December 2017

AVIATION SECURITY

TSA Strengthened Foreign Airport Assessments and Air Carrier Inspections, but Could Improve Analysis to Better Address Deficiencies

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Why GAO Did This Study

Approximately 300 foreign airports offer last point of departure flights to the United States. TSA is the federal agency with primary responsibility for securing the nation's civil aviation system and assesses foreign airports and inspects air carriers to ensure they have in place effective security measures. While TSA is authorized under U.S. law to conduct foreign airport assessments, it does not have authority to impose or otherwise enforce security requirements at foreign airports. TSA is authorized to impose and enforce requirements on air carriers. The Aviation Security Act of 2016 includes a provision for GAO to review TSA's effort to enhance security at foreign airports.

This report addresses (1) steps TSA has taken to enhance foreign airport assessments and air carrier inspections since 2011, (2) the results of TSA's foreign airport assessments and air carrier inspections, and (3) steps TSA takes to address any deficiencies identified during foreign airport assessments and air carrier inspections. GAO reviewed TSA program data, interviewed TSA officials, and conducted site visits to TSA field locations that manage assessments and inspections.

What GAO Recommends

To help strengthen TSA's analysis and decision making, GAO recommends that TSA fully capture and more specifically categorize data on the root causes of security deficiencies that it identifies and corrective actions. TSA concurred with the recommendations.

View GAO-18-178. For more information, contact Jennifer Grover at (202) 512-7141 or groverj@gao.gov, or Jessica Farb at (202) 512-6991 or farbj@gao.gov.

What GAO Found

The Transportation Security Administration (TSA) has taken steps to enhance its foreign airport assessments and air carrier inspections since 2011, including aligning resources based on risk, resolving airport access issues, making evaluations more comprehensive, and creating operational efficiencies. For example, TSA has implemented targeted foreign airport assessments in locations where risk is high and developed the Global Risk Analysis and Decision Support System to strengthen data analysis. In addition, TSA has increased the number of joint airport assessments with the European Commission. Specifically, TSA officials GAO met with indicated that TSA's strong relationship with the European Commission has afforded the agency excellent access to foreign airports in Europe and a better understanding of vulnerabilities at these locations, which has resulted in more comprehensive assessments.

In its analysis of TSA foreign airport assessment results, GAO found that during fiscal years 2012 through 2016 there was considerable regional variation among last point of departure airports in the level of compliance with select International Civil Aviation Organization security standards and recommended practices. TSA attributed this regional variation to lack of airport resources or technical knowledge, among other factors. TSA officials also stated that while these challenges are not easy to overcome, agency efforts, such as training host country staff, can help foreign airports reduce their vulnerability scores over time. GAO's analysis of TSA's foreign airport assessment data confirmed that point by demonstrating that most foreign airports categorized with poor vulnerability ratings in fiscal year 2012 improved their vulnerability score in at least one follow-up assessment during fiscal years 2012 through 2016.

Meanwhile, U.S. and foreign-flagged air carriers providing last point of departure service to the United States from foreign airports complied with all TSA security requirements in most inspections, and TSA was able to resolve the majority of security deficiencies it identified with on-the-spot counseling. In some cases, TSA inspectors submitted violations for investigation because the violations were considered serious enough to potentially warrant an enforcement action.

TSA addresses identified deficiencies at foreign airports through capacity development, such as training and on-the-spot counseling. However, GAO found that TSA's database for tracking the resolution status of security deficiencies did not have comprehensive data on security deficiencies' root causes and corrective actions. In addition, the database lacked adequate categorization mechanisms. For example, while it captures three broad categories of root causes (e.g., lack of knowledge) it does not capture subcategories (e.g., supervision) that would better explain the root causes of security deficiencies. Fully collecting these data and improving the specificity of categorization would help TSA strengthen analysis and decision making. For example, TSA would be better positioned to determine the extent to which airports that received particular types of capacity development assistance were able to close security vulnerabilities. This is a public version of a sensitive report issued in October 2017. Information that TSA deemed to be sensitive is omitted from this report.

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United States Government Accountability Office

Contents

Abbreviations

ARM	Analysis and Risk Mitigation
ATSA	Aviation and Transportation Security Act
CDB	Capacity Development Branch
DHS	Department of Homeland Security
EC	European Commission
FAA	Federal Aviation Administration
GC	Global Compliance
GRADS	Global Risk Analysis and Decision Support System
ICAO	International Civil Aviation Organization
IIR	International Industry Representative
OGS	Office of Global Strategies
OSFT	Open Standards and Recommended Practices Findings Tool
PARIS	Performance and Results Information System
RD	Regional Director
ROC	Regional Operations Center
SOP	Standard Operating Procedures
State	Department of State
TSA	Transportation Security Administration
TSAR	Transportation Security Administration Representative

U.S. GOVERNMENT ACCOUNTABILITY OFFICE

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December 4, 2017

Congressional Addressees

The April 2012 plot to detonate a bomb aboard a flight bound for the United States, which U.S. intelligence officials foiled in the Arabian Peninsula, and the October 2015 downing of a flight over the Sinai Peninsula illustrate that civil aviation, including U.S.-bound flights, remains a target of coordinated terrorist activity. Moreover, the threat has become more diverse and terrorists are continually developing new tactics to attack the aviation system, including advanced concealment of improvised explosive devices in baggage and personal electronic devices. Since approximately 300 airports in foreign countries offer last point of departure flights to the United States, efforts to evaluate the security of foreign airports and air carriers that service the United States—and mitigating any identified security risks—are of vital importance in ensuring the security of the aviation system.

The Transportation Security Administration (TSA), within the U.S. Department of Homeland Security (DHS), is the federal agency with primary responsibility for securing the nation's civil aviation system and has programs in place to help ensure the security of U.S.-bound flights.[1] Through its foreign airport assessment program, TSA determines whether foreign airports that provide service to the United States are maintaining and carrying out effective security measures.[2] Although TSA is authorized under U.S. law to conduct foreign airport assessments at intervals it considers necessary, it may not perform an assessment of security measures at a foreign airport without permission from the host government. TSA also does not have authority to impose or otherwise enforce security requirements at foreign airports and, therefore, seeks to address security deficiencies it identifies through capacity building, such as training of foreign airport staff and onsite consultation, and working with U.S. and foreign-flagged air carriers (i.e., air carriers) to implement security measures, among other things. In contrast, TSA is authorized under U.S. law to place security requirements on air carriers that service the United States and to take enforcement actions through its air carrier

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[1]See generally 49 U.S.C. § 114; 49 C.F.R. ch. XII, subch. C.

[2]See 49 U.S.C. § 44907.

inspection program if carriers fail to comply with the requirements.[3] For example, in June 2017, DHS announced new security requirements, including heightened screening of personal electronic devices, for air carriers operating last point of departure flights to the United States from foreign airports.[4]

In 2007, we recommended that TSA take steps to improve oversight of its foreign airport assessment and air carrier inspection programs.[5] In 2011, we reported on TSA's efforts to assess the security at foreign airports and made several recommendations to enhance program efficiency and effectiveness, among other things.[6] DHS concurred with the recommendations and has since taken a number of steps to address them and improve the program. We discuss these and other actions TSA has taken since 2011 later in this report.

The Aviation Security Act of 2016 includes a provision for GAO to review the efforts, capabilities, and effectiveness of TSA to enhance security capabilities at foreign airports and determine if the implementation of such efforts and capabilities effectively secures international-inbound aviation.[7] This report (1) describes steps TSA has taken to enhance foreign airport assessments and air carrier inspections since 2011, (2) describes the results of TSA's foreign airport assessments and air carrier inspections, and (3) examines steps TSA takes to address any deficiencies identified during foreign airport assessments and air carrier inspections.

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[3]See 49 U.S.C. §§ 44903(c), 44906. See also 49 C.F.R. pts. 1544 and 1546 (imposing requirements on U.S. and foreign-flagged air carriers, respectively).

[4]See, e.g., Security Directive 1544-17-01A, International Aviation Security (July 13, 2017); Emergency Amendment 1544-17-01A, International Aviation Security (July 13, 2017); and Emergency Amendment 1546-17-02A, International Aviation Security (July 13, 2017).

[5]GAO, *Aviation Security*: *Foreign Airport Assessments and Air Carrier Inspections Help Enhance Security, but Oversight of These Efforts Can Be Strengthened*, GAO-07-729 (Washington, D.C.: May 11, 2007).

[6]GAO, *Aviation Security*: *TSA Has Taken Steps to Enhance its Foreign Airport Assessments, but Opportunities Exist to Strengthen the Program*, GAO-12-163 (Washington, D.C.: October 21, 2011).

[7]See Pub. L. No. 114-190, tit. III, § 3202(b), 130 Stat. 615, 652 (2016). The Aviation Security Act was enacted as title III of the FAA Extension, Safety, and Security Act of 2016, on July 15, 2016. This report also addresses similar issues pursuant to a March 2016 request from the then Chairman, House Homeland Security Subcommittee on Transportation Security and the Chairman, House Homeland Security Committee.

This report is a public version of a sensitive report that we issued in October 2017.[8] TSA deemed some of the information in our October report to be Sensitive Security Information, which must be protected from public disclosure. Therefore, this report omits sensitive information about TSA's risk methodology, the standards that TSA uses to assess foreign airports, and the specific results of TSA's foreign airport assessments and air carrier inspections. Although the information provided in this report is more limited, the report addresses the same objectives as the sensitive report and uses the same methodology.

