

**Department of Transportation
Inspector General Top Management Challenges
for Fiscal Year 2018**

**Federal Aviation Administration
Year-End Progress Reports**

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Enhancing Interagency Communication and Working with Stakeholders to Improve Cockpit Safety and Security

Why is this issue significant?

Incidents in 2012 and 2015 in the United States and abroad have drawn attention to flight deck safety and security, including securing cockpit doors. Enhanced communication with key industry stakeholders will be critical to FAA's efforts to ensure the safety of the traveling public.

Actions taken for FY 2018:

- The FAA published guidance requiring an annual meeting for all principal inspectors who have oversight of 14 CFR Parts 125, 121, and 135 operators. The guidance was published in Flight Standards Order 8900.1, Volume 9, Chapter 4, Section 1 on June 13, 2018. In addition, we published a Notice placing emphasis on the new guidance.
- On October 23, 2017, two aviation safety inspectors from FAA met with members of the Association of Flight Attendants (AFA-CWA) attending a 3-day Intermediate Air Safety, Health and Security Department training event.
 - The inspectors were able to confirm the AFA-CWA was the union that provided the results of a "flight attendant union survey" on flight deck security to the DOT Inspector General (OIG).
 - The inspectors spoke with the AFA Air Safety, Health and Security Coordinator and provided an interactive briefing to AFA-CWA attendees on the Inspector General's report.
 - During the interactive briefing, the training attendees did not display concern with regard to complacency during the flight deck door transition. The group was more concerned about standardization within their own airlines on proper procedures.
- The FAA contacted the AFA-CWA Director of the Air Safety, Health and Security Department to ask if they would share the survey and discuss the results. On November 3, 2017, the AFA-CWA Director informed the FAA they would not share the survey and its results, and advised approaching the OIG with any further questions. The OIG subsequently informed the FAA the survey could not be shared without permission from the AFA-CWA.
- The responses from AFA-CWA membership during the interactive briefing and the unwillingness of their leadership to share their survey results led the FAA to conclude there is not any significant concern on flight deck door transitions from flight attendants. The FAA believes it exercised due diligence trying to validate and act on the OIG's concerns.
- After release of the OIG's audit, the FAA met with the Transportation Security Administration (TSA) to review the audit results and discuss a future meeting with industry. Based on the interaction with the AFA-CWA members and its leadership, the FAA believes there is no need to meet further with TSA on this issue, but we continue to meet regularly with TSA on all issues that arise.

- The OIG reported there was concern among air carriers on flight deck security. The FAA took this concern seriously and agreed with the OIG's recommendation to meet with the air carrier industry, along with the TSA, and discuss concerns.
 - In February 2018, the FAA sought to meet with two major air carrier industry associations and their operations councils: Airlines for America and the Regional Airlines Association. Despite our attempts, neither group made themselves available for such a meeting.
 - The FAA met separately with Delta Airlines, which is not a member of Airlines for America. Delta's representatives agreed with the assessment that industry was performing security measures well and had nothing substantial to add to the FAA's combined efforts.
 - The FAA concluded from these responses that there was no significant concern regarding flight deck security, much less any interest in addressing it. The FAA believes it exercised due diligence trying to validate and act on the OIG's concerns.

Actions remaining and expected completion date:

- The FAA did not concur with two of the OIG's recommendations (#2 and #4). These positions have not changed.

Results or expected results:

Meetings between FAA principal inspectors and TSA principal security inspectors have proven productive. All actions above are completed. The OIG accepted the FAA responses on four of the six recommendations and has closed them out.

Keeping Pace With a Dynamic and Evolving Regional Airline Industry

Why is this issue significant?

Regional air carriers have been a growing industry segment over the last several years and now operate over 10,000 flights a day and serve approximately 20 percent of all airline passengers. These carriers operate in a unique and competitive environment and present a multifaceted oversight challenge for FAA. While they must meet the same safety standards as mainline carriers, they operate under a business model that requires them to keep costs low, yet they do not benefit from upward trends in ticket prices, additional revenue from baggage fees, or passenger enplanements. Therefore, their operations are strongly impacted by changes such as service expansion, airline consolidations, or new pilot requirements—all of which have taken place in recent years.

Actions taken for FY 2018:

- The FAA acquired Tableau Desktop business intelligence software for approximately 50 identified safety analysts. This state of the art tool is being used to analyze and visualize safety data. It provides a tool for presenting critical data effectively for use in risk-based decision making (RBDM). This was completed July 2017.
- Current FAA guidance contains detailed information on policy and procedures for implementing the risk management process for any newly identified hazard. The process requires extensive documentation in the Safety Assurance System (SAS) and assesses the overall air carrier (14 CFR parts 121/135) and air agency (14 CFR part 145) operation in a subjective manner.
- Principal Inspectors document all external inputs (such as complaints) in the SAS, using the appropriate risk indicators found in the Certificate Holder Assessment Tool (CHAT). CHAT is a tool used for all certificates to identify risk. The Inspectors determine follow-up actions and add those actions to the Action Item Tracking Tool (AITT) and, when appropriate, add assessments to their Comprehensive Action Plans (CAP). Both the AITT and the CAP track the date that items are created and completed and are available for management review.
- Inspectors are required to regularly review the AITT and the CHAT as part of the planning process. The AITT/CHAT is reviewed at least annually (for Part 135/145 operators), quarterly (for Part 121 operators), or as needed.

