

A REVIEW OF AVIATION SAFETY IN THE UNITED STATES

(112-83)

HEARING
BEFORE THE
SUBCOMMITTEE ON
AVIATION
OF THE
COMMITTEE ON
TRANSPORTATION AND
INFRASTRUCTURE
HOUSE OF REPRESENTATIVES
ONE HUNDRED TWELFTH CONGRESS
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April 20, 2012

MEMORANDUM

TO: Members, Subcommittee on Aviation

FROM: The Honorable Thomas E. Petri, Chairman

SUBJECT: Hearing on a Review of Aviation Safety in the United States

Wednesday, April 25, 2012, 9:00 a.m. in 2167 Rayburn House Office Building

PURPOSE

The Subcommittee on Aviation will hold a hearing to receive testimony from government, industry and labor witnesses on the Federal Aviation Administration's safety oversight of the aviation system, as wells as ways to improve our very safe system.

BACKGROUND

The United States aviation system is the safest in the world, with an impressive safety record. On any given day the Federal Aviation Administration's (FAA) air traffic control will handle roughly 28,537 commercial flights. In calendar year 2011, there were zero commercial passenger fatalities in the United States. In the past five years, there has been only one tragic and fatal passenger accident. While even one accident is too many, to put this in context, during that time, roughly 52 million passenger flights were operated safely.¹ In addition, the U.S. aviation system is also the safest mode of transportation. For example, of the 9,562,900 departures that

¹ Research and Innovation Technology Administration, Bureau of Transportation Statistics. Press Release "U.S. Airlines and Foreign Airlines U.S. passengers continue to increase from 2009." April 3, 2012.

occurred in 2010, there were no fatalities.² In the same years there were no fatalities in commercial aviation, there were 32,788 fatalities on U.S. highways.³ This high level of safety in the U.S. aviation system is the result of decades of hard work and vigilance by Congress, the FAA, industry, labor, and other stakeholders. The safety of the aviation system is the top priority of the Committee, FAA, industry, and other stakeholders. Pilots, passengers, government agencies, and Congress have worked together to develop and implement standards, regulations, and laws to ensure the safety of the aviation system. It has been through legislative, regulatory, industry, and safety advocacy efforts that the U.S. aviation system has reached its high level of safety.

Although the U.S. aviation system is very safe, there is always room for improvement where safety is concerned. Both the Government Accountability Office (GAO) and the Inspector General of the Department of Transportation (DOT IG) have conducted audits and studies reviewing FAA's oversight activities, including reviews of terminal area safety, operational errors, safety management systems, oversight of repair stations, and pilot training requirements that result from the Airline Safety and FAA Extensions Act. (H.R. 5900, P.L. 111-216) Each of these areas is outlined below.

Terminal Area Safety

"Terminal areas" refer to the areas around an airport that extend from the airfield or surface to 10,000 feet vertically and 40 miles in any direction.⁴ These areas include runways, taxiways, ramps, and airspace managed by air traffic control towers. Incidents can occur in any of these areas and it is the shared responsibility of airlines, airports, and air traffic control to oversee operations. In response to a rise in runway incursions (the unauthorized presence of an airplane, vehicle or person on the runway) the FAA began a "Call to Action" on runway safety in 2007.⁵ The FAA, Occupational Safety and Health Administration (OSHA), airports, and airline industry agreed to a "Call to Action" plan on runway incursions. The FAA and industry have implemented new safety approaches and milestones for safety initiatives. In addition to the "Call to Action", the FAA and industry have implemented new technologies, such as Airport Surface Detection Equipment, Model X (ASDE-X). ASDE-X, which provides air traffic controllers with a visual representation of runway and taxiway traffic, has been installed as of January 2012 at the busiest 35 major airports. This new technology has assisted air traffic controllers in the situational awareness and oversight of safety operations at airports.

In addition to accelerated deployment of technologies, actions taken as a result of the "Call to Action" range from improving airport layouts, better markings, new terminology, improved training, and development of best practices to be shared throughout the airline industry and FAA. While the FAA met its interim goals to reduce the total number of runway incursions

² National Transportation Safety Board, Aviation Statistics, Table 6 "Accidents, Fatalities, and Rates, 1991 through 2010, for U.S. Air Carriers Operating Under 14 CFR 121, Scheduled Service (Airlines)".

³ National Highway Traffic Safety Administration, Press Release. "Traffic Fatalities in 2010 Drop to Lowest Level in Recorded History." April 1, 2011.

⁴ U.S. Government Accountability Office, *Aviation Safety: Enhanced Oversight and Improved Availability of Risk-Based Data Could Further Improve Safety*, GAO-12-24, October 2012, p. 3.

⁵ U.S. Government Accountability Office, *Aviation Safety: Enhanced Oversight and Improved Availability of Risk-Based Data Could Further Improve Safety*, GAO-12-24, October 2012, p. i.

in 2009 and 2010, GAO found the number of incursions at towered airports has trended upward in recent years.⁶ In addition, the GAO found that the FAA does not have comprehensive data regarding safety incidents, such as runway overruns or those in ramp areas. Finally, the FAA does not have data collection processes, risk-based metrics, and assessment frameworks for analyzing other safety incidents that are not runway incursions or operational errors.⁷ While the FAA has shifted its oversight approach from reactive to proactive, the GAO concludes that in order to be successful in this goal the FAA must extend oversight of terminal areas to incorporate ramp areas, develop risk-based measures for runway safety incidents, and improve information sharing about incidents.⁸

Operational Errors

As aircraft fly through the National Airspace System (NAS), pilots are given instructions of precisely where to fly by air traffic controllers in facilities across the country. To ensure the safety of the NAS, the FAA has developed separation minima between aircraft. If pilots deviate from an air traffic controller's instructions and violate the required separation standards, the FAA classifies the incident as a "pilot deviation". If an air traffic controller fails to issue instructions or gives bad instructions to pilots that results in a loss of required separation, the incident is classified as an "operational error".⁹ According to the DOT IG, "the fact that operational errors pose real safety risks is undisputed."¹⁰

An October 2011 aviation safety review by the GAO uncovered that the rate of reported airborne operational errors has increased considerably in recent years. FAA official statistics on terminal area safety events have traditionally been, and still are, reported through the Air Traffic Quality Assurance (ATQA) database. ATQA data is derived from reported incidents by FAA air traffic controller supervisors, support specialists, managers, and from other sources, including incident investigations. The 2011 GAO review of the FAA's ATQA database show that over the last three years—

- the rate of airborne operational errors in the terminal area nearly doubled, increasing 97%;
- the rate of operational errors in the TRACON environment more than doubled, increasing 166%;
- the rate of operational errors in the tower environment increased by 53%; and
- the rate of the most severe airborne operational errors (true near misses) more than doubled.¹¹

From 2007 to 2011, the FAA categorized operational errors in the database based on severity. "Category A" operational errors were those in which greater than 66 percent of the

⁶ U.S. Government Accountability Office, *Aviation Safety: Enhanced Oversight and Improved Availability of Risk-Based Data Could Further Improve Safety*, GAO-12-24, October 2012, p. 23.

⁷ U.S. Government Accountability Office, *Aviation Safety: Enhanced Oversight and Improved Availability of Risk-Based Data Could Further Improve Safety*, GAO-12-24, October 2012, p. 2.

⁸ U.S. Government Accountability Office, *Aviation Safety: Enhanced Oversight and Improved Availability of Risk-Based Data Could Further Improve Safety*, GAO-12-24, October 2012, p. 44-45.

⁹ U.S. Government Accountability Office, *Aviation Safety: Enhanced Oversight and Improved Availability of Risk-Based Data Could Further Improve Safety*, GAO-12-24, October 2012, p. 8.

¹⁰ Testimony of The Honorable Calvin L. Scovel, III before the Committee on Commerce, Science, and Transportation of the United States Senate, *Further Steps Are Needed to Address Challenges With the Management and Operations of FAA's Controller Workforce*, May 24, 2011, p.4.

¹¹ GAO-12-24, October 2012, p. 28-30.

required separation standards were lost. Errors with a loss of separation between 25 and 66 percent of required separation were categorized as “Category B” errors, and those with a loss of required separation between 10-25 percent were categorized as “Category C” events. Incidents with a loss of separation of less than 10 percent of the required separation standard were categorized as “proximity events”.¹² Category A and B errors are the most serious events.

In fiscal year 2011, the FAA began tracking operational errors with the System Risk Event Rate (SRER) tool. This new method of tracking operational errors focuses on a 12-month look-back at the most serious loss of separation events per one thousand total loss events. The FAA has set a target of 20 serious loss events per every 1,000 loss events.¹³ So rather than a simple count of how any event is categorized by severity, the FAA has opted to track and present to the public a rate of serious events relative to the total number of safety events in the system. This presentation of safety data is relatively new, and at this time it is unclear how it improves the public and Congress’s understanding of the safety of the National Airspace System. While the FAA further develops this new measure of the rate of serious operational errors, the Office of Management and Budget has required the FAA to continue to keep records and track operational errors under the “Category A-B-C-Proximity Event” classification for two years. This will allow everyone to make comparisons and better understand what information the new approach provides.

The FAA is expanding its use of both voluntary reporting systems and automated reporting systems to better understand the extent of operation errors in the NAS. Before these systems were developed, controllers’ operational errors would only be known by management if the controller reported the error, or if a facility manager reported the event. The Department of Transportation’s Office of Inspector General has criticized the FAA’s oversight of operational errors, saying that the old self-reporting process was “subject to intentional manipulation” by controllers and facility management alike.¹⁴

The FAA has developed the Traffic Analysis and Review Program (TARP), an automated recording system to report loss of separation events. Under TARP, the position information from towers and TRACONS are automatically reviewed by computers, and incidents where losses of separation occur are captured without relying on the reporting by an air traffic controller or supervisor. Although the TARP tool is equipped to capture operational error information 24 hours per day, seven days per week, the FAA currently plans to audit TARP reports for only 2 hours per month at most facilities.¹⁵

An additional tool the FAA is implementing to more fully understand the occurrence of operational errors is a voluntary safety reporting program for air traffic controllers called the Air Traffic Safety Action Program (ATSAP). ATSAP is intended to be a voluntary safety reporting system for air traffic controllers to report unknown safety incidents without risk of punitive

¹² GAO-12-24, October 2012, p. 30.

¹³ GAO-12-24, October 2012, p. 31-32.

¹⁴ Testimony of The Honorable Calvin L. Scovel, III before the Committee on Commerce, Science, and Transportation of the United States Senate, *Further Steps Are Needed to Address Challenges With the Management and Operations of FAA’s Controller Workforce*, May 24, 2011, p. 3.

¹⁵ GAO-12-24, October 2012, p. 18-19.

action. The idea is to increase the reporting of events that might otherwise not be known to air traffic controller supervisors or managers, and thus not likely to be reported through the ATQA database.

New reporting systems, like TARP and ATSAP, increase the number of “reported” incidents, and give FAA a fuller picture of what is happening in the National Airspace System. However, despite FAA claims, the new reporting systems do not account for the increases in operational errors cited above by the GAO. The orders implementing the automated reporting system, TARP, had not yet been signed during the timeframe GAO reviewed.¹⁶ In addition, the reports filed under the voluntary program, ATSAP, do not count toward the mandatory reporting, ATQA, totals cited above.¹⁷ In fact, since a voluntary report satisfies the requirement to report, one might expect fewer total reports through the mandatory reporting system.¹⁸ But since the voluntary reports do not contribute to the mandatory reporting count, the implementation of voluntary reporting systems alone cannot account for an increase in the mandatory reports cited by GAO.

In addition, while the goal of the voluntary safety reporting program for air traffic controllers, ATSAP, is in line with other popular and successful voluntary safety reporting systems used by the FAA to improve aviation safety, its implementation has raised concerns identified by the DOT OIG. While the program encourages reporting without the risk of punitive action against controllers for reporting mistakes, the FAA has seen abuse of the program. For instance, according to FAA records, a controller who was heard over the radio frequency watching movies while on duty in a Cleveland, Ohio air traffic control facility avoided disciplinary action by filing an ATSAP disclosure. The FAA accepted the ATSAP filing, and the controller returned to operational duty without punishment.¹⁹

ATSAP disclosures also protected controllers who did not report fit for duty. Secretary of Transportation Ray LaHood commented last April that “there is no excuse for air traffic controllers to be sleeping on the job,”²⁰ and in another interview, “we’re not going to pay controllers to nap.”²¹ However, despite the Secretary’s commitment to improve behavior in air traffic control facilities, the FAA accepted two air traffic controllers’ ATSAP disclosures after being caught asleep while on duty in air traffic control facilities. In both cases, the controllers involved avoided disciplinary action as a result of their ATSAP disclosure. In neither case was the ATSAP report the sole source of discovery of the incident. Because ATSAP disclosures protect the employee from disciplinary action, in one case, the proposed disciplinary action of removal was rescinded, and the controller was returned to operational duty.²² Of nine cases involving air traffic controllers sleeping while on duty between January and April 2011, only one air traffic controller was terminated for his or her misconduct.²³

¹⁶ US DOT, Federal Aviation Administration Order JO 7210.633, effective date January 30, 2012.

¹⁷ GAO-12-24, October 2012, p. 35.

¹⁸ GAO-12-24, October 2012, p. 35.

¹⁹ FAA ATC Disciplinary Cases All Update 3-2-12.

²⁰ CBS News, “Another napping air traffic controller in Miami”, April 16, 2011.

²¹ CBS News, “LaHood: We won’t pay air traffic controllers to nap”, April 18, 2011.

²² FAA ATC Disciplinary Cases All Update March, 2, 2012.

²³ *Ibid.*

Long standing voluntary disclosure programs, such as the Voluntary Disclosure Reporting Program for maintenance safety issues and the Aviation Safety Action Program for airline pilot disclosures, have led to significant aviation safety advances. As a result of these programs, the FAA has gained access to new safety data that would have otherwise gone unknown, and is in a position to act on safety issues before an accident should occur. Over the years, steps have been taken to safeguard these programs from abuse, and as the ATSAP program develops, it will be critical that the FAA takes similar measures. Of particular interest will be the relative standards between the voluntary reporting programs' requirements for acceptance into the safety programs, with the resulting immunity from punishment enjoyed by the employee hanging in the balance.

Repair Stations

Aeronautical repair stations provide maintenance of aircraft for major U.S. airlines, and are a critical part of the aviation safety system. According to the DOT IG, between 2000 and 2009 airlines spent \$1.1 billion on outsourced maintenance of aircraft in the U.S. and abroad rather than perform the maintenance in house. The DOT IG anticipates that the repair station industry will grow by 4.4 percent in the next ten years.²⁴ In 2003, the DOT IG issued recommendations to the FAA to strengthen FAA oversight of repair stations.²⁵ While the FAA made procedural changes in response, according to DOT IG, the FAA has not yet addressed the most significant and longstanding recommendations. In its most recent audit work, the DOT IG has found that while the FAA has implemented a risk-based system to oversee repair stations, the DOT IG found that the FAA has not fully implemented the system. While the FAA has taken steps to improve oversight of repair stations, the DOT IG has found that the FAA still needs to address consistency in the interpretation of FAA guidance to maintenance providers, training of inspectors, and the FAA's provision of explanations to implement changes in maintenance regulations to repair stations. In addition, the DOT IG outlined several concerns regarding the FAA's Organization Designation Authorization (ODA) program, which standardizes FAA's oversight of organization designees.²⁶ As the FAA does not have the manpower to oversee all parts of the aviation system, it is given authority to delegate certain functions to individuals or organizations. Through the ODA process, the FAA approves a company's process to choose personnel to perform maintenance and repair work. This has resulted in less FAA involvement in the approval of personnel.²⁷

The FAA Modernization and Reform Act of 2012 (H.R. 658, P.L. 112-95), which was signed into law on February 14, 2012, contained two provisions to address FAA's oversight of repair stations. The first provision addresses the FAA's safety oversight of foreign repair

²⁴ Department of Transportation Inspector General, Audit Announcement: *Follow up review of FAA's Oversight of Foreign and Domestic Repair Stations.* December 2010, p. 1.

²⁵ Department of Transportation Inspector General, Audit Announcement: *Follow up review of FAA's Oversight of Foreign and Domestic Repair Stations.* December 2010, p. 1.

²⁶ Department of Transportation Inspector General, AV-2011-136. *FAA needs to strength its risk assessment and oversight approach for organization designation authorization and risk-based resource targeting programs.* June 29, 2011, p. 2.

²⁷ Department of Transportation Inspector General, AV-2011-136. *FAA needs to strength its risk assessment and oversight approach for organization designation authorization and risk-based resource targeting programs.* June 29, 2011, p. 3.

stations certificated by the FAA. Foreign repair stations considered under the law are repair stations located overseas that perform work on U.S. certificated aircraft. It requires the FAA to inspect foreign repair stations annually, but in a manner that is consistent with U.S. obligations under international agreements. It also allows additional FAA inspections based on identified risks. The second provision addresses non-certificated repair stations and directs the FAA to require that essential maintenance, regularly scheduled maintenance, and work pursuant to required inspection items be performed by Part 121 carriers, Part 145 repair stations, or contractors meeting the requirements of Part 121 or 145 certificate holders. Part 121 air carriers are responsible for ensuring that all maintenance, whether performed by the air carrier itself or performed by another entity under contract with the carrier, is conducted in accordance with the air carrier's maintenance program. Responsibility for oversight by Part 121 carriers is not meant to change the permitted work of the Part 145 repair stations. In particular, Part 145 stations can continue to supervise and oversee the activities of individuals that perform contract maintenance when it is necessary to obtain technical expertise. These provisions provide improved FAA oversight of repair stations, both foreign and domestic.

Safety Management Systems and Data Collection

In order to further improve safety, the FAA is more intently focusing on a data-driven “risk-based approach” to address safety issues before accidents occur. This approach is dependent on the FAA being able to collect the necessary data and to analyze it properly in order to obtain a true understanding of operations and to prevent accidents and incidents. The FAA intends to implement its risk-based approach by using safety management systems (SMS). According to the FAA, “SMS is the formal, top-down business approach to managing safety risk, which includes a systemic approach to managing safety, including the necessary organizational structures, accountabilities, policies and procedures.” (Order VS 8000.367) SMS is a structured process that obligates organizations to manage safety with the same level of priority that other core business processes are managed. This applies to both internally at the FAA and external at aviation industry organizations (Operator & Product Service Provider). SMS gives airline operators the data needed to isolate trends that may be precursors to incidents and accidents and allows them to develop and implement risk mitigation strategies.²⁸ Although the FAA has not yet issued a final rule on SMS, air carriers have already voluntarily begun to implement SMS. The level of voluntary air carrier participation in the SMS pilot program is high, with 83 percent of all Part 121 air carriers participating in the 2007 SMS pilot program.²⁹ While this new program has great potential to improve safety, the airline industry is concerned that small air carriers will be unable to implement the FAA’s anticipated SMS requirements given the cost of the system. In addition, air carriers also have privacy concerns regarding the data collected in a SMS.

In recent years, the FAA has begun to implement systems to gather data regarding operations in the National Airspace System (NAS) to take proactive steps to treat systematic and

²⁸ Testimony of The Honorable Calvin L. Scovel, III before the Subcommittee on Aviation Operations, Safety, and Security, United States Senate, *Progress and Challenges in Responding to Key Provisions of the Airline Safety Act*, March 20, 2012, p. 4.

²⁹ Testimony of The Honorable Calvin L. Scovel, III before the Subcommittee on Aviation Operations, Safety, and Security, United States Senate, *Progress and Challenges in Responding to Key Provisions of the Airline Safety Act*, March 20, 2012, p. 4.

reoccurring troubles before an accident occurs. The FAA has done this so that it can identify hazards, assess and mitigate risk, and measure performance.³⁰ According to the GAO, the FAA is in the process of developing a plan that will address how data fits into its new oversight method, but the plan does not 1) contain a description of the data that will be required to conduct proactive data analysis; 2) list the skills personnel will need for analysis and ensure data quality; and 3) describe the steps needed to address continuing data quality problems. As data is collected it will only be effective if the FAA can properly and effectively analyze it. The GAO has expressed concern that the FAA has not effectively begun to analyze all the data it collects. According to the GAO, if FAA does not collect the necessary data, the FAA will receive an incomplete picture or information and the new proactive, risk-based approach will be challenged.

Airline Safety and FAA Extension Act

On February 12, 2009, Colgan Air Flight 3407 crashed in upstate New York, killing all on board and one person on the ground. This tragic event focused attention on safety concerns related to pilot training, fatigue, flight and duty time, and access to pilot employment histories by airlines. In response to the findings of the NTSB investigation and other investigations on the accident, Congress passed the Airline Safety and FAA Extension Act (H.R. 5900, P.L. 111-216). Specifically, H.R. 5900 requires additional training and flight hours for pilots, development of new procedures to address pilot fatigue, and an FAA operated database of pilot employment records. H.R. 5900 requires multiple rulemakings by the FAA. While the FAA is on track to meet many of the requirements of H.R. 5900, it is behind on some of the requirements of the legislation.³¹

In December 2011, the FAA issued a final rule on Flightcrew Member Duty and Rest Requirements. This rulemaking was required by H.R. 5900 to address concerns related to pilot fatigue. The final rule on flight and duty time will take effect in two years and includes the following key elements:

- The FAA limits flight time to eight or nine hours depending on the start time of the pilot's entire duty period.
- The rule sets a 10-hour minimum rest period prior to the flight duty period, a two-hour increase over the previous rules, and mandates that a pilot has an opportunity for eight hours of uninterrupted sleep within the 10-hour rest period.
- The new rule addresses potential cumulative fatigue by placing weekly and 28-day limits on actual flight time and the amount of time a pilot may be assigned any type of flight duty. It also requires that pilots have at least 30 consecutive hours free from duty on a weekly basis, a 25 percent increase over the previous rules.
- The FAA expects pilots and airlines to take joint responsibility when considering if a pilot is fit for duty, including fatigue resulting from pre-duty activities such as commuting. If a pilot reports they are fatigued, the airline must remove that pilot from duty immediately.

³⁰ U.S. Government Accountability Office, *Aviation Safety: Enhanced Oversight and Improved Availability of Risk-Based Data Could Further Improve Safety*, GAO-12-24, October 2012, p. 8.

³¹ Testimony of The Honorable Calvin L. Scovel, III before the Subcommittee on Aviation Operations, Safety, and Security, United States Senate, *Progress and Challenges in Responding to Key Provisions of the Airline Safety Act*, March 20, 2012, p. 1.

- An airline may develop an alternative way of mitigating fatigue based on science and data validated by the FAA. Such a program must be monitored by the FAA.

As noted above, there is opposition to the Administration's decision to exempt all-cargo operators from the requirements of the final flight and duty time rule. The Independent Pilots Association (IPA), the union representing UPS pilots, has filed a lawsuit against the FAA. The Cargo Airline Association has intervened in the lawsuit to defend the FAA's decision-making. This matter is still pending before the court. In addition, the Flight 3407 Families also oppose the "all-cargo" exemption. On April 16, 2012, a bill was introduced in the House of Representatives which would direct the Secretary of Transportation to apply the new flight and duty time rule to all-cargo operations "in the same manner as they apply to passenger operations." (H.R. 4350)

To address concerns that airline pilot commuting played a role in the Colgan accident, H.R. 5900 also required the National Academy of Sciences to study pilot commuting to assess its impact on fatigue. The NAS completed this study and found that long commutes across multiple time zones may worsen fatigue, however it noted that there was not enough data to determine the impact of commuting in fatigue and whether or not it should be regulated. While pilot commuting done incorrectly has been identified as a possible cause for fatigue there has not been sufficient data to fully understand the true impact it has on a pilot's ability to do their job.³² In its audit, the DOT IG recommended that the FAA request airlines to collect data on pilots commuting to determine if changes to flight duty and domicile regulations are required.

Lastly, the H.R. 5900 requires that the FAA develop a centralized electronic pilot records database to provide airlines with access to a pilot's prior employment records. According to the DOT IG, while the FAA met the initial milestone of the law, it still has several challenges in developing and utilizing the database. The first challenge is that the FAA must decide the level of detail that it wants to obtain from an air carrier pilot training record. The labor industry is concerned with the inclusion of comments and evaluations made by a pilot examiner, as required by the Act. The FAA must gather historical records and keep them standardized among a variety of sources which will be difficult. The second challenge is that the FAA is not expected to issue a final rule for another two years and it must determine how to transition to the new database. Lastly there are multiple issues for the FAA to address in accessing records from the National Driver Register and incorporating the data into the database.³³

Pilot Training

The training and education of commercial airline pilots is a critical part of the safety of the U.S. aviation system. In the wake of the tragic Colgan Flight 3407 crash, Congress passed the Airline Safety and FAA Extension Act (H.R. 5900, P.L. 111-216) which contained several new training requirements for pilots. These requirements include additional training on stall

³² Department of Transportation Inspector General. AV-2011-176. *FAA and Industry are Taking Action to Address Pilot Fatigue, but more Information on Pilot Commuting is Needed*. September 12, 2011, p. 10.

³³ Testimony of The Honorable Calvin L. Scovel, III before the Subcommittee on Aviation Operations, Safety, and Security, United States Senate, *Progress and Challenges in Responding to Key Provision of the Airline Safety Act*, March 20, 2012, p. 8.

recovery, an increase of flight hours required for first officers, pilot mentoring and leadership training, and inclusion of training on flight simulators.³⁴

H.R. 5900 requires the FAA to increase the minimum number of flight hours required for a first officer from 250 to 1500.³⁵ While the FAA has issued two proposed rulemakings for this requirement it has not yet issued a final rule.³⁶ There is some concern that this increase in required hours will make it hard for regional airlines to find qualified first officers.

Since many pilots who fly for commercial airlines receive training from one of the country's 3,400 pilot schools, it is important that the schools provide them with effective training. All pilot schools must provide classroom and flight training to educate pilots on aeronautical knowledge and flying skills. To achieve a pilot's license, all students must pass two FAA tests: a knowledge-based exam and a practical test. When the GAO looked at pilot training at schools in the U.S. they found that the training varied in quality, but all students are expected to pass the same tests.³⁷ According to the GAO, the airline industry encourages the FAA to revise regulations on pilot training for commercial airline pilots, including a suggestion for developing a different training track required for pilots who do intend to fly for an airline. The GAO found that the FAA's pilot training requirements for certification of commercial pilots are not aligned with airline operations and do not emphasize skills that airlines consider important for greater aviation safety. Furthermore, they advised the FAA to change current pilot training regulations to emphasize decision making, use modern technology, improve situational awareness and understand risk management.³⁸

Conclusion

The United States aviation system is the safest airspace system in the world. It operates at a high level of safety as a result of decades of collaboration among the government, industry, labor, and other stakeholders. While, overall, the system is very safe there are areas highlighted by recent events and government audits where safety can be improved. Identifying these areas enables Congress, the FAA, industry, and other stakeholders to take the necessary steps to further improve the safety of our aviation system.

³⁴ Airline Safety and Federal Aviation Administration Extension Act of 2010, Pub. L. No. 111-216, August 1, 2010.

³⁵ Airline Safety and Federal Aviation Administration Extension Act of 2010, Pub. L. No. 111-216, August 1, 2010.

³⁶ Testimony of The Honorable Calvin L. Scovel, III before the Subcommittee on Aviation Operations, Safety, and Security, United States Senate, *Progress and Challenges in Responding to Key Provision of the Airline Safety Act*, March 20, 2012, p. 5.

³⁷ General Accountability Office, Testimony before the Subcommittee on Aviation Operations, Safety and Security, of U.S. Senate, *FAA has an Opportunity to Enhance Safety and Improve Oversight of Initial Pilot Training*, March 20, 2012, p. 3.

³⁸ General Accountability Office, Testimony before the Subcommittee on Aviation Operations, Safety and Security, of U.S. Senate, *FAA has an Opportunity to Enhance Safety and Improve Oversight of Initial Pilot Training*, March 20, 2012, p. i.

Witnesses:

Panel 1:

The Honorable Margaret Gilligan
Associate Administrator for Aviation Safety
Federal Aviation Administration

The Honorable David Grizzle
Chief Operating Officer
Air Traffic Organization
Federal Aviation Administration

Mr. Jeffrey B. Guzzetti
Assistant Inspector General for Aviation and Special Programs Audit
Inspector General of Department of Transportation

Dr. Gerald L. Dillingham
Director, Physical Infrastructure Division
Government Accountability Office

Panel 2:

Mr. Tom Hendricks
Senior Vice President for Safety
Airlines for America

Mr. Scott Foose
Senior Vice President- Operations & Safety
Regional Airlines Association

Captain Sean Cassidy
First Vice President
Airline Pilots Association

Mr. Gary M. Fortner
Senior Vice President
Vice President of Quality Control, Fortner Engineering
Aeronautical Repair Stations Association

A REVIEW OF AVIATION SAFETY IN THE UNITED STATES

WEDNESDAY, APRIL 25, 2012

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON AVIATION,
COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE,
Washington, DC.

The subcommittee met, pursuant to call, at 9:00 a.m., in Room 2167, Rayburn House Office Building, Hon. Thomas Petri (Chairman of the subcommittee) presiding.

Mr. PETRI. The subcommittee will come to order.

Although the United States aviation system is very safe, when it comes to aviation safety there is always room for improvement. The top priority for our subcommittee is safety, and I know that the FAA, aviation operators industry, and passenger advocate groups share that priority.

With this in mind, today we will review the FAA's safety oversight activities, covering a broad range of issues.

As we have noted many times in the past, the United States aviation system is the safest in the world. On any given day the FAA's air traffic controllers will handle over 28,500 commercial flights. In 2011, there were no commercial passenger airline fatalities. Over the past 5 years, roughly 52 million passenger flights were operated safely. This high level of safety is the result of collaborative efforts by the FAA, Congress, industry and by other stakeholders.

But we must not forget the one tragic fatal commercial accident during those 5 years. We have taken steps with the passage of the Airline Safety and Federal Aviation Administration Act of 2010 to address the identified weaknesses that contributed to that tragedy, and we are accepting a statement for the record from the relatives of some of the victims of that airline disaster.

[The Families of Continental Flight 3407's prepared statement follows:]



FAMILIES OF CONTINENTAL FLIGHT 3407
Statement for the Record
Hearing on 'A REVIEW OF AVIATION SAFETY IN THE UNITED STATES'
April 25, 2012
U.S. House Aviation Subcommittee

Chairman Petri, Ranking Member Costello, and Subcommittee Members:

Thank you for calling this hearing and for the opportunity to weigh in on this critical topic that is so near and dear to our hearts. The importance of achieving a true 'One Level of Safety' between our nation's mainline and regional carriers cannot be emphasized enough, as the last six fatal commercial air crashes in our country have been on regional carriers, including the February 12, 2009 crash of Continental Flight 2009, operated by Colgan Air, which took the lives of our loved ones.

In filing for bankruptcy recently, Pinnacle Airlines, ironically the parent carrier of Colgan Air, blamed a "race to the bottom as... regional airlines have been forced to bid ever-lower rates and accept increasingly unfavorable contract terms to win the business of major carriers." This quote sums up the challenges faced by regional airlines, and illustrates how some of the deficiencies that caused Flight 3407 came about at Colgan Air.

The moral of the story is clear. If the regional airlines are not held to the higher standards that Congress sought to establish through the unanimous passing of PL 111-216, the 'Airline Safety and Federal Aviation Administration Extension Act of 2010', the economic pressures that they are faced with threaten to ensure a repeat of Flight 3407. However, if collectively we are able to see the Act through to complete implementation, the advances that it promotes in the areas of training, fatigue, safety management systems, and pilot screening, selection, and qualification will go a long ways towards preventing such a tragedy from occurring.

We cannot place a bright enough spotlight on the critical role that your subcommittee plays in making sure that another group of families does not have to suffer as we have. This completely preventable tragedy has driven us to make over forty trips to Washington over the past three years. **As time passes, we caution that oversight hearings such as this one cannot turn into round-after-round of stakeholders and congressional 'watchdogs' collectively patting each other on the back for a great safety record.**

We hearken back to January 11, 2009, and an article that appeared in USA Today highlighting the first time in the jet era that two calendar years had passed without a crash fatality. Barely one month later, we know all too well the tragic result that occurred just outside of Buffalo. As we move forward, we implore you to not lose sight of the fact that complacency is the enemy. **Regardless of how many days, weeks, months, or years have passed since the last fatal tragedy, how many media outlets may or may not be covering your subcommittee's work, or how many competing demands are being made on your time by your constituents and other committee assignments and congressional responsibilities, each and every American who flies is counting on each of you to remain vigilant to ensure that another needless tragedy does not occur today, tomorrow, or the next day.**

KEY ISSUES MOVING FORWARD

The motive of our group is pure, and should serve as a constant moral compass for all: simply put, how do we prevent the next Flight 3407 from occurring? As regional airlines have burst onto the scene over the past decade, to

the point where they now comprise over half of all domestic flights operated daily, this has put a tremendous strain on our aviation safety system. How we hire our pilots, how we schedule them, how we train them, how we compensate them, and how we support them from a safety management standpoint have all taken on a new dimension as the pressure to deliver the lowest bid manifests itself in the day-to-day operations of a regional airline. Unfortunately, shortcuts in many of the aforementioned areas were allowed to come together and thus Flight 3407 occurred.

