

INSPECTOR GENERAL'S TOP MANAGEMENT CHALLENGES FY 2019 ACTIONS TAKEN REPORT

The Reports Consolidation Act of 2000 requires the Inspector General (IG) to identify and report annually on the most serious management and performance challenges that federal agencies face.

On November 15, 2018, the IG issued its memorandum identifying the top management and performance challenges that DOT would be facing in FY 2019. The pages immediately following contain a summary prepared by the FAA of the challenges specifically applicable to the agency and the actions it took during FY 2019 to address those challenges.



Top Left: Photo by John McArthur via Unsplash.com

Lower Left: Inside the air traffic control tower at Charlotte Douglas International Airport, NC. FAA photo

Top Right: Drone at work on a sugar cane farm. Photo by Herney Gómez via Pixabay.com

Lower Right: Business jet at Chandler Municipal Airport, AZ. Photo: City of Chandler.

Of the 25 key challenges identified by the Inspector General for FY 2019, DOT tasked the FAA with addressing the following 15 challenges:

- **Implementing effective air carrier oversight by proactively identifying and mitigating significant operational and maintenance safety risks**
- **Balancing collaboration and enforcement in air carrier safety oversight**
- **Addressing runway safety risks**
- **Safely evacuating airline passengers in the event of an aircraft incident**
- **Strengthening oversight of Unmanned Aircraft Systems in the national airspace system**
- **Enhancing interagency coordination to improve cockpit security**
- **Ensuring effective oversight of FAA's drug and alcohol testing program**
- **Addressing barriers to implementation of new flight routes**
- **Providing new capabilities to airspace users while modernizing systems**
- **Replacing existing radar with a new system financed by the auction of electromagnetic spectrum**
- **Strengthening management oversight of developmental funding for air traffic management**
- **Resolving longstanding security weaknesses to strengthen information technology infrastructure**
- **Implementing congressionally mandated aviation cybersecurity initiatives**
- **Implementing innovative and streamlined acquisition practices while managing risk**
- **Strengthening agency oversight of DOT assets, contracts, and grants**

After the Inspector General's report was issued, the FAA developed an "Action Plan" that listed actions and timelines for addressing each of the challenges. The FAA then developed this "Actions Taken" report that describes the progress the FAA made throughout FY 2019 in addressing each of the challenges.

Implementing effective air carrier oversight by proactively identifying and mitigating significant operational and maintenance safety risks

Why this is a challenge

The effectiveness of FAA's risk-based oversight system depends on safety data to enable the agency to identify and target its oversight to areas of greatest risk. The FAA's safety oversight strategy relies on a strong safety culture within the agency and industry. To supplement industry's wide array of safety reporting systems, the FAA established a hotline in 2014 for stakeholders to submit safety concerns, in addition to allowing various FAA offices to receive complaints. The FAA recognizes the impact a single inspector can have on the safety culture and established standards that require inspectors to act impartially and avoid the appearance of preferential treatment when they perform their official duties. Ensuring that FAA's inspector workforce meets standards of impartiality remains a key oversight challenge for the agency to protect its safety culture, and effectively identify and mitigate risks.

Progress in meeting the challenge

- The FAA conducted an independent review of the oversight of American Airlines' flight operations to determine whether controls are in place and effective in preventing single points of failure.
- The FAA developed and implemented controls requiring oversight office staff to resolve complaints and follow key policy requirements.
- The FAA conducted an independent review at the American Airlines Certificate Management Office (CMO) in Irving, Texas that focused on ten specific areas of assessment. Of these ten areas, eight were satisfactory and two had findings of minor revisions needed to the Office Procedures Manual, which were processed in the Flight Standards Quality Management System (QMS).
- The FAA conducted numerous audits and assessments to evaluate air carrier oversight, including:
- Four assessments of the FAA's American Airlines CMO Operations unit;
 - American Airlines Flight Test Program viability through the Safety Assurance System Comprehensive Assessment Plan and normal surveillance assigned;

- The QMS process review and records to ensure continuous improvement;
 - Follow-up actions on Risk Management Processes to mitigate risks identified with American Airlines Flight Operations Programs; and
 - Analysis Assessment and Action Oversight. All areas were found satisfactory, and with no single points of failure.
- The FAA initiated a review and independent assessment of the policies and procedures for its Certificate Management Data Evaluation Program (CMDEP) to update and implement improved mechanisms to evaluate the objectivity of inspectors by incorporating risk factors such as non-routine operations and the length of time inspectors oversee the same air carrier.
 - In March 2019, the FAA initiated process improvements to ensure safety complaints are routed to FAA's Office of Audit and Evaluation (AAE). These included:
 - Revision of Order 8900.1 guidance pertaining to complaints received directly by FAA personnel concerning other FAA personnel.
 - Identified deficiencies in the Flight Standards Administrative Manual (FSAM) process for intake; and determination of cases requiring Management Inquiries, Security Investigations or AAE coordination, and coordinated draft changes.
 - Conducted meetings to explore possible needed changes in guidance regarding in-person safety complaints received by FAA Flight Standards employees.
 - Reviewed current complaint investigation guidance for duplication, and conducted a gap analysis (the gap between the current state of a safety management system and the desired state).
 - Consolidated FAA's complaint investigation policy and procedures to enable consistent and efficient execution of complaint investigations and to coordinate with AAE.
 - Identified the Safety Risk Management Division of the Flight Standards Service as the focal point to manage and control all changes and submissions to complaint investigations guidance.
 - Revised and drafted Order 8900.1 complaint investigation guidance to de-conflict with FSAM safety hotline guidance and meet the organizational intent of consistency and efficiency in complaint investigations and coordination with AAE.
 - Created a Job Aid to ensure data quality in complaint reporting and incorporated it by reference in the draft Order 8900.1 guidance to enable data analysis to identify complaints requiring AAE routing and coordination.