Actions remaining and expected completion date:

In FY 2019:

- Using Tableau software that allows for the visualization of data, Flight Standards safety analysts are creating and maintaining reports that support risk-based decision-making. A single SharePoint site is being developed where the products are kept for a single reference location for stakeholders. This SharePoint will be available to our stakeholders the first quarter of FY 2019.
- The FAA made significant changes/clarifications to the choices in the decision aid in FAA Order 8900.1 V6 C2 S18 to emphasize the importance of completing decision aids periodically for baseline comparisons and to implement a retention policy for completed decision aids so they will be available to inspectors for comparison and analysis during risk assessments. We are in

the process of performing a beta test with several FAA Certificate Management Offices. The expected completion date for the beta test is December 2018.

- The FAA also made significant changes/clarifications to FAA Order 8900.1 V6 C2 S18 regarding training for inspectors and is in the process of performing a beta test with Certificate Management Offices to determine if training is required. The expected completion on this determination is December 2018.
- The FAA evaluated and revised FAA Order 8900.1 V6 C2 S18 and is going through the coordination process for approval of the revision. The revised FAA Order 8900.1 V6 C2 S18 will include a requirement for completion of decision aids as a baseline, periodic completion, and retention for trend monitoring. The expected completion date is February 28, 2019.
- The FAA made significant changes/clarifications to the choices in the decision aid in FAA Order 8900.1 V6 C2 S18. The revision also includes more detailed information on how to detect triggers that would require the completion of decision aids. The expected completion date for this guidance is February 28, 2019.

In FY 2020:

- The SAS Integrated Project Team (IPT), IPT2 – Risk Profile, is on target for release in 2020. In the meantime, the FAA has created in prototype an Interim Certificate Holder Priority Index to bridge the gap between the present day and the release of the formal SAS Risk Profile in FY 2020.
- In order to provide a quantified and integrated measure of the impact of the Risk Management Process, the FAA has incorporated inspector guidance on risk-management processes throughout the IPT's SAS risk profile development process. Enhancements to the assessment determination functionality in SAS include an Inspector interface based on the risk matrices contained within FAA Order 8040.4B - Safety Risk Management Policy and Risk Management Processes in FAA Order 8900.1 Volume 10. The SAS will utilize a model based on FAA risk management policy that incorporates multiple manual and automatic data input sources to provide risk scores to assist managers and inspectors in using risk-based decision making to prioritize inspections. This will be a change to 8900.1 Volume 10 and the FAA-owned SAS automation. The FAA will release the SAS Risk Profile in FY 2020.
- Following the implementation of SAS Phase 3, the FAA will generate a risk profile for all overseen entities using SAS. One component of the risk profile will be external inputs. These inputs, when documented and assessed in the CHAT, will contribute to priority indices. Also, surveillance actions associated with the external input will be automatically added to the Inspector's CAP and the AITT. If the surveillance is not completed in the specified timeframe, SAS will categorize the assessment as overdue. The risk profile will calculate a risk value for the assessment based on its overdue status if not completed, or based on the risk determined by the findings if completed. The FAA will release the SAS Risk Profile in FY 2020.

Results or expected results:

The above list of actions demonstrates that the FAA is continuing to upgrade its existing (and introduce new) capabilities, processes, procedures, and tools to meet the multifaceted challenges of overseeing the dynamic and evolving regional airline industry.

Strengthening the Investigative Process and Proactively Removing Suspected Unapproved Parts from the Aviation Supply Chain

Why is this issue significant?

The traveling public depends on the FAA and the aviation industry to ensure that U.S. aircraft are properly maintained and airworthy. Part of this responsibility is to detect and monitor for Suspected Unapproved Parts (SUP) - aircraft parts that may have been manufactured without FAA approval, including counterfeit parts. The FAA is taking corrective actions in response to the Inspector General's 2017 recommendations to strengthen its management controls and ensure consistent investigations of SUPs. However, ensuring that the hundreds of thousands of aircraft parts installed on airplanes are manufactured or repaired according to standards continues to be a challenge for FAA and the aviation industry.

Actions taken for FY 2018:

- The FAA created two management controls to evaluate if SUP cases reported to local FAA offices were also reported to the FAA Hotline, as is required by Order 8120.16A.
- The FAA created two management controls to evaluate if Unapproved Part Notices were issued in all cases where local inspection offices found unapproved part(s) that could not be contained. The Inspector General closed this recommendation as having been addressed by the FAA on April 17, 2018.
- The FAA developed an Internal Evaluation of the SUP Program (audit) based on FAA Order 8120.16, *Suspected Unapproved Parts Program*, to evaluate how inspectors at each Manufacturing Inspection District Office adhere to guidance when conducting SUP investigations.
- The FAA developed a process to document the forwarding of all SUP reports that were classified as Improper Maintenance cases to the Inspector General, who then considered this recommendation addressed on July 26, 2018.
- The FAA included a "best practice" in the SUPs Advisory Circular AC 21-29 to encourage industry to register to receive automated notifications about unapproved parts.

Actions remaining and expected completion date:

The FAA will review the results from the Internal Evaluation of the SUP Program and document any nonconformance issues within the quality management system. We will also ensure that corrective action steps (management controls) necessary to prevent recurrence will be implemented accordingly by March 2019.

The FAA will develop a management control by February 2019 to ensure that inspectors follow current guidance when SUP investigations discover unapproved parts in the possession of operators/airlines.

The FAA is working to review and clarify our policy on SUPs, and will:

- Standardize policy to ensure that investigations are conducted thoroughly and completely;

- Ensure management is aware of all investigations and potential outcomes, including the mitigation for any parts that are considered unapproved after the investigation is complete; and
- Initiate internal and public comment periods for the changes to Order 8120.16 by February 2019.

