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# *Office of Inspector General*

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## **TOP MANAGEMENT CHALLENGES FOR FISCAL YEAR 2017**

*Department of Transportation*

*Report Number: PT-2017-007*

*Date Issued: November 15, 2016*





# Memorandum

U.S. Department of  
Transportation

Office of the Secretary  
of Transportation  
Office of Inspector General

Subject: **INFORMATION:** DOT's Fiscal Year 2017  
Top Management Challenges  
Department of Transportation  
Report Number PT-2017-007

Date: November 15, 2016

From: Calvin L. Scovel III  
Inspector General

Reply to  
Attn. of: J-1

To: The Secretary  
Deputy Secretary

Safe, efficient, and innovative transportation is one of the building blocks of the U.S. economy, and essential to creating opportunities that enhance our quality of life. Every year, the Department of Transportation (DOT) invests more than \$70 billion to maintain, protect, and enhance the Nation's transportation system. DOT has recently taken a number of steps toward improving transportation safety and oversight in aviation, surface transportation, hazardous materials transport, and other critical areas. Through our audits and investigations, our office supports DOT's efforts to enhance effectiveness and accountability in the Department's wide range of programs.

As always, safety remains at the forefront of DOT's mission and its highest priority. However, emerging transportation technologies pose new challenges to this mission. For example, while the Federal Aviation Administration (FAA) has increased efforts to integrate unmanned aircraft systems (UAS) into domestic airspace, the number of UAS sightings by pilots and other sources has also increased dramatically, by more than 362 percent from 2014 to 2015. Our work has found that FAA still lacks an effective risk-based oversight system to ensure UAS operators comply with all Federal regulations and requirements. DOT is also facing the emerging challenge of overseeing the safety of autonomous vehicles (i.e., driverless cars), which are already beginning to travel on U.S. roadways.

At the same time, DOT must continue to address ongoing surface transportation safety issues. We have identified a number of opportunities to improve safety, including enhancing processes for collecting and analyzing vehicle recall data and removing high-risk motor carriers and unqualified drivers from roads. In addition, the Federal Transit Administration faces challenges in determining how best to collect safety data and set safety goals, standards, and performance measures for transit

operators as it carries out its enhanced oversight role. Other key priorities for DOT include ensuring the integrity of the Nation's highways, bridges, and tunnels; strengthening guidance on compliance with railroad bridge safety standards; and better enforcing pipeline safety regulations.

Moreover, DOT must meet these safety goals while enhancing the stability and resilience of critical transportation systems. Our work demonstrates that DOT must do more to fulfill existing information technology (IT) security requirements for its 450-plus systems and undertake new strategies to mitigate increasing cybersecurity threats. Improved contingency planning is particularly critical to ensure the National Airspace System (NAS) can effectively respond to major disruptions in air traffic systems. While taking steps to increase the resilience of existing systems, DOT and FAA must also ensure that the Department's multibillion-dollar investments in programs to expand the capacity and efficiency of the NAS stay on track and address risks.

Meeting DOT's goals across all areas requires sound financial stewardship and management of its sizeable investments. As such, DOT must take advantage of all opportunities available to improve its internal controls and enhance accountability. Our work has highlighted areas where the Department can better manage its resources and increase oversight of contracts and grants to improve program performance. These include using sound management strategies for high-risk contracts, ensuring its acquisition workforce has the needed skills and financial management tools, and improving financial stewardship in areas such as cost accounting and contract closeout. DOT can also take steps to better leverage its fraud detection and prevention resources at hand, including increasing OIG referrals and harnessing data to better predict high-risk areas for fraud, waste, and abuse.

Finally, DOT faces the significant cross-modal challenge of implementing a growing list of mandated and recommended improvements to its safety, security, and financial management. For example, our work has found that the Department faces delays in fully meeting provisions of the Moving Ahead for Progress in the 21st Century Act while meeting more recent requirements established by the Fixing America's Surface Transportation Act—including establishing a new credit bureau to streamline credit and grant opportunities. At the same time, DOT will need to address new legislative requirements for aviation safety, as well as continue work on a number of mandates and recommendations that are vital to improve pipeline safety and rail transport of hazardous materials.

We remain committed to assisting DOT as it works to improve the management and execution of its programs and protect its resources. We considered several criteria in identifying DOT's top management challenges for fiscal year 2017, including their impact on safety, documented vulnerabilities, large dollar implications, and the ability

of the Department to effect change. In the enclosed report, we identify and discuss the following challenges:

- Maintaining Transportation Safety While Keeping Pace With Rapidly Evolving Technologies
- Bolstering Vehicle and Surface Transportation Safety
- Strengthening Cybersecurity Strategies To Address Increasing Threats
- Strengthening Controls To Detect and Prevent Fraud, Waste, and Abuse
- Enhancing the Capacity, Efficiency, and Resiliency of the National Airspace System
- Increasing Oversight of Critical Transportation Infrastructure
- Enhancing Oversight of Acquisition and Financial Management
- Managing Existing and New Mandates and Initiatives

We appreciate DOT's commitment to taking prompt actions in response to the issues we have identified. The final report and DOT's response will be included in the Department's Annual Financial Report, as required by law. The Department's response is included in its entirety in the appendix to this report. If you have any questions regarding this report, please contact me at (202) 366-1959. You may also contact Joseph W. Com  , Principal Assistant Inspector General for Auditing and Evaluation, at (202) 366-0377.

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cc: DOT Audit Liaison, M-1

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# Maintaining Transportation Safety While Keeping Pace With Rapidly Evolving Technologies



Source: FAA

As new technologies evolve in the field of transportation and beyond, new safety challenges arise alongside them. Without a doubt, the growing demand for unmanned and autonomous vehicles—both in the air and on the ground—represents substantial commercial opportunities for U.S. businesses. The Federal Aviation Administration (FAA) recently forecasted 1.9 million units in potential annual sales of Unmanned Aircraft Systems (UAS) in 2016, which could increase to 4.3 million units sold annually by 2020. Similarly, several companies are developing and testing the use of autonomous vehicles (i.e., driverless cars), and the number is expected to grow over the next decade. Keeping pace with these rapidly evolving technologies, while also maintaining safety, presents significant regulatory and oversight challenges for the Department of Transportation (DOT).

### Key Challenges

- Overseeing an expanding and dynamic UAS industry
- Preparing to oversee and regulate autonomous vehicles

**Overseeing an Expanding and Dynamic UAS Industry** The growing demand for commercial UAS—for purposes ranging from pipeline monitoring and precision agriculture to package delivery and filmmaking—presents one of the most significant safety challenges for FAA in decades. In June 2016, FAA published a new rule regulating the use of small UAS<sup>1</sup> (i.e., systems weighing less than 55 pounds)—an important step forward in advancing the integration of UAS technology into the National Airspace System (NAS). However, the rule does not yet permit several high-profile aspects of potential UAS use, such as delivering packages beyond the line of sight of the pilot, which underscores the need for further

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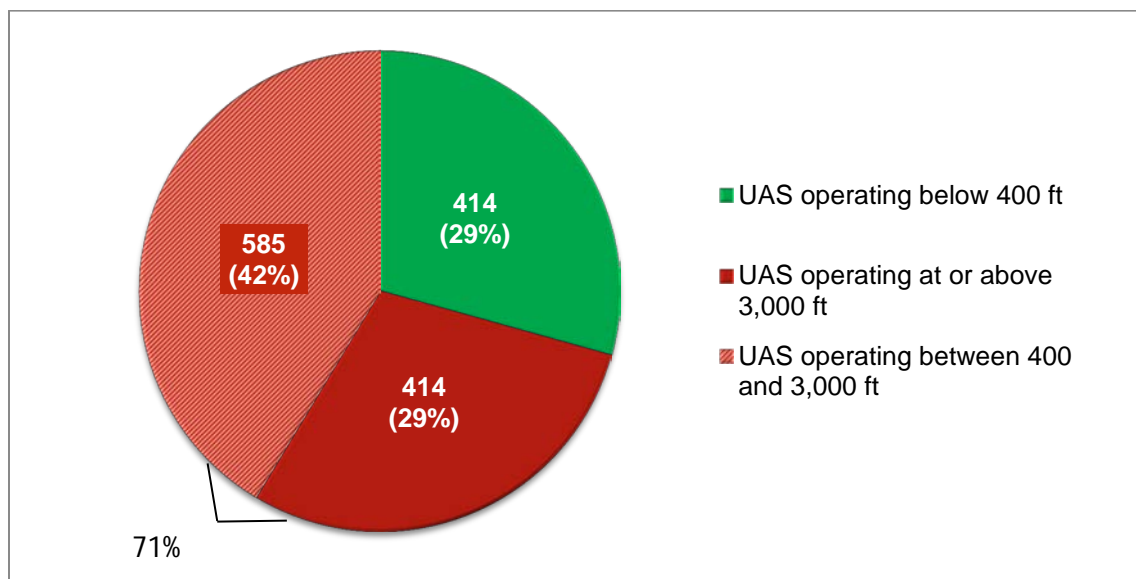
<sup>1</sup> 14 CFR Part 107 (June 2016).

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regulatory efforts. Until then, FAA will continue to accommodate some UAS operations through regulatory waivers and exemptions.

As the number of UAS operations in the NAS increases, FAA faces additional oversight and enforcement challenges. UAS sightings by pilots and other sources<sup>2</sup> have increased dramatically, with over 1,100 UAS events reported in 2015 compared to just 238 in 2014, according to UAS event data. According to FAA, the number of monthly reports has increased from over 60 in August 2015 to over 100 in August 2016. As shown in the figure below, 71 percent of reported sightings occurred at altitudes at or above the 400 feet maximum FAA-authorized altitude for civil UAS—with 42 percent of those sightings between 400 feet and 3,000 feet, and 29 percent of sightings reported at altitudes at or above 3,000 feet, approaching areas where other aircraft operate, thus presenting potential safety risks.<sup>3</sup>

**Figure. UAS Event Reports Above and Below 400 Feet**



Source: OIG analysis of FAA data reported between November 2014 and January 2016

While FAA has taken some steps to advance UAS technology, the Agency has not established a risk-based system for UAS oversight. FAA safety inspectors have received only limited UAS-related training and guidance, and FAA field offices, which are responsible for oversight, do not receive sufficient operational information regarding civil UAS operators. In the absence of a risk-based oversight system, FAA inspectors respond primarily to incidents only after they are reported. Further, FAA lacks a robust data reporting and tracking system for UAS activity, and the information available is difficult to analyze and collected in a fragmented manner throughout the Agency. As a result, FAA is currently restricted to a

<sup>2</sup> While sightings are primarily reported by pilots, reports also come from air traffic controllers, law enforcement officers, and the general public.

<sup>3</sup> It is important to note that FAA has not verified the validity of the reports received by air traffic, but the data indicate that a number of UAS operators may be flying their aircraft outside of FAA guidelines.



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reactive approach to UAS oversight, rather than proactively identifying and mitigating risks with a rapidly advancing technology.

While FAA has made strides in advancing safe UAS integration, continued progress will require developing sufficient guidance and training for inspectors, establishing the capacity for integrated UAS data and analysis, and implementing an effective process to verify and evaluate UAS operators' compliance with regulations. Furthermore, in partnership with other Government agencies, FAA must continue testing UAS detection technology to mitigate hazards posed by UAS near airports, while also assessing the operational impacts of UAS on airports, navigation, and air traffic services as directed by Congress in the FAA Extension, Safety, and Security Act of 2016.<sup>4</sup> At the same time, FAA will need to continue testing the UAS collision risk to manned aircraft and develop a system to manage UAS in low-altitude airspace as called for in the act.

