

**Before the Committee on Commerce, Science, and Transportation
Subcommittee on Aviation Operations, Safety, and Security
United States Senate**

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**The Federal Aviation
Administration's Role
in Safety Oversight of
Air Carriers**

**Statement of
The Honorable Calvin L. Scovel III
Inspector General
U.S. Department of Transportation**



Chairman Dorgan, Ranking Member DeMint, and Members of the Subcommittee:

We appreciate the opportunity to testify today regarding the Federal Aviation Administration's (FAA) role in the oversight of air carriers. Ensuring that airlines safely meet the demand for air travel is of paramount importance to the flying public and the national economy; this remains one of the top priorities for the Department of Transportation.

Safety is a shared responsibility among FAA, aircraft manufacturers, airlines, and airports. Together, all four form a series of overlapping controls to keep the system safe. The past several years have been one of the safest periods in history for the aviation industry. This is largely due to the dedicated efforts of the professionals within FAA and throughout the industry as well as significant advances in aviation technology.

In January, we witnessed a dramatic example of aviation safety at its best when U.S. Airways flight 1549 made an emergency landing in the Hudson River, and, miraculously, all 155 passengers and crew survived due to the skillful efforts of the pilot and crew. However, the tragic accident in February of Colgan flight 3407, which resulted in 50 fatalities, underscores the need for constant vigilance over aviation safety on the part of all stakeholders.

Last month, the National Transportation Safety Board (NTSB) held a preliminary hearing into the cause of that accident, in which some evidence suggested that pilot training and fatigue may have contributed to the crash. The NTSB has identified these issues as areas of concern for all air carriers; however, they are particularly critical at regional carriers. The last six fatal Part 121¹ accidents involved regional air carriers, and the NTSB has cited pilot performance as a potential contributory factor in four of those accidents.

As a result of that hearing, Mr. Chairman, you, along with Committee Chairman Rockefeller, Committee Ranking Member Hutchison, and Ranking Subcommittee Member DeMint, requested that our office begin a review to include FAA's standards for certification of commercial pilot training programs and licensing, FAA's oversight of those programs, and the Agency's ability to verify that pilots have the appropriate qualifications and training to operate specific aircraft. You also requested that we review FAA regulations and airline policies regarding crew rest requirements, including the role of pilots' domicile and duty locations, and FAA's and air carriers' (both mainline and regional) oversight and enforcement of those regulations and policies. We are in the preliminary stages of this extensive review, and, as part of the discussion today, we would like to address how we intend to proceed with that audit.

¹ 14 CFR 121 Operating Requirements: Domestic, Flag, and Supplemental Operations. This FAA regulation governs commercial air carriers, including regional air carriers, with primarily scheduled flights.

A key focus of this review, Mr. Chairman, is that FAA maintains it has one level of safety for all types of air carrier operations. Yet, we have overseen the application of that standard for years and have concerns. In short, our past work has disclosed serious lapses in FAA's safety oversight and inconsistencies in how its rules and regulations are enforced. Today, I would like to cover three areas: (1) vulnerabilities in FAA's oversight of safety, (2) differences between mainline and regional air carrier operations, and (3) our plan to address the Committee's and Subcommittee's new request for additional safety work.

VULNERABILITIES IN FAA'S OVERSIGHT OF SAFETY

While FAA has made progress toward improving aspects of its safety oversight, such as clarifying guidance to inspectors who monitor air carriers and repair stations, we continue to find weaknesses. For example, a year has passed since we last testified before this Subcommittee regarding FAA's oversight of the aviation industry.² That hearing highlighted weaknesses in FAA's national program for risk-based oversight, known as the Air Transportation Oversight System (ATOS), and in airline compliance with safety directives. While the safety lapses discussed at the hearing indicated problems with one airline's compliance, many stakeholders were concerned that they could be symptomatic of much deeper problems with FAA's air carrier oversight on a systemwide level. Since then, our work has focused on determining whether the kind of problems we reported on last year are unique to one air carrier and one FAA oversight office. We have determined the problems were not limited to that office and carrier, and we continue to believe the key to addressing this problem is better national FAA oversight.

In preparation for this hearing, we have identified serious vulnerabilities in five critical FAA programs for oversight of the aviation industry: risk-based inspections, repair stations, aging aircraft, disclosures of safety violations made through the Aviation Safety Action Program (ASAP), and whistleblower complaints.