Results or expected results:

The FAA will enhance its margin of safety related to removing unapproved parts from the system by: a) taking appropriate steps to strengthen the effectiveness of the SUPs investigation process; b) being more proactive in locating unapproved parts; and c) ensuring that they are removed from the aviation supply chain.

Addressing Reports of Increased Runway Safety Incidents

Why is this issue significant?

Reducing the risks posed by surface accidents and other surface-safety events is a top priority for the FAA. To monitor this risk, multiple data sources are used and data are weighted. Fatalities and injuries to people are the most severe, followed by damage to property, and finally, precursor events where there was no damage or injury but the risk was detected. Data shows that:

- The number of accidents has remained relatively consistent.
- The number of reported runway and surface-safety events has increased considerably, which is consistent with FAA's policies establishing the value of precursor information instead of accident investigations. These policies allow more events to be reported to better inform safety mitigation activities.
- National airspace system runway safety risk has decreased as a result of more informed mitigation activities.

While the FAA has achieved significant reduction in risk to people in airplanes that are on runways and taxiways, the runway safety metrics have not been updated publically to reflect the current risk-based safety-performance. The existing Runway Safety Metric focuses only on runway incursions. As a result, any increase in the number of runway safety incidents is perceived as an increased indicator of risk.

Actions taken for FY 2018:

- The FAA developed a separate commercial and non-commercial metric for runway safety and corresponding performance targets.
 - These new metrics incorporate all types of relevant surface-safety events (accidents and incidents) in the runway and taxiway environment, including runway incursions, runway excursions, and surface incidents.
 - By incorporating every type of runway safety event, the new metrics reflects the overall safety of the entire runway environment.
 - These new metrics are effective in FY 2019 and are being included in the updated DOT Strategic Plan.
- During FY 2018, the FAA continued to advance runway safety technologies such as the Airport Surface Surveillance Capability (ASSC), Runway Status Lights (RWSL), and Airport Surface Detection Equipment (ASDE-X) Enhancements.
 - ASSC achieved Operational Readiness Decision at Cincinnati/Northern Kentucky International Airport on May 24, 2018, and Initial Operational Capability at Kansas City on September 18, 2018.
 - RWSL went operational at Dallas/Ft. Worth in March 2018 and Boston Logan in May 2018.
 - ASDE-X Taxiway Arrival Prediction Alert began functioning at Seattle/Tacoma (SEA) in May 2018.
- The FAA's Runway Safety Council continued to meet quarterly to analyze surface event data collaboratively in order to develop and share focused outreach materials and efforts primarily for the pilot community. The Council last met on August 22, 2018.

- The FAA’s runway safety education and outreach activities promoted new training and conducted summits to improve runway safety:
 - The Pilot Simulator Situational Awareness Video Clips rolled out in July 2018.
 - The Wrong Surface General Aviation Situational Awareness Video was displayed at the Experimental Aircraft Association’s Air Venture event in July 2018.
 - The Wrong Surface Safety Summit was held August 21, 2018.

Actions remaining and expected completion date:

- The FAA will begin using and reporting on the new risk-based Runway Safety Metric in FY 2019.
- ASSC Operational Readiness Decision at Kansas City is targeted for October 2018; and Initial Operational Capability at Pittsburgh is targeted for December 2018.
- RWSL operational date at San Diego is targeted for October 2018.
- The Runway Safety Council meets for the last time in 2018 on November 28.
- ASDE-X Enhancements: Runway Arrival Prediction and Taxiway Arrival Prediction are targeting six additional airports by the end of December 2018 (Boston, Salt Lake City, Atlanta, Newark and Fort Lauderdale).

Results or expected results:

Monitoring the reported events and quantifying the risk to people enables the FAA to develop the most effective strategies for lowering overall risk and a more accurate approach to communicating runway risk to the public.

Mitigating Risks With High-Priority NextGen Investments and Delivering Benefits to Airspace Users

Why is this issue significant?

The FAA has successfully worked with industry to identify and launch key NextGen priorities. In 2013, FAA tasked the NextGen Advisory Committee (NAC) with reviewing FAA's NextGen plans and recommending priorities for investment. That same year, the NAC identified four top priorities critical to delivering near-term benefits and advancing NextGen: (1) advancing Performance Based Navigation (PBN); (2) improving access to closely spaced parallel runways (known as Multiple Runway Operations or MRO); (3) enhancing airport surface operations; and (4) developing data communications (Data Comm) for controllers and pilots.

Actions taken for FY 2018:

- The FAA continues to manage risk at the program level, portfolio level, and the NextGen enterprise level through standard working groups with FAA leadership and industry forums. The near-term NextGen priorities established in collaboration with the FAA and industry stakeholders via the NAC are included in this overall risk management framework.
- The FAA held three NAC meetings as planned in FY 2018: March 14, 2018; June 27, 2018; and October 31, 2018.
- The FAA held NextGen Priorities Integration Working Group status meetings throughout FY 2018, with each group deciding their respective meeting cadence but most met at least once per month. During each status meeting, the leaders discussed the risks and mitigation strategies and assigned solutions.
- The FAA held monthly NAC subcommittee meetings; the subcommittee is co-chaired by two executives from industry and serves as the functional advisor to the NAC through the working groups.
- In addition to NAC subcommittee meetings, the FAA held calls with and met bi-monthly with industry leadership to understand industry risk. Following the FAA's risk management process, identified risks were assigned to the appropriate program or portfolio managers for mitigation, or they were elevated to the NextGen Management Board or another higher-level body for mitigation and resolution.
- The NextGen Management Board reviewed risks, mitigations and tracked the status at the direction of the FAA Deputy Administrator and Chief NextGen Officer.

