Office of Inspector General

TOP MANAGEMENT CHALLENGES FOR FISCAL YEAR 2016

Department of Transportation

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Memorandum

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

Subject: **INFORMATION:** DOT's Fiscal Year 2016 Top Management Challenges Department of Transportation Report Number PT-2016-005

Date: November 16, 2015

From: Calvin L. Scovel III
Inspector General

Reply to Attn. of: J-1

To: The Secretary
Deputy Secretary

The safe and efficient movement of people, goods, and information is vital to our Nation's economic growth, global partnerships, and quality of life. The Department of Transportation (DOT) spends more than $70 billion each year on programs to protect, manage, and modernize U.S. transportation systems, and we continue to support the Department's efforts through our audits and investigations.

Making the Nation's environment, airspace, and roads safer continues to be the Department's top priority, and it must also continue to address both emerging and longstanding safety risks in a number of critical areas. A key mission is to mitigate the significant risks posed by transportation of hazardous materials (hazmat). From 2010 through 2014, there were more than 3,000 pipeline and 78,000 hazmat incidents in the United States. Reducing safety vulnerabilities will require timely action to implement pipeline safety recommendations; enforce regulations for hazmat transported by rail; and improve the oversight, training, and guidance for programs that promote safe practices for hazmat transported via aviation cargo.

The emergence of Unmanned Aircraft Systems (UAS) presents several new safety challenges for the Department. UAS technology is rapidly advancing, and usage is broadening from primarily the Government and military to commercial users. Analysts are predicting that as much as $91 billion will be invested worldwide over the next decade. To safely integrate UAS into the National Airspace System, the Department and the Federal Aviation Administration (FAA) must focus on reaching consensus on new technology standards, establishing a regulatory framework for commercial use of UAS, developing systems and protocols for collecting data and tracking UAS safety incidents, and adapting oversight to ensure UAS operational safety.

Recent large-scale recalls from automotive manufacturers and motor carrier fatalities highlight a number of safety issues the Department must address to better protect those traveling on our Nation's roads. The National Highway Traffic Safety Administration (NHTSA) plays a key role in reducing the risks posed by vehicle safety defects and has undergone several reviews to determine how it can strengthen its internal processes and controls. NHTSA must now follow through on the resulting recommendations to improve how it collects and analyzes vehicle safety data and investigates defects. In addition, our safety investigations continue to identify challenges for the Department and the Federal Motor Carrier Safety Administration (FMSCA) as they seek to remove unsafe motor carriers from the Nation's highways. While FMCSA has taken enforcement actions and is collaborating with our office and other law enforcement partners, carriers intent on breaking the law continue to pose a threat to the traveling public. Key actions for FMCSA to keep unsafe carriers off the road include effective vetting of carriers' applications, focusing resources on the most high risk carriers, and prosecuting those companies that are caught violating the law.

It is critical that DOT carry out its safety mission within a framework of diligent stewardship over its assets and investments of taxpayer funds. DOT receives over $50 billion annually to fund projects to build, repair, and maintain the Nation's surface transportation system. DOT remains committed to strengthening its oversight for highway, rail, and transit projects. To maximize Federal investments, the Department must strengthen its risk-based oversight of projects and grant controls, fully implement Moving Ahead for Progress in the 21st Century Act (MAP-21) requirements to improve performance management and project delivery, and maintain vigilance over grantees receiving funds for Hurricane Sandy recovery projects.

DOT has also invested billions of dollars in FAA's efforts to transition to a more reliable and efficient aviation system. Effective contract and acquisition management is critical to ensure the success and long-term viability of the many programs and systems required for the Next Generation Air Transportation System (NextGen). Our work continues to find that FAA must do more to structure high-dollar contracts to successfully manage risks and avoid large cost overruns, delays, and performance problems with major aviation acquisitions.

In addition, many of DOT's most critical transportation systems rely on more than 450 information systems to conduct business. Increasingly complex attacks on public and private sector information systems underscore the need for more effective contingency planning, resolution of longstanding cybersecurity weaknesses, and aggressive deterrence of insider threats to protect DOT from damaging security compromises.

The people who work for the Department are its most vital asset in maintaining a safe and vibrant transportation system. Sustaining an effective and skilled workforce in a changing environment presents a significant challenge to the Department. To maximize its efforts to use its resources wisely, the Department must focus on

identifying and hiring the right number of staff with the requisite skill mix, adapting hiring and training practices to account for Operating Administrations' changing missions and requirements, and implementing policies and procedures that promote its employees' success and ability to carry out DOT's mission effectively.

We remain committed to assisting the Department as it works to improve the management and execution of its programs and protect its resources. We considered several criteria in identifying the Department's top management challenges for fiscal year 2016, including their impact on safety, documented vulnerabilities, large dollar implications, and the ability of the Department to effect change in these areas:

- Addressing the Increasing Public Safety Risks Posed by the Transportation of Hazardous Materials
- Integrating Unmanned Aircraft Systems Safely Into the National Airspace System
- Enhancing NHTSA's Efforts To Identify and Investigate Vehicle Safety Defects
- Protecting the Department Against More Complex and Aggressive Cyber Security Threats
- Adopting Effective Practices for Managing FAA Acquisitions
- Improving Oversight of FHWA's and FTA's Surface Infrastructure Programs
- Removing High Risk Motor Carriers From the Nation's Roads
- Developing and Sustaining an Effective and Skilled DOT Workforce

We appreciate the Department's commitment to taking prompt actions in response to the issues we have identified. The final report and the Department'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 Lou E. Dixon, Principal Assistant Inspector General for Auditing and Evaluation, at (202) 366-1427.

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cc: DOT Audit Liaison, M-1

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

Source: National Transportation Safety Board

One of the Department's missions is to protect people and the environment from the risks of hazardous materials transportation. As such, the Pipeline and Hazardous Materials Safety Administration (PHMSA), Federal Aviation Administration (FAA), and Federal Railroad Administration (FRA) work continuously to find new ways to reduce the risk of fatalities, injuries, environmental and property damage, and transportation disruptions. However, vulnerabilities in the various modes of hazardous materials transportation remain, and our work shows that to best address safety concerns, the Department will need to focus on meeting congressional mandates, leveraging programs that can promote sound operating practices, and enforcing safety regulations.

Key Challenges

- Implementing pipeline and hazardous material congressional mandates and safety recommendations
- Enhancing the effectiveness of the hazardous materials voluntary disclosure reporting program
- Strengthening enforcement of railroad safety regulations

Implementing Pipeline and Hazardous Material Congressional Mandates and Safety Recommendations PHMSA is responsible for implementing robust and timely safety measures to prevent or mitigate significant hazardous materials (hazmat) accidents, which can have devastating public and environmental impacts. From 2010 through 2014, there have been more than 3,000 pipeline and 78,000 hazmat incidents in the United States. In 2015, the Ranking Member of the House Transportation and Infrastructure Committee requested that we review PHMSA's pipeline and hazmat safety programs to assess the Agency's progress towards meeting congressional mandates and addressing safety recommendations as well as Operating Administrations' safety concerns. In particular, the Ranking Member expressed concerns about PHMSA's ability to promptly respond to significant safety matters, noting that PHMSA had not adopted new standards for rail tank cars even after numerous accidents over the last decade, multiple National Transportation Safety Board (NTSB) recommendations, and a 2011 petition by the Association of American Railroads.[1] In addition, PHMSA has not fully implemented the safety measures included in the Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011.[2] These measures were intended to help change the interval for operators to reassess their gas pipelines, require leak detection systems on hazardous liquid pipelines, and develop regulations for transporting carbon dioxide by pipeline. Finally, the Ranking Member stated that PHMSA has not fully addressed longstanding safety issues raised by the NTSB. Such issues include requiring excess flow valves on gas service lines and evaluating the risk to crews of trains transporting hazmat. We plan to issue our report later this fiscal year.

Our investigations are focusing closely on pipeline safety issues as well. Our criminal investigation[3] of the fatal 2010 San Bruno, CA, pipeline explosion resulted in a 2014 indictment of Pacific Gas and Electric Company for knowingly violating record keeping and integrity management practices required by the Natural Gas Pipeline Safety Act of 1968.[4] We are also currently reviewing the circumstances of the 2015 Santa Barbara, CA, pipeline rupture that spilled 1,700 to 2,500 barrels of crude oil into the Pacific Ocean to determine whether regulated entities knowingly and willfully violated PHMSA's regulations.

Enhancing the Effectiveness of the Hazardous Materials Voluntary Disclosure Reporting Program Transportation of hazmat by air can also present serious safety risks. For example, between 1991 and 2014, lithium batteries, which have the potential to ignite, were involved in over 70 aircraft incidents involving extreme heat, smoke, fire, or explosion in aviation cargo and passenger baggage. In 2006, FAA established the Hazardous Materials Voluntary Disclosure Reporting Program (HM VDRP), which allows air carriers to voluntarily disclose violations of hazmat regulations without receiving civil penalties. FAA's HM VDRP policy is designed to encourage compliance with regulations, foster safe operating practices, and promote the development of internal evaluation programs by air carriers.