What needs to be done

- The FAA is following up on the results of the independent audit by processing two Non Conformity and Corrective Actions (NCA-19-0454 and NCA-19-0459). Both of these corrective actions are in "Disposition Correction" phase and are expected to be completed in early FY 2020.
- On CMDEP, the FAA is working to determine a method to account for significant discontinuity in Aviation Safety Inspector (ASI) certificate assignments and Front Line Manager (FLM) positions, to identify total times assigned to certificates. The team will review Safety Assurance System automation guidelines to identify relevant details for data validation. Once that is accomplished, the team will also review direct office inquiries to determine FLM to ASI ratio validity and accuracy.
- The FAA will validate the Flight Standards interpretation of the "Special Program" used to identify the American Airlines flight test program. This includes an authorization via local Memorandum of Understanding or other local arrangement that allows the certificate holder to perform any functions not normally supported by their certification; or tracked as part of the normal oversight process; or any arrangements that grant relief from FAA requirements that have not been published in the Flight Standards Information Management System.
- The FAA will create a process for evaluating the suitability and adequacy of the Special Programs approval to ensure that American Airlines flight test program, and other such programs, are captured in Flight Standards oversight and CMDEP analysis.
- The FAA will coordinate publishing the changes in guidance in accordance with the Document Control Board and QMS Document Control Procedures, and implement and manage the changes to the guidance upon release.

Balancing collaboration and enforcement in air carrier safety oversight

Why this is a challenge

FAA's Compliance Program emphasizes the agency's preference for collaborating with air carriers through education and training over penalizing carriers to address discrepancies. This program calls for FAA to work with air carriers to address the root causes of violations of safety regulations rather than imposing enforcement actions—a change in the way FAA and the airlines previously addressed compliance and safety issues. A key challenge the agency faces is striking a balance between collaboration and enforcement and accurately assessing whether an air carrier is willing and able to correct its deficiencies.

Progress in meeting the challenge

- The FAA has provided guidance concerning this challenge in several published documents:
 - FAA Order 8000.373A, Paragraph 4, which provides an overview of the Compliance Program.
 - FAA Order 2150.3C, Chapter 5, which describes the “Responsibilities of Program Offices When Selecting Among Compliance, Administrative, and Legal Enforcement Actions”.
 - Order 8900.1, Volume 14, Chapter 1, Section 1, Paragraph 14-1-1-7 which provides guidance to FAA personnel on addressing safety deviations (including specific instances when enforcement is required).
 - Order 8900.1, Volume 14, Chapter 1, Section 1, Paragraph 14-1-1-11 which provides guidance to FAA personnel on expectations when investigating a safety deviation.
 - Order 8900.1, Volume 14, Chapter 1, Section 2, which provides FAA personnel a process to determine if a compliance action (i.e., non-enforcement response to a deviation) is appropriate.
- The FAA provides training to newly hired Flight Standards personnel (who are responsible for investigative duties) through the following courses:
 - FAA 27100253, Compliance Philosophy Supplemental Briefing. This briefing provides foundational information on the Compliance Program and includes a video from the former Executive Director of the Flight Standards Service. The video focuses on the underlying precursors of deviations, and the willingness and ability of the subject of the investigation to correct the problem,

when determining action. The video also stresses interdependence and critical thinking when determining the FAA's responses to a safety deviation.

- FAA 27100259, Safety and Compliance Course, which provides newly hired Flight Standards personnel (who are responsible for investigative duties) information on FAA's creation of a culture of self-disclosure of errors and notes that there is a difference between unsafe acts that can be effectively addressed through the use of compliance tools and unacceptable behavior that requires the use of enforcement action. This course also reinforces the need for an individual to be both willing and able to cooperate in order to have a regulatory deviation resolved with a compliance action.
- FAA 21000136, Safety and Compliance Practical Application Workshop, which offers multiple compliance-related exercises. These exercises educate and provide practice for the participants on investigative procedures and determining which actions, in response to a deviation, are appropriate.
- FAA 21000148, Enforcement Procedures Course, which provides further training on when enforcement action is necessary and required.
- The Flight Standards Compliance Program Focus Team has conducted site visits to over 60 Safety Assurance offices (i.e., Flight Standards District Offices and Certificate Management Offices) to provide briefings on the Compliance Program; and continues to provide ongoing support to these offices.