Actions remaining and expected completion date:

The FAA will continue to update the NextGen Priorities Joint Implementation Plan in collaboration with its industry partners to oversee progress. As issues arise, risks will be identified and mitigated. The progress in modernizing the NAS will be tracked and reported by the Joint Analysis Team, a joint FAA-industry team charged with reporting on progress from a consensus approach.

Results or expected results:

With the actions taken throughout FY 2018, the NextGen Priorities have achieved a 97.8 percent completion rate. This includes the milestones described in the Performance Results section on page 49, as well as all industry-controlled milestones.

Keeping Key Air Traffic Infrastructure on Track

Why is this issue significant?

As the FAA works to deliver NextGen capabilities, it also faces the challenge of maintaining and upgrading key air traffic control infrastructure, including the \$2.7 billion En Route Automation Modernization (ERAM) system that air traffic controllers rely on to manage high-altitude traffic nationwide. FAA has embarked on a series of overlapping technical refresh and enhancement programs for ERAM that will impact all the system's hardware, including elements of the main operating system. Unanticipated problems with ERAM efforts will have a direct impact on FAA's ability to deliver NextGen benefits to airspace users between now and 2020.

Actions taken for FY 2018:

- The FAA continues to replace obsolete ERAM system equipment. In FY 2018, new processors were installed in the Radar Assistant Controller D Position consoles at the planned 15 of 20 locations. This upgrade enables the system to meet its operational availability and performance requirements by replacing obsolete hardware with modern, sustainable hardware platforms.
- The ERAM Enhancements Program is structured in segments to allow the introduction of new controller functionality in cost efficient intervals that do not overload current software/test capabilities or conflict with other airspace programs. In FY 2018, the FAA completed adaptation enhancements software for ERAM Enhancements 2 that is scheduled for deployment by April 2019.
- The FAA has established the New Program Integration (NPI) process that provides the foundation and structured approach for integrating new capabilities and external programs into the ERAM platform. The scope of the NPI process encompasses all activities from receipt of request for integration (e.g., a new program requesting a change in ERAM hardware, interface and/or software requirements) to establishing ERAM commitment for the schedule and lifecycle cost estimates of the requesting program. Additionally, NPI includes implementing new program requirements into the ERAM platform. In FY 2018, ERAM actively worked to onboard six programs into the NPI process, assigned an application lead, and held regular check-ins and updates on status to identify future commitments required of ERAM.
- In FY 2017-2018, the ERAM Strategic Release Planning team incorporated lessons learned from Data Communications Segment 1 Phase 1 Tower Services deployment, adjusting the planned ERAM software deployment schedule for 2018 and 2019. The change reduces risk by adding pre-planned software releases for Data Comm deployment and ensuring that both ERAM sustainment and DataComm deployment schedules do not conflict. As a result, both program milestones will be achieved on schedule.
- In FY 2018, the Strategic Release Planning Team mapped out a release schedule for the 2020-2021 timeframe that accommodates multi-phase deployments of ERAM Sustainment 3, ERAM Enhancements 2 (NavCanada), and Data Comm Full Services. The plan reduces risk by balancing the competing resource requirements for software development and the test and deployment of the various programs.

- The FAA completed the program's internal FY 2018 Business Plan goals that justify the next phases of ERAM Sustainment and Enhancements investments. These goals included the completion of the ERAM Sustainment 3 Draft Investment Analysis Plan and Draft Shortfall Analysis Report, as well as the ERAM Enhancements 2 supporting documentation – the International Civil Aviation Organization North American Region (NAM) Transmission Control Protocol/Internet Protocol (TCP/IP) Interface Requirements Document (IRD).

Actions remaining and expected completion date:

- New capabilities continue to be added to the ERAM baseline. ERAM's software is not being replaced; instead, new NextGen capabilities such as Data Communications are being added.
- The FAA is in the initial implementation of a planned phased approach for a technical refresh of ERAM hardware, known as ERAM Sustainment. This phased approach allows for cost efficient replacement of the hardware components that are approaching end of life/end of service, while permitting the flexibility of metering the effort to avoid conflicts with other program deployments. At the completion of ERAM Sustainment in 2025, the FAA will have provided all the necessary replacement hardware for the entire ERAM system.
- The United States is responsible for coordinating with the aviation organizations of countries with air traffic control automation systems that interface with ERAM (Canada, Cuba, and the Dominican Republic). As a result, the FAA has been working with NAV Canada to define and implement requirements that will facilitate the automation of radar handoffs between FAA's En Route Centers and the NAV Canada Border Centers. The supporting NAV Canada requirements and design finalization will be complete by February 2019.

Results or expected results:

Completing these ERAM-related efforts presents risks and challenges to FAA given the critical role the automation system plays in supporting new Performance Based Navigation routes and Data Communications - both high-priority NextGen investments for FAA and industry.

Strengthening the Resiliency of the National Airspace System (NAS)

Why is this issue significant?