[1] However, in May 2015, PHMSA—in cooperation with the Federal Railroad Administration—issued a final rule on enhanced tank car standards and operational controls for high-hazard flammable trains.
[2] Public Law No. 112-90 (2011).
[3] We investigated this case jointly with the San Mateo County District Attorney's Office, San Bruno Police Department, and Federal Bureau of Investigation, with assistance from PHMSA.
[4] Public Law No. 90-481 (1968).

However, in March 2015 we reported that FAA lacked sufficient program oversight, training, and guidance for meeting HM VDRP requirements. For example, under the HM VDRP, FAA requires air carriers to complete corrective actions for violations they disclose. However, for 31 of the 48 (65 percent) closed cases we reviewed, FAA did not obtain sufficient evidence that air carriers completed all the required corrective actions and conducted self-audits required in the HM VDRP. In response to our findings, FAA issued a new policy to require that, among other things, corrective actions taken be supported by air carriers' documentation and that FAA regions coordinate with FAA Headquarters on proposed corrective actions and significant HM VDRP cases. However, effective implementation of this policy will require program oversight, training, and adequate guidance to improve this critical safety program.

Strengthening Enforcement of Railroad Safety Regulations The fatal 2013 oil train derailment in Lac Mégantic (Quebec, Canada), other rail accidents involving hazmat in the United States, and recent increases in crude oil shipments highlight the importance of oversight of hazmat being transported by rail. FRA is responsible for enforcing hazmat regulations promulgated by PHMSA. In fiscal year 2014, FRA reported that its inspectors identified 2,046 violations of hazardous materials regulations, and the Agency fined regulated transporting entities roughly $3.2 million. Key elements in an effective enforcement program are considering risk when allocating enforcement resources and imposing sufficient penalties to deter future violations. We are currently assessing FRA's enforcement of hazmat regulations using inspections and other tools and plan to issue our report later this year.

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

- *Audit Initiated of PHMSA's Progress Addressing Significant Safety Issues*, May 5, 2015
- *Program and Data Limitations Impede the Effectiveness of FAA's Hazardous Materials Voluntary Disclosure Reporting Program*, March 13, 2015
- *PG&E Charged With Multiple Violations of the Natural Gas Pipeline Safety Act,* April 1, 2014
- *Audit Initiated of FRA's Oversight of the Transportation of Hazardous Materials by Rail*, October 29, 2014

For more information on the issues identified in this chapter, please contact Mitchell Behm, Assistant Inspector General for Surface Transportation, at (202) 366-5630; Matthew Hampton and Charles Ward, Assistant Inspectors General for Aviation Audits, at (202) 366-0500; or Michelle McVicker, Principal Assistant Inspector General for Investigations, at (202) 366-1967.

Integrating Unmanned Aircraft Systems Safely Into the National Airspace System

Source: FAA

Unmanned Aircraft Systems (UAS)[5] technology is rapidly advancing, with analysts predicting that as much as $93 billion will be invested in the technology worldwide over the next decade. However, safely integrating UAS into the National Airspace System (NAS) presents a significant challenge for the Federal Aviation Administration (FAA)—in part because unmanned aircraft vary widely. UAS can be smaller than a radio-controlled model airplane or have wingspans as large as a Boeing 737 and can serve an array of purposes, from monitoring forest fires and aiding law enforcement to commercial uses such as precision agriculture, filmmaking, and package delivery. Given the industry's rapid expansion, Congress included in the FAA Modernization and Reform Act of 2012 multiple steps FAA must take to safely integrate UAS into the NAS. As FAA works to meet this goal, it must address technological and regulatory challenges while ensuring that safety remains the top priority.

Key Challenges

- Developing technology standards for UAS
- Establishing a regulatory framework for commercial use of UAS
- Tracking incidents and mitigating risks as UAS integrate into the NAS
- Overseeing UAS operational safety

[5] UAS consist of systems of aircraft and ground control stations where operators control the movements of aircraft remotely.

Developing Technology Standards for UAS Because UAS do not have pilots on board, they cannot comply with FAA requirements for aircraft to be able to "see and avoid" other aircraft.[6] Therefore, the safe operation of UAS relies on effective, robust technology to automatically detect other aircraft operating in nearby airspace and successfully maneuver to avoid them.

However, as we have reported, despite years of working together, FAA, the aviation industry, and the law enforcement community have not reached consensus on technology standards that would enable UAS to detect and avoid other aircraft and ensure reliable communication links between ground stations and unmanned aircraft. According to the stakeholder committee tasked with providing recommended standards, this was due in part to the unique challenges posed by integrating UAS with manned aircraft. Developing these standards will be key to safely advancing integration on a widespread basis.

Establishing a Regulatory Framework for Commercial Use of UAS While UAS technology has existed for many years, these aircraft have historically been operated by military and government agencies. As such, the growing demand for commercial UAS presents new regulatory challenges for FAA, which must develop rules and regulations to govern UAS use while maintaining safety. However, FAA has not yet established a regulatory framework for UAS integration. This includes defining certification and crew qualification standards and issuing rules describing when and how UAS are authorized to operate in U.S. airspace. In addition, FAA has not established standard air traffic procedures for safely managing UAS in the same airspace as manned aircraft nor an adequate UAS training program for controllers. While FAA has provided interim guidance on air traffic policies and procedures, air traffic personnel have expressed concerns about the lack of training and guidance in some areas, such as how to handle "lost link" events—that is, interruptions or complete loss of aircraft connectivity. Further, FAA is behind schedule in issuing a congressionally mandated rule to govern operations of small UAS (under 55 pounds), which are expected to comprise most commercial UAS operations.

In the absence of regulations, FAA has approved UAS operations only on a case-by-case basis, leveraging an authority granted by Congress to exempt some UAS from certification requirements. Using this authority, FAA has broadened the commercial use of UAS by approving over 2,100 requests for exemption from companies in industries such as filmmaking, pipeline inspection, aerial surveying, precision agriculture, and real estate.

Tracking Incidents and Mitigating Risks as UAS Integrate Into the NAS As more UAS operate in the NAS, the number of reported incidents has grown. According to FAA, reported sightings of UAS by aircraft pilots have increased significantly, with more than 650 incidents reported this year so far, compared to 238 pilot reports in all of 2014. Some of the incidents did not pose a safety risk, but others have involved reports of pilots altering course to avoid unmanned aircraft. However, FAA has neither developed a formal system to

[6] While FAA 14 CFR 91.113 describes a pilot's ability to "see and avoid" other aircraft, the UAS community is using the term "detect and avoid" to describe the desired capability of UAS.

track and classify the severity and type of these UAS incidents nor established a system to refer egregious incidents to our office for potential criminal investigation.

FAA also has not established an effective way to collect and share comprehensive UAS safety data with the Department of Defense (DoD), the largest UAS user. While FAA routinely collects some limited safety data from current governmental UAS operators (mainly from DoD), FAA's UAS integration staff told us they do not find this information useful because it lacks detail. DoD has a wealth of additional operational data, such as airworthiness data, which could assist FAA in better understanding the reliability of UAS, but FAA has not reached agreement with DoD regarding the collection of these data.

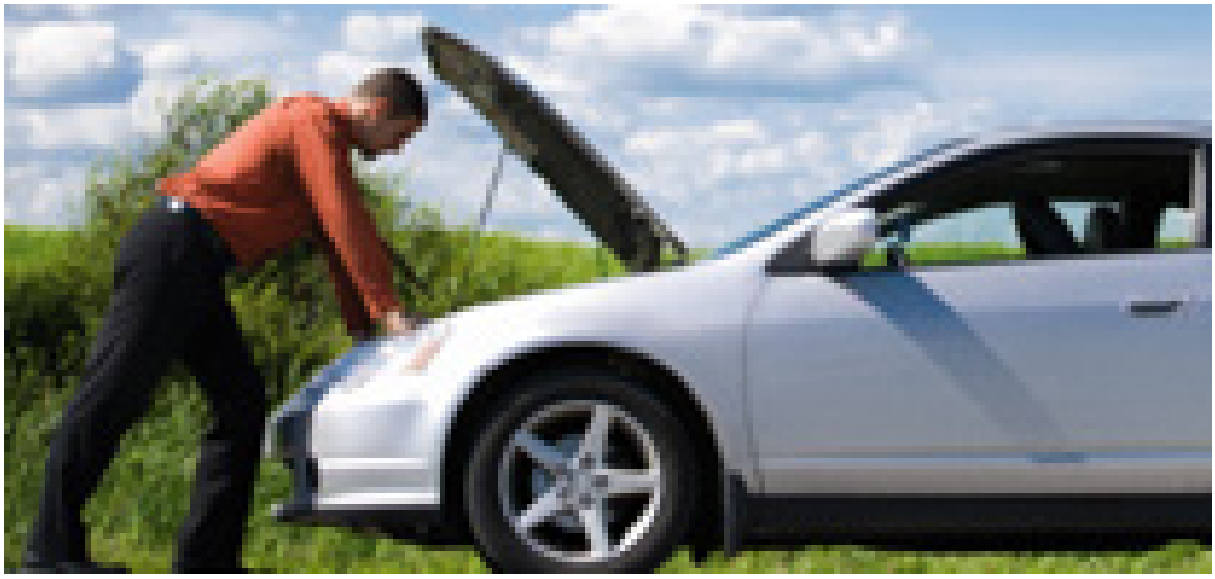
Overseeing UAS Operational Safety As we reported in 2014, aviation safety inspectors have experienced challenges related to UAS safety oversight, including unclear oversight guidance and lines of organizational reporting. For example, while FAA issued guidance in January 2013 that provides policies for evaluating proposed UAS operations and describes the operating procedures an applicant should have in place, the guidance did not clearly detail what actions an inspector should take in overseeing a UAS operator after it is approved. In addition, inspectors receive work instructions from the UAS Integration Office managers in FAA Headquarters, but actually report to regional managers in other offices, which can lead to competing priorities for the same resources. Given that FAA has already approved more than 1,700 UAS for commercial operations, along with an influx of unapproved operations in the NAS cited by pilots, UAS oversight will be a growing responsibility for FAA's safety inspector workforce.

