United States Government Accountability Office

Report to Congressional Requesters

November 2018

AVIATION SECURITY

TSA Uses a Variety of Methods to Secure U.S.-bound Air Cargo, but Could Do More to Assess Their Effectiveness

GAO-19-162

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GAO Highlights

Highlights of GAO-19-162, a report to congressional requesters

Why GAO Did This Study

According to TSA, the federal agency responsible for securing the nation's civil aviation system, the introduction of explosive devices in air cargo shipments is a significant threat. To mitigate this threat, TSA is to review the security procedures carried out by all air carriers with U.S.-bound flights and at foreign airports servicing those air carriers. In addition, TSA assesses the commensurability of foreign countries' air cargo security programs.

GAO was asked to evaluate TSA's progress in assessing and mitigating air cargo security risks. This report addresses (1) steps TSA takes to help ensure that U.S-bound air cargo is secure, (2) the status of TSA's efforts to recognize and monitor foreign governments' air cargo security programs, and (3) the extent to which TSA measures the effectiveness of its efforts to secure U.S.-bound air cargo. GAO reviewed TSA policies and procedures, analyzed TSA program data, observed a nongeneralizable sample of 17 air carrier inspections at two foreign airports (selected based on high air cargo volume and other factors), and interviewed TSA, foreign government, and air carrier representatives.

What GAO Recommends

GAO is recommending that TSA develop and monitor outcome-based performance measures to assess the effectiveness of (1) the cargo portion of foreign airport assessments, (2) air carrier cargo inspections, and (3) the NCSP Recognition Program. TSA concurred with the recommendations.

View GAO-19-162. For more information, contact Nathan Anderson at (202) 512-3841 or andersonn@gao.gov.

What GAO Found

The Transportation Security Administration (TSA) inspects air carriers and assesses foreign airports to help ensure the security of U.S.-bound air cargo.

- **Air carrier inspections**. GAO observed 17 air carrier inspections and found that TSA inspectors consistently followed TSA procedures. Further, GAO's analysis of TSA data found air carriers were in full compliance with cargo security requirements in 84 percent of the nearly 5,000 cargo inspections conducted during fiscal years 2012 through 2017. TSA officials were able to resolve a majority of the violations identified during the inspection process.
- **Foreign airport assessments**. GAO analysis of TSA data found that about 75 percent of the foreign airport assessments that TSA conducted during fiscal years 2012 through 2017 fully complied with international air cargo security standards. As of the end of 2017, foreign officials had addressed about 40 percent of the non-compliance issues. TSA continues to work with foreign officials to address the remaining non-compliance issues.

As of June 2018, TSA had recognized the national cargo security programs (NCSP) of the European Union and 12 other countries as commensurate with TSA's, and TSA uses a variety of mechanisms to monitor NCSP implementation. TSA's process for NCSP recognition, which is voluntary, involves comparing air cargo security requirements to TSA's and conducting visits to the countries to validate their use. Once TSA determines a program is commensurate with TSA's, it monitors NCSP implementation through regular air carrier inspections, foreign airport assessments, and dialog with government officials. TSA may decide not to recognize a country's NCSP but, instead, make recommendations for improving air cargo security. In countries where TSA has not recognized their NCSP, all U.S.-bound cargo is subject to TSA security requirements.

TSA's performance measures do not allow it to specifically determine the effectiveness of its efforts to secure U.S.-bound air cargo. For example, TSA measures whether foreign airports take actions to address all noncompliance issues identified during airport assessments, but such a broad measure could obscure progress made in resolving cargo-specific vulnerabilities. Similarly, TSA officials stated that they are developing a measure to gauge the effectiveness of air carrier inspections, but they do not plan to differentiate efforts to secure air cargo from those for securing passengers. Developing and monitoring outcome-based performance measures that separately account for cargo noncompliance issues and violations could help TSA better determine the extent to which its foreign airport assessments and air carrier inspections improve the security of U.S.-bound air cargo. In addition, TSA measures the number of countries it has recognized in the NCSP Recognition Program, but this metric does not address the effectiveness of the program. Developing and monitoring outcome-based performance measures for the NCSP Recognition Program would help TSA better determine whether the resources invested are yielding the intended results. This is a public version of a sensitive report issued in October 2018. Information that TSA deemed to be sensitive is omitted from this report.

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U.S. GOVERNMENT ACCOUNTABILITY OFFICE
441 G St. N.W.
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November 28, 2018

The Honorable Michael T. McCaul
Chairman
Committee on Homeland Security
House of Representatives

The Honorable John Katko
Chairman
Subcommittee on Transportation and Protective Security
Committee on Homeland Security
House of Representatives

In 2010, al-Qaeda attempted to conceal explosives in printer cartridges on a U.S.-bound flight from Yemen to Chicago. In July 2017, a terrorist group shipped partially-assembled components of a bomb from Turkey to Australia with plans to detonate the assembled device on a passenger flight. According to the Transportation Security Administration (TSA), the security threat posed by terrorists introducing explosive devices in air cargo shipments remains significant.

TSA, a component within the Department of Homeland Security (DHS), is the federal agency responsible for securing the nation's civil aviation system and it has programs in place to help ensure the security of passengers and property, including cargo, transported on U.S.-bound flights.[1] TSA's responsibilities with respect to cargo transported on U.S.-bound flights include establishing security requirements governing U.S. and foreign-flagged air carrier operations and overseeing implementation of such requirements, which it does through conducting air carrier inspections and security assessments of foreign airports, among other things. Foreign governments also establish national cargo security programs (NCSP) and may impose their own security requirements on air cargo operations within their jurisdictions—including screening requirements that may differ from TSA-established requirements—that apply to cargo bound for the United States from their airports. Through its NCSP recognition process, TSA analyzes the air cargo security programs of its foreign counterparts and determines if a country's security program

[1]See generally Pub. L. No. 107-71, 115 Stat. 597 (2001); 49 U.S.C. §§ 114, 44901; 49 C.F.R. ch. XII, subch. C.

is commensurate with the level of security required under U.S. air cargo security programs.

You requested that we evaluate TSA's progress in assessing and mitigating air cargo security risks. This report (1) describes steps TSA takes to help ensure that U.S-bound air cargo is secure, (2) describes the status of TSA's efforts to recognize and monitor foreign governments' air cargo security programs, and (3) analyzes the extent to which TSA measures the effectiveness of its efforts to secure U.S.-bound air cargo.

This report is a public version of a sensitive report that we issued in October 2018.[2] 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, the specific results of TSA's air carrier inspections and foreign airport assessments, and information on the types of NCSP recognition TSA has granted to other countries. 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 describe the steps TSA takes to help ensure that U.S-bound air cargo is secure, we reviewed relevant laws and regulations, TSA security policies and procedures, and screening program requirements.[3] We also reviewed annual air carrier inspection and airport assessment Master Work Plans for fiscal years 2012 through 2018—which TSA uses to track its overseas air carrier inspection and foreign airport assessment schedule—to better understand how TSA schedules inspections and assessments and the types of inspections it conducts.[4] In addition, we

[2]GAO, *Aviation Security: TSA Uses a Variety of Methods to Secure U.S.-bound Air Cargo, but Could Do More to Assess Their Effectiveness*, GAO-19-2SU (Washington, D.C.: October 17, 2018).

[3]For example, we reviewed relevant air carrier security programs and associated job aids that TSA transportation security specialists (inspectors) use during each air carrier inspection to ensure that requirements for air carrier security programs are fully evaluated. In general, air cargo is defined as property weighing 16 ounces or more tendered for air transportation, including unaccompanied baggage, accounted for on an airway bill, all accompanied commercial courier consignments, and non-U.S. mail. See 49 U.S.C. § 40102(12); 49 C.F.R. § 1540.5.

[4]We chose these fiscal years because they cover the time period since our previous air cargo security review.

conducted site visits to two foreign airports—one in South America and one in Asia—to observe TSA inspectors conducting air carrier cargo inspections. At one airport, we also observed the cargo portion of an airport assessment. We selected these locations based on their designation by TSA as airports of relatively high risk level, as well as high volume of U.S.-bound air cargo, TSA's inspection schedule, and geographic dispersion. We also chose airports in these countries because it would allow us to observe an inspection in one country where TSA has recognized the NCSP and one country where TSA has not recognized the NCSP. Further, we obtained data on and analyzed the results of all air carrier cargo inspections (close to 5,000) and assessments at airports that are last points of departure for cargo bound for the United States (about 570) conducted by TSA inspectors and then entered by them into TSA's databases.[5] We analyzed TSA data from fiscal years 2012 through 2017, to cover the period since our previous air cargo security review and to include the 5 most recent years for which data were available at the time of our review.[6] We also analyzed fiscal years 2012 through 2017 TSA data on the status of noncompliance issues TSA inspectors identified during foreign airport assessments.[7] To assess the reliability of TSA's air carrier and airport assessment data, we reviewed program documentation on system controls, interviewed knowledgeable TSA officials, and analyzed TSA's data for any potential gaps and errors. We concluded that TSA's data on air carrier inspections and foreign airport assessments were sufficiently reliable to provide a general indication of the level of compliance for TSA's air carrier inspections and foreign airport assessments over the period of our analysis. In addition, we interviewed TSA headquarters and field officials to discuss TSA's efforts to ensure the security of U.S.-bound air cargo prior to being transported

[5]The Performance and Results Information System (PARIS) database contains security compliance information on TSA-regulated entities, including air carriers, and the Global Risk Analysis and Decision Support (GRADS) system vulnerability tracking sheet contains the results of TSA's foreign airport assessments. TSA also uses GRADS to populate the Open Standards and Recommended Practices Finding Tool (OSFT), which tracks efforts taken by TSA and host governments to address noncompliance issues identified during TSA foreign airport assessments.

[6]See GAO, *Aviation Security: Actions Needed to Address Challenges and Potential Vulnerabilities Related to Securing Inbound Cargo*, GAO-12-632 (Washington, D.C.: May 10, 2012).

[7]Noncompliance issues are vulnerabilities identified during the course of a TSA foreign airport assessment. Vulnerabilities are security deficiencies that include physical features or operational attributes that render aviation security systems or infrastructure susceptible to disruption, destruction, or exploitation.

to the United States. We also interviewed other stakeholders, such as representatives from 11 air carriers—selected based on the relatively high volume of U.S.-bound cargo they transport; their operation of flights at the foreign airports we visited; and to obtain a range of coverage regarding geographical regions of operation, passenger and all-cargo air carriers, and U.S. and foreign-flagged air carriers—and officials at the European Commission (EC) and from the civil aviation authority from the country in Asia that we visited to discuss their experiences in coordinating with TSA on air cargo security issues. Results from these meetings are not generalizable, but provided us with information on stakeholders' experiences and perspectives regarding air cargo security issues.

To describe the status of TSA's efforts to recognize and monitor foreign governments' air cargo security programs, we reviewed TSA's policies and procedures for its NCSP Recognition Program. For example, we reviewed TSA memos from 2012, 2013, and 2016 that documented the recognition standards and any subsequent revisions to the NCSP Recognition Program, as well as TSA's process for monitoring NCSP recognition requirements. Further, we analyzed letters that TSA provided since 2012 to governments it determined had commensurate air cargo security programs and NCSP information TSA officials compiled specifically for our review to better understand TSA's terms of recognition with each government and the timeframes for revalidating NCSP recognition. We also analyzed data from TSA's Security Policy and Industry Engagement Policy Inventory to determine how the level of NCSP participation has changed over time. Specifically, we reviewed the number of air carriers participating in the NCSP Recognition Program from fiscal year 2012—when the NCSP Recognition Program began—through fiscal year 2017, which is the most recent complete fiscal year available at the time of our review. Finally, we conducted interviews with TSA and foreign government officials from two countries, and with representatives of the 11 air carriers described previously to better understand TSA's ongoing efforts to recognize and monitor foreign governments' air cargo security programs. We also confirmed the status of countries' NCSP recognition, as of June 2018, with TSA officials.

To analyze the extent to which TSA measures the effectiveness of its various efforts to secure U.S.-bound air cargo, we reviewed documents that contain information on TSA's air cargo security objectives, goals, and performance measures, including (1) information in annual budget documents from fiscal years 2014 through 2019, and (2) TSA's Global Strategies directorates' Operational Implementation Plans from fiscal years 2014 through 2018—the most recent years available at the time of

our review. These plans include annual objectives and milestones for U.S.-bound air cargo security programs. We also reviewed the measures in the annual budget documents and Operational Implementation Plans and compared them with requirements in TSA's *Global Strategies' Fiscal Year 2016 Strategy and Fiscal Year 2018 Strategy Program* and applicable laws governing performance reporting in the federal government, including the Government Performance and Results Act of 1993 (GPRA), as updated and expanded by the GPRA Modernization Act of 2010 (GPRAMA).[8] For example, we assessed whether the performance measures provide information on the effectiveness of TSA's various air cargo security efforts. Further, we assessed TSA's performance measures against DHS and TSA risk management principles. We obtained additional information on how TSA measures the performance of its air cargo security efforts during our interviews with TSA headquarters officials. See appendix I for more information on our objectives, scope, and methodology.

The performance audit upon which this report is based was conducted from July 2017 to October 2018 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 2018 to November 2018 to prepare this public version of the original sensitive report for public release. This public version was also prepared in accordance with these standards.

Background

U.S.-bound Air Cargo and the Air Cargo Supply Chain

In fiscal year 2017, about 13 billion pounds of cargo was transported on aircraft to the United States—over 5 billion pounds was transported on passenger aircraft (e.g., Delta and United Airlines), and about 8 billion pounds was transported on all-cargo aircraft (e.g., FedEx and United Parcel Service)—from over 300 foreign airports, according to our analysis

[8]Pub. L. No. 111-352, 124 Stat. 3866 (2011) (GPRAMA); Pub. L. No. 103-62, 107 Stat. 285 (1993) (GPRA).

of Bureau of Transportation Statistics data.[9] U.S.-bound air cargo can vary widely in size and include such disparate items as electronic equipment, automobile parts, clothing, medical supplies, fresh produce, and cut flowers.