To address these objectives, we reviewed the relevant laws and regulations pursuant to which TSA conducts foreign airport assessments and air carrier inspections. We reviewed various TSA documents on program management and strategic planning. Specifically, we reviewed TSA's 2016 Foreign Airport Assessment Program Standard Operating Procedures (SOP), which prescribes program and operational guidance for assessing security measures at foreign airports and informs TSA personnel at all levels of what is expected of them in the implementation of the program. We also reviewed the job aids that TSA inspectors use during each assessment and inspection, which are intended to ensure that the TSA-specified International Civil Aviation Organization (ICAO) aviation security standards and recommended practices (referred to collectively in this report as ICAO standards unless otherwise noted) and air carrier security program requirements are fully evaluated during each assessment. In addition, we interviewed senior TSA officials, inspectors, and country and industry liaisons located at TSA headquarters and in the field. Specifically, we conducted site visits to a non-generalizable selection of three of the six TSA regional operations centers (ROC) located in Reston, Miami, and Frankfurt. We based our site visit selections on the number and type of staff available at each location and geographic dispersion. During our interviews with TSA staff, we discussed TSA's efforts to enhance foreign airport assessments and air carrier inspections, the results of these evaluations, and the extent to which TSA uses information at its disposal to inform capacity development efforts for airports and air carriers. We also interviewed other stakeholders, such as the Department of State (State) and the European Commission (EC) to discuss efforts these organizations have in

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[8]GAO, *Aviation Security: TSA has Strengthened Foreign Airport Assessments and Air Carrier Inspections, but Could Strengthen Data Management*, GAO-18-73SU (Washington, D.C.: October 12, 2017).

place to enhance international aviation security and their experiences coordinating with TSA.

To obtain a greater understanding of TSA's foreign airport assessment and air carrier inspection processes, including how TSA works with host nation officials and air carrier representatives, we accompanied a team of TSA inspectors during an air carrier inspection at an airport in Europe, and we spoke with airport officials and representatives from two air carriers at a separate European airport. We based our site selection on several factors, including the air carrier locations TSA had plans to inspect during the course of our audit work and host government willingness to allow us to accompany TSA.

To describe the results of TSA's foreign airport assessments and air carrier inspections, we obtained and analyzed the results of TSA's foreign airport assessments and air carrier inspections from fiscal years 2012 through 2016, the five-year period since our previous review. Specifically, we analyzed the frequency with which foreign airports and air carriers complied with select ICAO standards that TSA uses and TSA requirements, such as passenger screening, baggage screening, and access controls, among others. To assess the reliability of TSA's assessment and inspection data, we reviewed program documentation on system controls, interviewed knowledgeable officials from the Office of Global Strategies (OGS), and checked TSA's data for any potential gaps and errors. We concluded that TSA's data on foreign airport assessments and air carrier inspections were sufficiently reliable for the purposes of our review. Finally, we compared TSA's efforts to leverage information for capacity development to the Foreign Airport Assessment Program SOP and criteria for obtaining and processing information in federal internal control standards.[9]

The performance audit upon which this report is based was conducted from August 2016 to October 2017 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate, evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives. We

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[9]GAO, *Standards for Internal Control in the Federal Government*, GAO-14-704G (Washington, D.C.: September 2014).

subsequently worked with TSA from September 2017 to December 2017 to prepare this nonsensitive version of the original sensitive report for public release. This public version was also prepared in accordance with these standards. More details about the scope and methodology of our work are contained in appendix I.

Background

DHS Responsibilities for Ensuring the Security of U.S.-Bound Flights from Foreign Countries

Shortly after the September 11, 2001, terrorist attacks, Congress passed and the President signed into law the Aviation and Transportation Security Act (ATSA), which established TSA and gave the agency responsibility for securing all modes of transportation, including the nation's civil aviation system, which includes the operations of U.S. and foreign-flagged air carriers to, from, and within the United States, as well as the foreign point-to-point operations of U.S.-flagged carriers.[10] Consistent with ATSA and in accordance with existing statutory requirements, TSA is to assess the effectiveness of security measures at foreign airports (1) served by a U.S. air carrier, (2) from which a foreign air carrier serves the United States, (3) that pose a high risk of introducing danger to international air travel, and (4) that are otherwise deemed appropriate by the Secretary of Homeland Security.[11] In carrying out this function, the statute identifies measures that the Secretary must take in the event that he or she determines that an airport is not maintaining and carrying out effective security measures based on TSA assessments.[12] In

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[10]See Pub. L. No. 107-71, 115 Stat. 597 (2001); 49 U.S.C. § 114. For purposes of this report, U.S.-flagged air carriers are air carrier operations regulated in accordance with 49 C.F.R. part 1544 and are referred to as "U.S. air carriers" or "domestic air carriers," and foreign-flagged air carriers are air carrier operations regulated in accordance with 49 C.F.R. part 1546 and are referred to as "foreign air carriers."

[11]49 U.S.C. § 44907. Prior to the establishment of DHS in March 2003, authority for conducting foreign airport assessments resided with the Secretary of Transportation. Although assessments were originally conducted by the Federal Aviation Administration (FAA), TSA assumed responsibility for conducting the assessments following the enactment of ATSA in November 2001. In March 2003, TSA transferred from the Department of Transportation to DHS in accordance with the Homeland Security Act of 2002. See Pub. L. No. 107-296, § 403(2), 116 Stat. 2135, 2178 (2002).

[12]See 49 U.S.C. § 44907(d)-(e) (providing, for example, that an airport determined by the Secretary as not maintaining and carrying out effective security measures shall be identified prominently at all U.S. airports at which scheduled air carrier operations are provided regularly).

addition, consistent with ATSA and in accordance with existing statutory requirements, TSA is to conduct inspections of U.S. air carriers and foreign air carriers servicing the United States from foreign airports to ensure that they meet applicable security requirements, including those set forth in an air carrier's TSA-approved security program.[13]

The Secretary of DHS delegated to the TSA Administrator the responsibility for conducting foreign airport assessments but retained responsibility for making the determination that a foreign airport does not maintain and carry out effective security measures.[14] Currently, the Global Compliance Directorate, within OGS, is responsible for conducting foreign airport assessments and air carrier inspections. Table 1 highlights the roles and responsibilities of certain TSA positions within OGS that are responsible for implementing the foreign airport assessment and air carrier inspection programs.

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[13]Domestic and foreign air carriers that operate to, from, or within the United States must establish and maintain security programs approved by TSA in accordance with requirements set forth in regulation at 49 C.F.R. parts 1544 (domestic air carriers) and 1546 (foreign air carriers). See 49 U.S.C. §§ 44903(c), 44906; 49 C.F.R. §§ 1544.3, 1544.101-1544.105, 1546.3, 1546.101-1546.105. While TSA's regulations governing foreign carriers provide that such carriers' security programs must be deemed "acceptable" by TSA (whereas domestic air carrier security programs must be "approved" by TSA), for the purposes of this report, we are using the term "TSA-approved" for both domestic and foreign air carriers' security programs. As with foreign airport assessments, FAA had responsibility for conducting air carrier inspections prior to TSA's establishment and assumption of this function.

[14]If the Secretary determines that a foreign airport does not maintain and carry out effective security measures, he or she must, after notifying (or, depending on the desired action, with approval of) the Secretary of State, take secretarial action, which includes, in general, notification to the foreign airport (or, as appropriate, the host government) of security deficiencies identified; notification to the general public that the airport does not maintain effective security measures; and modification to the operating authority of air carriers operating at that airport, such as prohibiting them from flying between the United States and that airport. See 49 U.S.C. § 44907(d)-(e). During the period covered by our review, fiscal years 2012 through 2016, the Secretary of Homeland Security did not determine that any foreign airports failed to maintain and carry out effective security measures. As we reported in GAO-12-163, in 2008, the Secretary of Homeland Security determined that foreign airports in Venezuela were not maintaining and carrying out effective security measures and notified the general public of that determination.

Table 1: Positions That Play a Key Role in Transportation Security Administration's (TSA) Foreign Airport Assessment and Air Carrier Inspection Programs

Position	Duties
Director of Global Compliance	The Director of Global Compliance carries out the statutory mandate of the Secretary of Homeland Security and the TSA Administrator to assess the adequacy of civil aviation security at foreign airports. The Director of Global Compliance supervises and directs work of the Regional Operations Center Managers and assigned desk officers.
Regional Operations Center (ROC) Manager	The six ROC Managers have responsibility for the overall planning and conduct of assessments of the foreign airports and inspections of air carriers, including the scheduling and coordination of personnel and resources. ROC Managers supervise and direct the work of the inspector workforce and administrative support personnel within their assigned geographic area.[a]
Transportation Security Specialist (inspectors)	Inspectors are primarily responsible for performing and reporting the results of foreign airport assessments and air carrier inspections, and will provide on-site assistance and make recommendations for security enhancements. They are also deployed in response to specific incidents and to monitor for identified threats. As of March 2017, TSA had 94 inspectors, each of whom is based in one of TSA's six ROCs.
Regional Directors (RD)	The four RDs oversee Office of Global Strategies operations in one of four regions worldwide and provide strategic and technical direction to the TSA Representatives in the areas of operations, outreach, and capacity development.
TSA Representative (TSAR)	TSARs communicate with foreign government officials to address transportation security matters and to facilitate foreign airport assessments. TSARs also serve as on-site coordinators for TSA responses to terrorist incidents and threats to U.S. assets at foreign transportation modes. For the foreign airport assessment program, TSARs are often involved in arranging pre-assessment activities, assessment visits, and follow-up visits. Additionally, TSARs are responsible for helping host government officials address security deficiencies that are identified during assessments. As of March 2017, TSA had 29 TSARs.[b]
International Industry Representative (IIR)	IIRs are the primary point of contact between TSA and U.S. and foreign-flagged air carriers with last point of departure flights to the United States. IIRs provide guidance to air carriers on TSA regulations and help them meet their TSA-approved security programs. If a security violation is identified during an inspection, which leads to an investigation, IIRs will coordinate with air carriers to ensure they take corrective action. In addition, IIRs serve as a liaison to air carriers during a security incident. As of March 2017, TSA had 16 IIRs.[c]

Source: GAO analysis of TSA documents. | GAO-18-178

[a]TSA's ROCs are located in Dallas, Honolulu, Miami, Reston, Singapore, and Frankfurt. They are responsible for foreign airports in the geographic regions of Africa-Middle East, Asia-Pacific, Europe, and Western Hemisphere.