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

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

Enhancing NHTSA's Efforts To Identify and Investigate Vehicle Safety Defects



Source: DOT

The National Highway Traffic Safety Administration (NHTSA) plays a key role in improving the safety of the Nation's highways by setting and enforcing motor vehicle safety performance standards, investigating safety defects, and conducting research on driver behavior and traffic safety. Large-scale recalls from automotive manufacturers—such as recent ones involving a faulty General Motors ignition switch—highlight the safety risk posed by vehicle safety defects and have prompted reviews of how NHTSA can improve its processes for identifying and investigating defects. Sustained focus on fully implementing such recommendations will be essential to the Department's highway safety efforts.

Key Challenges

- Improving NHTSA's processes for collecting and analyzing vehicle safety data
- Maintaining focus on the implementation of past safety process improvements
- Following through on *NHTSA's Path Forward*

Improving NHTSA's Processes for Collecting and Analyzing Vehicle Safety Data As of June 12, 2015, General Motors Corporation (GM) has received 114 eligible death and 229 eligible injury claims attributable to an ignition switch defect that could shut down the vehicle engine and disable power steering, power brakes, and air bags. Since February 2014, GM has recalled nearly 9 million vehicles in the United States due to this issue. Our office initiated a criminal investigation surrounding this matter, culminating in September 2015 when GM entered into a deferred prosecution agreement with the

Government and agreed to forfeit $900 million for engaging in a scheme to conceal the ignition switch defect from NHTSA and consumers.

Our 2015 audit of NHTSA's Office of Defects Investigations (ODI), requested by the Secretary, found that NHTSA's inadequate data collection and analysis processes undermined its efforts to identify and investigate potential vehicle safety concerns. For example, ODI's processes were insufficient for verifying that manufacturers submit complete and accurate early warning reporting data, which can be essential for determining whether a recall is necessary. NHTSA agreed to implement our 17 recommendations regarding 3 critical areas of concern: improving ODI's collection of vehicle safety data, improving ODI's processes for screening and analyzing vehicle safety data, and promoting a streamlined process for opening investigations. However, it will be a challenge for NHTSA to make these and other process improvements while continuing to respond to urgent safety issues stemming from the thousands of consumer complaints and reports from manufacturers that it receives each year.

Maintaining Focus on the Implementation of Past Safety Process Improvements Recent safety recalls, along with our ongoing work, have highlighted the need for NHTSA to conduct periodic reviews of its safety processes and strengthen its internal controls. These reviews and our recommendations have resulted in several potential improvements to ODI's procedures for identifying and addressing vehicle safety defects. For example, in response to our 2011 recommendations on ODI oversight, NHTSA agreed to strengthen ODI's procedures for documenting and retaining pre-investigative and investigative evidence. Other key process improvements that NHTSA agreed to implement include conducting a workforce assessment, coordinating with foreign nations to identify safety defects or recalls, and documenting its justifications for not investigating identified defects. Although NHTSA has completed actions for each of the 10 recommendations we made in 2011, it will be critical for NHTSA to follow through to ensure these improvements achieve their full impact. Accordingly, we are currently evaluating NHTSA's progress in implementing and sustaining these actions.

Following Through on NHTSA's Path Forward On June 5, 2015, the Secretary released *NHTSA's Path Forward*, reporting the results of a year-long due-diligence review to identify weaknesses and outline changes in a number of areas. Specifically, the Secretary seeks to improve NHTSA's ability to hold manufacturers accountable by collecting information more efficiently, auditing carmakers and their suppliers, expanding NHTSA's expertise on new technologies, implementing a systems safety approach to better examine assumptions, improving data mining techniques, improving control of the investigation process, and strengthening communications. Further, the Secretary announced the formation of an expert panel, called the Safety Systems Team, to help strengthen its defect investigation workforce. As it continues efforts to enhance NHTSA's ability to identify and investigate vehicle safety defects, the Department will need to closely monitor the implementation of the changes outlined in *NHTSA's Path Forward* and follow through on findings and recommendations made by the Safety Systems Team.

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

- *General Motors Agrees to Deferred Prosecution Agreement and a $900 Million Forfeiture*, September 16, 2015
- *Inadequate Data and Analysis Undermine NHTSA's Efforts To Identify and Investigate Vehicle Safety Concerns,* June 18, 2015
- *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

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

Protecting the Department Against More Complex and Aggressive Cyber Security Threats

Source: National Institute of Standards and Technology

Recent attacks on public and private sector information systems, carried out by increasingly well-funded and organized attackers, have significantly damaged the national and economic security interests of the United States. DOT uses more than 450 information systems to conduct business and operate some of the Nation's most critical transportation systems. Many of these systems have data that are of potential interest to hackers. Effective contingency planning along with resolving longstanding vulnerabilities will be critical to reduce the risk of catastrophic cybercrime and maintain continuity of the Department's vital systems in the event of a malicious attack.

Key Challenges

- Minimizing system disruptions through effective contingency planning and testing
- Overcoming longstanding cybersecurity vulnerabilities
- Deterring insider threats

Minimizing System Disruptions Through Effective Contingency Planning and Testing We continue to find weaknesses in DOT's ability to plan for contingencies and recover from disruptions, even for critical systems. For example, on September 26, 2014, a Federal Aviation Administration (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, and aviation stakeholders and airlines reportedly lost over $350 million. While FAA completed comprehensive reviews of its contingency plans and security procedures following the Chicago Center incident, significant work remains to prevent or mitigate the impact of similar events in the future. Likewise, the event highlighted the need to enhance security and increase the flexibility and resiliency of the national air traffic control system.

In addition, DOT's Operating Administrations are not effectively testing their disaster recovery plans to ensure they will work in the event of a disruption. For example, our recent work has shown that several Operating Administrations did not conduct annual contingency plan testing for their selected mission critical and high-impact systems, as required.[7] Moreover, 4 of the Department's 12 Operating Administrations had disaster recovery plans that were not in compliance with DOT policy. As a result, the Department cannot ensure continuity of its critical systems in the event of a malicious attack.

Overcoming Longstanding Cybersecurity Vulnerabilities DOT has made only limited progress toward addressing longstanding vulnerabilities and fulfilling key cybersecurity requirements. To help reduce cybersecurity risks, the Office of Management and Budget (OMB) requires agencies to create and track identified weaknesses using plans of actions and milestones (POA&M). Also, we issue recommendations as part of our audits, such as our annual Federal Information Security Management Act (FISMA) audit. Yet, DOT has been slow to take the corrective actions to address its cybersecurity weaknesses. For example, in 2014, DOT had a backlog of more than 5,000 POA&Ms, which included 38 unimplemented recommendations we have made. Of the 38, 16 recommendations were issued as part of our fiscal year 2014 FISMA audit, and DOT was required to submit a corrective action plan on January 31, 2015, to address them. However, we did not receive this plan until August 10, 2015—7 months behind schedule. Moreover, it remains unclear when the Department will fully implement this plan, as there are still several open recommendations and POA&Ms.

DOT's delays are of particular concern in light of current Presidential initiatives to strengthen cybersecurity protections. Many of our recommendations focus on key Administration priorities, such as implementing information system continuous monitoring and National Institute of Standards and Technology (NIST) requirements. OMB requires agencies to implement continuous monitoring by 2017.[8] However, DOT has not defined the

[7] Departmental Cybersecurity Compendium Supplement to DOT Order 1351.37, "Departmental Cybersecurity Policy," Version 3.0, September 2013.

[8] Continuous monitoring involves establishing processes and capabilities to provide near real-time security information to senior leaders.

practices or technologies that should be used to achieve this. As a result, its Operating Administrations have been unable to successfully implement a continuous monitoring program, thereby limiting their ability to detect and mitigate risks.

DOT also has not yet established common security controls that would help protect its information systems, including high-value asset[9] systems. Because many DOT systems are interconnected, meeting NIST requirements efficiently necessitates the use of common system security controls (i.e., controls that exist in one system that can be used to protect other systems). For example, many DOT systems rely on controls provided by the Common Operating Environment (COE). If these controls change or fail, the systems that rely on them may also be unknowingly placed at risk. However, DOT has not finalized procedures pertaining to common controls and is still conducting planning and research to determine the resources needed to ensure that common controls are properly used, implemented, and monitored. Until then, COE users may be dependent on controls that do not function or exist, leaving DOT vulnerable to more aggressive and complex cyber threats.

