

Department of Transportation
Inspector General Top Management Challenges
for Fiscal Year 2016

Federal Aviation Administration
Year-End Progress Reports

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Addressing the Increasing Public Safety Risks Posed by the Transportation of Hazardous Materials

Why is this issue significant?

Transportation of hazardous materials by air can present serious safety risks, and it is important for the FAA to have effective programs to address this risk. In 2006, FAA established the Hazardous Materials Voluntary Disclosure Reporting Program (HM VDRP). This program allows air carriers to voluntarily disclose violations of hazmat regulations without receiving civil penalties. The program is designed to encourage compliance with regulations, foster safe operating practices, and promote the development of internal evaluation programs by air carriers.

Actions taken in FY 2016:

- The FAA strengthened its policy to close HM VDRP cases only after sufficient evidence that comprehensive fixes and self-audits were completed is provided and verified.
- The FAA plans to improve an existing VDRP system to collect data for the HM VDRP. This existing system already uses an external web portal for data collection. In FY 2016, the FAA developed technical requirements and a work schedule, and started its work on the modification to our existing system.
- The FAA implemented a tracking system at FAA headquarters to verify that HM VDRP submissions are being addressed by regional offices consistent with FAA's policies and guidance.
- In order to avoid inconsistent implementation of the HM VDRP, the FAA held regular meetings and discussions throughout FY2016 to help division managers from the agency's field offices become more familiar with FAA policy and requirements. FAA headquarters provided feedback to division managers on a quarterly basis and collaborated closely on disposition of reports. Division managers have also participated in discussions pertaining to revisions to FAA's policy and guidance.

Actions remaining and expected completion date:

- FAA expects to submit for publication written guidance for the HM VDRP by December 31, 2016.
- The FAA plans to complete its modifications to the existing VDRP data collection system by the end of the first quarter of FY2017. Testing on this modification will begin in the second quarter of FY 2017.
- Once HM VDRP data has been integrated into the existing VDRP system, the FAA will conduct WebEx briefings to provide training on the new capabilities.

Results or expected results:

The FAA analyzes HM VDRP data in conjunction with past inspection data when planning future air carrier inspection and outreach activities. The integration of HM VDRP data into the existing VDRP system will increase data sharing for FAA's analyses. In addition, better training and tracking will ensure that the HM VDRP is implemented more consistently across the agency.

Integrating Unmanned Aircraft Systems Safely

Into the National Airspace System

Why is this issue significant?

Analysts predict that over the next decade as much as \$93 billion will be invested in UAS technology across the globe. Safely integrating UAS into the nation's airspace presents a challenge for the FAA because of the industry's fast expansion and variations in UAS size, purpose and design.

Actions taken in FY 2016:

- This year, the FAA finalized its first regulation for the routine use of small UAS, including new rules for the commercial use of UAS. More information about the regulation is available at http://www.faa.gov/uas/media/Part_107_Summary.pdf.
- The FAA completed the implementation of an electronic registration system for small UAS, including the ability to register commercial aircraft. This registration system helps the FAA communicate with UAS operators and gives the FAA a valuable opportunity to educate operators about how to fly their UAS safely. Also, by connecting UAS to their owners, the system helps the FAA enforce rules in cases of noncompliance with UAS regulations. More information about the registration system can be found at <https://registermyuas.faa.gov>.
- This year, the FAA published new oversight guidance related to UAS for its aviation safety inspectors. This guidance provides new standards for UAS maintenance, inspections, and conditions for safe operation, along with standards for UAS airmen certification, operational requirements and approval. The guidance is a comprehensive update to the Flight Standards Information Management System, which is available at <http://fsims.faa.gov>.
- In September 2016, the Radio Technical Commission for Aeronautics (RTCA) approved performance requirements for a safety-of-flight command and non-payload communication function that enables an UAS pilot to safely maneuver the aircraft from the ground. The FAA chartered the RTCA to operate as a Federal advisory committee, which employs a consensus-driven process to generate minimum performance standards and recommendations on key aviation policies.
- In FY 2016, the FAA continued to work closely with the American Society for Testing and Materials (ASTM) on the development of industry consensus standards for design, production and qualification of UAS and control stations. ASTM has published four standards: Quality Assurance; Production Acceptance; Ensuring Dependability of Software in UAS; and a UAS Aircraft Flight Manual. Two of these standards were published this past year: Ensuring Dependability of Software and a UAS Aircraft Flight Manual.
- This past year, an FAA representative continued to serve as the vice-chair for the Joint Authorities for the Rulemaking of Unmanned Systems (JARUS), which is responsible for the development of technical, safety, and operational UAS standards. In FY 2016, JARUS released

its Recommendations for Light Unmanned Aero plane Systems for external comments and released its Guidelines on Specific Operations Risk Assessment for external comments.