What needs to be done

- The FAA continues to collect and develop measures, and seeks feedback from the workforce, to inform any needed changes or additions to the guidance, training, and messaging described above. This includes ongoing Safety Assurance office site visits by the Compliance Program Focus Team.
- In FY 2020, the FAA will initiate a comprehensive revision to the Safety and Compliance courses, and the Enforcement Procedures course. The updated training material will incorporate collected feedback to aid in balancing the appropriate response from the FAA.
- In FY 2020, the FAA will initiate development of a Recurrent Safety and Compliance course that is to be required for all personnel with investigative duties and responsibilities.

Addressing runway safety risks

Why this is a challenge

Reducing the risks of surface safety events remains one of the FAA's highest priorities. The Office of the Inspector General for the Department of Transportation identified runway safety risks as a management challenge after observing that reports of runway incursions had increased between FY 2011 and FY 2017. The Inspector General further stated that, while the data indicates the rate of serious runway incursions is low, some incidents had occurred in which two aircraft came within "a few feet of colliding with each other, posing significant safety risks." These observations, combined with the ever-changing and complex nature of air travel and recent increases in the congestion of airspace, call for increased vigilance with regard to runway safety.

Progress in meeting the challenge

- During FY 2019, the FAA completed an analysis of surface safety events and identified causal factors that mitigate risks associated with surface operations. This analysis resulted in improved metrics for surface safety, which enabled more comprehensive assessments of runway safety events. The FAA anticipates these metrics will facilitate the tracking of trends and results.
- The FAA also enabled the Airport Surface Detection Equipment, Model X (ASDE-X) Taxiway Arrival Prediction enhancement at 13 airports. The ASDE-X surveillance system uses a variety of technologies to allow air traffic controllers to track surface movement of aircraft and vehicles. Controllers at ASDE-X equipped airports have access to depictions of aircraft and vehicles in airport movement areas and can discern aircraft flying on final approach to those airports. The Taxiway Arrival Prediction capability provides air traffic controllers with alerts when aircraft mistakenly line up on a taxiway rather than a runway. As a result of these new capabilities, the FAA is confident its use of ASDE-X will improve overall runway safety.
- The FAA took action to further its Runway Incursion Mitigation (RIM) program at five airports. The FAA identified these airports based on the existence of certain safety concerns and the airports' non-conformance with FAA standards. As a result of the redesign of these airports under the RIM program, the FAA has reduced the likelihood that a runway safety event will occur. The FAA has completed the planning and design phase for 10 additional locations that plan to participate in the program.

- The FAA also implemented the Airport Surface Surveillance Capability (ASSC) at Pittsburgh, New Orleans, Kansas City, and Cincinnati. The ASSC is a runway-safety tool that displays aircraft and ground vehicles on an airport surface, as well as aircraft on approach and departure paths within close proximity to the airport.
- In addition, the FAA completed upgrades to the Standard Terminal Automation Replacement System (STARS) in certain facilities. STARS provides controllers with a complete, precise picture of the airspace. The STARS Approach Runway Verification (ARV) modification is a software enhancement that monitors for wrong surface landings (taxiways, wrong runways, and closed runways), wrong airport and wrong direction approaches, and provides audio and visual alerts to controllers.

What needs to be done

- The FAA prepared FAA Order 7050.1B Change 1 that adds a Chapter 5 to the Runway Safety Program, and anticipates publishing the revised order in FY 2020. This new chapter defines the roles and responsibilities of the Runway Selection Safety Team (RSST). The primary purpose of the RSST is to develop and document in the Runway Selection Plan criteria for local runway operations and the process of assessing and determining the airport's active runway configurations. The Runway Selection Plan will be unique to every airport and provides direction and guidance for conducting RSST meetings.
- The FAA is prepared to conduct a shadow operations evaluation of real time speech recognition technology in FY 2020, barring any unforeseen delays related to technological updates.
- The FAA will continue the development and modifications of the STARS ARV and commence key site testing in FY 2020. Wrong surface landing alerts are currently available only at the 35 ASDE-X and 8 ASSC equipped airports. STARS ARV has the potential to bring this capability to hundreds of additional airports. The Runway Safety Group is collaborating with the STARS ARV team by providing wrong surface landing data, lessons learned from ASDE-X Taxiway Arrival Prediction capability deployment, and key site selection qualities.
- The implementation of ASDE-X Taxiway Arrival Prediction at additional sites is scheduled to continue over the next 18 months.

Safely evacuating airline passengers in the event of an aircraft incident

Why this is a challenge

The effective evacuation of a civil aircraft is a critical component of saving lives in the event of an incident. The FAA's standards for evacuating passenger aircraft require that the aircraft can be fully evacuated in 90 seconds or less. To obtain FAA certification for a specific aircraft type, manufacturers must conduct an actual demonstration of an emergency evacuation or a combination of tests and analyses, including computer simulations that yield equivalent results.