The international air cargo shipping process involves a complex network of business entities that include individual shippers, manufacturers, transportation companies, freight forwarders, warehouses and air carriers. Entities within the supply chain may provide all services (warehousing, consolidation, and loading of air cargo, for example) or only certain services. The standards set by the International Civil Aviation Organization (ICAO) focus on four primary types of entities: known and unknown consignors (i.e., individual shippers, manufacturers, other shipping entities),[10] regulated agents (i.e., freight forwarders, handling agents),[11] and commercial air carriers.[12] Various other air cargo supply chain entities also have responsibilities for applying specific types of security controls in accordance with the international standards. Figure 1 shows an illustrative example of the flow of U.S.-bound air cargo and where in the supply chain the cargo can be secured.

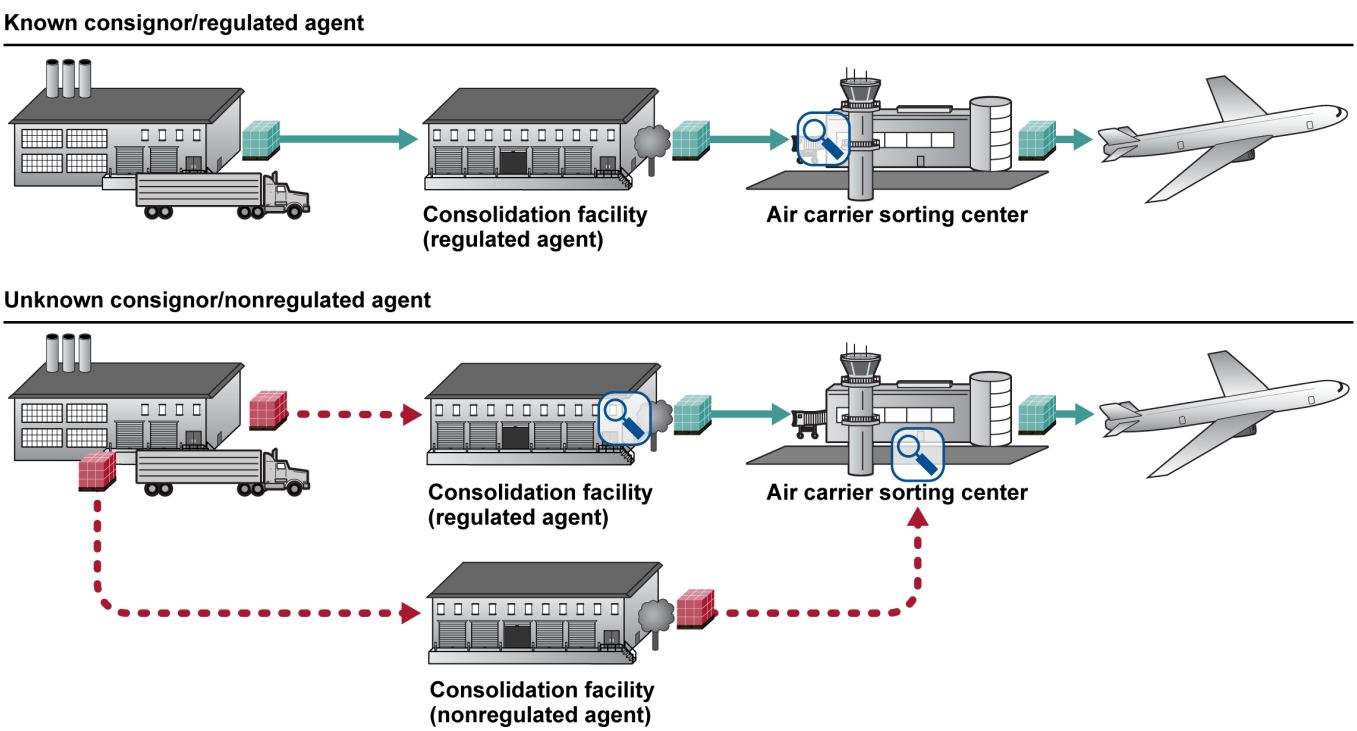
[9]In general, all-cargo aircraft are configured solely for the transport of cargo and authorized persons, not passengers.

[10]A known consignor is a consignor who originates cargo or mail for its own account and whose procedures meet common security rules and standards sufficient to allow the carriage of cargo or mail on any aircraft. According to ICAO, the purpose of the known consignor concept is to place the emphasis for the practical implementation of security controls on the actual shipper or originator of the goods and to ensure the security of air cargo and mail as it moves throughout the supply chain. This requires goods to be produced, packaged, stored, transported, and handled in a manner that ensures their integrity and protects them from unauthorized interference from the point of origin and throughout the secure supply chain.

[11]A regulated agent is a freight forwarder or any other entity that conducts business with an operator and provides security controls that are accepted or required by the appropriate authority in respect of cargo or mail.

[12]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 security standards. 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.

Figure 1: Illustrative Example of the Flow of Air Cargo Transported to the United States from Foreign Airports



Shipper/manufacturer sends air cargo

Known consignors and regulated agents (i.e., shippers and freight forwarders, respectively) have an established business relationship with other supply chain entities, such as air carriers, and have applied security measures accepted or required by the appropriate national authority. Unknown consignors and nonregulated agents do not meet these criteria.

Consolidation facility

Shippers may bring air cargo to regulated or nonregulated agents (i.e., freight forwarders), who, before loading cargo onto trucks and delivering it to air carriers' sorting and storage locations, may consolidate shipments from a number of shippers. In addition, regulated agents screen cargo for security purposes prior to delivering the cargo to air carrier facilities for safe storage until the cargo is loaded onto U.S.-bound flights. Unregulated agents do not screen cargo.

Air carrier sorting center

At an air carrier's sorting center, which is typically located on airport property, either the air carrier or cargo handling agents sort, then screen cargo according to the air carrier's TSA-approved security program.

Secure cargo
Unsecure cargo
Screened/secured

Source: GAO analysis of TSA information. | GAO-19-162

Notes: A known consignor (i.e., shipper) may also directly package air cargo and deliver it to an air carrier's sorting center.

To secure cargo, a known consignor is required to produce, package, store, and transport goods in a manner that ensures their integrity and protect them from unauthorized interference from the point of origin. After cargo is secured, subsequent supply chain entities must apply security measures accepted or required by the appropriate national authority, including measures to ensure the secure transport of cargo. Upon arrival at the air carrier's sorting center, the air carrier or cargo handling agent must verify the known consignor/regulated agent status and that the cargo was transported securely before accepting it.

TSA and Air Carrier Responsibilities for Ensuring the Security of U.S.-Bound Air Cargo

The Aviation and Transportation Security Act (ATSA), enacted into law shortly after the September 11, 2001 terrorist attacks, established TSA and gave it responsibility for securing all modes of transportation, including the nation's civil aviation system, which includes U.S. and foreign-flagged air carrier operations to, from, within, or overflying the United States, as well as the foreign point-to-point operations of U.S.-flagged carriers.[13] Among other things, ATSA requires, in general, that TSA provide for the screening of all passengers and property, including cargo transported by air carriers.[14] ATSA further requires that a system be in operation to screen, inspect, or otherwise ensure the security of the cargo transported by all-cargo aircraft to, from, and within the United States, but did not establish a firm deadline for the implementation of such a system.[15] Further, to help enhance civil aviation security, the Implementing Recommendations of the 9/11 Commission Act of 2007 (9/11 Commission Act), mandated that DHS establish a system within 3 years of enactment (enacted August 3, 2007) to screen 100 percent of air cargo transported on all passenger aircraft operated by an air carrier traveling to, from, within, or overflying the United States.[16] TSA reported that it met the mandate to screen 100 percent of domestic air cargo transported on passenger aircraft in August 2010 and U.S.-bound air cargo transported on passenger aircraft from foreign airports in August 2013.

There is no comparable 100 percent screening requirement in statute for cargo transported to the United States on all-cargo air carriers. However, TSA requires that all cargo transported on U.S.-bound flights be screened

[13]See generally Pub. L. No. 107-71, 115 Stat. 597 (2001); 49 U.S.C. § 114. For purposes of this report, the term "air carrier" includes the passenger and all-cargo operations of both U.S.-flagged air carriers operating under TSA-approved security programs in accordance with 49 C.F.R. part 1544 and foreign-flagged air carriers operating under security programs deemed acceptable by TSA in accordance with 49 C.F.R. part 1546. For purposes of this report, the security programs of both U.S. and foreign-flagged air carriers are referred to as "TSA-approved security programs."

[14]See Pub. L. No. 107-71, § 110(b), 115 Stat. at 614-15 (codified as amended at 49 U.S.C. § 44901); 49 U.S.C. § 44901(a).

[15]See 49 U.S.C. § 44901(f) (requiring the system to be in operation as soon as practicable after November 19, 2001—ATSA's date of enactment).

[16]See Pub. L. No. 110-53, § 1602(a), 121 Stat. 266, 477-79 (2007) (codified at 49 U.S.C. § 44901(g)) (providing that the system to screen 100 percent of all cargo transported by passenger aircraft shall be established no later than 3 years after enactment).

or subjected to security controls that prevent the introduction of explosives, incendiaries, or other destructive devices. If the cargo comes from known consignors or regulated agents, TSA's all-cargo security program does not require any additional screening unless the cargo piece exceeds a certain weight. On the other hand, all-cargo air carriers must screen all cargo that they accept from unknown consignors or nonregulated agents.

Air carriers are responsible for implementing TSA security requirements predominantly through TSA-approved security programs that describe the security policies, procedures, and systems the air carriers are to implement and maintain in order to comply with TSA security requirements. These requirements include measures related to the acceptance, handling, and screening of cargo; training of employees in security and cargo screening procedures; testing employee proficiency in cargo screening; and access to cargo areas and aircraft. If threat information or events indicate that additional security measures are needed to better secure the aviation sector, TSA may issue revised or new security requirements in the form of security directives or emergency amendments when more immediate action on behalf of air carriers is necessary.[17] Air carriers must implement the requirements set forth in applicable security directives or emergency amendments (unless otherwise approved by TSA to implement alternative security measures) in addition to requirements already imposed and enforced by TSA in order to remain compliant with their respective security programs.

Under TSA regulations, air carriers are responsible for ensuring the security of the air cargo they transport, and TSA requirements specify methods and technologies that may be used to secure U.S-bound air cargo through screening procedures. Specific screening methods outlined in the 9/11 Commission Act, for example, include X-ray systems, explosives detection systems (EDS),[18] explosives trace detection

[17]In general, TSA issues security directives to impose such requirements on U.S.-flagged air carriers and emergency amendments to impose such requirements on foreign-flagged air carriers, typically when immediate action is required. See 49 C.F.R. §§ 1544.305, 1546.105(d).

[18]An EDS machine uses computed tomography technology to automatically measure the physical characteristics of objects in baggage. The system automatically triggers an alarm when objects that exhibit the physical characteristics of explosives are detected.

(ETD),[19] explosives detection canine teams certified by TSA, and physical search together with manifest verification.[20] The 9/11 Commission Act, however, requires that screening involve a physical examination or non-intrusive method of assessing whether cargo poses a threat to transportation security and not solely performing a review of information about cargo contents or verifying the identity of the cargo's shipper, when not performed in conjunction with the screening methods outlined above.

Air Carrier Inspections and Foreign Airport Assessments

To assess whether air carriers properly implement security regulations, TSA conducts regulatory compliance inspections of U.S. and foreign-flagged air carriers at all foreign airports with U.S.-bound flights. During these inspections, a TSA inspection team is to examine air carriers' implementation of applicable security requirements, including their TSA-approved security programs, any amendments or alternative procedures to these security programs, and applicable security directives or emergency amendments. In general, following a risk-informed approach, TSA attempts to inspect all air carriers with TSA-approved security programs at each foreign airport where they operate flights to the United States either annually or semiannually depending on the risk level of the airport.[21] Compliance inspections can include reviews of documentation, such as screening logs; interviews of air carrier personnel; and direct observations of air cargo operations.[22]

Consistent with the ATSA, and in accordance with existing statutory requirements, TSA also assesses the effectiveness of security measures at foreign airports using select ICAO security standards and

[19]An ETD machine is used to chemically analyze trace materials after a human operator swabs the item to identify any traces of explosive material.

[20]See 49 U.S.C. § 44901(g)(5) (providing further that the TSA Administrator may approve additional methods that constitute a physical examination or nonintrusive method of assessing whether cargo poses a threat to transportation security).

[21]TSA defines risk as a function of threat, vulnerability, and consequence and uses various data sources to assess airport risk, including: presence of threats and government control of corruption (threat); foreign airport and air carrier inspection results (vulnerability); and number of flights and average passenger load (consequence).

[22]Appendix II contains a detailed description of TSA's efforts to assess air carrier compliance with U.S.-bound air cargo security requirements.

recommended practices.[23] These standards and recommended practices include ensuring that passengers and cargo are properly screened and that unauthorized individuals do not have access to restricted areas of the airport.[24] TSA uses a risk-informed approach to schedule foreign airport assessments, generally every 1 to 3 years, with high risk airports assessed more frequently than medium and low risk airports. 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.[25] TSA also does not have authority to impose or otherwise enforce security requirements at foreign airports. Instead TSA must work with host government civil aviation officials to schedule airport visits to conduct airport assessments (as well as air carrier inspections) and improve upon existing conditions when deficiencies are identified.[26] Table 1 highlights the roles and responsibilities of certain TSA positions within Global Strategies that are responsible for implementing the air carrier inspection and foreign airport assessment programs.[27]

[23]See 49 U.S.C. § 44907. TSA assesses foreign airports (1) served by a U.S. air carrier, (2) from which a foreign air carrier operates U.S.-bound flights, (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.