Vulnerabilities in FAA's National Program for Risk-Based Oversight— The Air Transportation Oversight System

More than 10 years ago, FAA initiated ATOS, its risk-based oversight approach to air carrier oversight. ATOS was designed to permit FAA to focus inspections on areas of highest risk and maximize the use of inspection resources. We have always supported the concept of ATOS as FAA would never have enough inspectors to continuously monitor all aspects of a constantly changing aviation industry. However, since 2002, we have reported that FAA needs to develop national oversight processes to ensure the program is effectively and consistently implemented. In 2005, we found that

² OIG Testimony Number CC-2008-067, "Key Safety Challenges Facing the FAA," April 10, 2008. OIG reports and testimonies are available on our website: www.oig.dot.gov.

inspectors did not complete 26 percent of planned ATOS inspections—half of these were in identified risk areas,³ such as maintenance personnel qualifications.

Last year, we reported that weaknesses in FAA’s implementation of ATOS allowed airworthiness directive (AD) compliance issues in Southwest Airlines’ (SWA) maintenance program to go undetected for several years.⁴ We found that FAA inspectors had not reviewed SWA’s system for compliance with ADs since 1999. In fact, at the time of our review, FAA inspectors had not completed 21 key inspections for at least 5 years. While FAA has subsequently completed some of these inspections, 4 of the 21 inspections were still incomplete at the time we testified before this Subcommittee; some had not been completed for nearly 8 years.

We have recommended that FAA implement a process to track field office inspections and alert the local, regional, and Headquarters offices to overdue inspections required through ATOS. While FAA has implemented a system to track field office inspections, it is unclear whether it has taken any actions in response to identified overdue inspections. At the request of the Subcommittee, we are currently performing a review of FAA’s implementation of ATOS and will address this issue as part of that review.

Thus far, we have determined that lapses in oversight inspections were not limited to SWA—FAA oversight offices for seven other major air carriers also missed ATOS inspections. We have found that these missed inspections were in critical maintenance areas such as AD Management, the Continuing Analysis and Surveillance System (CASS),⁵ and the Engineering and Major Alterations Program. Some inspections had been allowed to lapse beyond the 5-year inspection cycle by nearly 2 years.

As part of this review, we are also assessing FAA’s recent transition of regional air carriers into the ATOS program. FAA inspectors responsible for oversight of large, commercial air carriers have been using this risk-based system for several years, but the majority of FAA offices responsible for oversight of regional air carriers have only recently transitioned to ATOS. This is a completely new way of conducting oversight, and inspectors we interviewed stated that ATOS applies more to large carrier operations and needs to be revised to fit the operations unique to smaller air carriers. We plan to issue our report later this year.

³ OIG Report Number AV-2005-062, “FAA Safety Oversight of an Air Carrier Industry in Transition,” June 3, 2005.

⁴ OIG Report Number AV-2008-057, “Review of FAA’s Oversight of Airlines and Use of Regulatory Partnership Programs,” June 30, 2008.

⁵ FAA requires air carriers to maintain a CASS, which monitors and analyzes the performance and effectiveness of their inspection and maintenance programs.

Ineffective Oversight of Repair Stations

Our work has also shown that FAA's oversight of repair stations has struggled to keep pace with the dynamic changes occurring in that industry. Repair stations are rapidly growing as a primary source for aircraft maintenance as air carriers increasingly outsource maintenance in an effort to reduce costs. This is an area of particular concern for regional carriers since they outsource as much as 50 percent of their maintenance to repair stations. The NTSB's investigation into the January 2003 crash of Air Midwest flight 5481 (a regional air carrier), in which there were 21 fatalities, identified serious lapses in the carrier's oversight of outsourced maintenance as a contributory cause of that accident.

In 2005, FAA established a risk-based oversight system for repair stations. However, this system does not include non-certificated repair facilities that perform critical maintenance.⁶ To address this concern, FAA issued guidance in 2007 that required inspectors to evaluate air carriers' contracted maintenance providers and determine which ones performed critical maintenance and whether they were FAA-certificated. However, the guidance did not provide effective procedures for inspectors to do so, and FAA is now trying to develop a new method to capture these data.