[b]TSARs are located in Abu Dhabi, Bangkok, Beijing, Berlin, Brasilia, Brussels, Dakar, The Hague, Istanbul, Johannesburg, London, Manila, Mexico City, Miami, Nairobi, Nassau, Ottawa, Panama City, Paris, Rabat, Rome, Santiago, Singapore, Sydney, Tokyo, and Warsaw.

[c]IIRs are located in Abu Dhabi, Arlington, Beijing, Frankfurt, London, Mexico City, Ottawa, Singapore, Tokyo, and Warsaw.

TSA's Process for Conducting Foreign Airport Assessments and Air Carrier Inspections

TSA assesses the effectiveness of security measures at foreign airports using select aviation security standards and recommended practices adopted by ICAO, a United Nations organization representing 191 countries.[15] ICAO standards and recommended practices (referred to collectively in this report as ICAO standards unless otherwise noted) address operational issues at an airport, such as ensuring that passengers and baggage are properly screened and that unauthorized individuals do not have access to restricted areas of an airport.[16] ICAO standards also address non-operational issues, such as whether a foreign government has implemented a national civil aviation security program for regulating security procedures at its airports and whether airport officials implementing security controls are subject to background investigations, are appropriately trained, and are certified according to a foreign government's national civil aviation security program. TSA utilizes the 44 ICAO standards it sees as most critical in conducting its foreign airport assessments, which cover the following areas: airport operations; quality control; access control; aircraft security; passenger and cabin baggage screening; hold baggage screening; security measures relating to cargo, mail and other goods; security measures relating to special categories of passengers; prevention; and security measures relating to the landside.

TSA uses a risk-informed approach to schedule foreign airport assessments by categorizing airports into three risk tiers, with high risk airports assessed more frequently than medium and low risk airports.[17] TSA's assessments of foreign airports are conducted by a team of

[15]See 49 U.S.C. § 44907(a)(2)(C) (requiring that TSA conduct assessments using a standard that results in an analysis of the security measures at the airport based at least on the standards and appropriate recommended practices of ICAO Annex 17 in effect on the date of the assessment). ICAO is a specialized agency of the United Nations with a primary objective to provide for the safe, orderly, and efficient development of international civil aviation. ICAO member nations (i.e., contracting states) agree to cooperate with other contracting states to meet standardized international aviation security measures, which are detailed in Annex 17 and Annex 14 to the Convention on International Civil Aviation.

[16]Specifically, an ICAO standard is a specification for the safety or regularity of international air navigation, with which contracting states agree to comply, whereas, a recommended practice is any desirable specification for safety, regularity, or efficiency of international air navigation, with which contracting states are strongly encouraged to comply.

[17]A risk-informed approach entails consideration of terrorist threats, vulnerability of potential terrorist targets to those threats, and the consequences of those threats being carried out when deciding how to allocate resources to defend against these threats.

inspectors, which generally includes one team leader and one team member. According to TSA, it generally takes 3 to 7 days to complete a foreign airport assessment. However, the amount of time and number of team members required to conduct an assessment varies based on several factors, including the size of the airport, the number of air carrier inspections to be conducted at the airport, and the threat level to civil aviation in the host country.

TSA uses a multistep process to plan, conduct, and record assessments of foreign airports. Specifically, the TSAR must obtain approval from the host government to allow TSA to conduct an airport assessment, and schedule the date for the on-site assessment. After conducting an entry briefing with State, host country officials, and airport officials, the team conducts an on-site visit to the airport. During the assessment, the team of inspectors uses several methods to determine a foreign airport's level of compliance with ICAO standards, including conducting interviews with airport officials, examining documents pertaining to the airport's security measures, and conducting a physical inspection of the airport. For example, inspectors are to examine the integrity of fences, lighting, and locks by walking the grounds of the airport. Inspectors also make observations on access control procedures, such as examining employee and vehicle identification methods in secure areas, as well as monitoring passenger and baggage screening procedures in the airport. At the close of an airport assessment, inspectors brief foreign airport and government officials on the results. TSA inspectors also prepare a report detailing their findings on the airport's overall security posture and security measures, which may contain recommendations for corrective action and must be reviewed by the TSAR, the ROC manager, and TSA headquarters officials. Afterward, a summary of the results is shared with the foreign airport and host government officials. In some cases, TSA requires air carriers to adopt security procedures, such as additional passenger screening, to compensate for deficiencies that TSA identified during a foreign airport assessment.

Along with conducting airport assessments, the same TSA inspection team also conducts air carrier inspections when visiting a foreign airport to ensure that air carriers are in compliance with TSA security requirements.[18] The frequency of air carrier inspections at each airport

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[18]TSA may conduct air carrier inspections separately from airport assessments because foreign airports are generally assessed no more than once per year by TSA, while some air carriers are inspected twice per year by TSA.

depends on a risk-informed approach and is influenced, in part, by the airport's vulnerability to security breaches, since the security posture of each airport varies. In general, TSA procedures require TSA to inspect all air carriers at each airport annually or semi-annually depending on the vulnerability level of the airport, with some exceptions. For example, TSA may elect to inspect all air carriers at a particular airport on an 18-month cycle if the airport has no documented vulnerabilities for the three previous visits and all air carriers at that location have demonstrated full compliance over the past five years. When conducting inspections, TSA inspectors examine compliance with applicable security requirements, including TSA-approved security programs, security directives, and emergency amendments to the security programs.[19]

As in the case of airport assessments, air carrier inspections are conducted by a team of inspectors, which generally includes one team leader and one team member. An inspection of an air carrier typically takes 1 or 2 days, but can take longer depending on the extent of service by the air carrier. Inspection teams may spend several days at a foreign airport inspecting air carriers if there are multiple carriers serving the United States from that location. During an air carrier inspection, inspectors are to review applicable security manuals, procedures, and records; interview air carrier station personnel; and observe air carrier employees processing passengers from at least one flight from passenger check-in until the flight departs the gate to ensure that the air carrier is in compliance with applicable requirements. Inspectors evaluate a variety of security measures, such as passenger processing (e.g., use of No Fly and Selectee lists),[20] checked baggage acceptance and control, aircraft security, passenger screening, cargo and mail screening, and catering security. Inspectors record inspection results into TSA's

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[19]TSA requires that each air carrier adopt and implement a TSA-approved security program for all scheduled passenger and public charter operations at locations within the United States, from the United States to a non-U.S. location, or from a non-U.S. location to the United States. See 49 C.F.R. §§ 1544.101, 1546.101.When circumstances require that air carriers take immediate action to mitigate a known or potential threat or vulnerability, TSA may issue security directives to impose additional security requirements on U.S. air carriers and emergency amendments to impose additional requirements on, in general, foreign air carriers. See 49 C.F.R. §§ 1544.105(d), 1544.305, 1546.105(d).

[20]The No Fly List contains the names of individuals that pose, or are suspected of posing, a threat to civil aviation or national security and are precluded from boarding an aircraft. The Selectee List includes those individuals of interest that do not meet the criteria to be placed on the No Fly List. Individuals on the Selectee List will be subjected to additional screening.

Performance and Results Information System (PARIS), a database containing security compliance information on TSA-regulated entities. If an inspector finds that an air carrier is violating any applicable security requirements, additional steps are to be taken to record those specific violations and, in some cases, pursue them with further investigation.

GAO's 2011 Review of TSA Foreign Airport Assessment Program

In 2011, we reported on TSA's foreign airport assessment program, including TSA's steps taken to enhance its program, the results of TSA's foreign airport assessments, and opportunities for TSA to make program improvements in several key areas, such as developing criteria and guidance for determining foreign airport vulnerability ratings.[21] We reported that TSA had not taken steps to evaluate its assessment results to identify regional and other trends over time. In addition, we found that TSA had not developed criteria or guidance for determining foreign airport vulnerability ratings. We also reported that there were opportunities for TSA to increase program efficiency and effectiveness by, for example, conducting more targeted foreign airport assessments and systematically compiling and analyzing security best practices. As a result, we recommended that TSA (1) develop a mechanism for trend analysis, (2) establish criteria and guidance to help decision makers with vulnerability ratings, and (3) consider the feasibility of conducting more targeted foreign airport assessments and compiling best practices. DHS concurred with the three recommendations and has since taken several actions to address them all, including developing a mechanism to compile and analyze best practices.

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[21]GAO-12-163.

Since 2011, TSA Has Taken Various Steps to Strengthen its Foreign Airport Assessment and Air Carrier Inspection Programs

TSA Has Taken Steps to Better Target Program Resources Based on Risk

TSA established the Northern Virginia ROC. In 2012, TSA created a dedicated ROC in Northern Virginia to oversee North Africa and the Middle East given the high risk associated with many airports in the region.[22] The creation of the Northern Virginia ROC alleviated resource burdens on the Frankfurt ROC, which previously had oversight for both the Europe and Africa-Middle East regions. In addition, the Northern Virginia ROC Manager stated that the small size of the ROC has facilitated strong working relationships because foreign airport officials in the region tend to meet with the same inspectors more frequently.