The Office of the Inspector General is currently auditing the FAA on this subject (refer to Audit #18A3006A000, "FAA's Oversight of Aircraft Evacuation Procedures") and has not issued any report. The specific challenges associated with this task have therefore yet to be determined.

Progress in meeting the challenge

- The Inspector General is currently auditing the FAA on this subject. The FAA has supported the ongoing audit (refer to Audit #18A3006A000, "FAA's Oversight of Aircraft Evacuation Procedures") and will respond to the recommendations in the report.
- The FAA has formed an Aviation Rulemaking Committee to assess the existing regulatory requirements related to evacuation against the recent service history involving emergency evacuations.
- The FAA has developed research plans to assess aircraft exit types, location, and access over the next three years. This work will likely lead to additional guidance to address innovative configurations being developed.

What needs to be done

- The FAA will produce action plans to respond to the recommendations in the Inspector General's report.
- The FAA will conduct an extensive research program to assess whether there is any negative impact on evacuation due to variations in seat pitch and width. The program is scheduled to be concluded in December 2019.
- The Aviation Rulemaking Committee will write a report and identify whether there appear to be changes to the requirements needed. The report is expected in early 2020.

Strengthening oversight of Unmanned Aircraft Systems in the national airspace system

Why this is a challenge

The growing number of UAS operators presents significant oversight and risk mitigation challenges for FAA. The FAA needs to determine the risk posed by current UAS operations and develop appropriate oversight plans to address these risks.

Progress in meeting the challenge

- The FAA developed and issued the Extended UAS Oversight Plan (Notice 8900.504) on February 28, 2019. This oversight plan takes a risk-based approach to enhancing the surveillance of UAS activities in the national airspace.
- The FAA completed its Semi-Annual Assessment of UAS Data in August 2019. The assessment:
 - Verified desired effects of increased surveillance activities, identification of alleged non-compliant UAS operators, and corrective actions for non-compliant operations since implementation of the Oversight Plan.
 - Identified adjustments needed to the Oversight Plan and for the development of solutions which resulted in the following recommendations:
 - Make strategic adjustments using risk-based decision-making to achieve desired metrics and quality surveillance opportunities for mitigating the risks from UAS.
 - Define current and future UAS-specific educational needs for inspectors.
 - Use existing and new UAS data or information to evaluate oversight activities, and develop a mechanism to capture that data.
- The FAA issued Order 1800.56T, National Flight Standards Work Program Guidelines. This version of the Order updates previous guidance regarding work activities and identifies specific work functions that personnel in the FAA's Flight Standards service must accomplish. It also incorporated the findings of the semi-annual UAS assessment, adding new surveillance requirements for UAS, guidance on collecting and identifying key UAS data for identifying the risks UAS pose to the airspace system, and direction for how to mitigate risks through a risk-based decision-making oversight plan. By doing so, the revised Work Program Guidelines replace the previously issued UAS Oversight Plan.

What needs to be done

- The FAA is reviewing the recommendations resulting from the Semi-Annual Assessment of UAS Data.
- Applicable FAA guidance documents will be revised upon leadership approval.

Enhancing interagency coordination to improve cockpit security

Why this is a challenge

Incidents in recent years in the United States and abroad drew attention to flight deck safety and security, including securing cockpit doors. Although the FAA has taken dramatic steps to secure the flight deck and prevent any breaches, we continue to look for collaboration opportunities that could enhance cockpit safety and security. Enhanced communication with key industry stakeholders and the Transportation Security Administration will be critical to FAA's efforts to ensure the safety and security of flight crews and the traveling public.

Progress in meeting the challenge

- The FAA's Flight Standards Service policies and procedures have resulted in no breach of a flight deck door since 9/11.
- The FAA continued to implement a 2018 Order that requires Principal Inspectors to meet with Transportation Security Agency Principle Security Inspectors at least once a year to ensure enhanced interagency communication and coordination.
- The FAA continued to emphasize observing flight deck door transition procedures while conducting en route inspections.
- Flight Standards added two questions to its Safety Assurance System En Route Inspection Data Collection Tool regarding this topic. These questions will prompt FAA inspectors to document observations regarding the flight deck door procedures while in flight.

What needs to be done

- The FAA will comply with section 336 of the FAA Reauthorization Act of 2018. This provision directs the FAA to issue an Order requiring installation of secondary cockpit barriers on all new passenger aircraft operating under the provisions of 14 CFR Part 121.

Ensuring effective oversight of FAA's drug and alcohol testing program

Why this is a challenge

Effective drug and alcohol testing programs in the transportation industry are crucial to ensuring the safety of the traveling public. The National Transportation Safety Board recently highlighted this challenge to safety in its 2017–2018 Most Wanted List of Transportation Safety Improvements. The report stated that marijuana decriminalization, increased popularity of dangerous synthetic drugs, and a significant rise in the use and abuse of over-the-counter and prescription medication, along with alcohol, have led to an epidemic of impairment in transportation safety. In addition, recent Office of Inspector General investigations have reinforced the importance of maintaining strong substance abuse inspection programs.