Another issue we identified was air carriers' inadequate training of mechanics at non-certificated facilities. We found carriers provided from as little as 1 hour of video training for mechanics to as much as 11 hours of combined classroom and video instruction.

In 2008, we reported that while FAA established a system for air carriers to report the volume of outsourced repairs, it was inadequate because air carriers are not required to report this information.⁷ When they do voluntarily report it, FAA does not require that they list *all* repair stations performing repairs to critical components⁸ or that FAA inspectors validate the information. FAA is reevaluating this system in response to our report and expects to implement system improvements by the end of August 2009.

Gathering adequate data to target inspections is important since FAA does not have a specific policy governing when inspectors should initially visit repair stations performing substantial maintenance for air carriers. We found significant delays between FAA's initial approval of repair stations and its first inspections at those locations. For example, during a 3-year period, FAA inspectors reviewed only 4 of 15 substantial maintenance providers used by 1 air carrier. Among those uninspected

⁶ OIG Report Number AV-2006-031, "Air Carriers' Use of Non-Certificated Repair Facilities," December 15, 2005.

⁷ OIG Report Number AV-2008-090, "Air Carriers' Outsourcing of Aircraft Maintenance," September 30, 2008.

⁸ For the purposes of our report, we used the term "critical components" to identify those components that are significant to the overall airworthiness of the aircraft, such as landing gear, brakes, and hydraulics. FAA does not use this term or include these types of components in its definition of substantial maintenance. FAA defines substantial maintenance as major airframe maintenance checks; significant engine work (e.g., complete teardown/overhaul); major alterations or major repairs performed on airframes, engines, or propellers; repairs made to emergency equipment; and/or aircraft painting.

was a major foreign engine repair facility that FAA inspectors did not visit until 5 years after it had received approval for carrier use—even though it had worked on 39 of the 53 engines repaired for the air carrier.

We again recommended that FAA develop and implement an effective system to determine how much and where critical maintenance is performed. In addition, FAA must ensure that inspectors conduct initial and follow-up inspections at substantial maintenance providers and perform detailed reviews of air carrier and repair station audits and corrective actions. In response to our report, FAA is reviewing its procedures for opportunities to strengthen its guidance. However, it does not expect to complete these reviews until the fourth quarter of this fiscal year.

Differences in Oversight of Aging Aircraft

Following the December 2005 fatal crash of a regional airline, Chalks Ocean Airways, we identified vulnerabilities in FAA's oversight of aging aircraft. FAA rules require inspectors to perform aircraft inspections and records reviews, at least every 7 years, of each multi-engine airplane used in scheduled operations that is 14 years and older. However, the rule does not require a focus on airplane fatigue cracks or crack growth, and these deteriorations can only be detected through supplemental inspections (detailed engineering reviews). FAA requires only those operators using aircraft with 30 or more seats to perform supplemental inspections of areas susceptible to cracks and corrosion.

The Chalks aircraft involved in the crash did not receive a supplemental inspection because it was an outdated aircraft model that fell outside of this FAA requirement. Two months before the accident, FAA did a visual inspection and records review of the aircraft, and no structural issues were noted. However, the NTSB's subsequent investigation determined the probable cause of the accident was the in-flight failure and separation of the right aircraft wing due to fatigue cracking that went undetected by FAA and the air carrier's maintenance program. This incident shows that for those aircraft only covered under FAA's requirements for a visual inspection and records review, the structural integrity of the aircraft cannot be assured. We note that 27 regional operators in Alaska are not required to have any Aging Aircraft Programs.

FAA, Congress, and the aviation industry have made significant strides toward ensuring the structural integrity of aging aircraft. However, as operators continue to operate aircraft beyond their original design service goals, aging aircraft will continue to be an area that bears watching.

Ineffective Utilization of the Aviation Safety Action Program

We recently reported problems in how FAA utilizes ASAP.⁹ ASAP is a joint FAA and industry program intended to generate safety information by allowing aviation employees to self-report safety violations of regulations to air carriers and FAA without fear of reprisal through legal or disciplinary actions. When properly implemented, this program could provide valuable safety data to FAA. We found, however, that FAA's ineffective implementation and inadequate guidelines have allowed inconsistent use and potential abuse of the program. For example, we identified repetitive reports of safety violations indicating that pilot training may need to be strengthened at two air carriers we reviewed.