**Preparing To Oversee and Regulate Autonomous Vehicles** The rapid development of emerging vehicle automation technologies holds promising long-term safety benefits but also poses near-term safety, oversight, and regulatory challenges. In January 2016, Secretary Foxx announced a 10-year, nearly \$4 billion investment to accelerate the development and adoption of safe vehicle automation through pilot programs that will test connected vehicle systems throughout the country and ensure a national framework for connected and autonomous vehicles by working with industry.

The Secretary also announced a number of vehicle safety goals and initiatives for 2016 that included developing guidelines for the safe deployment of self-driving vehicles. For example, in September 2016, DOT issued its Federal Automated Vehicles Policy, which sets the framework for the next 50 years with guidance for the safe and rapid development of advanced automated vehicle safety technologies. To meet these goals, the Department faces the significant challenge of testing and developing new tools and standards necessary for overseeing and regulating this new era in automotive innovation. The National Highway Traffic Safety Administration will have to consider seeking new authorities as necessary to recognize the challenges that these new automation technologies pose and ensure that these vehicles are as safe as standard motor vehicles. While still in its early stages, this is an important and rapidly developing opportunity to adapt to a changing technological landscape while meeting DOT's primary safety mission.

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<sup>4</sup> Pub. L. No. 114-190 (2016).

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**Related Products** The following related documents can be found on the OIG Web site at <http://www.oig.dot.gov>.

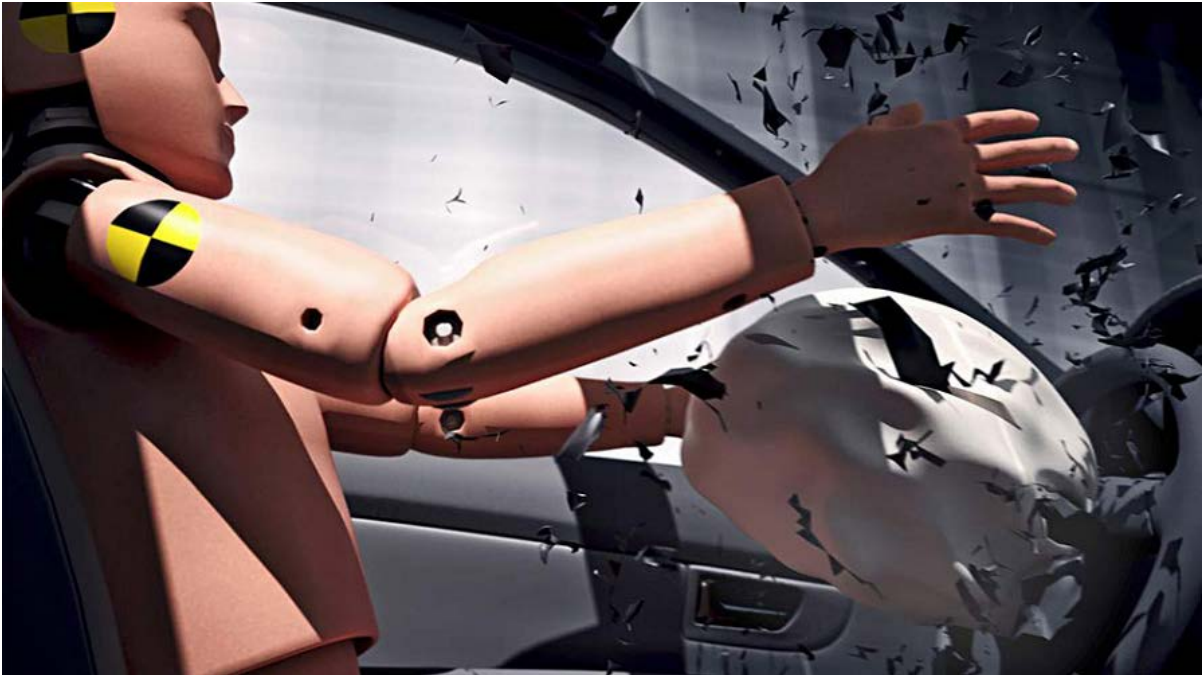
- *FAA's Progress and Challenges in Integrating Unmanned Aircraft Systems Into the National Airspace System*, December 10, 2014
- *FAA Faces Significant Barriers To Safely Integrate Unmanned Aircraft Systems Into the National Airspace System*, June 26, 2014

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***For more information on the issues identified in this chapter, please contact Matthew Hampton, Assistant Inspector General for Aviation Audits, at (202) 366-0500 or Barry DeWeese, Assistant Inspector General for Surface Transportation Audits, at (202) 366-5630.***

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# Bolstering Vehicle and Surface Transportation Safety



Source: transportation.gov

Maintaining the integrity of its safety programs remains the Department of Transportation's (DOT) top priority. Our audit and investigative work has highlighted improvements the Department can make to enhance the safety of the Nation's highways, mass transit systems, motor carriers, and commercial drivers.

### Key Challenges

- Enhancing processes for collecting and analyzing vehicle safety recall data
- Implementing the Federal Transit Administration's (FTA) role in overseeing the safety of the nation's rail transit system
- Removing high-risk motor carriers and unqualified drivers from the Nation's roads

### Enhancing Processes for Collecting and Analyzing Vehicle Safety Recall Data

Large-scale recalls from automotive manufacturers have highlighted the safety risk posed by vehicle safety defects. For example, since 2014, General Motors has recalled nearly 9 million U.S. vehicles for a defect involving a faulty ignition switch after it received more than 100 reports of death and more than 200 injury claims. In addition, the National Highway Traffic Safety Administration (NHTSA) has launched a recall of Takata airbags installed in tens of millions of U.S. vehicles due to a safety defect that may cause the inflator to explode unexpectedly. To address these and other risks, NHTSA has recognized the importance of conducting periodic reviews of its safety processes and strengthening its

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internal controls for collecting and analyzing vehicle safety recall data. NHTSA's Office of Defects Investigations (ODI) continues to make progress in addressing the 17 recommendations from our 2015 audit, which found ODI's processes were insufficient for verifying that manufacturers submit complete and accurate early warning reporting data. NHTSA concurred with all 17 recommendations, and based on the Agency's actions, we have closed 12 of them. However, in our view, NHTSA has not completed implementation of five recommendations that would enhance the collection and analysis of early warning reporting data and the process for reviewing complaints. Further, in February 2016, we reported that additional efforts are needed to enhance ODI's quality control mechanisms for complying with the policies and plans established to address our 2011 recommendations. In particular, ODI must develop and implement internal control mechanisms to address documentation and testing weaknesses. The two recommendations included in our 2016 report remain open.

NHTSA will also need to follow through on its internal plans and assessments, such as its *Path Forward* and its June 2015 Workforce Assessment, which describe NHTSA's plans to implement the lessons learned from recent high-profile safety defects. Specifically, NHTSA wants to improve its ability to hold manufacturers accountable by collecting information more efficiently, auditing carmakers and their suppliers, expanding its expertise on new technologies, improving data mining techniques, better managing the investigation process, and strengthening communications. However, sustained management effort will be needed to implement these plans, and close monitoring will remain vital to ensure that NHTSA effectively sustains these improvements.

**Implementing FTA's Enhanced Role in Overseeing the Safety of the Nation's Rail Transit System** FTA faces significant challenges in carrying out its critical and evolving role in safety oversight responsibilities. Under the State Safety Oversight program created in 1991,<sup>5</sup> FTA oversees State safety oversight agencies that monitor the safety of rail transit agencies. In 2012, we identified challenges and actions for FTA to take if it were granted enhanced rail transit safety oversight and enforcement authority. These challenges included collecting effective safety data, developing and implementing safety goals and performance measures, establishing national rail transit safety standards, and conducting enhanced oversight and enforcement. Since then, the Moving Ahead for Progress in the 21st Century Act (MAP-21)<sup>6</sup> and the Fixing America's Surface Transportation (FAST) Act<sup>7</sup> enhanced FTA's safety authority, including allowing it to assume State safety oversight responsibilities in the absence of an effective State safety oversight agency.

We recently completed an assessment of FTA's actions to assume and relinquish direct safety oversight of rail transit agencies. In October 2015, FTA assumed direct oversight of the Washington Metropolitan Area Transit Authority after a January 2015 incident on a Metrorail train where 1 passenger died and 91 people were injured. As part of our review, we also provided an update on FTA's progress toward addressing the safety oversight

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<sup>5</sup> Section 3029 of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), Pub. L. No. 102-240.

<sup>6</sup> Pub. L. No. 112-141, § 20021 (2012).

<sup>7</sup> Pub. L. No. 114-94, § 3013 (2015).

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challenges we identified in 2012. Overall, we found that FTA has actions underway to develop policies and procedures for assuming direct safety oversight of a transit agency and for transferring it back to a State safety oversight agency but lacks milestones for finalizing those policies and procedures. Additionally, FTA has taken actions to address issues we identified in 2012 but faces challenges in acquiring and retaining safety oversight personnel and resources; establishing a data-driven, risk-based oversight system; and establishing robust safety performance criteria and enforceable safety standards. We made recommendations to strengthen FTA's ability to assume and relinquish direct safety oversight and to improve its rail transit safety oversight overall.

**Removing High-Risk Motor Carriers and Unqualified Drivers From the Nation's Roads** Our criminal investigations have identified challenges for the Federal Motor Carrier Safety Administration (FMCSA) as it seeks to prevent unsafe motor carriers and unqualified drivers from operating on the Nation's highways. We focus our investigations on entities that repeatedly engage in unsafe practices, such as carriers that are placed out of service and reincarnate under new identities, unqualified individuals who obtain fraudulent Commercial Driver Licenses (CDL), and drivers or entities that falsify driver qualification and vehicle maintenance requirements. In some cases, these unsafe practices led or contributed to multivehicle collisions and fatalities.

Since October 2011, we opened 134 motor carrier safety investigations. Forty-one involved reincarnated carriers and 52 involved frauds related to CDLs. In fiscal year 2016, our investigations resulted in the prosecution of 2 unsafe carriers that continued to operate after being placed out of service, as well as 5 separate CDL medical certificate and test-taking fraud schemes that allowed over 3,500 unqualified individuals to obtain CDLs. Sometimes these schemes involved public officials. For example, we identified five Department of Motor Vehicles (DMV) test centers that were used to illegally issue CDLs in New York State. Eleven individuals, including State DMV officials, were found guilty on charges related to applicants cheating on CDL tests.

To reduce the risks associated with unsafe carriers or unlicensed drivers, FMCSA must take stringent enforcement action against motor carriers that violate safety regulations and ensure that unsafe carriers are placed out of service and not re-issued authority under new identities. Additionally, we continue to collaborate with FMCSA and the States to revoke licenses and/or retest the individuals associated with the schemes to reduce the threat to the traveling public.