The FAA's Drug Abatement Division oversees the aviation industry's compliance with drug and alcohol testing laws and regulations that cover pilots, mechanics, and flight dispatchers at approximately 7,000 regulated aviation companies. Given the changing landscape of drug use in the United States, developing a risk-based inspection schedule to maximize the agency's resources will remain key to mitigating the safety risks presented by impaired pilots, mechanics, and other safety-responsible staff.

Progress in meeting the challenge

- The Office of the Inspector General completed its audit of FAA's Drug Abatement Inspection Program and issued its findings on June 25, 2019 (Report #AV-2019-055, "FAA Needs To Adopt a Risk-Based, Data-Driven Scheduling Process To Improve the Effectiveness of Its Drug Abatement Inspection Program"). The FAA concurred with both of the report's recommendations and began work on their implementation.
- The FAA's Office of Aerospace Medicine has been coordinating with FAA's Flight Standards Service and other aviation safety offices to enhance FAA's Drug Abatement Inspection Program. These efforts include:
 - Gathered information on additional risk factors available for inclusion by FAA's Drug Abatement Inspection Program;
 - Continued to develop a common risk-profiling methodology, and adopted structured, national-level profiles to identify and analyze emerging trends that affect safety;

- Defined parameters for measuring risk in our Strategic Compliance Monitoring Plan (SCMP);
- Continued to develop a tool to help define information for statistical analysis such as baseline numbers, confidence levels, a calculated inspection sample, and a target error rate, which will provide a method to validate the SCMP goals for inspection scheduling. This initiative will provide scheduling and inspector personnel with enhanced tools to identify, analyze and document risk when planning and conducting surveillance;
- Developed an initial plan for determining high, medium and low risk of non-compliance which will be used with the Aerospace Medicine Safety Information System (AMSIS) program, to allow for an automated scheduling process based on the risk analysis. The Drug Abatement Division implemented and continues to utilize a temporary method for risk analysis until AMSIS is deployed; and
- Revamped several reports to measure risk and performance to be displayed on the Division's dashboard and in quarterly program management meetings.
- In November 2018, the FAA's Associate Administrator for Aviation Safety directed the Office of Aerospace Medicine's Drug Abatement Division and Flight Standards organization to explore the benefits of integrating oversight surveillance of the industry drug and alcohol testing program into a larger workforce. To evaluate the benefits, the Drug Abatement Division and North Texas Flight Standards District Office initiated a beta test concept to conduct surveillance of small repair station operators in the North Texas area.
 - In July 2019, Drug Abatement Division personnel provided a briefing to the North Texas Aviation Safety Inspectors (ASIs) to explain the program and benefits of the beta test.
 - Throughout August 2019, the ASIs conducted their on-site surveillance using a checklist and document collection list. The documents collected by the ASIs were provided to the Drug Abatement Division.
 - The Drug Abatement Division is currently reviewing these documents to identify possible noncompliance and determine appropriate action.
- Train Drug Abatement Division representative in Change Management in October 2019, to enhance effectiveness as we develop and implement process and organizational changes. This will enhance our ability to help employees through the transition from the current state to the future state.
- By March 2020, complete the beta test document review and initiate appropriate action for non-compliance items discovered. Provide a final report to the Associate Administrator for Aviation Safety.
- Continue to provide training to Drug Abatement staff on changing policies, methodologies, and systems, including:
 - Root Cause and Risk Model (September 2020)
 - New Inspector (December 2019)
 - Recurrent Training/High Impact (September 2020)
 - AMSIS Training (upon AMSIS deployment)
- Implement the two recommendations from Inspector General Report #AV-2019-055 by December 31, 2020:
 - Develop and implement a data-driven, risk-based inspection scheduling program in accordance with FAA's Safety Risk Management Policy.
 - Develop and implement a process to coordinate and verify the accuracy of aviation company data, including coordinating with FAA Flight Standards, prior to finalizing the inspection schedule.
- Deploy AMSIS by September 2021.

Addressing barriers to implementation of new flight routes

Why this is a challenge

Advancing Performance-Based Navigation (PBN) is a top investment priority for both the FAA and industry. PBN flight procedures will provide flight paths that are more direct than paths previously used, enhance capacity for traffic in the airspace, improve on-time airport arrival rates, and reduce aircraft emissions and fuel burn. While PBN promises great benefits for aviation, implementation must be done without disrupting air traffic flow and with input from local communities that will be impacted by the changes.