[24]See 49 U.S.C. § 44907(a)(2)(C). TSA utilizes select ICAO standards and recommended practices it sees as most critical to conduct its foreign airport assessments. For all foreign airport assessments discussed in this report, TSA used 44 standards and recommended practices detailed in Annex 17 to the Convention of International Civil Aviation, *Safeguarding International Civil Aviation Against Unlawful Acts of Interference,* Ninth Edition, March 2011, and Annex 14, *Aerodrome Design and Operations,* Volume I (relevant provisions from both annexes, have been reproduced in appendix III with permission of ICAO). The Tenth Edition of Annex 17, issued in April 2017 and effective August 2017, supersedes the Ninth Edition from March 2011. The cargo-related standards and recommended practices remained unchanged in the new addition.

[25]According to TSA officials, there have been instances where TSA inspectors have not received permission to conduct air carrier inspections or airport assessments by the host government.

[26]For further information on TSA's foreign airport assessments, see appendix III.

[27]Global Strategies was previously called the Office of Global Strategies.

Table 1: Positions That Play a Key Role in Transportation Security Administration's (TSA) Air Carrier Inspection and Foreign Airport Assessment 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 Manager	The six regional operations center managers have responsibility for the overall planning and conduct of inspections of air carriers and assessments of the foreign airports, including the scheduling and coordination of personnel and resources. Regional Operations Center managers supervise and direct the work of the inspector workforce and administrative support personnel within their assigned geographical area.[a]
Transportation Security Specialist (inspector)	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 July 2018, TSA had 97 inspectors, each of whom is based in one of TSA's six regional operations centers.
TSA Representative	TSA representatives communicate with foreign government officials to address transportation security matters and to facilitate foreign airport assessments. TSA representatives 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, TSA representatives are often involved in arranging pre-assessment activities, assessment visits, and follow-up visits. Additionally, TSA representatives are responsible for helping host government officials address security deficiencies that are identified during assessments. As of July 2018, TSA had 23 TSA representatives.[b]
International Industry Representative	International industry representatives 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. International industry representatives 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, international industry representatives will coordinate with air carriers to ensure they take corrective action. In addition, International industry representatives serve as a liaison to air carriers during a security incident. As of July 2018, TSA had 19 international industry representatives.[c]

Source: GAO analysis of TSA documents. | GAO-19-162

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

[b]TSA representatives 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]International industry representatives are located in Abu Dhabi, Arlington, Beijing, Frankfurt, London, Mexico City, Ottawa, Singapore, Tokyo, and Warsaw.

NCSP Recognition

In addition to conducting air carrier inspections and foreign airport assessments, TSA has also developed the NCSP Recognition Program, for which TSA compares and assesses foreign air cargo security programs and standards to determine if those programs provide a level of security that is commensurate with TSA's air cargo security standards. The NCSP recognition process involves comparing foreign countries' air cargo security program requirements to TSA air cargo security requirements and conducting visits to the foreign countries to observe the security programs in operation and determine if they can be validated as commensurate with TSA's. The recognition decision is based on whether the other country's NCSP is commensurate in six pillars of cargo supply chain security that TSA has identified, which are:

- **Facility Security.** Procedures and mechanisms to prevent unauthorized entry to facilities where cargo is screened, prepared, and stored.
- **Chain of Custody/Transit Procedures.** Methods or procedures to prevent and deter unauthorized access to cargo while stored or in transit between facilities prior to loading onboard aircraft.
- **Screening.** Screening of cargo through the application of technical or other means that are intended to identify weapons or explosives.
- **Personnel Security.** Processes to vet individuals with unescorted access to air cargo at any point in the air cargo supply chain.
- **Training.** Training of personnel who screen, handle screened cargo, or perform other duties related to air cargo screening, preparation, or storage.
- **Compliance and Oversight Activities.** Clearly established requirements that regulated entities must satisfy in order to participate in the security program, and routine audits of such entities for compliance by appropriate authorities.

TSA first approved the NCSP recognition process for passenger aircraft operations in fiscal year 2011 and made subsequent changes to the process in fiscal year 2013. According to TSA, the NCSP Recognition Program increases its visibility into recognized governments' air cargo security requirements and air cargo supply chains, facilitates the identification of air cargo industry vulnerabilities, and is a key component of TSA's efforts to achieve 100 percent screening of U.S.-bound air cargo and enhance global supply chain security. Within Global Strategies, the

Mitigation Plans and Programs Directorate is responsible for the NCSP Recognition Program.

GAO's 2012 Air Cargo Security Review

Air Cargo Advance Screening (ACAS)

The Department of Homeland Security's (DHS) U.S. Customs and Border Protection (CBP) and the Transportation Security Administration (TSA) initiated the ACAS pilot in December 2010 to more readily identify high risk cargo for additional screening prior to all-cargo and passenger aircraft departing from foreign airports to the United States. Unlike TSA, which focuses on aviation security, to include the security of air cargo prior to loading on aircraft at last point of departure airports, CBP focuses on identifying persons and cargo that may violate U.S. law and are, therefore, prohibited from entry into the United States. The aim of the pilot was to determine whether it was feasible for air carriers to submit air cargo manifest data to CBP prior to departure from all foreign last point of departure airports. This would allow CBP to analyze, target, and, if needed, for DHS to issue instructions to air carriers to provide additional cargo information or take additional security measures before such cargo is loaded onto U.S.-bound aircraft. DHS determined that the pilot was successful.

Source: GAO analysis of DHS information. I GAO-19-162

In 2012, we reported on the actions TSA took to enhance the security of U.S.-bound air cargo after the October 2010 discovery of explosive devices in packages on all-cargo aircraft bound for the United States from Yemen.[28] We recommended, among other things, that DHS assess the costs and benefits of requiring all-cargo carriers to report U.S.-bound air cargo screening data. DHS agreed with our recommendation and TSA reported that, although all-cargo air carriers submit data to TSA as part of the Air Cargo Advance Screening (ACAS) pilot, the all-cargo air carriers do not need to report on the number of shipments screened for explosives. Nevertheless, TSA reported that it will be able to utilize ACAS data to determine the percentage of shipments transported to the United States on all-cargo aircraft that carriers must screen for explosives.

[28]See GAO-12-632.

TSA Conducts Overseas Inspections and Assessments to Help Ensure Screening of U.S.-bound Air Cargo and Compliance with Security Requirements

To help ensure compliance with cargo security requirements and international standards, TSA inspects air carriers and assesses certain known consignors and regulated agents. TSA also inspects cargo security procedures during foreign airport assessments. Further, DHS has also implemented requirements to obtain advance information on air cargo shipments through ACAS that it uses to perform targeted risk assessments.

TSA Inspects Air Carriers and Assesses Other Supply Chain Entities to Help Ensure Compliance with Cargo Security Requirements

TSA inspects air carriers and assesses certain known consignors and regulated agents to help ensure compliance with cargo security requirements. However, certain factors can limit TSA's ability to conduct inspections or observe various security measures, including cargo screening.

TSA Inspects Air Carriers

TSA uses a multistep process to plan, conduct, and record air carrier cargo inspections.[29] To plan inspections, TSA develops an annual Master Work Plan that regional operations centers use to schedule air carrier inspections each fiscal year. Based on our review of TSA work plans for fiscal years 2012 through 2018 and discussions with TSA officials at all six regional operations centers, TSA separately plans for passenger inspections and cargo inspections of both all-cargo air carriers as well as passenger air carriers that transport cargo bound for the United States from foreign airports.

To conduct air cargo inspections, TSA inspectors are to use standardized, cargo-specific job aids that assess air carriers against security program requirements in all six pillars of supply chain security. According to TSA officials, they update the cargo inspection job aids, as

[29]See appendix II for additional details on TSA's air carrier inspection process.

needed, to ensure they reflect changes to TSA requirements and the current threat environment. For example, the cargo inspection job aids prompt TSA inspectors to inquire about the transportation of cargo from certain high risk countries. TSA inspectors we spoke with at all six regional operations centers stated that they use the cargo inspection job aids, and inspectors we spoke with at five regional operations centers stated that they are helpful.[30]

We observed 17 air carrier cargo inspections at airports in two different countries and found that TSA inspectors consistently used the cargo inspection job aids to assess the air carriers against TSA requirements. These inspectors observed air carriers' implementation of security measures (such as cargo screening), interviewed security officials, and reviewed air carrier records (including cargo screening and training logs). Officials at all six regional operations centers and the air carriers we met with confirmed these methods are routine practices. Further, officials representing 10 of the 11 air carriers we met with confirmed that TSA regularly inspects their cargo operations at foreign airports to ensure compliance with screening and other security requirements.[31]

After completing an air carrier inspection, TSA inspectors are to enter air carrier cargo inspection results into PARIS. TSA supervisors and managers are to review the inspection reports for quality and track their completion. TSA officials we interviewed at TSA headquarters and all six regional operations centers confirmed the quality review process is in place and that they use it. In addition, TSA headquarters cargo experts are to review a sample of air carrier cargo inspections.

Based on our analysis of PARIS data, TSA conducted close to 5,000 air carrier cargo inspections (including both passenger air carriers and all-cargo air carriers) from fiscal year 2012 through fiscal year 2017 and found air carriers in full compliance with applicable security requirements

[30]Inspectors at the remaining regional operations center stated that the job aids are not comprehensive and are not accurate for inspections in all countries. For example, one inspector noted that TSA regulates air carriers and has written the job aids as if the air carriers are the only supply chain entity the government regulates. However, in at least one country in that regional operation center's area of responsibility, the foreign government regulates the cargo terminal operators instead of air carriers.

[31]The other air carrier informed us that TSA has an arrangement with the governments of the United Kingdom that TSA relies on their inspectors to inspect British-flagged air carriers that operate U.S.-bound flights.

in 84 percent of these inspections.[32] TSA reported at least one instance of noncompliance, or violation, for the remaining 16 percent of cargo inspections.[33] Based on the TSA data, the percentage of inspections with violations has generally trended downward during this time period.[34] TSA officials attributed this downward trend to a number of factors including: (1) TSA's emphasis on assisting air carriers (through its international industry representative) in implementing new air cargo security requirements after the 2010 printer ink cartridge plot; (2) increases in the number of TSA inspectors to ensure compliance; (3) TSA's outreach to foreign governments for improved cargo security under the NCSP Recognition Program; and (4) TSA efforts to engage with air carriers, including regional industry summits that included a cargo security focus.

According to TSA officials, if a TSA inspector finds that an air carrier is not in compliance with any applicable security requirements, additional steps are to be taken to correct and record those specific violations, which can include providing on-the-spot counseling for minor violations or opening an investigation if the violation is potentially more serious. Upon conclusion of the investigation, TSA is to make a determination whether to issue a warning notice, letter of correction, or notice of proposed civil penalty. For example, based on TSA data, we determined that TSA inspectors provided counseling (specific guidance) in certain instances when they found that an air carrier had failed to obtain multiple views of cargo screened using an X-ray machine. According to the TSA data, the air carrier took immediate corrective actions and implemented the correct procedures on-the-spot. From the data provided by TSA, we also identified potentially more serious violations. Examples of such violations included instances in which TSA inspectors initiated an investigation when they found that an air carrier was not screening 100 percent of the cargo as required under its approved security program.

[32]According to our analysis of TSA data from fiscal years 2012 through 2017, TSA conducted 3,031 passenger carrier cargo inspections and 1,925 all-cargo air carrier inspections and both types of air carriers had similar rates of compliance. In particular, 84 percent of passenger air carrier inspections and 85 percent of all-cargo carrier inspections identified no violations.

[33]According to TSA data, noncompliant inspections averaged from one to two violations per inspection for each year of the data we reviewed. The maximum number of violations was seven.

[34]Specific information related to TSA's air carrier inspection results is deemed Sensitive Security Information.

According to TSA officials, TSA relies on a system of progressive enforcement and carefully considers whether a civil penalty is warranted based, in part, on the history of an air carrier's inspections.[35] TSA officials added that they may consider options other than civil penalties, since their objective is to encourage compliance through capacity-building efforts with air carriers, not to generate revenue. For example, TSA will sometimes settle a civil penalty by allowing the air carrier responsible for the violation to invest the agreed upon penalty into improved security measures or screening processes.

According to TSA data, TSA inspectors identified 1,128 air carrier cargo security violations during fiscal years 2012 through 2017 for the 16 percent (781) of air carrier inspections where they found at least one violation. For these violations, TSA took the following actions:

- TSA inspectors resolved 580 of the violations (approximately half) through counseling and referred the remaining 548 violations for investigation since they were each potentially serious enough to warrant an enforcement action.
- TSA conducted investigations covering the 548 potentially more serious violations, which resulted in about 220 administrative actions, nearly 50 civil penalties, and over 30 instances where no action was taken.[36] According to TSA, TSA inspectors recommended total civil penalties of approximately $23.5 million,[37] $22.2 million of which consisted of penalties proposed for one air carrier.[38]

TSA Assesses Known Consignors and Regulated Agents in Recognized Countries

During air carrier inspection visits, the TSA inspection team may also conduct assessments of known consignors and regulated agents in countries with recognized NCSPs. According to TSA data, TSA conducted assessments of 38 known consignors and regulated agents in fiscal year 2017. While conducting a site visit to a foreign airport in an NCSP country in March 2018, we observed TSA inspectors conduct

[35]Also, according to TSA officials, they will use the results of air carrier inspections—including past violations—to inform future inspections of individual air carriers.

[36]According to TSA officials, a single investigation can cover multiple violations identified during an air carrier inspection.

[37]According to TSA officials, after TSA inspectors recommend a certain civil penalty, TSA's Chief Counsel processes the case, which may result in a different civil penalty amount being assessed.

[38]TSA officials stated that, as of July 2018, they are in the process of negotiating a settlement agreement with this air carrier.

assessments of two regulated agents and the inspectors covered all of the required questions. The assessments were primarily interviews along with some observations that included warehouse security and limited cargo screening. Record reviews were not part of the assessment because that is the purview of the foreign government's civil aviation authority, according to the TSA inspectors. Foreign government civil aviation authority officials attended the assessments of the two regulated agents to observe and take notes of the visit and discussions.