**Related Products** The following related documents can be found on the OIG Web site at <http://www.oig.dot.gov>.

- *Improvements in FTA's Safety Oversight Policies and Procedures Could Strengthen Program Implementation and Address Persistent Challenges*, November 2, 2016
- *Florida Man Pleads Guilty in Fraudulent CDL Testing Scheme*, July 21, 2016

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- *Louisiana Trucking Company Co-Owner Sentenced for Falsifying an Application for Motor Carrier Operating Certificate, May 25, 2016*
- *Louisiana Commercial Driver's License Examiner Pleads Guilty for Falsifying Test Results, May 4, 2016*
- *Massachusetts Man Sentenced for Illegally Operating a Transportation Service, May 4, 2016*
- *Philadelphia Trucking Firm Associate Pleads Guilty in CDL Fraud Case, April 21, 2016*
- *New York Man Sentenced in CDL Test-Taking Scheme, April 13, 2016*
- *Additional Efforts Are Needed To Enhance NHTSA's Full Implementation of OIG's 2011 Recommendations, February 24, 2016*
- *Florida School Owner Sentenced to Prison for His Role in Fraudulent CDL Testing Scheme, January 11, 2016*
- *South Carolina Man Sentenced for False Statements in Connection With Third Party CDL Testing, December 15, 2015*
- *General Motors Agrees to Deferred Prosecution Agreement and a \$900 Million Forfeiture, September 16, 2015*
- *NHTSA's Efforts To Identify Safety-Related Vehicle Defects, June 23, 2015*
- *Inadequate Data and Analysis Undermine NHTSA's Efforts To Identify and Investigate Vehicle Safety Concerns, June 18, 2015*
- *Challenges to Improving Oversight of Rail Transit Safety and Implementing an Enhanced Federal Role, January 31, 2012*
- *Process Improvements Are Needed for Identifying and Addressing Vehicle Safety Defects, October 6, 2011*
- *Letter to Chairmen Rockefeller and Pryor Regarding Whether Former NHTSA Employees Exerted Undue Influence on Safety Defect Investigations, April 4, 2011*

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***For more information on the issues identified in this chapter, please contact Barry DeWeese, Assistant Inspector General for Surface Transportation Audits, at (202) 366-5630 or Michelle McVicker, Principal Assistant Inspector General for Investigations, at (202) 366-1967.***

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# Strengthening Cybersecurity Strategies To Address Increasing Threats



Source: OPM

Each year, the threats posed by cybercriminals evolve into new and more dangerous forms, while security organizations must continually develop approaches to keep pace and thwart potential attacks. As security threats become increasingly sophisticated and more numerous, the Department of Transportation (DOT) faces the challenge of reevaluating and expanding traditional approaches to securing information technology (IT) systems. The Department must work to fulfill existing requirements while also implementing new strategies to meet the additional security demands of mobile technology, cloud-based computing, and other technological developments.

### Key Challenges

- Maximizing benefits from personal identity verification (PIV) cards
- Coordinating technological initiatives to efficiently improve security
- Extending security boundaries to cover all DOT information

**Maximizing Benefits From PIV Cards** Attackers have grown increasingly proficient at impersonating system, network, security, and database administrators, as well as other IT personnel with administrative privileges, to gain unauthorized access to Federal systems and the information they contain. To help mitigate this risk, the Office of Management and Budget (OMB) requires agencies to implement the full use of PIV<sup>8</sup> credentials for access to Federal facilities and their information systems, including logging onto agency computers.

DOT has successfully supplied PIV cards to 100 percent of its employees. However, we continue to observe weaknesses in establishing required PIV use to access applications and facilities. For example, in 2015, DOT had only enabled 140 of its 445 systems for PIV access, including systems containing sensitive information. In a recent audit of PIV use for accessing personally identifiable information (PII), we reported that DOT has not fully implemented its PIV use for authentication of users' identities for access. Furthermore, DOT implementation of PIV for facilities remains a challenge. For example, the Federal Aviation Administration (FAA) has not yet established PIV access at 530 facilities, though it plans to do so by the end of fiscal year 2018. Until DOT establishes full use of PIV cards across all its Operating Administrations, it will face increased security risks and will be unable to ensure that system users and individuals who access facilities and systems are correctly identified as authorized personnel.

**Coordinating Technological Initiatives To Efficiently Improve Security** As the complexity and sophistication of cyberattacks grows, it is even more important, beyond taking preventive measures, for organizations to be able to actively monitor and mitigate security weaknesses as soon as possible during or after an attack. To address this challenge, the Department of Homeland Security, OMB, and National Institute of Standards and Technology (NIST) conceived programs and concepts such as Continuous Diagnostics and Mitigation<sup>9</sup> and Information Security Continuous Monitoring.<sup>10</sup> However, our work has found that DOT has not yet effectively implemented these measures. For example, we recently reported that DOT's continuous monitoring program lacks sufficient maturity to be effective, leaving the Department's systems vulnerable to exploitable hardware and software. We also found that DOT's Operating Administrations continue to use different tools for hardware and software management and to identify and resolve vulnerabilities, rather than a DOT-wide integrated security approach.<sup>11</sup> By eliminating redundancy through

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<sup>8</sup> A PIV card is a smart card that contains the necessary data for the holder to be granted access to Federal facilities and information systems and assure appropriate levels of security for all applicable applications.

<sup>9</sup> The Continuous Diagnostics and Mitigation (CDM) program is a dynamic approach to fortifying the cybersecurity of government networks and systems. CDM provides Federal departments and agencies with capabilities and tools that identify cybersecurity risks on an ongoing basis, prioritize these risks based upon potential impacts, and enable cybersecurity personnel to mitigate the most significant problems first. Congress established the CDM program to provide adequate, risk-based, and cost-effective cybersecurity and more efficiently allocate cybersecurity resources.

<sup>10</sup> Information Security Continuous Monitoring (ISCM) is the automated identification, prioritization, and detection of risks. ISCM provides an organization the ability to discover risks, prioritize resolving the most critical problems, delegate mitigation, correct deficiencies, and update an enterprise dashboard for management visibility/decision making/audit compliance while reducing the level of risk for the organization.

<sup>11</sup> Hardware asset management, software asset management, configuration management, and vulnerability management are just a few of the critical, foundational controls involved in ISCM.



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automated and integrated continuous monitoring tools, DOT should gain expected efficiencies that can aid in network defense and reduce the human factor risk and errors.

Furthermore, recent trends in mobile technology and workplace transformation highlight the importance of effectively implementing an integrated approach to monitoring and securing DOT's network. As the technological sophistication of employees grows, so does the complexity of end-user computing environments. Traditional methods of managing desktop computer security and delivering applications to users do not provide the flexibility IT departments need to support modern-day organizations. DOT will now have to deal with a surge in the number of remote and mobile employees; a proliferation of alternative endpoint devices, such as smartphones, tablets, and thin clients<sup>12</sup>; and smartphone users who want instant access to corporate applications across all their devices—all of which pose new and evolving security risks.

**Extending Security Boundaries To Cover All DOT Information** Federal law requires agency heads to ensure that their information and information systems are secure, and to delegate to their chief information officers the authority to ensure compliance with Federal requirements. However, DOT's Office of the Chief Information Officer has not ensured that the Security Operations Center (Center) has access to all departmental systems or required the Center to consider incident risk, thus limiting the Center's ability to effectively monitor, detect, and eradicate cyber incidents throughout DOT. In addition, we recently reported that DOT's monitoring of cybersecurity incidents is ineffective and incomplete due to lack of access to FAA's and cloud service providers' systems.

DOT also faces challenges as the industry moves towards extending desktop virtualization and cloud computing. We have reported that moving applications and data to a public or private cloud does not absolve organizations of their accountability to protect their data. Instead, it requires the Department to address how it will share security responsibilities with its cloud providers and manage risks. Changes in how data are stored and managed affect incident response structures and measures and further demonstrate the importance of keeping identity management and access protection at the core of DOT's cloud strategy. In addition, solid IT governance practices will be required to ensure that an Operating Administration's IT infrastructure continues to support and enable the achievement of its strategies and objectives.

DOT also needs to address security vulnerabilities in contracted network space. We recently reported that the Volpe Center does not follow NIST's and DOT's policies and procedures for establishing agreements with clients that connect networks owned by third parties to its network. For example, the Federal Motor Carrier Safety Administration (FMCSA) has contracted with Volpe and has connections with third parties. Volpe had not required a security agreement with FMCSA regarding this connection. We also identified vulnerabilities in the network space that Volpe hosts for DOT's Operating Administrations, such as

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<sup>12</sup> A thin client is a client machine that relies on the server to perform the data processing. Either a dedicated thin client terminal or a regular PC with thin client software is used to send keyboard and mouse input to the server and receive screen output in return.

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outdated and unpatched operating systems and the use of default passwords.

**Related Products** The following related documents can be found on the OIG Web site at <http://www.oig.dot.gov>.

- *DOT Cybersecurity Incident Handling and Reporting Is Ineffective and Incomplete*, October 13, 2016
- *The Volpe Center’s Information Technology Infrastructure Is at Risk for Compromise*, March 22, 2016
- *DOT Lacks an Effective Process for Its Transition to Cloud Computing*, June 16, 2016
- *Multiple DOT Operating Administrations Lack Effective Information System Disaster Recovery Plans and Exercises*, March 3, 2016
- *FISMA 2015: DOT Has Made Major Success in PIV Implementation, But Problems Persist in Other Cybersecurity Areas*, November 05, 2015
- *FISMA 2014: DOT Has Made Progress But Significant Weaknesses In Its Information Security Remain*, November 14, 2014
- *FISMA 2013: DOT Has Made Progress, but Its Systems Remain Vulnerable to Significant Security Threats*, November 22, 2013
- *Security Weaknesses in DOT’s Common Operating Environment Expose Its Systems and Data to Compromise*, September 10, 2013
- *FISMA 2012: Ongoing Weaknesses Impede DOT’s Progress Toward Effective Information Security*, November 14, 2012
- *FISMA 2011: Persistent Weaknesses in DOT’s Controls Challenge the Protection and Security of Its Information Systems*, November 14, 2011
- *FISMA 2010: Timely Actions Needed To Improve DOT’s Cybersecurity*, November 15, 2010

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**For more information on the issues identified in this chapter, please contact Louis C. King, Assistant Inspector General for Financial and Information Technology Audits, at (202) 366-1407.**

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# Strengthening Controls To Detect and Prevent Fraud, Waste, and Abuse



Source: OIG

In 2015, the Department of Transportation (DOT) awarded over \$55 billion in grants to States, cities, airports, and other transportation authorities, and another \$6 billion in contracts to roughly 1,000 vendors. The Association of Certified Fraud Examiners estimates that the typical organization loses 5 percent of its revenues to fraud each year, highlighting the importance of robust internal controls and a strong fraud detection and prevention program. Our audit and investigative work continues to identify opportunities where the Department can enhance its internal controls to better oversee major programs and grants. DOT can also do more to leverage its fraud detection and prevention resources at hand, including increasing OIG referrals and harnessing data to better predict high-risk areas for fraud, waste, and abuse.

### Key Challenges

- Enhancing internal controls to protect Federal investments
- Strengthening Disadvantaged Business Enterprises (DBE) program oversight
- Leveraging fraud detection and prevention resources
- Analyzing data to proactively identify risks

**Enhancing Internal Controls To Protect Federal Investments** Effective internal controls are key to successfully managing DOT's programs and minimizing program and financial risks. Our work continues to identify instances where weak controls could result in overpayments and other issues, particularly in DOT's multibillion-dollar Federal grant programs. For example, the Federal Highway Administration (FHWA), which oversees the management of over \$37 billion annually in Federal financial assistance at State

departments of transportation (State DOTs), is regularly challenged to ensure compliance with multiple Federal requirements across thousands of projects. In a recent audit of FHWA's controls related to State-managed project agreements, we found that State DOTs advertised projects prior to FHWA authorization and verification that they complied with all Federal requirements. In fact, because of our audit, FHWA requested and received reimbursement of about \$10.5 million from a State DOT for a construction project that was awarded prior to FHWA authorization. Strengthening its procedures and controls will allow FHWA to reduce the amount of Federal funds at risk.

In addition to addressing compliance issues, DOT agencies can strengthen internal controls by providing close monitoring for at-risk grantees. Our recent work discussed how the Federal Transit Administration (FTA) can enhance its processes to better safeguard millions of dollars in grant funds. FTA awards to more than 2,000 urban and rural transit operators over \$10 billion in grant funds and technical assistance each year. If FTA becomes aware that a grantee has a significant internal control weakness or does not comply with Federal requirements, the Agency can temporarily restrict the grantee's access to Federal grant funds while the grantees work to mitigate those risks. Our audit found that FTA monitored grantees' progress on corrective actions but lacks policies and guidance on the Federal funding restriction process. As a result, it is difficult for FTA Headquarters to track issues over time and across multiple transit agencies to gain assurance that its regional offices provide sufficient oversight of at-risk grantees.