Further, FAA has limited the program's effectiveness because it has not devised a method to fully compile data reported through ASAP and analyze these data on a national level to identify trends. This impedes a primary intent of ASAP—to identify *precursors* of accidents or fatalities. While ASAP has proven highly beneficial to the airlines, FAA currently obtains only limited aviation safety data through the program for use in proactively identifying systemic safety issues. For example, FAA inspectors' quarterly reports of ASAP activity at participating carriers may only provide general information on the number—not the nature—of ASAP submissions for that quarter.

As a result of these issues, ASAP, as currently implemented, is a missed opportunity for FAA to enhance the national margin of safety. In addition, ASAP is not widely used by regional carriers. While major carriers view ASAP as an integral safety tool, 37 percent of large regional carriers do not participate in ASAP. In response to our report, FAA agreed to clarify ASAP guidance and establish a centralized system for the acquisition and analysis of ASAP and other safety-related information at a national level. We will continue to monitor FAA's progress in this area.

Mishandling Internal Reviews of Whistleblower Complaints

Our work at SWA and Northwest Airlines (NWA)¹⁰ has identified systemic weaknesses in FAA's processes for conducting internal reviews and ensuring appropriate corrective actions. In the SWA case, FAA's internal reviews found, as early as April 2007, that the principal maintenance inspector was complicit in allowing SWA to continue flying aircraft in violation of an AD requiring inspections of aircraft for structural fatigue cracks. Yet, FAA did not attempt to determine the root cause of the safety issue nor initiate enforcement action against the carrier until November 2007.

⁹ OIG Report Number AV-2009-057, "FAA Is Not Realizing the Full Benefits of the Aviation Safety Action Program," May 14, 2009.

¹⁰ OIG Report Number AV-2007-080, "FAA's Actions Taken To Address Allegations of Unsafe Maintenance Practices at Northwest Airlines," September 28, 2007.

At NWA, FAA's reviews of an inspector's safety concerns were limited and also overlooked key findings identified by other inspectors, such as findings related to mechanics' lack of knowledge or ability to properly complete maintenance tasks and documentation. Although FAA found that some of the inspector's safety concerns were valid, FAA informed him that all of his concerns lacked merit.

We also have concerns regarding FAA's failure to protect employees who report safety issues from retaliation by other FAA employees. At both SWA and NWA, we found that FAA managers reassigned experienced inspectors who reported safety concerns to office duties, after an alleged complaint from the airline, and restricted them from performing oversight on carrier premises. Both the SWA and NWA cases demonstrate that FAA must pursue a more reliable internal review process and protect employees who identify important safety issues.

Given the vulnerabilities surrounding FAA's national program for risk-based oversight, ASAP implementation, and protection of whistleblowers, we have made a series of recommendations. Key actions needed from FAA include the following:

- Develop a national review team that conducts periodic reviews of FAA's oversight of air carriers.
- Periodically rotate supervisory inspectors to ensure reliable and objective air carrier oversight.
- Require that its post-employment guidance include a "cooling-off" period when an FAA inspector is hired at an air carrier he or she previously inspected.
- Establish an independent organization to investigate safety issues identified by its employees.

In response, FAA has developed a proposed rule requiring a "cooling-off" period for its inspectors. However, FAA still needs to address our remaining recommendations to demonstrate its commitment to effective oversight. We will continue our efforts to examine FAA's oversight of the aviation industry and will keep this Subcommittee apprised of our progress as well as other actions FAA should take to ensure safety.

OPERATIONAL DIFFERENCES BETWEEN REGIONAL AND MAINLINE CARRIERS

As mainline carriers continue to cut their capacity in response to the current economic downturn, regional airlines constitute an increasingly important proportion of operations in the U.S. National Airspace System. Today, regional flights represent one half of the total scheduled flights across the country, and regional airlines provide the only scheduled airline service to more than 400 American communities. Additionally, regional airlines provide passenger air service to communities without

sufficient demand to attract mainline service. Regional carriers tend to fulfill two roles: (1) delivering passengers to the mainline airline's hubs from surrounding communities and (2) increasing the frequency of service in mainline markets during times of the day or days of the week when demand does not warrant use of large aircraft.