Deterring Insider Threats Insider threats can take many forms—from a malicious employee who steals data to an unwitting employee who opens infected email attachments. For example, in 2014, a DOT employee opened an infected email attachment and unleashed a serious computer virus (known as "Dyre") into DOT's network, compromising more than 5,000 computers and resulting in loss of productivity, email interruptions, and data loss. This virus was designed to steal information (including passwords), avoid routine detection, and generate new emails with attachments to further spread the virus. While DOT reported that the virus has been mostly eradicated, it has also noted the need to better train employees to protect DOT's systems and strengthen other controls, such as using Personal Identity Verification (PIV) card capabilities. Employees using PIV cards to log on to systems were at lower risk of compromise. Until employees are properly educated and PIV cards are fully implemented, DOT will continue to face preventable security compromises.

In addition, the 2014 Chicago Center fire incident highlighted that FAA's security protocols were insufficient to identify, counter, or mitigate the impact of an insider threat to its air traffic control systems. For example, FAA lacked the controls necessary to block access to a contract employee no longer assigned to this facility, thereby leaving the Center's high-value systems vulnerable to unauthorized access, disruption, or loss of information. Prior to the Chicago Center incident, FAA security policies were primarily focused on prevention and mitigation of external threats. FAA has acknowledged that its security controls against both internal and external threats need strengthening, to include risk assessment, access control, personnel screening policies and procedures, and training enhancements.

[9] High-value assets are those assets, systems, or datasets that may be considered "high-value" by the Department based on the following attributes—sensitivity of the information, uniqueness of the dataset, impact of loss or compromise, system dependencies, and systems that are integral to supporting critical department communications.

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

- *FAA's Contingency Plans and Security Protocols Were Insufficient at Chicago Air Traffic Control Facilities*, September 29, 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

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.

Adopting Effective Practices for Managing FAA Acquisitions

Source: FAA

The Federal Aviation Administration (FAA) faces several key challenges in its efforts to provide effective contract and acquisition management, a critical element in ensuring the success and long-term viability of its many programs and systems. Our work has shown that FAA continues to award high-dollar contracts without fully addressing and mitigating risk in the acquisition planning and contract award stages, often resulting in large cost overruns and delays in system implementation. Failure to address and mitigate risk in major aviation system contracts could significantly delay the implementation of FAA's Next Generation Air Transportation System (NextGen), as many of these acquisitions are central to FAA's plans to transition to a more reliable, efficient, and modern aviation system.

Key Challenges

- Structuring major acquisitions to successfully manage risk
- Reducing cost, schedule, and performance risks by adequately testing systems
- Assessing risks and validating cost estimates prior to contract award

Structuring Major Acquisitions To Successfully Manage Risk Successful risk management is essential to Agency officials' ability to develop sound contracting and acquisition approaches. Yet, FAA has not structured its major acquisitions to address this challenge, such as adopting the use of modular contracting or selecting contract types that are appropriate for the procurement. For example, in 2007 FAA awarded a contract to ITT Corporation for $1.8 billion (if all options are exercised through 2025) to develop and deploy the ground infrastructure for the Automatic Dependence Surveillance-Broadcast (ADS-B) system, a new satellite-based surveillance system for managing air traffic. Since 2010, we have reported that FAA faces significant risks in implementing the ADS-B program and realizing benefits due to weaknesses in its contract management and oversight, including its contract structure. For example, the ADS-B contract structure bundles and comingles tasks and costs, making it difficult for decision makers to manage the contract and track costs. In addition, FAA attempted to cover the first 18 years of ADS-B's 28-year lifecycle through one contract award. In contrast, guidance from the Office of Management and Budget and the Federal Chief Information Officer recommends dividing large acquisitions into a series of shorter term contracts, task orders, or segments. This reduces the risk of adverse consequences on the overall project by isolating errors and refining requirements. FAA has made progress implementing ADS-B by completing the deployment of 634 ground radio stations. However, it is not clear whether past problems associated with oversight and contract management have been rectified to ensure ADS-B technical requirements are being achieved as intended and within budget. Given FAA's continuing challenge with managing risk on this major effort, we are currently reviewing FAA's prime ADS-B contract to determine whether FAA is effectively monitoring the delivery of contractor services and establishing procedures to verify contractor payments.

Reducing Cost, Schedule, and Performance Risks by Adequately Testing Systems FAA has increased the risk of performance problems, along with cost and schedule growth, by not adequately testing systems and sometimes accepting them from the contractor prematurely. For example, FAA's ability to achieve its NextGen goals depends on the successful implementation of the En Route Automation Modernization (ERAM) system—a $2.7 billion system for processing flight data at facilities that manage high-altitude traffic. In 2012 we reported that FAA did not address significant acquisition risks, including ensuring that its system was adequately tested before agreeing to accept the system from the contractor. Instead, FAA chose to accept an immature system before testing it at an operational site. As a result, FAA became responsible for hundreds of millions of dollars in increased costs to address extensive software-related problems, which also delayed ERAM's nationwide implementation by over 4 years. FAA has made considerable progress in deploying ERAM since then—declaring the system fully operational at all 20 sites in March 2015. However, recent ERAM outages that significantly disrupted air traffic have raised questions about the stability of the system. FAA must continue to identify and correct recurring problems with ERAM, especially since further delays pose significant risks to other key NextGen programs—such as DataComm[10]—that depend on fully functional ERAM capabilities. As FAA moves forward with implementing these other

[10] DataComm will reduce controller-to-pilot voice communications by enabling digital communications capabilities, which enhance the speed and accuracy of delivering instructions and information.

programs, adequate testing will remain critical to ensure that ERAM is stable enough to effectively integrate with NextGen technologies.

Assessing Risks and Validating Cost Estimates Prior to Contract Award FAA has not taken sufficient steps to assess and mitigate risk factors identified on previous contracts when selecting a bidder and awarding new contracts, potentially resulting in significant increased costs to the Agency. We have made recommendations in recent years to improve FAA's ability to manage risks in the contract selection and award process. Yet, in April 2015, FAA awarded a $727.2 million new air traffic controller training contract, known as the Controller Training Contract (CTC), without fully addressing recommendations from our 2013 report. We had identified significant problems with FAA's management of performance and cost risks on a similar high-dollar service contract. Specifically, we reported that prior to awarding the $859 million Air Traffic Control Optimum Training Solution (ATCOTS) contract, FAA determined there was a 60- to 80-percent likelihood that the successful bidder would not meet FAA's training needs with the limited staff hours proposed. However, FAA did not require the contractor to address this issue prior to award, and FAA had to spend millions of dollars more than expected to make up for the shortfall in contracted resources. FAA also did not sufficiently assess and address identified risks before extending the contract again in 2012—despite the program's $89 million in cost overruns and failure to achieve key contract goals to reduce controller training times and costs and produce training innovations. Our ongoing work has found that FAA did not implement our recommendations to define requirements and validate costs of its controller training efforts before awarding CTC in April 2015. FAA's lack of knowledge of these foundational aspects of its controller training program could hinder its ability to effectively and transparently manage training costs, validate cost estimates, and detect and address cost or performance risks on its new CTC.

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

- *Status of FAA's Efforts To Operate and Modernize the National Airspace System, Testimony Before the Committee on Transportation and Infrastructure, United States House of Representatives,* November 18, 2014
- *ADS-B Benefits Are Limited Due to a Lack of Advanced Capabilities and Delays in Used Equipage,* September 11, 2014
- *The Success of FAA's Air Traffic Controller Optimum Training Solution Relies on Sound Contracting and Program Management Practices, Testimony Before the Senate Committee on Homeland Security and Governmental Affairs, Subcommittee on Financial and Contracting Oversight,* January 14, 2014
- *FAA Needs To Improve ATCOTS Contract Management To Achieve Its Air Traffic Controller Training Goals,* December 18, 2013
- *FAA Has Made Progress Fielding ERAM, but Critical Work on Complex Sites and Key Capabilities Remains,* August 15, 2013

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 or Matthew Hampton and Charles Ward, Assistant Inspectors General for Aviation Audits, at (202) 366-0500.

Improving Oversight of FHWA's and FTA's Surface Transportation Programs

Source: Caltrans Sepulveda Project Report

DOT receives over $50 billion in Federal dollars annually to fund projects to build, repair, and maintain the Nation's surface transportation system. DOT remains committed to strengthening its oversight for highway, rail, and transit projects to maximize Federal investments. As part of this effort, it must enhance its risk-based oversight of projects and grant controls, fully implement Moving Ahead for Progress in the 21st Century Act (MAP-21) requirements to improve performance management and project delivery, and continue to exercise vigilant oversight over Hurricane Sandy recovery projects. At the same time, DOT must address longstanding deficiencies with the Nation's highway and bridge systems and move forward effectively with a new tunnel safety program.