Progress in meeting the challenge

In FY 2019, the FAA improved regional traffic movement through the PBN NextGen Integration Working Group

What needs to be done

- Distribute the updated Strategic Compliance Monitoring Plan for FY 2020 in early October 2019.

and the Northeast Corridor by completing the following activities:

- Completed seven of the 11 Metroplex PBN projects. Metroplex sites are metropolitan areas with multiple airports and complex air traffic flows.
- Accomplished the following key milestones at the remaining Metroplex projects:
 - For Las Vegas, completed final optimized airspace and procedure designs in May 2019.
 - For Denver, published the draft Environmental Assessment in April 2019 and accepted public comments on the draft Environmental Assessment in May 2019. Also completed 12 community engagement workshops.
 - For South-Central Florida, completed final optimized airspace and procedure designs in July 2019.
- Completed over half of the 52 Northeast Corridor milestones. Notable PBN route and airspace redesign accomplishments include:
 - Completion of a new high altitude PBN route structure design along the eastern seaboard.
 - Redesign of a high altitude airspace structure in Washington Air Route Traffic Control Center.
 - Design of a new offshore airspace route structure east of the New York Metro area. Also redesigned the New York Air Route Traffic Control Center's offshore airspace structure to support the new PBN "Y" routes.
- Deployed a standardized, step-by-step process across the FAA for the use of the Environmental Screening Tool that interfaces with the Aviation Environmental Design Tool. These tools work together to ensure changes to airspace utilization, such as creating a new air route, will not present extraordinary circumstances that trigger the use of a categorical exclusion provision per the National Environmental Policy Act. In addition, the FAA designed a portal to automate the noise screening request process. The portal standardizes the handling of all environmental documentation for airspace changes, such as special use designation and implementing performance based navigation procedures.
- Developed the Aircraft Noise Complaint/Inquiry Repository, a single, online mechanism available for all FAA employees who work on aircraft noise complaints and inquiries. The repository includes information about the noise complaint process and standardized text to facilitate efficient resolution of complaints and inquiries from the public.
- Developed and implemented practices for early and ongoing community engagement by building partnerships with communities, airport operators, and other stakeholders.
 - The FAA adheres to a five-phase process for collaboration with aviation stakeholders, as described in the FAA Community Involvement Manual. The FAA uses this process as a guide during the project lifecycle for airspace projects that involve changes to flight paths, their utilization, or the concentration of flight tracks at lower altitudes. The FAA also uses this process in its consideration of changes that could result in unequal impacts or perceived controversy.
 - The FAA developed the Community Involvement PBN Desk Guide to describe community engagement activities and establish a standard, repeatable process to ensure productive and effective community involvement for PBN projects, as described in FAA Order 7110.41A.
 - The FAA expanded the Metroplex Handbook to include community engagement recommendations for each phase of a Metroplex project lifecycle.
- The FAA expanded community engagement activities by holding additional public workshops, outreach briefings, and webinars. For example, the FAA held outreach briefings at airports in Houston, Washington DC, North Texas, and Atlanta. In addition to outreach briefings, the FAA held other engagement activities in Northern and Southern California, Denver, Florida, Cleveland and Detroit.

What needs to be done

The FAA completed the items it planned for FY 2019 and will continue to address this management challenge as necessary.

Providing new capabilities to airspace users while modernizing systems

Why this is a challenge

Working with the airlines, FAA plans to implement Data Communications (Data Comm) for controllers and pilots at high-altitude Air Route Traffic Control (ARTCC) facilities beginning in 2019 through 2021 at a cost of over \$691 million. Deploying Data Comm at the 20 ARTCC facilities while replacing their existing En Route Automation Modernization (ERAM) system hardware (and implementing other enhancements) represents a significant system integration challenge.

Progress in meeting the challenge

- During FY 2019 FAA replaced obsolete ERAM system equipment with modern, sustainable hardware platforms at certain locations. This replacement ensured the system fulfilled operational availability and performance requirements. For this effort the FAA:
 - Completed the Early D portion of ERAM Sustainment 2 at five ARTCCs. This equipment upgrade deployed new processors in the Controller D Position consoles, bringing all 20 ARTCCs to completion.
 - Began full deployment of ERAM Sustainment 2 at three key sites in August 2019.
 - Deployed adaptation enhancements software for ERAM Enhancements 2.
- The FAA completed the following strategic integration activities for ERAM and Data Comm:
 - Implemented the New Program Integration process, which provides the foundation for integrating new capabilities and external programs into the ERAM platform. This process encompasses all activities from receipt of request for integration (e.g., a new program requesting a change in ERAM hardware, interface or software requirements) to establishing schedule and lifecycle cost estimates for the requesting program. Additionally, the process includes implementing new program requirements into the ERAM platform and will focus on the successful implementation of Data Comm software.
 - Applied the ERAM Strategic Release Planning process and multi-year integrated schedule to support pre-planned software releases to ensure that conflicts do not exist between ERAM sustainment and Data Comm deployment schedules.

- The FAA also accepted Data Comm supporting software releases and conducted en route Controller Pilot Data Link Communications operations at two sites.

What needs to be done

- The FAA will continue to address this challenge by taking the following additional steps:
 - Conduct Initial Operating Capability in November 2019 for both sites at which the FAA completed Data Comm supporting software releases. Following this Initial Operating Capability, the FAA plans to conduct an Independent Operational Assessment and complete an In-Service Decision.
 - Complete ERAM Sustainment in 2025 by providing all the necessary replacement hardware for the entire ERAM system.