Before moving on to some of the specific issues that are awaiting FAA action, we would like to highlight the renewed spotlight that the DOT Office of the Inspector General has placed on Code Sharing. **This effort references back to FAA's 2009 Call to Action, and the need for FAA to "assess the potential safety impacts" of these code share agreements. We believe that the IG raises a major question of "whether the performance incentives or penalties contained within these agreements... result in unintended safety vulnerabilities"? We challenge all government overseers to reflect on this point, and to consider increased scrutiny of these arrangements, again all in the interest of attaining a true 'One Level of Safety.'**

Returning our focus to the implementation of PL 111-216 we note that, in the past three years, many positive strides have been made towards our goal of preventing a repeat of Flight 3407. Most notably, FAA has scored a significant achievement in the issuance of a decades-overdue new rule on pilot flight and duty time limits. But much remains to be done, and here are five key areas that we are currently focusing in on:

1) TRAINING - Issuance of a final rule revising airlines' pilot training curriculums by OCTOBER 1, 2012. This rulemaking project has been ongoing since March 1999, and the past three years have seen two rounds of proposals and comment periods. The latest proposal contains crucial improvements in the areas of stall and upset recognition and recovery training, as well as a continuous analysis program (CAP) targeted towards pilots exhibiting training deficiencies. Additionally, this proposal will make major strides in enhancing pilot training by requiring all training to be done in a full crew environment. Taken together, these initiatives will address key shortcomings identified by the NTSB in its investigation of the Flight 3407 tragedy and greatly improve how we prepare our pilots to deal with difficult situations. **The October 1, 2011 deadline mandated by Congress in PL 111-216 has come and gone, and there are loud calls from the airlines to withdraw the latest proposal and re-convene an aviation rulemaking committee to 'start from scratch'. Our position is clear: this cannot be allowed to happen, lest we repeat the same mistakes of the last two decades in attempting to update our pilot fatigue guidelines. We call on FAA and DOT to not allow this critical undertaking to drag on any more than a year past the statutory deadline.**

2) ENTRY-LEVEL PILOT QUALIFICATIONS - Issuance of a final rule on pilot certification and qualifications that requires all commercial airline first officers to have an Airline Transport Pilot (ATP) rating, and emphasizes Quality AND Quantity. FAA recently released a proposal that if finalized, will significantly enhance the competency of entry-level regional airline first officers, and should also ensure better-prepared captains as well. Our position is clear: we advocate for maintaining the significant enhancements in quality that will better prepare our future commercial airline first officers by requiring type ratings, multi-engine time, and operating experience in a multi-crew environment. We also call on FAA to hold the line on a significant increase in flight hours that will greatly improve the 'stick-and-rudder' skills that all evidence points to having been deteriorating in the most recent crops of new pilots. One area that requires special attention is the waiver of some required flight hours for pilots receiving a four-year aviation degree in conjunction with their pilot's license. We call on FAA to be mindful of Congressional intent in rewarding students who attend collegiate flight programs that meet the most robust accreditation standards, and to follow the mandate in PL 111-216 that any credit granted towards flight hours will enhance safety more than requiring the pilot to fully comply with the flight hours requirement.

We also highlight reports from the IG's office of two regional carriers with over 75% of current first officers lacking an ATP, and of even greater concern, no plan in place to ensure that this will be addressed. This statutory requirement, scheduled to take effect on August 1, 2013, has been in place and well-publicized since August 2010, and we find the

industry's foot-dragging in this regard to be extremely concerning. Amid calls from various sectors of the industry for a grandfather clause of sorts to address this gap, we call on FAA to hold firm to the statutory requirement.

3) COMMUTING - Compilation and analysis of data on pilot commuting as called for by NTSB and the DOT Inspector General by October 11, 2012. There can be no doubt that commuting, and its corresponding contribution to fatigue, came into play in regards to the performance of the crew of Flight 3407. We have grown increasingly frustrated by airline, labor, and FAA resistance to a simple tenet of risk assessment and management: namely for each airline to simply identify pilots who commute and where they are commuting from. An increased awareness of this information and its relation to crew scheduling can go a long way towards ensuring that we do not have fatigued pilots in our cockpits. We appreciate the repeated calls for this step to be taken by both the NTSB in the Flight 3407 final report, and in OIG's recent audit of FAA's efforts to fight pilot fatigue. **The Inspector General has highlighted a commitment by FAA to report on this by October 2012, and we are counting on FAA to make a thorough effort.**

4) PILOT RECORDS DATABASE - Creation of a COMPREHENSIVE database and in the most timely manner possible. For our group, perhaps the most appalling revelation to come from the Flight 3407 investigation was the fact that the pilots were hired without Colgan Air being fully aware of their complete training history. Once again, there is opposition from both labor and the airlines, but FAA must deliver a final product that is comprehensive in both the scope of the records it contains, as well as the descriptiveness of these records. Simply put, it is not enough to note that a pilot failed; we must also capture why he or she failed. And in terms of timeline, every hire that is allowed to be made prior to this project being completed introduces the risk that a mistake similar to what happened with Flight 3407 will be allowed to happen again. **The next milestone for this effort is the delivery of a proof-of-concept in August 2012, and we call on FAA to act with expedience on this entire project.**

5) REGIONAL AIRLINES' COMMITMENT TO BEST PRACTICE SAFETY MANAGEMENT SYSTEMS - Issuance of a final rule on Safety Management Systems, and continued scrutiny of regional airlines' follow-thru in implementing best practice safety programs like ASAP, FOQA, and LOSA. While former FAA Administrator Babbitt declared back in 2009 that he received 100% cooperation from regional airlines pledging to voluntarily implement these programs, information self-reported to FAA from these carriers tells us that this is far from being a reality. While our preference continues to be for these programs to be mandatory, so that there is no temptation for carriers to take shortcuts to save some money, we call on Administrator Huerta to continue to use his 'bully pulpit' to hold these regional airlines to their word. A true 'One Level of Safety' demands that regional carriers make the same commitment to, and investment in, safety that their parent carriers do. We sadly know that to be far from the truth when it came to Colgan Air in February 2009.

We would like to make two key points in regards to claims made by the regional carriers referencing their implementation of these critical programs. **First, we reject the measuring stick of comparing their implementation percentage to 'all Part 121 carriers'.** By doing so, they make their statistics look better by including a number of small cargo carriers with fleet sizes that perhaps do not justify investment in such programs. Rather, we expect them to hold themselves to the same standard as the mainline carriers with whom they enter into code share agreements; that is what the essence of a true 'One Level of Safety' demands, and that is the statistical comparison that the flying public wants and deserves.

Secondly, we dispute the value of the statistic of carriers who have 'at least one voluntary safety program' in place. We find this to be extremely misleading, as it takes credit for administering the Aviation Safety Action Program (ASAP), a self-reporting program which has negligible, if any, cost, and is nearly at a one hundred percent implementation level. **We call on regional airlines, and all carriers, to grade their progress in adopting voluntary safety programs by considering only Flight Operations Quality Assurance (FOQA), Line Operations Safety Audit (LOSA), and Advanced Qualification Program (AQP), programs which require a significant investment, and sadly, programs where there has been a marked gap between mainline and regional carriers in the past.** For instance, our analysis of the FAA's March 2011 Report to Congress on Voluntary Safety Programs reveals that 87% of mainline carriers utilize FOQA, versus 67% of regional carriers. Again, the flying public deserves better.

Finally, as we hear repeated concerns expressed about the protection of the voluntary data that drives these critical programs, we realize that an opportunity was missed in the last Congress to include language originally in the Senate's version of the Reauthorization Bill (S. 1451, Sec 554) that would have offered such safeguards. This language was specifically intended to address NTSB safety recommendation A-10-28, and we call on both houses to keep this provision on their radar moving forward, with the hope that it will be included in future transportation legislation.

COUNTING ON KEY GOVERNMENT AGENCIES TO DELIVER

1) FAA and DOT – FAA and DOT have made meaningful progress in the implementation of all statutory responsibilities mandated by P.L. 111-216 over the past twenty-one months. Looking ahead, significant challenges remain as FAA attempts to complete multiple rulemaking projects. As always, there is industry pressure that comes with the increased cost of many of these new safety measures. And FAA must also deal with the numerous requirements directed its way in the recently-passed FAA Reauthorization Bill. Regardless of any challenges, we remind FAA and DOT that the flying public is counting on them to continue to move forward and complete the crucial safety initiatives contained in P.L. 111-216.

2) White House Office of Management and Budget – The role played by the Office of Management and Budget cannot be overlooked in the issuance of final rules in many of these key safety areas. As OMB deals with the economic ramifications of these new rules, we call on its key leaders to not lose sight of the strong Congressional mandate behind the unanimous passage of this bill, as well as OMB's specified mandate to protect the health, safety, and welfare of the American public. There is no convenient shortcut around a key fact: Safety costs money. We have learned the hard way that a tragic crash like Flight 3407 takes a toll that goes well beyond dollars and cents. We challenge OMB to place safety and the 'little people' like us ahead of these giant corporations and the well-paid lobbyists that they employ in an attempt to bully the government to get their way.

3) Office of the Inspector General - We have been encouraged by the work done by the Inspector General's office in monitoring FAA's progress in implementing this landmark safety bill. It has cast a bright light on FAA's oversight of qualification and training programs, as well as FAA's lack of responsiveness on the pilot commuting issue. Most recently, OIG has opened our eyes to the challenges of FAA disseminating the critical safety work being accomplished in Washington down to the field level where it will actually be implemented and monitored. We call on the OIG to continue to hold FAA's feet to the fire on its follow-thru on P.L. 111-216, and we remind all involved that even the most well-constructed initiatives on paper are only as effective as the extent to which they are carried out on the front lines.

CONCLUSION – DO NOT ALLOW OUR LOVED ONES TO HAVE DIED IN VAIN

Through this whole process, we have become intimately aware of the history surrounding attempts to achieve many of these aviation safety initiatives. To put it bluntly, in many cases, the airlines have been extremely successful in manipulating FAA and Congress to slow down or halt these reforms altogether, with the effort to revamp the pilot flight and duty time limits being a prime example. We sadly reflect on the decade prior to the crash of Flight 3407 as being a time where regional airlines were allowed to expand almost unchecked, with the tragic end result being a very avoidable crash like Flight 3407.

Unfortunately there is nothing that can be done to bring back our loved ones lost on Flight 3407. However, we pray that their tragic deaths, and our diligent advocacy to prevent the next crash from occurring, serve as a shining example to all involved. We call on FAA, DOT, OMB, the Aviation subcommittees in both houses of Congress, and just as importantly, every stakeholder in the aviation industry, to come together in our loved ones' memory to finish what we have started, and complete the timely and effective implementation of P.L. 111-216.

Mr. PETRI. While the U.S. aviation system enjoys a high level of safety, there are areas in which safety can be improved. The General Accounting Office and the Inspector General of the Department of Transportation have conducted audits and studies to assess the FAA's safety oversight role in a variety of areas, including terminal area safety, operational errors, safety management system, oversight of repair stations, and rulemakings required by the Airline Safety and FAA Extension Act of 2010.

Today the subcommittee will hear testimony from representatives of the Government, industry, and labor on these and other safety oversight issues. As we hear testimony from today's witnesses, I would like to highlight two areas of safety oversight.

First, we will look at the requirements included in the bipartisan 2010 Safety Act. As stated previously, this law was enacted in response to the findings of the National Transportation Safety Board and other investigations of the tragic Colgan crash in February of 2009. The reforms directed the FAA to, among other things, set new requirements for pilot flight and duty time and pilot training and directed the FAA to develop and maintain a pilot records database.

We recognize the Colgan family members for their continued oversight and attention to ensuring that these requirements are put in place.

I understand that the FAA has made progress on several of the required rules, but that significant challenges remain in terms of implementing other requirements. We look forward to discussing the steps that have been taken and what remains to be addressed to successfully implement the law.

The second area that I would like to highlight is the increase in operational errors in recent years. According to the Inspector General, operational errors where there is a loss in required separation between aircraft have increased, but the FAA is not able to fully explain the reason for the increase. Operational errors pose a safety risk to the aviation system and need to be mitigated.

According to the FAA, the increase in operational errors is the result of increased reporting through the voluntary and nonpunitive air traffic safety action program. Following the audit, the IG found no evidence to support this assertion. The Inspector General concluded that the exact cause for the rise in operational errors is unclear. Given this, we are interested in exploring this with the FAA so that we can understand the true cause of the increase in operational errors and fully address the safety issue.

It is our responsibility, regardless of how safe the system is, to conduct oversight and address any possible safety issues that may be present or arise in the future.

I look forward to hearing the testimony from the witnesses, and thank you again for attending this important oversight hearing.

Finally, before I recognize Mr. Costello for his opening statement, I ask unanimous consent that all Members have 5 legislative days to revise and extend their remarks and include extraneous material in the record of this hearing.

Without objection, so ordered.

I now recognize Mr. Costello for his opening statement.

Mr. COSTELLO. Mr. Chairman, thank you, and I thank you for calling the hearing today to review aviation safety in the United States. I am pleased to see that a number of the Colgan families are with us here, as they have been many times for hearings over the past several years.

We all know that the United States commercial aviation system is the safest in the world. It is the safest because of the hard work of many individuals and professionals over many years at the FAA, the National Transportation Safety Board, Government auditing agencies, organized labor, the airline industry and also Congress, and in particular this subcommittee.

As both the chairman and ranking member of the Aviation Subcommittee, I have always made safety my top priority, and I know that Mr. Petri has as well. In the 110th and 111th Congresses we held 19 safety-related hearings and roundtables, including 2 hearings on runway safety, 4 hearings on pilot training and fatigue and a hearing on the FAA's oversight of outsourced airline maintenance.

Additionally, in response to the February 2009 Colgan Flight 3407 crash, we worked together to enact sweeping airline safety and pilot training reforms, the strongest piece of airline safety legislation in decades. We will receive updates on all of these subjects today, and it is important that we continue to hold subsequent hearings on the implementation of the airline safety law.

I am pleased that we passed and the President signed into law the FAA reauthorization bill, although I disagreed with the funding cuts in the House bill which the FAA testified would have harmed safety because the FAA would have had to furlough a large number of safety employees. Fortunately, these cuts were rejected in the final conference report. Nevertheless, the DOT IG will testify today that we will still need to keep a close eye on whether the FAA has an adequate number of safety inspectors.

Likewise, we had a heated debate over an amendment accepted on the House floor that both the NTSB and the FAA said would undermine aviation safety rulemakings, including a new pilot fatigue rulemaking. I opposed this amendment, which was also opposed by the Colgan families. The amendment was dropped from the conference report, the fatigue rule has been finished, and the American public is safer now today because we won that battle.

Looking forward, we must continue to work together to ensure that safety continues to be the subcommittee's highest priority and that we do not enact policies that could undermine our work to improve safety.

We should continue to be vigilant about the FAA's oversight of contract repair stations. Based on a 2003 DOT IG report that identifies weaknesses in the FAA's aircraft repair station oversight, some members of this subcommittee wanted to require foreign repair stations to be inspected at least twice a year. Instead, Congress adopted a primarily risk-based inspection approach in the recently enacted FAA bill. However, the DOT IG will testify that several weaknesses that they originally identified in 2003 still remain and that this issue still requires vigorous oversight.

Generally speaking, I am encouraged by the progress the FAA has made implementing the comprehensive airline safety and pilot

training bill that we enacted in the 111th Congress. I commend Secretary LaHood and the acting administrator for completing a pilot fatigue rule and proposing a new pilot training rule that will dramatically increase the training standards for first officers.

As the Colgan tragedy made very clear, aviation safety depends on making sure pilots have the training and experience necessary to deal with adverse situations. I will continue to work with the FAA and all interested stakeholders as this process continues to make sure that the FAA produces the strongest possible rule.

Mr. Chairman, I thank you again for calling the hearing today. I look forward to hearing from our witnesses and I will have several questions for them as well. Thank you.

Mr. PETRI. Thank you.

I would like to ask unanimous consent that our colleague William Shuster, a member of the full committee, be permitted to participate in all of the proceedings of this subcommittee hearing.

Mr. Duncan, do you have an opening statement?

Mr. DUNCAN. Thank you very much, Mr. Chairman. I have heard the opening statements that you and Ranking Member Costello have given, and I certainly agree with all of your remarks. And I salute you, Mr. Chairman, and Ranking Member Costello for the great work you have done in this Subcommittee on Aviation Safety. Certainly we all want to try to make our aviation system as safe as possible and do whatever we can. You can never rest on your laurels in any field or profession or occupation, and we shouldn't rest on our laurels about aviation safety. We should always be trying to make things better and improve things that we can.

By the same token, the American aviation system has the greatest record of almost any industry and anything. I did chair this subcommittee for 6 years, but I now chair the Highways and Transit Subcommittee, and it is a very unfortunate thing that we have about as many deaths in 3½ months on the Nation's highways as we have had in all U.S. aviation accidents combined since the Wright Brothers' flight in 1903.

I am concerned. I know that this hearing is supposed to look at aviation safety in general, and there are many different aspects of it. I am concerned about something though that we will get more into in the second panel, and I won't be able to be here at that time because starting at 10 o'clock I am going to be leading a tribute on the floor of the House to Coach Pat Summitt, who received the top award of the National Alzheimer's Association and is being honored by the Tennessee delegation on the floor of the House this morning.

But there is a provision to apply these same flight crew rest requirements to cargo aircraft as passenger aircraft, and I think we need to be very careful before we—we need to look before we leap on that, because I am told that that rule, if applied to cargo airlines, would cost, according to the FAA's own analysis, \$306 million, which is about 15 times the benefits that would accrue. In addition to that, cargo pilots, I am told many cargo pilots now fly only 31 hours a month, which seems to me is a real sweetheart deal, and fly about half the time that passenger pilots fly. So I just don't know that we may be correcting a problem that doesn't exist.

I understand that there were only two crashes in the last 30 years, or two accidents by cargo planes, and neither one of those

would have been prevented by this rule that we are talking about. In fact, one of them apparently came about because of personal problems that the pilot was having at home and not anything due to rest.

So, I hope we look into that proposed legislation very, very carefully before we get into it.

Already, because of the cost of fuel, we have been told over the years that each one penny increase in jet fuel costs the aviation industry as a whole \$180 million to \$200 million a year, a phenomenal statistic. And now because fuel has gone up so much, passenger travel is going to shoot way up, and because cargo planes carry almost everything, the cost of almost everything is going to go up. So we need to be very careful in what we do in this regard.

I thank you very much for yielding me this time.

Mr. PETRI. Thank you. Mr. Shuster, would you care to make a statement?

Mr. SHUSTER. Thank you, Mr. Chairman. I will be brief.

I was the author of that amendment that passed on the House floor that was taken out in committee. I was disappointed, because that amendment I believe dealt directly with safety first. But looking at things based on science, not on emotion, not on knee-jerk reactions, but based on the cost-benefit analysis and looking at the different operations that the pilots they participate in, there is passenger and cargo. And there is a difference, as my colleague from Tennessee pointed out. The time that a pilot operates cargo versus passenger aircraft is significantly different.

But I am very pleased that the FAA came with a final rule regarding the flight crew duty and rest requirements, and it followed, as did our amendment, followed the President's Executive order. I don't always agree with the President, but in this case we were on the same page. So, the final rule I believe does reflect the Executive order, it does reflect an amendment we tried to pass, and it looks at passenger versus cargo in a different way. One size doesn't fit all.

My colleague also pointed out the cost-benefit analysis, the cost to the industry, which is probably much higher than the FAA thinks it would be. As I said, once size does not fit all. There are a few other significant things the cargo industry has done in the past several years. It has reduced all accidents significantly over the past two decades, and since 2003, have operated over 8 million flight operations with no fatigue-related accidents. That is a pretty strong indication they are doing the right thing.

It provides more and longer flight crewmember rest opportunities than passenger flights. They spent millions of dollars on sleep facilities, both in cargo hubs and on board long-range aircraft. It operates with no passengers or flight attendants, thereby allowing restful sleep aboard long-range aircraft. And schedule of pilots, as was mentioned, they fly significantly less than the passenger pilots.

So, again, I am looking forward to the hearing. I appreciate and respect and support what the FAA did on this, and I will continue to fight to make sure we do rules and regulations in a reasonable way while maintaining a high level of safety.

With that, Mr. Chairman, I yield back.

Mr. PETRI. Mr. Boswell, did you have a word you wanted to say?

Mr. BOSWELL. Thank you, Mr. Chairman. Just very briefly. I told you I did not, and I looked over your panels, and I just want to thank you for having the experts you have got before you now. But I am also very interested in Panel 2 that we are going to have.

It just made me reminisce for a second. Years and years ago when I became a safety officer in a unit that I was in, and I found out when I sat down with the crews, the pilots, the people that flew in the aircraft and so on, is where I really put it together, and we had what turned out to be an excellent, very successful program. So I am glad to see that you have airlines and regionals and the Airline Pilot Association as you go down that list.

So, thank you very much. I think that we will learn a lot and I look forward to what comes out of this. So I yield back.

Mr. PETRI. I recognize the chairman of the full committee, John Mica from Florida.

Mr. MICA. Well, thank you. And as Elizabeth Taylor said to her sixth husband, I don't intend to keep you long. I will try to be as brief as possible, like Mr. Boswell.

Well, first of all, I have to say thank you to Mr. Petri and Mr. Costello. This is a very important hearing and a very important responsibility of this subcommittee, and that is our aviation industry and passenger service safety and oversight of that.

Let me just say here we have been so fortunate. We have had some great leadership working together. We did pass finally FAA legislation that was 5 years overdue, 23 extensions. In the interim we worked together.

The large commercial aircraft have had an incredible safety record. We saw some problems with commuter, and through the Colgan families and others everyone was determined to make certain that commuter passengers are just as safe as those on a large commercial aircraft. We lost lives there. We put some reforms in place, and actually last year's record was incredible.

But let me tell you this. Mark this in the record. We will have a horrible incident involving passenger aircraft. Why do I say that? Because the odds are just totally stacked against us. You can only go so long when you have so many human beings involved, when you have technology that sometimes fails. And people are going to come back and say well, what did they do to make certain that this didn't happen? And this hearing is one of them. And we have missed the mark.

I just got through talking to an aviation group, and I cited NextGen. NextGen provides us not only a better way to get our planes around, environmentally more friendly, shorter points, knowing where the planes are in the air, on the ground, changing out of a post-World War II radar-based system to a satellite based system, all of that. But that program is 2 years behind. It is at half a billion dollars. Some of the technical components, for example ERAM, 2 years behind, half a billion dollars behind. And this needs to come out.

We have had FAA in turmoil, because I remember Babbitt coming to me and people say why did you push to move this bill forward? Because Randy Babbitt told me that his operations were in a state of confusion. These 2-month, 2-week extensions, were costing millions of dollars and keeping the agency in turmoil. Now we

have him departed. We have had an FAA with no administrator at some times, now an acting administrator and an under-siege administrator. And it is difficult to get things done in that atmosphere. Then you don't have the blueprint, which is the Federal law which we now have in place.

So this is an opportunity to get it back in place. I am hoping that we don't have what I described that we are long overdue for, and that is going to be, unfortunately, again there are just so many human beings, so much technology in place.

You have got to have two things that I think are important. One, you have to have the personnel, and you have to have the technology. I talked about that for a second. That is behind schedule, over budget and not acceptable.

The second thing is personnel. We have some great air traffic controllers, and thank goodness in the most recent months we have not had another incident of somebody sleeping on the job or not paying attention on the job or lax on the job. Most of the incidents, and every one of them the staff will tell you, every incident I try to investigate, was this a rookie air traffic controller or was this somebody experienced. Most of the incidents, unfortunately, have been with people who have been experienced.

So we have met, and we have got to redouble our effort, guys, to make certain that the air traffic controllers, and we are changing many of them out because of their age and retirement. So you have to have a program to make certain that they are the best trained and also the best prepared, best to go to work rested and all of these things.

And some of the conditions where air traffic controllers actually in the United States stink, they need to be improved. I have seen pets accommodated better than some of our air traffic controllers, and that needs to be changed out and I am going to work with folks to do that. We saw some of the accommodations in Canada that were just outstanding workplaces and conducive to putting a rested, alert well-trained air traffic controller on the job. So we have got to improve that part of the equation, which is the human equation.

So I guess that is my little longer than I should talk, but this is very important. Again, I commend you and we will stay on it with you and work with the agencies. I want to hear from the witnesses. Thank you, I yield back.

Mr. PETRI. Thank you. Now we turn to our panel. The Honorable Margaret Gilligan, who is the associate administrator for Aviation Safety of FAA; the Honorable David Grizzle, the chief operating officer, Air Traffic Organization at the FAA; Jeffrey B. Guzzetti, who is the assistant inspector general for aviation and special programs of the Department of Transportation; and the person who assists us on many of these occasions, Dr. Gerald Dillingham, director, physical infrastructure issues, Government Accountability Office.

Ma'am and gentleman, thank you very much for joining us. As you know, we thank you for your prepared statements and would invite you to summarize them in approximately 5 minutes, beginning with Ms. Gilligan.

TESTIMONY OF THE HONORABLE MARGARET GILLIGAN, ASSOCIATE ADMINISTRATOR FOR AVIATION SAFETY, FEDERAL AVIATION ADMINISTRATION; THE HONORABLE DAVID GRIZZLE, CHIEF OPERATING OFFICER FOR AIR TRAFFIC, FEDERAL AVIATION ADMINISTRATION; JEFFREY B. GUZZETTI, ASSISTANT INSPECTOR GENERAL FOR AVIATION AND SPECIAL PROGRAMS, U.S. DEPARTMENT OF TRANSPORTATION; AND GERALD L. DILLINGHAM, PH.D., DIRECTOR, PHYSICAL INFRASTRUCTURE ISSUES, GOVERNMENT ACCOUNTABILITY OFFICE

Ms. GILLIGAN. Chairman Petri, Congressman Costello and members of the subcommittee, thank you for inviting us here today to review aviation safety in the United States. I would like to update you on the progress we have made to implement the Airline Safety and FAA Extension Act of 2010. But as mentioned in your opening statements, we know there is a lot of interest in air traffic control as well, so I am joined today by my colleague David Grizzle, the chief operating officer for the Air Traffic Organization, who will be here to answer any questions you may have on air traffic management.

Several provisions in the 2010 act helped facilitate major safety advancements, such as the new flight duty and rest requirements for pilots and a proposal to require air carriers to implement safety management systems. Although some of the provisions have taken longer than Congress anticipated under the provisions of the act, we have made significant strides in accomplishing many of the objectives.

In the area of pilot fatigue, which was identified as a top priority in the FAA's 2009 call to action, we completed the final rule, which uses the latest fatigue science to establish flight schedules that mitigate and manage fatigue. Flight duty periods under the new rules are more comprehensive and include flight-related activities such as time spent in training and standing by on call for flights at an airport. These duties are part of the workday, they contribute to fatigue, and they must be counted as part of the core job of flying the airplane.

We also took into account that off duty activities, such as recreational activities or commuting, have an impact on fatigue. To address this, the final rule establishes new fitness for duty requirements that serve as a reminder to both the airlines and the pilots of their professional responsibilities to ensure that rest periods are used for what they are intended, and that is to rest.

We met the statutory deadline in the 2010 act to issue a proposal requiring air carriers to develop and implement safety management systems. The FAA and industry recognize SMS as a holistic approach to safety that allows for trend spotting to help identify possible safety problems and correct them before they lead to accidents or incidents.

We have initiated two rulemaking projects to address the pilot training and experience requirements highlighted in the act. The first project is a comprehensive proposal to revise the current qualification and training requirements not just for pilots, but for flight attendants and aircraft dispatchers.

Although we had initiated this project before the tragic Colgan accidents, in order to fully consider the comments we received on the proposal, to address many NTSB recommendations that resulted from the investigation of that accident, and to incorporate the mandates of the 2010 act, we issued a supplemental proposal in May 2011. The comment period closed in September and we are working on the comments to develop a final rule to address these training enhancements.

We have also proposed a rule to require first officers to hold an airline transport pilot's certificate requiring 1,500 hours of pilot flight time in most cases. We appreciate that in the act Congress acknowledged the measurement of pilot experience is not limited solely to the number of hours flown, so our proposal would allow a restricted airline transport pilot's certificate in two instances. First, graduates of a 4-year aviation degree program who receive their commercial pilot's certificate and instrument rating while studying at the school would need only 1,000 hours of flight time. Former military pilots would require only 750 hours of flight time. The comment period on this proposal will close April 30th.

There are, as you have noted, a few areas of the 2010 act that have presented some challenge to the FAA. The first concerns the area of pilot professionalism. We in industry recognize the need to continuously improve professional standards to improve flight deck discipline. We have drafted a proposal that is currently in executive review as we continue to work on balancing the regulatory burden and the effectiveness of the proposal.

Another challenging area is the development of a centralized database of pilot records. We are working to define the scope of the records to be reported and how to integrate thousands of records kept on all forms of media from paper to microfiche to various automated systems. We do have several major milestones in place and we do anticipate a database proof of concept test this summer.

All of these initiatives have been very complicated and in some cases very expensive. As the rulemaking progress, we are constantly evaluating how these provisions may best be leveraged to improve safety while ensuring the benefits justify the costs. We remain committed to addressing these safety enhancements while continuing with our daily oversight responsibilities, and now while satisfying the requirements recently set forth in the FAA Modernization and Reform Act of 2012.

Chairman Petri, Mr. Costello, members of the subcommittee, this concludes our prepared remarks and we are prepared to answer questions. Thank you.

Mr. PETRI. Thank you. Mr. Grizzle.

Mr. GRIZZLE. Sir, I do not have a statement separate from Ms. Gilligan's.

Mr. PETRI. All right. Mr. Guzzetti.

Mr. GUZZETTI. Chairman Petri, Ranking Member Costello, and members of the subcommittee, thank you for the opportunity to testify today on the state of aviation safety and FAA's oversight of the National Airspace System.

As you know, FAA does operate the world's safest transportation system, largely due to the dedication of its workforce. FAA has implemented many initiatives to enhance safety, such as its recent ac-

tions in response to the 2010 Airline Safety and FAA Extension Act. However, to realize the full benefits of the programs it has in place, FAA must address challenges in three key areas.

First, FAA needs to improve the way it collects, counts and uses data regarding incidents where aircraft come too close together in the air and on the ground. Over the past few years, FAA has encouraged controllers to voluntarily report errors through the Air Traffic Safety Action Program, or ATSAP. However, FAA does not count all ATSAP reported errors in its yearly totals. As a result, it is unclear whether the 53-percent rise we saw in reported controller errors between fiscal years 2009 and 2010 is due to more errors, improved reporting, or both.

According to FAA, the increase is likely due to more errors being reported through ATSAP, but our work does not support this assertion. The agency's en route centers which have had systems in place for years to automatically detect separation losses saw a 39-percent increase in errors during that same period. This would indicate that the increase is due at least in part to more actual errors occurring.

It is clear that FAA can better leverage existing data to investigate incidents, identify trends and root causes and mitigate their risks. Currently FAA does not effectively analyze data captured through ATSAP or through its automated detection tool recently installed at terminal facilities.

With runway incursions, FAA has made progress in reducing the most serious ones. Serious incidents declined over the past decade from 53 in fiscal year 2001 down to only 7 in fiscal year 2011. However, the number of serious incursions reported so far this fiscal year is already up to 12, which is nearly double last year's events. To sustain the progress made in past years, executive level oversight and accountability will be needed. This is going to remain a watch item for our office.

Second, FAA needs to improve its risk-based oversight of the aviation industry. In particular, oversight at repair stations has been a longstanding challenge for FAA and one we have reported on since 2003. While FAA established a risk-based system in 2007 for improved surveillance, our ongoing work indicates there are still problems. For example, the system is not applied consistently and it does not permit trend analyses needed to better target repair stations with the greatest risks. Our work has also shown that FAA needs to strengthen its risk-based oversight of aircraft manufacturers under its relatively new delegated authority program known as ODA. We issued a report on ODA last year and FAA has responded positively to our recommendations.