According to the TSA inspectors who conducted the assessments in the NCSP country we visited, meeting with regulated agents is invaluable because regulated agents, not air carriers or their authorized representatives, conduct almost all air cargo screening in that country. The inspectors added that having the opportunity to meet with regulated agents during foreign site visits provides them with insights regarding the extent to which screening of U.S.-bound cargo is being conducted at foreign last point of departure airports. In countries without a recognized NCSP, air carriers are required under their TSA-approved security programs to screen all cargo at the airport.

Certain Factors Can Limit TSA's Ability to Conduct Inspections or Observe Cargo Screening

TSA inspectors are not always able to observe certain security measures during air carrier cargo inspections or airport assessments because of foreign government sovereignty and air cargo logistics. For example, regional operations center officials told us that they are not always able to observe cargo screening because of restrictions placed on them by foreign governments, such as the number of days they are given to complete an inspection or assessment, the hours they are allowed to work, or the size of the TSA inspection team. TSA officials also stated that the transportation of air cargo occurs at all hours of the day and night, and TSA inspectors must sometimes choose which security measures to observe. For example, the TSA officials stated that screening may occur many hours prior to the loading of that cargo on an aircraft. At both foreign airports we visited, we observed TSA inspectors working late night or early morning hours to observe air carriers' cargo operations.

Out of the 17 air carrier cargo inspections we observed at the two foreign airports we visited, TSA inspectors were not able to observe cargo acceptance procedures for 11 air carriers and cargo screening for 9 air carriers because these carriers did not receive or screen cargo during the time of the inspections or the inspectors were busy conducting other inspections. Because regulated agents screen the vast majority of the

cargo before transporting it to the airport in the NCSP country we visited, TSA did not observe cargo screening in eight of the nine air carrier cargo inspections they conducted at that airport.[39] For inspections where TSA inspectors cannot observe security measures, we observed (and TSA inspectors confirmed) that they rely on interviews with officials responsible for cargo security and screening and document reviews (such a reviewing cargo screening logs) to determine whether air carriers are complying with TSA air cargo security requirements. At the request of TSA, air carriers must provide evidence of compliance with applicable security requirements and its security programs, including copies of records.[40]

TSA inspectors also do not inspect air carriers at all foreign airports from which air carriers transport U.S.-bound cargo. As we reported in May 2018, challenges prevent TSA from completing 100 percent of required air carrier inspections in Cuba at the frequency established in its standard operating procedures, including external factors, such as foreign government requests to reschedule TSA inspections, and limitations in the data TSA uses to schedule inspections.[41] Further, TSA officials stated that most all-cargo carriers do not have scheduled flights. Instead, they wait until they have sufficient cargo to ship and then complete their routes, which can make it difficult for TSA to schedule inspections—planned 3 months in advance—during times that the carrier will be flying cargo to the United States. According to the vice president of security at one all-cargo carrier, TSA does not always inspect all last point of departure routes used by the airline.

[39]The one instance at this airport where TSA inspectors were able to observe screening involved an all-cargo air carrier. Officials with this carrier stated that, for this location, they accept about 90 percent of U.S.-bound cargo from unregulated agents—which, according to the TSA all-cargo security program, requires screening.

[40]See, e.g., 49 C.F.R. §§ 1544.3, 1546.3.

[41]See GAO, *Aviation Security: Actions Needed to Better Identify and Track U.S.-Bound Public Charter Operations from Cuba*, GAO-18-345SU (Washington, D.C., May 2018). We reported on TSA's efforts to ensure the security of air carrier operations between the United States and Cuba and found that TSA's inspections and assessments in Cuba generally followed standard operating procedures, but TSA did not inspect all air carriers at the established frequency. As a result, we recommended that TSA develop and implement a tool that corroborates and validates flight schedule data to more reliably track certain air carriers' operations between the United States and Cuba. TSA agreed with our recommendation and is taking steps to address it. GAO-18-526 is the public version of this report.

TSA is taking steps to better understand air carriers' schedules. For example, in response to our 2018 review addressing TSA's efforts to ensure the security of air carrier operations between the United States and Cuba, TSA reported that it began developing a tool in August 2017 that is designed to analyze aggregate flight data and validate or identify last point of departure service to the United States from international locations.[42]

TSA Inspectors Assess Foreign Airports from which U.S-bound Cargo is Shipped to Help Ensure Proper Cargo Security Procedures Are in Place

In addition to conducting air carrier cargo inspections, TSA inspection teams conduct assessments of foreign airports that provide passenger and/or cargo service to the United States to determine if these airports are maintaining and carrying out effective security measures. TSA inspectors generally use the same process to plan, conduct, and record airport assessments as air carrier inspections, according to TSA headquarters and regional operations centers officials. Specifically, TSA inspection teams assess the foreign airports using 44 ICAO standards and recommended practices, including nine standards or practices that are specific to the transport of cargo and mail. These standards include measures for the acceptance, screening, and protection of air cargo. At the end of each foreign airport assessment, TSA inspectors are to prepare a report detailing findings on the airport's overall security posture and security measures that may also contain recommendations for corrective actions.[43]

We observed TSA inspectors conducting the cargo portion of an airport assessment at one airport we visited and confirmed their use of this process. Inspectors used the results of the air carrier cargo inspections conducted earlier in the site visit to inform the cargo portion of the airport assessment and complete the associated job aid. The TSA inspectors obtained additional information specific to the assessment during an interview with airport officials and an international mail facility in the country we visited. The inspectors stated that they corroborated the information obtained during interviews with documentation provided by airport officials and the foreign government in advance of the visit.

TSA conducted about 570 assessments of foreign airports with U.S-bound cargo shipments from fiscal year 2012 through fiscal year 2017,

[42]See GAO-18-345SU.

[43]See appendix III for additional information on TSA's foreign airport assessment process.

and TSA inspectors determined that the airports were fully compliant with the cargo-related ICAO standards and recommended practices in about 430 of these assessments (75 percent), according to our analysis of TSA data.[44] However, TSA inspectors found at least one instance of cargo noncompliance in about 140 airport assessments (25 percent).[45] Based on TSA data, the percentage of airport assessments in which TSA inspectors identified cargo noncompliance issues has generally trended upward during fiscal years 2012 through 2017. TSA officials attributed this upward trend to the introduction of a new ICAO standard in 2014 for ensuring that all cargo shipments designated as higher-risk undergo enhanced screening.

TSA assigns a vulnerability score to each ICAO standard and recommended practice assessed using a rating system, ranging from a category "1," which represents full compliance with ICAO standards and recommended practices, to a "5," which involves the most serious or egregious issues. For example, in a fiscal year 2017 foreign airport assessment, TSA inspectors recorded an instance of noncompliance of ICAO standard 4.6.3 (that requires protection of cargo from the point of screening until departure of the aircraft) as a "3" when they identified holes in a facility perimeter barrier allowing direct access to secured cargo. Further, during a 2014 airport assessment, TSA inspectors assessed an instance of noncompliance of the same standard as a "5" when they observed two unescorted individuals in a security restricted area without airport identification. Based on the results of TSA's foreign airport assessments conducted during fiscal years 2012 through 2017, TSA inspectors assessed most noncompliance issues identified as a "2" or "3."

[44]Our analysis includes noncompliance issues pertaining to catering and merchandise and supplies introduced into security restricted areas, which, while not cargo, is included in the ICAO category that covers cargo. Catering is food, beverages, other dry stores and associated equipment used on board an aircraft. Merchandise and supplies are goods brought into the airport's security restricted area but may not be cargo. Examples include duty-free merchandise for purchase and aircraft deicing fluid.

[45]Specific information related to TSA's airport assessment results is deemed Sensitive Security Information.

As of December 2017, TSA officials reported that certain foreign airports took corrective actions to address noncompliance issues. As a result, TSA closed out approximately 40 percent of the fiscal year 2012 through 2017 deficiencies identified in its assessments. According to our analysis of TSA data, for the remaining 60 percent of noncompliance issues, the airports have not yet taken sufficient action to fully address TSA's concerns, or TSA inspectors have not yet verified whether the actions foreign airports reported that they have taken are sufficient for addressing the noncompliance issues. The majority of unaddressed noncompliance issues pertain to issues identified in fiscal year 2016 or 2017 assessments.

In our 2017 review of TSA's foreign airport assessments, we reported that TSA assists foreign airports in addressing identified noncompliance issues (security deficiencies) in various ways, but noted that TSA could enhance data management.[46] As part of assisting foreign airports, TSA inspectors educate foreign airport officials on how to mitigate identified airport security deficiencies. Specifically, TSA provides on-the-spot counseling, training, technical assistance, security consultations, and security equipment. In addition, TSA representatives—the primary liaisons between the U.S. government and foreign governments on transportation security issues—are responsible for monitoring the progress made by foreign officials in addressing security deficiencies identified during TSA airport assessments. Our 2017 review found, however, that TSA representatives did not always update key information in TSA's database for tracking the resolution status of security deficiencies, including the security deficiencies' root causes and corrective actions. To help strengthen TSA's analysis and decision making, we recommended that TSA fully capture and specifically categorize data on the root causes of security deficiencies and the status of corrective actions to be taken. TSA concurred with our recommendations and is taking steps to address them, as discussed below. In addition to working with foreign airports to address deficiencies, TSA sometimes requires air carriers to adopt security procedures through security directives or emergency amendments to compensate for serious vulnerabilities that TSA identified during the foreign airport assessment. For example, at one airport in Africa, passenger air carriers must hold all cargo for 24 hours prior to transport.

[46]GAO, *TSA Has Strengthened Foreign Airport Assessments and Air Carrier Inspections, but Could Improve Data Management*, GAO-18-73SU (Washington, D.C., October 2017). GAO-18-178 is the public version of this report.

In response to our 2017 recommendations, TSA officials told us that they are in the process of developing a vulnerability resolution tool to capture the vulnerabilities associated with a specific location, such as a foreign country or airport. According to TSA officials, the tool will be used to identify and categorize root causes of vulnerabilities identified during air carrier inspections and foreign airport assessments, as well as incorporate other country specific information. TSA officials added that, once completed, TSA hopes to be able to use the tool to develop vulnerability mitigation options to, among other things, address security vulnerabilities identified during air carrier inspections and foreign airport assessments. For example, if TSA inspectors identify a cargo screening vulnerability during an air carrier inspection or airport assessment, they may determine that the root cause is a lack of national-level training courses. In an example such as this, although TSA does not have the authority to require a foreign government to take corrective actions, TSA officials may develop a training curriculum that foreign governments could deploy, if they choose, to address the identified vulnerability. According to TSA officials, TSA inspectors and TSA representatives would subsequently determine whether the training resolved the vulnerability and, if necessary, consider what additional measures may be appropriate. TSA expects to have the tool in place and staff trained to use it by the beginning of fiscal year 2019.

DHS Has Taken Steps to Obtain Advance Air Cargo Information to Perform Targeted Risk Assessments of U.S.-Bound Flights

DHS has taken steps to require advance information on air cargo shipments in order to conduct targeted risk assessments and help ensure the cargo is secure before air carriers transport it to the United States. As previously discussed, in December 2010, U.S. Customs and Border Protection (CBP) began collecting cargo data from certain air carriers before they loaded U.S.-bound cargo as part of the voluntary ACAS pilot program.[47] In response to a terrorist plot in July 2017, TSA issued security directives and emergency amendments in September 2017 requiring air carriers transporting cargo to the United States from last point of departure airports in Turkey to submit advance cargo data to CBP.[48] Further, in January 2018, TSA imposed similar requirements for foreign air carriers operating out of certain high risk countries in the

[47]TSA officials stated that ACAS pilot participants collectively accounted for about 80 percent of U.S-bound air cargo.

[48]See TSA, SD 1544-17-03: *Cargo Security Measures—Flights departing Turkey to the United States* (September 11, 2017) and EA 1546-17-03: *Cargo Security Measures—Flights from Turkey to the United States* (September 11, 2017).

Middle East.[49] DHS subsequently published the ACAS interim final rule, which requires all air carriers to submit advance air cargo information as of June 12, 2018.[50]

TSA and CBP identify high risk cargo based on, among other things, the advance information air carriers submit and may require them to take additional actions before loading the cargo onto U.S.-bound flights. Before implementation of the ACAS interim final rule, air carriers not participating in the ACAS pilot were required to submit manifest data to CBP no later than 4 hours before the flight's arrival in the United States, or no later than the time of departure from locations in North America, the Caribbean, Central America, and parts of South America north of the Equator.[51] However, under ACAS, a subset of the manifest data must be provided prior to loading the cargo onto U.S.-bound aircraft.[52] After reviewing the data, DHS can mandate that an air carrier (1) provide additional information on a particular cargo shipment, (2) perform enhanced screening before loading the cargo, or (3) not transport the cargo to the United States.

TSA officials are beginning to track whether air carriers have conducted the required ACAS screening as a part of their international compliance activities. TSA officials stated that inspectors review air carrier screening and manifest logs during air carrier cargo inspections at foreign airports to verify compliance with ACAS. In addition, TSA plans to fully develop the process of assessing air carrier compliance with ACAS requirements, according to TSA officials.

[49]See TSA, EA 1546-18-02: *Cargo Security Measures—All-Cargo Flights to the United States from Airports Listed in Attachment 1* (January 22, 2018).

[50]See 83 Fed. Reg. 27,380 (June 12, 2018); 19 C.F.R. § 122.48b.

[51]See 19 C.F.R. § 122.48a(b).

[52]See 19 C.F.R. § 122.48b(b) (providing that ACAS data must be submitted as early as practicable, but no later than prior to loading of the cargo onto the aircraft).