These smaller airlines typically conduct business as a feeder airline, contracting with a major airline and operating under their brand name in what is essentially a domestic code share arrangement. Code sharing is a marketing arrangement in which one air carrier sells and issues tickets for the flight of another carrier as if it were operating the flight itself. Under both international and domestic code share agreements, a passenger buys a ticket from one carrier, but the actual travel for all or a portion of the trip could be with another carrier's aircraft and crew. For example, Colgan flight 3407 was operating as a Continental Connection flight.

We reported 10 years ago on carriers' growing use of international code share agreements as a means to increase profit while expanding their network and offering passengers more seamless and efficient international travel services.¹¹ While such agreements were beneficial, we reported that safety was not treated as a major factor in the Department's code share approval process, and FAA did not take an active role in the approval or oversight of these agreements.

Domestic code shares between major and regional carriers follow a similar business model, with the focus on a more seamless travel experience. However, a significant difference is that FAA certifies and oversees both parties to these agreements. Yet, according to industry sources, FAA has no role in the contractual agreements. This is a potential concern since the safety implications of these agreements are unknown. We are examining this issue as part of the review you requested, Mr. Chairman.

Last month's NTSB hearing brought to light the need to closely examine the regulations governing pilot training and rest requirements and the oversight necessary to ensure their compliance. This is a particular concern at regional carriers since the last six fatal Part 121 accidents involved regional air carriers (see table 1 below), and the NTSB has cited pilot performance as a potential contributory factor in four of those accidents.

¹¹ OIG Report Number AV-1999-138, "Aviation Safety Under International Code Share Agreements," September 30, 1999.

Table 1. Part 121 Accidents Involving Regional Carriers

Accident Date	Regional Carrier	Accident Site	Fatalities	Potential Factors
12-Feb-09	Colgan Air Inc (DBA Continental Connection)	Buffalo, NY	50	Not yet determined. Training and pilot fatigue issues have been raised.
27-Aug-06	Comair Inc (DBA Delta Connection)	Lexington, KY	49	Pilot performance, non-pertinent conversation during taxi.
19-Dec-05	Flying Boat Inc (DBA Chalks Ocean Airways)	Miami, FL	20	Deficiencies in the company's maintenance program.
19-Oct-04	Corporate Airlines (now Regions Air)	Kirksville, MO	13	Pilots' unprofessional behavior during the flight and fatigue.
14-Oct-04	Pinnacle Airlines (DBA Northwest Airlink) repositioning flight	Jefferson City, MO	2	Pilots' unprofessional behavior, deviation from standard operating procedures, and poor airmanship.
8-Jan-03	Air Midwest (DBA US Airways Express)	Charlotte, NC	21	Deficiencies in company's oversight of outsourced maintenance.

*Doing Business As (DBA)

In addition to these accidents, there were two, non-fatal accidents in 2007 involving regional air carriers. In both of these accidents, the NTSB concluded that pilot fatigue was a contributing factor.

While we have had only a short time to address the joint request from the Committee and Subcommittee to examine these issues, we have identified operational differences between regional and mainline carriers. These include differences in operations and flight experience and potential differences in pilot training programs. Our review will examine FAA's role in determining whether air carriers have developed programs to ensure pilots are adequately trained and have sufficient experience to perform their responsibilities.

Differences in Operations, Pilot Fatigue, and Flight Experience

Regional carriers typically perform short and medium hauls to hub airports. This could result in many short flights in 1 day for a pilot with a regional air carrier. While there have been multiple studies by agencies such as the National Aeronautics and Space Administration that concluded that these types of operations can contribute to pilot fatigue, FAA has yet to revise its rules governing crew rest requirements.

FAA last attempted to significantly revise flight duty and rest regulations in 1995, but the rule was never finalized and little or no action has been taken since then. Yet, pilot fatigue remains high on NTSB's list of most wanted safety improvements. As we begin our audits in response to the Committee's and Subcommittee's request, we will evaluate these operations, their potential effects on pilot fatigue, and FAA's oversight of air carrier programs established to meet the current flight and duty rest regulations.

Coupled with potential fatigue issues, another defining factor of regional air carriers is that their pilots tend to have less experience than pilots with mainline air carriers. Generally, pilots are primarily interested in using regional air carrier experience as a stepping stone to the more lucrative pay at a major air carrier. We will also address the potential impact this issue could have on safety during our pending audit.