Because FAA may never have enough inspectors to oversee every aspect of aviation, it is critical that it target its inspector workforce to areas with the highest risk. A 2006 study mandated by this subcommittee found that FAA wasn't effectively allocating its inspector workforce and they recommended a new approach. FAA introduced a new staffing model in 2009 and we are currently evaluating it. Thus far, however, it appears that FAA needs to further refine the model to obtain reliable staffing projections.

Finally, FAA needs to continue its focus on implementing key provisions of the Airline Safety Act. FAA has made progress on

many of the Act's provisions, such as updating pilot rest requirements. However, the agency has been challenged to implement other key measures, as Ms. Gilligan mentioned. For example, the new rest rules do not require carriers to identify pilots who commute hundreds or thousands of miles to their duty location. FAA is also several months behind on issuing rules to improve pilot training and implement pilot mentoring programs. All of these issues were seen in the tragic 2009 Colgan crash.

FAA is also behind in its efforts to enhance pilot qualifications. The agency expects to issue a rule by August 2013, a year after the mandated deadline. Due to the increase in flight hours the rule will require, FAA has met opposition from airlines who feel the quality and type of training should be weighted more heavily than the actual number of hours. Airlines are also concerned that entry level pilots will have difficulty meeting the new flight time mandates.

FAA also faces challenges in developing a centralized pilot records database for carriers to use when hiring pilots. These challenges include determining what records should be captured, maintaining the flow of information during that transition, and addressing concerns with the National Driver Register data.

In closing, Mr. Chairman, let me reiterate that FAA has overcome many challenges and continues to take important steps to oversee aviation safety. We will continue to monitor FAA's progress to address these issues and we will keep this subcommittee apprised of our work.

This concludes my statement. I will be happy to address any of the questions you or other members of the subcommittee may have.

Mr. PETRI. Thank you. Mr. Dillingham.

Mr. DILLINGHAM. Thank you, Mr. Chairman, Ranking Member Costello, Mr. Duncan and other members of the committee. As you have heard from previous witnesses, FAA regulates one of the safest aviation systems in the world, and to its credit FAA continues to strive for even higher levels of safety through a shift to a more data-driven, risk-based safety oversight approach. This shift means that FAA needs safety data that is accurate, complete, and gives it the capability to identify systemwide trends and manage emerging risks.

My testimony this morning focuses on three key aspects of FAA's implementation of its new approach. First is how FAA uses data to manage safety risk; second is how FAA ensures the quality of its safety data; and third are the several challenges the agency must address in using data to better manage aviation safety.

Regarding how FAA uses data to manage safety, FAA collects accident data and uses various voluntary reporting programs to collect incident data, such as for runway incursions and operational errors. FAA also collects data through its inspection and certification program.

For decades, FAA, NTSB, and the aviation industry have used data primarily in a reactive fashion; that is, after an accident, to identify the causes and take action to prevent their reoccurrence. FAA's new use of safety data combines this approach and a proactive approach in which data are used to identify emerging risks and strategies to reduce the likelihood of accidents before they occur.

FAA also plans to use data proactively to identify risks that might emerge with the introduction of NextGen capabilities into the NAS. In 2010, GAO examined how FAA ensures the quality of that data. We found that the agency had a variety of processes in place that we consider good practices to help ensure data quality. However, we did identify some vulnerabilities in FAA's processes that could potentially limit the usefulness of its data for both safety analysis and for conducting oversight through safety management systems. We made several recommendations to FAA to help improve and expand on this capability to use data.

Mr. Chairman, although FAA has put in place various quality controls for its data, it continues to experience data challenges, some of which may hinder the agency's ability to assess and manage risks. Similar to the IG's findings, it is unclear if the recent increase in operational error reports is due to more actual reporting or an actual increase in errors. FAA also lacks data in some areas that are important for monitoring safety risks. For example, the lack of ramp incident data means that FAA is unable to assess the risk of safety events in that area.

Another challenge is in what some industry stakeholders have identified as the number one air transportation safety issue. That is runway safety. According to FAA, there are three runway incursions that occur each day at towered airports in the United States, and research has also shown that runway excursions can be just as dangerous as incursions.

Our October 2011 study found that FAA does not have a process in place to track and evaluate runway excursions. The absence of such a process inhibits FAA's capability to address the risks of these time of safety events. Similarly, the lack of complete data for inspections of pilot training schools and pilot examiners makes it difficult for FAA to ensure that the training standards are being met for the initial training of pilots. In response to our recommendation or on its own volition, for each of the challenges I have identified, as well as others that are listed in our written statement, FAA has efforts planned or underway to address them.

In closing, Mr. Chairman, given FAA's forecast of significant increases in aviation traffic, we would urge that all stakeholders not become complacent with the extraordinary aviation safety record that has been achieved to date and continue to do what will be necessary to make a safe system even safer.

Thank you, Mr. Chairman.

Mr. PETRI. Well, thank you. I thank you all for your summaries. I have a couple of questions.

Ms. Gilligan, if you have looked at this, it is indicated the FAA safety management pilot program, there is a difference in the participation between the larger airlines and smaller airlines. I think the information I have is that 14 of the 15 smaller air carriers, those with 20 planes or less, are not participating in the program, and the point was made that it might not be scalable for smaller airplanes. Is that true or is that something that is of concern or is that being addressed? Could you discuss that?

Ms. GILLIGAN. Yes, Mr. Chairman. Thank you. As you know, we do have a pilot program, because, before we put the rule in place, we wanted to learn ourselves what was the best way to frame the

regulation for the safety management system. The pilot program has been very helpful in helping us better understand what the necessary elements are, and specifically to your question, how can we assure that the rule allows it to be appropriate to the size of the operation.

This is something we have been aware of for a long time. I believe former Administrator Babbitt testified to this committee that in an airline with two airplanes and a small number of crew, written records may be sufficient, whereas at the newly merged United Airlines, for example, clearly automated systems that know how to collect and analyze data will be necessary to be successful. We are taking that all into account as we look at finalizing our rule to assure that the rule is sufficiently flexible to allow all of the operators to make the most use out of a safety management system effectively and efficiently. So we will be watching closely to be able to scale it to the size of the operation.

Mr. PETRI. Thank you. I think this was mentioned by Mr. Guzzetti, but I wonder if you could respond. The people in the repair station industry argue that the oversight by the FAA is often inconsistent between FAA offices and even within FAA offices. Do you recognize that problem or is it being dealt with or is there an explanation for that situation?

Ms. GILLIGAN. Yes. Again, Mr. Chairman, we certainly have heard the criticism of inconsistency among FAA offices. We are a large organization with over 125 offices across the country and around the world, and individuals who come to work intending to do the best they know how to do every day can sometimes disagree. So we are constantly looking for ways to document what the proper processes and procedures are so that our staff is well informed and well trained.

We do have processes in place for any of our certificate holders to raise questions if they believe that they have gotten an inaccurate or an incorrect determination from one of our inspectors, and we are really building a culture that allows for that exchange of professional disagreement, because we think that is healthy. Folks in the industry are smart. FAA doesn't have the corner on the market on how to interpret all of the rules and regulations. We need to work together to make sure that we have the right safety outcome.

So we believe with those kinds of programs in place, where people can ask questions, we will all get to the best safety outcome. But it is a criticism we are constantly working to improve.

Mr. PETRI. Thank you. There has been some discussion, Mr. Grizzle, of the increase in reported incidences of operational errors and then some speculation as to the reason, whether it is better reporting or more actual errors or whatever. Could you shed any light on that situation?

Mr. GRIZZLE. Mr. Chairman, we have been in the process of making a substantial change to the culture within the Air Traffic Organization to encourage the voluntary reporting of operational incidents. We have also been changing our entire program for data acquisition of events that do occur. We are confident that because of these cultural changes, the reporting of incidents has increased. But we are not able to tell which part of the increase is the result

of greater reporting and which part of the increase is the result of more incidents in fact occurring.

However, as you know, the occurrence of incidents is extremely rare and that is the reason that we have paid a great deal of attention to making sure that we are able to harvest as much information as we possibly can from every incident so that we can turn that data into information which then becomes risk managing changes of procedures, and we have done a very good job in that regard.

Mr. PETRI. Thank you. Mr. Costello.

Mr. COSTELLO. Mr. Chairman, thank you.

Mr. Chairman, just to put things in perspective, if I may, to follow up on Mr. Grizzle's comments, I think it is noteworthy to take a look at how many operations take place a year versus how many operational errors there have been reported. And as the chairman said earlier and a number of other Members have said, one incident of operational error is too many and we need to do everything we can to reduce the number of errors.

But when you take a look at the ATC operations, how many operations they handled in fiscal year 2009, there were 120.3 million and there were 1,234 operational errors, which is 0.001 percent of the total operations that year. The number of flight operations that the air traffic system handled in fiscal year 2010, there were 118.9 million operations and there were 1,187 operational errors, which is 0.0016 of the total in that year. So it comes down to in fiscal year 2009 about 1 error reported either by someone in the system, including a pilot, to 1 error per 100,000 flight operations and 1.5 percent errors per 100,000 flight operations in fiscal year 2010. So I think it is worth noting. The purpose of this hearing is to make certain that we reduce to zero, so there are zero operational errors.

With that being said, Dr. Dillingham, let me ask you, in an October GAO report, the report, and I quote, says, "We found evidence to suggest that changes to reporting policies and processes have likely contributed to the increased number of incidents reported into the ATQA, the official data base for operational errors."

Would you explain some of the evidence that you reviewed, the GAO reviewed, in order to reach that conclusion?

Mr. DILLINGHAM. Thank you, Mr. Costello. We looked at some of the data that you in fact have just provided to us and we also looked at other situations where new policies and procedures were put in place at the same time as technology was put in place. And what we found in terms of evidence is we found an association wherein we could see that there were more operational errors being reported at the same time that these various other activities were taking place, but we could not establish a causal relationship and sort out the factors that might be having the most effect on this reporting. And until that kind of analysis is done, until that kind of statistical analysis is done, as Mr. Grizzle said, it is an unknown, logically it fits, but sometimes logic goes out when you actually do the statistical analysis to ensure that what you are seeing logically is in fact real.

Mr. COSTELLO. A followup question. In talking about the series of recent policy changes that Mr. Grizzle referred to and you referred to as well, the FAA is reporting processes that include mak-

ing incident reports less punitive, removal of facility incident targets, implementation of new technology and a shifting to a risk-based system.

Would you explain for the record some of these changes and whether or not you believe that there is a correlation between these changes and the increase in reporting of operational errors? You touched on that in answer to my first question, but everything that I have read I have to conclude that there is a correlation. You have no reason to doubt that there is a correlation, is that correct?

Mr. DILLINGHAM. I don't have any reason to doubt there is a correlation. I would be hesitant to use that statistical term of correlation. But understanding what you mean and that there is in fact some kind of likely association, all of the things that you mentioned as policy changes would contribute to having people feel more free to in fact report incidences that they were aware of.

Mr. COSTELLO. For the record, could you explain just a few of the policy changes that the FAA has been dealing with at the same time taking into account these operational error reports?

Mr. DILLINGHAM. Yes, sir. You mentioned one, the removal of the limits that were in place for the number of operational errors that could be reported by a facility. When that limit was removed, it meant that supervisors were not as concerned about going over that limit and anything that might result, any kind of discipline or negative association that would result from reporting as many operational errors as occurred.

There is also a de-identification of the controllers who are in fact making those kinds of reports, so that again the anonymous nature of it made controllers feel a lot safer or freer in making those kinds of reports.

So all of those things together were contributing factors as far as we can determine at this point.

Mr. COSTELLO. Thank you. Mr. Grizzle, would you explain what not-to-exceed targets were and whether or not you agree with the GAO's assessment?

Mr. GRIZZLE. We do agree with the GAO's assessment. Our centers have had automatic incident detection technology for quite a while. We took our ATO total of incidents that we were expecting and we allocated that to facilities so that each facility, in effect, had a quota that they were not to exceed. Unlike the new error detection technology that we are implementing now, which is referred to as TARP, the technology that was in place in the centers involved evaluation and characterization of the incidents in the facilities. And so there was an opportunity for facility managers to characterize the events as errors or not. Consequently, with the "not-to-exceed" requirement in place, this was in fact an incentive and a capability to manage down the number of incidents that had been reported with the automatic detection technology.

Mr. COSTELLO. A final question, and then I will probably come back and have a few more after the first round. What if any role did the TARP program, the Traffic Analysis and Review Program, and the implementation of the radar voice replay technologies play with regard to the increase in the operation error?

Mr. GRIZZLE. It certainly has an impact. The TARP is in the process of being implemented. It is currently in place in all of our

terminal facilities, but the data is only being analyzed currently at 37 of the facilities. By the end of this fiscal year, the data from all of our terminal facilities will be analyzed for 24/7 operations, and at that point we believe it will have a substantial impact on our reportable incident numbers.

Mr. COSTELLO. Mr. Guzzetti, would you care to comment?

Mr. GUZZETTI. Yes. To piggyback on Mr. Grizzle's comments about the implementation of TARP, FAA estimates that the number of reported operational errors will increase greatly, perhaps by as many as 600 to 900 additional losses of separation each day. But again, not all losses of separation are operational errors. In fact, just a small percentage. But even if you take a small percentage of the amount of losses of separation that will be recorded automatically every day by TARP, the number is going to jump up. We don't know how much. But it is imperative that a baseline is generated after TARP has been implemented and settles down so that we get an idea of just what is the norm, what is the baseline for the total number of yearly operational errors. And only then do I think we can use that as a performance measure.

Mr. COSTELLO. My last question for you, Mr. Guzzetti. You cited that in 2010 there was a misinterpretation of arrival waivers in Southern California TRACON as a factor in contributing to the statistical spike in operational errors. Can you explain what actually happened and how it impacted the operational error statistic?

Mr. GUZZETTI. Yes, Congressman Costello. In early 2010 in the Los Angeles region the controllers there, Southern California TRACON, were bringing airplanes into LAX as well as Hawthorne. Hawthorne had a runway that was close to LAX and they were kind of treating it as three parallel runways in terms of routing these airplanes in there.

The Southern California TRACON was using this procedure for many years. They felt it was safe. However, FAA's AOV ATC oversight organization came in and said, "You know what? We don't think this is safe. We think there is a loss of separation here." And they made them go back 45 days, which is how long they keep recorded radar data, and they found that 147 losses of separation as a result of this approach procedure should be deemed to be operational errors and they added that to the count. That accounted for about 23 percent of that spike that I alluded to between 2009 and 2010.

Mr. COSTELLO. Thank you, Mr. Chairman.

Mr. PETRI. Thank you. Mr. Coble.

Mr. COBLE. Thank you, Mr. Chairman. I had two conflicting meetings, so I missed much of the testimony, but I appreciate the witnesses' contribution.

Ms. Gilligan, I am told that the FAA is behind in issuing the final rule for pilot qualifications. What is the status of this rule-making effort?

Ms. GILLIGAN. Yes, Congressman. We did issue that rule. It is currently out for comment. The comment period will close at the end of this month and then we will work very quickly to try to get this to final rule. As you know, under the statute, the requirement for 1,500 hours and for all pilots to have an ATP will go into effect

in August of 2013, so we want our rule to be in place by that same time.

Mr. COBLE. Thank you. Furthermore, I am told that the FAA is working to refine its inspector staffing model to more effectively identify the number of inspectors needed and where they should be placed to address the greatest safety risks. What is the status of this effort, Ms. Gilligan?

Ms. GILLIGAN. That model, sir, has been in use actually over the last two budget cycles, so we have been making some use of the model. But we are trying to refine the data that goes into it. The way we set up the model originally, we collected data from subject matter experts, inspectors out in the field, about what they do and how often they do it. But we do think there can be some refinement brought to that. So with each year we are learning more about how to really try to calculate what our future need will be based on our past experience, which is really how we have set up the model.

So, again, we have used it as we have developed our budget requests for the last couple of fiscal years, but we are just trying to make it as tight as we can.

Mr. COBLE. I thank you.

Mr. Guzzetti, you may have touched on this, but let me ask Dr. Dillingham a question. Doctor, what are the causes of runway incursions and what has the FAA done to mitigate incursion risks?

Mr. DILLINGHAM. Thank you, Mr. Coble. We have looked at it over the last decade, and there are three principal causes for runway incursions. One is failure to comply with ATC instructions. Another one is what is referred to as lack of situational awareness. Oftentimes if a pilot is unfamiliar with the aircraft or with the airport in fact, you can in fact lose your place and cause a runway incursion. And then the other one, the other factor is just not conforming to standard operating procedures.

So those are the three factors. And FAA has taken a myriad of actions to address this issue, including updating the taxiway and runway markings, putting in technologies like runway lights to indicate when a runway is in use. They have done a number of things in terms of training of pilots, controllers.

So they have done, as I said, a myriad of things to address these things, but they still occur, and part of it is it is a learning experience, and also the human element in it means that you are not going to get all of them out down to zero. But the effort is being made.

Mr. COBLE. Thank you, sir. Thank you, ladies and gentlemen for being with us.

Mr. Chairman, I yield back.

Mr. PETRI. Thank you. Mr. Capuano, any questions?

Mr. CAPUANO. Thank you, Mr. Chairman. I am sorry I was a little late. I had other things I had to do so I didn't hear your testimony. I have reviewed it. And also, I am kind of a simple guy. The chairman and the ranking member do a great job on the details and the technicalities. I am a pretty simple guy. I flew down here, flying home hopefully Friday. My wife and her family are currently on a plane.

I just want to know a really simple thing. I think really what America wants to know is just one simple thing, and I would like to hear from each of you.

Ms. GILLIGAN, is it safe to fly?

Ms. GILLIGAN. Mr. Capuano, I can assure you that everyone at FAA and everyone in this industry works every day to assure that it is as safe as it can be. I think our record demonstrates that we have made that commitment, and that we are continuing to meet it. I think as the chairman and Mr. Costello identified early on, we are not resting on those laurels though.

Mr. CAPUANO. No, I respect everybody's attempt to get to zero. We all—everybody wants to do that. But basically, you fly, you family flies?

Ms. GILLIGAN. Of course.

Mr. CAPUANO. You recommend to everybody you know that flying is safe.

Ms. GILLIGAN. We wish you could fly to the supermarket because it is safer than lots of other modes of transportation.

Mr. CAPUANO. I could carry more groceries, too. Mr. Grizzle, is it safe to fly? Do you recommend? Do you recommend to your family to?

Mr. GRIZZLE. Sir, it is extremely safe. In fact, when people ask me what is the safest airport to fly out of, I say the one closest to your home. Because once you get on the airplane you are in one of the safest spots you can be in your entire day.

Mr. CAPUANO. Thank you. Mr. Guzzetti?

Mr. GUZZETTI. I would concur that it is safe to fly. As we have all indicated in our testimony, the United States has the safest air transportation system in the world. However, there is always room for improvement. I am a pilot myself. I fly airplanes myself, as well as take my family on airplanes. But I also recognize as a former accident investigator and as an aeronautical engineer, that there is always room for improvement and the key to improvement is constantly remaining vigilant and collecting data.

Mr. CAPUANO. Mr. Dillingham, the same question.

Mr. DILLINGHAM. Yes, I concur that it is safe to fly. Some aspects of flying are safer than others. I think there is beginning to be a consensus that the most dangerous part of the flight is when the wheels are still on the ground.

Mr. CAPUANO. And I thank you, ladies and gentlemen. Now, obviously, I agree with that, but you are the professionals. You are the experts. I am not. And the truth is, most Americans, they don't understand half of the acronyms you use. I struggle to keep up with some of them myself. And the truth is, I understand some—I also understand that accidents happen, you know, sometimes they are mechanical, and sometimes they are human error, and it happens. And I really, I will tell you unequivocally, that I really respect the job that all of you do to try to get that to zero. You are pretty darn close to zero, if you want the truth, from everything I know, and as a flying person myself, I want to thank you for that, and thank you for your testimony today.

Mr. PETRI. Mr. Shuster.

Mr. SHUSTER. Thank you, Mr. Chairman. Thank you all for being here today. I appreciate the line of questioning of my colleague

from Massachusetts, because I have been telling my children for the last 15 years when we go to fly somewhere, they are concerned about flying and safety, and I always tell them the most dangerous part of the trip is getting to the airport. So I appreciate that. My 20-year-old son, I will take the testimony back and he will finally believe they me that I know something—what I am talking about.

Ms. Gilligan, I want to commend you on the ruling. I think it was the absolutely the right way to go, taking into what you took into consideration, and the question I have is, isn't it—isn't it true that cargo carriers and passengers are vastly different models the systems operate under? Although the fatigue can have the same reaction, the fact is they operate differently. Can you talk a little bit about that, what you went through and what you found as you came up to make the ruling?

Ms. GILLIGAN. Sure. Yes, Congressman, it is accurate that the model for cargo is very different from the passenger carrying model. Having said that though, as you point out, fatigue affects all of us the same way. So we do think that there are elements in our new rule that could be very beneficial to the cargo industry. In fact, we did take into account in the rule that oftentimes pilots are given rests after they have flown into a hub airport, while boxes are being moved they are given an opportunity for rest, and we would allow cargo operators to take credit for that additional rest, for example, under the new rule. We also have—

Mr. SHUSTER. How long a time could that last?

Ms. GILLIGAN. I believe in the rule it was credit for up to a 4-hour rest period, and it would be 3 to 4 hours of credit, so for additional flight time after that rest period.

Mr. SHUSTER. So a pretty significant nap?

Ms. GILLIGAN. Yes, because that is really how the industry works right now. As I think you know, the model is the aircraft fly into a hub location, packages are sorted for quite a period of time, and then the flights are taken out. The pilots, during that in-between time, can get a substantial amount of rest that can allow them then to continue to fly for a longer period of time after that rest.

So we did try to accommodate that in the new rule. And that is why the administrator and the secretary have really encouraged cargo operators to opt into the new rule, although we do did not require that they be covered by the rule.

Mr. SHUSTER. And in your analysis, it failed the cost-benefit analysis, as you went through. Can you talk a little bit about that?

Ms. GILLIGAN. Yes, sir. As you mentioned in your opening statement, we look at the cost benefit for the full proposal, but we do look at it as it would affect particular segments of the industry, which is required through the Executive order. When we looked at the immediate impacts or the cost impacts for the cargo operators, the cost for implementing the new flight duty and rest rules was substantially higher than the benefits that we could quantify.

Mr. SHUSTER. Right.

Ms. GILLIGAN. We do believe there is value in reducing fatigue, but it is sometimes hard to quantify that, and for those reasons we did not keep the cargo community in the rule.

Mr. SHUSTER. All right, so in your view, your expert opinion, has safety been compromised in any way, shape, or form under this rule?

Ms. GILLIGAN. The framework that we currently have in place that the cargo operators will continue to operate under we believe sets an appropriate level of safety. We do think improvements will be made for those that will move into the new rule, and we will continue to work with the cargo operators as they implement their fatigue risk management plans to make sure they are analyzing their own schedules to see if there is risk and to see that they mitigate it.

Mr. SHUSTER. All right. Well, thank you very much and I yield back, Mr. Chairman.

Mr. PETRI. Mr. Boswell, do you have any questions? Ms. Johnson?

Ms. JOHNSON OF TEXAS. Thank you very much, Mr. Chairman. Let me apologize for being late. This committee meeting started while I was in another meeting. Let me preface my remarks by simply—my questions by simply thanking the witnesses, and thanking them for being a part of the safety, and I want to especially thank Dr. Dillingham, who I have seen come before this committee year after year after year, and his opinions and findings have never been questioned. And I think that speaks well for his work.

I truly believe that the airline industry is safe. For 20 years I have gone back and forth almost every weekend. And even though I have landed places other than where I was supposed to land, it was safe, and that is much appreciated. What I would like to pose for the witnesses is, what is it we need to do to keep it safe? Where are we in NextGen? Where are we in technology, and what may be the threats?

I am sorry I didn't hear your testimony earlier.

Ms. GILLIGAN. Congresswoman, actually, where we are focused, working with industry, is on trying to understand what are mistakes that may be happening in the system today that haven't manifested themselves as an incident or an accident, but where we can intervene in time to change training or procedures or processes so that those mistakes are what we call captured so they don't cause real risk in the system.

And that is really, I think where as an industry we are focused, on trying to understand what can we learn from everyday operations that let us make the system constantly safer. I think we are making good progress in understanding how to analyze the data, identify risks, and put in place mitigations.

Mr. GRIZZLE. And let me speak to the NextGen implications on safety. It does, in fact, have a significant impact on improving safety. Let me identify three ways, recognizing that most of our safety issues are, in fact, human error issues. NextGen provides more data to both controllers and pilots so they will have more information for making the decisions that they need to make.

There are also tools that substantially reduce the opportunity for human error, for example, in communicating route changes which will be done in the fully implemented NextGen world completely digitally and without having to rely upon voice communications.

The third area is that, because NextGen expedites the route of flight of aircraft, it causes fewer route changes that need to be done in the first place. And so in those three areas, particularly, it will be very beneficial.

Mr. GUZZETTI. Congresswoman Johnson, the Inspector General's office, our office, believes that there are several areas that FAA could continue to work to improve safety. One of them is the issue of what we have been discussing in regards to operational errors. The risk of loss of life when two airplanes collide on the ground or in the air is low, but if it does occur, there will be a catastrophic loss of life. So that is why there is a lot of concern about tracking these near misses.

Secondly, the inspector workforce, the risk-based approach, is a positive step, but it is a work in progress. There are some problems with the fact that it is not being—it is not robust enough at this point.

And lastly, the things that came out of the tragic Colgan accident in regards to human elements in aviation, the pilot training, knowing which pilots airlines are hiring and how they are being trained, we have identified issues in that regard which is contained in our testimony.

And then I would like to also mention that our office has a large body of work in regards to NextGen, and I would agree with Mr. Grizzle that the potential for NextGen to make things more efficient and more safe is absolutely there. However, NextGen is experiencing some management problems, contracting problems, and delay problems. This is a new technology and the transition will be key to ensure that things are being kept safe.

Ms. JOHNSON OF TEXAS. Thank you.

Mr. DILLINGHAM. Thank you, Congresswoman Johnson, for the kind words, and I will take that back to my staff as well. I think what the FAA representative said, we agree with that, that NextGen is going to be a positive in terms of improving safety. I think the risk management that FAA is doing now is also going to be a positive. And as you said, there is always going to be the human element involved in this. But if we look from the late 1990s to where we are now in our aviation safety record, people keep saying it over and over again, that we indeed have the safest system in the world. I think FAA recognizes, and we will be monitoring to ensure that they recognize where the issues are, and they are about the business of dealing with those issues each and every day. So we would recommend that they in fact do expedite the technology as well as keep up the education and the regulatory oversight that they currently undertake.

Ms. JOHNSON OF TEXAS. Thank you very much, Mr. Chairman. I yield back.

Mr. PETRI. Thank you. Let's see. Mr. Cravaack, do you have a question?

Mr. CRAVAACK. Thank you, Mr. Chairman, sorry. I appreciate the testimony today on obviously something that is near and dear to my heart. And I would have to, as an airline pilot with many hours, I believe we do have fantastic safe skies and professionals that want to make sure that our skies remain safe and will do everything to do that.

But if I would, I would just like to ask a couple of questions. Ms. Gilligan, if you could tell me, how did the carve-out for cargo pilots actually occur, because going up to the President, everything is, you know, is one level of duty time, flight-time, duty-time rules. And then there was a carve-out for cargo pilots. How did that actually occur?

Ms. GILLIGAN. Congressman, as you point out, the initial proposal applied to all aspects of the industry. One of the things we were looking to accomplish was to have a single framework for flight duty and rest to replace three or four models that we have now, which have come into place over many years as industry grew and as the capabilities and distances airplanes could fly increased. So we did have a single proposal. But as I said in response to Congressman Shuster, we are also required to do an analysis of the cost and benefits in different elements of the community, and when we looked at the cost for the cargo community, the costs were quite high and the quantifiable benefits were substantially lower than those costs. And so we always look to try to assure that we are getting a comparable level of societal benefits to the costs that any rulemaking would drive, and in this case we could not reach that balance. Rather than hold up the whole rule to try to come up with a new proposal, the rule would go forward for the passenger carrying flights because we could demonstrate strong societal benefits from those costs, that we would not include cargo at this time but that we would work separately, as the Secretary indicated, to encourage the cargo operators to opt into the new framework which is based on the science of fatigue in a way that our other rules really don't reflect.

Mr. CRAVAACK. So basically it was a financial decision, correct?

Ms. GILLIGAN. Part of the rulemaking analysis is to look at the cost and benefit that the requirement will have.

Mr. CRAVAACK. So the data associated with the extricating rhythm of the pilots and flying and things like that was set aside for the financial aspect of it?

Ms. GILLIGAN. Well, no, sir. The way we look at determining the benefits is to look at past accidents and incidents and what contributed to them. What the data indicated was that at this point the cargo accident rate does not demonstrate fatigue at a level that required us to change the standards. That is kind of the easiest way to describe it. As has been—

Mr. CRAVAACK. Were you looking at it as a percentage because there is a lot less cargo aircraft in the air than there are passenger aircraft?

Ms. GILLIGAN. It actually has to do with the econometric model that is used which takes a cost for what society is willing to pay to protect a life. And there are many more passengers, or lives involved in a passenger aircraft than in a cargo aircraft.

Mr. CRAVAACK. Could you repeat what you just said?

Ms. GILLIGAN. That the econometric model that is used by all agencies that do regulations is to look at what society is willing to pay to protect the value of life.

Mr. CRAVAACK. That is what I thought you said. OK. Thank you. I appreciate that testimony. A little chilling, but I appreciate it.

Mr. Grizzle, if you don't mind, both the IG and the GAO have indicated an improved reporting process that cannot alone explain the increase of operational errors. What does the FAA believe are the other contributing factors to increase how the FAA is addressing those factors?

Mr. GRIZZLE. The most important action we are taking, sir, is making sure that we harvest all of the information from the voluntary disclosures in order to identify safety risk and then be sure that we convert that information into actionable items. Through this data we have identified 5 top risk areas, and to address those 5 top risk areas, we have developed 22 separate risk mitigating procedures that we are in the process of implementing and intend to have implemented by the end of this year.

Mr. CRAVAACK. OK, if I can go back to you, Ms. Gilligan, real quick. Segments of the industry are very concerned about the public disclosure of the safety management system that is being collected and protecting that data. How do you propose to address this problem?

Ms. GILLIGAN. Well, Congressman, actually the reauthorization bill will give us some additional authority to be certain that safety data is protected and only used to improve the safety of the system. So again, as we go forward with our safety management system rule, we will be looking to put in place those kinds of protections very much based on the work of this committee, which provided the basis for that in the reauthorization.

Mr. CRAVAACK. I think one of the most valuable inputs that you have are pilots, you know, and air traffic controllers need to voluntarily submit suggestions without any fear of retribution, because that is where the answers are going to come from.

I am over my time, sir, and I yield back.

Mr. PETRI. Thank you. Mr. Costello.

Mr. COSTELLO. Mr. Chairman, thank you. One final question for Ms. Gilligan. As you know, in the 2010 Safety Act, for good reason, I believe, we put in a requirement for a database for centralized pilot records. You mentioned in your written testimony that there are several technical challenges associated with implementing that section of the act. Can you detail those for us for the record?

Ms. GILLIGAN. Yes, sir. As we mentioned in the testimony, there are some issues around exactly what records need to be collected and so we are trying to get common understanding throughout the industry of who and what we should be saving and what we should be collecting.

Secondly, there are two big challenges. One is the IT system required, getting the database actually put together, and we are trying to prototype that this summer which will go a long way to helping us understand how the technology of it would work.

But I think the biggest challenge for us will be the actual ability to integrate records that are in paper, on microfiche, on mimeograph, some of them automated in the last more recent years, but for pilot historic records. There are pilots who have been in the FAA system for 20, 30, 40 years, and there are a tremendous number of records, most of them starkly paper, that will all have to be somehow incorporated into the system. So now we are trying to understand how we can do that effectively and efficiently.

Mr. COSTELLO. So what can we expect from a planning standpoint? Is there a plan to do this?

Ms. GILLIGAN. We do have some milestones. Unfortunately, we have such a demand in our rulemaking program right now that because of the challenges technically, we aren't really ready to start the rulemaking process. Again, we are hopeful with the prototyping this summer that we will better really understand what we are up against, and based on that, we will be able to come up with a more realistic schedule.