TSA created the Analysis and Risk Mitigation (ARM) Directorate. In 2013, TSA established a working group to evaluate ways to better integrate risk management in the foreign airport assessment and air carrier inspection programs. This working group developed a risk framework, which, according to TSA documentation, provides a systematic approach for analyzing risk at international airports, supports OGS decision making, and informs efforts to mitigate security deficiencies. In 2015, OGS created the ARM Directorate, which formalized the risk mitigation responsibilities of the working group and serves as the data analysis and evaluation arm of OGS. OGS officials stated that ARM helps the program focus its resources based on risk. For example, ARM analyzes and prioritizes activities, such as training, that are designed to mitigate security vulnerabilities at foreign airports.

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[22]During fiscal years 2012 through 2016, 48 percent of the total airport assessments conducted in the Africa-Middle East region related to high risk airports, compared to 20 percent for the Asia-Pacific region, 12 percent for the Western Hemisphere region and 6 percent for the Europe region.

TSA conducts more targeted foreign airport assessments. Based on a recommendation in our 2011 report, TSA has taken actions to conduct more targeted foreign airport assessments. For example, TSA developed the Pre-Visit Questionnaire, which host foreign airport officials fill out prior to TSA's visit. This information enables each TSA foreign airport assessment team to tailor the on-site assessment at each airport and focus TSA's assessment efforts on specific areas of concern. Additionally, TSA implemented more focused airport assessments, known as targeted risk assessments, in locations where risk is high or there are other factors that require a more focused evaluation of the site's security posture. For the focused assessments, inspection teams place emphasis on observations, interviews, document reviews, and thorough analysis of specific ICAO standards.

TSA implemented cross-directorate reviews. In 2015, TSA implemented cross-directorate reviews, which bring together experts across the OGS components, such as inspectors and TSARs, to identify critical vulnerabilities at foreign airports and outline an initial plan to mitigate those vulnerabilities. Overall, TSA completed 28 cross-directorate reviews in 2015 and 2016.

TSA Has Taken Steps to Strengthen Foreign Airport Access and the Comprehensiveness of Its Evaluations

TSA took steps to resolve foreign airport access issues. Since our 2011 review, TSA has faced delays in scheduling some foreign airport assessments and obstacles in obtaining full access to airport operations at certain locations. According to TSA officials, TSA has used several tactics to resolve access issues, including deploying the same inspectors over multiple assessments to build rapport with foreign airport officials. For example, in one country in the Western Hemisphere region, TSA's access to airport operations was initially limited by the host government. However, over time, TSA used a small pool of inspectors who officials said were able to build trust with the host government and gain better access, including the ability to conduct interviews of airport officials and take photographs of the security environment. Additionally, in 2011, we reported on TSA's challenges in obtaining access to airports in Venezuela. Specifically, we reported that TSA had not been able to assess airports in Venezuela or conduct TSA compliance inspections for air carriers, including U.S. carriers, flying from Venezuela to the United States since 2006. According to TSA officials, in 2014, TSA regained access in Venezuela after establishing dialogue with the new government in place and emphasizing the benefits of the evaluation process.

TSA increased the number of joint airport assessments in Europe. In 2011, we reported that TSA took a number of actions to assess foreign airports in Europe, including conducting joint assessments with the EC, performing bi-lateral assessments, and executing table-top reviews in place of on-site airports visits.[23] According to EC officials, the main goal under this arrangement was to better leverage resources and reduce the number of TSA visits per year to European airports because of concerns from EU member states about the frequency of visits from EC and U.S. audit teams. However, since our previous review, TSA has limited the use of table-top reviews and now primarily assesses foreign airports in Europe through joint assessments with the EC. Frankfurt ROC officials we met with indicated that TSA's strong relationship with the EC has afforded the agency excellent access to foreign airports in Europe and a better understanding of vulnerabilities at these locations, which has resulted in more comprehensive assessments. For example, according to TSA, through the joint assessments, inspectors have better access to airport training documents, the ability to observe tests conducted by EC inspectors, and more time at checkpoints to observe screening operations.

TSA developed airport assessment and air carrier inspection job aids. In 2012, TSA developed job aids that provide inspectors with a set of detailed areas to assess for each ICAO standard. For example, a job aid for passenger and cabin baggage screening includes several prompts related to screening roles and responsibilities, the resolution process if a suspicious item is detected, and alternative procedures if screening equipment is not working as intended. TSA also developed job aids for the air carrier inspection process to better ensure that inspectors cover all requirements associated with air carrier security programs. According to

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[23]The EC is the executive body of the European Union. The body is responsible for proposing legislation, implementing decisions, upholding the Union's treaties and the general day-to-day running of the Union. The Commission is required to monitor Member States' compliance with aviation security legislation and carries out inspections of the national appropriate authorities of Member States, airport inspections, and follow-up inspections to confirm the implementation of remedial actions. In 2008, TSA signed a multilateral working arrangement with the EU to facilitate joint assessments and information sharing between TSA and the EU. Specifically, under the arrangement, TSA and the EC coordinate assessment schedules annually to identify airport locations at which to conduct joint assessments. If the EC has inspected an airport within the last two years, TSA can meet with EC officials to review the EC inspection report—referred to as a table-top review—which typically contains enough information for TSA to make its evaluations.

OGS officials, these actions have led to more comprehensive evaluations and a better understanding of foreign airport and air carrier vulnerabilities.

TSA Has Worked to Create Operational Efficiencies

TSA established the Honolulu ROC. In 2012, TSA eliminated the Los Angeles ROC and established the Honolulu ROC given its proximity to the Pacific Islands, which allowed the agency to reduce costs and travel time to airports in these locations. Specifically according to TSA documentation, inspectors in the Los Angeles ROC often spent more than 20 hours traveling to and from sites in the Asia-Pacific region because of in-flight transit time and connection requirements. With the creation of the Honolulu ROC, TSA officials told us that inspectors have been better able to meet deadlines for completing foreign airport assessment reports and conduct follow-up visits to resolve noted issues.

TSA developed the Global Risk Analysis and Decision Support System. In 2012, TSA developed the Global Risk Analysis and Decision Support System (GRADS) to streamline the assessment report writing process and strengthen OGS's data analysis capabilities of its foreign airport assessment results. According to TSA officials, GRADS has provided OGS personnel with a number of benefits, including the ability to run standardized reports, extract and analyze key data, and manage airport operational information, such as data on security screening equipment. According to TSA documentation, prior to 2012, the agency captured the results of its foreign airport assessments in narrative form that often amounted to more than 80 pages, hampering the ability to perform data analysis.

TSA standardized processes. Between 2012 and 2016, TSA deployed standardization teams, called Standardization Effort Teams, to help ensure more consistency among inspectors when conducting air carrier inspections and airport assessments, and to identify and develop best practices in areas such as training, among others. For example, in 2016, a team developed a tool to facilitate performance evaluations of inspectors.

TSA Foreign Airport Assessment Data Showed Variations in Compliance by Region and Across ICAO Standards, while Air Carrier Inspection Data Showed That Most Inspections Were Fully Compliant

Foreign Airports Differed in Level of Compliance by Region and Across ICAO Standards

TSA assesses the overall vulnerability level at each foreign airport using a rating system, ranging from a category "1," which represents full compliance with ICAO standards, to a "4" or "5," which involve more serious or egregious issues.[24] Based on our analysis of TSA's foreign airport assessment data, we found that compliance with ICAO standards varied by region. For example, our analysis showed that some regions of the world had a higher percentage of airports in vulnerability categories 4 and 5. Our analysis also showed that there are differences in compliance across the ICAO standards. Specific information related to TSA's airport assessment results is deemed Sensitive Security Information.

According to TSA officials, it is difficult to draw conclusions about the cumulative foreign airport assessment results—such as whether the results are generally positive or negative—because the primary concern is not whether security deficiencies are identified, but whether foreign

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[24]Based on a recommendation that we made in GAO-12-163, TSA developed vulnerability ratings for each foreign airport assessment. TSA's vulnerability ratings are as follows: Category 1: Fully compliant; Category 2: Have documented procedures; however, the implementation of procedures is inconsistent; Category 3: Have documented procedures; however, shortfalls remain or have no documented procedures, but measures are implemented; Category 4: Have documented procedures; however, the procedures are not implemented; and Category 5: No documented procedures and no implementation.

countries are capable and willing to address security deficiencies. Specifically, there is considerable regional variation in the level of compliance because some foreign countries face challenges due to lack of resources or technical knowledge, among other factors. TSA officials stated that while these challenges are not easy to overcome, agency efforts, such as training host country staff, can help foreign airports reduce their vulnerability scores over time. Our analysis of TSA's foreign airport assessment data confirms that point. Specifically, we found that of the foreign airports categorized with a vulnerability rating of 4 of 5 in fiscal year 2012, the majority of these airports improved their vulnerability score in at least one follow-up assessment during fiscal years 2012 through 2016.[25] According to TSA documentation, in some cases, foreign airports are able to take immediate measures to resolve security deficiencies. On the other hand, there are situations in which foreign airports may struggle to take corrective actions or sustain the improvements over time. Accordingly, TSA's regulatory authority over air carriers is an important tool. TSA officials indicated that the agency commonly requires air carriers to adopt security procedures, such as passenger screening, to compensate for foreign airport security deficiencies. Moreover, if appropriate, DHS can take secretarial action, which includes the option to prohibit air carriers operating at a foreign airport from providing last point of departure flights to the United States.[26]

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[25]Our analysis comprises airports with at least one follow-up assessment during fiscal years 2012 through 2016.