Our work has also emphasized the importance of implementing effective controls at the Maritime Administration (MARAD), an agency whose mission—and resultant internal control risk—has increased to include oversight of a number of grants for port development projects. Since 2010, we have issued 5 MARAD-specific reports with 46 recommendations and 7 departmentwide reports with 15 MARAD-related recommendations. Most recently, in December 2015, we reported that MARAD did not thoroughly document its risk mitigation strategies and that its controls for program implementation, monitoring, and oversight were deficient. MARAD has since taken action to address 11 of the 16 recommendations from this report and plans to address the remaining recommendations by December 2018. Sustained management attention will be required to effectively implement these improvements to its oversight and processes.

**Strengthening DBE Program Oversight** DOT continues to experience a number of challenges in administering and overseeing its DBE program, including identifying and deterring DBE fraud. DOT's DBE program was created to help socially and economically disadvantaged individuals who own and control small businesses to participate in DOT contracting opportunities. Three Operating Administrations—the Federal Aviation Administration (FAA), FTA, and FHWA—distribute over \$3 billion each year to DBE firms for transportation projects, which are administered by State and local transportation agencies, or grantees.

The DBE program's overall effectiveness and integrity depends on sustained DOT leadership, guidance, and oversight. In April 2013, we made several recommendations for

DOT to strengthen its oversight, such as to formally assign one departmental office the responsibility and accountability for managing the DBE program, develop performance measures, and develop an oversight and compliance plan. More recently, in 2015, we found FAA and airports also do not provide adequate oversight and guidance to ensure DBE firms are paid promptly. While DOT and airports are taking steps to address the challenges that DBEs face, the number of new firms doing business at the Nation's largest airports has declined, and major barriers impede the success of new and existing disadvantaged firms. Such barriers include infrequent turnover of DBE firms, high entry costs, and inexperience with the airport bidding process.

Strong oversight is key to weeding out bad actors who attempt to fraudulently claim funds under the program. DBE fraud often involves prime contractors and non-DBE subcontractors who conspire with DBE firms to fraudulently meet DBE participation criteria. DBE fraud investigations currently represent 38 percent of our active grant and procurement fraud investigations, which focus on the most egregious violators. In the past 5 years, our DBE fraud investigations have produced 43 indictments, 41 convictions, and over \$200 million in financial recoveries. For example, in 2016, a New York prime contractor was convicted of fraudulently using a DBE to obtain \$70 million in FTA-funded work at the World Trade Center Transportation Hub. We opened 16 new DBE fraud cases in fiscal year 2015, but have seen an increase with 23 new cases in fiscal year 2016, indicating that increased oversight is warranted to better identify and prevent DBE fraud.

**Leveraging Fraud Detection and Prevention Resources** Effective stewardship of taxpayer dollars requires diligent attention to identify and prevent instances of fraud, waste, and abuse. Better leveraging its anti-fraud resources could significantly improve DOT's ability to proactively detect and mitigate fraud risks. As one of these resources, we perform a robust outreach training program to inform our internal and external stakeholders about our commitment to safeguarding DOT resources and making the Nation's transportation system safe and efficient. Examples of our outreach include a recurring role for our special agents as guest instructors at the FAA and Pipeline and Hazardous Materials Safety Administration safety academies to train aviation and pipeline safety inspectors in fraud awareness and detection. Our outreach efforts contributed to the overall initiation of over 200 investigations during fiscal year 2016 in matters involving significant public safety concerns and enhanced stewardship of DOT's financial resources.

Despite our best efforts to partner with DOT Operating Administrations, we continue to witness impediments to consistent case referrals to our office. For example, over the course of 5 years, one Operating Administration conducted hundreds of hazardous materials inspections each year; yet, it did not refer any of those matters to our office for review. After reviewing those cases, we determined that 17 should have been referred to us for potential criminal violations. To best harness our robust anti-fraud resources, we will continue to work with the Department and its Operating Administrations to improve collaboration, and raise their awareness about OIG's authorities and their obligations to provide us information in the timeliest manner possible.

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**Analyzing Data To Proactively Identify Risks** At its most effective, fraud prevention proactively identifies and mitigates risks to stop fraudulent incidents before they start. DOT has opportunities to harness data to better predict and target possible areas of fraud, waste, and abuse, and our office is committed to increasing our risk-based data analytics work and assisting the Department in this challenge.

In particular, mining and analyzing data from electronic databases can uncover hidden patterns, trends, anomalies, relationships, and predictive behavior that can transform the information into actionable information. We have successfully used data analytics in the past on our audit and investigative work, including the use of data from the Federal Motor Carrier Safety Administration's complaints and registration databases to proactively identify investigative leads for Operation Boxed Up, a nationwide initiative aimed at removing unscrupulous household goods movers before they further victimize American consumers. Effectively leveraging data to identify outliers, patterns of abuse, or other areas of concern can increase both the effectiveness and efficiency of the Department's anti-fraud efforts.

**Related Products** The following related documents can be found on the OIG Web site at <http://www.oig.dot.gov>.

- *Federal Jury in NYC Convicts DCM Erectors, Inc. and Chief Executive Officer on DBE Fraud*, August 10, 2016
- *FTA Monitored Grantees' Corrective Actions but Lacks Policies and Guidance to Oversee Grantees with Restricted Access to Federal Funds*, April 12, 2016
- *MARAD's Efforts To Address Program Management Challenges*, March 8, 2016
- *Judge Orders Pennsylvania Contractors to Pay \$1.33 Million in Restitution to FHWA for DBE Fraud Scheme Involving Hundreds of Bridge Projects*, February 3, 2016
- *Weaknesses in MARAD's Management Controls for Risk Mitigation, Workforce Development, and Program Implementation Hinder the Agency's Ability To Meet Its Mission*, December 10, 2015
- *New Disadvantaged Business Enterprise Firms Continue To Face Barriers to Obtaining Work at the Nation's Largest Airports*, November 3, 2015
- *FTA Has Not Fully Implemented Key Internal Controls for Hurricane Sandy Oversight and Future Emergency Relief Efforts*, June 12, 2015
- *Civil Judgment of \$5.8 Million Entered Against Sound Solutions for Defrauding the FAA*, May 28, 2015
- *MARAD Has Taken Steps To Develop a Port Infrastructure Development Program but Is Challenged in Managing Its Current Port Projects*, August 2, 2013



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- *New Disadvantaged Business Enterprise Firms Face Barriers to Obtaining Work at the Nation's Largest Airports*, June 12, 2014
- *Weaknesses in the Department's Disadvantaged Business Enterprise Program Limit Achievement of Its Objectives*, April 23, 2013
- *USMMA Security Controls Were Not Sufficient To Protect Sensitive Data From Unauthorized Access*, May 30, 2012
- *Title XI Loan Guarantee Program: Actions Are Needed To Fully Address OIG Recommendations*, December 7, 2010

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*For more information on the issues identified in this chapter, please contact Barry DeWeese, Assistant Inspector General for Surface Transportation Audits, at (202) 366-5630; Mary Kay Langan-Feirson, Assistant Inspector General for Acquisition and Procurement Audits, at (202) 366-5225; or Michelle McVicker, Principal Assistant Inspector General for Investigations, at (202) 366-1967.*

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# Enhancing the Capacity, Efficiency, and Resiliency of the National Airspace System



Source: FAA

The Federal Aviation Administration (FAA) operates the safest aviation system in the world and continues to work with stakeholders to implement new technologies that are providing near-term benefits to airspace users. However, FAA faces ongoing challenges with its investments to deliver specific capabilities and programs required to implement the Next Generation Air Transportation System (NextGen). Many of these are delayed and face undefined costs, unquantified benefits, and evolving requirements. At the same time, FAA must ensure the National Airspace System (NAS) remains stable by developing more realistic resiliency and contingency plans and staffing enough fully certified controllers at the busiest, most critical air traffic control facilities.

### Key Challenges

- Keeping near-term NextGen investment priorities on track and addressing key risks
- Defining the costs and benefits of the NextGen transformational programs
- Enhancing redundancy and contingency plans for air traffic operations to mitigate disruptions
- Ensuring enough fully certified controllers at critical air traffic facilities



### Keeping Near-Term NextGen Investment Priorities on Track and Addressing Key Risks

In July 2013, FAA tasked the NextGen Advisory Committee (NAC) with reviewing FAA's plans for NextGen and recommending priorities for investment. FAA in response worked with industry to develop an implementation plan for the four highest priority capabilities: (1) advancing performance based navigation (PBN),<sup>13</sup> (2) improving access to closely spaced parallel runways, (3) enhancing airport surface operations, and (4) developing data communications for controllers and pilots. FAA has reported progress in all four areas, including implementation of Wake Recategorization, a capability that allows more aircraft arrivals and departures at airports with closely spaced parallel runways. However, delays continue in all four areas, particularly with new PBN procedures. For example, PBN has been delayed due to community concerns regarding aircraft noise—a high-risk issue due to the public's heightened level of interest at other airports implementing similar procedures. Another key risk to optimizing use of PBN procedures is the lack of advanced controller tools. We are currently assessing FAA's process for managing the implementation risks for the four prioritized capabilities and plan to issue a report later this year.

### Defining the Costs and Benefits of the NextGen Transformational Programs

In 2008, FAA identified six “transformational” programs<sup>14</sup> required to implement NextGen and introduce new capabilities. FAA continues to make changes to the scope, cost, and schedules of these programs since our 2012 report, which noted that a lack of firm costs, schedules, and performance baselines would limit visibility into the programs' benefits. FAA has made some progress by approving costs and schedules for initial segments of the six programs. For example, FAA approved funding of \$2 billion for the first segment of DataComm and \$2.7 billion for three segments of the Automatic Dependent Surveillance–Broadcast system (ADS-B), including the recently completed ground-based infrastructure and the ongoing development and implementation of ADS-B services and applications.<sup>15</sup> However, FAA has not fully identified the *total* costs, the number of segments, their capabilities, or completion schedules for any of the six programs. Cost estimates for the transformational programs now total over \$5.3 billion (compared to \$2.1 billion in 2012) and extend beyond 2020. Moreover, FAA's progress in implementing the programs continues to be hindered by a lack of finalized requirements and complex integration issues with automation systems that controllers rely on to manage air traffic.

In addition, FAA has not adjusted anticipated user benefits for its transformational programs or determined when the programs will start delivering benefits. Many benefits remain unquantified as to how they will improve the flow of air traffic or controller workforce productivity. For example, FAA's ADS-B program currently focuses on the ADS-B

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<sup>13</sup> PBN is a blanket term for more precise Global Positioning System (GPS)-based navigation methods that allow optimal routing in all phases of flight.

<sup>14</sup> The six transformational programs are: Automatic Dependent Surveillance–Broadcast (ADS-B), System Wide Information Management (SWIM), Data Communications (DataComm), NAS Voice System (NVS), Common Support Services–Weather (CSS-Wx), and Collaborative Air Traffic Management–Technologies (CATM-T).

<sup>15</sup> DataComm will allow controllers to send digital messages to pilots. ADS-B technology uses satellite-based GPS and is intended to allow FAA to transition from ground-based radar to a satellite-based system for improving surveillance and management of air traffic.