- In FY 2016, the FAA participated in and guided the development of industry consensus regarding the technology standards for the integration of UAS into the national airspace. With the RTCA Special Committee 228, the FAA completed the development of Minimum Operational Performance Standards.

Actions still remaining and expected completion date?

- In FY 2017, the FAA plans to propose a rule on unmanned aircraft operations over people. Under the FAA's current regulation, small UAS may not operate over people who are not directly participating in the operation.
- With RTCA, the FAA continues with the development of the detect-and-avoid minimum operational performance standard. This standard is progressing on schedule for a completion in December 2016.
- The ASTM continues its work on the development of industry consensus standards for design, production, and qualification of UAS and control stations. These standards will be updated every three years.
- The FAA continues to work with the International Civil Aviation Organization (ICAO) on changes to its standards and recommended practices.
- The FAA continues to work on a prototype system that can further automate the FAA's UAS events tracking database and analytical capability.

What are the results or expected results of the actions taken?

The FAA's small UAS rule is the agency's first regulation to provide for the routine use of UAS. It replaces the need to grant authorization for most small UAS operations on a case by case basis. With the publication of this rule, the FAA has built an important regulatory foundation for allowing additional UAS operations in the future. The FAA's continuing efforts to develop technology standards, oversee UAS safety, and better track UAS incidents will further mitigate safety risks related to UAS.

Protecting the Department Against More Complex and Aggressive Cyber Security Threats

Why is this issue significant?

The Department of Transportation uses more than 450 information systems to conduct business and operate some of the nation's most critical transportation systems. Many of these systems have data that are of potential interest to hackers. Preparing effective contingency plans and resolving longstanding vulnerabilities are critical for reducing the risk of catastrophic cybercrime and maintaining continuity of the FAA's vital systems in the event of a malicious attack.

Actions taken in 2016:

- The FAA established a permanent office to manage major disruptions to the national airspace. This office manages the policies and guidance that prepares the FAA to respond to air traffic control disruptions. The FAA will use an incremental, risk-based approach that focuses on a range of solutions to facilitate the transfer of air traffic control services from one FAA facility to another in the event of a disruption ("divestment" of airspace).
- The FAA developed divestment requirements and started to coordinate their implementation among regional offices and air traffic facilities.
- The FAA established a goal to restore air traffic control services within 24 hours at the core 30 airports and affected airspace within 96 hours of an event.
- For air traffic control facilities that manage en route airspace, the FAA developed divestment plans that meet FAA's new targets to achieve 90% efficiency during contingency operations.
- The FAA demonstrated its capability to restore air traffic control services quickly and efficiently through airspace divestment planning that allowed two facilities – the Oakland Air Route Traffic Control Center and the Anchorage Air route Traffic Control Center – to run on a combined air traffic system. Each facility was successful in divesting airspace, and facility workgroups documented the procedures as plans and check lists for the exchange of airspace.

Actions still remaining and expected completion date?

- The FAA anticipates having documented procedures for airspace divestment in place by fall 2019.
- The FAA expects to have domestic airspace divestment plans for facilities that serve the core 30 airports in place by 2019. The FAA expects to develop divestment and contingency plans to cover oceanic airspace and for other air traffic control facilities by 2020.
- The FAA will demonstrate airspace divestment capabilities through a comprehensive review of air traffic facility contingency plans and will perform exercises to validate the effectiveness of those plans.

Results or expected results

The FAA is determined to minimize system disruptions through effective contingency planning and testing, and to deter insider threats. Having recovery plans in place that are validated and fully implemented will minimize the impact of events such as natural disasters, cybercrime attacks, or insider threats.

Adopting Effective Practices for Managing FAA Acquisitions

Why is this issue significant?

Each year the FAA relies on a variety of systems, facilities, services and infrastructure to fulfill its mission. The FAA's Acquisition Management System (AMS) establishes the policy and guidance that the FAA uses to identify, define, acquire, deploy and manage its needs. Effective implementation of the AMS is critical to ensuring the success and long-term viability of the FAA's programs and systems. Failure to effectively implement its acquisition programs could result in large cost overruns and scheduling delays. It could also put the FAA's NextGen modernization effort at risk.