Key Challenges

- Strengthening risk-based oversight of projects and grant controls
- Fully implementing MAP-21 performance management and project delivery requirements and initiatives
- Improving Hurricane Sandy oversight and grantee controls
- Ensuring the integrity of the Nation's highway and rail bridges and implementing a new tunnel safety program

Strengthening Risk-Based Oversight of Projects and Financial Controls The Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) provide funding each year for more than 100,000 transportation projects nationwide. Therefore, it is critical that they have strong risk-based oversight and financial controls. FHWA oversees $40 billion annually in Federal-aid highway project funds. The Agency recently revised its risk-based approach to oversee these funds in response to MAP-21 requirements and our recommendations and must now follow through to ensure their success. This revised effort includes improving the linkage between FHWA's annual assessments of State and Federal-aid highway programs and then analyzing that information to better target its oversight reviews of highway and bridge projects. FHWA is also conducting internal process reviews and updating congressionally required stewardship and oversight agreements.[11] Many of the approaches and requirements are different than FHWA's past practices. FHWA recently completed its first full performance cycle with these revised initiatives; in future performance cycles, management will need to assess whether the program is robust and working as designed and make improvements where needed. Another key component of a sound risk-based oversight strategy will be tightening and enforcing its grant controls over approving, obligating, and spending funds. For example, our work has found that FHWA needs to improve oversight of financial and program plans covering major highway and bridge projects—those exceeding $500 million in funding, implement its new guidance on project estimating, and address the backlog of pending Federal-aid highway project closeouts to ensure effective use of Federal-aid funds. As part of its efforts to enhance grant controls, FHWA must also finalize improvements to its financial information system, intended to improve project data used to oversee its programs.

FTA awards billions of dollars in grant funds each year to more than 1,200 grantees across its 10 regions. FTA has opportunities to better target its oversight and use tools to meet its goals to ensure major capital projects are on time and within budget. For example, we reviewed the Metropolitan Washington Airports Authority's (MWAA) grant expenses for FTA's Dulles Rail Project. We found that FTA did not verify whether MWAA had adequate support for claimed costs and initially reimbursed MWAA for more than $36 million in unsupported and unallowable costs. We provided our results to FTA for cost recovery purposes. According to FTA, MWAA later provided documentation showing that most of the costs are now supported.

Going forward, FTA must also focus on promptly addressing identified oversight issues, strengthening stakeholder agreements, and enhancing controls to prevent and detect fraud. FTA started a comprehensive review of its oversight program in 2011 but needs to complete it to ensure the Agency is effectively monitoring grantees' use of Federal funds. For example, our work determined that FTA lacked performance measures to assess the outcomes of its grant oversight program as well as a risk-based approach and adequate policies and procedures for using remedies and sanctions. Addressing these gaps could help provide FTA with needed insight into how Headquarters, regional staff, and contracted

[11] Stewardship and Oversight Agreements formalize the roles and responsibilities of FHWA Division Offices and the States to ensure oversight of Federal funds, project quality, and safety.

oversight staff are operating and identify opportunities to improve oversight reviews and follow-up actions.

Our investigations are also focusing closely on oversight of grantees' use of Federal transit funds. In July 2015, the former owner of a Massachusetts transit authority bus operator was sentenced to 70 months in prison and ordered to pay $688,772 in restitution in connection with his misuse of grant funds that were designated to pay salaries, benefits, and other expenses for employees of the bus company. Instead, the operator used the funds to pay employees to work on his personally owned produce farm.

Fully Implementing MAP-21 Performance Management and Project Delivery Requirements and Initiatives Three years after MAP-21's enactment, many requirements for DOT to move toward more performance-based investment management of its highway and transit programs are still not in place. A key requirement, to establish individual State transportation performance plans linked to Federal-aid highway funds, will require DOT to modify related oversight mechanisms. The new performance measures will incorporate the Department's seven national goals: safety, infrastructure condition, congestion reduction, system reliability, freight movement and economic vitality, environmental sustainability, and reduced project delivery delays. MAP-21 also called for DOT to increase project efficiency and innovation, with a focus on environmental issues during the planning and design phase of highway and transit projects. DOT still has not fully implemented all actions it identified to meet these requirements. Sustained management attention will be critical to ensure the timely completion of rulemakings, guidance, other program initiatives, and reports to Congress.

Improving Hurricane Sandy Oversight and Grantee Controls In late 2012, Hurricane Sandy substantially damaged transit infrastructure in the mid-Atlantic and northeastern United States. To assist State and local agencies in their recovery efforts, FTA received approximately $10 billion in relief funds through the Disaster Relief Appropriations Act (DRAA) and still faces challenges in overseeing use of these funds.[12] Our second Hurricane Sandy assessment, issued in June 2015, determined that FTA had not fully implemented the processes and internal controls it established to monitor Hurricane Sandy funds, as required by DRAA. FTA also has yet to develop a formal coordination process with the Federal Emergency Management Agency to reduce the risk of duplicating Hurricane Sandy reimbursements.

Given FTA's significant investment in Hurricane Sandy funds, it plays a critical role in overseeing project awards and ensuring grantees take steps to mitigate the risk of fraud. During liaison and coordination efforts with FTA and other stakeholders, we found that a grantee receiving Sandy and non-Sandy grants was not reporting fraud settlements to FTA, and funds were not being appropriately returned back to FTA. We also found that the same FTA grantee did not notify Federal suspension and debarment (S&D) authorities of contractors who have settled or been found to have business integrity issues. We are

[12] In response to the storm, Congress passed, and the President signed into law, the Disaster Relief Appropriations Act, Public Law No. 113-2, in January 2013.

reviewing these reporting issues to assess any impact on Sandy-related contracts awarded by the same grantee.

S&D actions exclude parties found to be unethical, dishonest, or otherwise irresponsible from receiving Federal contracts and grants and are among the Government's strongest tools to deter unethical and unlawful use of Federal funds. Without full information on fraud settlements from its grant recipients, FTA cannot determine if S&D actions are warranted, and the contractor could continue to receive work involving Federal funds—putting the Federal Government at greater risk of doing business with dishonest or irresponsible parties. In response to this issue, FTA recommended that the grantee include in its next progress report any claims, litigation, or pending settlements involving third-party contracts. We consider FTA's recommendation important in our efforts to ensure that Federal taxpayers' interests are protected. In addition, we recently reported that the use of integrity monitors, which FTA requires grantees receiving over $100 million in Hurricane Sandy funding to hire, can help to prevent and detect fraud. FTA is working with our Office of Investigations, which has led to some referrals of alleged fraud. The Agency must continue efforts to ensure its recipients comply with its grant requirements by providing timely notification of fraud and all fraud settlements to FTA.

Ensuring the Integrity of the Nation's Highway and Rail Bridges and Implementing the New Tunnel Safety Program Approximately one-fourth of the Nation's more than 600,000 bridges are deficient according to FHWA. Since 2006, FHWA has been working to address our recommendations for improving its oversight of State bridge programs. These recommendations include establishing a data-driven, risk-based approach to assessing States' compliance with National Bridge Inspection Standards; prioritizing and remediating national bridge safety risks; improving bridge inspection and inventory practices; and encouraging States' effective use of bridge management systems. As part of its corrective actions, in 2011, FHWA launched a program that assesses each State's bridge safety risks based on uniform metrics. In 2015, however, we found that FHWA needs to build a better foundation for the assessment program's long-term success by improving communication with Division Offices and addressing gaps in program guidance. Furthermore, until FHWA defines and implements a comprehensive national bridge safety risk management process, it may be missing opportunities to identify, track, and remediate high-priority risks.

FHWA is progressing in its implementation of MAP-21 requirements to establish a new national tunnel inspection program and inventory. On July 14, 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 on the condition of the Nation's tunnels. The program has similarities to the long-standing national bridge inspection program. FHWA now faces the challenge of assisting States and tunnel owners in developing their program to meet near-term deadlines imposed by the regulation for program compliance, as well as performing annual reviews of such compliance. We will

monitor FHWA as it helps States take the appropriate steps and deploy resources to meet requirements and ensure tunnel inventories are accurate.