Mr. COSTELLO. Mr. Chairman, thank you. And again, I thank our witnesses for being here and I especially thank the Colgan families for being here as well.

Mr. PETRI. Thank you. I have one question. I don't know quite who to address it to, but we have been talking about a nearly perfect record of safety, but arise in some reported incidents though at a very small level. Everyone is aware, I think who follows it, that the aviation industry has traditionally for many years and continues to be, aspects of it, under financial pressure. American Airlines is in bankruptcy right now, Pinnacle that owned Colgan, which did have an accident, is in bankruptcy.

Is there any correlation or relationship at all or are there safeguards to protect from people cutting corners because of their financial situation?

Ms. GILLIGAN. Mr. Chairman, if I may start. I am sure others will have opinions. I think that it is clear throughout the industry that an investment in safety is an important business investment. I think there is broad understanding that a fatal accident has a tremendously negative impact, not just on the operator involved but throughout the industry. So what we see from the FAA is continued investment in safety systems, like the safety management system, like data systems, so that carriers understand what is happening within their system.

At the same time, within FAA, we have always had a program where inspectors enhance their oversight when there are financial problems. So as we went through mergers we had the two teams that continued to oversee, for example, United and Continental, as they operated, and a third team that monitored and managed the merger so that we had good eyes on everything that was happening because there is some risk, obviously, that some misstep or some human error can occur while you are making those kinds of changes. The same with bankruptcy. As soon as a carrier announces that they are going into bankruptcy, we enhance our oversight system to focus on evaluating the changes they will have to make as they downsize or as they furlough, or whatever the effects of bankruptcy may be. And I think those two sides, the industry's commitment to aviation safety as a good business practice with heightened FAA oversight when there is financial problems, gives as you good balance to assure the levels of safety continue.

Mr. GUZZETTI. Chairman Petri, if I may, our office is completing an audit in regards to code share that I believe the subcommittee requested, and one of the aspects of the three things we are looking at is whether safety is handled any differently with mainline carriers as opposed to the code-sharing partners. And you are correct about the economic situation. I think most of the code-share air-

lines' revenues are from the mainline carrier which they utilize to feed the main lines. But yet our audit is finding that FAA really doesn't have a requirement to look at those code-share agreements. And perhaps there could be some incentives in those agreements, or aspects that could impact safety. That is one of the things our audit is looking at.

Mr. PETRI. Thank you. Again, thank you all for your statements, and for your conscientious response to the questions we have asked. This concludes the first panel, and we will now turn to the second panel. And as it is taking its place, as they are taking their places, let me introduce them to you. The panel consists Mr. Tom Hendricks, who is the senior vice president for safety, security and operations, Airlines for America; Mr. Scott Foose, who is senior vice president, operations and safety, Regional Airline Association; Captain Sean Cassidy, first vice president of the Air Line Pilots Association; and Mr. Gary M. Fortner, who is vice president of quality control and engineering, Fortner Engineering, on behalf of the Aeronautical Repair Station Association.

I would like to express all of our thanks for you gentlemen joining us today and participating in this panel, and for the effort that you and your associates have exerted to prepare the statements that you have submitted.

And as you know, we would invite you to summarize those, in approximately 5 minutes, beginning with Mr. Hendricks.

TESTIMONY OF THOMAS L. HENDRICKS, SENIOR VICE PRESIDENT FOR SAFETY, SECURITY AND OPERATIONS, AIRLINES FOR AMERICA; SCOTT FOOSE, SENIOR VICE PRESIDENT, OPERATIONS AND SAFETY, REGIONAL AIRLINE ASSOCIATION; CAPTAIN SEAN CASSIDY, FIRST VICE PRESIDENT, AIR LINE PILOTS ASSOCIATION, INTERNATIONAL; AND GARY M. FORTNER, VICE PRESIDENT OF QUALITY CONTROL AND ENGINEERING, FORTNER ENGINEERING AND MANUFACTURING, INC., ON BEHALF OF THE AERONAUTICAL REPAIR STATION ASSOCIATION

Mr. HENDRICKS. Chairman Petri, Ranking Member Costello, members of the subcommittee, thank you for inviting A4A to appear at this important and timely hearing. At the outset, I want to express our thanks to the committee for its leadership in aviation safety and its support of the initiatives that I will discuss this morning, many of which were addressed in the recently enacted FAA Modernization Reform Act of 2012.

Of course, we also appreciate the efforts of the Federal Aviation Administration and the National Transportation Safety Board. Safety underpins every aspect of airline operations. The remarkable safety record of airlines that are members of A4A, demonstrates their unflagging commitment to fulfilling that responsibility. As a former airline captain I have repeatedly witnessed that commitment.

The results are extraordinary. This is the safest era in our history. We are the safest form of transportation on the planet, bar none. This safety record is neither random nor unintended. We have achieved levels of aviation safety that other industries and foreign civil aviation authorities envy. While our commitment to

safety is unchanging, the way we pursue safety has evolved and transformed over time as our understanding of human factors has grown, technology has advanced and our ability to capture and utilize data has expanded. This transformation has been indispensable in producing our extraordinary safety record. In simplest terms, we operate at a higher level of safety because we have become much better at identifying and managing risk.

We haven't conquered risk. No one can promise that in aviation, but airlines have introduced throughout their operations very potent data-driven risk assessment systems. These systems are tailored to an airline's operations. However, there is a common methodology to them. Hazards are identified and rigorously analyzed, and risk mitigation measures are carefully thought out and implemented.

Risk assessment has been used in aviation for many years. What has changed since the 1990s is the volume and accessibility of operational data that can be applied to safety issues. Airline safety professionals work in an information-rich environment. That means that we now rely on data-driven analysis, which frequently involves the combined scrutiny of the FAA, employees and management. This yields a high-definition picture, if you will, of operating environments and transient events and thus more refined risk assessments. And as the subcommittee knows, some of the most effective of these safety data programs are voluntary. They are very tangible manifestations of the industry's willingness to explore new means and develop new relationships within the aviation community to improve safety.

In short, a cultural shift has occurred that promotes and enables a higher level of safety. Data-based programs enable us to identify emerging patterns and properly deploy focused resources, and when that action is taken also has changed over the years. Today, unlike in past decades, there has been increasing emphasis on initiating change rather than simply reacting to events. That is proactive safety. This disciplined approach, going where the data take us and acting accordingly, has significantly advanced safety. It produces the most responsive and effective results, and it facilitates the most efficient deployment of finite resources in making necessary changes. That discipline gives us the confidence to undertake change when warranted, but it also gives us the ability to recognize when change is uncalled for and to challenge assumptions no matter how widely they may be embraced. Not every new idea is an improvement or free from unintended consequences.

The FAA's proposed rule on pilot certification and qualification requirements, for example, concerns us for these reasons.

I want to inject some words of caution. All who are involved in aviation safety need to realize the importance of sticking to the disciplined approach that I have outlined. We must resist the temptation to tinker with the safety system lest we disturb what we have accomplished and the benefits of that to our passengers and crewmembers.

Expertise and rigor should guide us. Going forward, we have the tools to foster safety enhancements. That is because today's airline safety culture in the United States is characterized by, first, a common understanding that safety is the foundation of our business,

second, robust communication within airlines, including with employees and among industry and Government stakeholders based on mutual trust, and finally, a recognition that safety issue precursors can be identified and effective preventative actions taken.

When we look beyond our borders, the situation appears more mixed. Many foreign airlines and civil aviation authorities have adopted data-driven approaches to safety. The maturity of those systems, however, can vary. Because of that we urge the U.S. Government to continue its efforts at the International Civil Aviation Organization and in other venues to expand use of safety data systems worldwide. This advocacy helps not only foreign airlines, but also American citizens who fly on them.

We look forward to continuing to work with the subcommittee on these matters, and I would be happy to answer any questions you might have.

Mr. PETRI. Thank you. Mr. Foose.

Mr. FOOSE. Good morning. Chairman Petri, Ranking Member Costello, members of the subcommittee, thank you for the invitation to testify at this hearing. Three years ago RAA testified before your committee after a fatal accident in order to discuss our members' commitment to safety. At that time, we outlined several important safety initiatives already in place. We shared our plans to go even further. Today I am here to talk to you about what we have been doing since then.

While our safety work has been both broad and deep and is discussed more fully in our written statement, I will focus my testimony on four areas in particular: Safety information sharing, voluntary safety programs, pilot fatigue, first officer qualifications.

All of our members participate in safety committees established by code-sharing airline families. They are also active participants in the InfoShare Program cosponsored by the FAA and the airlines. In fact, at our recent InfoShare meetings half of the attendees and briefings were from regional airlines. Safety information is being shared by many means that now transcend many boundaries. Regional airlines are not only committed participants, but they are also taking leadership roles.

RAA members have been also active, achieved extremely high participation levels, in a list of gold standard voluntary safety programs. In fact, RAA members have the highest levels of participation among all of part 121 carriers in each of the key FAA-supported voluntary safety programs, including ASAP, FOQA, AQP and safety management systems.

The majority of carriers transitioning to advance qualification programs for pilot training were regionals. While carriers of small fleets cannot be expected to participate in AQP, RAA's members have made the transition in significant numbers. While 25 percent of all 121 carriers trained their pilots under AQP, 66 percent of RAA members have that program.

Also, the large majority of RAA's part 121 members have flight operations quality assurance programs in place. This is all the more impressive knowing that RAA's members have significant data collection equipment obstacles to overcome in order to participate.

I want to express my appreciation to our pilots and air associations. They have been key partners and share the credit in this accomplishment.

Another significant milestone for the airline industry was marked when the flight and duty time final rule was published in December. For the first time we will use science to avoid and mitigate fatigue in the cockpit. In 2009, industry recognized there was a gap in the available science with regard to workload fatigue. RAA took action, initiating an independent ground-breaking research study to fill this gap. The goal of this study is simple. We want to better understand the fatiguing effects of multisegment operations on pilots so we can incorporate what we have learned into our training, our procedures, and our culture. RAA has taken a leading role in fatigue research and will continue to work hard to ensure the highest levels of safety in this area.

Finally, I would like to briefly discuss the proposed pilot qualifications rule. But first I want to address a recent allegation that regional airlines have no plan in place to comply. This is far from the case. In fact, RAA members have been very busy developing their transition programs. Several programs have been approved and members have begun to transition their first officers. We are preparing our public comments in which we will urge the FAA to consider the valuable conclusions reached by the First Officer Qualifications Aviation Rulemaking Committee in formulating the rule. We also express our concern that unless the new rule recognizes the value and experience that structured training programs provide, the burden will now shift to tomorrow's pilots.

The implication here is not diminished safety, but diminished incentive for students to pursue training and diminished service to smaller communities. The potential availability of new pilots could jeopardize scheduled service to dozens of communities. It is estimated that an annual shortfall of approximately 2,300 pilots could translate to a loss of service to 75 communities. If we do not take advantage of this opportunity, we will be encouraging the next generation of pilots to merely build hours, when what we really need is experience in our cockpits.

In the 3 years since we last testified before this committee, our 60,000 regional airline employees have operated nearly 15 million flights at a pace of 13,000 flights each day. In fact, today is the safest period of time in commercial history. It is our hope that our deeds which have gone well beyond the rules demonstrate to you, to each of the passengers that we are fully committed to safe operation of each and every flight each day.

This concludes my statement. I look forward to your questions.

Mr. PETRI. Thank you. Captain Cassidy.

Mr. CASSIDY. Good morning, Mr. Chairman, Ranking Member Costello, and members of the subcommittee. I am Captain Sean Cassidy, first vice president of the Air Line Pilots Association, International, and I am also its national safety coordinator. I represent more than 53,000 professional airline pilots who fly for 37 airlines both in the United States and Canada. ALPA is not only the world's largest pilot union, We are also the world's largest non-governmental aviation safety organization. I am honored to be here and would like to offer our perspective on where the U.S. airline

industry stands, where we need to go in four critical areas of aviation safety.

First, although ALPA believes our industry has made good progress in taking on pilot fatigue, critical work remains to be done to achieve one level of safety for all airline operations, a concept that has formed the foundation of ALPA's safety work for many years. All pilots are human and we experience fatigue in the same way regardless of whether we are passengers or we have cargo in our aircraft. Despite this, new science-based fatigue regulations apply only to pilots who fly passengers and not those who fly cargo. Leaving all cargo pilots out of the regulations is a serious safety concern.

ALPA thanks your colleagues, Representative Chip Cravaack and Representative Tim Bishop, for introducing the Safe Skies Act of 2012, which would apply the fatigue rules to all airline operations. We urge all members of this committee to cosponsor H.R. 4350 and to swiftly report out the Safe Skies Act of 2012 to help achieve one level of safety across the industry.

I would also like to applaud the families from Colgan 3407 who not only have been staunch supporters for H.R. 5900, but also the Safe Skies Act as well.

Second, the screening, selection, training, qualification, and continued professional development of a pilot are also key components of maintaining the highest levels of safety. While ALPA is encouraged by the rulemaking proposals both for revising training standards and requirements for new first officers and for implementing safety management systems at airlines, the job is clearly not finished. Of particular concern to airline pilots is the new regulations which seek to ensure that relevant experiences obtained before pilots begin airline service, they must not set the stage for unintended consequences of rendering an active airline line pilot suddenly ineligible to continue his or her employment. Fairness and common sense dictate that efforts to ensure relevant experience should not inadvertently take that experience out of the cockpit.

New regulations must include a clear path to follow so currently employed airline pilots can continue to fly and are able to achieve full compliance with requirements that were created after their employment began. In addition, ALPA has long emphasized the value of professional development, command training, and mentoring. As the U.S. airline industry has evolved, opportunities have diminished for new pilots to gain experience through years of flying under the command of more seasoned aviators. As a result, the mentoring command training of professional development that once occurred organically must be replaced with formal mechanisms to develop these skills.

In the Airline Safety and Federal Aviation Administration Act of 2010, Congress rightly identified the need for airlines to provide specific command training courses for new captains. We advocate that new captains receive training to reinforce effective communication, leadership, and conflict resolution.

On a related issue, while mentoring does not replace proficiency training, it provides an excellent supplement to it. While informal mentoring can often take place if an airline safety culture fosters the opportunity, mentoring should also be formalized as a standard

part of a pilot's professional development. In all of these areas, mentoring, leadership, and professional development, the changes will take time to fully implement and mature. Our industry must act now to make these enhancements a reality.

Third, safety management systems which provide the NextGen blueprint for aviation safety, both on the ground and in the air, have already proven to be extremely effective as demonstrated by our Canadian neighbors. A key principle of SMS is to all members of an organization to identify hazards without fear of retribution. The ability to capitalize on frontline employees' firsthand knowledge is a critical element in maintaining safest possible operations. ALPA is encouraged that the Federal Aviation Administration appears to be on schedule to publish a final SMS rule this summer.

Finally, and especially important in the context of SMS is the absolute priority that our industry must place on the protection of safety data. The proven success of voluntary safety programs hinges on the strength of the data collected. Individuals provide this data based on the expectation that he or she will be respected as acting to enhance safety and that information will not be misused. Legislation should be considered to make certain this information is only used as intended and that is to advance safety.

The pilots of ALPA commend the U.S. Aviation House Subcommittee for holding this hearing and allowing us to underscore the importance of continuing to pursue the highest standards in safe air transportation. Thank you.

Mr. PETRI. Thank you, Captain. Mr. Fortner.

Mr. FORTNER. Thank you. Chairman Petri, Ranking Member Costello, and members of the subcommittee, I thank you for the invitation to testify this morning.

Incorporated in 1952, Fortner Engineering is a third-generation family-owned company with 45 workers. My company is an FAA certificated repair station that specializes in the repair and overhaul of hydraulic aircraft components. I am testifying in my capacity as the senior vice president of the Aeronautical Repair Association, also known as ARSA. The efforts of ARSA's members facilitate the safe operation of aircraft worldwide by providing expert maintenance services for general and commercial aircraft. Overall, these services generate over \$39 billion of economic activity in the United States and employ more than 274,000 workers in all 50 States.

North America is a major net exporter of aviation maintenance services, enjoying a \$2.4 billion positive trade balance of trade. I would like to use my time this morning to highlight four main points: First, for ARSA members around the world, good safety is good business. The basic nature of the aviation industry demands that safety and security be the top priority for our member companies. Operators and airlines will not do business with companies that put their passengers and valuable business assets at risk.

Aviation safety does not begin and end with the FAA or any other regulatory body. Safety is the responsibility of every aviation maintenance employee performing work on behalf of an owner or operator, a certificated repair station, air carrier, or other aviation business. Government inspectors will never be able to oversee each mechanic at every facility at all times. The industry has the ultimate obligation, responsibility, and authority to ensure that the

civil aviation system is safe and repair stations are filling that responsibility despite the FAA's limited oversight resources.

My second point is that foreign repair stations are an essential element of the global aviation system to help ensure the safety of travelers worldwide. FAA certificated foreign repair stations are subject to the same safety centers as FAA domestic part 145 certificate holders. The International Convention of Civil Aviation of 1944 and ICAO standards require that the country in which the aircraft is registered oversee the maintenance performed on that aircraft and all related components regardless of whether work was performed. Consequently, maintenance on a U.S. registered aircraft must be performed by an FAA certificated maintenance provider. Similarly, when an aircraft of foreign registry requires maintenance, only a repair station certificated or validated by that aircraft's civil aviation authority or registry may perform that work.

As far as other countries are concerned, U.S. repair stations are also foreign repair stations. My company has an EASA approval that allows us to perform work for EU registered aircraft. Consequently, Fortner Engineering has to ensure comply not only with the civil aviation authority of this country, but additional and different requirements of EASA. Any efforts to limit the ability of U.S. carriers to use foreign repair stations will inevitably lead to retaliation from foreign governments that will hurt hundreds of U.S. companies like mine that serve an international clientele.

Thirdly, the long-term threat to the aviation maintenance industry is over-regulation and Government intrusion. Vision 100, an FAA reauthorization law enacted in 2003, required the TSA to issue security rules for all aviation repair stations by August 2004. When TSA failed to meet that deadline, lawmakers demanded that security regulations be completed by August of 2008. The penalty for failure to comply was the FAA would be prohibited from issuing new foreign repair station certificates.

Nearly 4 years later, the TSA has still failed to issue final repair station security regulations, and the FAA is currently banned from issuing new foreign repair station certificates. TSA's failure to finalize repair station security rules is preventing aviation companies from tapping into rapidly expanding overseas markets, hindering job creation and growth at home.

My final point is that the lack of standardization across FAA regional offices can significantly impact repair stations across the country. A situation of Fortner Engineering detailed in my written testimony demonstrates how overzealous regulators and inconsistent application of regulations impede repair stations with no benefit to flight safety.

ARSA members are routinely plagued by FAA's widespread varying application of regulations across the country. Inconsistent interpretation and enforcement is frequently cited by ARSA members as a major problem and small businesses are particularly impacted by a lack of regulatory standardization across regions.

In conclusion, repair stations have long been and continue to be a vital part of the aviation industry in our Nation's economy. It is no coincidence that the increased use of contract maintenance has coincided with the safest period in commercial aviation history. In the end, no governmental agency can guarantee aviation safety.

Safety is a business of aviation industry companies and their employees. ARSA looks forward to working with Congress to ensure that legislation and regulations are based on our one common goal, safety.

Mr. PETRI. Thank you. Thank you all again. Mr. Hendricks, in your prepared statement, you talked about some of the modern techniques for analyzing data and improvements that were being made, and you cautioned against, quote/unquote, “tinkering” with the safety system. And we are always looking for improvements, but we are not looking for mindless tinkering. I guess—so could you discuss what it is that you would fear from what—expand on the word “tinkering” and the consequences of that?

Mr. HENDRICKS. Sure. Certainly. As I tried to reflect in my statement, the results we have been able to achieve are extraordinary and unprecedented and we have largely done this through these very robust voluntary reporting mechanisms that are very much a partnership between airlines, our regulator the FAA, and our employees, and it provides us with an amount of data that 10 years ago was unthinkable. We are able to do very deep analysis of this data that has been protected by the Congress from intrusion, and we are able to do analysis that frankly is very deep, and very compelling in terms of what actions we should take to enable further improvements in safety.

I sit on the executive committee of the Commercial Aviation Safety Team which Ms. Gilligan co-chairs with Mr. Ken Hylander from Delta Airlines, and we routinely participate in directed studies, look at safety threats. We go where the data take us. And we are convinced that this path we are on will lead to further improvements and is the correct path to assure that we will stay on this journey that we are taking to a phenomenally safe system that we are currently operating.

So we want to ensure that we stay true to the data, and while we will always try to determine ways to improve the system further, we want to ensure that we make any of those decisions grounded on these facts that we are able to uncover through this intense and very focused analysis of the data that we are receiving.

Mr. PETRI. Thank you. Mr. Foose, I think I know the answer to this, but in your testimony you talked about how you had to take into account experience versus flight hours.

Mr. FOOSE. Correct.

Mr. PETRI. And could you explain what you—and so not just looking for hours. I suspect you are talking about the number of maneuvers you are doing, rather than just flying, well, it is on auto pilot hours, but could you expand on that?

Mr. FOOSE. That is correct. The proposed pilot certification rule focuses on two areas I wanted to talk about. One is the additional training that is required, and we support that. We think there is lots of good steps that are proposed in there that actually in many ways have already been incorporated into our training programs. Our biggest concern is that the—we know that the Public Law of course requires 1,500 hours and an ATP. Our members have already taken a significant step forward and will meet that. All of our pilots will meet that requirement by August of 2013. But the FAA in their rulemaking activity has proposed an academic system

that accommodates only 4-year aviation degrees and also military as well, but our experience with the airlines, and we obviously have lots of experience, qualifying thousands and thousands of pilots that are in service today and doing so very safely. And what that experience tell us is that the quality of training is really what tell us whether that pilot really will have the skills and the knowledge to do his job appropriately. And when the time comes and he is faced with an abnormal situation, he will be better prepared to do that. The flight time does not necessarily do that, and of course in our written testimony we offered an example of how that occurs.

Mr. PETRI. Thank you. Captain Cassidy, one area of some controversy has been the different treatment of freighter pilots as opposed to passenger pilots, and we are told one explanation is that cargo pilots—actually, the data shows actually—fly significantly less than passenger pilots. Could you comment on that? Does that difference, in fact, exist, or do you know about anything about that?

Mr. CASSIDY. Yes, sir. Well, scheduling differences exist relative to the operation. You have long-haul cargo operations that fly tremendous distance and extended crew days with augmented crews and they fly intercontinental. You also have cargo operations that fly stage links which are just sometimes as little as 100 miles. So there is a tremendous variety of flying that gets done both on passenger and in cargo operations. I can speak to you from a little bit of a vantage of somebody who has done both, because the airline I am currently employed by, we actually have stand-alone cargo operations as well as passenger operations. And I think the important point is that with regard to crew fatigue issues, with regard to the stressors that affect you, many times I have actually had higher workload situations flying cargo operations rather than passenger ones because of the lack of additional crewmembers. You know, from my vantage as an airline pilot, fatigue is fatigue is fatigue. I know a little bit about it, as does Congressman Cravaack, who we both share a background both in military, passenger, and cargo operations, and I honestly cannot distinguish why there should be a difference in the way that you are treated based upon what resides behind the flight deck door.

Mr. PETRI. Thank you. Mr. Costello.

Mr. COSTELLO. Thank you, Mr. Chairman. Mr. Foose, you have testified that the regional airlines are making a lot of progress in developing plans to implement the ATP requirement, although the Inspector General, you have heard his testimony that their investigators visited two regional carriers and found out that 75 percent of their first officers do not have ATP certificates.

Mr. FOOSE. Correct.

Mr. COSTELLO. And they also found out that in both cases that neither carrier had developed a plan to ensure that the first officers would meet the ATP requirement by the deadline of August 2013.

So my question is, how many of your carrier members have developed a plan to ensure that the first officer meets the ATP certificates and will be able to meet the enhanced safety requirements by August of 2013?

Mr. FOOSE. Excuse me, that is a good question and thank you for that. I am not sure which carriers they spoke to. In my conversations with our operations executive of carriers, we, as far as I know, all the carriers have either developed a plan or have completed development and submitted that to the FAA office. At this point in time, we have three carriers that have approved programs, and they have begun to transition their first officers.

Given the August 2013 deadline, we would expect that all airlines will have their programs approved and in place and being executed as of July or August of this year. At that point all of the pilots should be—start the program, be complete by August of 2013.

Mr. COSTELLO. So three carriers have approved plans?

Mr. FOOSE. Correct.

Mr. COSTELLO. And how many members do you have in your association?

Mr. FOOSE. Twenty-seven, 24 of which are part 121 carriers.

Mr. COSTELLO. So 3 of the 27 have approved plans.

Mr. FOOSE. That is correct.

Mr. COSTELLO. Let me ask you. Is Pinnacle one of those companies, which of course is the parent company for Colgan Air?

Mr. FOOSE. Yes.

Mr. COSTELLO. And they are one of your members and do they have an approved plan?

Mr. FOOSE. I do not know that, sir. I can get back to you on that.

Mr. COSTELLO. Why wouldn't you know that? Why wouldn't you know—if you have 27 members and you were coming here today, why wouldn't you have found out from your members which ones have approved plans, which ones do not, and which ones do not have even a plan in place?

Mr. FOOSE. That is a good question. I, as of last week, when we polled our members we had three approved, but I do not know. I have not talked to Pinnacle since then, so I don't know if they have been approved since.

Mr. COSTELLO. How long would it take you to get a list to this subcommittee of the 27 members, how many have plans in place right now?

Mr. FOOSE. We could do that very quickly, sir.

Mr. COSTELLO. Well, I would request that you would submit that to us as soon as possible.

Mr. FOOSE. I would be glad to do that.

[The information follows:]



May 4, 2012

The Honorable Thomas Petri
Chairman
House Transportation and Infrastructure's
Subcommittee on Aviation U.S. House of
Representatives
Washington, DC 20515

The Honorable Jerry Costello
Ranking Member
House Transportation and Infrastructure's
Subcommittee on Aviation
U.S. House of Representatives
Washington, DC 20515

Dear Chairman Petri and Ranking Member Costello:

On behalf of the Regional Airline Association (RAA), we are following up on the Ranking Member's request for clarification on information provided to this Subcommittee during its April 25 hearing entitled: "A Review of Aviation Safety in the United States."

The purpose of this letter is to provide additional information about the industry's implementation of certain portions of the Airline Safety Act of 2010 related to first officer qualifications, and the leadership role regional airlines have taken in moving toward implementation of the statute in advance of next year's deadline.

RAA respectfully requests that this letter be inserted into the hearing record to accompany our testimony.

Background

Over the years, regional airlines have been among the first air carriers to develop innovative programs and to adopt best safety practices. For instance, regional airlines were among the leaders in developing and adopting now-common safety programs such as Crew Resource Management, Advanced Qualifications Program, and Required Navigation Performance. In becoming early adopters of such programs, these airlines, which we appropriately call "pathfinders," must work through a maze of regulatory guidelines as they blaze the first trail toward successful implementation.

During the hearing, I testified that all RAA member Part 121 airlines were on track and have plans in place to meet the statutory requirements of the Airline Safety Act of 2010. Our objectives are to fully comply with the Act and to do so in a manner that provides the highest level of safety, the very best training, and presents the least disruption of service for the communities we serve. While regional airlines continue to work to resolve regulatory

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framework challenges, I want to reiterate that **each and every one** of RAA's Part 121 member airlines anticipate program implementation and completion on time and in advance of the August 2013 deadline.

During the hearing, I referenced three regional air carriers that, predating the Airline Safety Act of 2010, had begun to act as "pathfinders" on first officer qualifications, having begun early development of Air Transport Pilot certification training for first officers independent of new federal regulations or statutes. The Ranking member asked us to provide the identities of these members. Although RAA is not a regulatory body and reminds the Subcommittee that we cannot speak on behalf of the FAA, the airlines we were referencing, based on our conversations with carriers, include RAA members Compass Airlines and SkyWest Airlines, as well as Comair, a regional airline that is not currently a member of the RAA.

These three operators, along with the FAA, sought to develop a new process for transitioning first officers to ATP holders within the regulatory structure originally designed to support new captains.

FAA Guidance is a Necessary Step in Collaborative Process

As you know, statutory changes require clear and consistent regulatory guidance as a necessary part of the implementation process. Importantly, regulatory interpretations must be consistent throughout the network of FAA certificate management offices so that delays are not encountered at the primary inspection level. Therefore, implementation of the Act is, by nature, highly collaborative between the FAA and air carriers.

Given those circumstances, regional airlines – both independently and through the RAA – sought consistent, national guidance from FAA as a necessary first step in implementing transitional training programs for first officers. Regional airlines raised both highly specific questions – such as the specific cockpit seat from which a first officer could take his ATP training – and sought high level guidance. While the FAA has responded promptly to these requests for guidance with policy memorandums, this process of soliciting appropriate guidance was a necessary step that had to be taken before carriers could begin implementing individual training programs in order to avoid or minimize implementation delays.

Most recently, RAA met with FAA to discuss several newly identified regulatory questions. FAA responded by publishing FAA Notice 8900.184, Incorporation of ATP Certification into an Air Carrier SIC Training Program, which RAA received on April 27, 2012, effectively answering our questions and enabling air carriers and principal inspectors to continue to work together to develop ATP training programs.

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Role of the Association in Supporting Compliance

While this Subcommittee is aware that RAA is not an official regulatory agency, part of our role as an industry trade association is to act in good faith as a liaison between Congress and our members, sharing expectations and information, as well as helping members to prepare for compliance. In this capacity, RAA has reached out to our membership and has received assurance that each of our Part 121 carriers – 100 percent of impacted carriers – expects full and timely implementation of ATP training in advance of the August 2013 deadline. Absent further, significant regulatory challenges, all Part 121 member airlines have committed to completing the FAA review and approval process and will begin the execution stage by August 2012 – fully one year prior to the Act's deadline. ATP training will be seamlessly integrated into the existing framework of pilots' 12-month recurrent training schedule. The exceptions to this timeline are those air carriers with high seasonal flying, which would meet the deadline by concentrating training outside the summer months.

These timelines assure a reliable means of ensuring pilots meet the FAA's eligibility requirements for the ATP and receive their new certificates prior to the deadline in a manner that delivers the highest quality training, accounts for pilot availability and simulator resources, and minimizes air service disruptions.

Impact on First Officer Populations

Given the importance of this issue, RAA has also conducted an initial impact assessment to identify how many of the 18,000 regional airline pilots may be in jeopardy of not meeting the regulatory requirements for an ATP. Based on early estimates, approximately 100 of our members' current pilots may be grounded because they will not reach 23 years of age or otherwise cannot be expected to meet the ATP requirements by the deadline. While it is regrettable that these pilots, who have proven to be skilled and knowledgeable aviators, may be disqualified, if they do not meet the standards, they simply will not fly.

We encourage you, and members of this Subcommittee, to read our comments to Docket No. FAA 2010-0100, Pilot Certification and Qualification Requirements for Air Carrier Operations (<http://www.regulations.gov/#!documentDetail;D=FAA-2010-0100-1899>) for comprehensive insight into the projected impact of these standards on future pilot availability and small community air service.

Response to Information Requested on RAA Member Pinnacle Airlines

During the April 25 hearing, Ranking Member Costello asked a question specific to the efforts of one RAA member, Pinnacle Airlines, to obtain approval and implement their first

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officer ATP program. Pinnacle has confirmed they are working with the FAA and intend to integrate ATP training into their approved recurrent training program on the timetable previously outlined, which will become fully operational on or about August 2012. Like our other airline members, Pinnacle expects its first officers to be fully transitioned before the Act's deadline.

Conclusion

My colleagues and I met with your staff earlier this week to discuss this issue and we are eager to continue that positive dialogue. We encourage you to contact us anytime with questions or concerns you may have. We also encourage you to continue to view RAA as a resource for safety information and as a firmly committed partner in the pursuit of the highest levels of safety in the U.S. commercial airline industry.

Thank you.

Respectfully submitted,

A handwritten signature in black ink that reads "Scott W. Foose".