Replacing existing radar with a new system financed by the auction of electromagnetic spectrum

Why this is a challenge

The FAA manages air traffic and collects weather information with an aging radar infrastructure that has been in service longer than originally planned, making it increasingly difficult and expensive to maintain. The FAA has partnered with two other agencies in the Spectrum Efficient National Surveillance Radar (SENSR) program to auction Government-owned electromagnetic spectrum frequencies and use the revenue to develop and deploy new radar systems.

The SENSR initiative will provide the FAA and the other participating agencies with the opportunity to consolidate surveillance capability outside of the normal appropriations process. The agency is leveraging this opportunity to completely overhaul federal surveillance capability and gain spectral efficiencies.

As part of the process, the FAA will perform due diligence to assess the relocation of surveillance capabilities to a different portion of the spectrum, while ensuring that the existing surveillance capabilities are maintained. We will also incorporate inherent and incidental improvements over existing legacy surveillance capability that modern technical solutions may provide.

Progress in meeting the challenge

During FY 2019, the FAA worked with the National Telecommunications and Information Administration, the Office of Management and Budget, and the Federal Communications Commission to confirm the availability of funding for spectrum reallocation from the Spectrum Relocation Fund. The FAA also determined the scope of the program and established a program management infrastructure necessary for a functional, cross-agency program team.

Throughout the fiscal year, FAA engaged with industry partners to resolve certain program challenges. The SENSr team released multiple requests for information which garnered industry input on the program's overall approach, requirements, and acquisition strategy. In addition, the team held multiple meetings with vendors.

Publication of the requests for information and vendor engagement events with industry partners provided FAA with helpful information. After receiving this input, the FAA worked with other agencies to refine the program's scope and requirements.

Milestones the FAA completed in FY 2019 include:

- Submitted acquisition strategy for approval to the FAA's Joint Resource Council in October 2018.
- Drafted cross estimating plan and submitted Investment Planning and Analysis in December 2018.
- Held one-on-one meetings with vendors about RFI 2.1 in March 2019.
- Submitted Phase I Extension SENSr Pipeline Plan to Tech Panel in April 2019.
- Identified Finalized Program Requirements in July 2019.
- Released Program Requirements to industry, conducted Feasibility Assessment, and held Industry Week in August 2019 to provide information to vendors.

What needs to be done

The FAA will continue to address this challenge by working towards achieving an Initial Investment Decision for the SENSr program, at which point the FAA selects for detailed implementation planning for one alternative solution that best satisfies customer service needs within cost, operational, performance, benefit, and risk constraints.

Strengthening management oversight of developmental funding for air traffic management

Why this is a challenge

The FAA annually spends millions of dollars on research and air traffic development projects through its capital account and faces challenges in managing these efforts while providing adequate oversight. These projects are part of a development, testing, and demonstration process that FAA uses to reduce risks in new air traffic management concepts. FAA manages each project with project-level agreements—an internal control mechanism for documenting agreed-upon work and managing project execution.

Progress in meeting the challenge

- The FAA modified the Program Management Assessment Funding Request Standard Operating Procedure (SOP). The SOP now includes language that requires the Office of National Airspace System Lifecycle Planning to provide a close-out memorandum as verification for completion of work. This ensures that project requirements are met before transferring expiring funds into the Project Level Agreement account.
- Instead of updating the FAA Financial Manual to define projects that are considered pre-implementation, it was determined that this addition would be more effective if it was added to the Facilities & Equipment (F&E) budget narrative justifications included in the FAA's FY 2021 President's Budget Submission.
- As planned, we continued to follow the formal process for reviewing F&E budget requests at the individual Capital Investment Plan level. The F&E budget process aligns the FAA's strategic vision on the Enterprise Architecture with the agency's F&E budget request. The Joint Resources Council produces a formal record of its final determination on the F&E budget request. Continuing to follow the formal process enhances management control of allocated funds and this effort remains ongoing.

What needs to be done

- Include the definition of projects that are considered pre-implementation in the F&E executive summary section and/or NextGen sections of the FY 2021 President's Budget submission expected to be submitted to Congress in February 2020.
- Continue to improve management and oversight of NextGen developmental funding to achieve better outcomes for our air traffic management development efforts.

Resolving longstanding security weaknesses to strengthen information technology infrastructure

Why this is a challenge

Over the last 10 years, the Inspector General consistently found that the cyber security assessment and management database does not include all known security weaknesses. For example, FAA did not track weaknesses that the Government Accountability Office (GAO) identified in its 2015 report on the air traffic control information security program, which resulted in 185 recommendations.

Progress in meeting the challenge

- The FAA continues to meet with GAO to discuss open recommendations and clarifications to documentation that has been submitted in support of their closing.
 - As of September 2019, GAO has closed all 17 publically available recommendations and 135 of 168 technical recommendations marked as Sensitive Security Information.
 - In August and September of 2019, FAA submitted to GAO documentation supporting closure of an additional 12 technical recommendations.
- The Air Traffic Organization updated the FAA Cybersecurity Steering Committee on the progress of addressing GAO audit recommendations in February, May, and September 2019.