*Out* capability (the broadcast of information to ground systems), which is mandated for airspace users to equip by January 1, 2020. However, ADS-B *Out* will provide few benefits to airspace users except in airspace where radar is limited or nonexistent. FAA expects more widespread benefits through ADS-B *In*—which will enable display of the information in the cockpit—but those requirements and implementation dates continue to evolve. Similarly, DataComm is expected to begin allowing controllers and pilots to reroute air traffic around severe weather in the 2020 timeframe. However, FAA has not determined how this will affect productivity or how much more traffic the controller workforce can safely handle. Finally, while the six programs as currently defined will help replace and modernize aging systems, they will not meet FAA’s original vision of NextGen as a transformational shift in air traffic management for the foreseeable future.

### **Enhancing Redundancy and Contingency Plans for Air Traffic Operations To Mitigate Disruptions**

Unexpected events and emergencies that disrupt air traffic control can have a long-lasting and devastating impact on the Nation’s economy, airlines, and passengers. On September 26, 2014, an FAA contract employee deliberately started a fire that destroyed critical telecommunications equipment at FAA’s Chicago Air Route Traffic Control Center (Chicago Center) in Aurora, IL. As a result of the damage, Chicago Center was unable to control air traffic for more than 2 weeks, thousands of flights were delayed and cancelled into and out of Chicago O’Hare and Midway airports, and aviation stakeholders and airlines reportedly lost over \$350 million. The incident demonstrated that FAA’s contingency plans do not ensure redundancy and resiliency for sustained operations. Moreover, the damage to Chicago Center highlighted weaknesses in FAA’s current air traffic control infrastructure, which has limited flexibility to respond to system failures and quickly return to normal operations. While FAA has begun to develop new contingency plans, which include airspace divestment<sup>16</sup> for the major Center facilities, the plans are incomplete. For instance, FAA has not validated or procured the necessary hardware (i.e., switches, circuits, and cabling) needed to support the new plans. In addition, FAA has not fully developed divestment plans to manage the loss of air traffic control or identified various facilities’ specific roles and responsibilities to support the new plans. As a result, it is unclear whether the new contingency plans are realistic, fully executable, or will actually mitigate the impact of future disruptions.

### **Ensuring Enough Fully Certified Controllers at Critical Air Traffic Facilities**

FAA employs nearly 14,000 air traffic controllers and is planning to hire over 6,300 more in the next 5 years. Although FAA’s controller staffing levels at its critical facilities are generally consistent with the Agency’s Controller Workforce Plan, we found there are unresolved issues with the validity of the plan. For example, industry experts and FAA facility managers have raised concerns about how to account for the contribution of trainees to overall staffing resources. Our review found that when excluding controllers-in-training, six of eight large Terminal Radar and Approach Control facilities (e.g., New York, Chicago, and Atlanta) had staffing levels below the staffing range, while some en route facilities had more controllers than the Controller Workforce Plan required. This was due in part to significant weaknesses with the process that FAA uses to determine the staffing ranges in its plans. For

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<sup>16</sup> Airspace divestment means the ability to quickly shift control of airspace from one major Center facility to another.

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example, FAA uses historical data to anticipate the controller retirement pattern at each critical facility and then places and trains enough new controllers to account for those expected losses. However, predicted losses can be difficult to anticipate at the facility level, largely because FAA's historical data and nationwide trends may not apply to an individual critical facility. In addition, FAA's current training times and processes vary by location and are largely based on the proficiency of the new trainees, adding to the uncertainty of how many controllers to train. Without better models, FAA will continue to face challenges in ensuring its critical facilities are well staffed.

**Related Products** The following related documents can be found on the OIG Web site at <http://www.oig.dot.gov>.

- *FAA Continues To Face Challenges in Ensuring Enough Fully Trained Controllers at Critical Facilities*, January 11, 2016
- *FAA's Contingency Plans and Security Protocols Were Insufficient at Chicago Air Traffic Control Facilities*, September 29, 2015
- *ADS-B Benefits Are Limited Due to a Lack of Advanced Capabilities and Delays in User Equipage*, September 11, 2014
- *Status of Transformational Programs and Risks To Achieve NextGen Goals*, April 23, 2012

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***For more information on the issues identified in this chapter, please contact Matthew Hampton, Assistant Inspector General for Aviation Audits, at (202) 366-0500.***

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# Increasing Oversight of Critical Surface Transportation Infrastructure



Source: FHWA

The Department of Transportation (DOT) plays a key oversight role for the more than 100,000 projects underway at any time to build and maintain the Nation's surface transportation systems. As part of this effort, DOT must make proactive improvements in several areas: use of Federal-aid funds on transportation projects; the integrity of the Nation's highways, bridges, and tunnels; guidance on compliance with railroad bridge safety standards; and pipeline safety enforcement.

### Key Challenges

- Strengthening stewardship of the Federal Highway Administration's (FHWA) Federal-aid funds
- Ensuring the integrity of the Nation's highway bridges and implementing a new tunnel safety program
- Improving guidance to ensure compliance with railroad bridge safety standards
- Addressing willful violations of pipeline safety regulations

**Strengthening Stewardship of FHWA's Federal-Aid Funds** DOT's 2013 biennial report to Congress on the status of the Nation's highways, bridges, and transit noted a significant funding gap between the amount needed to maintain and improve the conditions and performance of roads and bridges and the amount that Government agencies actually provide. Thus, it is imperative that FHWA ensure the most efficient use of Federal investments in this critical infrastructure.

Each year FHWA provides about \$40 billion in Federal funding to States to construct and improve highways and bridges. Our work has identified key areas where FHWA can ensure that States use these funds more efficiently and better deter fraud, waste, and abuse. For example, we recently found that FHWA is not enforcing a law<sup>17</sup> requiring States to repay Federal expenditures for preliminary engineering (PE) projects in a timely manner. FHWA provides billions of dollars to States to help them achieve the design and related ground work needed before a highway or bridge project advances to physical construction or acquires property needed for the construction project (i.e., right-of-way<sup>18</sup>). States are required to repay the Highway Trust Fund the full amount of Federal aid expended on PE when a project does not acquire right-of-way or start construction within 10 years after the PE funds were made available. However, FHWA Headquarters has not enforced PE oversight requirements or clarified its guidance on PE to Division Offices, and Division Office officials do not consider State compliance with PE repayment requirements to be a high risk. As a result, FHWA cannot ensure that States repaid funds or requested extensions when required.

**Ensuring the Integrity of the Nation's Highway Bridges and Implementing a New Tunnel Safety Program** Four years after the enactment of the Moving Ahead for Progress in the 21st Century Act (MAP-21),<sup>19</sup> FHWA has not implemented key requirements to improve bridge safety programs or addressed several of our related recommendations. In 2009, we recommended that FHWA improve its bridge inspection and inventory standards—actions later mandated in MAP-21—but the Agency's rulemaking process to implement these improvements has extended more than a year beyond the statutory deadline of October 1, 2015, for a final rule. Additionally, in 2015, although we found that FHWA implemented a data-driven, risk-based approach to oversee States' bridge inspection programs, we identified issues and recommended oversight improvements, such as addressing gaps in program guidance and implementing a comprehensive national bridge safety risk management process. While FHWA agreed to our recommendations, delays in implementing these actions will hinder FHWA's ability to ensure the safety and integrity of the Nation's more than 600,000 bridges, of which approximately one-fourth are deficient. Timely actions are also critical for FHWA to implement MAP-21's minimum condition requirements for bridges in the National Highway System beginning in fiscal year 2017 and enforce a funding penalty on States that do not comply with requirements.

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<sup>17</sup> 23 U.S. Code (U.S.C.) § 102(b).

<sup>18</sup> Right-of-way is new real property that must be acquired in order to construct or complete a transportation project.

<sup>19</sup> Pub. L. 112-141.



FHWA has made progress toward MAP-21 requirements to establish a national tunnel inspection program. In 2015, FHWA issued the National Tunnel Inspection Standards (NTIS). This is its first regulation on tunnel inspection standards with qualifications, certification procedures, and formal training for tunnel inspectors as well as periodic State inspections and reports. Since then, FHWA has established its initial national tunnel inventory and a training and certification program for Federal and State tunnel safety inspectors nationwide. Because of upcoming regulatory deadlines, FHWA will face challenges ensuring States and other tunnel owners complete their initial safety inspections of all existing tunnels by August 2017 and update their inventory within 3 months of inspection, as required by NTIS. To meet MAP-21 mandates, FHWA will need to develop procedures for States to report and rectify critical structural or safety deficiencies found from such inspections.

**Improving Guidance To Ensure Compliance With Railroad Bridge Safety Standards** We recently made a number of recommendations to the Federal Railroad Administration (FRA) for improving its oversight of railroad bridge safety. Everything transported by rail likely travels across 1 or more of approximately 100,000 U.S. railroad bridges. While structural failures of railroad bridges are rare, the severity of a train accident is usually compounded when a bridge is involved, regardless of the cause of the accident. In 2010, FRA issued a rule on Bridge Safety Standards that requires railroad track owners to implement bridge management programs that include procedures for determining bridge load capacities and inspecting bridges. However, our work found that FRA had not developed guidance for its bridge safety specialists for conducting bridge safety reviews, following up on instances of noncompliance, and recommending civil penalties. Such guidance is needed to ensure FRA appropriately addresses all regulatory instances of noncompliance and that track owners mitigate bridge safety risks. We also found that FRA had not developed guidance for its bridge safety specialists on prioritizing track owners for bridge safety reviews and does not maintain a comprehensive list of track owners who must comply with its Bridge Safety Standards. Therefore, until FRA finalizes its new guidance, it is difficult for FRA to ensure it effectively deploys oversight resources to highest-risk track owners.

**Addressing Willful Violations of Pipeline Safety Regulations** The Pipeline and Hazardous Materials Safety Administration (PHMSA) develops and enforces regulations for the safe, reliable, and environmentally sound operation of the Nation's 2.5 million-mile pipeline transportation system. However, PHMSA has faced challenges enforcing some key regulatory safeguards. There have been a number of serious pipeline-related incidents over the past several years. From 2011 to 2015, there were 140 serious pipeline incidents resulting in 59 fatalities. Many of these were due to violations of safety regulations, such as those included in the Natural Gas Pipeline Safety Act (PSA).<sup>20</sup> Historically, however, it has not been possible to prosecute many such violations due to language in the PSA's Section 60123(a). The section requires that the violation be committed "knowingly and willfully," which is unusual in a sophisticated industry that is well versed in regulations.

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<sup>20</sup> Pub. L. No. 90-481 (1968).

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Our Office of Investigations has had more success prosecuting cases under Title 49 U.S.C. Section 5124, which establishes the penalty for violating hazardous materials transportation laws and regulations and penalizes “reckless” violations (i.e., display of deliberate indifference or conscious disregard to the consequences of their conduct). In the past 5 years, Federal charges were brought under Section 5124 against 23 individuals and companies. By contrast, in the past 10 years, Federal charges under Section 60123(a) were brought against only four individuals and companies.

In the past 10 years, there has been only one successful prosecution of a utility company for violations of the PSA’s Section 60123(a)—our office’s recent case against the Pacific Gas and Electric Company (PG&E). We conducted an investigation with PHMSA, the National Transportation Safety Board (NTSB), and the Department of Justice after a natural gas pipeline ruptured in San Bruno, CA, in September 2010. The rupture created a crater 72 feet long and 26 feet wide. Massive amounts of natural gas escaped and ignited, resulting in a fire that destroyed 38 homes, damaged 70, and killed 8 people. On August 9, 2016, a Federal jury in U.S. District Court, San Francisco, CA, found PG&E guilty of multiple willful violations of the PSA and of obstructing NTSB’s investigation. As with the hazardous material transportation laws, charging reckless violations of the PSA would likely result in more successful prosecutions, and deter future pipeline incidents that could result in fatalities, injuries, and environmental damage.