Actions taken in FY 2016

- This year, the FAA completed its AMS 2016 effort. Under this effort, the agency performed a process review and risk analysis of the Acquisition Management System (AMS) acquisition lifecycle. Goals of the review included identifying areas of improvement, incorporating government and private sector best practices where feasible and ensuring that the AMS process efficiently and effectively supported FAA mission requirements.
- In March 2016, the FAA published revisions to AMS policy and guidance. These revisions focused on areas that received the most user feedback and recommendations from the IG: market analysis, effective cost and price analysis, and consistent assessment of proposed contract actions through the Chief Financial Officer review process.
- This year the FAA provided focused training to employees and key stakeholders in order to integrate these changes to the AMS into existing operations.
- This year the FAA also refined its metrics to measure the performance of the AMS. These refinements will ensure that the FAA can better measure the effectiveness of the AMS.

Actions still remaining and expected completion date?

- As it continues to use the AMS, including the improvements developed through the AMS 2016 effort, the FAA will review all of the risks and the cost estimates for major acquisitions before making an investment decision and before awarding a contract.

Results or expected results

Initial measurable improvements include increased competition of contract awards, a reduction in FAA's one-bid rate to a best-in-government performance, and increased utilization of performance tools such as the Contractor Performance Assessment Reporting System.

Developing and Sustaining an Effective and Skilled DOT Workforce

Why is this issue significant?

The success of FAA's mission depends on maintaining highly skilled workforces, including its air traffic controllers and employees who oversee the safety of our air transportation system. In addition, the FAA makes use of its Organization Designation Authorization (ODA) program, which allows the agency to delegate certain functions, such as approving new aircraft designs and certifying aircraft components to aviation manufacturers and other organizations. In addition to hiring and developing its own workforce, the FAA needs to maintain sufficient staffing levels for conducting ODA oversight.

Actions taken in FY 2016:

- The FAA hired over 1,600 air traffic controllers in FY 2016, exceeding the agency's hiring target.
- This year, the FAA established the new Center of Excellence for Technical Training and Human Performance, which will help the FAA access research on training improvements.
- The FAA continues to support the air traffic controller basic qualification training working group under the Aviation Rulemaking Advisory Committee. The 12-member working group is made up of representatives from academia, associations, and industry. An FAA representative participates in the working group, and FAA subject matter experts provide guidance as needed. The working group is tasked with providing recommendations on how the agency can use external training providers to deliver basic qualification training for air traffic controllers.
- This year, the FAA expanded the model it uses to estimate staffing needs for aircraft certification. The expanded model includes the FAA's office with direct responsibility for overseeing Boeing's internal inspection organization, which will improve the model's ability to forecast the FAA staff required to support ODA activities in FY 2017 and beyond.
- This year, the FAA starting using its Labor Distribution Reporting (LDR) system as a tool to track activities associated with ODA oversight activities. The FAA implemented and analyzed new LDR codes for designee management, designee training, delegated organization certification activities, ODA technical issue resolution, procedures manual reviews, program notification letter/certification plan reviews, notification of noncompliance, ODA policy development, and oversight and surveillance.

Actions remaining and expected completion date:

- The FAA will continue to support the air traffic controller basic qualification training working group under the Aviation Rulemaking Advisory Committee. The FAA expects the working group to provide initial recommendations on air traffic controller training in March 2017. Initial recommendations on air traffic controller hiring are expected by the end of 2018.

- A data analysis meeting on the staffing model for aircraft certification will take place in December 2016. At that meeting, work activities will be compared to the new LDR hours to determine average/nominal times per work products completed. The team staffing model team will also conduct a mid-year data review meeting in July 2017 to determine if model adjustments to work activity counts or LDR hours are required.
- The work activity and LDR information included in the staffing model for aircraft certification will be used to forecast staffing needs from FY 2018 to FY 2020.

Results or expected results:

Transforming the air traffic controller training structure can shift the FAA's focus from basic qualification training to training certified controllers on advanced NextGen tools and procedures. The FAA's efforts to improve its staffing models and LDR system will help the agency better estimate the workforce level required to provide direct safety oversight and oversee the safety functions delegated to other organizations.