What needs to be done

GAO records indicate that, as of the end of FY 2019, 21 technical recommendations from the 2015 report remain open. The FAA will continue to work on addressing GAO's concerns so that we can close out these remaining open recommendations.

Implementing congressionally mandated aviation cybersecurity initiatives

Why this is a challenge

About 70 percent of DOT's information technology investments belong to the FAA. Spread out across the country, this vast network of systems and facilities are indispensable components in managing air traffic in the national airspace. Ensuring these systems are reliable and secure from external threats is a dynamic process requiring continuous evaluation and preparation. This process

becomes increasingly complex as the FAA integrates new communication systems, tracking systems, and technologies into its existing systems.

Progress in meeting the challenge

- The FAA's Aviation Safety office initiated efforts to address the four deferred recommendations made by the Aviation Rulemaking Advisory Committee Aircraft Systems Information Security Protection Working Group. Target dates for completing these recommendations have been identified.
- The FAA updated the Aircraft Systems Information Security Protection (ASISP) plan and submitted the document to the Office of the Inspector General.
- The FAA's NextGen organization provided a status update of cyber security risk model (CyRM) activities to the FAA Cybersecurity Steering Committee in March 2019 and submitted an updated CyRM strategy and plan to the OIG.
- NextGen also provided the updated draft of FAA's Cyber Research & Development (R&D) Plan to the Cybersecurity Steering Committee for review in August 2019. To prevent duplicate efforts, agency priorities were coordinated with other agency cybersecurity plans and activities.

What needs to be done

- The FAA will finalize the Cyber R&D plan and submit it to the Inspector General.

Implementing innovative and streamlined acquisition practices while managing risk

Why this is a challenge

The Department of Transportation (DOT) utilizes agreements and multiple-award vehicles to acquire a wide range of supplies and services to meet mission needs. For example, the FAA uses multiple-award vehicles to support major initiatives such as the Next Generation Air Transportation System (NextGen) and meet DOT procurement targets for small and disadvantaged businesses. While multiple-award vehicles can streamline the process for meeting acquisition goals, they are prone to oversight vulnerabilities.

Progress in meeting the challenge

- The FAA developed and implemented a process in July 2019 requiring contracting officers to verify and document a firm's small/disadvantaged status prior to

establishing or exercising an option issued under a master ordering agreement.

- The FAA revised the Acquisition Management System in July 2019 to require FAA acquisition program offices that manage multiple-award contract vehicles to develop and maintain comprehensive program management and governance plans.
- The FAA also revised the Acquisition Management System in July 2019 to strengthen multiple-award contract oversight and management framework to ensure multiple-award contracts follow sound business practices.

Strengthening agency oversight of DOT assets, contracts, and grants

Why this is a challenge

The Office of the Inspector General's recent examination of FAA's portfolio of agency-leased offices and warehouses found issues with inadequate management. These included inaccurate data in the FAA's real estate database, an ineffective planning process for identifying opportunities, and inefficient use of existing space. As a result of these weaknesses, the Inspector General concluded that the FAA missed opportunities to realize cost savings, and missed potential rent reduction opportunities on unused or vacant space.

Progress in meeting the challenge

- Developed and issued a revised user guide for submitting and updating data in our Real Estate Management System (REMS). This revised guide was reviewed by FAA regional personnel in the Service Areas and posted to our Knowledge Sharing Network site in early February 2019.
- Enhanced REMS training to provide better descriptions of individual data elements that align with the data entry screens. After reviewing the revised guidance and training, the Inspector General officially closed the related recommendation on April 1, 2019.
- After considering input from the Service Areas, a new vetting step was added on May 1, 2019. The new step requires FAA headquarters personnel to review data entries for accuracy. Errors found are referred back to the Service Areas for reconciliation.
- The results from an in-depth analysis supported an FAA Operations Governance Board conclusion that there are commercial off the shelf tools with the capability to

replace both REMS and the Automated Inventory Tracking System (AITS). FAA is currently pursuing a commercial off the shelf solution.

- Completed Version 1 of the Real Property Data Quality Plan on September 30, 2019. The plan seeks to streamline our evaluation methods and details our approach to baselining and monitoring metrics used. This data will be collected during onsite audits when implementation initiates in the first quarter of FY 2020.

What needs to be done

- Continue to pursue the procurement of commercial off the shelf replacement system(s) for REMS and AITS. The acquisition team is working to gain an approved business case from FAA's Operations Governance Board that will outline our acquisition strategy.
- Implement the Real Property Data Quality Plan, beginning in the first quarter of FY 2020. This includes detailed mapping of data elements in REMS against requirements and information sources and onsite audits to correct data, establish the baseline of actual state of data quality, and identify processes that need improvement. Subsequent site visits will be used to monitor data quality trends.