**Related Products** The following related documents can be found on the OIG Web site at <http://www.oig.dot.gov>.

- *FHWA Does Not Effectively Ensure States Account for Preliminary Engineering and Reimburse Funds as Required*, August 25, 2016
- *PG&E Convicted of Obstruction and Multiple Violations of the Natural Gas Pipeline Safety Act*, August 9, 2016
- *FRA Lacks Guidance on Overseeing Compliance With Bridge Safety Standards*, April 21, 2016
- *Oversight of Major Transportation Projects: Opportunities To Apply Lessons Learned*, June 8, 2015
- *Most FHWA ARRA Projects Will Be Closed Out Before Funds Expire, but Weaknesses in the Project Close-Out Process Persist*, March 2, 2015
- *FHWA Effectively Oversees Bridge Safety, but Opportunities Exist To Enhance Guidance and Address National Risks*, February 18, 2015
- *FHWA Met Basic Requirements but Can Strengthen Guidance and Controls for Financial and Project Management Plans*, January 27, 2015

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- *DOT's Suspension and Debarment Program Continues To Have Insufficient Controls*, October 15, 2014
- *FHWA Has Not Fully Implemented All MAP-21 Bridge Provisions and Prior OIG Recommendations*, August 21, 2014

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*For more information on the issues identified in this chapter, please contact Barry J. DeWeese, Assistant Inspector General for Surface Transportation Audits, at (202) 366-5630 or Michelle McVicker, Principal Assistant Inspector General for Investigations, at (202) 366-1967.*

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# Ensuring Oversight of Acquisition and Financial Management



Source: HHS

In fiscal year 2015, the Department of Transportation (DOT) distributed approximately \$67 billion in contracts and grants, and must continue to improve its internal controls and accountability in managing these sizable investments. Our work has identified areas where DOT can more diligently manage its resources and oversight of contracts and grants to improve program performance and help prevent fraud, waste, and abuse of taxpayer funds. These include using sound management strategies for high-risk contracts, ensuring its acquisition workforce has the needed skills and financial management tools, and improving financial stewardship in areas such as cost accounting and contract closeout.

### Key Challenges

- Increasing oversight of high-risk contracts
- Keeping current on new acquisition skills and financial tools
- Improving financial stewardship

**Increasing Oversight of High-Risk Contracts** In recent years, the Office of Management and Budget (OMB) and the Office of Federal Procurement Policy (OFPP) have focused on improving Government acquisition by reducing dollars obligated under high-risk contracts. These include noncompetitive contracts, cost-reimbursement contracts, and time-and-materials or labor-hour contracts. Governmentwide guidance called on agencies to maximize the use of full and open competition and to govern the appropriate use and oversight of all contract types to minimize risk and maximize value to the Government. Our work has found that DOT faces challenges in overseeing high-risk contracts such as

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cost-reimbursable, sole-source, and multiple award service contracts. These contract types are often used without considering the possibility of using less risky contract types and frequently lack sufficient management oversight. For example:

- **Cost-Reimbursable Contracts:** Cost-reimbursable contracts are considered high risk because of the potential for cost escalation and the fact that the Government pays a contractor's costs of performance regardless of whether work is completed. However, this contract type involves significantly more Government oversight than do fixed-price contracts. The Federal Acquisition Regulation (FAR)<sup>21</sup> provides that this contract type should only be used when circumstances do not allow the agency to define its requirements to allow for a fixed-price contract. FAR also requires contracting officers to document the rationale for using this contract type. Our prior review of six Operating Administrations found that they did not (1) perform adequate acquisition planning and document their justifications for using this contract type or (2) consistently assess oversight risks, properly designate oversight personnel, or verify that contractors' accounting systems are adequate to provide valid and reliable cost data.
- **Sole-Source Contracts:** Sole-source contracts are higher risk because they are negotiated without the benefit of a competition and carry the risk of overspending. Our recent review of the Federal Aviation Administration's (FAA) sole-source contracts found that the Agency took limited actions to reduce its use of sole-source contracts between fiscal years 2008 and 2014. During this period, the Agency awarded a total of 624 sole-source contracts, with a total value of about \$2.2 billion. In our review of 34 sole-source contracts, we found 29 did not fully comply with key pre-award requirements—such as conducting market analysis and developing independent government cost estimates. These requirements are essential in helping to ensure that acquisitions are adequately planned, sole-source awards are properly justified, and prices can be demonstrated to be fair and reasonable.
- **Multiple Award Service Contracts:** While this type of contract is not by its nature high risk, the various task orders issued under them frequently lack sufficient oversight and competition. Our reviews of large, multiple award service contracts have found that DOT agencies do not always ensure adequate competition of task orders or provide sufficient contractor oversight. For example, our review of FAA's Systems Engineering 2020 (SE-2020) contracts,<sup>22</sup> valued at \$7 billion, found that FAA had not ensured adequate competition for task orders, identified potential conflicts of interest, documented task order decisions, or ensured contract oversight staff had needed skills. These ineffective contracting practices can result in schedule and cost overruns and increase the risk of receiving services that do not meet DOT's needs. We are continuing our focus in this area, through our ongoing reviews of FAA's SE-2020 contracts and a multiple vendor vehicle

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<sup>21</sup> FAR 16.301-2.

<sup>22</sup> SE-2020 is a portfolio of contracts that FAA is using to obtain professional and technical services to support its development and implementation of the Next Generation Air Transportation System—the Agency's effort to modernize and maintain the National Airspace System.

known as eFAST, which is a multibillion-dollar FAA contracting vehicle for small businesses.

**Keeping Current on New Acquisition Skills and Financial Tools** OFPP has recognized that achieving good results from contracting tools is directly linked to the skills, judgment, and capacity of the acquisition workforce. As DOT's acquisition workload changes or increases with the growing complexity of Federal programs, it will require more resources and new skills to ensure sound acquisition management and reduce program risks—an area where our work has identified several challenges for DOT. For example:

- **Contracting Certification and Warrant Requirements:** We reported in 2015 on difficulties DOT encountered with fully complying with contracting officer (CO) certification and warrant requirements. COs that do not fully comply with these requirements may not have the necessary training and qualifications to effectively award and administer the Department's significant portfolio of contracts. Of the 63 COs we reviewed, 15 (24 percent) did not fully comply with these requirements. For example, 10 COs with expired certifications approved over 3,000 contract actions and obligated over \$731 million. High-risk contracts generally require more in-depth knowledge and experience—including a broader range of skills such as accounting, cost and price analysis, and program management—than competitively awarded fixed-price contracts.
- **Modular Contracting:** Modular contracting—which divides a contract into manageable segments—is intended to reduce program risk and to incentivize contractor performance while meeting the Government's need for timely access to rapidly changing technology. The Federal Chief Information Officer community has recognized that many of the Government's troubled information technology projects ran over budget or behind schedule because they used acquisition approaches that were planned to deliver functionality in terms of years rather than incrementally. We found that FAA attempted to acquire or is acquiring individual major investment systems for air traffic modernization—such as En Route Automation Modernization (ERAM)<sup>23</sup> and Automatic Dependent Surveillance-Broadcast (ADS-B)<sup>24</sup>—in one “grand design” to deliver capabilities over many years. For example, FAA structured its \$2 billion-plus ERAM program as a traditional, large-scale contract with enormous tasks that span several years instead of using modular contracting. Transitioning to incremental acquisition approaches could serve to mitigate cost and schedule issues with these major acquisitions.
- **Using Incentives To Lower Costs and Encourage Improved Delivery:** As budgetary constraints continue to reduce available resources, there is increased need for contracting officers to have the skills to effectively use incentives to motivate contractors to provide efficient and economical performance. Yet we have found that DOT faces challenges in managing contract incentives. For example, we reported that performance measures (i.e., earned award and incentive fees) that FAA used on its Air Traffic Control Optimum

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<sup>23</sup> ERAM replaced aging air traffic control hardware and software at facilities that manage high-altitude traffic.

<sup>24</sup> ADS-B is expected to allow FAA to transition from ground-based radar to a satellite-based system for managing air traffic.

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Training Solution (ATCOTS) contract to help train the influx of new air traffic controllers were not effective at motivating the contractor to meet established goals and manage costs. Our ongoing review of FAA's ADS-B contract has also found that FAA has not effectively used incentives to encourage improved performance.

**Improving Financial Stewardship** To be an effective steward of taxpayer dollars, DOT must establish and maintain internal controls to achieve effective operations, perform reliable financial reporting, and comply with applicable laws and regulations. Our work has identified several areas where DOT faces challenges in meeting this critical management responsibility:

- **Oversight of Hurricane Sandy Relief Funds:** In response to the widespread damage caused by Hurricane Sandy, Congress enacted the Disaster Relief Appropriations Act (DRAA)<sup>25</sup> in 2013, appropriating over \$10 billion for the Federal Transit Administration's (FTA) Public Transportation Emergency Relief Program for relief, recovery, and resiliency efforts in the affected areas. Our recent work identified that FTA's oversight practices did not fully ensure that recipients used DRAA funds properly and in compliance with FTA procurement requirements. Specifically, we found (1) New York City Transit drew down \$17.7 million in DRAA funds for procurement actions that FTA determined were ineligible for inclusion in a grant, (2) FTA did not enforce its requirement that Port Authority Trans-Hudson Corporation have an approved project management plan in place before drawing down Federal funds for the project, and (3) FTA lacks effective processes for tracking and following up on grantee and project-specific issues identified by the project management oversight contractor. While FTA agreed to take action to address these issues, continued vigilance is needed as there are still 26 active Hurricane Sandy grants, with some not estimated for completion until 2025.
- **Debt Collection Practices:** Our work in 2015 found that weak internal controls at DOT contributed to an increase in outstanding debt owed the Federal Government by individuals and non-Federal entities and an increased risk that these debts would not be collected. From fiscal year 1999 to September 30, 2013, DOT's reported delinquent debt increased by over 300 percent, from approximately \$170 million to \$737 million. In one case, over \$1 million in debts were not referred to the Department of Treasury for collection until they were on average 115 days past the then 180-day statutory limit for referral.<sup>26</sup> Developing and implementing DOT-wide policies and procedures for accurately identifying and reporting delinquent debt and recoveries and collecting debts in a timely manner are key to addressing the Department's delinquent debt. In response to our recommendations, DOT is working to finalize a departmental order that establishes guidance and policy on managing delinquent debt. Implementation of this recommendation could put \$494.1 million in funds to better use.
- **Contract Closeout:** Timely and effective closeout ultimately protects the Government's interests and helps agencies efficiently manage residual contract funds. However, in 2015,

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<sup>25</sup> Pub. L. No. 113-2, January 29, 2013.

<sup>26</sup> With the passage of the DATA Act (Pub. L. No. 113-101, May 9, 2014), the referral requirement was reduced to 120 days.

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we found that DOT lacked sufficient closeout guidance and had not implemented oversight procedures or performance metrics to assess whether the Operating Administrations comply with Federal and departmental closeout requirements.

- **Uniform Guidance Compliance:** The Federal Highway Administration (FHWA) has not ensured States' compliance with modified regulations in OMB's Uniform Guidance<sup>27</sup> when administering highway and bridge construction projects involving Federal funds. These revised and consolidated regulations are part of a larger Federal effort to improve performance and outcomes, while helping ensure the financial integrity of taxpayer dollars in partnership with non-Federal stakeholders. In a recent audit, we found FHWA does not comply with the Uniform Guidance's requirements for recording indirect cost rates and project end dates in project agreements<sup>28</sup> and modifications. FHWA's noncompliance with these requirements puts DOT funds at risk. For example, FHWA will be challenged to verify which costs are eligible for reimbursement without the recording of project end dates—as costs beyond this date are ineligible. FHWA officials stated that they will eventually revise the Agency's fiscal management information system to include fields for recording this information, but has not established a timeframe for doing so.