Unexpected events and emergencies that disrupt air traffic control can have a long-lasting and significant impact on the nation's economy, airlines, and passengers. While FAA has taken steps to improve the effectiveness of its operational contingency plans since the 2014 fire at the Chicago Air Route Traffic Control Center that grounded 2000 flights, work is still underway. For instance, many of the new technologies and capabilities that can improve the continuity of air traffic operations, such as the new NAS Voice System, are still under development with availability anticipated in the next several years. The agency is developing plans to meet newly established requirements for transferring airspace and managing air traffic control responsibilities to other facilities in the event of an incident.

In 2017, the update to this management challenge describes what the FAA's Air Traffic Organization has done to plan for and implement contingency measures, under the Director of Operational Readiness. Since 2017, the FAA has continued to staff that office and approved goals and resources to make progress on closing gaps related to contingency operations.

Actions taken for FY 2018:

The FAA has established goals and activities to address three major focus areas for contingency improvements – operational viability of the plans, facility familiarity with the plans, and a continuous improvement to contingency capabilities.

To improve the viability of existing Operational Contingency Plans (OCPs), the FAA is deploying better guidance and support for operational facilities to aid them in improving their plans.

- The FAA has completed the development of three versions of an OCP improvement guidebook: one for Air Route Traffic Control Centers (ARTCCs), one for Terminal Radar Approach Control Facilities (TRACONS) and one for Air Traffic Control Towers (ATCTs).
- The ARTCC guidebook was completed by December 2017 and the TRACON and ATCT guidebooks were completed in June 2018. The FAA solicited feedback from our field offices and piloted the guides with operational facilities.
- Three site visits were completed in May 2018, and we are on track for completing 10 OCP reviews before the end of the calendar year.

In order to assist in improving facility familiarity with the OCPs:

- The FAA kicked off development of an Operational Contingency Evaluation & Exercise Procedure (OCEEP) that will build upon the existing requirement for all sites to complete an annual comprehensive walk-through of procedures and an annual exercise that validates the facility contingency procedures.
- The OCEEP will provide guidance for how to conduct the exercises and provide realistic scenarios that are geographically and operationally relevant to specific facilities based on lessons learned from previous events nationwide.

- The FAA completed a draft OCEEP at the end of March 2018 and coordinated with the field offices and three sites to solicit facility feedback on the pilot program, which was completed in May 2018. The feedback from those site visits was used to further inform the OCEEP rollout strategy.
- An additional objective to improve facility familiarity is developing right-sized outreach and training for operational and support offices. In FY 2018, the FAA developed a draft contingency operations overview training video. The video describes what an Operational Contingency Plan (OCP) is, where it is stored, and how it is updated along with the process to implement an OCP and the roles for impacted and supporting facilities.

Improving the operational capabilities during contingency operations can be enhanced by integrating contingency improvements with new technology as it is deployed. It should be noted that improvements are possible, and are being explored, by leveraging technology already in place, including ERAM, ADS-B, FAA Telecommunications Infrastructure, and other technology.

- For example, it is possible to leverage the improvements in ERAM to provide better flight data capability, and to leverage the additional capability introduced in automation with ADS-B fusion radar processing to provide better surveillance from neighbors and build airspace plans for divestment.
- As the FAA works with facilities to improve their OCPs, the opportunities to leverage existing technology are being integrated. For example, with improvements in numbers of radars ERAM can process, the ARTCCs can be used to provide wider coverage for neighboring sites, as well as underlying TRACONS. This analysis and effort must be conducted site-by-site and is part of the new guidance material going to operational sites in order to improve OCPs.
- The FAA is improving existing OCPs that leverage current technology across the country in a priority order. Additionally, after deploying an improved SOP for OCEEP, the FAA continues to conduct nationally-led exercises at top tier facilities on an annual, rotational basis. Also in FY 2018 and continuing into FY 2019, we are developing outreach and training materials to address national, service area, and facility familiarity on operational contingency planning.

Actions remaining and expected completion date:

- The FAA development and deployment of long-term training requirements for OCPs is in process. Once baseline requirements are determined, draft goals will define a follow-on schedule for development and deployment of necessary training improvements.
- Existing technology is being leveraged to improve contingency operations. This work is ongoing into FY 2019 and beyond to ensure continuous analyses to best leverage existing and new NAS technology.

- The FAA will conduct more site visits and improve our guidebooks based on facility feedback. The FAA will continue to deploy to sites to assist them in building improved OCPs in FY 2019 and beyond. A goal of rebuilding 18 OCPs has been set for FY 2019.
- The FAA will consolidate facility feedback on the OCEEP pilot program to further inform the OCEEP rollout strategy. The FAA is working to baseline the OCEEP for field use by March FY 2019.
- The FAA's completed OCP video will be available to the field by December 2018.
- In addition to each site's requirements for annual exercises, starting in FY 2019 the FAA will be conducting exercises at approximately 10 sites per year on a rotational basis, implementing a national approach for capturing and sharing lessons learned, as well as continuously improving capabilities and standards.

Results or expected results:

The FAA has addressed three major focus areas for contingency improvements to prevent unexpected events and emergencies from disrupting air traffic control.

Meeting the Regulatory Challenges of an Evolving and Diverse Commercial UAS Industry

Why is this issue significant?

The FAA recently forecast that the number of UAS in the United States is likely to be about 4 million by 2021, increasing from 1.1 million in 2016. The growing demand for commercial UAS presents new regulatory challenges for FAA, which must develop rules to govern UAS use while maintaining safety. To advance the safe integration of UAS in domestic airspace, FAA published a new rule in June 2016 for small UAS (i.e., systems weighing less than 55 pounds). However, the rule does not permit several potential uses for UAS that are highly valued by industry, such as operating beyond line of sight or at night.