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

- *Former President of a Massachusetts Transit Authority Operator Sentenced to 70 Months Imprisonment,* July 29, 2015
- *Oversight of Major Transportation Projects: Opportunities To Apply Lessons Learned,* June 8, 2015
- *FTA Has Not Fully Implemented Key Internal Controls for Hurricane Sandy Oversight and Future Emergency Relief Efforts*, June 12, 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 Meets Basic Requirements but Can Strengthen Guidance and Controls for Financial and Project Management Plans*, January 27, 2015
- *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
- *MWAA's Financial Management Controls Are Not Sufficient To Ensure Eligibility of Expenses on FTA's Dulles Rail Project Grant*, January 16,2014
- *Letter to Congress on the Status of MAP-21, Subtitle C: Acceleration of Project Delivery*, May 22, 2013
- *Lessons Learned From ARRA Could Improve the Federal Highway Administration's Use of Full Oversight*, May 7, 2013
- *FHWA Provides Sufficient Guidance and Assistance To Implement the Highway Safety Improvement Program but Could Do More To Assess Program Results*, March 26, 2013
- *FHWA Has Opportunities To Improve Oversight of ARRA High Dollar Projects and the Federal-Aid Highway Program*, November 12, 2012

- *Improvements to Stewardship and Oversight Agreements Are Needed To Enhance Federal-Aid Highway Program Management*, October 1, 2012
- *Improvements Needed in FTA's Grant Oversight Program*, August 2, 2012
- *Actions Needed To Improve FTA's Oversight of the Dulles Corridor Metrorail Project's Phase 1*, July 26, 2012

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

Removing High Risk Motor Carriers From the Nation's Roads

Source: Washington State Patrol Trooper Darren Wright

Maintaining the integrity of its safety programs is a top priority for the Department, and our criminal investigations bolster these safety efforts by identifying and prosecuting the most egregious violators of DOT regulations. A longstanding concern is reducing motor carrier fatalities and better enforcing related safety regulations. Since fiscal year 2010, we have opened 138 investigations involving motor carrier safety. Criminal and civil prosecutions through the Department of Justice send a strong message to companies and individuals who evade DOT regulations or consider regulatory penalties "the cost of doing business." Our safety investigations have identified challenges for the Federal Motor Carrier Safety Administration (FMSCA) as it seeks to remove unsafe motor carriers from the Nation's highways.

Key Challenges

- Pursuing motor carriers that continually violate FMCSA regulations
- Removing reincarnated motor carriers from highways

Pursuing Motor Carriers That Continually Violate FMCSA Regulations A total of 4,278 people died in large truck and bus crashes in 2014. To reduce such fatalities, FMCSA must take stringent enforcement action against motor carriers that repeatedly violate safety regulations and ensure that unsafe carriers are placed out of service and not re-issued authority under new identities.

We focus our investigations on those entities that repeatedly engage in the most unsafe of practices. These include violating hours of service regulations and subsequently falsifying records of duty status; violating medical, drug, and alcohol testing requirements for drivers; and falsifying vehicle inspection, repair, and maintenance records. In some instances, these carriers are involved in multi-vehicle crashes and fatalities. For example, a truck driver traveling to New Jersey was involved in a six-vehicle fatal crash outside of Philadelphia. Our investigation revealed that the driver had been repeatedly violating hours of service regulations and falsifying his records of duty status, up until the day of the crash. Records prior to the crash revealed that the driver and his employer had been previously cited for falsification of logs and vehicles placed out of service for mechanical problems. He pleaded guilty to Federal charges and was sentenced to 18 months of incarceration and 36 months of supervised release.

While FMCSA has taken strong enforcement actions and continues to collaborate with our office and other law enforcement partners, carriers intent on breaking the law continue to pose a threat to the traveling public. Key actions to keep unsafe carriers off the road include effective vetting of carriers' applications, focusing resources on the most high risk carriers, and prosecuting those companies that are caught violating the law.

Removing Reincarnated Motor Carriers From Highways A longstanding safety concern in the motor carrier industry is the practice of reincarnated carriers—carriers that attempt to operate as different entities in an effort to evade FMCSA's enforcement actions. To circumvent out-of-service orders, these carriers often assume aliases or use different business addresses. For example, in Texas, we initiated an investigation of a company that was issued an unsatisfactory safety rating by FMCSA for numerous violations including falsification of hours of service requirements and using drivers who were not medically examined or certified. After being placed out of service by FMCSA, the company reincarnated under a different name and was ultimately involved in a passenger bus crash that killed 14 people. The owner of the company was prosecuted and sentenced to 3 years of probation and ordered to pay a fine. Unfortunately, current FMCSA procedures make it difficult to revoke the carrier's operating authority without a protracted investigation. Further, while FMCSA has implemented a more stringent application vetting process to identify carriers that might have had a previous authority revoked for unsafe operations, rogue carriers continue to bypass the system.

Criminal cases of carriers violating safety laws and regulations and reincarnating have increased in recent years. Of the 138 motor carrier safety investigations we opened since fiscal year 2010, 34 involved reincarnated carriers. In one particularly egregious case, a Georgia man continued to drive trucks for a company that had been issued an out-of-

service order following a fatal crash that killed seven in Alabama. The man was sentenced to 10 months incarceration and 12 months supervised release for his participation in the conspiracy to violate the out-of-service order. In November 2013, we initiated a proactive project in California that has identified over 200 DOT-regulated carriers suspected of reincarnation.

Prosecuting carriers that attempt to evade FMCSA's out-of-service orders can be challenging for the Department. While a number of our investigations of alleged reincarnated carriers have prompted legal action, there are some legal and procedural barriers. For example, one reincarnated carrier case was recently declined for prosecution because the criminal penalties under Title 49 U.S.C. Section 521 contain only a misdemeanor provision, which is less likely to result in jail time.[13] In a Tennessee case, a District Court Judge similarly ruled that violating an out-of-service order under Title 49 U.S.C. Section 521 was a civil—not a criminal—offense. FMCSA has proposed modification of Section 521 to include criminal penalties for knowingly and willfully violating an out-of-service order.

In addition, we found instances of third parties completing applications for DOT authority and falsely representing that the applicant had no prior affiliation with another carrier. This practice not only violates FMCSA's application instructions but complicates the Department of Justice's ability to pursue prosecutions. The current application process makes it too easy for rogue carriers to deny any knowledge that they were required to disclose prior affiliations. In many of the cases we investigated, the third parties completing the applications never questioned company owners about prior affiliations. Continued efforts are needed to enhance the process for vetting applications so that FMCSA may more efficiently identify carriers that pose safety risks and keep them off the road.

[13] 49 United States Code Section 521(b)(6)(A) is a misdemeanor statute for violations of certain FMCSA regulations.

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

- *FMCSA Oversight and Reauthorization Issues,* March 4, 2015
- *Bus Company Owner Sentenced for Operating Without FMCSA Authority,* October 24, 2014
- *Georgia Man Sentenced for Violating a FMCSA Imminent Hazard Out of Service Order,* May 29, 2014
- *Philadelphia Truck Driver Sentenced to Jail for False Logbooks Resulting in Fatal Crash,* May 7, 2013

For more information on the issues identified in this chapter, please contact Michelle McVicker, Principal Assistant Inspector General for Investigations, at (202) 366-1967.

Developing and Sustaining an Effective and Skilled DOT Workforce

Source: FAA

The people who work for the Department are its most vital asset in maintaining a safe and vibrant transportation system. Maintaining an effective and skilled workforce in an evolving and more fiscally constrained environment will present a significant challenge to the Department's leadership. Our work continues to highlight DOT's efforts to use its resources wisely and identify a number of areas where the Department can make improvements to support the hiring, development, placement, and performance of its workforce. The challenges we have identified significantly impact the Federal Aviation Administration (FAA)—which has the largest workforce in the Department—however, other Operating Administrations must address these at various levels as well.

Key Challenges

- Identifying and hiring the right number of staff with the requisite skill mix
- Adapting training and staffing practices to account for changing missions and requirements
- Implementing policies and procedures that facilitate the success of key workforce components across the Department

Identifying and Hiring the Right Number of Staff With the Requisite Skill Mix

Knowing how many staff are needed and the types of skills they should possess is a basic step toward being able to achieve the Department's missions. Our work has shown the complexity involved in accomplishing this task. For example, FAA's efforts to provide for the certification of new aircraft and related technologies depend on the Agency's ability to maximize its authority provided by existing law and regulations under the Organization Designation Authorization (ODA) program. Using ODA, FAA can delegate certain functions, such as approving new aircraft designs and certifying aircraft components, to organizations (e.g., manufacturers). However, FAA lacks a comprehensive process for determining staffing levels needed to provide ODA oversight. Although FAA uses a staffing model to help identify overall staffing needs, the model does not include detailed ODA data on important workload drivers such as a company's size and location, type of work performed, past performance, and project complexity and volume. Additionally, the Agency does not use the model to forecast specific staffing needs at the field certification office and oversight team levels. Instead, a committee of managers allocates staffing using the model's overall results, which are based on average amount of time spent on ODA oversight regardless of company size and a discussion of individual office needs.

While FAA has improved its oversight of air traffic controller staffing at critical facilities—the busiest and most complex facilities—many have a shortage of fully trained controllers. Moreover, FAA still does not have the data or an effective model in place to fully and accurately identify how many controllers it needs to maintain efficiency without compromising safety. Without better models, it will be difficult for FAA to ensure critical facilities are well staffed, especially as more controllers retire. In addition, FAA will also need more effective tools for screening and selecting applicants, given its plans to hire over 6,300 controllers in the next 5 years. In 2010, we reported that although FAA used an aptitude test known as Air Traffic Selection and Training (AT-SAT) as a pre-employment screening tool, the Agency was not using the test to determine the type of facility in which new controllers should be placed. In 2014, FAA made several changes to its controller hiring process. However, Congress has expressed concerns about the transparency and effectiveness of FAA's revised processes. At the request of Congress, we plan to conduct another review of FAA's air traffic control hiring programs and practices and the impact of FAA's recent changes to these processes.