TSA Has Recognized the Air Cargo Security Programs of the European Union and 12 Other Countries and Monitors Their Implementation

TSA Has Increased the Number of Countries Recognized, as well as the Scope of Its Recognition Program

As of June 2018, TSA has recognized the passenger air cargo security programs of the European Union, which covers the 28 European Union member states, and 12 other countries.[53] NCSP recognition is a voluntary agreement between TSA and a foreign government. TSA's NCSP recognition process involves three phases: (1) a technical review and analysis of a foreign country's air cargo security program's requirements with TSA requirements to determine if the programs align on basic principles; (2) validation visits to the foreign country to determine if the air cargo security program aligns with TSA practices; and (3) a decision on whether to recognize the foreign government's air cargo security program as commensurate with TSA's air cargo security requirements. The recognition decision is based on whether the foreign government's NCSP is commensurate with TSA requirements across TSA's six pillars of cargo supply chain security, and the potential outcomes are as follows:

- **Recognition with no caveats.** TSA may determine that the foreign government's NCSP is fully commensurate with all of TSA's air cargo security requirements across all six supply chain security pillars or TSA may find there are slight variations in air cargo security requirements that nonetheless provide a commensurate level of security and give the country's NCSP recognition with no caveats. As of June 2018, TSA had recognized the NCSPs of Canada, Israel, and Norway without any caveats.

[53]One of the 12 recognized countries is Switzerland which, although not a member of the European Union, implements the European Union NCSP. As of June 2018, the United Kingdom remained a member of the European Union.

- **Recognition with caveats.** TSA may decide to recognize a government's NCSP, but with certain caveats based on specific variations within a country's national requirements. According to TSA officials, in this instance, TSA requires air carriers in that country to continue to implement specific TSA requirements on U.S.-bound air cargo to account for the variation.[54] As of June 2018, TSA had issued at least one caveat with nine NCSP recognized countries and the European Union.[55] For example, in these nine recognized countries and the European Union, TSA requires air carriers to rescreen cargo originating from specific third party countries according to TSA standards before transporting it to the United States.
- **No recognition, but provides recommendations.** TSA may determine that a foreign government's NCSP is not commensurate with TSA requirements in many areas and make recommendations to that government on how to improve its air cargo security program to better align with TSA and global air cargo security requirements.[56] For example, after reviewing one country's air cargo security program requirements, TSA determined that its NCSP was not commensurate and provided written recommendations on ways to improve its NCSP, as discussed below. According to TSA officials, under such circumstances they will continue to engage with the foreign government. If the foreign government implements the recommendations, TSA may reconsider the foreign government for NCSP recognition. Notably, TSA recognized another country's air cargo security program only after its civil aviation authority implemented TSA's recommendations to improve certain procedures, including screening of staff with access to air cargo. Where NCSP recognition is not applicable, air carriers transporting air cargo into the United States from last point of departure airports must continue to apply their TSA-approved security program requirements pertaining to cargo.

[54]According to TSA officials, caveats are often based on TSA specific threats or vulnerabilities. Further, most caveats are due to the fact that a country is unable to legally require that a specific procedure be completed because of national legislation or international norms.

[55]The nine NCSP recognized countries with at least one caveat include Australia, China, Japan, Iceland, Korea, New Zealand, Singapore, South Africa, and Switzerland.

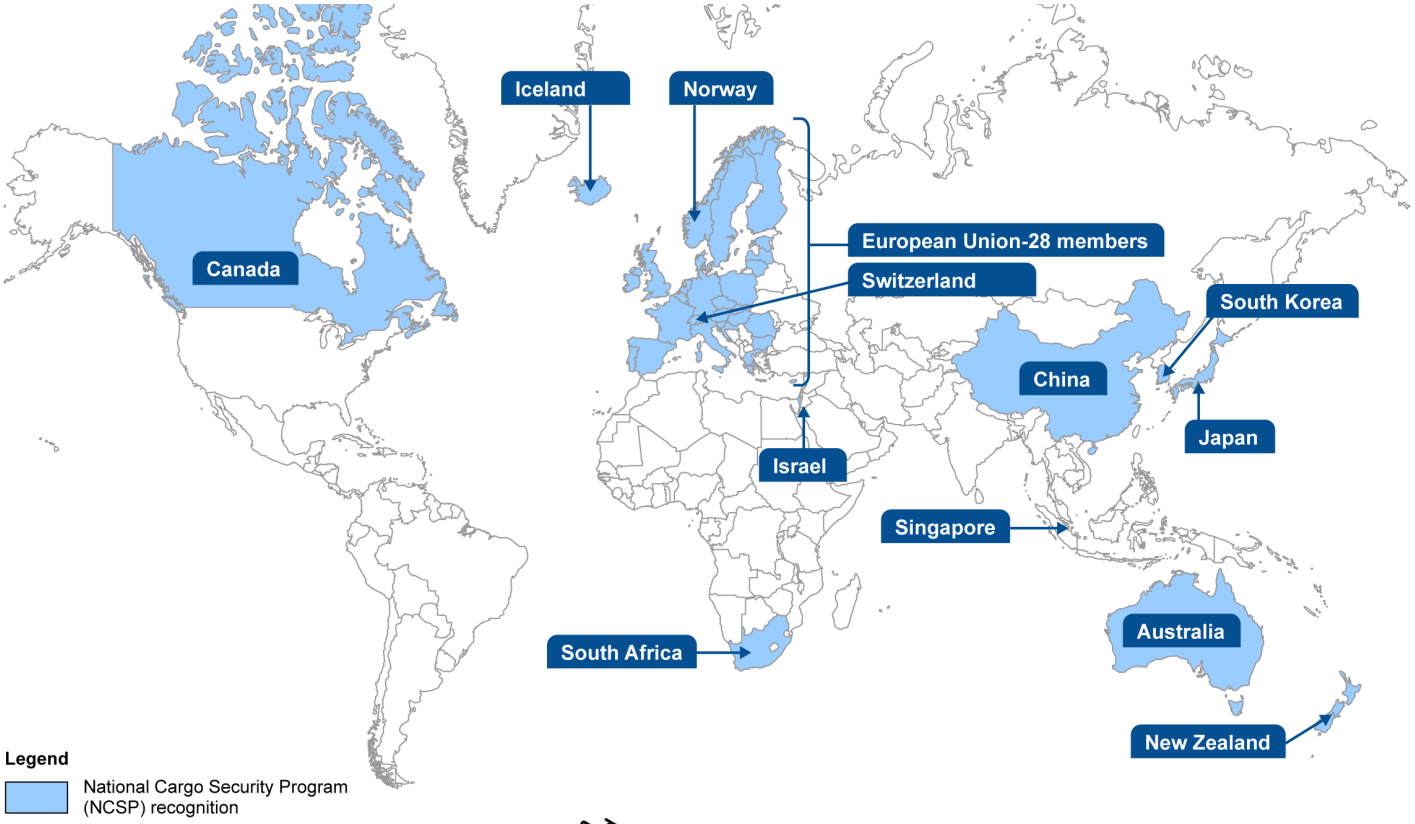
[56]According to TSA officials, examples of common recommendations include cargo screening, background checks, training, and quality control.

TSA originally developed the NCSP Recognition Program for passenger air cargo security programs in fiscal year 2011, and TSA expanded the scope of the program in fiscal year 2013 to include all-cargo operations.[57] As a result of this expansion, foreign governments may choose to engage with TSA on NCSP recognition for passenger operations, all-cargo operations, or both.[58] According to TSA's NCSP memo authorizing the change, by including all-cargo operations in its evaluation of other countries' NCSPs, TSA can gain a greater understanding of the international air cargo supply chain. As of June 2018, TSA had recognized the all-cargo operations of the European Union and six other countries. Figure 2 provides information about the foreign government NCSPs that TSA had recognized as of June 2018.

[57]In addition, during fiscal year 2013, TSA developed a process to evaluate the commensurability of explosive detection canine security programs in foreign countries for use in aviation security, to include screening of air cargo, passengers, and checked baggage. TSA officials are to use the same three phases to assess commensurability of canine security programs that it uses for the NCSP Recognition Program. As of June 2018, TSA recognized the canine security programs of the European Union and New Zealand. According to TSA officials, they continue to develop the program.

[58]Specific information related to which countries have passenger or all-cargo NCSP recognition is deemed Sensitive Security Information.

Figure 2: Foreign Governments with National Cargo Security Programs Recognized by the Transportation Security Administration (TSA), as of June 2018



	Australia	Canada	28 European Union member states and Switzerland	New Zealand	Japan	Republic of Korea	Iceland	South Africa	Israel	Norway	China	Singapore	Total percentage U.S.-bound cargo (by weight)
FY of original recognition	2012	2012	2012	2012	2013	2013	2013	2013	2014	2014	2014	2015	
FY of revalidation	2015, 2017, 2018	2015, 2018	2016	2015, 2018	2016	2016	2016	2016	2017	2017	2018	2018	
Percentage of overall FY 2017 U.S.-bound cargo	1%	2%	28%	<1%	11%	7%	<1%	<1%	<1%	<1%	11%	<1%	61%

FY Fiscal year

Source: GAO analysis of TSA information and Bureau of Transportation Statistics data. | GAO-19-162

Notes: Switzerland implements the European Union NCSP and, as a result, recognition granted to the European Union extends to Switzerland, which is not a member of the European Union. As of June 2018, the United Kingdom remained a member of the European Union.

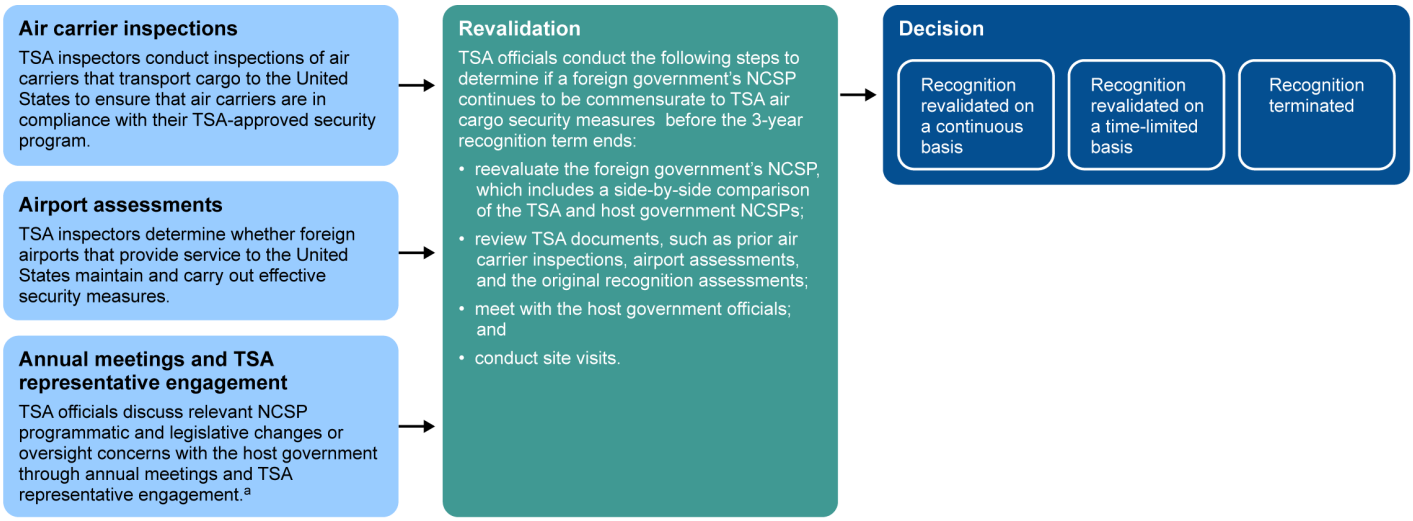
According to TSA data, air carrier participation in the NCSP Recognition Program has increased in recent years. Specifically, as of June 2018, 130 air carriers participate in the NCSP Recognition Program—an increase from about 50 in fiscal year 2015 when TSA last recognized a foreign government's NCSP. After TSA has recognized a foreign government's NCSP, air carriers can request amendments to their TSA-approved security programs to allow them to follow a recognized country's air cargo security program instead of having to follow both the recognized country's security program and separate requirements in their TSA-approved security programs. Representatives from all 11 air carriers we met with stated that they have submitted requests to TSA to amend their security programs in order to implement the foreign government's NCSP instead of TSA requirements when operating in those countries that have NCSP recognition. According to representatives from all 11 air carriers and TSA officials we met with, air carriers benefit from NCSP recognition. Specifically, they and the stakeholders in their supply chains can learn and use the host country's set of air cargo security requirements (and without a need to know and implement TSA requirements for cargo transported on U.S.-bound flights from that country).

TSA officials stated that, as of June 2018, apart from the European Union and the 12 other countries that have NCSP programs, no additional foreign governments are close to achieving NCSP recognition. However, TSA NCSP Recognition Program officials continue to coordinate with foreign governments on air cargo security issues when requested and as TSA resources allow. According to information provided by TSA, as of June 2018, TSA had coordinated with 21 additional foreign governments interested in NCSP recognition that are not yet recognized. In non-recognized countries, air carriers transporting U.S.-bound air cargo must follow the measures required by the foreign governments in addition to their TSA-approved security programs.

TSA Uses a Variety of Mechanisms to Monitor and Revalidate Recognized Governments' NCSP Implementation

Once TSA determines a foreign government's NCSP is commensurate with TSA requirements, it monitors NCSP implementation through air carrier cargo inspections, foreign airport assessments, ongoing engagements with foreign government officials, and revalidation of NCSP recognition (see fig. 3). Each of these monitoring mechanisms is discussed in greater detail below.

Figure 3: Transportation Security Administration's (TSA) National Cargo Security Program (NCSP) Monitoring Process



Source: GAO analysis of TSA information. | GAO-19-162

[a]TSA representatives are stationed overseas and communicate with foreign government officials to address transportation security matters.