Actions taken for FY 2018:

- The Notice of Proposed Rulemaking (NPRM) *“Operations of Small Unmanned Aircraft Over People”* was signed as planned in December 2017. The rule will standardize means to allow small UAS operations over people and at night. Additionally, the rule will allow for recurrent Part 107 pilot certification online.
- The FAA Administrator signed the Advanced NPRM *“Safe and Secure Operations of Small Unmanned Aircraft Systems”* on December 11, 2017 to seek public comment on the needs of the UAS security community.
- The FAA launched the Presidential UAS Integration Pilot Program with the selection of 10 lead participants in May 2018. The program works with state, local and tribal governments, who partner with industry leaders, to foster innovation and seek solutions to safely integrating UAS into U.S. airspace.
- The FAA collaborated with industry to deploy an automated system to process airspace authorizations for small UAS operators nationwide. The prototype of this system, known as Low Altitude Authorization and Notification Capability (LAANC), was deployed at several air traffic facilities in November 2017 to evaluate the feasibility of a fully automated system. After successful testing, LAANC was deployed at nearly 300 air traffic control facilities covering approximately 500 airports. As of October 1, 2018, over 35,000 authorizations have been granted in controlled airspace using this capability.

Actions remaining and expected completion date:

- The NPRM *“Operations of Small Unmanned Aircraft Over People”* remains in intergovernmental review. Due to security concerns from other agencies, the FAA will not finalize the proposed rule until a rule is in place to require remote identification of UAS operators. Initial publication of the NPRM is expected by the end of December 2018.
- The ANPRM *“Safe and Secure Operations of Small Unmanned Aircraft Systems”* is also in intergovernmental review. Initial publication is expected by the end of December 2018.
- The FAA started a rulemaking effort to create a NPRM on Remote ID that will answer public safety and security concerns tied to linking an unmanned aircraft to the remote pilot responsible

for its operation. This is a critical rule that is needed prior to other rules that would enable additional UAS operations. It is also a fundamental first step in the creation of UAS Traffic Management (UTM) systems. The FAA expects to publish the NPRM by summer of 2019.

- The proposed operations under the Presidential UAS Integration Pilot Program push the envelope of previously allowed UAS operations in cooperatively controlled environments. The results of these operations are captured in more than 50 data elements that will be used for future rulemaking and policy by the FAA. The pilot program will run through the end of FY 2020.

Results or expected results:

The FAA will continue to enable other current operations by waiving and exempting regulations to facilitate UAS operations. The FAA has been successful at enabling small UAS operations over people, limited operations beyond visual line of sight, multiple agricultural operations, infrastructure surveillance operations, and thousands of other commercial operations. Teams are currently working with industry leaders to create the first exemptions to Part 135, which will allow safe UAS package delivery starting in 2019.

Developing Strategies for Overseeing Operations and Mitigating Risks as UAS Integration Continues

Why is this issue significant?

The growing number of UAS operators presents significant oversight and risk mitigation challenges for FAA. UAS sightings by pilots and other sources have increased dramatically, from just 238 in 2014 to 1,100 in 2015 and more than 1,800 reported in 2016.

Actions taken for FY 2018:

- The FAA developed and implemented a consistent process to review and respond to applications for Certificates of Waiver or Authorization (COAs).
 - The new Certification for Authorization Processing System (CAPS) was deployed on October 14, 2017 and currently has approximately 1500 users. CAPS improves on previous processes by automating the workflow, which streamlines the application review process, allowing the applicant to receive a COA in a shorter amount of time.
 - Specialists processing COAs are fully trained and CAPS is updated monthly to improve performance and gain efficiencies.
 - The updates are collected during biweekly stakeholder meetings and the final decisions are made in the monthly Change Control Board meetings.
- The FAA developed the [DroneZone Portal \(https://faadronezone.faa.gov/\)](https://faadronezone.faa.gov/), a “one-stop shop” for the public to register a drone, learn where to fly, apply for a part 107 waiver, request a waiver or authorization, check the status of a waiver/authorization request, or submit a UAS accident report. This resource launched on January 5, 2018.
- The FAA established metrics to track our progress in meeting UAS implementation milestones for reporting to Congress. These metrics were published in the FY 2018 UAS Implementation Plan on December 14, 2017.
- The FAA continued its ongoing weekly General Aviation Safety Assurance outreach (formerly Flight Standards District Offices outreach) for Aviation Safety Inspectors to remain current on UAS issues and guidance. This effort is ongoing.

Actions remaining and expected completion date:

- The FAA developed the Mission Logging System (MLS) to capture data from the seven UAS test sites. FAA uses this information to help gather the information needed to facilitate safe UAS integration into the NAS. The MLS was developed and implemented in May 2015 and will remain operational until September 30, 2019.
- The FAA will submit a report to Congress with the Test Sites findings and conclusions by December 31, 2019.

Results or expected results:

The FAA is in the early stages of developing a risk-based oversight process for commercial UAS operators. Developing an effective oversight strategy is particularly important given the safety issues that arise as UAS increasingly operate in the same airspace as manned aircraft.

Managing Growth in the Commercial Space Launch Activities as the Industry Grows and Expands

Why is this issue significant?

The growing demand for commercial space launch capabilities presents a significant new oversight challenge for the FAA. Since the retirement of the space shuttle fleet in 2011, the United States has started to rely on private, commercial providers to transport satellites and other cargo into space. The growth in the industry has been tremendous in recent years.