Scott W. Foose
Senior Vice President, Operations and Safety

Attachment: RAA Member list



RAA Members

- | | |
|---------------------------------------|---------------------------|
| 1. AeroLitoral | 15. Horizon Air |
| 2. Air Wisconsin Airlines Corporation | 16. Island Air |
| 3. American Eagle Airlines | 17. Jazz Aviation |
| 4. Cape Air | 18. Mesaba Airlines |
| 5. Chautauqua Airlines | 19. New England Airlines |
| 6. Colgan Air | 20. Piedmont Airlines |
| 7. CommutAir | 21. Pinnacle Airlines |
| 8. Compass Airlines | 22. PSA Airlines |
| 9. Empire Airlines | 23. Republic Airlines |
| 10. Era Aviation | 24. Shuttle America |
| 11. ExpressJet Airlines | 25. Silver Airways |
| 12. GoJet Airlines | 26. SkyWest Airlines |
| 13. Grand Canyon Airlines/Scenic | 27. Trans States Airlines |
| 14. Great Lakes Aviation | |

Mr. COSTELLO. Captain Cassidy, you have heard the regionals say that the proposed rule for pilot qualifications could affect the supply of airline pilots. You have heard that previously and that is the position of the regionals. How do you respond to that?

Mr. CASSIDY. Our association's motto is: Schedule with safety. And I think the determinant on whether or not there is going to be an excess amount of eligible pilots to fill the flight decks in the commercial aircraft is really dependent on the industry's efforts to recruit, attract, and retain qualified pilots. I think that taking one step beyond that, regardless if there exists a paucity or a surplus of pilots, I think that our core concern is ensuring that they are as well-trained, as safe, as experienced, and as proficient as possible, which is why we are so much in favor of the recent legislation helping with mentoring leadership, and as well as stepped-up hourly qualifications.

Mr. COSTELLO. Thank you. Thank you, Mr. Chairman.

Mr. PETRI. Mr. Graves, do you have—oh, Mr. Shuster.

Mr. SHUSTER. Thank you. Thank you, Mr. Chairman. Captain Cassidy, you said you have serious safety concerns with this new ruling, and again, based upon the evidence that has been put forth over the last several years, cargo has been extremely safe, and in fact there has been no increase with incidents with fatigue. You know, so where is the concern there if you have got an industry that continues to improve?

Mr. CASSIDY. You are correct, sir. The industry—we have—basically, I have the pleasure of working in the transportation system, which is the safest in the history of the world for the last 10 years, and the previous 10 years preceding that was the next safest era of operations. So in one respect, this is a very high-class problem to have because we are talking about a very, very safe system or an even safer one.

Now, with regard to fatigue issues and cargo, I think that those same issues that would serve as precursors for higher safety risk for cargo are identical to passenger situation. And I think we are just looking at the tip of the iceberg because we are now finally getting into scientifically based data collection which really determines the precursors to fatigue in a way that we have not done in years past.

I was sitting right next to Secretary LaHood on December 21st when he made the announcement of the flight-time/duty-time regulation, and although cargo was placed in a different category than passenger operations under part 117, you know, I think I was pretty clear when I heard him say very emphatically that even that cargo is not regulated on the side of 117 with the passengers, nevertheless it is absolutely the right thing to do.

Mr. SHUSTER. Well, look, I agree 100 percent with the passenger side of it, but, you know, you made the comment that you shouldn't be treated differently because of what is behind the flight deck door. But in reality, it is not just about what the cargo is, whether it is with passengers or if it is cargo, it is the operations are significantly different, the hours that the pilots are flying are significantly different. And so I believe fully that that is the difference. And would you agree that the facilities for cargo—or let me ask you this way. Are the facilities on the plane, or on the ground, are they

the same for passenger as they are for cargo, or is there a difference?

Mr. CASSIDY. There is different rest facilities that are provided on planes that help to give crews the prescribed rest and augmented rest and they really vary pretty dramatically from completely separated cabins that only the flight crew can access to basically a seat back with the passengers. So there is a tremendous variety. Cargo as well.

Mr. SHUSTER. Cargo and passenger, is cargo significantly different facilities than with passenger?

Mr. FOOSE. I think that in many cases the answer is yes. As Ms. Gilligan referred to before, you know, I think we can use like FedEx or one of the big long-haul cargo carriers as an example where they actually have separate rest facilities so the crews can go in and get prescribed rest while they are doing the sort function.

Mr. SHUSTER. But what about the number of hours flown. Is that a significant difference in fatigue, where you have roughly 30 hours where a cargo pilot on average is flying and over 50 a passenger. Does that have a significant difference in a fatigue? Would you agree with that, or not?

Mr. CASSIDY. It is a difficult question to answer because of the tremendous complexity and scale of the different operations. You can have somebody who only flew 30–40 hours during that month and be placed in a situation where they are more fatigued than somebody who flew 70 because of the way that the crew rest matrix works and prescribed rest requirements.

Mr. SHUSTER. All right. Well, that brings me down to if we want to do one-size-fits-all, then we are going to get to some point I believe if we continue down this road where we are going to have to look at the individual. I know Sam Graves is a pilot and I know Mr. Cravaack is a pilot, and maybe he operates well on 6 hours of sleep and Mr. Cravaack needs 8 or 10 hours. We are going to get to a level where—is that where we are headed? I have been dealing with this sleep issue, whether it is for the railroads or truck drivers. It really comes down to the individual, how an individual operates and if those people are getting the right amount of rest. I mean, we are going to end up having sleep or rest police or cameras in your room.

So, again, I just disagree fundamentally that these are two different operations. And fatigue is fatigue, but fatigue for Mr. Graves and fatigue for Mr. Cravaack ends up at a different threshold. So I think we really have to look at cargo and passenger differently and, again, look at what is available to the cargo passengers. Again, you have said a couple of things that I have asked you. The facilities are different, the flight duty is different for the different industries.

So I know you are not agreeing with me, but you sound like you are agreeing with some of the principles that I have come to believe with, and that is why I have come to the difference. Is that accurate?

Mr. CASSIDY. Well, I agree fatigue is fatigue is fatigue regardless of who we are discussing. I also think that the regulation is very sane and safe in that it provides me, if I have a trip, you know, flying a passenger trip, multiple legs, I have the assurance that

when I shut that hotel room door that I have 8 hours of prescribed rest time, period.

And the other thing which I think is important to emphasize, you know, I have the privilege of representing both cargo pilots as well as passenger pilots at the Air Line Pilots Association, and I have a tremendous amount of faith in every single one of those members' ability to ensure that they are adequately fit and rested to fly regardless of what the regulation says, because the other notable achievement with some of this new regs is that it empowers companies to ensure that crewmembers are put in a situation where they can determine that they are fit to fly and not face any disciplinary issues if they identify, for whatever reason, the ice maker next door, the hotel elevator going up and down, that for whatever reason they just are not in a position where they feel safe to fly because of fatigue issues.

Mr. SHUSTER. Mr. Chairman, I have one more question. I wonder if I might ask it and I will also address it to Mr. Cassidy and Mr. Hendricks.

Mr. Hendricks, you are a former airline pilot, is that accurate?

Mr. HENDRICKS. Yes, Congressman.

Mr. SHUSTER. The new regs, the new rule, limits the number of consecutive nights that a pilot may fly to 3 nights. Is that your understanding? That would be for passengers?

Mr. HENDRICKS. Yes, sir.

Mr. SHUSTER. Would that force the carriers into scheduling greater numbers of shorter rotations for pilots?

Mr. CASSIDY. It might, and it really depends on the system operations for the airline. For instance, I fly for Alaska Airlines. Once upon a time we predominantly flew up and down the West Coast. Now we do a lot more transcontinental operations as well. So when you look at the complexity of a scheduling operation, a lot of times they can have mitigating strategies which allow them to best utilize a crewmember so it doesn't really affect efficiency that much of the operation by scheduling practices.

Mr. SHUSTER. Mr. Hendricks?

Mr. HENDRICKS. Congressman, A4A has engaged a group of leading sleep scientists to help answer these types of questions, and we thank you for posing it today.

We will say that with regard to the consecutive nights of operation, many times that will in fact impose more fatigue on pilots, because flying on the back side of the clock, if you are a cargo pilot or you are a long-haul international pilot, that first night is the most challenging in terms of managing your alertness, and we want to limit the amount of first nights of flying that this rule may impose upon the system. So we are studying that more closely, and we do have some concerns in that regard.

Mr. SHUSTER. So quite possibly applying this new FAA rule to cargo could make it less safe for cargo pilots, if you are going to increase the number of first night flights. Would that be a concern?

Mr. HENDRICKS. Well, I would agree with Captain Cassidy that our crewmembers are all highly professional. We rely on them to make assessments of themselves and their fitness to fly. And along the lines that Captain Cassidy also mentioned, most airlines have completely non-punitive policies in place when pilots exercise their

prerogative to say that they are too fatigued to operate the aircraft. So we support that. There is still more study that is required, but we are concerned about the increased exposure that pilots may have to this first night of night flying.

Mr. SHUSTER. Well, I appreciate all four of you being here, especially Captain Cassidy and Mr. Hendricks. And thank you, Mr. Chairman, for indulging me. I think this is an issue that we have got to continue to look at. As I said, I want to make sure. Across this Government we do one-size-fits-all in far too many things, and I just don't think, and in this case there is evidence, significant evidence, that says we have to look at this a little differently. So I appreciate your being here.

Thank you, Mr. Chairman.

Mr. PETRI. Thank you. Mr. Lipinski.

Mr. LIPINSKI. Thank you, Mr. Chairman. I thank Chairman Petri and Ranking Member Costello for your leadership and for holding this morning's oversight hearing on safety. We all know that America has the aviation system that is the finest and safest in the world, but while we have an impressive safety record, we know that errors do happen in rare instances and the consequences are often very severe.

I have Midway Airport in my district, also close to Chicago's O'Hare Airport, and I know that safety has to be our top priority.

So I really just wanted to follow up a little bit on what Chairman Petri's original question, first question was with Mr. Hendricks. I in a previous time before I was in Congress did systems analysis. I worked for Swiss Air, although I didn't do this kind of risk assessments there.

But I was just wondering, Mr. Hendricks, you talked about in your answer to Mr. Petri and your testimony about data. We know that data is the core of safety. I just wanted to get a better sense of what kind of data are we talking about? What do you look at in your risk assessment?

Mr. HENDRICKS. Thank you very much. Many different types of data. We have a flight ops quality assurance program. It is actually a separate digital recorder on the aircraft that records parameters different than the digital flight data recorder in many cases.

We have voluntary reporting systems that our pilots provide us, not only pilots, air traffic controllers in the ATSAP program. Some airlines have implemented this with the professionals that plan the loads on the aircraft. And we take into account also the surveillance data from our radars, from ADSB in some cases. And all of this is collected and fused by the MITRE Corporation, which operates under this umbrella of protection that the Congress has granted us to do a de-identified, deep dive into all of this data, not specific instances, but looking for systemic risk. And that is where we have been able to achieve success, because the data is protected, it is rich, and it has proven to be very reliable in terms of what it is telling us and what mitigations we can then put in place to address what we are seeing in the data.

Mr. LIPINSKI. Are there any examples that you can give about things that have been learned?

Mr. HENDRICKS. Well, certainly. The Commercial Aviation Safety Team has had numerous directed studies. In fact, 3 years ago they

were awarded the Collier Trophy. As you know, it is one of the most distinguished aviation awards in the United States because of this work.

So they have done directed studies on control flight and terrain. We are currently looking at navigating on the runway into the area navigation, NextGen type procedures on departure. We are looking at other systems such as upset prevention.

What we have been allowed to do, because we brought down the fatal accident rate to such a low level right now, is we are able to look at other things we simply didn't have the luxury of looking at because there were other pressing matters.

But I would like to reemphasize the points I made earlier, which are the data is guiding us on what we should look at. We have a very formal process on the Commercial Aviation Safety Team to identify these risks, and then we focus our resources in these directed studies to go out and mitigate those risks throughout the system. The FAA is providing great leadership in this regard.

Mr. LIPINSKI. Do you do any international sharing of data or findings?

Mr. HENDRICKS. That is expanding currently. We are in dialogue with the European equivalent of the Commercial Aviation Safety Team. There are regional aviation groups throughout the world. One of the newer ones and more robust safety systems is in the Latin American region.

I was just last week at a Latin American operations conference and the results they are seeing are pretty phenomenal. They have a very young fleet. They are collecting this data. We are showing them the way in many regards and we are learning things that when we operate in that region that perhaps we didn't see because we didn't have as much data. So we are starting down that path. We need to ensure that we protect that data as well as we do in the United States. But other regions of the world are starting to see that this is the path forward for success.

Mr. LIPINSKI. Thank you. I yield back.

Mr. PETRI. Mr. Cravaack.

Mr. CRAVAACK. Thanks, Mr. Chairman. I appreciate everybody being here today because everybody here is on the same page. We all want safe flights, safe airlines, to be able to get our passengers to and from where they want to go as safely as possible and bring cargo to the places that really need it. In some ports even in our own country we have to rely on cargo aircraft to just bring the sustenance to some different cities. So we are all working on the same page, let's just put it like that.

Captain Cassidy, if I could just talk—I wish my colleague was still here in regards to hear some of this testimony you are about to give here. The studies that were done were data-based studies, correct?

Mr. CASSIDY. Correct.

Mr. CRAVAACK. I mean, they took a look at a lot of—a plethora of different fatigues that happen to a pilot on a normal basis. The thing is we are not just talking about flight times here. We are talking about crossing time zones, going from JFK to Tokyo and being on the back side of the clock, your circadian rhythm is completely maladjusted, and then being on a 12-day trip and coming

back home. So one of the things that we want to talk about when you talk about when cargo guys do that, long-haul cargo guys, we want to make sure that they get the proper rest and ensuring that occurs.

Now, one of the things that my colleague brought up to me, and he says well, you know, cargo guys, they can rest while the aircraft is being—you are smiling—you know, pilots can rest 4 hours while cargo is being taken off and placed back on. I was a wrench on a flight on a 747 and I can guarantee you that while that cargo was going off and on, I wasn't resting. I was making sure where the cargo was going, making sure it was tied down correctly, preflight planning.

When you talk about flight time, it is when the cockpit door is shut and when the cockpit door opens again. It doesn't account for the preflight of the aircraft, the flight planning and things like that. I wanted to make sure they brought that up as well.

So, you know, in understanding the effect, can you please describe to me why fatigue in your opinion as a professional pilot is so dangerous to aviation?

Mr. CASSIDY. Well, thank you for that question, and I appreciate the leadup to that. I think that the reason fatigue is is because it affects every bit of our function, our ability to process information, our cognitive function, our judgment, our ability to execute a critical, timely—make critical and timely choices, especially when you get faced with abnormal situations.

Now, fortunately, 99 percent of the time that we are flying we don't get placed in a situation where you have to react in a nano-second. However, there are times, both on the ground and in the air, I think it has been pointed out very clearly that a lot of our concern, risk factors, exist with runway incursions, excursions, ground-ops as well, and you have to be on your game. And unfortunately, discussing—you know, having a prescribed rest facility while they are doing the cargo operation, there is a couple of issues at play.

First of all is just the responsibility, especially the pilot command, to make sure the load is done properly, center of gravity, that you understand what the manifest of goods are on the airplane, hazardous materials, et cetera, et cetera. But even if you did have that rest facility, if your body clock was such that it just was telling itself it is just simply not time to sleep, you may be in that rest facility but you will probably be staring at the ceiling for 4 hours just begging your body to sleep, otherwise known as window of circadian high and low. Your body travels in certain sleep cycles. Data speaks to the fact that a prescribed matrix which takes into account your start time for the day, the finish time for the day, the number of time zones that you skip, and as well as the number of operations that you have, are all very important in factoring in what the safest, sanest way to deal with rest requirements are.

Mr. CRAVAACK. Thank you, Captain.

Mr. Fortner, I am sorry, did I say that correctly? I am an old wrench on a 747 and coming out of Singapore on our way to Bangkok we had a number four engine fire uncontrollable, and the reason why is because the mechanic in Singapore put a wrong starter on the engine. Foreign repair facilities are a big concern of mine

to make sure that we have proper maintenance going on in foreign repair facilities.

What is your main comment on that and making sure that we have the right mechanics doing the right things?

Mr. FORTNER. Well, when it comes to an end registered aircraft, a U.S. registered aircraft, regardless of where the maintenance is being done, it is being done with the same rules, regulations, maintenance practices and data no matter where it is at. So along the lines of the differences between a foreign and domestic repair station, there should not be any difference.

Mr. CRAVAACK. Who makes sure, I know I am over, but who makes sure that that is in fact occurring? Who is spot checking? The people that are spot checking, do they have the people available to ensure that that occurs?

Mr. FORTNER. Again, being just a simple small U.S. domestic repair station, I am speaking a little bit out of my full realm of knowledge. But that being said, I do have full faith that with the training that is being done over there and that is required by U.S. law, that they undergo the same training that we do here. The oversight is the same.

That is not to say that maintenance mistakes don't happen, but I don't believe that they are any more likely here versus there. That is part of the reason why we have so many redundancies and checks.

Mr. CRAVAACK. OK. Great. Super. I appreciate that testimony. Thank you very much. I appreciate the chair's indulgence, and I yield back.

Mr. PETRI. Thank you. Mr. Lankford.

Mr. LANKFORD. Thank you. I actually want to pick up on what Chip Cravaack was just talking about just now about foreign repair stations as well.

What percentage do you think, and anyone can answer this, but obviously, Mr. Fortner, I think this would be closer to the center of your wheelhouse on it. What percentage do you think of maintenance that we have, that is scheduled maintenance, not just a, hey, the aircraft is parked here for a few minutes. Let's check this out while we are here transition. We have got a problem before we before we take the next leg scheduled, maintenance and repair is done internationally versus domestically at this point for our domestic airlines?

Mr. FORTNER. I will be honest with you, I really do not have an answer to that question. It is beyond my scope of knowledge.

Mr. LANKFORD. Does anyone have a perspective on that or a guess?

Mr. HENDRICKS. Congressman, I am not sure I can answer directly, but I can say that the example that Congressman Cravaack gave about 747s, there are no facilities in the United States that can perform heavy maintenance on 747s. We must take these aircraft overseas to have this type of maintenance action performed on them. These are very expensive capital assets that our airlines own and they are very highly motivated to assure that the quality of the repairs and the overhauls is very high.

Speaking about foreign repair station ratios, if you will, I would say that it is a net positive trade balance with repair stations, com-

paring what we bring into the U.S. compared to what we conduct outside the U.S., to the tune of over \$2 billion.

Mr. LANKFORD. Right, because of the sale of our aircraft, the initial construction and sale of the aircraft going out now obviously to be repaired. Why is it, why do we have, for instance, no facilities domestically for the heavy-duty repair for a 747?

Mr. HENDRICKS. I don't have a good answer for you. I am not sure if it was economically driven or just facility driven. But I can say based on my experience in the airline industry, the quality of this work that is being done is very high and very robust, and that is why airlines continue to do this.

Mr. LANKFORD. OK. Other comments on that? Mr. Fortner.

Mr. FORTNER. Again, as purely a domestic repair station, I would have to agree that when I go to other repair stations, including some foreign ones, the equipment and facilities they have over there and the training and personnel that I have seen and talked to are on par with anything you would see here in the United States.

Mr. LANKFORD. Mr. Fortner, in your testimony you had stated that it has been 4 years since the TSA has given a final repair station security regulation. Do you have any perspective on why, what the delay is on getting that final regulation out there?

Mr. FORTNER. Sure. Actually it is only 4 since they were actually mandated to do it with penalties to the FAA. It really has been 9 years since they were first asked to do it. And, again, I don't work for the TSA, but, again, from speaking with the TSA, my feeling is that it is just a matter of priorities. They were a new governmental agency tasked with a lot of issues, and I think that—

Mr. LANKFORD. So 9 years is not enough time to get that done?

Mr. FORTNER. I think that they had—I think they had more important things. And I agree with them. I honestly don't believe that the issues that they are trying to solve are there. It is really a solution looking for a problem. I mean, most people, they look at a repair station, I think that most public and probably much of Congress thinks of a repair station as a place where you land an airplane and you pull it up to the hangar and they do work on the airplane.

The reality is that most of the repair stations out there are just like mine, which is I am 6 miles from the closest airport. Everything comes to me via UPS and FedEx. The parts come in. They fail on an airplane. They come in, we take them apart, we evaluate them, repair them, put them back together, test them and send them back.

So long lines of security for a facility like ours that has 45 employees, I don't think it is what Congress envisioned that they were looking at when they mandated this rule. So, again, I think the TSA simply had better things to do.

Mr. LANKFORD. OK. So your perception, again, obviously you are not inside TSA, but your perception is they look at it and say this is a silly rule. We have got other things. We will just continue pushing this down.

Do you think it has any impact in the industry, in the repair side, to not have that final rule out there? Just let us do our business, we are going to do a good job?

Mr. FORTNER. I think the only real impact is the fact that you can apply for and receive a foreign repair station certificate. It is kind of ironic that right now industry and the association are pushing for a rule that we don't want, not for the rule itself but to get rid of the penalties that have been imposed.

Mr. LANKFORD. OK. So you can't get a foreign repair certification, is that what you are saying right now, without that?

Mr. FORTNER. That is correct.

Mr. LANKFORD. But more than ever, we are doing repairs internationally?

Mr. FORTNER. Yes.

Mr. LANKFORD. But we just can't add new places. You have pre-existing. So basically this limits competition internationally, that you can't add new places. The existing ones just pay the penalty. How does that work?

Mr. FORTNER. You cannot add existing foreign repair stations, but the U.S. regulated certificated foreign repair stations can continue to do business. Does that answer your question?

Mr. LANKFORD. I think. Do you want to try to clarify that a little more? So we are not adding new entities, we just have the same existing ones.

Mr. FORTNER. That is correct.

Mr. LANKFORD. At this point. So if we had the rule, then we can increase competition for this. If we don't add the rule, then it stays as it is?

Mr. FORTNER. Well, I think that competition is—you know it is a global market right now.

Mr. LANKFORD. Sure.

Mr. FORTNER. I think that I wouldn't—again, as a purely domestic repair station, I don't look at this as competition as much as equalizing the playing field for everybody. I think that there is a lot of companies out there that are U.S. that would like the ability to open a foreign repair station facility, because there is a demand and there is a market for it. That does not necessarily mean that you going to be taking work from a domestic carrier here. There is just work over there to be had.

Mr. LANKFORD. Thank you. I yield back.

Mr. PETRI. Thank you.

Mr. Fortner, as long as you are here, before we adjourn, it is my understanding that the U.S. repair station industry does not have a high public visibility, but it does employ some nearly 300,000, 275,000 people in the United States and contributes nearly \$40 billion a year to our economy.

We have been talking in this hearing about safety. How do you strike the right balance or could you comment on any advice on how we could strike the right balance between appropriate safety regulations and oversight and over regulation that could end up being detrimental to people who are employed by this industry and who benefit from it?

Mr. FORTNER. I think probably first and foremost, new regulation are not always good and not always bad. The security rule is a good example of one where it is not necessarily a bad regulation as much as I think it is an unneeded regulation.

Personally, what I would prefer to see is more resources put into what we already have, more inspectors, FAA inspectors out there to be able to do their jobs. What we see more than anything else is the lack of resources given to the people to do their job currently. I think that is one of the biggest issues that we face right now along the lines of safety and security for the repair station side.

Mr. PETRI. Thank you. Mr. Costello has one comment.

Mr. COSTELLO. Mr. Chairman, I really don't have a question, but my friend from Oklahoma, in asking the question about foreign repair stations, we have, members of this subcommittee have visited a number of foreign repair stations as well as domestic repair stations and my personal observation is some are better than others. But one of the things that concerns me the most is we had—when Mr. Sabatini testified before this subcommittee a few years ago, I asked him the question, how many safety inspectors do we have working at the FAA in all of Asia and Europe to inspect the foreign repair stations? And he said we had eight at the time. And I said how many repair stations do we have? And he gave us the number of repair stations. And I asked him the question, can you attest to the fact that these inspectors actually physically go in and inspect the repair stations once a year? And he said no. And I said once every 2 or 3 years? And he said he couldn't really tell us that.

So I would agree that we need to put more resources into safety inspectors, both domestically and also internationally. And I would also say to the gentleman from Oklahoma, as he knows, because I think he has been to the American Airlines repair facility, they run an excellent repair facility.

But the bottom line is the bottom line, and it comes down to money. In many cases where if you have an airline, a domestic airline in the United States flying empty airplanes to San Salvador to have them repaired and to bring them back empty, then you know that they are paying less to have them repaired in San Salvador than they are in the United States. So that is my personal conclusion.

But I would agree with you that we should have more resources going to inspectors to make certain that we have the highest level of inspections and safety, both at domestic and international repair stations.

With that, Mr. Chairman—

Mr. LANKFORD. Would the gentleman yield?

Mr. COSTELLO. I would be happy to yield.

Mr. LANKFORD. And that is my concern as well. My question was really about if there is something that we have done, as you said, a regulation in search of a problem, if there is some regulation that has been added, if there is some system that has been put in place that is outdated and outmoded, that is pushing this essential business overseas.

We do have an excellent maintenance facility in Tulsa, Oklahoma, that deals with American Airlines. There are a lot of great people that work there, that work very hard, are very diligent and very particular about their aircraft. I am sure there are people internationally that are also particular about their aircraft as well. I am not doubting that, just to say this can be done domestically. If there is something that we are doing that is encouraging it to

go domestic, that would be helpful for us to know. Because it would help us with jobs and progressing with the industry and the relationships with the airlines to the local communities if they would do it locally.

There is no substitute to having a worker that lives in the district for having a tenacious commitment to the airline as well. That is different when the work is done internationally, and it is separate from it.

Thank you for that. I yield back.

Mr. COSTELLO. I thank the gentleman and thank our witnesses and yield back the balance of my time.

Mr. PETRI. Thank you. It is my understanding our colleague Mr. Shuster has some additional questions, but we will ask him to submit them for the record and that you respond and we will hold the record open for that.

Thank you all very much. The hearing is adjourned.

[Whereupon, at 11:30 a.m., the subcommittee was adjourned.]

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Statement for the Record
 Congresswoman Eddie Bernice Johnson
 House Committee on Transportation & Infrastructure
 Subcommittee on Aviation
 Wednesday, April 25, 2012
 Hearing on
 Oversight of Aviation Safety

The United States' aviation system is the safest in the world, and with the recent passage of the FAA Reauthorization, we will advance new technologies, reduce errors and improve our aviation system. Through NextGen's satellite-based traffic management, we will be able to address increased congestion in our Nation's skies, while improving safety and reducing the environmental footprint of air transport.

In 2011, there were no commercial passenger fatalities in the United States, and on any given day FAA's air traffic control will handle roughly 28,537 commercial flights. While this record is impressive, we remember the 2009 tragedy of Colgan Air Flight 3407 that crashed in Clarence Center, New York, in which 50 people lost their lives.

One accident is too many, and we must constantly strive to make our skies safer. I am concerned that recent FAA data indicates a rise in operation errors, and welcome the testimony of the witnesses. It is my understanding that the rise in reported errors is due in large part to changes made to the reporting process, and I applaud the FAA's introduction of a voluntary, non-punitive safety reporting

program. FAA employees should not fear the threats of reprisal when they report lapses in safety.

I thank Chairman Petri and Ranking Member Costello for holding this critical hearing on aviation safety, and welcome the opportunity to increase the safety of our aviation system.

STATEMENT OF MARGARET GILLIGAN, ASSOCIATE ADMINISTRATOR FOR AVIATION SAFETY, FEDERAL AVIATION ADMINISTRATION, AND DAVID GRIZZLE, CHIEF OPERATING OFFICER FOR AIR TRAFFIC, BEFORE THE HOUSE COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE, SUBCOMMITTEE ON AVIATION ON A REVIEW OF AVIATION SAFETY IN THE UNITED STATES. APRIL 25, 2012.

Chairman Petri, Congressman Costello, Members of the Subcommittee:

Thank you for inviting us here today to update the Subcommittee on the Federal Aviation Administration's (FAA's) progress in implementing the safety enhancement initiatives in the Airline Safety and Federal Aviation Administration Extension Act of 2010 (Act), and other operational issues related to air traffic management.

First, we would like to begin with our progress on the initiatives in the 2010 Act. Over the past three years, the aviation industry, as with many other industries, has faced some tough economic challenges. During this period, we have remained vigilant in our oversight responsibilities to ensure that we continue to have the safest aviation system in the world, while also advancing aviation for the future. The provisions in the 2010 Act helped facilitate several of these major advancements, such as new flight, duty and rest requirements for pilots, and issuing a proposal to require air carriers to implement safety management systems. Although some of the provisions have taken longer than Congress anticipated under the provisions of the Act, we have made significant strides in accomplishing many of the objectives and I am here today to outline this progress for you.

The first area we would like to highlight for you is on pilot fatigue, which was identified as a top priority in the FAA's 2009 call to action. The FAA completed the final rule, which uses the latest fatigue science to address cumulative fatigue and how flight schedules affect the body's

24-hour clock in calculating appropriate duty periods for pilots. Flight duty periods under the new rule are more comprehensive and include flight-related activities such as time spent in training in an aircraft simulator, and standing by on-call for flights at an airport. These duties are part of the workday, contribute to fatigue, and must be counted as part of the core job of flying the airplane. We also took into account that off-duty activities, such as playing golf or commuting, have an impact on fatigue. To address this, the final rule establishes new fitness for duty requirements that serve as a reminder to both airlines and pilots of their professional responsibilities to ensure that rest periods are used for what they are intended--to rest.

In regard to commuting, the National Academy of Sciences (NAS) completed its study on pilot commuting in July 2011. The work by the NAS represents the most recent effort to determine whether there is a link between commuting and safety. The NAS panel identified neither a correlation between pilot commuting and safety nor a unique risk to aviation safety. However, the NAS also indicated that it was unable to find enough data to appropriately determine the relationship between commuting and safety. Based on the NAS study, and the National Transportation Safety Board's recommendation for the FAA to address commuting, the Department of Transportation Inspector General has recommended that we survey the data in order to conduct a proper analysis on what impact commuting may have on fatigue. We have committed to reviewing the available data and reporting to the Inspector General this fall on whether a further data collection effort would be warranted.

The next area we would like to address for you is our progress on developing requirements for air carriers to implement safety management systems. The FAA met the statutory deadline in the 2010 Act and issued a rulemaking proposal on October 29, 2010. It was

published in the Federal Register on November 5, 2010 and the comment period closed March 7, 2011. The FAA and industry recognize SMS as a holistic approach to safety that allows for trend spotting to help identify possible safety problems and correct them before they lead to accidents or incidents. We know that SMS is not a substitute for FAA oversight, inspection, and audits of air carriers to ensure compliance with existing regulations and will continue to ensure our responsibilities in these areas are met. SMS would allow us, however, to take a more proactive approach to focus on risk prediction and mitigation strategies in order to tailor our oversight resources in a more effective manner.

In the areas of pilot qualification and training requirements, the FAA has initiated two rulemaking projects to address the pilot training and experience requirements highlighted in the 2010 Act. The first rulemaking project, Qualification, Service, and Use of Crewmembers and Aircraft Dispatchers, is a comprehensive proposal that would revise the current qualification and training requirements for pilots, flight attendants and aircraft dispatchers. We first proposed this revision in 2009, one month prior to the Continental Flight 3407 accident. The FAA received over 3,000 pages of comments in response to this proposal. Following the accident, the National Transportation Safety Board issued several recommendations related to training requirements for air carrier pilots. The 2010 Act mandated some additional training requirements as well. In order to fully consider the comments, address many of the NTSB's recommendations resulting from the accident of Flight 3407, and incorporate the mandates of the Act, the FAA issued a supplemental proposal to permit interested parties to comment on the new requirements. The supplemental proposal was issued on May 20, 2011 and the comment period closed on September 19, 2011. The FAA is actively reviewing the comments to develop a final rule that addresses these training enhancements.

The second rulemaking proposal would substantially raise the qualification requirements for first officers (sometimes referred to as “co-pilots”) who fly for U.S. passenger and cargo airlines, consistent with the mandate in the 2010 Act. The proposed rule would require first officers to hold an Airline Transport Pilot (ATP) certificate, requiring 1,500 hours of pilot flight time in most cases. Currently, these pilots are required to have a commercial pilot certificate, which requires only 250 hours of flight time. Some other highlights of the proposed rule include requiring pilots to have a minimum of 1,000 flight hours as a pilot in air carrier operations that require an ATP prior to serving as a captain for a U.S. airline; enhanced training requirements for an ATP certificate, including 50 hours of multi-engine flight experience; and completion of a new FAA-approved training program.