[26]TSA officials told us that the decision to take secretarial action is not based solely on the number and type of security deficiencies identified during a TSA foreign airport assessment. Rather, they said a decision on whether or not to take secretarial action is based on the severity of the security deficiencies identified, as well as past compliance history, threat information, and the capacity of the host government to take corrective action. They also noted that these factors may not and generally do not rise to a high enough risk level to warrant a secretarial action, such as suspending air carrier operations to or from a particular airport.

Most Air Carrier Inspections Were Fully Compliant and TSA Used On-the-Spot Counseling to Resolve the Majority of Deficiencies

According to air carrier inspection data maintained by TSA, between fiscal years 2012 and 2016, air carriers providing last point of departure service to the United States from foreign airports complied with all TSA security requirements in most inspections.[27] For those inspections that identified noncompliance, data from TSA showed that the majority of violations were corrected or addressed immediately through on-the-spot counseling. Inspectors submitted a certain number of violations for investigation because the violations were considered serious enough to potentially warrant an enforcement action. TSA can impose two general types of enforcement actions on air carriers that violate security requirements—an administrative action, such as a warning notice, or a monetary civil penalty.[28] Based on information included in TSA's investigation module within PARIS, TSA took administrative action in the majority of cases and levied 44 fines during fiscal years 2012 through 2016, which totaled about $575,000 and ranged from $1,000 to $40,500. According to TSA officials, they rely on a system of progressive enforcement and carefully consider whether a civil penalty is warranted based on the compliance history of an air carrier, among other factors.

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[27]Specifically, between fiscal years 2012 and 2016, TSA conducted 9,620 inspections of air carriers providing last point of departure service to the United States.

[28]See 49 C.F.R. pt. 1503, subpt. D (authorizing the use of warning notices and letters of correction as administrative actions available if TSA determines a violation or alleged violation of a TSA requirement does not require the assessment of a civil penalty) and subpt. E (authorizing the assessment of civil penalties).

TSA Addresses Security Deficiencies through Various Capacity Development Efforts, but Enhanced Data Management Could Strengthen Analysis and Decision Making

TSA Assists Foreign Airports and Air Carriers in Addressing Identified Security Deficiencies in Various Ways

Foreign Airports

As part of assisting foreign airports, inspectors work to transfer knowledge on how to mitigate identified airport security deficiencies to foreign airport officials and provide TSA program officials with suggestions for capacity development that could be effective in addressing these deficiencies. Specifically, TSA capacity development assistance to foreign airports includes on-the-spot counseling, training, technical assistance and consultation, and provision of security equipment.

Inspectors counsel foreign airport staff on-the-spot. According to TSA officials, inspectors typically offer counseling during airport assessments when they discover deficiencies, usually of an infrequent, less serious, or technical nature, that can be addressed immediately. For example, during a 2013 assessment of an airport in the Europe region, inspectors observed a total of 53 employees within the restricted area, of which one was not displaying his badge. Airport officials immediately requested that the individual display his badge and informed the TSA inspection team that they will remind all staff to properly display their

airport media while in the restricted area. For the remainder of the airport visit, no badge display issues were noted. In another example, during an assessment in the Western Hemisphere region, inspectors observed persons entering a restricted area without undergoing screening. The inspectors counseled the airport's security officials on the importance of adhering to the airport's security program, and observed the airport officials take immediate action by implementing escort and screening procedures.

TSA provides security training. TSA may provide training to foreign airport staff to address deeper problems with staff security knowledge or to strengthen staff knowledge in an evolving threat environment. Training may take several forms, including traditional classroom courses or interactive workshops, and can range in length from one or two days to more than one week. Course topics include risk management, screening operations, and airport security, with a broad variety of sub-topics, such as insider risk, cargo security, and inspection techniques. According to TSA, new courses are in development to meet the changing security landscape. New course topics include landside security, behavioral awareness, and the effective use of canines.

TSA arranges for technical assistance and consultation. TSA assists foreign governments in securing technical assistance and consultation provided by TSA and other U.S. and foreign government agencies to help improve security at foreign airports, particularly after security incidents or at airports in developing countries. For example, after the 2016 terrorist attack on Brussels Airport, TSA was invited by airport officials to provide on-site consultation during the reconstitution of the airport facilities. In another example, TSA provided a country in the Africa-Middle East region with on-site technical assistance for configuring and testing explosives detection equipment at baggage screening checkpoints. In addition, State's Anti-Terrorism Assistance Program augments TSA's resources in building the aviation security capacity of foreign governments. For instance, State provides recipient nations with courses focused on airport security management, quality control, and fraudulent document recognition as well as multi-day passenger and cargo security consultations. In addition, with regard to capacity development TSA collaborates with other countries. Partners may promote common aviation security goals to other countries when political considerations preclude TSA from doing so, or combine resources with TSA for joint efforts. For example, in one collaboration, a country in the Asia-Pacific region provided resources and facilities, while TSA provided staff so that neighboring countries could attend aviation security training.

TSA loans and donates security equipment. TSA may loan or donate security equipment such as explosives detection devices and metal detection hand wands to lower-income countries. Since fiscal year 2012, TSA has loaned X-ray screening equipment and explosives detection devices to five countries. Enacted in July 2016, the Aviation Security Act expressly authorizes TSA to donate security screening equipment to a foreign last point of departure airport if such equipment can be reasonably expected to mitigate a specific vulnerability to the security of the United States or U.S. citizens.[29] TSA may also provide staff at foreign airports with demonstrations for using equipment that has been loaned or donated by TSA, as well as equipment otherwise acquired by host governments. For instance, in 2016 TSA provided operator training and maintenance assistance to a country in the Africa-Middle East region that had procured passenger body scanners.

Air Carriers

TSA also takes steps to help air carriers address security deficiencies identified during air carrier inspections. TSA primarily offers capacity development support to air carriers through on-the-spot counseling and consultation with IIRs.

Inspectors counsel air carrier representatives on-the-spot. TSA assists air carrier representatives in addressing security deficiencies identified during air carrier inspections. According to TSA, since carriers have TSA-approved security programs, additional training may not be necessary to correct small issues. Rather, officials said that counseling air carrier staff on the proper procedures and follow up observations of them practicing the procedures may suffice. TSA data show that of the

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[29]See Pub. L. No. 114-190, tit. III, § 3204, 130 Stat. at 652-53 (providing further that TSA must provide the Committee on Homeland Security of the House of Representatives and the Committee on Homeland Security and Governmental Affairs and the Committee on Commerce, Science, and Transportation of the Senate a detailed written explanation of the donation not later than 30 days before the donation of secure screening equipment). According to TSA documentation, since this authority to donate security screening equipment is a new capability without program funding to support execution, the agency will implement this authority in phases that expand scope and work volume over time as funding becomes available. TSA expects its activities to include the donation of excess screening equipment, new screening equipment procured for the purpose of donation, and replacement parts and maintenance services to support the donated screening equipment during its lifecycle. The Aviation Security Act also authorizes TSA to evaluate foreign countries' air cargo security programs to determine whether such programs provide a level of security commensurate with the level of security required by U.S. air cargo security programs and requires TSA to establish an international training and capacity development program to train the appropriate authorities of foreign governments in air transportation security. See Pub. L. No. 114-190, tit. III, § 3205-06, 130 Stat. at 653-54.

instances in which inspectors identified noncompliance with TSA security requirements during fiscal years 2012 through 2016, the majority of instances were resolved through counseling—that is, the security deficiencies were resolved with on-site assistance or consultation provided by TSA. For example, during an air carrier inspection in the Europe region, inspectors observed that a passenger wearing sandals was not screened properly. TSA counseled the screening staff that footwear screening requirements apply to all shoes, including sandals. The inspectors then observed proper rescreening of the passenger. TSA also discussed the matter with airline security representatives, who concurred with TSA.

IIRs assist air carriers with compliance. In addition to counseling provided by inspectors when deficiencies are identified, TSA assigns each air carrier to a representative who assists the carriers in complying with TSA security requirements.[30] Although these representatives, called IIRs, do not participate in air carrier inspections, they do receive inspection results for the carriers with whom they work. IIRs counsel the air carriers and provide clarification regarding TSA security requirements when necessary. For example, they provide air carriers with clarification on the requirements contained in security directives and emergency amendments issued by TSA. In other instances, when an air carrier cannot comply with a TSA security requirement—such as when complying with a TSA security requirement would cause the air carrier to violate a host government security requirement—the air carrier works with its IIR to develop alternative security procedures in a manner consistent with TSA regulations. With alternative procedures, air carriers can deviate from their TSA-approved security program while still meeting the intent of TSA requirements. According to some IIRs with whom we spoke, these alternative procedures are intended to provide a level of security that is equivalent to the level of security provided by TSA's standard requirements while also affording air carriers with some flexibility in how they achieve the intended security benefit of the TSA requirement. Alternative security procedures are reviewed by the IIR, who submits them to TSA headquarters and field officials for final review and approval.

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[30]According to TSA, air carriers are assigned to IIRs according to factors such as geographic location of the carrier, duty station of the IIR, size of the carrier, and IIRs' current portfolios. IIR portfolios range in size and may have 30 or more carriers.

TSA Has Taken Steps to Leverage Information for Capacity Development, but Could Enhance Data Management

Leveraging Information for Capacity Development

TSA has taken a number of steps to strengthen its analytical processes and better understand the impact of the foreign airport assessment and air carrier inspection programs. According to OGS officials, the establishment and evolution of the ARM Directorate has facilitated better data analysis and enhanced decision making pertaining to capacity development. Specifically, TSA now conducts regional strategy meetings, produces regional risk reports, and approves requests for assistance based on risk.