Since 2010, the FAA has seen an increase of approximately 300 percent in the number of launch and reentry operations it oversees; a 150 percent increase in the number of licenses and permits it issues; and an 800 percent increase in the number of inspections FAA performs to ensure safety compliance. In addition, several U.S. companies are developing launch vehicles that will carry passengers into space. This “space tourism” industry will require licensed launch facilities as well as licensed launch operations.

Actions taken for FY 2018:

- The FAA engaged commercial space and aviation industry stakeholders for recommendations on developing a more performance-based regulatory approach. The FAA received recommendations on developing the performance-based regulatory approach in April 2018.
- The FAA reviewed the Office of Commercial Space Transportation’s organizational structure to ensure resources are aligned to meet its goals.
- The FAA is developing a multi-year resource plan to enable more strategic focus on current and future needs in terms of technical and operational expertise to support increased licensing activities.
- The FAA ensured that the research activity undertaken by the Center of Excellence for Commercial Space Transportation prioritizes work on innovations that will facilitate safe and efficient integration of commercial space transportation into the national airspace system (NAS). This was completed on September 24, 2018.

Actions remaining and expected completion date:

- The FAA has progressed a comprehensive rulemaking effort that will transform the current launch and re-entry licensing regime to a single license for all types of launch and re-entry vehicle operations, and is on track to publish a Notice of Proposed Rulemaking by February 1, 2019. This transformation will be accomplished largely through moving from a prescriptive regulatory framework to a performance-based regime.
- The FAA has enlisted industry to ascertain if it is possible to “operationally categorize” current and planned launch and reentry sites. This effort will provide initial awareness of public safety, security, and environmental issues associated with commercial space operations. The FAA expects to receive industry’s recommendation in December 2018.
- The FAA has continued to develop the Space Data Integrator – a new capability that will automate the FAA’s ability to monitor the status of launch and reentry operations in the NAS. The Space Data Integrator is expected to reach Initial Investment Decision in December 2018.

Results or expected results:

The FAA will continue to work with the Department of Transportation to address policy challenges. We will safely integrate commercial space launches with other aircraft operating in the national airspace system. We will align commercial space related procedures and technologies with NextGen modernization plans. We will coordinate the evolution of oversight and regulatory approaches with other Federal agencies such as NASA, the Federal Communications Commission, and the Departments of Commerce and Defense.

Increasing FAA's Ability to Withstand Cyberattacks and Enhancing DOT Coordination with FAA

Why is this issue significant?

As the FAA has expanded its use of technology, its vulnerability to cyberattacks has expanded. For example, FAA's cyberattack surface (the set of ways in which an adversary can enter a system and cause damage) now includes:

- Global Positioning System (GPS) technology. The FAA is transitioning from radar to GPS technology to monitor and control aircraft. However, GPS can be jammed or "spoofed" to send incorrect information.
- Connections between air traffic control information systems and networks. Some air traffic control systems are legacy systems that lack required security controls, and may be particularly vulnerable to cyberattacks when connected to new networks.

The FAA has historically conducted its security-related efforts separately from the Department of Transportation by operating the National Airspace Systems Cyber Operations (NCO), which monitors the cybersecurity of the national airspace system, and tracks security weaknesses outside the Department's central system. In addition, the Department's recent enterprise-wide network assessment did not include FAA networks.

Actions taken for FY 2018:

- As part of the adoption of the National Institute of Standards and Technology's Risk Management Framework (RMF), the FAA updated cybersecurity roles and responsibilities to align with the RMF. Since 2014, the Risk Executive function is carried out by the FAA Cybersecurity Steering Committee (CSC) to oversee the execution of the FAA Cybersecurity Program and strengthen FAA's overall cybersecurity posture. The FAA CSC identifies and agrees upon the cybersecurity priorities, strategies, and operational guidelines needed in support of an integrated approach to protecting the FAA.
- The FAA established the NCO to integrate with the national airspace system services, programs, and infrastructure. The NCO is the focal point for all coordination of national airspace system cyber security activities. When NCO validates that a reportable cybersecurity incident has occurred, NCO notifies the FAA's Security Operations Center (SOC) in compliance with Federal Incident Notification Guidelines. Additionally, the FAA conducts an annual cyber exercise to assess and improve NCO and DOT SOC coordination.
- The NCO and FAA/DOT SOC incorporate lessons learned from ongoing incident handling activities into incident response procedures, training, and testing/exercises, and implement the resulting changes accordingly. The FAA/DOT SOC and NCO participated in an FAA-wide Incident Response Process exercise at the Cyber Test Facility at the William J Hughes Technical Center in June 2018.