The National Highway Traffic Safety Administration (NHTSA) has also faced an issue with determining the right number of staff needed for specific elements of its mission. In 2011 we reported that NHTSA's Office of Defects Investigation (ODI) had not determined the number of staff needed nor the specialized skill sets required for ensuring that manufacturers recall vehicles and equipment with safety-related defects in a timely manner. We recommended that NHTSA conduct a workforce assessment. In April 2015, NHTSA responded by providing us with its "Workforce Assessment: The Future of NHTSA's Defect Investigations" report. NHTSA's evaluation used two models to assess its available resources: one to address the immediate staffing needs of ODI and one that would align ODI with other safety enforcement transportation modes, such as FAA's Office of Aviation Safety, with more than 7,000 employees. NHTSA must now effectively implement the

results of the workforce assessment to help inform future decisions regarding the resources required for this critical mission.

Adapting Training and Staffing Practices To Account for Changing Missions and Requirements Sustaining a workforce at the desired skill level requires additional efforts to ensure employees keep abreast of changing technology and missions. Our work has identified a number of areas where further efforts are needed. For example, in 2011 we found that NHTSA's ODI did not have a formal training program to help develop the current and future workforce to ensure the continuity of institutional knowledge. ODI's ability to identify potential safety risks depends on the expertise of its staff, and it relies heavily on its on-the-job training and supplemental periodic outside training. However, from 2002 through 2009, only 15 of 23 ODI defect investigators took at least one training course directly related to automobile technology, dynamics, and crashes—for a total of 30 courses during the 8-year period. We recommended that ODI develop a formal training program. Our additional work in 2015 found that while ODI had developed a training plan in response to our recommendations, it had not been effectively implemented. For example, ODI staff charged with interpreting statistical test results for early warning reporting data told us they have no training or background in statistics. Three screeners assigned to analyze air bag incidents lacked training in air bags. One screener who was originally hired to review child seat restraint issues was assigned in 2008 to review air bag issues—without any air bag training and without an engineering or automotive background. Going forward, NHTSA will need to focus on establishing a clear plan for carrying out its new program to ensure that its staff receives the appropriate training.

In 2014, we reported that the Federal Highway Administration's (FHWA) workforce planning processes generally aligned with six best practices identified by the Government Accountability Office (GAO). Specifically, they (1) align with FHWA's strategic plan, (2) involve stakeholders, (3) identify workforce gaps, (4) include strategies to address those gaps, (5) stress human capital flexibilities to support workforce strategies, and (6) include means to monitor and evaluate progress. However, we found that FHWA had not conducted a comprehensive assessment of MAP-21's impact on its workforce. MAP-21 brought about significant structural changes, such as consolidation of several FHWA programs. In August 2014, FHWA issued a Strategic Workforce Assessment Summary Report, which recognized that the Agency still needs to make a number of changes to the way it does business and deploys staff to meet MAP-21 requirements. FHWA's implementation of these changes and the challenges that develop will be critical to the Agency's ability to carry out its mission effectively.

Implementing Policies and Procedures That Facilitate the Success of Key Workforce Components Across the Department FAA's air traffic controllers and the many staff throughout the Department devoted to the acquisition function pose a number of workforce-related challenges. Since 1998, FAA has implemented 51 initiatives intended to increase productivity among the controller workforce. The goal of these efforts is to increase workforce productivity, reduce operating costs, and improve training and hiring practices. However, FAA has been unable to demonstrate the results of its controller

productivity initiatives largely because it has missed opportunities to assess their effectiveness. For example, FAA did not establish detailed baseline metrics or quantifiable cost and productivity goals for 43 (84 percent) of its 51 initiatives. A lack of baseline goals hinders FAA's ability to ensure these initiatives are effective. In addition, FAA is not maximizing operational and financial data regarding its controller workforce. The Agency does not systematically collect or analyze these data to reduce cost or improve productivity due to a number of barriers. These include a lack of requirements and guidance for facility managers on analyzing existing data, FAA's inability to reach consensus on which metrics should be used to measure controller productivity, and data control and entry weaknesses with controllers' time recording system. FAA's challenge will be to implement procedures that clearly demonstrate whether controller productivity has increased, operating costs have decreased, or training and hiring practices have improved.

At the Department level, the demographic changes facing the DOT acquisition workforce—22 percent will be retirement-eligible in fiscal year 2015—heighten the need for improved compliance with contracting officer (CO) training and experience requirements.[14] The Department's acquisition workforce is composed of hundreds of COs, CO representatives, and other supporting staff who are necessary to provide agencies with the goods and services required to accomplish their mission at the best value to taxpayers. While the Department has several training improvement initiatives underway for its acquisition workforce, our 2015 review found that it still needs to clarify and enforce its policies governing certification and warrant authority for COs. COs award and manage DOT's significant portfolio of contracts, which in fiscal year 2014 totaled $2 billion in obligations. Therefore, COs must be certified at the level appropriate for the dollar value of contracts they award and administer. COs who do not fully comply with Federal certification requirements may not be properly trained and therefore could be unqualified to award and administer DOT contracts. Of the 63 COs we reviewed, 15 (24 percent) did not fully comply with DOT requirements. For example, 10 COs with expired certifications had approved over 3,000 contract actions and obligated over $731 million. In addition, DOT policies also contain conflicting information on whether it is optional or mandatory to revoke warrants for COs who do not complete the required number of training hours. Timely implementation of our recommendation that DOT update its policies and strengthen controls for CO warrant and certification practices will help to reduce the risk that complex, high-dollar acquisitions may be awarded and administered by COs who lack appropriate training and experience.

[14] FAA is excluded from these data and the scope of our work described in this paragraph because Congress exempted FAA from Federal acquisition laws and regulations in DOT's fiscal year 1996 Appropriations Act and provided FAA with broad authority to develop its own acquisition process, which FAA used to develop the Acquisition Management System and a set of policies and guidance designed to address the unique needs of the Agency.

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

- *Inadequate Data and Analysis Undermine NHTSA's Efforts To Identify and Investigate Vehicle Safety Concerns,* June 18, 2015
- *Audit Initiated of FAA's Policies and Procedures for Hiring New Air Traffic Controllers*, June 17, 2015
- *Some Deficiencies Exist in DOT's Enforcement and Oversight of Certification and Warrant Authority for Its Contracting Officers*, April 9, 2015
- *FAA Lacks the Metrics and Data Needed To Accurately Measure the Outcomes of Its Controller Productivity Initiatives,* July 9, 2014
- *FHWA's Workforce Planning Processes Generally Align With Best Practices, but Some Components Are Inconsistently Implemented or Lack Map-21 Consideration,* June 19, 2014
- *Audit Initiated of FAA's Controller Staffing at Critical Air Traffic Control Facilities*, April 3, 2014
- *Process Improvements Are Needed for Identifying and Addressing Vehicle Safety Defects,* October 6, 2011
- *Review of Screening, Placement, and Initial Training of Newly Hired Air Traffic Controllers*, April 1, 2010

For more information on the issues identified in this chapter, please contact Matt Hampton or Chuck Ward, Assistant Inspectors General for Aviation Audits, at (202) 366-0500; Mitchell Behm, Assistant Inspector General for Surface Transportation Audits, at (202) 366-5630; or Mary Kay Langan-Feirson, Assistant Inspector General for Acquisition and Procurement Audits at (202) 366 5225.

Comparison of Fiscal Years 2016 and 2015 Top Management Challenges

Fiscal Year 2016 Challenges	Fiscal Year 2015 Challenges
• Addressing the Increasing Public Safety Risks Posed by the Transportation of Hazardous Materials	• Increasing Efforts To Promote Highway, Vehicle, Pipeline, and Hazmat Safety
• Integrating Unmanned Aircraft Systems Safely Into the National Airspace System	• Modernizing the National Airspace System and Addressing Organizational Challenges • Enhancing Safety and Oversight of a Diverse and Dynamic U.S. Aviation Industry
• Enhancing NHTSA's Efforts To Identify and Investigate Vehicle Safety Defects	
• Protecting the Department Against More Complex and Aggressive Cyber Security Threats	• Securing Information Technology Resources
• Adopting Effective Practices for Managing FAA Acquisitions	• Managing Acquisitions and Grants To Maximize Performance and Save Federal Funds
• Improving Oversight of FHWA's and FTA's Surface Infrastructure Programs	• Improving Oversight, Project Delivery, and System Performance of Surface Transportation Programs • Leveraging Existing Funding Mechanisms To Finance Surface Transportation Projects in a Challenging Fiscal Environment
• Removing High Risk Motor Carriers From the Nation's Roads	
• Developing and Sustaining an Effective and Skilled DOT Workforce	

APPENDIX. DEPARTMENT RESPONSE

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

1200 New Jersey Avenue, SE
Washington, DC 20590

OCT 30 2015

Subject: ACTION: Management Response – OIG Fiscal Year 2016 Top Management Challenges

From: Lana Hurdle
Deputy Assistant Secretary for Budget and Programs

To: Calvin L. Scovel III
Inspector General

The Department of Transportation (DOT) works diligently to ensure a fast, safe, efficient, accessible and convenient transportation system that meets our vital national interests and enhances the quality of life of the American people, today and for the future. In early 2015, the Secretary launched "*Beyond Traffic: Trends and Choices 2045," which* examines the trends and choices facing America's transportation infrastructure over the next three decades, including a rapidly growing population, increasing freight volume, demographic shifts in rural and urban areas, and a transportation system facing more frequent extreme weather events. The report has sparked a national dialogue about the shape, size, and condition of our nation's transportation system and how it will need to meet the needs and goals of our nation for decades to come. The Secretary has also made expanding ladders of opportunity a priority. Transportation plays a critical role in connecting Americans and communities to economic opportunity. The Department can help more Americans reach opportunity by ensuring that our transportation system provides reliable, safe, and affordable ways to reach jobs, education and other essential services. Through the TIGER 2015 Discretionary Grant Program, the Department was able to fund numerous transportation projects focused on improving ladders of opportunity across cities, towns, and regions.