Air Carrier Cargo Inspections and Foreign Airport Assessments

According to TSA officials, results from air carrier inspections and foreign airport assessments provide TSA valuable information in determining whether to revalidate a foreign government's NCSP recognition because TSA inspectors are able to verify a recognized government's NCSP implementation in person.[59] We analyzed TSA data from fiscal years 2015 through 2017 and confirmed that TSA conducted air carrier cargo inspections and assessments of foreign airports with U.S-bound cargo shipments that covered all recognized NCSPs. Representatives from 10 of the 11 air carriers we met with and the two foreign governments we

[59]TSA officials stated that they may not conduct air carrier inspections and airport assessments at airports in recognized countries at the same rate as foreign airports in non-recognized countries. Specifically, TSA inspects certain airports in Canada and the European Union less frequently. In addition, TSA has an agreement with the United Kingdom that the United Kingdom civil aviation authority will conduct inspections of British-flagged air carriers operating out of its airports instead of TSA.

met with confirmed that TSA conducts air carrier inspections in recognized countries.[60]

According to our analysis of TSA data for fiscal years 2015 through 2017, TSA inspectors identified more air carrier violations and lower rates of compliance with cargo-related standards and recommended practices at foreign airports located in non-NCSP countries than in NCSP countries.[61] In addition to identifying lower rates of compliance in non-NCSP countries, TSA officials also determined that the noncompliance issues in non-NCSP countries were more serious than noncompliance issues in NCSP countries, according to our data analysis.

According to TSA officials, TSA inspectors identified fewer violations during air carrier cargo inspections in NCSP countries because air carriers only need to implement one air cargo security program (the host government's) and, therefore, were less likely to make errors. Additionally, TSA inspectors identified fewer noncompliance issues in NCSP countries because TSA officials meet with foreign officials in recognized countries on a regular basis, and this helps to improve compliance. Representatives from 10 air carriers we met with confirmed that they are less likely to violate air cargo security requirements in NCSP countries because (1) the foreign government conducts regular compliance inspections (a component of the oversight and compliance security pillar TSA requires foreign governments implement to obtain NCSP recognition), or (2) screeners are less likely to make errors screening cargo because they only need to implement the foreign government's NCSP, which reduces confusion. For example, one air carrier representative told us that cargo screeners do not need to determine which security measures (TSA's or the host government's) to implement for a particular flight.

[60]The remaining air carrier is based out of the United Kingdom and only operates U.S.-bound flights out of airports in the United Kingdom. As a result, TSA does not conduct inspections of this air carrier pursuant to its agreement with the United Kingdom civil aviation authority mentioned previously.

[61]We chose to analyze fiscal years 2015 through 2017 data because this time period represents the 3 most recent complete fiscal years, and TSA last recognized a country's NCSP in 2015. Specific information related to TSA's air carrier inspection and airport assessment results is deemed Sensitive Security Information.

Annual Meetings and TSA Representative Engagement with Foreign Government Officials

TSA and foreign government officials also discuss changes in a foreign government's NCSP on a regular basis, according to our review of TSA's documents and interviews with TSA and foreign government officials. For example, TSA's memos authorizing the NCSP Recognition Program and 11 of 12 letters of recognition provided to foreign governments express an intent for TSA to hold in-person, annual meetings with officials in countries with a recognized NCSP program to discuss issues related to NCSP recognition.[62] TSA officials generally held or planned to hold such meetings in fiscal years 2017 and 2018, according to our review of TSA's NCSP Recognition Program fiscal year 2018 work plan. In addition, TSA officials stationed at U.S. embassies are to meet with their foreign government counterparts on a regular basis, according to TSA officials and the two recognized governments with whom we met. For example, the TSA representative who coordinates with the European Commission in Brussels, Belgium, told us that he meets with European Commission officials multiple times each month. He stated that these conversations can cover regulatory and legislative changes pertaining to air cargo security with European Commission officials and he informs TSA headquarters and the Frankfurt Regional Operations Center of changes that could affect NCSP recognition in Europe. TSA headquarters and European Commission officials confirmed that these meetings occur.

Revalidation of NCSP Recognition

TSA revalidates recognized NCSPs using the results of its air carrier inspections, airport assessments, ongoing engagement with foreign government officials, and additional site visits to the foreign country, if needed. According to our analysis of TSA NCSP recognition letters and NCSP information compiled by TSA officials, TSA has revalidated all recognized NCSP countries at least once since fiscal year 2012. Further, this analysis shows that TSA has generally revalidated the NCSPs of recognized countries every 3 years, as required by the TSA memos that established and revised the NCSP recognition process. However, in 2016, TSA authorized a change to the revalidation process that allows for continuous NCSP recognition because, according to TSA officials and NCSP memos, the monitoring mechanisms TSA has in place (e.g., air carrier inspections, foreign airport assessments, and ongoing dialogue with foreign government officials) provide sufficient information to validate that foreign governments' recognized NCSPs and continue to provide a

[62]The Japan letter of recognition does not include an annual meeting requirement in its terms of recognition. In addition, the European Union and Switzerland are included in the same recognition letter.

commensurate level of security to TSA's. TSA's 2016 NCSP memo states that TSA can revoke continuous recognition at any time, and TSA may not grant continuous recognition to a country if TSA determines that additional oversight is warranted. For example, TSA officials stated that they may only recognize a country's NCSP on a time-limited basis if they experience communication or access issues or have concerns about implementation of the NCSP. As of June 2018, TSA had granted continuous recognition to the European Union and 10 other countries and had not revoked any government's continuous recognition, according to summary NCSP information provided by TSA officials.[63]

TSA's Existing Performance Measures Do Not Allow It to Specifically Determine the Effectiveness of Its Efforts to Secure U.S.-Bound Air Cargo

TSA has taken steps to broadly measure the effectiveness of its air carrier inspections and foreign airport assessments, but these efforts do not allow TSA to specifically determine the effectiveness of the cargo portions of such inspections or assessments. In addition, TSA has not developed measures for determining the effectiveness of its NCSP Recognition Program.

TSA Has Not Evaluated the Effectiveness of its Air Carrier Cargo Inspections or the Cargo Portions of Foreign Airport Assessments

TSA tracks data on the results of air carrier inspections and foreign airport assessments, and it broadly measures the effectiveness of its foreign airport assessment program and is developing a similar measure for its air carrier inspection program. However, TSA's performance measures do not allow it to specifically determine the effectiveness of its air carrier cargo inspections or the cargo portions of foreign airport assessments. For example, in fiscal year 2017, TSA developed a new performance measure to track the extent to which foreign airports take actions to address noncompliance issues identified by TSA inspectors during

[63]According to TSA documents and officials, as of June 2018, TSA had granted continuous recognition to Australia, the European Union, Canada, China, Iceland, Israel, New Zealand, Norway, South Africa, South Korea, and Switzerland. As of June 2018, TSA had not granted continuous recognition to Japan or Singapore.

foreign airport assessments.[64] The target for this performance measure is for 70 percent of foreign airports to implement corrective actions or other mitigation strategies. However, that performance measure does not allow TSA to determine the effectiveness of the cargo portions of airport assessments because it does not separately account for cargo and noncargo noncompliance issues. Specifically, the current measure does not capture noncompliance issues by category, to allow TSA to determine which noncompliance issues specifically pertain to cargo. Such a broad measure of the effectiveness of foreign airport assessments could obscure progress made (or lack thereof) in resolving cargo-specific vulnerabilities. According to our analysis of TSA fiscal year 2017 foreign airport assessment data, TSA could meet its 70 percent target if foreign airports take actions to address noncompliance issues unrelated to cargo—including passenger and carry-on baggage screening and access controls—without taking any actions to address identified noncompliance issues for cargo.

TSA officials stated that they are coordinating with the Office of Management and Budget to develop a performance measure to gauge the effectiveness of air carrier inspections. However, TSA officials also stated that they have no plans to differentiate the extent to which air carriers correct violations TSA inspectors identify related to cargo from those identified related to passengers as they develop this measure. Notably, TSA has regularly included a goal to secure air cargo and the supply chain in annual operational implementation plans, but TSA has no associated performance measures that show the effectiveness of efforts taken to meet this goal.

TSA's *Office of Global Strategies Fiscal Year 2016 Strategy* states that all strategic goals and objectives will have corresponding, relevant performance indicators that measure organization effectiveness in those areas. Further, DHS and TSA guidance state that it is important to measure the effectiveness of risk management priorities. For example, the *DHS National Infrastructure Protection Plan and Transportation Systems Sector-Specific Plan* state that setting goals and measuring the effectiveness of risk management efforts against these goals are key

[64]According to TSA officials, they are in the process of updating this measure to focus on the actions TSA takes to improve airport security worldwide instead of the foreign airports' actions because TSA cannot require that sovereign governments address any noncompliance issues inspectors identify.

elements of a risk management framework.[65,66] We have also previously reported on the importance of developing outcome-based performance measures—measures that address the results (effectiveness) of products and services.[67]

According to TSA officials, they have not developed outcome-based performance measures that are specific to cargo security because they believe that measuring the results of air carrier inspections and foreign airport assessments holistically is sufficient to provide them with information on air cargo vulnerabilities. However, as previously discussed, TSA inspectors are identifying some potentially serious cargo vulnerabilities during air carrier cargo inspections and the cargo portions of airport assessments, including cargo that was not properly screened. Given TSA's assessment that the security threat in air cargo is significant, developing and monitoring an outcome-based performance measure specific to the cargo portions of foreign airport assessments—along with differentiating the extent to which air carriers correct violations related to cargo from those related to passengers as it develops and monitors outcome-based performance measures for its air carrier inspection program–could help TSA better determine the effectiveness of these efforts and whether they are improving the security of U.S.-bound air cargo. Such cargo-specific outcome-based performance measures could include differentiating the percentage of cargo-related violations that TSA has verified air carriers have addressed (as opposed to passenger-

[65]See DHS, *National Infrastructure Protection Plan, Partnering for Critical Infrastructure Security and Resilience* (Washington, D.C.: 2013) and DHS, *Transportation Systems Sector-Specific Plan: An Annex to the National Infrastructure Protection Plan* (Washington, D.C.: 2010).

[66]In accordance with GPRA, as updated by the GPRA Modernization Act of 2010, performance measurement is the ongoing monitoring and reporting of program accomplishments, particularly towards pre-established goals, and agencies are to establish performance measures to assess progress towards goals. See generally Pub. L. No. 111-352, 124 Stat. 3866 (2011) (GPRAMA) (updating Pub. L. No. 103-62, 107 Stat. 285 (1993) (GPRA)). Such measures provide federal agencies with information on how resources and efforts should be allocated to ensure effectiveness. While GPRA is applicable to the department or agency level, (e.g., DHS), we have previously reported that they can serve as leading practices at other organizational levels, such as component agencies, offices, programs, and projects. See GAO, *Coast Guard: Actions Needed to Enhance Performance Information Transparency and Monitoring,* GAO-18-13 (Washington, D.C: October 27, 2017).

[67]See, for example, GAO, *Illicit Opioids: While Greater Attention Given to Combating Synthetic Opioids, Agencies Need to Better Assess their Efforts*, GAO-18-205 (Washington, D.C.: March 29, 2018).

related violations) and measuring the progress that foreign airport authorities, foreign governments, or TSA have made to address vulnerabilities specific to ICAO's cargo-related standards.

TSA Has Not Evaluated the Effectiveness of its NCSP Recognition Program

TSA does not measure the effectiveness of its NCSP Recognition Program. Specifically, TSA budget documents and annual performance reports do not include measures for gauging the success of its NCSP Recognition Program. TSA operational implementation plans for fiscal years 2014 through 2017 addressed program recognition—including working toward recognition efforts with countries based on a list of priorities and holding annual in-person meetings with each recognized government—but TSA has not evaluated the impact of these actions. In addition, while TSA's operational implementation plans include milestones to measure outputs of the NCSP Recognition Program, TSA has not measured outcomes of its NCSP recognition efforts. For example, TSA has not measured the extent to which non-recognized countries implement recommendations that TSA has made to them during the NCSP recognition process. TSA officials stated that such a measure would help them determine the effect of the NCSP Recognition Program on air cargo security. According to TSA officials, in the absence of formal performance measures, the primary metric used to measure the performance of the NCSP Recognition Program is the number of countries TSA has recognized. However, this metric does not address the effectiveness of the NCSP Recognition Program because it does not measure how the program improves air cargo security.

We have previously reported on the importance of measuring program performance.[68] Our prior reports and guidance have stated that performance measures should evaluate both processes (outputs) and outcomes related to program activities. Specifically, we have noted that output measures address the type or level of program activities conducted, such as the number of countries recognized, while outcome-based measures address the results of products and services, such as how recognition programs facilitate the identification of air cargo industry vulnerabilities or contribute to improved air cargo security. Further, as discussed earlier, TSA strategy documents and leading practices encourage the development of relevant performance indicators that measure program effectiveness.

[68]GAO-14-207; GAO-12-208G; GAO-11-646SP; and GAO/GGD-96-118.

TSA officials stated that TSA has not developed performance measures associated with the NCSP Recognition Program because TSA has reorganized and different directorates within TSA have had responsibility for NCSP program recognition over time. TSA officials also stated that developing NCSP Recognition Program performance measures has been secondary to other tasks, such as developing the ACAS program. Developing and monitoring output and outcome-based performance measures for its NCSP Recognition Program will help TSA better assess the effectiveness of the program and whether the resources it has invested are yielding their intended results.

Conclusions

Air carriers transport billions of pounds of cargo into the United States from foreign airports each year, and the threat posed by terrorists attempting to conceal explosive devices in air cargo shipments remains significant, according to TSA. TSA has taken steps to ensure that U.S-bound air cargo is secure by, for example, conducting air carrier cargo inspections overseas, performing assessments of foreign airports that transport cargo to the United States using ICAO cargo-related standards and recommended practices, and evaluating and recognizing the NCSPs of foreign countries. Although TSA tracks cargo compliance data collected during its air carrier inspections and foreign airport assessments and is developing a vulnerability resolution tool, TSA has not developed outcome-based performance measures for determining the effectiveness of its air cargo security compliance efforts. Developing and monitoring an outcome-based performance measure for the cargo portions of airport assessments and differentiating the extent to which air carriers correct violations related to cargo from those related to passengers as it develops and monitors outcome-based performance measures for its air carrier inspection program could help TSA better assess the effectiveness of these efforts and whether they are improving air cargo security. For example, TSA could measure the percentage of cargo-related violations that TSA has verified air carriers have addressed. Further, developing and monitoring output and outcome-based performance measures for its recognition programs will help TSA better determine the effectiveness of the NCSP Recognition Program and whether the resources TSA has invested are yielding their intended results. For example, TSA could measure the extent to which non-recognized countries implement recommendations that TSA has made to them during the NCSP recognition process.