In the 2010 Act, Congress clearly acknowledged that the measurement of experience in determining when an individual may be ready to serve is not limited solely to the number of hours flown. Rather, education and other commercial flying experience must also be considered. Consistent with the requirements of the 2010 Act, this proposal also allows pilots with fewer than 1,500 hours of flight time to apply for an ATP certificate with restricted privileges. As proposed, this certificate would only be issued to graduates of a four-year baccalaureate aviation degree program with 1,000 hours of flight time, provided they have obtained a commercial pilot certificate and instrument rating from a pilot school affiliated with the university or college. Former military pilots with 750 hours of flight time may also qualify for this restricted ATP certificate. Pilots with this restricted certificate would only be able to serve as first officers for U.S. airlines. They could not use it to serve as a captain in any commercial flying operation that requires an ATP, nor use it to teach other pilots. Pilots seeking a restricted ATP would be tested to the same standard required for full ATP certificates, and they would be required to have the

equivalent minimum instrument time and night time flight hours as a full ATP certificate would require. The comment period for this proposed rulemaking closes April 30, 2012, and we will work diligently to develop a final rule that addresses the safety initiatives required in the 2010 Act.

Finally, we would like to address two areas of the 2010 Act that have presented some additional challenges for the FAA. The first concerns the area of pilot professionalism. We, and industry, recognize the need to continuously improve professional standards to improve flightdeck discipline. On September 15, 2010, the FAA established an Aviation Rulemaking Committee to develop recommendations on appropriate leadership training and professional development requirements for pilots. That group of experts delivered its recommendations in November 2010, and the FAA has considered them in developing a rule to address the mentoring mandate in the 2010 Act. We have not met the statutory deadline for this proposal because it has been difficult to draft a proposal that appropriately balances effectiveness and resulting benefits, with regulatory burden and cost, as we are required to do.

The second area concerns the requirements in the 2010 Act for the FAA to develop a centralized database of pilot records, which would include a pilot's training and experience history. While we have several major milestones in place and anticipate the database proof-of-concept by August 2012, there are many technical challenges. Some of these challenges include defining requirements for the records to be reported, and integrating thousands of records kept on all forms of media, from paper to microfiche to various automated records.

These initiatives are very complicated, and in some cases, very expensive. As the rulemakings progress, we are constantly evaluating how these provisions may best be leveraged to improve safety, while ensuring that the aggregate costs to society are not greater than these benefits as we are required to do. We remain committed to addressing these safety enhancements while continuing with our daily oversight responsibilities, and satisfying the requirements recently set forth in the FAA Modernization and Reform Act of 2012. In the 2012 Act, we have identified approximately 20 required rulemakings, and up to as many as 10 additional projects that will likely result in rulemaking, in addition to the 2010 Act's rulemaking requirements. Meeting the intent of Congress as anticipated under these Acts, while complying with our other requirements in conducting rulemaking, may present some challenges. However, as we have demonstrated with the provisions of the 2010 Act, our dedicated safety-minded aviation professionals will continue to aggressively work on these issues, while they also continue to perform inspections, analyze data, look for areas for improvement, and work with air carriers to enhance aviation safety.

We would also like to address the advancements we have made within our air traffic safety programs. The FAA has embraced a culture change in air traffic safety. As catastrophic events become extremely rare, the new approach focuses on risk, system design and the management of behavioral choices rather than forensics.

We have put in place an Air Traffic Management System that will provide more insight into the types of events that occur in the National Airspace System that could affect safety. The goal is to identify and mitigate risks early before an accident occurs. It is important to look at precursors because they provide a window into how the safety system is working and they help identify risks.

One area we have targeted is occurrence reporting within the FAA Air Traffic Organization. Occurrence reporting, which is now mandatory, emphasizes the responsibility of all FAA employees involved with air traffic services to report suspected unsafe air traffic occurrences. This gives the organization an opportunity to collect safety information to determine why adverse safety events happen and to develop interventions based on quantifiable data. The objective is to collect enough information to identify system risks, make long term corrections and prevent adverse safety events. We have made reporting this information easier by establishing a common software platform for all facilities which will also facilitate analysis now that it is in a digital format.

To collect and analyze this information, in 2010, the Air Traffic Organization began tracking losses of separation electronically, which include those errors commonly referred to as operational errors or pilot deviations. The tool that enables this new collection of data is known as the Traffic Analysis and Review Program (TARP) and is installed at all terminal radar facilities. TARP is an analytical tool available to local facilities and quality assurance staff to facilitate the detection of trends and development of corrective action. Quality assurance staff has also begun centralized processing of TARP alerts collected from over 20 facilities. These facilities are capable of collecting alerts 24 hours a day, 7 days a week, and we are adding new facilities operating at this level every month. Our goal is to be able to process alerts from all facilities by September 2012.

Another tool that has had an impact on our cultural change is our Air Traffic Safety Action Program (ATSAP). ATSAP is a confidential, non-punitive reporting program that empowers FAA employees to play a direct role in safety. Using this tool, we have seen an

increase in safety reporting that has produced a wealth of information to help the FAA identify potential risks in the system and take swift action to address them.

The FAA is also continuing efforts to improve safety on the nation's airport runways. The FAA is working with all stakeholders on innovative programs and techniques to reduce the number and severity of surface incidents. Some of the runway incursion prevention actions include the deployment of technology, better communication and instructions such as line-up-and- wait, explicit taxi instructions for runway crossings, and deploying local runway safety action teams throughout the country. These efforts have contributed to a reduction in total runway incursions from 1,009 runway incursions in FY 2008 to 954 in FY 2011.

As the results of these programs have demonstrated, we have embraced the necessary cultural changes to allow us to identify and mitigate risks early. We remain committed to empowering our employees to be proactive and providing them with the tools they need to play a direct role in the safety of the National Airspace System.

Chairman Petri, Congressman Costello, Members of the Subcommittee, this concludes our prepared remarks. We would be happy to answer any questions that you might have.



U.S. House of Representatives
Committee on Transportation and Infrastructure

John L. Mica
Chairman

Washington, DC 20515

Rick J. Rahall, III
Ranking Member

May 4, 2012

James W. Coon II, Chief of Staff

James H. Zoia, Democrat Chief of Staff

The Honorable Margaret Gilligan
Associate Administrator for Aviation Safety
Federal Aviation Administration
800 Independence Avenue S.W.
Washington, D.C. 20591

Dear Associate Administrator Gilligan:

Thank you for your testimony before the House Transportation and Infrastructure Committee's Subcommittee on Aviation on April 25, 2012. I appreciated the opportunity to hear about the Federal Aviation Administration's safety initiatives as well as the responses you provided to questions during the hearing.

Due to time constraints during the hearing, I have additional questions and would appreciate a response to each question for the hearing record:

- (1) Does the Federal Aviation Administration (FAA) believe that requiring air carriers to adopt Flight Operations Quality Assurance (FOQA) programs could improve safety if information yielded by the programs would be subject to the same protections from (i) public disclosure and (ii) use by the FAA for enforcement purposes that currently apply to voluntarily-furnished information?
- (2) Could the applicable laws be strengthened so that information furnished to the FAA through any future mandatory FOQA program would clearly be subject to the same protections that apply to voluntarily-furnished information?

The Honorable Margaret Gilligan
May 4, 2012
Page 2

Again, thank you for your testimony before the Subcommittee, and I look forward to your response.

Kind regards,

A handwritten signature in black ink that reads "Jerry Costello". The signature is written in a cursive style with a long horizontal stroke at the end.

JERRY F. COSTELLO
Ranking Member
Subcommittee on Aviation

AVS
5/22/2012

Rep Costello QFRs

1. Does the FAA believe that requiring air carriers to adopt FOQA programs could improve safety if information yielded by the programs would be subject to the same protections from public disclosure and (ii) use by the FAA for enforcement purposes that currently apply to voluntarily-furnished information?

ANSWER: Virtually all major passenger-carrying and a significant number of regional airlines have already voluntarily established FAA-approved FOQA programs. The FAA believes that mandating FOQA would not only fail to result in an enhanced benefit to public safety, but could actually diminish the effectiveness of FOQA programs in place.

The establishment of regulations applicable to the entire range of intended regulated entities, in this case Part121 airlines, would necessarily establish requirements. Current FAA-approved FOQA programs monitor many more event parameters than could reasonably be required under a broad-based regulation. Alternatively, if the FAA did not require specific event parameters, it is not certain the resulting programs would provide safety benefits equal to those provided by the voluntary programs.

2. Could the applicable laws be strengthened so that information furnished to the FAA through any future mandatory FOQA program would clearly be subject to the same protections that apply to voluntarily-furnished information?

ANSWER: Congress could address concerns about public release of mandated programs if it amended public law to specifically exempt FOQA from disclosure. Among the main justifications for the existing exemption for FOQA was that the information would be provided voluntarily and not otherwise available. If the data were not provided, the safety benefits to the public could not be realized. That justification would not apply if the programs were required. In addition, if required it is likely these programs would be reduced to minimum regulatory requirements, thereby negatively impacting their scope, detail, and effectiveness compared to current voluntary programs.

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

For Release on Delivery
Expected at
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The State of Aviation Safety and FAA's Oversight of the National Airspace System

**Statement of
Jeffrey B. Guzzetti
Assistant Inspector General
for Aviation and Special Programs
U.S. Department of Transportation**



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 reported⁴ were unknown.⁵ Instead, our work shows that the

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 centers⁸ increased by approximately 39 percent, from 353 errors to 489 errors. This increase is concerning because these types of facilities have had an automated system⁹ 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 errors¹¹ 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 strategy¹² to mitigate separation losses that

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 121²⁰ 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 programs²¹ 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 reported²⁵ 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, and the oversight of repair stations and manufacturers. Finally, as FAA moves forward with implementing provisions of the Airline Safety Act, it must continue to promote carriers' use of voluntary safety programs 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 Report	1/30/2011	Met
			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.

United States Government Accountability Office

GAO

Testimony
Before the Subcommittee on Aviation,
Committee on Transportation and
Infrastructure, House of Representatives

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AVIATION SAFETY

FAA Is Taking Steps to Improve Data, but Challenges for Managing Safety Risks Remain

Statement of Gerald L. Dillingham, Ph.D., Director
Physical Infrastructure Issues



April 25, 2012

AVIATION SAFETY

FAA Is Taking Steps to Improve Data, but Challenges for Managing Safety Risks Remain



Highlights of GAO-12-660T, a testimony before the Subcommittee on Aviation, Committee on Transportation and Infrastructure, House of Representatives

Why GAO Did This Study

The U.S. aviation system is one of the safest in the world, but fatal accidents, though rare, continue to occur. As a result of recent accidents and related NTSB findings, FAA announced a Call to Action Plan in June 2009 to, among other things, increase air carrier participation in voluntary safety programs. In 2010, Congress passed the Airline Safety and Federal Aviation Administration Extension Act, which, in part, called for FAA to better manage safety risks. As a result, FAA developed a concerted strategy to implement new safety programs, including increasing air carrier use of voluntary safety programs and advancing the use of SMS.

FAA is implementing SMS—a data-driven, risk-based safety approach that involves establishing the necessary organizational structures, accountabilities, policies, and procedures. The implementation of SMS heightens the importance of obtaining and using high-quality aviation safety data.

This statement is based on GAO's previous work and focuses on (1) how FAA uses data to manage safety risks, (2) how FAA ensures it has quality data to manage risk, and (3) the challenges FAA faces in using data to better manage safety risks.

What GAO Recommends

GAO has made a number of recommendations to address data quality weaknesses. FAA concurred with most of these recommendations and in some cases has taken steps toward addressing them.

View GAO-12-660T. For more information, contact Gerald L. Dillingham, Ph.D. at (202) 512-2834 or dillinghamg@gao.gov.

What GAO Found

The Federal Aviation Administration (FAA) uses data reactively and proactively to prevent accidents and manage safety risks. For instance, since 1998, FAA has partnered with the airline industry to identify precursors and contributing factors, and ensure that efforts to improve safety focus on the most prevalent categories of accidents and incidents, as part of its adoption of Safety Management Systems (SMS), it is shifting to a proactive approach in which it analyzes data to identify and mitigate risks before they result in accidents.

Implementing systems and processes that capture accurate and complete data are critical for FAA to determine the magnitude of safety issues, assess their potential impacts, identify their root causes, and effectively address and mitigate them. Though FAA has put in place data quality controls, weaknesses remain in some areas. In particular, several FAA databases GAO reviewed in 2010 did not have a managerial review process prior to data entry—an important control that helps ensure data accuracy and completeness. In response to GAO's recommendations, FAA is taking steps to address its data weaknesses, but vulnerabilities that remain potentially limit the data's usefulness for safety analysis.

FAA also continues to experience data-related challenges, including limitations with the analysis it conducts and the data it collects and the absence of data in some areas. For example, FAA does not have a process to track or assess runway excursions, which occur when an aircraft veers off or overruns a runway. Runway excursions can be as dangerous as runway incursions, which occur when an unauthorized aircraft, vehicle, or person is on a runway, and FAA has tracked runway incursions for years. GAO previously recommended that FAA develop and implement plans to track and assess runway excursions. FAA agreed and is currently developing a program to collect and analyze runway excursion data and is drafting an order to set out the definitions and risk assessment processes for categorizing and analyzing the data. However, according to GAO's review of FAA's plans, it will be several years before FAA has obtained enough detailed information about these incidents to assess risks. Similarly, GAO has found that efforts to address the occurrence of safety incidents in ramp areas were hindered by the lack of data on the nature, extent, and cost of such incidents and accidents. FAA collects no comprehensive data on incidents in ramp areas, and the National Transportation Safety Board (NTSB) does not routinely collect data on ramp accidents unless they result in serious injury or substantial aircraft damage. FAA's lack of ramp incident data means that FAA is unable to assess the risk of catastrophic accidents in this area. FAA agreed with GAO's recommendation to extend oversight to ramp areas but noted that it already provides oversight through its oversight of airlines. FAA expects to further enhance that oversight through its proposed ruling to require airports with air carrier operations to establish a safety management system.

Chairman Petri, Ranking Member Costello, and Members of the Subcommittee:

Thank you for the opportunity to testify before you today on the safety of U.S. commercial aviation. The U.S. aviation system is one of the safest in the world, but fatal accidents, though rare, continue to occur. The last fatal commercial aviation accident occurred in Buffalo, New York, on February 12, 2009, when 50 people perished in a Colgan Air crash. In response to this accident, and National Transportation Safety Board (NTSB) findings that pilot training and lack of qualifications were potentially contributing factors, the Federal Aviation Administration (FAA) began a Call to Action Plan in June 2009 to, among other things, increase air carrier participation in voluntary safety programs. In 2010, Congress passed the Airline Safety and Federal Aviation Administration Extension Act (Airline Safety Act),¹ which, in part, called for FAA to better manage safety risks. As a result, FAA developed a concerted strategy to implement new safety programs required by the Airline Safety Act, including establishing better processes for managing safety risks and advancing Safety Management Systems (SMS).²

SMS is an integrated, data-driven approach to managing safety risk that involves establishing the necessary organizational structures, accountabilities, policies, and procedures to enhance safety. SMS introduces an evolutionary structured process in system safety and safety management that obligates organizations to manage safety with the same level of priority that other core business processes are managed. This applies to both internal FAA operations and external aviation industry organizations. The International Civil Aviation Organization (ICAO), of which the U.S. is a member state, requires SMS for the management of safety risk in air operations, maintenance, air traffic services, and airports. SMS is becoming a worldwide standard throughout the aviation industry, and SMS concepts have generated widespread support as an effective approach that can deliver safety benefits. The implementation of SMS heightens the importance of obtaining and using high-quality aviation safety data. Further, according to a 2008 independent review team

¹Pub. L. No. 111-216, 124 Stat. 2348 (2010).

²We are currently conducting a study of FAA's implementation of SMS as well as its oversight of the industry's SMS implementation efforts; we expect to issue a report in September of this year.

chartered by the Secretary of Transportation,³ as commercial aviation accidents have become increasingly rare, information that can be used to help identify accident and incident precursors has become more critical for accident prevention.

My testimony today focuses on (1) how FAA uses data to manage safety risks, (2) how FAA ensures it has quality data to manage risk, and (3) the challenges FAA faces in using data to better manage safety risks. This statement is based on our previous work, including our May 2010 report on aviation data quality, our October 2011 report on terminal area safety, and our November 2011 report and March 2012 statement for the record on initial pilot training.⁴ We updated the information from these reports—such as the status of our recommendations and programs or initiatives FAA planned to implement—as necessary during March and April 2012. We also conferred with FAA officials on the new information included in this statement. The GAO publications cited in this statement contain detailed explanations of the methods used to conduct our work, which we performed in accordance with generally accepted government auditing standards.

³Independent Review Team, *Managing Risks in Civil Aviation: A Review of the FAA's Approach to Safety* (Washington, D.C.: Sept. 2, 2008). The team was chartered to assess FAA's safety culture and approach to safety management.

⁴See GAO, *Aviation Safety: Improved Data Quality and Analysis Capabilities Are Needed as FAA Plans a Risk-Based Approach to Safety Oversight*, GAO-10-414 (Washington, D.C.: May 6, 2010); *Aviation Safety: Enhanced Oversight and Improved Availability of Risk-Based Data Could Further Improve Safety*, GAO-12-24 (Washington, D.C.: Oct. 5, 2011); *Initial Pilot Training: Better Management Controls Are Needed to Improve FAA Oversight*, GAO-12-117 (Washington, D.C.: Nov. 4, 2011); and *Aviation Safety: FAA Has an Opportunity to Enhance Safety and Improve Oversight of Initial Pilot Training*, GAO-12-537T (Washington, D.C.: Mar. 20, 2012).

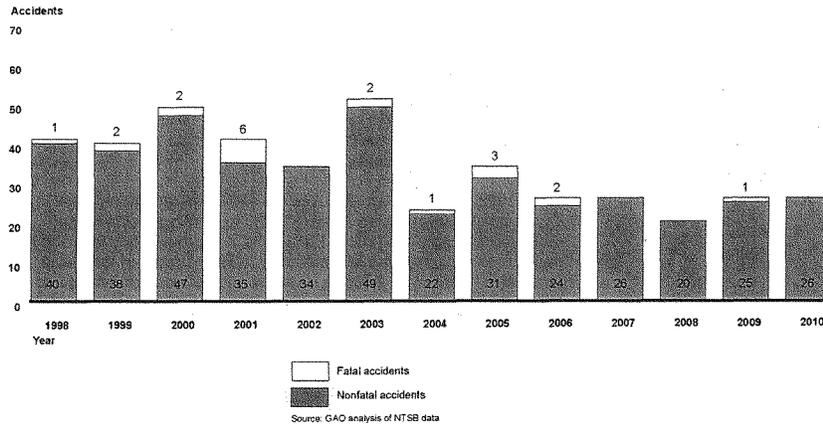
FAA Uses Reactive and Proactive Data Analysis to Prevent Accidents and Manage Risk

For decades, FAA, other federal regulators, and the aviation industry have used data in a reactive fashion—that is, to identify the causes of aviation accidents and incidents⁵ and take actions to prevent their recurrence. Aviation accident data are collected by NTSB, but FAA also collects some accident data and uses various databases and voluntary reporting programs to collect incident data, such as for runway incursions—the unauthorized presence of an aircraft, vehicle, or person on a runway. FAA also gathers and analyzes data through its inspection and certification programs to ensure industry compliance with safety regulations. (App. I provides more information on the databases discussed in this statement.)

Since 1998, FAA has partnered with the airline industry through the Commercial Aviation Safety Team (CAST) to identify precursors and contributing factors and ensure that efforts to improve safety focus on the most prevalent categories of accidents. CAST has reduced the risk in commercial aviation by focusing on areas such as controlled flight into terrain, loss of control, and runway incursions. CAST analyzes accident and incident data to identify precipitating conditions and causes, and then formulates an intervention strategy designed to reduce the likelihood of a recurrence. According to CAST, its work—along with new aircraft, regulations, and other activities—reduced the commercial aviation fatal accident rate by 83 percent from 1998 to 2008 and is an important aspect of FAA's efforts to improve aviation safety by sharing and analyzing data. (Fig. 1 illustrates the number of fatal and nonfatal commercial air carrier accidents from 1998 through 2010.)

⁵An aviation accident, as defined by 49 C.F.R. § 830.2, occurs when in the course of the operation of an aircraft—between the time anyone boards with intention of flight and until the last person disembarks—any person suffers death or serious injury, or the aircraft receives substantial damage. An aviation incident occurs when an aircraft encounters a safety hazard, or potential safety hazard, yet is not classified as an accident due to a lesser degree of injury or damage.

Figure 1: Number of Commercial Air Carrier Accidents, 1998-2010



Source: GAO analysis of NTSB data

Note: Fatal accidents include those aircraft involved in the September 11, 2001, terrorist attacks. Data for 2010 are considered preliminary.

Similarly, FAA analyzes data on incidents, such as those where there is a risk of a catastrophic accident. For example, data on runway incursions, other surface incidents, and airborne incidents⁶ are collected at airports that have air traffic control towers. FAA analyzes those data to categorize incidents according to the actions or inactions of air traffic controllers, pilots, or others, such as pedestrians or vehicle operators, and determines the severity of those incidents. These data are then used to assess the root causes of incidents to identify potential remedies. Using this process, FAA has taken steps to improve safety in the terminal area since 2007 and has both reduced the number of serious runway incursions—where collisions are narrowly avoided or where there was a

⁶ Airborne incidents could include a pilot leveling off at an incorrect altitude and flying too closely to another aircraft or a failure to coordinate between air traffic control facilities as an aircraft approaches an airport.

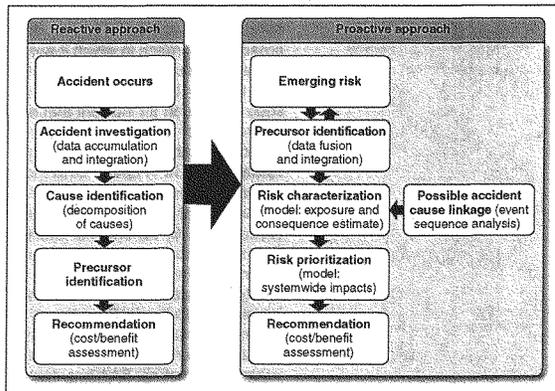
significant potential for a collision—and undertaken successful efforts to increase the reporting of incidents.

Although FAA will continue using data in a reactive manner to understand the causes of accidents and incidents, it is shifting emphasis to a proactive approach in which it analyzes data to identify and mitigate risks to prevent future accidents as part of its adoption of SMS. As a result, data that can be used to help identify accident and incident precursors—such as data on an incident that is voluntarily reported by pilots, air traffic controllers, or others to FAA or air carriers—have become more critical for accident prevention, according to the independent review of FAA's safety oversight in 2008.⁷ CAST is also now moving beyond the forensic approach of examining past accident data to a more proactive approach that will focus on risk prediction and mitigation strategies and aims to reduce the U.S. commercial fatality risk by 50 percent from 2010 to 2025. FAA's effort to integrate aviation safety data—the Aviation Safety Information Analysis and Sharing (ASIAS) system, which connects 46 safety databases across the industry and has 45 participating airlines—is integrated into the CAST process. ASIAS enables better safety information management and data sharing as it proactively extracts from public and non-public data sources, including accidents, incidents, and voluntary reporting. FAA has demonstrated the potential of using integrated safety data to better understand the causes of certain safety events and identify mitigating strategies. For example, FAA fused data from government and industry sources to identify underlying factors contributing to numerous nuisance warnings pilots were receiving from their terrain awareness warning systems (TAWs). By combining all of the data, FAA was able to identify needed changes in the way it handles air traffic as well as improvements in the design of the TAWs software. FAA also plans to use data proactively to model the impact of the Next Generation Air Transportation System (NextGen)⁸ on the safety of the national airspace system, to proactively identify risks that might emerge with the introduction of NextGen changes. Figure 2 illustrates the type of transition FAA plans as the agency shifts its emphasis to a proactive assessment of emerging safety risks.

⁷Independent Review Team, *Managing Risks in Civil Aviation*.

⁸NextGen is a new satellite-based air traffic management system that by 2025 will replace the current radar-based system and is expected to enhance the safety and capacity of the air transport system.

Figure 2: FAA's Emphasis Is Shifting from a Reactive to a Proactive Approach to Data Analysis in Order to Manage Risk



Source: FAA and GAO.

As part of its oversight system for commercial air carriers, FAA collects and analyzes data to ensure that the industry complies with safety regulations. FAA uses the Air Transportation Oversight System (ATOS), a risk-based data-driven system, to oversee maintenance and operations at all air carriers.⁹ Under the ATOS concept, FAA inspectors use data analysis to focus their inspections on areas that pose the greatest risk. ATOS also permits inspectors to shift the focus of their inspections in response to changing conditions within air carriers' operations. In contrast, FAA's oversight program for the remaining operators (i.e., air taxi, general aviation, etc.) focuses on inspectors completing a prescribed number of inspection activities annually and is primarily based on checking operator compliance with regulations.

⁹For more information on ATOS, see Department of Transportation Inspector General, *FAA Needs to Improve Risk Assessment Processes for Its Air Transportation Oversight System* (Dec. 16, 2010).

FAA Has Various Processes in Place to Help Ensure Data Quality

Implementing systems and processes that capture accurate and complete data is critical for FAA to determine the magnitude of safety issues, assess their potential impacts, identify their root causes, and effectively address and mitigate them. As such, FAA has various processes in place to help ensure data quality and is taking steps to address remaining weaknesses. For example, FAA established an agency-wide order on data management that specifies the roles and associated responsibilities for data management within the agency.¹⁰ This order applies to all sharable information from FAA and other sources used to perform the agency's mission.

In accordance with the data management order, FAA's Office of Aviation Safety established a data management framework that includes a four-step process for importing data from other FAA offices and external sources. This process includes

- data acquisition—obtaining information from various data owners,
- data standardization—validating data by comparing a new data set with previous data sets to identify inconsistencies,
- data integration—translating data values into plain English and correcting data errors, and
- data loading—importing data into the agency's own systems.

FAA has furthermore put in place data quality controls that we consider good practices for handling data, although weaknesses remain in some areas. For example, FAA has developed training for users on data systems and restricted access to the data. The FAA databases we reviewed in 2010 also had at least some controls in place to ensure that erroneous data are identified, reported, and corrected. However, several of the databases lacked an important control in that managers do not review the data prior to entry into the system. This quality control is important because it could affect accuracy and completeness.¹¹ FAA has controls in place and is taking steps to address its data weaknesses;

¹⁰FAA Order 1375.1E, *Information/Data Management* (Nov. 16, 2011).

¹¹GAO, *Assessing the Reliability of Computer-Processed Data*, GAO-09-680G (Washington, D.C.: July 2009).

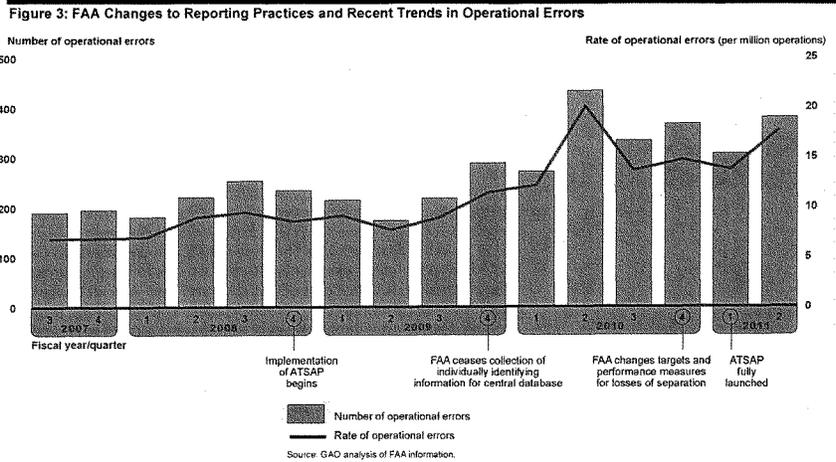
however, vulnerabilities remain that potentially limit the usefulness of FAA's data for some of the safety analyses planned to support SMS. In 2010, we made several recommendations to FAA to help improve and expand its capability to use data for aviation safety oversight. For example, we recommended that FAA extend standard quality controls, as appropriate, to the databases that support aviation safety oversight. Although FAA concurred with our recommendations, it has not fully implemented them.¹²

Data Limitations and Lack of Data Challenge FAA's Ability to Manage Safety Risks

FAA has put in place various quality controls for its data, but it continues to experience data challenges—including limitations with the analysis it conducts and data it collects, as well as the absence of data in some areas. Some of these limitations hinder the agency's ability to comprehensively and accurately assess and manage risk, as seen in the following examples:

- *FAA's changes to reporting policies impact its ability to accurately determine operational error trends.* The rate and number of airborne operational errors—errors made by air traffic controllers—have increased considerably in recent years, with the rate nearly doubling for errors in the terminal area from 2008 to 2011. Multiple changes to reporting policies and processes during this time make it difficult to know the extent to which the recent increases in operational errors are due to more accurate reporting, an increase in the occurrence of safety incidents, or both. For example, FAA removed air traffic controller names from reports in the Air Traffic Quality Assurance (ATQA) database, which may encourage controllers to share more information about incidents. (See fig. 3.) Without determining the potential impact of these policy changes, FAA cannot ensure accurate and consistent measures of operational errors and cannot assess the risks posed over time. FAA believes that these changes likely caused the increases in operational errors but has not yet conducted an analysis to validate the linkage.

¹²GAO-10-414.



Note: Graphic only includes operational errors at air traffic control towers and terminal radar approach control (TRACON) facilities. FAA officials attributed at least some portion of the spike in reported incidents during the second quarter of fiscal year 2010 to approximately 150 events that occurred as a result of the misinterpretation of an arrival waiver at one TRACON facility.

- Incomplete data on operational errors are assessed, making it difficult to account for all potential risk.* Operational errors can be captured in multiple reporting systems. For instance, an air traffic controller's failure to maintain minimum separation between two aircraft—a loss of separation—could be reported to the ATQA database by a supervisor¹³ and will also be captured automatically by airplane tracking technology—the Traffic Analysis and Review Program (TARP)—if it is in use at the relevant facility. However, FAA's current process for analyzing data on losses of separation captured by these systems only assesses those incidents that occur between two or

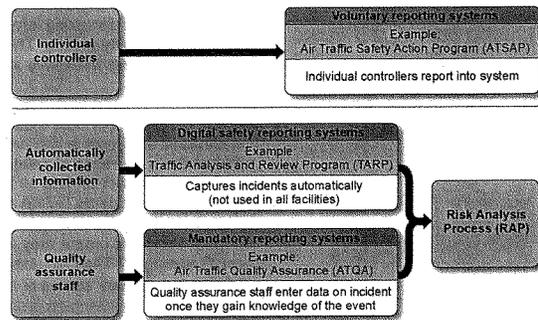
¹³ATQA data may also be recorded by support specialists, managers, and incident investigators.

more radar-tracked aircraft. By excluding incidents such as those that occur between the aircraft and terrain or aircraft and protected airspace, FAA is not considering the systemic risks associated with many other airborne incidents. We recommended last year that FAA expand its current risk assessment process,¹⁴ and FAA responded that it will include these incidents in its risk assessment process before the end of 2013.

- *Lack of coordination among data systems may affect FAA's ability to conduct comprehensive data analyses.* As previously mentioned, multiple programs and systems capture safety data. Some of these programs—including the Air Traffic Safety Action Program (ATSAP), ATQA, and the Risk Analysis Process (RAP) that considers ATQA and TARP data—also assign contributing factors to the incidents they review. (See fig. 4.) Though both ATSAP and RAP look at some of the same types of incidents (e.g., airborne losses of separation), they had not coordinated on a common set of contributing factors to describe and analyze the incidents. As a result, it is difficult to compare the data and conduct comprehensive analyses. According to FAA officials, they are currently developing a common set of contributing factors for ATSAP and RAP, as well as a translation capability that will allow for the inclusion of historical data on contributing factors in future analyses.

¹⁴GAO-12-24.

Figure 4: Information Flow into ATSAP Is Separate from Other Systems FAA Uses to Track Air Traffic Safety Incidents



Source: GAO.

- Lack of a robust, complete, and secure data repository of pilot records raises questions about data reliability.* Because the training and experience of some pilots have been factors in several commercial aviation accidents, there have been efforts to increase the amount of information airlines have before hiring pilots. The Pilot Records Improvement Act of 1996¹⁵ requires airlines to conduct background checks on pilots before hiring them, and the Airline Safety Act requires that FAA develop a centralized pilot records database that air carriers must access to review pilot qualifications and past performance data before hiring pilots. According to the Department of Transportation Inspector General (IG), FAA met the act's initial milestone in developing a centralized electronic pilot records database that will include records previously maintained by air carriers.¹⁶ However, the IG indicated that FAA needs to address the level of

¹⁵49 U.S.C. § 44703(h). See GAO, *Aviation Safety: Better Guidance and Training Needed on Providing Files on Pilots' Background Information*, GAO-02-722 (Washington, D.C.: Aug. 30, 2002).