OGS conducts regional strategy meetings. Since fiscal year 2012, OGS has held strategy meetings to address aviation security threats and vulnerabilities within each region. During these meetings, OGS officials examine trend data for both airport assessments and air carrier inspections, including vulnerability ratings over a multi-year period, identify common areas of non-compliance, and develop capacity building approaches customized to each region. According to agency documentation, these meetings led OGS to recognize that each geographic region faces its own particular challenges and risks and requires unique mitigation approaches, such as at the country or airport level.

ARM develops regional risk reports. In 2016, the ARM Directorate began producing regional risk reports for use by other teams within OGS. The purpose of these reports is to provide OGS personnel operating within each of the four regions with an understanding of known vulnerabilities in the region and their associated risk in order to inform mitigation planning efforts. These reports include such information as key risks at each location and region-wide trends on vulnerabilities. For example, the reports show patterns in noncompliance related to critical ICAO standards. In addition, the reports compare airports by risk level and examine how individual airports compare to a regional average. According to ARM staff, one of the top priorities this year is to centralize analysis results within a web portal that allows users across OGS to sort and filter data. ARM expects the portal to include comprehensive airport

profiles that capture the primary details for each location, such as the largest carriers and main risks.

OGS approves requests for assistance based on risk. Requests for capacity development assistance are submitted by OGS personnel, including TSARs and inspectors. TSA's Capacity Development Branch (CDB) in ARM assesses these requests according to a standardized criterion that includes an airport's past and present vulnerabilities, the root causes of these vulnerabilities, the timing of the assistance delivery, and the suitability of the intended recipient. For instance, TSA assesses the capabilities of the government or airport that would receive the assistance, and considers such factors as whether the intended recipient has the commitment necessary to institutionalize TSA-sponsored training and the technical expertise to use any equipment that may be loaned or donated by TSA. In addition, according to TSA officials, TSA considers the extent to which the intended recipient has been a cooperative partner in the past and implemented TSA's previous security recommendations. After CDB's risk-based assessment of assistance requests, OGS management makes a final determination regarding the provision of assistance.

TSA Could Enhance Data Management

While TSA has taken steps to leverage the results of foreign airport assessments and air carrier inspections to monitor system-wide vulnerabilities and inform capacity development, TSA lacks key information for decision making. For instance, we found that the Open Standards and Recommended Practices Findings Tool (OSFT) — a database for tracking the resolution status of identified foreign airport deficiencies — has gaps and its system for categorization does not result in sufficient specificity of information related to security deficiencies' root causes and corrective actions.

Root causes represent the underlying reason why an airport is not meeting an ICAO standard and, according to TSA documentation, fall into three general categories: lack of knowledge, lack of infrastructure, and lack of will. For example, a foreign airport might fail to meet an ICAO standard because of lack of knowledge stemming from insufficient training programs or a high rate of staff turnover. According to OGS officials, an understanding of root causes is important because the challenges to addressing security deficiencies at foreign airports vary extensively from country to country and corrective actions need to be tailored to addressing the unique root causes of deficiencies that TSA identifies. Corrective actions are efforts to mitigate security deficiencies and might include training and other capacity building efforts. Corrective

actions can be designed to help a foreign airport add a new security capability, enhance an existing capability, or increase the deployment of security measures.

Although root causes and corrective actions are important variables for decision making, we found that the OSFT has gaps in this information. TSARs—the primary liaisons between the U.S. government and foreign governments on transportation security issues—are responsible for following up on progress made by foreign officials in addressing security deficiencies identified during TSA assessments. Specifically, the Foreign Airport Assessment Program SOP states that, for each foreign airport assessed, the assigned TSAR is responsible for entering and updating key information in the OSFT, including root cause and corrective action information. According to the SOP, a thorough understanding of the underlying reasons for each deficiency is critical to selecting the appropriate mitigation activities. However, we found that around two thirds of fiscal year 2016 records in the OSFT exhibited empty fields pertaining to root cause or recommended corrective action. More specifically, root cause data and recommended corrective action data were each not recorded for 70 percent of findings.[31]

During our interviews with TSARs, half (4 out of 8) indicated that they believed the OSFT to be a cumbersome tool that has limitations for recording status updates, among other issues, or that they preferred to use other mechanisms, such as spreadsheets stored locally, in order to avoid using the OSFT for certain functions. TSA headquarters officials indicated that OGS began requiring staff to record root cause and corrective action information in 2015 and that institutionalizing this requirement to facilitate consistent data entry will take time. However, complete data on root causes and corrective actions would help TSA systematically monitor airport performance in addressing deficiencies and leverage information for decision making regarding capacity development. For example, with complete information TSA would be in a better position to determine the extent to which airports were able to effectively close security vulnerabilities based on TSA's capacity building efforts, as well

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[31]TSA guidance provides OGS's GC Directorate with up to 45 days to complete the final airport assessment package. This guidance also requires TSARs to identify the root cause of each finding in the OSFT within 30 days of receiving the final assessment package from the GC Directorate after the assessment results have been finalized. Because TSA sent us the OSFT data less than 30 days after the end of fiscal year 2016, some recently entered findings may have been within TSA's prescribed timeframe for inputting root cause and recommended corrective action data.

as conduct trend analysis within and across its four regions, including identifying potential linkages between root causes and corrective actions. Specifically, TSA could determine the extent to which corrective actions seem to align best with certain root causes. For example, while training might be an appropriate remedy if foreign airport personnel lack knowledge, it might not be an appropriate solution for lack of will.

We also found that the OSFT has limitations related to the categorization of root causes and corrective actions. The Foreign Airport Assessment Program SOP indicates that root causes may relate to three broad categories, as explained earlier, and twelve subcategories: aviation security infrastructure, communication, cultural factors, human factors, management systems, physical infrastructure, procedures, quality control, resources, supervision, technology, and training. However, the OSFT does not include a field to categorize root causes according to these subcategories or other more specific areas. As a result, it does not capture more granular information that would better explain the specific root cause of an identified security issue.

Moreover, information on recommended corrective actions is stored entirely in OSFT narrative fields without a drop-down list or other type of categorization mechanism. For example, according to OSFT data, in one Western Hemisphere region country, inspectors observed insufficient employee screening and access control. The recommended corrective action—"Fencing around the terminal area will be enhanced and airport personnel counseled about employee screening"—would be difficult to include in quantitative analysis without manual intervention. The OSFT also includes a field for the final corrective action—how an airport ultimately resolved a security issue. However, the categories in the OSFT for final corrective action do not account for many key types of TSA's mitigation efforts (e.g., training, loaning or donating equipment, and directing an air carrier to mitigate an airport vulnerability). Specifically, for fiscal year 2016, we found that the OSFT only included data for three high-level categories of final corrective actions: "airport authorities resolved," "national authorities resolved," and "other."

ARM staff stated that they recognize that the classification of data currently contained in the OSFT could be improved, but that they have not had an opportunity to address the issues because they have been focused on developing the newest release of GRADS. TSA staff also indicated that they are exploring opportunities to better classify data in future releases of GRADS. However, according to the Foreign Airport Assessment Program SOP, a thorough understanding of the underlying

reasons for each deficiency is critical to properly selecting the appropriate mitigation activities. Moreover, federal internal control standards suggest that agencies should design information systems to obtain and process information to meet each operational process's data requirements and to respond to the entity's objectives and risks.[32] By classifying information on root causes and corrective actions with additional specificity, and through a standard system of categorization that would allow for system-wide analysis, TSA would be better positioned to assure that corrective actions accurately address the specific, underlying reasons for security vulnerabilities.

Conclusions

TSA's foreign airport assessment and air carrier inspection programs play a vital role in ensuring the security of the aviation system. TSA has taken a number of steps to enhance foreign airport assessments and air carrier inspections since 2011, including targeting resources based on risk, strengthening access to foreign airports and the comprehensiveness of its assessments and inspections, and creating operational efficiencies. While TSA does not have authority to impose or otherwise enforce security requirements at foreign airports, the agency makes a concerted effort to help foreign airports improve their security posture and address security deficiencies identified during assessments. Moreover, TSA is commonly able to resolve air carrier security deficiencies with on-the-spot counseling.

While TSA uses various mechanisms for capacity building, better data management would help strengthen analysis and decision making. Specifically, fully capturing and more specifically categorizing data on the root causes of security deficiencies that TSA identifies and the associated corrective actions would provide the agency with a more comprehensive understanding of the security environment at foreign airports. For example, TSA could leverage this information for trend analysis, including evaluating potential linkages between root causes and corrective actions, and determining the extent to which airports that received specific types of capacity development services were able to close security vulnerabilities. Accordingly, TSA would have better visibility over the different types of capacity development that the agency offers and the overall return on investment for these efforts.

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[32]GAO-14-704G.