- The DOT and FAA participate in the Department of Homeland Security (DHS) Continuous Diagnostics and Mitigation Program for the deployment of information-security-continuous-monitoring products. These products integrate and correlate the information from sensors into a dashboard-reporting-solution that summarizes and filters information at the FAA, DOT, and federal level. These products were implemented and expanded in the R&D and Mission Support domains. As of February 2018, FAA reported its required metrics through the DHS's Continuous Diagnostics and Mitigation Program capabilities.
- The FAA developed a Common Control Catalog and a Common Control Provider Agreement documenting the common controls available for inheritance by managed systems to address the Office of the Inspector General's (OIG) recommendation to develop and finalize policy, procedures, and other guidance regarding the inherited-controls-process and agreements with internal/external service providers for inherited controls. The FAA completed and provided a copy of the Common Control Catalog to DOT and OIG in August 2018 and briefed the Common Control Provider Agreement to the CSC on September 2018.
- The OIG audit reports also identified issues with tracking Government Accounting Office (GAO) technical recommendations outside of Cyber Security Assessment and Management; Air Traffic Organization's managing Plan of Action and Milestones in their SMART tool; and increased number of unresolved Plan of Action and Milestones. The FAA completed two initiatives to resolve longstanding cybersecurity issues:
 - The FAA completed migrating Plan of Action and Milestones into DOT's central system (CSAM) from the SMART tool for 136 systems and remains on target to complete the remaining systems by December 2018.
 - The FAA completed the analysis of open Plan of Action and Milestones within the CSAM to identify and evaluate potential enterprise solutions to address FAA information systems' security requirements. CSC was briefed on the results in September 2018.
- With regard to tracking the GAO audit recommendations, FAA and DOT reported that it is impractical to treat and manage each technical vulnerability as a Plan of Action and Milestone to be entered into CSAM due to the number of technical vulnerabilities identified. The platform is not designed for that, and the database and reporting capabilities would be quickly overwhelmed and become unusable. The FAA met with GAO regularly to discuss progress on addressing the GAO audit recommendations, and briefed status updates to CSC on a quarterly basis.

Actions remaining and expected completion date:

- Complete migration of Airport Traffic Organization's Plan of Action and Milestones into CSAM for four remaining systems by the end of December 2018.
- Address remaining open GAO audit recommendations by the end of September 2019.
- Provide a copy of the Common Control Provider Agreement to DOT and OIG.

Results or expected results:

Promote cybersecurity through coordinated security-related efforts across the FAA and DOT. Reshape cybersecurity programs to ensure our workforce and strategies can keep pace with rapidly evolving developments as well as resolve longstanding and emerging cybersecurity vulnerabilities.

Increasing Management Attention to Federal Aviation Administration (FAA) Acquisitions – the Department’s Largest Buyer

Why is this issue significant?

The FAA has the largest acquisition office within the Department of Transportation, obligating almost \$5 billion annually for goods and services supporting the national airspace system. The Inspector General has identified contract management weaknesses that have increased costs and delays in implementing technology deliverables integral to Next Generation Air Transportation System (NextGen) programs.

Effective acquisition practices and transparent reporting are tenets of FAA’s unique Acquisition Management System, resulting in FAA meeting mission need faster, continually improving competition (80-90 percent) and one-bid rates (below 2 percent), and maintaining meaningful small business participation. Major FAA programs have experienced drastic improvement in performance, reducing cost growth by 34 percent and schedule delays by 15 percent since 2004.

Actions taken for FY 2018:

- Initiated a Quarterly Federal Procurement Data System (FPDS) Quality Report, detailing results from the National Acquisition Evaluation Program reviews of FPDS records and a reconciliation of data between FAA’s Procurement Request Information System (PRISM) and FPDS entries. This was completed in July 2018.
- The FAA continued governance and oversight processes over both the proposed and approved investment programs using its Joint Resources Council. This was achieved in September 2018.
- The FAA maintained oversight of proposed acquisition actions using its Chief Financial Officer Review and Acquisition Strategy Review Board, as applicable. This was completed in September 2018.
- Completed two lifecycle acquisition reviews of FAA programs in September 2018, as identified by the Joint Resources Council.

Results or expected results:

To maintain and promote further success within the FAA acquisition process, we must continue effective acquisition planning, have appropriate governance and oversight over the investment process, and promote transparency in spending-reporting to internal and external stakeholders.

Enhancing Oversight of Multiple–Award Contracts and Other Types of Agreements to Successfully Manage Risk

Why is this issue significant?

Multiple-award contracting programs present opportunities for FAA to streamline acquisition processes for services and supplies, reduce administrative costs, and satisfy requirements in a timely manner. Congress has granted Other Transaction Agreement (OTA) authority to eleven federal agencies, including the FAA. This authority allows each agency broader authority and flexibility to establish legally binding instruments with industry and academia for research and prototyping activities.

OTAs can provide important flexibilities for agencies when the requirements of a particular project cannot be easily met through traditional procurement instruments. However, OTAs also pose performance and financial risks because they are not subject to the same controls as contracts or grants.

Actions taken for FY 2018:

- Established a best practices guide for the award and administration of multi-award contracts by September 30, 2018. This guide will be updated regularly.
- Revised current Acquisition Management System policy and guidance governing the award and administration of OTAs by September 30, 2018, enhancing provisions for when an OTA should be used, how it should be documented, and who has authority to issue the agreement. This document will be updated regularly.
- Leveraged recording capabilities deployed through the FAA’s PRISM 7.2 upgrade, and established a quarterly report of OTAs. This capability was deployed in June 2018.
- Incorporated OTAs into National Acquisition Evaluation Program acquisition reviews. This capability was deployed in April 2018.

Actions remaining and expected completion date:

- The FAA will establish a best practices guide for the award and administration of multi-award contracts, to be published in the FAA Acquisition System Toolset by January 31, 2019.
- The FAA will revise its policy and guidance governing the award and administration of OTAs by January 31, 2019, enhancing provisions for appropriate OTA usage, to include documentation and authorities of issuer.

Results or expected results:

While Congress did not require agencies to enact policies for the use of OTAs, FAA established provisions in its unique Acquisition Management System to promote standardization towards their issuance and administration. While multi-awards programs and OTAs present multiple opportunities for meeting FAA’s mission, like all acquisition tools they also present unique risks to the agency it must mitigate through effective policies and appropriate oversight.