¹⁶DOT IG, *Progress and Challenges in Responding to Key Provisions of the Airline Safety Act* (Mar. 20, 2012).

detail that should be captured from air carrier pilot training records—such as determining whether recurrent flight training will be included, determining how to transition from the current practices to the new database without disrupting information flow, and deciding how to ensure the reliability of data. The IG also noted that FAA lacks a centralized process to receive and respond to carriers' requests for pilot records.

- *Lack of ramp incident data means FAA is unable to assess the risk of catastrophic accidents in this area.* In 2007, we reported that efforts to address the occurrence of safety incidents in ramp areas were hindered by the lack of data on the nature, extent, and cost of ramp incidents and accidents.¹⁷ FAA still collects no comprehensive data on incidents in the ramp area and NTSB does not routinely collect data on ramp accidents unless they result in serious injury or substantial aircraft damage.¹⁸ The Occupational Safety and Health Administration (OSHA), the primary source of ramp fatality data, collects only data from accidents involving an employee death or the hospitalization of at least three employees.¹⁹ The lack of ramp incident data will pose a challenge as airports move to implement SMS. We recommended in 2011 that FAA extend oversight to the ramp areas.²⁰ FAA agreed with our recommendation but noted that it already oversees ramps through its oversight of airlines. FAA expects to further enhance that oversight through its proposed ruling to require airports with air carrier operations to establish a safety management system.
- *Lack of a process to track and assess runway excursions denies FAA the ability to assess the risks of these incidents.* Runway excursions can be as dangerous as incursions; according to the Flight Safety Foundation, excursions have resulted in more fatalities than incursions globally. (Fig. 5 illustrates the difference between runway incursions and excursions.) FAA does not have a process to track

¹⁷See GAO, *Aviation Runway and Ramp Safety: Sustained Efforts to Address Leadership, Technology, and Other Challenges Needed to Reduce Accidents and Incidents*, GAO-08-29 (Washington, D.C.: Nov. 20, 2007).

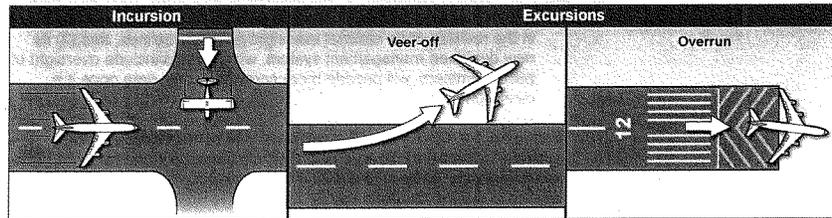
¹⁸NTSB officials said they current collect data on accidents in the ramp area that meet the definition of an aircraft accident as defined by 49 C.F.R. § 830.2.

¹⁹OSHA data on worker fatalities in the ramp area show the annual number of deaths to have varied between 3 and 11 from 2000 to 2010.

²⁰GAO-12-24.

excursions, unlike for runway incursions. We recommended in 2011 that FAA develop and implement plans to track and assess runway excursions. FAA agreed and will be developing a program to collect and analyze runway excursion data and is drafting an order to set out the definitions and risk assessment processes for categorizing and analyzing the data. However, according to our review of FAA's plans, it will be several years before FAA has obtained enough detailed information about these incidents in order to assess risks.

Figure 5: Illustration of Runway Incursions and Excursions



Source: GAO.

- *Lack of complete data on active pilot schools and pilot examiners makes it difficult for FAA to ensure that safety standards are being met.* Inspections are a part of FAA's oversight of Part 141 pilot schools²¹ and pilot examiners²²— gatekeepers for the initial pilot training process. However, it was unclear from our analysis of FAA

²¹The roughly 3,400 U.S. pilot schools can be divided into three categories: (1) noncollegiate flight instructor-based schools, (2) noncollegiate vocational pilot schools, and (3) collegiate aviation schools. Vocational pilot schools elect to apply for an operating certificate from FAA to provide pilot training under Part 141 regulations, which require these schools to meet prescribed standards with respect to training equipment, facilities, student records, personnel, and curriculums. Most of the collegiate aviation schools also provide pilot training under a Part 141 certificate. Flight instructor-based schools are not subject to direct FAA oversight beyond the initial certification and subsequent renewal of the flight instructor's certificate.

²²Pilot examiners are private individuals (and organizations) FAA uses to supplement its workforce to examine and test pilot applicants for a fee paid for by the applicant. Known as designees, pilot examiners are generally appointed by FAA's local district personnel for either 3 years (for an individual) or 5 years (for an organization).

inspection data for pilot schools and pilot examiners whether FAA met its oversight requirements because we could not determine the number of active entities that should have been inspected each year. FAA does not maintain a historical listing of pilot schools and examiners, and, thus, we could not define the universe of active entities that was required to be inspected. Because of this data limitation, we could not determine the completion percentage of the inspections for either group. In November 2011, we recommended that FAA develop a comprehensive system for measuring its performance in meeting its inspection requirements for pilot schools and examiners.²³ FAA acknowledged our recommendation and noted that (1) it needed to clarify its inspection requirements for pilot schools in the revision of its national oversight policy guidelines, and (2) its new designee management system, which would include oversight of pilot examiners, will provide more comprehensive data once it is developed.

In closing, Mr. Chairman, FAA regulates one of the safest aviation systems in the world. To its credit, FAA continues to strive for even higher levels of safety. Shifting to a data-driven, risk-based safety oversight approach means that FAA needs data that are appropriate, complete, and accurate to be able to identify system-wide trends and manage emerging risks. Furthermore, when implementing changes in safety data reporting systems, or processes used to assess and analyze data to determine risk, FAA needs to take into account how such changes might impact trend analysis. Today, I have pointed out some of the challenges FAA faces in improving its data. While FAA is working diligently to improve its data in some instances, more work remains to address limitations and to collect additional data where necessary.²⁴

Chairman Petri, Ranking Member Costello, and Members of the Subcommittee, this concludes my prepared statement. I would be pleased to answer any questions at this time.

²³GAO-12-117.

²⁴In addition to the recommendations we made to FAA that are discussed in this statement, we made others in GAO-10-414, GAO-12-24, and GAO-12-117 to improve FAA's capability to use data and enhance its oversight of pilot certification, pilot training, and terminal area safety. FAA concurred with all of these recommendations and is working toward implementing them. We will continue to monitor FAA as it addresses our recommendations.

**GAO Contact and
Staff
Acknowledgments**

For further information on this testimony, please contact Gerald L. Dillingham, Ph.D., at (202) 512-2834 or dillinghamg@gao.gov. In addition, contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this statement. Individuals making key contributions to this testimony include Brandon Haller (Assistant Director), Pamela Vines, Martha Chow, Vashun Cole, Kevin Egan, Colin Fallon, Molly Laster, Brooke Leary, Erica Miles, Richard Scott, Teresa Spisak, and Jessica Wintfeld.

Appendix I: Summary of Databases Referenced in Statement

Database	Responsible entity	Description	Safety-related data collected	Format
Aviation Safety Information Analysis and Sharing (ASIAS)	FAA	Integrates aviation safety data from 46 safety databases and 45 participating airlines	Accidents, incidents, advisory information, aircraft information, statistical data	Narrative and quantitative
Air Transportation Oversight System (ATOS)	FAA	Primary database for collecting part 121 air carrier oversight data	Inspection results	Narrative and quantitative
Air Traffic Quality Assurance (ATQA) database	FAA	Contains information recorded by air traffic controller supervisors, support specialists, and managers	Surface and airborne incidents	Narrative and quantitative
Air Traffic Safety Action Program (ATSAP)	FAA	Non-punitive, voluntary safety reporting program for air traffic controllers	Air-traffic controller safety issues, including loss of separation	Primarily narrative, some quantitative information
Traffic Analysis and Review Program (TARP)	FAA	Error detection system that automatically captures data on airborne losses of separation	Airborne losses of separation that occur while the aircraft is under the control of air traffic control towers and terminal radar approach controls	Quantitative

Sources: FAA and GAO

Note: FAA uses numerous other databases to provide safety oversight, many of which are referenced in our previous work. For more information about these databases, see GAO-10-414, GAO-12-24, and GAO-12-117.

Appendix I: Summary of Databases
Referenced in Statement

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Airlines for America
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Testimony

Commercial Airline Safety Oversight

Testimony of
Thomas L. Hendricks
Senior Vice President For Safety, Security and Operations
Airlines for America
before the
U.S. House of Representatives,
Committee on Transportation and Infrastructure,
Subcommittee on Aviation

April 25, 2012

Chairman Petri, Ranking Member Costello and Members of the Subcommittee, thank you for inviting A4A to appear at this important and timely hearing.

At the outset, I want to express our thanks to the Committee for its leadership in aviation safety and its support of the initiatives that I will discuss this morning, many of which were addressed in the recently enacted *FAA Modernization and Reform Act of 2012*. Of course, we also appreciate the efforts of the Federal Aviation Administration and the National Transportation Safety Board.

Safety underpins every aspect of airline operations. The remarkable safety record of the airline members of A4A demonstrates their unflagging commitment to fulfilling that responsibility. As a former airline captain, I have repeatedly witnessed that commitment.

The results are extraordinary – this is the safest era in our history. We are the safest form of transportation on the planet, bar none. Importantly, our safety record is neither random nor unintended. We have achieved levels of aviation safety that other industries and foreign civil-aviation authorities envy.

While our commitment to safety is unchanging, the way we pursue safety has evolved and transformed over time as our understanding of human factors has grown, technology has advanced, and our ability to capture and utilize data has expanded. This transformation has been indispensable in producing our extraordinary safety record.

In simplest terms, we operate at a higher level of safety because we have become much better at identifying and managing risk. We haven't conquered risk – no one can promise that in aviation. But throughout their operations, airlines have introduced very potent data-driven risk-assessment systems. These systems are tailored to an individual airline's operations. However, there is a common methodology to them: hazards are identified and rigorously analyzed, and risk-mitigation measures are carefully thought out and implemented.

Risk assessment has been used in aviation for many years. What has changed since the 1990s is the volume and accessibility of operational data that can be applied to safety issues. Airline safety professionals work in an information-rich environment.

That means that we now rely on data-driven analysis, which frequently involves the combined scrutiny of the FAA, employees and management. This yields a high-definition picture, if you will, of operating environments and transient events, and thus more refined risk assessments. And, as the Subcommittee knows, some of the most effective of these safety-data programs are voluntary. They are very tangible manifestations of the industry's willingness to explore new means and develop new relationships within the aviation community to improve safety. In short, a cultural shift has occurred that promotes and enables a higher level of safety.

Data-based programs enable us to identify emerging patterns and promptly deploy focused resources. And when that action is taken also has changed over the years. Today, unlike in past decades, there is an increasing emphasis on initiating change, rather than simply reacting to events. That is proactive safety.

This disciplined approach – going where the data take us and acting accordingly – has significantly advanced safety. It produces the most responsive and effective results. And it facilitates the most efficient deployment of finite resources in making necessary changes.

This discipline gives us the confidence to undertake change when warranted. But it also gives us the ability to recognize when change is uncalled-for and to challenge assumptions, no matter how widely they may be embraced. Not every new idea is an improvement or free of unintended consequences. The proposed FAA rule on pilot certification and qualification requirements, for example, concerns us for these reasons.

I want to inject some words of caution. All who are involved in aviation safety need to realize the importance of sticking to the disciplined approach that I have just outlined. We must resist the temptation to tinker with the safety system, lest we disturb what we have accomplished – and the benefits of that to our passengers and crew members. Expertise and rigor should guide us.

Going forward, we have the tools to continue to foster safety enhancements. That is because today's airline safety culture in the United States is characterized by:

- First, a common understanding that safety is the foundation of our business;
- Second, robust communication within airlines – including with employees – and among industry and government stakeholders based on mutual trust; and
- Finally, recognition that safety-issue precursors can be identified and effective preventive actions taken.

When we look beyond our borders, the situation appears more mixed. Many foreign airlines and civil-aviation authorities have adopted data-driven approaches to safety. The maturity of those systems, however, can vary. Because of that, we urge the U.S. Government to continue its efforts at the International Civil Aviation Organization and in other venues to expand the use of safety-data systems worldwide. This advocacy helps not only foreign airlines but also the American citizens who fly on them.

We look forward to continuing to work with the Subcommittee on these matters.

Statement of Scott Foose
Senior Vice President, Operations and Safety
Regional Airline Association

House Transportation and Infrastructure Committee
Subcommittee on Aviation
Commercial Aviation Oversight Hearing

April 25, 2012

Chairman Petri, Ranking Member Costello, and members of the Subcommittee, thank you for the invitation to testify at this hearing.

Regional airlines provide half of our nation's scheduled flights, serving more than 600 airports nationwide. At nearly three-quarters of those airports, regional airlines are the only source of scheduled air service. Given this tremendous role we play in keeping America connected, safety is critically important – indeed, the paramount priority – for regional airlines.

Three years ago, RAA testified before this committee after a fatal accident, in order to discuss our members' commitment to safety. Our overarching goal has always been and always will be zero accidents and we pledged at that time that RAA's member airlines would continue to work tirelessly to improve upon and enhance our strong safety culture. We also outlined several important safety initiatives we already had in place while sharing our plans to go even further.

I want to take this opportunity to brief you on four areas in particular; safety information sharing, voluntary safety programs, pilot fatigue and first officer qualifications.

Safety Information Sharing

When it comes to sharing of safety information, regardless of the size of the fleet or the name on the aircraft, our goal is that all airlines will work together as a team, which will improve safety overall for the industry and most importantly, for our employees and passengers.

RAA has always been a proponent of education and information-sharing among our members through our well-organized structure of executive councils and technical committees. Since 2009, we have expanded the program by bringing senior regional airline Operations and Safety Department executives together to discuss safety trends and the most important issues affecting the industry. The group also provides a conduit

through which our members periodically meet with officials from the NTSB and FAA headquarters.

These meetings have been incredibly valuable and we have gone much farther by expanding our involvement in safety forums well beyond the scope of RAA's membership. For example, regional airlines played a key role in the NTSB's Code Sharing Symposium, which provided the Board and traveling public with an opportunity to see how code-sharing partners work together to share safety information.

Airlines continually look for opportunities to exchange information to improve our awareness of safety concerns and trends. Information-sharing forums ensure all airlines are moving forward together. For instance, all of our part 121 airline members participate in safety committees established by code-sharing airline families. Additionally, they are active participants in the InfoShare Program, which is co-sponsored by FAA and the airlines. At recent InfoShare meetings, approximately half of the attendees and briefings were from regional airlines. The message here is that regional airlines are not only committed participants but they are taking on leadership roles.

We certainly have made great strides in creating a multi-layered structure of programs for sharing information. Safety information now transcends boundaries and is being shared freely between airlines flying under the same livery. It is being shared by airlines within the associations' committee structures. It is being shared by all operators under the InfoShare and ASIAs programs. Ultimately, we are very confident these efforts will enable every airline to stay on top of the latest trends and best practices.

Voluntary Safety Programs

Three years ago the FAA Administrator asked regional airlines to examine participation in two voluntary safety programs in particular; Advanced Qualifications and Flight Operations Quality Assurance programs. Although in 2009, the FAA's focused inspection of all airlines with conventional training programs gave regional airlines very good marks, we took action. Regional airlines are firmly committed to accelerating our transition to those key programs.

RAA members have already achieved extremely high participation levels in a list of gold-standard, voluntary safety programs. While 70 percent of all airlines have at least one of these safety programs, RAA members exceed that by a wide margin; with 100 percent participating in at least one. Additionally, and as the DOT's Inspector General has recognized in recent testimony, the majority of carriers that transitioned to AQP were regional airlines. In fact, RAA members have the *highest levels of participation* among all part 121 carriers in each of the key voluntary safety programs: ASAP, FOQA, AQP and Safety Management Systems.

Pilot Training

Because pilot training is such an important issue for airlines and for this committee, it's appropriate to provide a report on our advancements. While I would not expect carriers with very small fleets to participate in AQP, it is important to mention how many of RAA's members have made the transition. 25 percent of all 121 carriers have AQP. By comparison, 66 percent of RAA's members have this program.

We are quite proud of this very important accomplishment, which we attribute to the commitment and dedication of RAA's members and their willingness to work together to share information about AQP best practices. More than two years ago, RAA created a working group to provide a forum for that purpose. The group meets three times a year to bring together airlines with mature programs alongside those that are in the early phases of development. While RAA is the proud sponsor, this group is completely open to all operators, not just RAA members. At the last meeting I attended, we had 22 airlines in attendance, of which 18 were regionals and 4 were major airlines. This activity has received fantastic support from the FAA's office of Aviation Flight Standards and in particular from the Voluntary Safety Programs office.

The second program that I want to discuss is Flight Operations Qualify Assurance. In 2009, regional airlines drew criticism because only two of RAA members had a FOQA program in place at that time. Since that time, we have made considerable progress in this area. Today, 79 percent of our part 121 members have FOQA in place. This is all the more impressive knowing that RAA's members had significant equipage obstacles to overcome in order to participate. By comparison, 46 percent of all airlines have FOQA. I want to express my appreciation to the pilots and their associations, which have been key partners and share credit for this accomplishment.

Flight and Duty Time / Fatigue

The Flight and Duty Time Final Rule published in December marked a significant milestone for the airline industry. For the first time, we will be using science to avoid and mitigate fatigue in the cockpit. Fatigue is a safety concern for all modes of transportation. Aviation is leading the effort to prevent further accidents and, RAA members, in particular, have made great strides in this area, by implementing Fatigue Risk Management Programs, which include training, procedures and non-punitive fatigue reporting.

While we view the new rule and Fatigue Risk Management Program as significant steps forward on a critical issue, we believe there is more work to be done. RAA is taking action. In 2009, the industry recognized the gap in the science available to understand

workload related fatigue. RAA initiated an independent, ground-breaking research study to fill this gap. This research, sponsored by RAA's members, is being conducted independently by Washington State University's Sleep and Research Performance Center. The study specifically focuses on filling the gap in the available science on fatigue as it relates to multi-segment operations.

The goal of the study is simple: we want to better understand the fatiguing effects of multi-segment operations on pilots so we can incorporate what we learn in our training, procedures and culture. I am happy to report that Phase 1 was completed within a year. WSU has created the first-ever computer model analyzing pilot schedules and identifying peak fatigue risks. We are excited about the results, but we have further to go. The next phase of the study will focus on validating the model using full-flight simulators and regional airline pilots. We are planning to be in the simulators in the 4th quarter of this year.

Not only are regional airlines fully prepared to comply with the new flight and duty rules, we have taken a leading role in fatigue research and training and will continue to work hard to ensure the highest levels of safety in this area.

Pilot Qualifications

Finally, I want to briefly discuss the ongoing First Officer Qualifications rulemaking and, specifically, to address the allegation that regional airlines have "no plan in place" to comply with the public law, requiring all pilots to have an ATP certificate and 1500 flight hours. In fact, RAA's members have been busy developing transition programs. Several have already submitted their programs for FAA approval. Frankly, I did not expect these programs to be operational until July, but our members have already begun to transition their first officers. I can assure you that all of our pilots will have an ATP and 1500 hours by the effective date of the law, or they simply will not fly.

I would also like to talk about the ongoing Pilot Certification rulemaking. RAA is a committed and engaged stakeholder in the rulemaking process. With a pilot workforce of 18,000 and a veteran instructor workforce with years of training experience, we are confident we offer valuable insight. While RAA is still preparing our response, it is appropriate to share our concern that much of the burden of the proposed changes will disproportionately fall on regional airlines.

To be clear: RAA and its member airlines support nearly all of the important changes that the NPRM offers in the Proposed Rule. Yet, we will urge the FAA to more closely adhere to the recommendations of Congress and to consider the valuable conclusions reached by the First Officer Qualifications Aviation Rulemaking Committee in formulating its final rule.

The Airline Safety Act of 2010 raises the certification standard, but without additional action, there may be unintended consequences. Pilots not reaching age 23 will lose their jobs, students graduating from well-respected aviation programs will be disadvantaged and may find non-airline jobs or airline jobs in foreign countries more appealing, and students frustrated by the lack of financial support may find the less-rigorous route of flying pipeline patrol to be easier and more feasible than attending training from our best instructors in our best simulators.

If safety is the goal, than experience is part of the solution. It is my opinion and the opinion of many other industry veterans that “flight time” does not equal “experience.” We believe Congress understood this, having directed the FAA to develop an academic complement to the public law. The industry has a wealth of information, identifying several paths candidates can take that have proven to provide highly skilled and professional pilots. As the chairman of the rulemaking ARC, I was incredibly impressed with how well the participants worked together to make recommendations that they sincerely believe will improve safety.

The FOQ ARC’s deliberations responding to this assignment absorbed the most FOQ ARC member time and generated the liveliest discussions. Out of this effort, the FOQ ARC recommended an expansive and detailed methodology for crediting academic training against the hours of experience requirements for the certification of a first officer. A total of 14 distinct academic training alternatives were reviewed and evaluated, with credit recommendations made for each. Of those 14 alternatives, 12 are civil training experiences and two are military training experiences.

This FOQ ARC effort and the reasons for its recommendation will be more completely discussed in our comments to the docket, but it is important to consider the breadth of the ARC member’s efforts and recommendations in comparison to what is found in the Proposed Rule. In contrast to the 14 total training experiences (12 civil and two military) recommended by the ARC, the Proposed Rule offers allows only for two training experiences: one civil and one military.

Frankly, there are many pilots flying the line today that have flawless records; yet, if they were part of the next generation of airline pilots, these same pilots would be facing many more obstacles. These pilots have proven themselves as having the right stuff and yet the new law, without broader academic provisions, would have impeded their entry into our industry. I have to wonder how many of these professionals would have opted out of the excellent training programs to take the path of least resistance.

There has been considerable discussion in recent years about the need for skilled and motivated pilots. Just so I am clear in my message, the additional training proposed in the

NPRM clearly takes us a step further in the right direction and we feel it is warranted. We acknowledge the need for prescriptive standards but the FAA and NTSB have each recognized that flight time is not a good indication of experience or safety. Let me put it simply: four hours of fair weather sightseeing in a Skyhawk has minimal benefit as compared to four hours in a modern simulator with a highly trained, professional flight instructor. The rulemaking process is the opportunity for those of us in the industry and the FAA to use our own experience to promote the highest quality training and education, which will yield pilots with the needed skills. Our concern is that if we do not take advantage of this opportunity, we will be encouraging the next generation of pilots to merely build hours, when what we really need is experience in our cockpits. Again, flight time is not the same thing as experience.

With respect to the public law, RAA's members are complying. This has already reduced the availability of new pilots. Unless the FAA's new rule recognizes the value and experience the structured training programs provide, the burden will now shift to tomorrow's pilots. The implication here is not diminished safety, but diminished service to smaller communities. One RAA member airline estimates that for every 30 pilots displaced by the new rule, one community will lose service. Initial estimates of the pilot shortage expected under the new rule have projected a shortfall of approximately 2300 pilots. This translates to imperiled air service at upwards of 75 communities if the rule is enacted as proposed.

RAA is currently drafting comments for the docket where we will share our full perspective and offer recommendations. We would be glad to discuss our comments in greater detail with any member of this committee as they are completed.

Conclusion

In the three years since we last testified before this committee, our 60,000 regional airline employees have operated nearly 15 million flights, at a pace of 13,000 flights each day. In fact, today is the safest period of time in commercial aviation history. We are proud of our contribution to that record, although we will never become complacent.

Every day and every flight, RAA member airlines operate to or above exacting part 121 safety standards. It is our hope that our deeds, which have gone well beyond the rules, demonstrate to you and to each of our passengers that we are fully committed to the safe operation of each and every regional airline flight, every single day.

We fully embrace the FAA's System Safety oversight and have made increasing use of FAA's many important voluntary safety programs, as well as the new SMS initiatives to that end. As we continue to take proactive steps, as industry collaborators and as industry

leaders, to make this safe industry even safer, we welcome the opportunity to continue this dialogue with you.

There have been so many successes in the last three years and few should doubt our resolve and commitment to safety. It is our most important goal and obligation Flying is the safest form of transportation and we will continue to work hard every day to keep it that way.

That concludes my statement. I look forward to taking your questions at the conclusion of the panel.

Thank you.



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Name: Scott Foose
 Title: Senior Vice President, Operations and Safety
 Company: Regional Airline Association

Bio:

Scott is Senior Vice President, Operations and Safety at the Regional Airline Association. RAA's primary role is to represent the interests of member airlines in North America before the Legislative and Executive branches of the federal government in Washington, D.C. Scott works directly with key officials at the U.S. Department of Transportation, Federal Aviation Administration and other stakeholder organizations on a wide variety of issues pertaining to public policy, regulations and industry programs and practices. He is the staff senior advisor for industry affairs, chairman of RAA's Regional Operations Council and he is the senior staff member supporting RAA's Safety Council. He has represented the industry as a participant of several notable FAA aviation rulemaking committees including the Flight and Duty Time ARC and the First Officer Qualifications ARC, which he chaired.

Before joining RAA, he was with Allegheny Airlines for 21 years, holding several positions in the airline's flight operations and corporate safety departments. During his tenure he was a line pilot, pilots' association officer, check airman, and he held senior management positions as the Chief Pilot, Director of Flight Standards and Director of Safety and Regulatory Compliance. Scott's training, operating experience and management experience in commercial air carrier operations, and his ongoing work on emerging regulatory and policy issues gives him an insightful perspective of the critical issues facing the air transportation industry today.

With safety as its highest priority, the Regional Airline Association (RAA) represents North American regional airlines before federal legislative and regulatory agencies, and also provides technical, educational, and promotional support to member airlines and their supply company partners. RAA's 27 member airlines operate one half of all U.S. scheduled passenger flights and carry more than one in five domestic passengers. RAA members serve more than 600 U.S. airports, and some 75 percent of those airports depend on regional airlines, exclusively, for their only source of scheduled air service.

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STATEMENT OF
CAPTAIN SEAN CASSIDY
FIRST VICE-PRESIDENT
AIR LINE PILOTS ASSOCIATION, INTERNATIONAL
BEFORE THE
SUBCOMMITTEE ON AVIATION
COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE
UNITED STATES HOUSE OF REPRESENTATIVES
WASHINGTON, DC
April 25, 2012

A Review of Aviation Safety in the United States

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STATEMENT OF
CAPTAIN SEAN CASSIDY
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AIR LINE PILOTS ASSOCIATION, INTERNATIONAL
BEFORE THE
SUBCOMMITTEE ON AVIATION
COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE
UNITED STATES HOUSE OF REPRESENTATIVES
ON
A REVIEW OF AVIATION SAFETY IN THE UNITED STATES
APRIL 25, 2012

Good morning Chairman Petri, Ranking Member Costello, members of the Subcommittee. I am Captain Sean Cassidy and it's my privilege to serve as First Vice President of the Air Line Pilots Association, International (ALPA), and as ALPA's National Safety Coordinator. Thank you for offering us the opportunity to provide the Subcommittee our views on a variety of important safety topics here today.

ALPA represents more than 53,000 professional airline pilots flying for 37 airlines in the United States and Canada. We are the world's largest pilot union and the world's largest non-governmental aviation safety organization. We are proud to be the recognized voice of the airline piloting profession in the United States, with a history of safety advocacy that extends for over 80 years. As the sole US member of the International Federation of Airline Pilots Associations (IFALPA), ALPA has the unique ability to provide active airline pilot expertise to aviation safety issues worldwide, and to incorporate an international dimension to safety advocacy.

ALPA applauds the Subcommittee's diligence in monitoring progress toward implementation of the safety improvements outlined in PL 111-216, the "Airline Safety and Federal Aviation Administration Extension Act of 2010" as well as other critical safety issues facing our industry. We have been pleased to represent the voice of airline pilots nation-wide through our participation in all of the FAA Aviation Rulemaking Committees formed as result of the Act. We have commented extensively through that process and through the public comment process for FAA Notices of Proposed Rulemaking (NPRM) covering pilot fatigue and mitigations for it, pilot training and standards, pilot qualification requirements, and principles related to the initial and continuing professional development of an airline pilot. Our formal comments go into extensive detail on many of the topics under consideration by the subcommittee and we would be pleased to provide you with copies of those comments. ALPA has long said, and continues to maintain, that the single most effective safety feature of a modern airline aircraft is a well-trained, well-motivated, well-rested professional pilot.

Pilot Fatigue

ALPA believes that in general, our industry is making good progress in developing and implementing the safety enhancements set forth in the legislation under discussion here today. There are, however, notable areas where there remains critical work to be done. Foremost among these is the gap left in the safety net by the exclusion of pilots of all-cargo airlines from the provisions of the newly promulgated flight and duty time regulations. We continue to find it unconscionable that some airline pilots will not be afforded the safety margins that the new law provides as relates to fatigue risks. This inequity has been created despite the fact that airline pilots operate the same aircraft at the same time in the same airspace and to and from the same crowded airports, and that this discrepancy is based solely on the nature of the payload.

Just last month, the National Sleep Foundation's report on its 2012 'Sleep in America' poll vividly illustrated the risk posed by fatigue among transportation workers and the particular challenges that airline pilots face in delivering on their commitment to achieving the highest standards of safety. That poll is the latest evidence of the serious risk. ALPA respectfully urges the Administration to acknowledge that risk—and the compelling and conclusive science that preceded it—and bring cargo pilots under the new pilot fatigue rules. To that end, we ask this Committee to pursue an immediate legislative remedy to mandate that the new flight and duty regulations (FAR Part 117) apply to all-cargo operations. Your colleagues Representatives Chip Cravaack (R-MN) and Tim Bishop (D-NY) have introduced a bill to bring parity to cargo operations. The Safe Skies Act of 2012, HR 4350, simply directs DOT to ensure that flight/duty and rest requirements apply to all-cargo operations in the same manner as passenger carriers. This is a science-based, common-sense bill and we hope all members of this Committee will support it. Clearly, it was not Congress' intent when it passed the Aviation Safety and Federal Aviation Administration Extension Act to create different levels of safety. We urge this Committee to report out this bill expeditiously.

In spite of the shortcoming of cutting out cargo operations, the new pilot fatigue rule marks historic progress in what must be an unrelenting commitment to ensuring the highest safety standards throughout the airline industry. We commend the FAA for enacting the final rule. For decades, ALPA has fought for regulations that are based on modern science; apply equally to all types of airline operations, including domestic, international, and supplemental; and enable air carriers to establish Fatigue Risk Management Systems. ALPA is proud to have contributed to the effort to move forward on these critical safety provisions in our role as co-chair of the FAA's Aviation Rulemaking Committee, which made recommendations regarding this important rule, with the determined goal of advancing safety. While the new rule brings much-needed science-based improvements in flight and duty regulations, ALPA will continue to strongly advocate for One Level of Safety for all types of flight operations and across the airline industry.

Pilot Training and Development

Another key element of the Act is the recognition that the screening, selection, training, qualification and continued professional development of a pilot in air carrier service is a critical factor in maintaining the absolute highest levels of safety. The Act directed a number of activities, including the formation of several aviation rulemaking committees (ARCs). Those groups have done extensive work to identify industry best training practices and to develop recommendations for more rigorous selection and qualification criteria, improved training standards and means to ensure continuing professional development of airline pilots. ALPA's advocacy in these efforts has been consistent and universal across the activities specified in the Act. Almost all of the industry efforts directed by the Act have been completed, and FAA is in the process of evaluating the many recommendations made. To date, we note the publication of the aforementioned and long-awaited improvements to flight time, duty time and fatigue regulations, and rulemaking proposals for revisions of training standards and requirements for new first officers in airline service and for implementation of safety management systems at airlines. The remaining efforts identified in the legislation are not yet incorporated in proposed rulemaking. This means there remains a great deal of work yet to be done, and we urge the Administration to dedicate sufficient resources to ensure these vital efforts can continue without delay.