Recommendations for Executive Action

We are making the following three recommendations to TSA:

- The Administrator of TSA should instruct Global Strategies to develop and monitor outcome-based performance measures for determining the effectiveness of the cargo portion of its foreign airport assessments. (Recommendation 1)
- The Administrator of TSA should instruct Global Strategies to differentiate the extent to which air carriers correct violations related to cargo from those related to passengers as it develops outcome-based performance measures for its air carrier inspection program, and monitor any measure it develops. (Recommendation 2)
- The Administrator of TSA should instruct Global Strategies to develop and monitor output and outcome-based performance measures for determining the effectiveness of its NCSP Recognition Program. (Recommendation 3)

Agency Comments

In August 2018, we provided a draft of the sensitive version of this report to the Department of Homeland Security for its review and comment. In written comments, which are included in appendix IV, DHS stated that it concurred with the recommendations and plans to develop cargo-specific performance measures to help determine the effectiveness of its air carrier inspections, foreign airport assessments, and the NCSP Recognition Program. DHS also provided technical comments, which we have incorporated into the report, as appropriate.

We are sending copies of this report to interested congressional committees and the Secretary of Homeland Security. In addition, the report is available at no charge on the GAO website at http://www.gao.gov.

If you or your staff members have any questions about this report, please contact Nathan Anderson at (202) 512-3841 or andersonn@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made key contributions to this report are listed in appendix V.

Sincerely yours,

Nathan Anderson
Acting Director,
Homeland Security and Justice

Appendix I: Objectives, Scope, and Methodology

This report: (1) describes steps the Transportation Security Administration (TSA) takes to help ensure that U.S-bound air cargo is secure, (2) describes the status of TSA's efforts to recognize and monitor foreign governments' air cargo security programs, and (3) analyzes the extent to which TSA measures the effectiveness of its efforts to secure U.S.-bound air cargo.

This report is a public version of a sensitive report that we issued in October 2018.[1] 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, the specific results of TSA's air carrier inspections and foreign airport assessments, and information on the types of NCSP recognition TSA has granted to other countries. 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 describe the steps TSA takes to help ensure that U.S-bound air cargo is secure,[2] we reviewed relevant laws and regulations, TSA security policies and procedures, screening program requirements, and security directives and emergency amendments relevant to air cargo. For example, we reviewed relevant air carrier security programs and associated cargo inspection job aids that TSA transportation security specialists (inspectors) are to use during each air carrier cargo inspection to ensure that requirements for air carrier security programs are fully evaluated during each inspection.[3] We also reviewed fiscal years 2012 through 2018 air carrier inspection and airport assessment Master Work Plans—which TSA uses to track its overseas air carrier inspection and

[1]GAO, *Aviation Security: TSA Uses a Variety of Methods to Secure U.S.-bound Air Cargo, but Could Do More to Assess Their Effectiveness*, GAO-19-2SU (Washington, D.C.: October 17, 2018).

[2]In general, air cargo is defined as property weighing 16 ounces or more tendered for air transportation, including unaccompanied baggage, accounted for on an airway bill, all accompanied commercial courier consignments, and non-U.S. mail. See 49 U.S.C. § 40102(12); 49 C.F.R. § 1540.5.

[3]We reviewed the Aircraft Operator Standard Security Program (U.S.-flagged passenger air carriers), the Model Security Program (foreign-flagged passenger air carriers), the Full All-Cargo Aircraft Operator Standard Security Program (U.S.-flagged all-cargo carriers), and the All-Cargo International Security Program (foreign-flagged all-cargo carriers) and their associated job aids. We also reviewed job aids associated with National Cargo Security Program (NCSP) air carrier inspections.

foreign airport assessment schedule—to better understand how TSA schedules inspections and assessments and the types of inspections it conducts. We chose these fiscal years because they cover the time period since our previous air cargo security review. In addition, we conducted site visits to two foreign airports that operate flights that transport air cargo directly to the United States—one in South America and one in Asia—to observe a nongeneralizable sample of TSA inspectors conducting a total of 17 air carrier cargo inspections. At one airport, we also observed the cargo portion of an airport assessment. We selected these locations based on their designation by TSA as airports of relatively high risk level, as well as high volume of U.S.-bound air cargo; TSA's air carrier inspection schedule; and geographic dispersion. We also chose these countries to allow us to observe an inspection in one country where TSA has recognized the NCSP and one country where TSA has not recognized the NCSP. In addition, we reviewed the final reports TSA inspectors completed for the air carrier cargo inspections and airport assessment we observed.

Further, we obtained and analyzed the results of all air carrier cargo inspections (close to 5,000) and assessments at foreign airports that are last points of departure for cargo bound for the United States (about 570) conducted by TSA inspectors and then entered by them into TSA's databases. The Performance and Results Information System (PARIS) database contains security compliance information on TSA-regulated entities, including air carriers, and the Global Risk Analysis and Decision Support (GRADS) system vulnerability tracking sheet contains the results of foreign airport assessments. We analyzed PARIS and GRADS data from fiscal years 2012 through 2017, to cover the period since our previous air cargo security review and to include the 5 most recent years for which data were available at the time of our review.[4] Specifically, we analyzed the frequency with which air carriers and foreign airports complied with TSA air cargo security requirements and select cargo-related International Civil Aviation Organization (ICAO) aviation security standards and recommended practices, including the seriousness of ICAO noncompliance issues TSA inspectors identified.[5] TSA also uses

[4]See GAO, *Aviation Security: Actions Needed to Address Challenges and Potential Vulnerabilities Related to Securing Inbound Cargo*, GAO-12-632 (Washington, D.C.: May 10, 2012).

[5]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).

GRADS to populate the Open Standards and Recommended Practices Finding Tool (OSFT), which tracks efforts taken by TSA and host governments to address noncompliance issues identified during foreign airport assessments. We analyzed fiscal years 2012 through 2017 OSFT data to determine the status of noncompliance issues TSA inspectors identified. We also reviewed 2017 PARIS data on the number of known consignor and regulated agent assessments TSA inspectors conducted.

To assess the reliability of TSA's air carrier and airport assessment data captured in PARIS and GRADS tracking sheet and OSFT, we reviewed program documentation on system controls, interviewed knowledgeable TSA officials, and analyzed TSA's data for any potential gaps and errors. During our assessment, we found some inconsistencies in the tool TSA uses to follow up on airport noncompliance issues. We rounded airport compliance information to the nearest 10 for reporting purposes. We also aggregated ICAO standards and recommended practices within the Measures Related to Cargo, Mail, and Other Goods category for reporting purposes because their numbering has changed over time.[6] We concluded that TSA's data on air carrier inspections and foreign airport assessments were sufficiently reliable to provide a general indication of the level of compliance for TSA's air carrier inspections and foreign airport assessments over the period of our analysis.

In addition, we conducted interviews with TSA officials, foreign government representatives, and air cargo industry stakeholders, as follows:

- We interviewed senior TSA officials, inspectors, TSA representatives stationed overseas, and international industry representatives located at TSA headquarters and in the field. For example, we met with the Director of Global Compliance as well as managers and inspectors from all six TSA regional operations centers who are responsible for planning and conducting air carrier inspections and assessments of foreign airports.[7] During our interviews with TSA staff, we discussed

[6]There are 10 ICAO categories of standards and recommended practices that include, among others: Airport Operations; Measures Related to Passengers and their Cabin Baggage; and Measures Related to Cargo, Mail, and Other Goods. Our analysis includes noncompliance issues pertaining to catering and merchandise and supplies introduced into security restricted areas, which, while not cargo, is included in the Measures Related to Cargo, Mail, and Other Goods category.

[7]TSA's six regional operations centers are located in Dallas, Texas; Honolulu, Hawaii; Miami, Florida; Reston, Virginia; Frankfurt, Germany; and Singapore.

TSA's efforts to ensure the security of U.S.-bound air cargo prior to being transported to the United States and air carriers are in compliance with the applicable TSA cargo security requirements.

- We also interviewed officials at the European Commission (EC) and from the civil aviation authority in the country in Asia that we visited to discuss air cargo security standards and their experiences in coordinating with TSA. We judgmentally selected these foreign government entities because they (1) aligned with TSA's inspection site visit in the country in Asia that we observed and (2) represent different models of recognition (i.e., TSA recognizes both the passenger and all-cargo portions of the European Union national cargo security program (NCSP) but only passenger operations in the NCSP for the country in Asia that we visited).
- Further, we met with representatives from 2 aviation associations and 11 air carriers that include U.S. and foreign-flagged air carriers, as well as passenger and all-cargo carriers. One of the international aviation associations includes air carriers that comprise over 80 percent of the world's air traffic and the other aviation association includes the 5 air carriers that transported the largest individual amounts of U.S.-bound air cargo, by tonnage, in fiscal year 2017. We based our selection of the 11 air carriers on the relatively high volume of U.S.-bound cargo they transport; their operation of flights at the foreign airports we visited; and to obtain a range of coverage regarding their geographical regions of operation, passenger and all-cargo air carriers, and U.S. and foreign-flagged air carriers.

Results from these meetings with foreign governments and aviation industry officials are not generalizable, but provided us with information on stakeholders' experiences and perspectives regarding air cargo security issues.

To describe the status of TSA's efforts to recognize and monitor foreign governments' air cargo security programs, we reviewed TSA's policies and procedures for its NCSP Recognition Program. For example, we reviewed TSA memos from 2012, 2013, and 2016 that documented the recognition standards and any subsequent revisions to the NCSP Recognition Program; as well as TSA's process for monitoring NCSP recognition requirements. Additionally, we analyzed letters that TSA provided since 2012 to the 13 governments it determined had commensurate air cargo security programs and NCSP information TSA officials compiled specifically for our review to better understand TSA's terms of recognition with each government and the timeframes for

revalidating NCSP recognition. We also reviewed letters TSA provided to governments it had determined did not have commensurate air cargo security programs, which provided us with insights into the recognition process and the criteria applied to TSA's reviews. Further, we reviewed the NCSP Recognition Program's fiscal years 2017 and 2018 work plans, as well as summaries of TSA's annual meetings with foreign governments to better understand TSA's efforts to engage with recognized governments.

We also analyzed the air carrier cargo inspection and airport assessment data discussed above to determine the number of cargo inspections and assessments TSA completed in recognized countries from fiscal years 2015 through 2017. We chose this time period because it represents the 3 most recent complete fiscal years, and TSA last recognized a country's NCSP in 2015. We also analyzed data from TSA's Security Policy and Industry Engagement Policy Inventory on the number of air carriers participating in the NCSP Recognition Program from fiscal year 2012—when the NCSP Recognition Program began—through fiscal year 2017—the most recent complete fiscal year available at the time of our review—to determine how the level of participation has changed over time. In addition, we analyzed fiscal year 2017 Department of Transportation Bureau of Transportation Statistics T-100 data bank, which contains data on U.S.-bound departures from foreign airports, among other things, to determine the percentage of overall U.S.-bound air cargo shipped from NCSP countries. To assess the reliability of the T-100 data, we reviewed documentation on system controls, interviewed knowledgeable officials from the Bureau of Transportation Statistics, and analyzed the data for any potential gaps and errors. We determined that the T-100 data were sufficiently reliable for our intended purposes. Finally, we conducted interviews with TSA and foreign government officials from two countries, and with representatives of the 11 air carriers described previously to better understand TSA's ongoing efforts to recognize and monitor foreign governments' air cargo security programs. We also confirmed the status of countries' NCSP recognition, as of June 2018, with TSA officials.

To analyze the extent to which TSA measures the effectiveness of its various efforts to secure U.S.-bound air cargo, we reviewed documents that contain information on TSA's air cargo security objectives, goals, and performance measures, including (1) information reported to the Office of Management and Budget in annual budget documents from fiscal years 2014 through 2019, and (2) TSA's *Global Strategies directorates Operational Implementation Plans* from fiscal years 2014 through 2018—the most recent years available at the time of our review. These plans

include annual objectives and milestones for U.S.-bound air cargo security programs. We also reviewed the measures in the annual budget documents and *Operational Implementation Plans* and compared them with requirements in *TSA's Global Strategies' Fiscal Year 2016 Strategy and Fiscal Year 2018 Strategy Program* and applicable laws governing performance reporting in the federal government, including the Government Performance and Results Act of 1993 (GPRA), as updated and expanded by the GPRA Modernization Act of 2010 (GPRAMA).[8] For example, we assessed whether the performance measures provide information on the effectiveness of TSA's various air cargo security efforts. Although GPRA and GPRAMA requirements apply to those goals reported by departments (e.g., DHS), we have previously reported that they can serve as leading practices at other organizational levels, such as component agencies (e.g., the TSA) for performance management.[9] Further, we assessed TSA's performance measures against risk management principles in the *DHS National Infrastructure Protection Plan and the Transportation Systems Sector-Specific Plan*.[10] In addition, we obtained additional information on how TSA measures the performance of its air cargo security efforts during our interviews with TSA headquarters officials.

The performance audit upon which this report is based was conducted from July 2017 to October 2018 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 2018 to November 2018 to prepare this public version of the original sensitive report for public release. This public version was also prepared in accordance with these standards.

[8]Pub. L. No. 111-352, 124 Stat. 3866 (2011) (GPRAMA); Pub. L. No. 103-62, 107 Stat. 285 (1993) (GPRA).

[9]GAO, *Coast Guard: Actions Needed to Enhance Performance Information Transparency and Monitoring*, GAO-18-13 (Washington, D.C: October 27, 2017) and *Motor Carriers: Better Information Needed to Assess Effectiveness and Efficiency of Safety Interventions*, GAO-17-49 (Washington, D.C.: October 27, 2016).

[10]DHS, *National Infrastructure Protection Plan, Partnering for Critical Infrastructure Security and Resilience* (2013), and DHS, *Transportation Systems Sector-Specific Plan: An Annex to the National Infrastructure Protection Plan* (Washington, D.C.: 2010).