Potential Differences in Training Programs

To fly for a regional or mainline air carrier, a pilot must have a commercial pilot's license, at a minimum. To obtain a commercial pilot's license, a candidate must have at least 250 hours of flight time. However, many air carriers require more stringent licensing requirements and may require pilots to have an Airline Transport Pilot's license, which requires a minimum of 1,500 flight hours.

Once a pilot has been hired by an air carrier, they are required to undergo training provided by the airline that has been approved by FAA and meet certain minimum requirements. Every Part 121 certificate holder, which includes all scheduled operations with aircraft seating 10 or more passengers, must establish and implement a training program that ensures each crewmember is adequately trained to perform his or her assigned duties. FAA regulations only provide general subjects to be covered during various training phases and minimum hours for the different training phases. The broad language in the regulations leaves air carriers significant latitude in formulating their training programs.

Additionally, air carrier training programs must be approved by the carrier's FAA inspector. However, the lack of more specific requirements in the regulations may hinder FAA inspectors' ability to determine whether air carriers' established programs will ensure crewmembers are "adequately" trained. As we delve deeper into this issue in our upcoming audit, we will analyze more closely the degree of variance of air carrier training programs.

FAA regulations also provide different instructional hour requirements for different types of aircraft. For example, pilots of piston engine aircraft are only required to have 64 hours of initial ground training, and those flying turbo-propeller powered aircraft must have 80 hours. Jet aircraft pilots must have 120 hours of initial ground training, or 50 percent more than turboprops, as shown in table 2 below.

**Table 2. Air Carrier Training Hour Requirements
by Aircraft Type**

Training Type	Piston Engine	Turboprop	Turbojet
<i>Initial Ground Training</i>	64	80	120
<i>Pilot-In-Command Initial In-Flight Training & Practice</i>	10	15	20
<i>Recurrent Ground Training</i>	16	20	25

Similar differences in instructional hours are found among in-flight and recurrent training requirements. Other turboprop crewmembers, such as flight attendants and dispatchers, are also required to receive fewer instructional hours of training than the crewmembers of jet aircraft. The differences in instructional hours for turboprops are significant distinctions because 23 percent of regional aircraft are turboprop aircraft and 24 percent of U.S. airports receive scheduled air service only from turboprop aircraft operations. Colgan flight 3407 was a turboprop aircraft.

While we need to complete additional work in this area, we are also concerned that the broad language of the requirements could result in wide variances between air carrier training programs. We will further focus our efforts on these differences and their potential impact on safety.

OIG PLANS FOR ADDRESSING NEW WORK ON FAA SAFETY OVERSIGHT

The NTSB’s recent hearing regarding the Colgan accident included evidence suggesting that pilot training and fatigue may have contributed to the crash. We are in preliminary stages of our review requested by the Committee and Subcommittee and would like to take this opportunity to discuss our overall approach.

We are executing this engagement in three stages. The first review concentrates on several aspects of pilot training. These include standards for certification of pilot training; frequency of training on new technologies; and FAA’s oversight of training (including use of simulators) and pilot qualifications. As part of this review, we are specifically examining training for regional pilots on the various types of aircraft since these carriers operate a wide variety of aircraft, including turboprop and regional jets. We are also reviewing FAA’s January 2009 proposed rulemaking on pilot training and evaluating its potential impact on air carrier training programs at both mainline and regional carriers. Currently, the comment period on the proposed rule has been extended to the end of August 2009.

Our second review concentrates on regulations covering pilot rest requirements and domicile and duty locations. The third review comprises a statistical analysis to determine if there is a correlation between accidents and pilot experience and compensation. As always, Mr. Chairman, we will adjust the focus of our reviews to address any other specific concerns that the Committee or Subcommittee may identify.

CONCLUSION

The importance of airline safety is critical to the Department and the flying public. We will continue to do our part in advancing the Department's goal of one level of safety. While all stakeholders are committed to getting it right, our work has identified a number of significant vulnerabilities that must be addressed. This will require actions in areas FAA has already targeted for improvement as well as other areas where FAA will need to revisit differences in standards and regulations and rethink its approach to safety oversight.

That concludes my statement, Mr. Chairman, I would be happy to address any questions you or other Members of the Subcommittee may have.