The Office of Inspector General's (OIG) Fiscal Year 2016 Management Challenges report touches upon priorities the Secretary has identified. The combination of emerging and ongoing complex issues cited in the OIG report aligns with several efforts already underway at the Department. Highlights of these efforts are as follows:

Protecting People and the Environment from Hazardous Materials Transportation Risks

The Pipeline and Hazardous Materials Safety Administration (PHMSA) is focused on protecting people and the environment from the risks of hazardous materials transportation. Hazardous materials accident fatalities have generally declined over time. Accidents involving death or major injury associated with hazardous materials

transportation by pipeline have been declining at a rate of about 10 percent every 3 years on average. Even as risk exposure has increased, accidents involving death or major injury associated with hazardous materials transportation by other modes also have declined over the past 25 years. PHMSA has identified hazardous materials transportation risks from recent changes and emerging trends in energy and technology sectors. Environmental consequences and damages, especially from crude by rail transportation, have significantly increased every year since 2011. With a focus on safety, PHMSA has improved its data collection activities and risk-based approaches to better inform policy and regulatory changes. Safety is a shared responsibility in this arena and PHMSA collaborates and coordinates with its Departmental, Federal, and international partners and industry. PHMSA has a multi-modal partnership underway involving rail, pipelines, and motor carriers on the safe transport of petroleum and other hazardous materials.

Integrating UAS Technology into the National Air Space While Maintaining the Highest Levels of Safety

The United States has the safest aviation system in the world, and the Department's goal is to integrate the new and important Unmanned Aircraft Systems (UAS) technology while maintaining the highest levels of safety. The Federal Aviation Administration (FAA) recognizes the significance of this technology and has adapted organizationally. Its efforts focus on long-term planning, including the ongoing development and finalization of the regulation of small unmanned aircraft. Further, the Secretary and FAA Administrator recently announced the Department's new approach to creating a culture of accountability and responsibility among the UAS community by requiring the registration of UAS. A task force will advise the Department on which aircraft to exempt from registration and will explore options for a streamlined system that would make registration less burdensome for commercial UAS operators.

Enhancing Highway Safety Through Improved Defect Investigation Processes and Increased Oversight

The National Highway Traffic Safety Administration (NHTSA) Office of Defects Investigation (ODI) leads the world in protecting the driving public from vehicle safety defects. Efforts to enhance safety never end and examining lessons learned is critical to improving NHTSA's effectiveness in pursuing the agency's vital mission. Based on ongoing efforts to enhance NHTSA and ODI effectiveness and lessons learned, improvements have been instituted in pre-investigative, investigation, and recall completion processes. In addition, NHTSA has undertaken several enforcement actions against vehicle and vehicle equipment manufacturers for violating the Vehicle Safety Act requirements. In 2015, NHTSA extended its oversight of General Motors Corporation's (GM) review, decision making and communications about potential vehicle safety issues for an additional year after the company faced significant fines and recalled the Chevrolet Cobalt. NHTSA extended its oversight because the consent order has proven to be a productive and effective tool to proactively and expeditiously address potential safety-related defects. The agency also issued Consent Orders to Ricon, Graco, Forest River, Spartan, Triumph, and Fiat Chrysler Automobiles with Fiat Chrysler agreeing to a $105 million penalty, the largest ever imposed by NHTSA.

Adapting to Ever-Changing Cybersecurity Challenges

Information security is a priority for the Department. While the OIG recognized progress in the Department's annual Financial Information Security Modernization Act audit, our efforts must continue to evolve with ever-changing cybersecurity challenges. Consistently working with the Operating Administrations, the Office of the Chief Information Officer (OCIO) provides comprehensive guidance, updates controls, assesses risk, and provides oversight. Further, in alignment with the DOT Information Technology Strategic Plan, the Department has implemented, and is enhancing, a cybersecurity risk management program that continually adapts to changing threats, vulnerabilities, and assets.

Utilizing Effective and Innovative Approaches in Managing FAA Acquisitions

FAA utilizes sound and innovative acquisition approaches which are in the best interest of the government. For the Automatic Dependence Surveillance-Broadcast (ADS-B), FAA used a two phase approach which included a cost plus incentive fee and allowed for the development solution to be proven, followed by a second phase that was structured as fixed price for the services. FAA realized a variety of benefits from this approach. For example, since FAA does not own or maintain the equipment it does not have to invest in technical advancements or address technical obsolescence. This innovative approach was more cost effective for FAA when compared to a traditional design and development type of government acquisition. Similarly, the new Controller Training Contract awarded in spring 2015, is designed to improve contract resource planning and management through a change in contract type, better mechanisms for requirements planning, and improved oversight of contractor provided services.

Taking Safety Oversight and Stewardship of Surface Transportation Programs to the Next Level

The Department continues to take safety to the next level. In October 2015, the Secretary directed the Federal Transit Administration (FTA) to assume extended safety oversight of the Washington Metropolitan Area Transit Authority (WMATA). FTA has also improved its oversight of major capital projects and financial controls through data tracking, analyzing, and reporting and plans to develop performance metrics based on these enhanced oversight data capabilities. FTA successfully implemented its new Public Transportation Emergency Relief Program, following Hurricane Sandy, with a focus on oversight and grantee controls. Throughout the process, FTA identified areas for continued improvement. Actions FTA has taken include establishing a Memorandum of Agreement with the Federal Emergency Management Agency, completing a Final Rule on the Emergency Relief Program, publishing an Emergency Relief Manual, implementing a risk-based oversight approach with heightened scrutiny for the funds, and allocating approximately $9.3 billion.

Through its Risk Based Stewardship and Oversight program implemented in 2013, the Federal Highway Administration (FHWA) uses an objective, data-driven approach to identify national trends and to address priority focus areas based on the review of highway and bridge projects. To strengthen its oversight practices, FHWA also conducted a comprehensive review of its Stewardship and Oversight Agreements with each State partner to ensure responsibilities in the agreements are clear and updated. Additionally, FHWA continues to complete its rulemaking efforts in accordance with MAP-21 requirements. For example, on July 14, 2015, FHWA issued a final rule on National Tunnel Inspection

Standards, which require tunnel owners to establish a program for the inspection of highway tunnels, maintain a tunnel inventory, report the inspection findings to FHWA, and correct any critical findings found during inspections.

Keeping Potentially Dangerous Motor Carriers Off the Roads

The Federal Motor Carrier Safety Administration's (FMCSA) safety mission is to reduce crashes, injuries, and fatalities involving large trucks and buses. To ensure FMCSA allocates its resources as effectively as possible, the Compliance, Safety, Accountability (CSA) Safety Measurement System uses motor carrier data from roadside inspections, reportable crashes, and investigations to prioritize motor carriers for safety interventions and identify the highest risk carriers before crashes occur. FMCSA has kept some 220 potentially dangerous motor carriers off the highway since 2012, using its new record consolidation rule. The rule prevents truck and bus companies from using the FMCSA registration process to escape poor safety records by enabling the Agency to legally merge the records of affiliated or reincarnated motor carriers that are still operating with out-of-service orders and other safety histories of carriers in the agency's databases.

Additionally, the Utility for Risk Based Screening and Assessment (URSA), which will screen applications for reincarnated/chameleon carriers, is in the final stages of development. The URSA algorithm will be integrated with the Unified Registration System which will begin a phased implementation in December 2015 in accordance with the recent FMCSA Federal Register Notice. A stand-alone prototype of URSA is operational and FMCSA plans to begin screening all new applications, instead of only Household Goods and Passenger Carriers, for reincarnated/chameleon behavior beginning in the second quarter of Fiscal Year 2016.

Building and Sustaining a Highly-Skilled, Diverse, Innovative, and Motivated Workforce

DOT's ability to provide transportation programs and services that meet the Nation's needs depends on effective management of our organization and resources. The Department is committed to building a workforce that can meet the challenges of this decade, especially in light of the pending retirement of many of its eligible employees. Succession planning and employee engagement are critical for retaining or replacing retiring employees, and hiring and training are increasingly important. The Department is implementing workforce planning, and competency-based hiring and training to ensure it has a diverse, inclusive, and capable workforce and a culture of continuous learning and improvement.

We appreciate this opportunity to offer an additional perspective on the OIG's Top Management Challenges Report for Fiscal Year 2016. Please contact Madeline M. Chulumovich, Director of Program Management and Improvement, at (202) 366-6512 with any questions or additional details about our comments.