Appendix II: Transportation Security Administration (TSA) Processes for Conducting Air Carrier Cargo Inspections

Air carrier cargo inspections are conducted by a team of Transportation Security Administration (TSA) security specialists (inspectors) at foreign airports who review passenger and all-cargo air carriers' implementation of requirements in their TSA-approved security programs, any amendments or alternative procedures to these security programs, and applicable security directives or emergency amendments.[1] The frequency of air carrier cargo inspections at each airport 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, according to TSA. In general, TSA procedures require TSA to inspect air carriers with TSA-approved security programs at each airport annually or semiannually depending on the vulnerability level of the airport, with some exceptions. The inspection teams—based out of TSA regional operations centers—generally include one team leader and one team member and typically take 1 or 2 days, but can involve more inspectors and take longer to complete depending on the extent of service by the air carrier.[2] TSA inspectors may spend several days at a foreign airport inspecting air carriers if there are multiple air carriers serving the United States from that location. During air carrier cargo inspections, TSA inspectors are to review applicable security manuals, procedures, and records; interview air carrier personnel; and are to observe security measures, such as cargo acceptance and screening, among other activities. Air carriers are subject to inspection in six key areas of cargo supply chain security, as described in table 2.

[1]U.S. and foreign-flagged air carriers that operate to, from, within, or overflying 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 (U.S.-flagged 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-flagged carriers provide that such carriers' security programs must be deemed "acceptable" by TSA (whereas U.S.-flagged air carrier security programs must be "approved" by TSA), for the purposes of this report, we are using the term "TSA-approved" for both U.S. and foreign-flagged air carriers' security programs.

[2]TSA's regional operations centers and their geographic responsibilities are as follows: Dallas, Texas (Canada, Mexico, and Central America); Honolulu, Hawaii (Australia, Japan, New Zealand, South Korea, the Pacific Islands, and Philippines); Miami, Florida (the Caribbean and South America); Reston, Virginia (North Africa and the Middle East); Singapore (Asia, including India, China, Hong Kong, Taiwan, and Thailand); and Frankfurt, Germany (Europe, Russia, Israel, parts of Western Asia, and Sub-Saharan Africa).

Table 2: Inspection Steps Employed by Transportation Security Administration (TSA) Inspectors to Verify Compliance during Air Carrier Cargo Inspections, by Security Area

Cargo supply chain security area	Steps TSA inspectors are to take during TSA air carrier cargo inspections to verify compliance
Facility security	TSA inspectors are to verify that an air carrier adheres to facility security procedures by, among other things, interviewing air carrier officials and observing cargo warehouse security measures, such as the security measures in place at access points and the procedures used for personnel screening.
Chain of custody procedures	TSA inspectors are to verify that an air carrier follows TSA procedures to accept, store, and transport cargo by, for example, observing whether air carrier officials verify shippers' identification during the acceptance process and how cargo is secured during loading onto an aircraft. TSA inspectors also verify that shipper documentation is maintained by reviewing shipment records.
Screening	TSA inspectors are to verify that an air carrier follows TSA screening requirements by reviewing air carrier documentation, such as screening logs and equipment test logs. Further, TSA inspectors may also interview air carrier officials about their screening practices and conduct direct observations of air cargo screening operations.
Personnel security	TSA inspectors are to interview an air carrier about hiring practices and observe or review records on how certain air carriers conduct vetting procedures for crew members, for example.
Training	TSA inspectors are to verify that an air carrier complies with TSA training requirements by reviewing air carrier training course material and logs, and interviewing air carrier officials about required training.
Compliance and oversight activities	TSA inspectors are to verify, among other things, that an air carrier properly maintains and secures required documents, such as its TSA-approved security program, and conducts internal reviews on a timely basis, such as cargo screening self-audits by, for example, reviewing cargo scanning records and interviewing air carrier officials.

Source: GAO analysis of TSA information and observations made during TSA air carrier cargo inspections. | GAO-19-162

After completion of an air carrier inspection, TSA inspectors are to record the results into TSA's 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 in violation of any applicable security requirements, the inspector is to take additional steps to record the specific violation(s) and, in some cases, pursue them with further investigation. For example, TSA inspectors may choose to resolve violations that are minor or technical in nature, such as an employee not displaying their identification, through on-the-spot feedback and instruction, referred to as "counseling." For more serious violations, such as inadequate screener training, TSA inspectors may pursue administrative actions, including issuing a warning notice, or initiating an investigation and requiring air carriers to inform TSA of the specific steps they will take to address the issue.[3] For more egregious violations, such

[3]TSA takes administrative actions, which can include issuing a warning notice or letter of correction if the violation was unintentional or inadvertent, was not the result of a substantial disregard for security, and there are no prior cases involving similar violations resolved with administrative action.

as failure to screen cargo, TSA inspectors may recommend a civil penalty.[4] In extreme cases, TSA may withdraw its approval of an air carriers' security program and suspend the air carriers' operations.[5] 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.

[4]TSA issues civil penalties for repeat violations or in instances in which TSA inspectors identify violations that could critically impact the transportation system, put a flight at risk, or that involve situations in which there are no back-up or redundant security measures in place. TSA may also issue a civil penalty for violations that involve intentional, deliberate conduct, involve gross negligence, or acts done in wanton disregard for TSA security requirements. TSA has the authority to issue civil penalties up to $11,182 per violation against individuals or small business concerns and has the authority to issue civil penalties up to $32,666 per violation against U.S. air carriers. See 49 C.F.R. § 1503.401.

[5]TSA may withdraw its approval of air carriers' security programs if air carriers' continued operation would be contrary to the safety and public interest. See 49 C.F.R. § 1540.301.

Appendix III: Transportation Security Administration (TSA) Processes for Conducting Foreign Airport Assessments

Through its foreign airport assessment program, TSA determines whether foreign airports that provide passenger or all-cargo air carrier service to the United States are maintaining and carrying out effective security measures.[1] To determine the frequency of foreign airport assessments, TSA uses a risk-informed approach to categorize airports into three risk tiers, with high risk airports assessed more frequently than medium and low risk airports. TSA's assessments of foreign airports are generally scheduled during the same site visit as air carrier inspections for a certain location, and the same team of inspectors generally conducts both the airport assessment and air carrier inspections. 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 and the threat level to civil aviation in the host country.

TSA uses a multistep process to plan and conduct assessments of foreign airports. Specifically, TSA must obtain approval from the host government to conduct an airport assessment, and schedule the date for the on-site assessment. After conducting an entry briefing with host country and airport officials, the TSA 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 39 International Civil Aviation Organization (ICAO) standards and five ICAO recommended practices, to include conducting interviews with airport officials, examining documents pertaining to the airport's security measures, and conducting a physical inspection of the airport.[2] ICAO standards and recommended practices address operational issues at an airport, such as ensuring that passengers and cargo are properly screened and that unauthorized individuals do not have access to restricted areas of an airport. ICAO standards and recommended practices 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

[1]See 49 U.S.C. § 44907.

[2]TSA used 44 standards and recommended practices detailed in Annex 17 to the Convention of International Civil Aviation, *Safeguarding International Civil Aviation Against Unlawful Acts of Interference,* Ninth Edition, March 2011, and Annex 14, *Aerodrome Design and Operations,* Volume I (relevant provisions from both annexes, have been reproduced with permission of ICAO). The Tenth Edition of Annex 17, issued in April 2017 and effective August 2017, supersedes the Ninth Edition from March 2011. The cargo-related standards and recommended practices remained unchanged in the new addition.

that are responsible for implementing security controls are subject to background investigations, are appropriately trained, and are certified according to the foreign government's national civil aviation security program.

At the close of an airport assessment, TSA inspectors are to brief foreign airport and government officials on the results. TSA inspectors also prepare a report in TSA's Global Risk Analysis and Decision Support System (GRADS) detailing their findings on the airport's overall security posture and security measures, which may contain recommendations for corrective actions and must be reviewed by TSA field and headquarters management. As part of the report, TSA assigns a vulnerability score to each ICAO standard and recommended practice assessed, as well as an overall vulnerability score for the airport, which corresponds to the level of compliance for each ICAO standard and recommended practice TSA assesses.[3] Further, according to TSA officials, cargo experts in TSA headquarters review the cargo portion of each airport assessment before the assessment report is finalized. Afterward, TSA shares a summary of the results with the foreign airport and host government officials. In some cases, TSA requires air carriers to implement security procedures, such as requiring air carrier employees to guard the aircraft while on the tarmac, to address any deficiency that TSA identified during a foreign airport assessment through the issuance of security directives and emergency amendments. If the Secretary of Homeland Security determines that an airport does not maintain and carry out effective security measures, he or she shall, after advising the Secretary of State, take action, which generally includes notification to the appropriate authorities of the country of security deficiencies identified, notification to the general public that the airport does not maintain effective security measures, and modification of air carrier operations at that airport.[4]

[3]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.

[4]See 49 U.S.C. § 44907(c)-(e) (providing, for example, that after consulting with the appropriate aeronautic authorities of the foreign country concerned, and each air carrier serving the airport and with the approval of the Secretary of State, the Secretary may withhold, revoke, or prescribe conditions on the operating authority of an air carrier or foreign air carrier that uses that airport to provide foreign air transportation to the United States).

Appendix IV: Comments from the Department of Homeland Security

U.S. Department of Homeland Security
Washington, DC 20528

Homeland Security

November 1, 2018

Nathan Anderson
Acting Director, Homeland Security and Justice
U.S. Government Accountability Office
441 G Street, NW
Washington, DC 20548

Re: Management's Response to Draft Report GAO-19-162, "AVIATION SECURITY: TSA Uses a Variety of Methods to Secure U.S.-bound Air Cargo, but Could Do More to Assess Their Effectiveness"

Dear Mr. Anderson:

Thank you for the opportunity to review and comment on 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 ensure that U.S.-bound air cargo is secure by, for example, (1) conducting air carrier cargo inspections overseas, (2) performing assessments at foreign airports that transport cargo to the United States using International Civil Aviation Organization cargo-related standards and recommended practices, and (3) evaluating and recognizing the National Cargo Security Programs (NCSPs) of foreign countries.

TSA remains committed to effectively assessing the security of U.S.-bound air cargo and continuously striving to ensure the maximum effect in carrying out its mission for securing the nation's civil aviation system. TSA recognizes that securing the Nation's civil aviation system requires the implementation of interconnected programs and security measures to help ensure the security of passengers and property, including cargo, transported on U.S.-bound flights. Since our adversaries are looking for ways to introduce explosives, incendiaries, and/or other destructive devices into the aircraft, TSA looks at the totality of the aircraft and any entry point that might be exploited. Therefore, TSA's air carrier inspections and foreign airport assessments are a reliable means of providing an indication of the level of compliance with required security measures.

As background, the Aviation and Transportation Security Act, enacted into law shortly after the September 11, 2001 terrorist attacks, requires that a system be in operation to screen, inspect, or otherwise ensure the security of the cargo transported by all-cargo aircraft to, from, and within the United States. To further help enhance civil aviation security, the Implementing Recommendations of the 9/11 Commission Act of 2007, mandated DHS establish a system to screen 100 percent of air cargo transported on all passenger aircraft to a level commensurate with passenger baggage.

It is important to note TSA has taken numerous steps to date to meet the mandate to screen air cargo. Currently cargo is transported on aircraft from approximately 250 last point of departure airports to the United States, which varies by season, with nearly 500 air carrier stations involved in these operations. Despite TSA's dwindling resources and other challenges noted in the draft report, GAO concluded TSA's data on air carrier inspections and foreign airport assessments were sufficiently reliable to provide a general indication of the level of compliance for TSA's air carrier inspections and foreign airport assessments. Under its risk-based strategy, TSA has implemented multiple initiatives to achieve the mandate including Security Program revisions and the NCSP recognition program, and under the Air Cargo Advance Screening program is working to enhance the pre-departure risk assessment of international inbound air cargo.

The draft report contained three recommendations with which the Department concurs. Attached find our detailed response to each recommendation. Technical comments were previously provided under separate cover.

Again, thank you for the opportunity to review and comment on this draft report. Please feel free to contact me if you have any questions. We look forward to working with you again in the future.

Sincerely,

JIM H. CRUMPACKER, CIA, CFE
Director
Departmental GAO-OIG Liaison Office

Attachment

2

Attachment: Management Response to Recommendations Contained in GAO-19-162

GAO recommended that the Administator of TSA instruct Global Stategies (GS) to:

Recommendation 1: Develop and monitor outcome-based performance measures for determining the effectiveness of the cargo portion of its foreign airport assessments.

Response: Concur. TSA's GS has already developed outcome-based performance measures for its foreign airport assessment program and as such, GS will work to create a system to determine the effectiveness of the cargo portion of these assessments. Estimated Completion Date (ECD): June 30, 2019.

Recommendation 2: Differentiate the extent to which air carriers correct violations related to cargo from those related to passengers as it develops outcome-based performance measures for its air carrier inspection program, and monitor any measure it develops.

Response: Concur. GS will develop outcome-based performance measures for air carrier inspections which will differentiate between cargo and passenger findings. TSA will review its strategy and align its resources to work towards developing outcome-based performance measures and determine the feasibility of leveraging current technology tools. ECD: September 30, 2019.

Recommendation 3: The Develop and monitor output and outcome-based performance measures for determining the effectiveness of its NCSP Recognition Program.

Response: Concur. TSA has already begun taking action by baselining its NCSP recognition activities to develop outcome based performance metrics. GS is developing the baseline activities and tools to establish performance metrics. ECD: October 31, 2019.

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Appendix V: GAO Contact and Staff Acknowledgments

GAO Contact

Nathan Anderson, (206) 287-4804 or andersonn@gao.gov.

Staff Acknowledgments

In addition to the contact above, Christopher Conrad (Assistant Director), Paul Hobart (Analyst-in-Charge), Hiwotte Amare, Charles Bausell, Dominick Dale, Pamela Davidson, Wendy Dye, Mike Harmond, Eric Hauswirth, Ryan Lester, Benjamin Licht, and Tom Lombardi made key contributions.

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