**Related Products** The following related documents can be found on the OIG Web site at <http://www.oig.dot.gov>.

- *FTA Can Improve Its Oversight of Hurricane Sandy Relief Funds*, July 21, 2016
- *FAA Lacks Adequate Controls To Accurately Track and Award Its Sole Source Contracts*, May 9, 2016
- *FTA Did Not Adequately Verify PATH's Compliance With Federal Procurement Requirements for the Salt Mitigation of Tunnels Project*, March 28, 2016
- *FAA Reforms Have Not Achieved Expected Cost, Efficiency, and Modernization Outcomes*, January 15, 2016
- *Weak Internal Controls for Collecting Delinquent Debt Put Millions of DOT Dollars at Risk*, July 9, 2015
- *FAA Has Not Sufficiently Addressed Key Weaknesses Related to Its ATCOTS Contract*, December 10, 2015
- *The Department Does Not Fully Ensure Compliance With Contract Closeout Requirements*, July 23, 2015

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<sup>27</sup> 2 CFR § Part 200, Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards, (2014), known as the Uniform Guidance.

<sup>28</sup> A State DOT must first enter into a project agreement with FHWA to be eligible for Federal funding for a proposed highway or bridge construction project. By signing the project agreement, FHWA authorizes construction to begin and the State to incur reimbursable costs, advertise for contract bids, and award construction contracts.

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- *Some Deficiencies Exist in DOT's Enforcement and Oversight of Certification and Warrant Authority for Its Contracting Officers*, April 9, 2015
- *FAA Needs To Improve ATCOTS Contract Management To Achieve Its Air Traffic Controller Training Goals*, December 18, 2013
- *DOT Does Not Fully Comply With Revised Federal Acquisition Regulations on the Use and Management of Cost-Reimbursement Awards*, August 5, 2013
- *Weaknesses in Program and Contract Management Contribute To ERAM Delays and Put Other NextGen Initiatives at Risk*, September 13, 2012
- *FAA's Contracting Practices Are Insufficient To Effectively Manage Its Systems Engineering 2020 Contracts*, March 28, 2012
- *FAA Policies and Plans Are Insufficient To Ensure an Adequate and Effective Acquisition Workforce*, August 3, 2011

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***For more information on the issues identified in this chapter, please contact Mary Kay Langan-Feirson, Assistant Inspector General for Acquisition and Procurement Audits, at (202) 366-5225.***

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# Managing Existing and New Mandates and Initiatives



Source: transportation.gov

The Department of Transportation (DOT) is taking action on several fronts to meet a number of congressional mandates and to carry out initiatives addressing recommendations from our office and others. In 2012, the Moving Ahead for Progress in the 21st Century Act (MAP-21)<sup>29</sup> set new performance management requirements and project delivery initiatives. DOT faces delays in fully implementing these provisions while meeting more recent requirements established by the Fixing America's Surface Transportation (FAST) Act.<sup>30</sup> At the same time, new legislative requirements for aviation safety will require significant efforts to meet provisions on pilot safety and foreign repair station oversight. Regulations and recommendations on pipeline safety and rail transport of hazardous materials also require actions to ensure robust safety and enforcement measures. Finally, in the financial arena, the FAST Act also requires DOT to fully establish its newly created credit bureau to streamline credit opportunities and grants within the Department.

### Key Challenges

- Implementing performance management requirements and accelerating project delivery
- Managing new safety requirements from the FAA Extension Act
- Addressing pipeline and hazardous materials safety recommendations and mandates
- Implementing initiatives for increasing enforcement of regulations for transport of hazardous materials by rail
- Harnessing new financing methods in DOT's credit programs

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<sup>29</sup> Pub. L. 112-141 (2012).

<sup>30</sup> Pub. L. 114-94 (2015).

### **Implementing Performance Management Requirements and Accelerating Project Delivery**

In 2012, MAP-21 established requirements for States to employ performance-based investment management of DOT's highway and transit programs, including linking State transportation performance plans to Federal-aid highway funds through an asset management plan. DOT plans to finalize the rulemakings<sup>31</sup> needed to meet these requirements in fiscal year 2017. After those rules are in place, the challenge for DOT will be adjusting its risk-based oversight to ensure that States consistently comply with the rules and that the rules achieve desired outcomes. Additionally, MAP-21 called for DOT to implement initiatives to accelerate highway, bridge, and transit project delivery. These changes include rulemakings to streamline the environmental review process and reports to Congress on environmental actions. DOT has implemented half of the actions it initially identified. However, DOT will need to revise a large number of its planned actions to comply with FAST Act requirements for mandated rulemakings and program guidance. We plan to report on DOT's progress implementing these key provisions later this year.

**Managing New Safety Requirements From the FAA Extension Act** The Federal Aviation Administration (FAA) has several ongoing initiatives to enhance aviation safety. However, FAA faces challenges to implement new requirements called for in the FAA Extension, Safety, and Security Act of 2016 (Extension Act).<sup>32</sup> These include several efforts to address pilot safety issues and new requirements for oversight of foreign repair stations.

Specifically, in line with our recent report, the Extension Act includes provisions to train pilots on monitoring, establish inspector guidance for tracking and assessing pilot proficiency in manual flight, and ensure that air carriers implement new pilot training requirements. Until FAA ensures that air carrier training programs adequately address these provisions, it is missing opportunities to ensure that pilots maintain the skills needed to fly safely and recover from an automation failure or unexpected event.

Another key safety aspect of commercial air travel reflected in the Extension Act is ensuring air carriers have the information they need on a pilot's training and background to make informed hiring decisions. We have monitored FAA's efforts to establish a pilot records database since it was first mandated in 2010. We reported last year that FAA's progress has been limited; currently, FAA does not expect to have the database ready for use by the act's deadline of April 2017. In response to our recommendation, FAA has accelerated efforts to launch its portion of the database. One of FAA's most significant challenges is deciding how to obtain and input air carrier records as far back as 2005, as the act requires. FAA will have to resolve issues related to differences in recordkeeping systems and the amount and type of data carriers maintain on pilots. This portion of the database requires a rulemaking initiative, which is expected to be issued in 2018 at the earliest. We will continue to track FAA's ability to meet near- and long-term goals in these areas.

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<sup>31</sup> Rulemakings pending include establishing a process for development of a State risk-based asset management plan, including defining minimum standards for developing and operating bridge and pavement management systems, and a rulemaking for setting performance targets and measures covering bridges and pavement.

<sup>32</sup> FAA Extension, Safety, and Security Act of 2016, Pub. L. No. 114-190, July 15, 2016.



The Extension Act also requires FAA to consider the recommendations of a Pilot Fitness Aviation Rulemaking Committee in determining whether to implement additional screening for mental health conditions. This effort is in response to the recent Germanwings accident in which a pilot intentionally crashed the plane into a remote area of the French Alps. According to the rulemaking committee, the best strategy for minimizing the risks related to pilot mental fitness is to create an environment that encourages voluntary disclosure—an extremely difficult task given the misperceptions that all mental illness is career ending. In response to a congressional request, we plan to evaluate this subject later this year.

Under the act, FAA must also ensure the Agency’s safety assessment system prioritizes inspections at foreign repair stations performing heavy maintenance for U.S. carriers, using risk-based oversight and data to track corrective actions. However, we continue to find weaknesses in FAA’s ability to obtain data necessary to assess risk and effectively monitor foreign repair stations covered under the United States and European Union (EU) Aviation Safety Agreement. Currently, foreign authorities are only required to provide FAA with repair station inspection results pertaining to those FAA regulations that differ from the EU—not complete facility inspection reports. In response to our recommendation last year, FAA is working to develop procedures to obtain these facility inspection reports, which should enhance its ability to assess risk. Further, the Extension Act requires FAA to issue a rulemaking on alcohol and controlled substances testing and ensure completion of pre-employment background checks for safety-sensitive repair station employees. FAA faces challenges in implementing such policies at foreign repair stations where laws differ from those in the United States.

**Addressing Pipeline and Hazardous Materials Safety Recommendations and Mandates** Since 2005, the Pipeline and Hazardous Materials Administration (PHMSA) has received 263 mandates and recommendations aimed at improving its ability to prevent or mitigate pipeline and hazardous materials accidents. While PHMSA has implemented 173—or nearly two-thirds—of these mandates and recommendations, the Agency has missed about 75 percent of its mandated deadlines and 85 percent of its internal deadlines.

Our work has found that PHMSA lacks sufficient processes, oversight, and project management to address safety recommendations and mandated and internal deadlines in a timely manner—including those requiring rulemakings or non-rulemaking activities, such as advisory bulletins and studies. For example, in 2011, PHMSA received a National Transportation Safety Board (NTSB) recommendation to eliminate from a regulation a “grandfather” clause that exempts operators from testing gas transmission pipelines installed before 1970. In response, PHMSA developed a rulemaking, but did so more than 2 years after its internal deadline.

Currently, 20 of PHMSA’s 81 mandates (25 percent) remain unimplemented, including 8 pipeline safety rulemaking mandates from the Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011.<sup>33</sup> Three of our recommendations remain open, as well as more

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<sup>33</sup> Pub. L. 112-90 (2012).

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than half of NTSB's 118 safety recommendations and 7 recommendations from the Government Accountability Office.

PHMSA's delays with rulemakings stem in part from ineffective coordination with the three other Operating Administrations involved with the transportation of hazmat—FAA, the Federal Motor Carrier Safety Administration, and the Federal Railroad Administration (FRA). Our work found that PHMSA has not adequately coordinated, as required by a DOT Order,<sup>34</sup> on rulemaking and international standards development with these agencies, limiting its ability to resolve disputes in a timely manner.

PHMSA has recently identified many areas for improvement related to rulemakings and is developing plans to address them through organizational changes. However, it is too soon to determine whether these plans, once finalized, will adequately address the Agency's ability to meet mandates and recommendations in full and on time.

**Implementing Initiatives for Increasing Enforcement of Regulations for Transport of Hazardous Materials by Rail** FRA is responsible for enforcing PHMSA regulations to ensure U.S. railroads safely transport hazardous materials. We found, however, that FRA pursues only limited civil penalties for violations of hazardous materials regulations because its policies and procedures focus on timely penalty processing and avoiding litigation. Further, our work examining FRA's program oversight found that the Agency has not conducted a comprehensive evaluation of risks associated with hazardous materials transportation that appropriately addresses national-level risk. FRA agreed with our recommendations on these issues and noted that several of our recommendations augment efforts FRA had already initiated. However, as FRA puts new initiatives in place, it will need to change not only policy and processes, but the behavior of its legal and enforcement staff in both headquarters and the regions to address concerns about imposing sufficient penalties to deter future violations and referring suspected criminal activities directly to OIG.

**Harnessing New Financing Methods in DOT's Credit Programs** Effectively implementing mandated changes in DOT's credit programs, such as the Transportation Infrastructure Finance and Innovation Act (TIFIA) and the Railroad Rehabilitation and Improvement Financing (RRIF), will require sustained management attention. These programs leverage private investment and help fund projects that are not supported by dedicated sources. In 2014, DOT established the Build America Transportation Investment Center (BATIC) to serve as a single point of contact between project sponsors and DOT. The purpose of BATIC is to streamline the process of getting public and private sectors working together to plan and implement infrastructure projects. Since BATIC's inception, DOT credit programs have issued credit instruments totaling roughly \$10 billion to 21 projects that support up to \$26 billion in transportation infrastructure. Recognizing BATIC's impact on funding for infrastructure projects, Congress, in the 2015 FAST Act, mandated the restructuring of DOT credit programs to consolidate the TIFIA and RRIF programs with

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<sup>34</sup> DOT Order 1100.74A, Department of Transportation Organization Manual: Pipeline and Hazardous Materials Safety Administration, September 2010.