In particular, we note the potential, embodied in the Act, for significant improvements in the minimum qualifications necessary to become a professional airline pilot and in the standards to which pilots must be trained. As our industry has evolved, the complexity and sophistication of the aircraft, the airspace, and the operations have increased dramatically. Yet the pilot training and qualification regulations have failed to keep pace. The FAA has recently issued a Notice of Proposed Rulemaking that, when finalized, will represent a quantum leap in recognizing what ALPA has said for some time – that piloting an airline aircraft in revenue service is a demanding profession that requires the highest levels of training and certification.. In particular, those improvements include the following:

- Increasing the minimum flight experience necessary in order to be hired by a FAR 121 air carrier
- Establishing a restricted ATP that recognizes that quality of training is more important than total flight hours accumulated and gives appropriate level of credit to military trained pilots and graduates of aviation colleges and universities that have intense, structured, professional pilot-training programs
- Establishing ATP training programs tailored toward FAR 121 airline operations
- Establishing a requirement for SIC pilots to be type rated in the aircraft they operate to ensure that they demonstrate the same knowledge requirements and flying skills as the PIC for that aircraft.
- Establishing minimum experience requirements for pilots before they can move into the PIC position

New rules are needed because Federal Aviation Regulations (FAR) parts 61 and 121 have not kept pace with the dynamic airline industry. Many pilot training requirements currently in force were first published in an era in which common business practices, driven not by regulation but by the supply of pilots and equipment in use, dictated that low-time, commercial-certificated pilots could only get airline jobs flying small, slow, propeller-driven aircraft and as flight engineers on jet transports. Pilots would traditionally fly several years and thousands of hours before even being given an opportunity to upgrade to first officers on high-performance jet transports. Today, it is not uncommon for new-hire pilots to be employed as first officers of high-altitude, high-performance aircraft carrying 50 or more passengers in highly complex part 121 operations. This reality demands that airlines hire pilots with more knowledge and greater skills than the new-hire airline pilots of the past, but in fact, just the opposite is happening at some airlines. Due to economic pressures, some "regional" airlines actually seek out and hire the least experienced pilots meeting FAA minimum requirements because they are willing to accept the lowest compensation in order to build flight time and use that experience to progress to larger, more stable airlines. It must be noted that building this experience is done in unrestricted, revenue service.

It is also noteworthy that before code-sharing with regional partners began, all flying was done by the pilots of an airline on a single pilot-seniority list. This practice ensured that newly hired airline pilots — even those with thousands of hours of military or civilian flight time — had several years of airline operations experience before assuming the command responsibilities of an airline captain. However, as competitive cost concerns increased with the advent of post-deregulated start-up carriers, the "legacy" airlines began to outsource the flying to as many as a dozen new "regional" partners flying 30- to 50-seat propeller aircraft and 50- to 90-seat jets. The "legacy" airlines then began the practice of having their "partners" bid against each other to maintain these "fee for departure" outsourcing contracts. As the legacy airlines replaced more and more mainline flying by this outsourcing scheme to regional operators, they furloughed hundreds of highly experienced pilots, effectively replacing them with lower-paid and lower-experienced pilots.

The time has clearly come for these regulations to be updated to ensure that a high standard of aptitude, knowledge and training are met by anyone flying an aircraft in part 121 operations. One critical gap in this effort, however, needs to be addressed. New regulations—promulgated with the intent of ensuring relevant experience is obtained before pilots begin airline service—must not allow the unintended consequence of rendering an active airline pilot suddenly ineligible to continue his or her employment. Fairness and common sense dictate that attempts to ensure relevant experience should not inadvertently result in taking that experience out of the cockpit. New regulations must include a clear path for currently employed airline pilots to follow to continue to fly and be able to achieve full compliance with requirements imposed after their employment began.

As a result of PL 111-216, we have seen broader recognition of the value of professional development, command training and mentoring.

ALPA has long advocated these principles, and the ongoing industry activity to develop these programs, initiated as a result of the Act, must be supported in order to continue. As we have noted, our industry has changed dramatically since the era when many of today's training regulations were developed. That change has affected the training culture within airlines as well. The days of pilots being "seasoned" through years of experience under the tutelage of wise old Captains are gone. However, the need for the piloting skills developed in that manner remains, and the need for the pilot in command to in fact *be* in command has become more acute. The solution is to replace the mentoring, command training and professional development which once were a guaranteed by-product of business models and industry practices with formal mechanisms to address the means to develop these skills.

An airline captain must have skills far beyond simply being able to operate the aircraft from the captain's seat. The captain must be able to organize the efficient cooperative activity of all flight crew, cabin crew, and ground crew to ensure the safe planning and conduct of the flight from gate to gate. He or she must be able to maintain control of situations under adverse conditions and in the face of pressure to compromise standards in the interest of operational expediency. The need to maintain command authority has arguably increased due to the continuing decline in experience levels of other crewmembers.

PL 111-216 accurately identified the need for airlines to provide specific command training courses for new captains to instill in them the skills to lead on the flight deck. In addition to basic skills such as aeronautical decision making and crew resource management, new captains should receive training to reinforce effective communication, leadership, conflict resolution, and judgment necessary to properly lead a crew, exercise command authority, and maintain the highest levels of safety in the face of internal or external pressures.

The Act also points out the value of mentoring. Mentoring is a form of instructing in which seasoned pilots share their experiences to help newer pilots increase their proficiency. This activity does not take the place of any proficiency training, but supplements it. In many cases, this mentoring takes the form of captains mentoring first officers, but could also be an experienced first officer providing counsel to a new-hire on company policies, piloting technique, aircraft systems, etc. Much of this mentoring can be informal if an airline safety culture fosters the opportunity for pilots to interact away from the actual flight, but can and should also be formalized in the interest of transferring the maximum amount of knowledge across experience levels. This training must go beyond just written statements in the airline's manuals.

ALPA has long recognized the value of a formal Professional Standards function within an airline's pilot group, and in fact maintains such a formal organization at each ALPA-represented airline and as part of ALPA's Air Safety Organization at the national level. Such Professional Standards organizations, supported by both line pilots and airline management, are identified in the legislation as a critical component to enhancing safety.

The ARC that addressed mentoring, leadership and professional development has made its recommendations to the FAA that are aimed at strengthening this function, and that activity must not be allowed to stagnate. These are critical, cultural changes that will take time to fully implement and mature, so we must begin sooner rather than later to implement these enhancements.

Safety Management Systems and Hazard Identification

A safety management system (SMS), such as referred to in PL 111-216, has been described as “a comprehensive, process-oriented approach to managing safety throughout an organization.” An SMS includes an organization-wide safety policy; formal methods for identifying hazards; controlling, and continually assessing risk; and promotion of a safety culture. SMS stresses not only compliance with technical standards but increased emphasis on the overall safety performance of the organization. ALPA has participated in numerous FAA activities related to developing and promoting SMS, including the SMS Pilot Project and the SMS Aviation Rulemaking Committee (ARC). We are encouraged that the FAA appears to be on schedule to comply with PL 111-216 and publish a final SMS rule this summer.

Use of SMS has been recognized by the International Civil Aviation Organization (ICAO) as an effective means to identify hazards and manage risk and to implement a non-punitive safety culture in an organization. SMS encourages all members of an organization to identify hazards and for that identification to be made without fear of retribution, even if the identified problem is that individuals’ own error. This constant vigilance and the ability to capitalize on front-line employees to identify hazards and thus manage risk is a key element in attaining and maintaining the enviable safety record our industry enjoys today.

It is important to emphasize that this data collection extends to all employee groups in an organization, whether they are pilots, mechanics, flight attendants or any of the groups of professionals who ensure the safety of the airline. In the broader context of the aviation system, air traffic controllers have recently joined the partnership of employee groups with confidential, non-punitive safety reporting programs, the Air Traffic Safety Action Program (ATSAP). ATSAP has allowed the identification of a wide variety of safety issues in the air traffic control system, before these issues manifest themselves as significant safety concerns. In combination with the increased use of automated processes to analyze radar data and identify additional potential safety issues has led to a wealth of safety data never before available. From the pilot perspective, the air traffic control system remains incredibly safe, and we caution against drawing any particular conclusion from the numbers of events reported with these new processes in place. ALPA feels that it is important to analyze these new data in the updated context of increased reporting mechanisms and greater use of automation, establish baselines in this context, and evaluate the data for trends.

To continue that trend, and to preserve the ability to identify hazards that may be increasingly difficult to detect as we continue to improve the safety of our systems, a robust stream of high-

quality safety data must be maintained. Safeguarding the sources of those data, and preventing misuse of safety data from compromising the ability to identify hazards is vital.

Protection of Safety Data

Protection of safety data is an essential and critical element of any safety program, and especially of an SMS. Data must be gathered in sufficient depth and detail to support analysis of risk and implementation of corrective procedures, processes, etc. There are a variety of proven voluntary safety programs that can exist independently or be part of an SMS, such as the Aviation Safety Action Program (ASAP), Flight Operations Quality Assurance (FOQA), Advanced Qualification Program (AQP) and Line Oriented Safety Audits (LOSA). The emerging potential of a Fatigue Risk Management System (FRMS) would fall in this category as well. We must point out, however, that these programs rely to varying degrees on data provided by individuals that is provided voluntarily with an expectation that the reporter's forthrightness will be respected as an attempt to enhance safety. Thus the need to protect those data from being used for adverse action against such a reporter by airlines, regulators or the courts is critical to the survival of these safety programs. Processes in place to protect the data gathered through various need to be strengthened and expanded to provide proper protection for the data, both within and outside an organization. Legislation should be considered to further strengthen the protection of this vital source of safety information against misuse.

Information gathered through an anonymous, non-punitive employee reporting program must be protected against disclosure to anyone who is not authorized to view such safety reports. If sanctions are taken against an employee as a result of a safety report, that reporting program will lose participation. Much can be inferred about an organization's safety culture through their support for employee reporting programs. Failure to protect data in these programs will hinder future data-gathering efforts. ALPA has spoken often at a number of venues urging protection of this information to better assure data privacy and legal protections. Use of this information for any other than its intended purpose perverts an essential, much-needed safety system.

In conclusion, ALPA is proud to be part of the successful government-industry collaboration that has led us to the safest period in aviation history, but we reiterate that much remains to be done. ALPA stands ready to continue to assist in that effort, and we appreciate the opportunity to offer our views to the Subcommittee.



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"A Review of Aviation Safety in the United States"

**Testimony of Gary M. Fortner
 Vice President of Quality Control & Engineering
 on behalf of the Aeronautical Repair Station Association
 Before the U.S. House of Representatives Aviation Subcommittee**

April 25, 2012

Chairman Petri, Ranking Member Costello, and members of the Subcommittee, thank you for the invitation to testify this morning about the excellent work repair stations across the country and around the world are doing to ensure aviation safety.

My name is Gary Fortner and I am vice president of quality control and engineering at Fortner Engineering & Manufacturing, Inc., based in Glendale, California. Incorporated in 1952, Fortner Engineering is a family-owned company with 45 workers. My company specializes in the repair and overhaul of hydraulic aircraft components. Our customers include foreign and domestic airlines, parts distributors, and other repair stations. Fortner Engineering holds a Federal Aviation Administration (FAA) part 145 repair station certificate and is a European Aviation Safety Agency (EASA) part 145 approval holder.

I am testifying in my capacity as senior vice president of the Aeronautical Repair Station Association (ARSA). ARSA is the premier association for the international maintenance industry with 450 members worldwide; it also represents certificated aviation design, production, and maintenance facilities before Congress, the FAA and other national aviation authorities (NAAs).

ARSA's primary members are companies holding repair station certificates issued by the FAA under part 145 of the Federal Aviation Regulations (FARs). These certificates are our industry's "license to do business." They authorize repair stations to perform maintenance and alterations on civil aviation articles, including aircraft, engines, and propellers; the certificates also permit maintenance on the components installed on these products. Certificated repair stations perform maintenance for airlines, the military, and general aviation owners and operators.

My testimony will touch on several key themes:

- The aviation maintenance industry has a substantial, positive economic impact on the U.S. economy;
- Industry – not government – is ultimately responsible for the safety and security of airline travelers; ARSA's members are proudly living up to that challenge and contributing to the safest period in the history of civil aviation;

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- Foreign repair stations are an essential element of the global aviation system and help ensure the safety of travelers worldwide;
- Policymakers and regulators must refrain from micromanaging our industry and allow repair stations to operate free from unnecessary government interference;
- Inconsistent interpretation of regulations is hindering job creation and wreaking havoc on repair stations; and,
- The FAA Modernization & Reform Act strikes the right balance between the need for government oversight and operational freedom.

Repair stations are an integral part of the U.S. economy

The repair station industry is a vibrant part of the U.S. and world economy. A recent study by AeroStrategy for ARSA determined that spending in the global maintenance, repair, and overhaul (MRO) market exceeded \$50 billion in 2008, with North America (the U.S. and Canada) accounting for \$19.4 billion of the total. When induced and related economic effects are considered, the industry's impact on the U.S. economy is \$39.1 billion per year. The more than 4,000 repair stations in the United States - 85 percent of which are small and medium-size companies like Fortner Engineering - collectively employ more than 274,000 individuals.¹

The United States also has a strong and favorable balance of trade in the aviation maintenance market. The association's study determined that North America is a major net exporter of aviation maintenance services, enjoying a \$2.4 billion positive balance of trade in this arena. While North America is a slight net importer of heavy airframe maintenance services, it has \$1.4 billion and \$1.2 billion trade surpluses in the engine and component maintenance services markets, respectively. The U.S. competitive advantage in these two areas has important economic benefits because one dollar of spending on airframe heavy maintenance generates just \$1.38 in additional monetary activity, while a dollar spent on engine and component maintenance services generates \$1.85 and \$1.67, respectively.

The contract maintenance industry is a source of stable, good paying jobs for skilled American workers. Unlike many sectors, repair stations are rapidly growing. According to ARSA's 2012 member survey, there is optimism about economic prospects in the coming year; 65 percent of respondents expect business and markets to grow. This economic growth will translate into job creation; more than 60 percent of respondents plan to add workers and positions in 2012.

¹ For details, see the "Aviation Maintenance Industry Employment and Economic Impact" table, found on ARSA's website at the following link: <http://www.arsa.org/files/ARSA-StatebyStateOnePager-20100505.pdf>.

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Repair stations specialize in safety

To operate in the civil aviation maintenance industry, certificated repair stations must demonstrate to the FAA, or other NAAs, that they possess the housing, facilities, equipment, personnel, technical data, and quality control systems necessary to perform maintenance in an airworthy manner. Based upon satisfactory showings in these areas, a repair station is then rated to perform certain types of maintenance.

Not all repair stations look alike and their capabilities vary significantly. Some provide line maintenance – the routine, day-to-day work necessary to keep an airline's fleet operating safely. Some perform substantial maintenance, which includes more comprehensive inspection and repairs on airframes and overhauls of aircraft engines that can take months to complete. Other repair stations offer specialized services such as welding, heat treating, painting, and coating on a variety of aircraft parts. However, the vast majority of repair stations perform maintenance on component parts. Component maintenance occurs off the aircraft, typically away from an airport in industrial parks and similar facilities.

The skills and technology required to maintain civil aviation products call for an increased level of sophistication. To meet this demand, contract maintenance companies have developed highly-specialized facilities. Repair stations, like medical specialists, often seek to strengthen their core competencies by specializing in a particular line or type of product. This allows them to develop a high level of proficiency in certain processes or repairs.

Good safety is good business

The increased use of contract maintenance by airlines has coincided with the safest period in the history of America's commercial aviation industry.

The basic nature of the aviation industry demands that safety and security be the top priorities for our member companies. Operators and airlines will not do business with companies that put their passengers and valuable business assets (i.e., aircraft) at risk. Put simply, for ARSA members, good safety is good business.

Aviation safety does not begin and end with the FAA or any other regulatory body. Safety is the responsibility of every aviation maintenance employee performing work on behalf of an owner or operator, a certificated repair station, air carrier or other aviation business. Government inspectors will never be able to oversee each mechanic at every facility all the time. The industry has the ultimate obligation, responsibility, and authority to ensure that the civil aviation system is safe and repair stations are fulfilling that responsibility despite the FAA's limited oversight resources.

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Given the federal government's budget challenges, it is inevitable that the FAA will continue to be under-resourced as the industry grows. That makes it even more imperative that Congress and regulators alike realize that safety depends not on legislation or regulation, but on the culture of safety within individual companies and an effective partnership between government and industry.

Foreign repair stations are an integral part of the aviation safety system

Foreign repair stations - entities outside the United States that are authorized to perform work on U.S.-registered aircraft – are integral to international aviation and are subject to the same safety standards as domestic part 145 certificate holders.

The International Convention on Civil Aviation (i.e., the Chicago Convention) of 1944 and ICAO standards require that the State of Registry (i.e., the country in which an aircraft is registered) oversee the maintenance performed on that aircraft and related components, regardless of where the work is performed. Consequently, maintenance on a U.S.-registered aircraft must be performed by an FAA-certificated maintenance provider. Similarly, when an aircraft of foreign registry requires maintenance (e.g., while in the United States), only a repair station certificated or validated by the aircraft's civil aviation authority (CAA) of registry may perform the work. For example, only a European Aviation Safety Agency (EASA) certificated repair station may perform maintenance on an aircraft of French registry.

Foreign repair stations must meet the same or equivalent safety standards as domestic facilities. The FAA Modernization & Reform Act ensures that foreign repair stations be inspected annually by FAA safety inspectors in a manner consistent with our bilateral aviation safety agreements (BASAs). It also ensures the FAA can carry out additional inspections based on identified risk. This allows the FAA to reserve scarce resources for repair stations that pose the most risk and prevents the agency from performing duplicative inspections in areas where there are BASAs in place.

To restate a point made earlier in the testimony, the U.S. is a major beneficiary of the international trade in aviation maintenance. The rest of the world buys \$2.4 billion more each year in maintenance services than we buy from abroad. As far as other countries are concerned, U.S. repair stations are "foreign" repair stations. My company has an EASA approval that allows us to perform work for EU registered aircraft. Consequently, Fortner Engineering had to ensure compliance not only with the civil aviation authority in this country, but the additional and different requirements of EASA.

Any effort to limit the ability of U.S. air carriers to use foreign repair stations will inevitably lead to retaliation from foreign governments that will hurt the hundreds of U.S. companies, like mine, that serve an international clientele.

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Congressional micromanagement wreaks havoc on the industry

Unfortunately, there has been a push by many in Congress and the administration to micromanage the aviation maintenance industry. These efforts are not without consequence. In fact, according to ARSA's 2012 member survey, the biggest long-term threat to the aviation maintenance industry is over-regulation and government intrusion.

One recent – though unfortunately not isolated - example of Congress attempting to micromanage the aviation maintenance industry is the mandate that the Transportation Security Administration (TSA) issue repair station security rules.

VISION-100, an FAA reauthorization law enacted in 2003, required TSA to issue security rules for all aviation repair stations by August 2004. When TSA failed to meet that deadline, lawmakers (in the 9/11 Recommendation Implementation Act) demanded the security regulations be completed by August 2008. The penalty for the TSA's failure to comply: Congress prohibited the FAA from issuing new foreign repair station certifications.

Nearly four years later, the TSA has failed to issue final repair station security regulations and the FAA is banned from issuing new foreign repair station certificates. In 2011, ARSA completed an informal survey of aerospace companies to assess the effect that TSA's inaction and the ensuing foreign repair station certification prohibition is having on the industry. The results demonstrated the detrimental impact on industry:

- **The ban is hurting small to medium-sized businesses.** Half (50 percent) of respondent companies employ fewer than 500 workers. Of these, an overwhelming majority (83 percent) are seeking to open new foreign repair stations.
- **Companies want to tap into rapidly expanding international aviation markets.** Three quarters of respondents (75 percent) indicated their company has an application for FAA foreign repair station certification pending or will submit an application when the moratorium is removed.
- **U.S. companies are losing revenue.** U.S.-based companies responding to the survey report they are losing more than \$18 million in combined revenues annually because of the FAA's inability to certificate new foreign repair stations.
- **The ban is stifling job growth.** Over half of respondents (55 percent) said their companies would hire new U.S.-based employees if they could obtain FAA foreign repair station certification. Two companies anticipated hiring more than 100 new U.S.-based employees.

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The results of ARSA's informal survey are clear: TSA's failure to finalize repair station security rules is preventing U.S. aviation companies from tapping into rapidly expanding overseas markets, hindering domestic job creation and growth. Further, ARSA believes that it is only a matter of time before foreign countries impose a reciprocal ban that prevents repair stations located in the United States from gaining approval from foreign CAAs.

Given TSA's lack of progress toward finalizing repair station security rules, Congress must stop penalizing the aerospace industry and again allow the FAA to certificate new foreign repair stations. Prohibiting one federal agency (FAA) from doing its job because another (TSA) is ignoring congressional mandates is bad policy and does not work. TSA has committed to completing the security rules during the fourth quarter of this year; if the agency does not meet its self-imposed deadline, Congress must take action and permit the FAA to do its job and once again certificate new foreign repair stations.

Inconsistent interpretation of regulations is hindering growth

Lack of standardization across FAA regional offices (even within a single office) can significantly impact repair stations across the country.

A situation at Fortner Engineering demonstrates how overzealous regulators and inconsistent application of regulations impose impediments on repair stations with no benefit to flight safety. My company built its business around the repair of a component called a "lap assembly," which is at the heart of most hydraulic valves. Due to their design, lap assemblies are a difficult part to manufacture and are typically very expensive.

In 1969, Fortner developed proprietary procedures to repair lap assemblies in a less costly manner without compromising safety. We fixed thousands of these components for over a decade with the full knowledge of our local FAA inspector based in the Western-Pacific region. In 1979, an FAA inspector from a completely different region (the Northwest Mountain region) determined that the repair was "unapproved." The FAA proceeded to impose an emergency suspension of my company's part 145 repair station certificate. While the FAA reinstated our part 145 certificate shortly thereafter, the matter wasn't resolved for almost two more years.

Unfortunately, these types of arbitrary agency actions have no benefit to flight safety, but they do have real world consequences. During the time my company was battling with the FAA, we had to divert substantial resources to retain our part 145 certificate and our ability to perform the lap assembly repair we developed. The company lost significant revenues and we were forced to cut our workforce by two-thirds; all because of the capricious determination of one FAA inspector.

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While my company's situation occurred years ago, ARSA members are routinely plagued by FAA's inconsistent application of regulations. ARSA members frequently cite inconsistent interpretation and enforcement as a major problem and the lack of regulatory standardization across regions particularly impairs small businesses.

ARSA commends Congress for mandating in the FAA Modernization & Reform Act that the FAA convene an advisory panel to determine the root causes of inconsistent regulatory interpretation by the FAA Flight Standards Service and Aircraft Certification Service and develop recommendations to improve the consistency of regulatory interpretation. Repair stations look forward to having a voice on this new advisory panel and urge Congress to do everything in its power to find a solution to this problem.

The FAA Modernization & Reform Act

ARSA congratulates Congress for recently completing long-overdue FAA reauthorization legislation. The FAA Modernization & Reform Act strikes the right balance between oversight and safety and will allow the aviation maintenance industry continued prosperity (see Appendix A for ARSA's full analysis of the maintenance provisions of the law).

The law is a major improvement over past legislative proposals. Last Congress, repair stations faced FAA reauthorization legislation that would have required duplicative biannual inspections of all repair stations. It also would have mandated drug and alcohol testing for overseas maintenance facilities without regard to laws of other nations, effectively forcing repair stations in countries that prohibit random testing to surrender their certificates. Having no foreign repair stations in a country would inhibit travel by American citizens on U.S.-registered aircraft.

The earlier versions of the bill would have added layers of bureaucratic oversight and increased costs for repair stations and airlines with no improvement to safety. Most significantly, they would have destroyed the system of BASAs that allow U.S. aviation maintenance companies to compete internationally and threatened the United States' \$2.4 billion positive balance of trade in maintenance services.

A recent ARSA commissioned study quantified the economic benefits of BASAs. The research determined that maintenance bilaterals significantly reduce certification costs for repair stations. In fact, it costs repair stations significantly more (almost three times as much) to become certificated by "foreign" CAA's when the home country does not have a BASA. Additionally, the study found maintenance bilaterals help make repair

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stations more profitable and that the collapse of the U.S.-EU BASA would disproportionately hurt small companies.²

For example, my small company would have been required to pay as much as \$37,000 to obtain EASA certification and an annual renewal fee of \$33,000 if the E.U.-U.S. BASA collapsed. Currently, we pay about \$1,150 per year. Bilaterals clearly are a huge benefit to U.S. repair stations.

Conclusion

Repair stations have long been, and continue to be, a vital part of the aviation industry and our nation's economy. It is no coincidence that the increased use of contract maintenance has coincided with the safest period in commercial aviation history. In the end, no government agency can guarantee aviation safety. Safety is the business of aviation companies and their employees. ARSA looks forward to working with Congress to ensure that legislation and regulations are based on our common goal: safety with economic viability.

² For the complete study see "Bilateral Aviation Safety Agreements: Reducing Costs for the Aviation Industry", found on ARSA's website at the following link: <http://www.arsa.org/files/ARSA-BASAs-ReducingCostsForTheAviationIndustry.pdf>

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**Appendix A
 Analysis of the Maintenance Provisions of the Final FAA Modernization & Reform Act**

On February 14, 2012, President Obama signed a new, four-year FAA authorization law. This analysis of the key provisions of the FAA Modernization & Reform Act affecting maintenance providers was prepared by the Aeronautical Repair Station Association.

Final FAA Modernization & Reform Act		
Provision	Exact Language	ARSA Analysis
Sec. 308. Inspection of Repair Stations Located Outside the United States	(a) IN GENERAL.—Not later than 1 year after the date of enactment of this section, the Administrator of the Federal Aviation Administration shall establish and implement a safety assessment system for all part 145 repair stations based on the type, scope, and complexity of work being performed. The system shall— (1) ensure that repair stations located outside the United States are subject to appropriate inspections based on identified risks and consistent with existing United States requirements; (2) consider inspection results and findings submitted by foreign civil aviation authorities operating under a maintenance safety or maintenance implementation agreement with the United States; and (3) require all maintenance safety or maintenance implementation agreements to provide an opportunity for the Administration to conduct independent inspections of covered part 145 repair stations when safety concerns warrant such inspections.	Within a year, the FAA is required to create a safety assessment system for part 145 repair stations, an initiative the FAA and ARSA have been working on for some time. The FAA has been working to adapt its “ATOS” to repair stations, which should result in a “safety” assessment. ARSA is helping the agency develop a “repair station preparedness” assessment for new repair stations that can be used to enhance the continued oversight of repair stations based upon original readiness, types of ratings, work and size.

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	(b) NOTICE TO CONGRESS OF NEGOTIATIONS.—The Administrator shall notify the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives not later than 30 days after initiating formal negotiations with foreign aviation authorities or other appropriate foreign government agencies on a new maintenance safety or maintenance implementation agreement.	The law requires the FAA to notify congressional authorizing committees after commencing negotiations on new maintenance safety or implementation agreements.
	(c) ANNUAL REPORT.—The Administrator shall publish an annual report on the Administration’s oversight of part 145 repair stations and implementation of the safety assessment system required under subsection (a). The report shall— (1) describe in detail any improvements in the Administration’s ability to identify and track where part 121 air carrier repair work is performed; (2) include a staffing model to determine the best placement of inspectors and the number of inspectors needed; (3) describe the training provided to inspectors; and (4) include an assessment of the quality of monitoring and surveillance by the Administration of work performed by its inspectors and the inspectors of foreign authorities operating under a maintenance safety or maintenance implementation agreement.	The FAA is required to submit a report on the progress and certain aspects of the safety assessment system.

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	(d) ALCOHOL AND CONTROLLED SUBSTANCES TESTING PROGRAM REQUIREMENTS.— (1) IN GENERAL.—The Secretary of State and the Secretary of Transportation, acting jointly, shall request the governments of foreign countries that are members of the International Civil Aviation Organization to establish international standards for alcohol and controlled substances testing of persons that perform safety-sensitive maintenance functions on commercial air carrier aircraft.	The International Civil Aviation Organization (ICAO) currently recommends drug and alcohol testing of safety-sensitive employees, but does not require testing. ARSA supports working through ICAO for any broad changes to the aviation industry.

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	<p>(2) APPLICATION TO PART 121 AIRCRAFT WORK.—Not later than 1 year after the date of enactment of this section, the Administrator shall promulgate a proposed rule requiring that all part 145 repair station employees responsible for safety-sensitive maintenance functions on part 121 air carrier aircraft are subject to an alcohol and controlled substances testing program determined acceptable by the Administrator and consistent with the applicable laws of the country in which the repair station is located.</p>	<p>This section contains ARSA supported and suggested language that respects national sovereignty and BASAs.</p> <p>The FAA is to issue a proposed rule requiring all part 145 repair station employees responsible for safety-sensitive functions on part 121 air carrier aircraft be subject to a drug and alcohol program acceptable to the Administrator and consistent with the laws of the repair station's country.</p> <p>Importantly, the law does not require that individuals be subject to the DOT drug and alcohol testing program, a requirement from prior FAA reauthorization proposals. In addition, the provision respects the applicable laws of the country in which a repair station is located when determining if the facility's drug and alcohol testing program is acceptable, a top ARSA priority.</p>

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	(e) ANNUAL INSPECTIONS.—The Administrator shall ensure that part 145 repair stations located outside the United States are inspected annually by Federal Aviation Administration safety inspectors, without regard to where the station is located, in a manner consistent with United States obligations under international agreements. The Administrator may carry out inspections in addition to the annual inspection required under this subsection based on identified risks.	<p>The law codifies current FAA policy requiring that foreign repair stations be inspected annually by FAA safety inspectors in a manner consistent with BASAs. It also ensures the FAA can carry out additional inspections based on identified risk. The FAA need not perform duplicative inspections in areas where there are BASAs in place.</p> <p>This provision is a significant improvement over past reauthorization proposals that would have required biannual inspections of <u>all</u> repair stations, regardless of international agreements.</p>
Sec. 319. Maintenance Providers	(a) REGULATIONS.—Not later than 3 years after the date of enactment of this Act, the Administrator of the Federal Aviation Administration shall issue regulations requiring that covered work on an aircraft used to provide air transportation under part 121 of title 14, Code of Federal Regulations, be performed by persons in accordance with subsection (b).	Within three years, the FAA is to issue regulations limiting who can perform certain maintenance on a part 121 aircraft.

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	<p>(b) PERSONS AUTHORIZED TO PERFORM CERTAIN WORK.—A person may perform covered work on aircraft used to provide air transportation under part 121 of title 14, Code of Federal Regulations, only if the person is employed by—</p> <p>(1) a part 121 air carrier;</p> <p>(2) a part 145 repair station or a person authorized under section 43.17 of title 14, Code of Federal Regulations (or any successor regulation); or</p> <p>(3) subject to subsection (c), a person that—</p> <p>(A) provides contract maintenance workers, services, or maintenance functions to a part 121 air carrier or part 145 repair station; and</p> <p>(B) meets the requirements of the part 121 air carrier or the part 145 repair station, as appropriate.</p>	<p>The law prohibits contracting covered work to a person certificated under part 65 <u>unless</u> that person is employed by an air carrier, repair station or a company contractor. The law takes into account the BASA with Canada.</p>
	<p>(c) TERMS AND CONDITIONS.—Covered work performed by a person who is employed by a person described in subsection (b)(3) shall be subject to the following terms and conditions:</p> <p>(1) The applicable part 121 air carrier shall be directly in charge of the covered work being performed.</p> <p>(2) The covered work shall be carried out in accordance with the part 121 air carrier's maintenance manual.</p> <p>(3) The person shall carry out the covered work under the supervision and control of the part 121 air carrier directly in charge of the covered work being performed on its aircraft.</p>	<p>When it comes to part 65 certificated workers, Congress mixed up the phrases "<u>directly in charge</u>" and <u>working "under the supervision and control"</u> of the air carrier.</p> <p>Therefore, ARSA believes the FAA will take the position that the current air carrier control and oversight will meet the requirements of this law.</p>

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	<p>DEFINITIONS.—In this section, the following definitions apply:</p> <p>(1) COVERED WORK.—The term “covered work” means any of the following:</p> <p>(A) Essential maintenance that could result in a failure, malfunction, or defect endangering the safe operation of an aircraft if not performed properly or if improper parts or materials are used.</p> <p>(B) Regularly scheduled maintenance.</p> <p>(C) A required inspection item (as defined by the Administrator).</p> <p>(2) PART 121 AIR CARRIER.—The term “part 121 air carrier” means an air carrier that holds a certificate issued under part 121 of title 14, Code of Federal Regulations.</p> <p>(3) PART 145 REPAIR STATION.—The term “part 145 repair station” means a repair station that holds a certificate issued under part 145 of title 14, Code of Federal Regulations.</p>	<p>The terms “essential maintenance” and “required inspection item” has already been defined by the FAA in anticipation of this legal requirement.</p> <p>ARSA anticipates that the term “regularly scheduled maintenance” will become “heavy maintenance” rather than line checks and other daily or flight required inspections.</p>

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