Recommendations for Executive Action

We are making the following two recommendations to TSA:

- The Assistant Administrator for the Office of Global Strategies should ensure that data regarding the root causes of security deficiencies and corrective actions are consistently captured in accordance with TSA guidance. (Recommendation 1)

- The Assistant Administrator for the Office of Global Strategies should update TSA's data systems to include more specific categories for TSA's data on the root causes and corrective actions related to security deficiencies. (Recommendation 2)

Agency Comments and Our Evaluation

We provided a draft of our report to DHS for its review and comment. DHS provided written comments, which are noted below and reproduced in full in appendix II. DHS concurred with both recommendations in the report and described actions underway or planned to address them. With regard to the first recommendation that TSA ensure that data regarding the root causes of security deficiencies and corrective actions are consistently captured in accordance with TSA guidance, DHS concurred and stated that TSA will use a new tool, the Vulnerability Resolution Tool (VRT), to capture and categorize root causes and corrective actions. During the next fiscal year, TSA plans to train its staff in the use and importance of the VRT, and estimates that it will complete this process by October 31, 2018. If TSA consistently captures root causes and corrective actions in the new tool, TSA's planned actions would address the intent of the recommendation. With regard to the second recommendation that TSA update TSA's data systems to include more specific categories for TSA's data on the root causes and corrective actions related to security deficiencies, DHS concurred and stated that TSA plans to include more specific categories for root causes and corrective actions in a future iteration of GRADS, and expects to complete the updates by October 31, 2018. If fully implemented, these actions should address the intent of the recommendation.
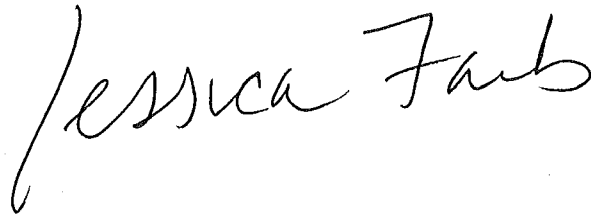
We are sending copies of this report to interested congressional committees and the Secretary of Homeland Security, the Secretary of State, the Administrator of the Transportation Security Administration, and the TSA Assistant Administrator for the Office of Global Strategies. In addition, the report is available at no charge on the GAO website at http://gao.gov.

If you or your staff members have any questions about this report, please contact Jennifer Grover at (202) 512-7141 or groverj@gao.gov, or Jessica Farb at (202) 512-6991 or farbj@gao.gov. Key contributors to this report are listed in appendix III.

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The Honorable Peter DeFazio
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The Honorable John Katko
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Appendix I: Objectives, Scope, and Methodology

The Aviation Security Act of 2016 includes a provision for GAO to review the efforts, capabilities, and effectiveness of TSA to enhance security capabilities at foreign airports and determine if the implementation of such efforts and capabilities effectively secures international-inbound aviation.[1] This report (1) describes steps TSA has taken to enhance foreign airport assessments and air carrier inspections since 2011, (2) describes the results of TSA's foreign airport assessments and air carrier inspections, and (3) examines steps TSA takes to address any deficiencies identified during foreign airport assessments and air carrier inspections.

To collectively address all three objectives, we reviewed the relevant laws and regulations pursuant to which TSA conducts foreign airport assessments and air carrier inspections. We reviewed various TSA documents on program management and strategic planning and interviewed TSA officials located at TSA headquarters and in the field. We interviewed other federal and nonfederal stakeholders, such as the Department of State (State), the European Commission (EC), and airport and air carrier representatives. We outline the specific steps taken to answer each objective below.

To obtain a greater understanding of the foreign airport assessment and air carrier inspection processes, including how TSA works with host nation officials and air carrier representatives, we accompanied a team of TSA inspectors during an air carrier inspection at an airport in Europe. We based our site selection on several factors, including the air carrier locations TSA had plans to inspect during the course of our audit work and host government willingness to allow us to accompany TSA. In addition, we spoke with officials at a separate European airport, including the airport operator and representatives from two air carriers.

To understand how TSA assesses and manages its foreign airport and air carrier risk information, we obtained and reviewed documents on TSA's methodology for assigning individual risk rankings (called tier rankings) to each foreign airport it assesses. TSA's rankings are based on the likelihood of a location being targeted, the protective measures in place at that location, and the potential impact of an attack on the international transportation system. Airports are then categorized as high, medium, or

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[1]See Pub. L. No. 114-190, tit. III, § 3202(b), 130 Stat. 615, 652 (2016). The Aviation Security Act was enacted as title III of the FAA Extension, Safety, and Security Act of 2016, on July 15, 2016.

low risk. We also reviewed TSA's methodology for grouping air carriers
based on risk, which is influenced by the foreign airport risk tiers.

To describe the steps that TSA has taken to enhance foreign airport
assessments and air carrier inspections since 2011, we reviewed various
TSA documents on program management and strategic planning.
Specifically, we reviewed TSA's 2016 Foreign Airport Assessment
Program Standard Operating Procedures (SOP), which prescribes
program and operational guidance for assessing security measures at
foreign airports, and informs TSA personnel at all levels of what is
expected of them in the implementation of the program. We also reviewed
the job aids that TSA inspectors use during each assessment and
inspection, which ensure that the TSA-specified International Civil
Aviation Organization (ICAO) aviation security standards and
recommended practices (referred to collectively in this report as ICAO
standards unless otherwise noted) and air carrier security program
requirements are fully evaluated during each assessment. In addition, we
reviewed TSA's Office of Global Strategies (OGS) Strategic Plan for fiscal
years 2014 through 2018, and documents describing changes to the OGS
organizational structure since 2011.

To obtain stakeholder views and perspectives on steps TSA has taken to
enhance its foreign airport assessment program since 2011, we
interviewed and obtained information from various federal stakeholders.
Specifically, we interviewed OGS officials located in the Global
Compliance (GC), Global Affairs, and Analysis and Risk Mitigation (ARM)
directorates. In addition, we also conducted site visits to three of the six
TSA regional operations centers (ROC), located in Reston, Miami, and
Frankfurt, where we met with ROC managers, transportation security
specialists (henceforth referred to as inspectors) who conduct TSA's
foreign airport assessments and air carrier inspections, TSARs who follow
up on host governments' progress in addressing identified security
deficiencies, international industry representatives (IIR) who liaise with air
carriers, and regional directors (RD). We based our site visit selections on
the number and type of staff available at each location and geographic
dispersion. We also conducted telephone interviews with personnel from
the Honolulu ROC and other OGS staff stationed worldwide. In total, we
interviewed 4 of the 6 ROC managers, 19 of the 94 inspectors, 8 of the 29
TSARs, 8 of the 16 IIRs, and all 4 RDs. During these interviews, we
discussed these officials' responsibilities related to the assessment and
inspection programs.

To describe the results of TSA's foreign airport assessments and air
carrier inspections, we interviewed TSA officials on the results of its
evaluations, obtained and reviewed relevant program documents, and
conducted our own independent analysis of TSA's assessment and
inspection results. Specifically, we obtained and reviewed TSA's foreign
airport assessment program vulnerability results tracking sheet used by
GC to compile and track current and prior-year assessment results. This
tracking sheet included records of TSA's compliance assessments for
each airport that TSA assessed from fiscal years 2012 through 2016.
Specifically, the tracking sheet recorded assessment results for each of
the ICAO standards used in the airport assessments, as well as an
overall vulnerability score of 1 through 5 assigned after each assessment.
This overall vulnerability score is a representation of compliance or
noncompliance with all the ICAO standards against which TSA assesses
foreign airports. We interviewed OGS officials on the steps taken to
develop the tracking sheet, including how TSA manages and updates
data. In addition, we conducted our own independent analysis of TSA's
assessment results from fiscal years 2012 through 2016, the five-year
period since our previous review. Specifically, we analyzed data from
TSA's foreign airport assessment program vulnerability results tracking
sheet to identify the number of airports in each vulnerability category by
region. We also analyzed TSA assessment results data to determine the
frequency with which foreign airports complied with particular ICAO
standards, such as access control, quality control, passenger screening,
and baggage screening, among others.

For air carrier inspection results, we analyzed data from PARIS on each
air carrier that TSA inspected from fiscal years 2012 through 2016. Our
analysis included the overall level of compliance, as well as the frequency
with which each air carrier complied with particular security program
requirements, such as aircraft search and passenger screening. We also
interviewed TSA managers, inspectors, and TSARs about their roles and
responsibilities in determining and documenting assessment and
inspection results. To assess the reliability of TSA's assessment and
inspection data, we reviewed program documentation on system controls,
interviewed knowledgeable officials from OGS and checked TSA's data
for any potential gaps and errors. Based on our overall analysis of the
data, we determined that the data were sufficiently reliable to provide a
general indication, by type or category, of the standards TSA assesses
against and the level of compliance, and frequency of compliance, for
TSA's foreign airport assessments and air carrier inspections over the
period of our analysis.

To examine the steps TSA takes to address deficiencies identified during
foreign airport assessments and air carrier inspections, we interviewed
ARM and other TSA staff. Specifically, we discussed the full range of
options that are available to TSA for addressing airport and air carrier
security deficiencies, including a variety of capacity development tools
and collaboration with domestic agencies, such as State, and foreign
partners, such as Australia, Canada, Chile, New Zealand, Singapore,
South Africa, and the United Kingdom. During these interviews, we
discussed the circumstances in which each option is typically used and
the factors determining when an option is used. We also reviewed
program management tools TSA uses to track and manage the status of
foreign airport security deficiencies and records pertaining to capacity
development assistance deliveries from fiscal years 2012 through 2016,
including equipment loaned or donated, training courses provided, and
technical assistance delivered.

To obtain information on the extent to which TSA provided oversight of its
assessment and inspection efforts, we obtained and reviewed various
TSA program management documents and tools that TSA uses to track
and manage information for the programs. Specifically, we reviewed the
fiscal year 2017 Global Compliance Master Work Plan, which TSA uses
to track its foreign airport assessment schedule, including when various
airports are due to be assessed. We also reviewed the Open Standards
and Recommended Practices Findings Tool, which the TSA
Representatives (TSAR) use to monitor and track a foreign airport's
progress in resolving security deficiencies identified by TSA inspectors
during previous assessments. In addition, we reviewed the tracking sheet
TSA uses to compile and track airport assessment results, including
individual airport vulnerability scores and information on which specific
ICAO standards were in noncompliance. Finally, we reviewed the results
of air carrier inspections that are contained in the inspections and
investigations modules of TSA's Performance and Results Information
System (PARIS).