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BATIC. In July 2016, 7 months after the enactment of the FAST Act, Secretary Foxx announced the launching of the Build America Bureau that addresses this mandate. However, DOT is still identifying the numbers and capabilities of staff needed to support the Bureau's operations and has yet to appoint its Executive Director.

**Related Products** The following related documents can be found on the OIG Web site at <http://www.oig.dot.gov>.

- *Insufficient Guidance, Oversight, and Coordination Hinder PHMSA's Full Implementation of Mandates and Recommendations*, October 14, 2016
- *FRA's Oversight of Hazardous Materials Shipments Lacks Comprehensive Risk Evaluation and Focus on Deterrence*, February 24, 2016
- *Enhanced FAA Oversight Could Reduce Hazards Associated With Increased Use of Flight Deck Automation*, January 7, 2016
- *FAA Delays in Establishing a Pilot Records Database Limit Air Carriers' Access to Background Information*, August 20, 2015
- *FAA Has Not Effectively Implemented Repair Station Oversight in the European Union*, July 16, 2015
- *FHWA Has Not Fully Implemented All MAP-21 Bridge Provisions and Prior OIG Recommendations*, August 21, 2014

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***For more information on the issues identified in this chapter, please contact Barry J. DeWeese, Assistant Inspector General for Surface Transportation Audits, at (202) 366-5630; Matthew Hampton, Assistant Inspector General for Aviation Audits, at (202) 366-0500; or Michelle McVicker, Principal Assistant Inspector General for Investigations, at (202) 366-1967.***

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## Comparison of Fiscal Years 2017 and 2016 Top Management Challenges

Fiscal Year 2017 Challenges	Fiscal Year 2016 Challenges
<ul style="list-style-type: none"><li>• Maintaining Transportation Safety While Keeping Pace With Rapidly Evolving Technologies</li><li>• Enhancing the Capacity, Efficiency, and Resiliency of the National Airspace System</li></ul>	<ul style="list-style-type: none"><li>• Integrating Unmanned Aircraft Systems Safely Into the National Airspace System</li></ul>
<ul style="list-style-type: none"><li>• Bolstering Vehicle and Surface Transportation Safety</li></ul>	<ul style="list-style-type: none"><li>• Enhancing NHTSA's Efforts To Identify and Investigate Vehicle Safety Defects</li><li>• Addressing the Increasing Public Safety Risks Posed by the Transportation of Hazardous Materials</li></ul>
<ul style="list-style-type: none"><li>• Strengthening Cybersecurity Strategies To Address Increasing Threats</li></ul>	<ul style="list-style-type: none"><li>• Protecting the Department Against More Complex and Aggressive Cyber Security Threats</li></ul>
<ul style="list-style-type: none"><li>• Strengthening Controls To Detect and Prevent Fraud, Waste, and Abuse</li></ul>	<ul style="list-style-type: none"><li>• Removing High-Risk Motor Carriers From the Nation's Roads</li></ul>
<ul style="list-style-type: none"><li>• Increasing Oversight of Critical Transportation Infrastructure</li></ul>	<ul style="list-style-type: none"><li>• Improving Oversight of FHWA's and FTA's Surface Infrastructure Programs</li></ul>
<ul style="list-style-type: none"><li>• Enhancing Oversight of Acquisition and Financial Management</li></ul>	<ul style="list-style-type: none"><li>• Adopting Effective Practices for Managing FAA Acquisitions</li></ul>
<ul style="list-style-type: none"><li>• Managing Existing and New Mandates and Requirements</li></ul>	
	<ul style="list-style-type: none"><li>• Developing and Sustaining an Effective and Skilled DOT Workforce</li></ul>



U.S. Department of  
Transportation  
Office of the Secretary  
of Transportation

# Memorandum

Subject: **INFORMATION:** Management Response to the  
Office of Inspector General (OIG) Draft Report:  
*DOT's Fiscal Year 2017 Top Management Challenges*

October 31, 2016

From: Shoshana M. Lew  
Chief Financial Officer and  
Assistant Secretary for Budget and Program

A handwritten signature in blue ink, reading "Shoshana M. Lew".

To: Mitchell Behm  
Deputy Inspector General

For fifty years the Department of Transportation (DOT) has been working to ensure that the Nation's transportation system is safe, efficient, accessible, and environmentally friendly. We are moving towards the ambitious vision of a transportation network that matches the changing demographics of where people live and work; fosters safety, innovation and adapts to evolving technology; and provides access to opportunity for people and communities across America. The combination of emerging and ongoing complex issues cited in the Office of Inspector General's (OIG) Fiscal Year 2017 Top Management Challenges Report aligns with several efforts the Department has initiated or identified. Highlights are as follows:

**Investing in the Safe Integration of Emerging Technologies:** Our top priority is to make the U.S. transportation system the safest in the world. As emerging technologies and "not yet conceived" innovations increasingly reach deeper into transportation, the Department must not only keep pace, but also ensure public safety. In October 2016, the Secretary announced a new Advisory Committee on Automation in Transportation which will serve as a critical resource for the Department in framing Federal policy for the continued development and deployment of automated transportation. In September 2016, the National Highway Transportation Safety Administration (NHTSA) issued a Federal Automated Vehicles policy, which includes a 15-point safety assessment framework for highly automated vehicles. Further, the Federal Aviation Administration (FAA) recently announced new rules for small unmanned aircraft systems. With these new rules, FAA has created an environment in which emerging technologies can be rapidly introduced while protecting the safety of the world's busiest and most complex airspace.

**Using U.S. Air Space in Safer, More Efficient and Environmentally Sound Ways:** The United States has the safest aviation system in the world. FAA continues to develop and deploy technologies to use U.S. air space in safer, more efficient and environmentally sound ways. The Next Generation Air Transportation System (NextGen) is a comprehensive suite of state-of-the-art technologies and procedures that enable aircraft to move more directly from Point A to Point B. We have measured \$1.6 billion in benefits to airlines and the flying public all across the National Airspace System (NAS) from NextGen capabilities and we estimated an

## APPENDIX. DEPARTMENT RESPONSE

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additional \$11.7 billion in benefits over the next 15 years. In October, 2016, FAA issued the NextGen Priorities Joint Implementation Plan, a rolling plan to re-examine the needs of NAS and its users and milestones through 2019.

**Enforcing our Safety Regulatory Authority to Ensure Safety:** We continue to use our safety regulatory authority over automobiles, aviation, rail, trucks, motor coaches, pipelines, and hazardous materials as cost-effectively as possible to reduce crashes and injuries, and implement our expanded regulatory authority for public transit. For example, NHTSA proactively pursued several enforcement actions against vehicle and vehicle equipment manufacturers for violating the Vehicle Safety Act requirements, including global equipment manufacturer Takata, which resulted in the largest civil penalty ever imposed by NHTSA—\$200 million. In fiscal year 2016, Federal Motor Carrier Safety Administration (FMCSA) nearly doubled the number of Imminent Hazard orders, removing unsafe motor carriers and drivers from the Nation’s roads. And, within the past year, the Federal Transit Administration met key targets for carrying out new statutory safety responsibilities while initiating the unprecedented direct Federal safety oversight of the Washington Metropolitan Area Transit Authority. In addition, the United States Attorney in San Francisco conducted a six-week criminal trial, with substantial support from the Pipeline and Hazardous Materials Safety Administration (PHMSA), the DOT Office of the General Counsel, and the DOT OIG, that resulted in a five-count criminal conviction of Pacific Gas and Electric for violating PHMSA pipeline regulations in connection with the San Bruno pipeline explosion.

**Strengthening the Integrity of Surface Transportation Programs:** DOT influences the integrity of Federally-funded roadway infrastructure through program guidance and technical assistance provided to State departments of transportation. Building upon its previous efforts, the Federal Highway Administration (FHWA) has several actions underway to further strengthen its oversight, including a national review on Preliminary Engineering (PE) projects and a development of a new PE risk tool. Since April 2015, FHWA began collecting annual element level data for National Highway Bridges and in August 2016, issued guidance that clarified the applicability of National Bridge and Tunnel Inspection Standards. Further, the Federal Railroad Administration has made significant changes in its oversight of railroad bridge safety including enhanced oversight of bridge specialists, a renewed focus on enforcement, and more thorough reviews of railroad bridge management practices.

**Continuing Evolution of Cyber Security:** The Department’s cyber security program continues to evolve and adapt to increasing legislative requirements, Federal initiatives, administrative imperatives, and cyber threats, through tailored application of the National Institute of Standards and Technology’s risk management framework, efficient allocation of available personnel, and increased application of data analytic tools and automation capabilities to protect agency systems, information, and stakeholders. With OIG recognition of progress in the Department’s annual Federal Information Security Modernization Act audit, and no major cyber security incidents this fiscal year, the Office of the Chief Information Officer’s focus will be on a strategy of collaboration with operating administrations and other partners to streamline policies and guidance, implement enterprise cyber security shared services and capabilities, simplify systems through smart use of these capabilities and common controls, and further integrate cyber security risk management program into the Department’s IT governance framework.



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**Exercising Rigorous Management and Oversight of Contracts and Grants; and Enhancing Controls to Deter Fraud, Waste, and Abuse:** The Department is committed to exercising rigorous management and oversight of its contracts and grants to improve program performance and help prevent fraud, waste, and abuse. For example, the Department's Senior Procurement Executive established an Acquisition Strategy Review Board to review all acquisition plans for procurements greater than \$20 million and all high-risk contracts over \$10 million. Operating Administrations have also enhanced their oversight efforts. FAA uses a National Acquisition Evaluation Program and Support Contract Review Board to ensure documentation supports all business decisions and projects do not create redundant solutions. In the area of grants management and oversight, the Department periodically assesses and tests controls over its payment and grants management business process and leverages results of its improper payments reviews and other audits to identify and remedy payment control weaknesses.

**Implementing Existing and New Mandates:** In December 2015, President Obama signed the Fixing America's Surface Transportation (FAST) Act into law, the first long-term transportation bill in 10 years. This brings an end to a long period of uncertainty for state DOTs, with 36 short-term extensions. The FAST Act increases funding by roughly 11 percent over five years. This goes a long way towards building a 21st century transportation system, but is far short of what is needed to reduce road congestion and meet increasing demands on our transportation systems. While we should celebrate this bill as a milestone, based upon studies conducted by various stakeholders, more needs to be done.

Since last December, we have focused on distributing as much available funding as possible to states and other grantees through formula dollars and discretionary grant opportunities. Our implementation efforts are focused on five key areas:

- **Safety** is our top priority and we have taken steps to implement FAST Act provisions in this area as quickly as possible.
- To aid in **project delivery**, the FAST Act speeds up review and the permitting processes while still protecting our Nation's environmental and historic treasures, and we have a number of guidance and rulemaking documents underway to implement these provisions.
- The FAST Act provides dedicated Federal funding for **freight** programs, addressing the challenges outlined in our *Beyond Traffic* study, to deal with these growing needs.
- Building on the Administration's successful Build America Investment Initiative, the FAST Act establishes a "National Surface Transportation and **Innovative Finance** Bureau" (later established as the "Build America Bureau").
- The **research** and innovation deployment piece of the FAST Act goes hand-in-hand with the Department's efforts, and as a result, we have begun the competition for University Transportation Centers (UTC) grants, encouraging innovative transportation solutions.

We appreciate the opportunity to respond to the OIG draft report. Please contact Madeline M. Chulumovich, Director, Office of Audit Relations and Program Improvement, at (202) 366-6512 with any questions or if you would like to obtain additional details.