To identify challenges affecting TSA's foreign airport assessment
program, we interviewed TSA officials, such as TSA's Director of Global
Compliance, and field officials located at the TSA ROCs about the
challenges they experience obtaining access to foreign airports to
conduct assessments, the performance of data management systems,
and the provision of aviation security capacity development assistance to
foreign governments. We also obtained their perspectives on foreign
governments that have been reluctant to allow TSA inspectors to visit
their airports. We also interviewed TSA's Director of Global Compliance

and headquarters and field staff on the agency's use of databases and
other tracking mechanisms to manage assessment and inspection
results. In addition, we obtained the perspective of TSARs on challenges
to ensuring that foreign airports address security deficiencies. We also
interviewed officials within TSA's Capacity Development Branch to better
understand the scope and types of requests for assistance that they
receive from foreign countries, the challenges that they experience in
attempting to provide assistance, and their experience collaborating with
State.

We met with State officials to better understand how they coordinate with
TSA through their Office of Anti-Terrorism Assistance and other related
efforts aimed at assisting foreign partners' capacity to secure their
airports. In addition, we met with officials from the EC and the
International Air Transport Association to discuss efforts and programs
these organizations have in place to enhance international aviation
security.

In addition, during our interviews with ARM staff, we discussed the extent
to which TSA uses information at its disposal to inform capacity
development efforts. We also compared these efforts to criteria for
obtaining and processing information in federal internal control
standards.[2] To identify opportunities for TSA to better leverage
information to inform capacity development, we reviewed relevant
program management documentation and tools that TSA uses to track
and analyze assessment results. Specifically, we reviewed the 2016
Foreign Airport Assessment Program SOP and program management
tools TSA uses to track and manage the status of foreign airport security
deficiencies. We also reviewed our prior work concerning how risk-
informed and priority driven decisions can help inform agency decision
makers in allocating finite resources to the areas of greatest need.

Information from our interviews with government officials and members of
the aviation industry provide insight into their perspectives on TSA's
foreign airport assessment and air carrier inspection programs. However,
this information cannot be generalized beyond those with whom we spoke
because we did not use statistical sampling techniques in selecting
individuals to interview.

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[2]GAO, *Standards for Internal Control in the Federal Government*, GAO-14-704G
(Washington, D.C.: September 2014).

The performance audit upon which this report is based was conducted
from August 2016 to October 2017 in accordance with generally accepted
government auditing standards. Those standards require that we plan
and perform the audit to obtain sufficient, appropriate, evidence to provide
a reasonable basis for our findings and conclusions based on our audit
objectives. We believe that the evidence obtained provides a reasonable
basis for our findings and conclusions based on our audit objectives. We
subsequently worked with TSA from September 2017 to December 2017
to prepare this nonsensitive version of the original sensitive report for
public release. This public version was also prepared in accordance with
these standards.

Appendix II: Comments from the Department of Homeland Security

Homeland
Security

November 13, 2017

Ms. Jennifer Grover
Director, Homeland Security and Justice
U.S. Government Accountability Office
441 G Street, NW
Washington, DC 20548

Ms. Jessica Farb
Director, International Affairs and Trade
U.S. Government Accountability Office
441 G Street, NW
Washington, DC 20548

Re: Management's Response to Draft Report GAO-18-178, "AVIATION SECURITY: TSA
     Strengthened Foreign Airport Assessments and Air Carrier Inspections, but Could
     Improve Analysis to Better Address Deficiencies"

Dear Ms. Grover and Ms. Farb:

Thank you for the opportunity to review and comment on this draft report. The U.S. Department
of Homeland Security (DHS) appreciates the U.S. Government Accountability Office's (GAO)
work in planning and conducting its review and issuing this report.

The Department is pleased to note GAO's positive recognition of the Transportation Security
Administration's (TSA) efforts to enhance foreign airport assessments and air carrier inspections.
Since the GAO audit in 2011,[1] TSA's Office of Global Strategies (OGS) has improved its
processes to better align resources based on risk. Specifically, OGS has conducted more targeted
foreign airport assessments that concentrate on locations requiring a more focused evaluation;
created the Analysis and Risk Mitigation Branch which analyzes data and helps to focus
resources, based on risk, to better mitigate vulnerabilities; and established an additional Regional
Operation Center that is solely dedicated to an identified high-risk region.

The draft report also highlights TSA's efforts in resolving airport access issues, making
evaluations more comprehensive, and creating operational efficiencies. TSA's successes in
improving the foreign airport assessment program stems from OGS' ability to leverage
partnerships and resources, and secure access to last point of departure locations to conduct

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[1] GAO, "AVIATION SECURITY: TSA Has Taken Steps to Ensure Its Foreign Airport Assessments, but
Opportunities Exist to Strengthen the Program," GAO-12-163 (Washington, DC: Published: October 21, 2011:
Publicly Released: October 31, 2011)
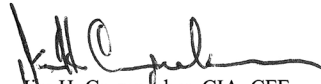
evaluations of the implementation of measures intended to mitigate risk. OGS has worked diligently to equip its inspector cadre with the most up to date, and detailed job aids, which provide for a more complete evaluation, and has standardized processes and systems to capture and analyze uniformly.

The draft report contained two recommendations with which the Department concurs. Attached find our detailed response to each recommendation.

Again, thank you for the opportunity to review and comment on this draft report. Technical comments were previously provided under separate cover. Please feel free to contact me if you have any questions. We look forward to working with you in the future.

Sincerely,

Jim H. Crumpacker, CIA, CFE
Director
Departmental GAO-OIG Liaison Office

Attachment

2

**Attachment: DHS Management Response to Recommendations
Contained in GAO-18-178**

GAO recommended that TSA's Assistant Administrator for the Office of Global Strategies:

Recommendation 1: Ensure that data regarding the root causes of security deficiencies and corrective actions are consistently captured in accordance with TSA guidance.

Response: Concur. On May 2, 2013, OGS officially launched the Global Risk Analysis and Decision Support (GRADS) system. The GRADS system automated tracking and documenting of information and established outcome-based performance measures to strengthen the oversight of the Foreign Airport Assessment Program. This was a significant development effort for OGS as the GRADS system increased operational efficiency by providing remote data collection and input capabilities, reduced the time to process foreign airport assessment reports, and improved the allocation of human resources. In addition to foreign airport assessment data, GRADS provides a method to collect Airport, Country, and Air Carrier Airport profile information. Pulling information from current TSA production applications, internal document repositories, and external data feeds, GRADS serves as a centralized repository which OGS can leverage for reporting needs. The GRADS system provides custom and consistent reporting for all OGS users with timely, accurate results. OGS has leveraged the collected data, along with other relevant data sources as inputs, to develop a comprehensive formula for determining risk at last point of departure airports.

As part of the OGS's foreign airport assessment program, OGS assesses foreign airports for vulnerabilities. Vulnerabilities are security deficiencies that can be natural or manmade and include physical features, or operational attributes, that render aviation security systems and/or infrastructure susceptible to disruption, destruction, or exploitation.

In an effort to improve the tracking of vulnerabilities, on September 5, 2017, OGS released version 3.1 of the GRADS system. The purpose of this release was to enable users to extend the lifecycle of identified vulnerabilities beyond that of an airport assessment and to expand TSA's capability to capture, document, and track those identified vulnerabilities until resolved. The GRADS 3.1 release created a new tool, the Vulnerability Resolution Tool (VRT), which helps capture vulnerability data, such as a description of the finding and associated vulnerability score. The VRT not only captures the vulnerabilities associated with a specific location, but it also allows for analysis of the vulnerability. The VRT will allow TSA to run specific reports on vulnerabilities, to include, but not limited to: Standard and Recommended Practices (SARP) number, SARP type, specific keywords, location (site specific, state, regional), etc. In addition, the VRT has the capability to capture root cause data for the development of mitigation planning, as well as corrective actions taken, in accordance with TSA guidance.

During the next fiscal year, OGS has plans to train its staff in the use and importance of the VRT, to include how to correctly capture and categorize root causes and corrective actions. Estimated Completion Date (ECD): October 31, 2018.

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Recommendation 2: Update TSA's data systems to include more specific categories for TSA's data on the root causes and corrective actions related to security deficiencies.

Response: Concur. A thorough understanding of the underlying reason(s) is critical to properly select mitigation activities to address a vulnerability. Historically, OGS has leveraged three main categories to describe a vulnerability's root cause: lack of knowledge, lack of infrastructure, and lack of will. OGS has evolved its thinking and recognizes the importance of clearly defining root causes within each of these categories. To do so, the GRADS system data fields capturing root cause information and corrective actions will be expanded in a future release system. This release will include additional categories to help capture the required specificity. Those categories will, among others, include: Aviation Security infrastructure, communication, cultural factors, human factors, management systems, physical infrastructure, procedures, quality control, resources, supervision, technology, and training. The contract for this next iteration of the GRADS system was awarded in late September 2017. TSA will work to include more system specific categories on root causes and corrective actions related to security deficiencies. ECD: October 31, 2018.

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Appendix III: GAO Contacts and Staff Acknowledgments

GAO Contacts	Jennifer Grover, (202) 512-7141 or groverj@gao.gov Jessica Farb, (202) 512-6991 or farbj@gao.gov
Staff Acknowledgments	In addition to the contacts above, Jason Bair and Chris Ferencik (Assistant Directors); Anthony C. Fernandez (Analyst-in-Charge); Bryan Bourgault; Elizabeth Dretsch; Jesse Elrod; Eric Hauswirth; Christopher Lee; Tom Lombardi; Amanda Miller; and Adam Vogt made key contributions to this report.