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AVIATION SECURITY

TSA Has Made Progress but Faces Challenges in Meeting the Statutory Mandate for Screening Air Cargo on Passenger Aircraft



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Highlights of [GAO-10-446](#), a report to congressional requesters

Why GAO Did This Study

Billions of pounds of cargo are transported on U.S. passenger flights annually. The Department of Homeland Security's (DHS) Transportation Security Administration (TSA) is the primary federal agency responsible for securing the air cargo system. The 9/11 Commission Act of 2007 mandated DHS to establish a system to screen 100 percent of cargo flown on passenger aircraft by August 2010. As requested, GAO reviewed TSA's progress in meeting the act's screening mandate, and any related challenges it faces for both domestic (cargo transported within and from the United States) and inbound cargo (cargo bound for the United States). GAO reviewed TSA's policies and procedures, interviewed TSA officials and air cargo industry stakeholders, and conducted site visits at five U.S. airports, selected based on size, among other factors.

What GAO Recommends

GAO recommends that TSA establish milestones for a staffing study, verify the accuracy of all reported screening data, develop a contingency plan for screening domestic cargo, and develop plans for meeting the mandate as it applies to inbound cargo. TSA partially concurred with verifying screening data and did not concur with developing a contingency plan because it did not believe such actions were feasible. GAO believes these recommendations remain valid, as discussed in this report. TSA agreed with all other recommendations.

[View GAO-10-446 or key components.](#)
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AVIATION SECURITY

TSA Has Made Progress but Faces Challenges in Meeting the Statutory Mandate for Screening Air Cargo on Passenger Aircraft

What GAO Found

TSA has made progress in meeting the air cargo screening mandate as it applies to domestic cargo, but faces challenges in doing so that highlight the need for a contingency plan. TSA has, for example, increased required domestic cargo screening levels from 50 percent in February 2009 to 75 percent in May 2010, increased the amount of cargo subject to screening by eliminating many domestic screening exemptions, created a voluntary program to allow screening to take place at various points in the air cargo supply chain, conducted outreach to familiarize industry stakeholders with screening requirements, and tested air cargo screening technologies. However, TSA faces several challenges in developing and implementing a system to screen 100 percent of domestic air cargo, and it is questionable, based on reported screening rates, whether 100 percent of such cargo will be screened by August 2010 without impeding the flow of commerce. For example, shipper participation in the voluntary screening program has been lower than targeted by TSA. In addition, TSA has not completed a staffing study to determine the number of inspectors needed to oversee the screening program. Because it is unclear how many industry stakeholders will join the program, TSA could benefit from establishing milestones to complete a staffing study to help ensure that it has the resources it needs under different scenarios. Moreover, TSA faces technology challenges that could affect its ability to meet the screening mandate. Among these, there is no technology approved by TSA to screen large pallets or containers of cargo, which suggests the need for alternative approaches to screening such cargo. TSA also does not verify the self-reported data submitted by screening participants. Several of these challenges suggest the need for a contingency plan, in case the agency's current initiatives are not successful in meeting the mandate without impeding the flow of commerce. However, TSA has not developed such a plan. Addressing these issues could better position TSA to meet the mandate.

TSA has made some progress in meeting the screening mandate as it applies to inbound cargo by taking steps to increase the percentage of screened inbound cargo—including working to understand the screening standards of other nations and coordinating with them to mutually strengthen their respective security efforts. Nevertheless, challenges remain and TSA does not expect to achieve 100 percent screening of inbound air cargo by the mandated August 2010 deadline. TSA officials estimate that air carriers are meeting the current mandated screening level of 50 percent of inbound cargo based on estimates rather than on actual data as required by law. Thus, TSA cannot verify if mandated screening levels are being met. In addition, the agency has not determined how it will eventually meet the screening mandate as it applies to inbound cargo; developing such a plan could better position TSA to assess its progress toward meeting the mandate.

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Abbreviations

ATS	Automated Targeting System
CBP	U.S. Customs and Border Protection
CCSF	certified cargo screening facility
CCSP	Certified Cargo Screening Program
DHS	Department of Homeland Security
EC	European Commission
EDS	explosives detection system
EMD	electronic metal detection
ETD	explosives trace detection
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IFR	interim final rule
S&T Directorate	Directorate for Science and Technology
TSA	Transportation Security Administration
TSI	transportation security inspector
ULD	unit load device

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United States Government Accountability Office
Washington, DC 20548

June 28, 2010

The Honorable Bennie G. Thompson
Chairman
Committee on Homeland Security
House of Representatives

The Honorable John D. Rockefeller, IV
Chairman
Committee on Commerce, Science, and Transportation
United States Senate

The Honorable Edward J. Markey
House of Representatives

In 2008, about 7.3 billion pounds of cargo was transported on U.S. passenger flights—approximately 58 percent of which was transported domestically (domestic cargo) and 42 percent of which was transported on flights arriving in the United States from a foreign location (inbound cargo).¹ The 2009 Christmas Day plot to detonate an explosive device during an international flight bound for Detroit demonstrates that terrorists continue to view passenger aircraft as attractive targets. According to the Transportation Security Administration (TSA), the security threat posed by terrorists introducing explosive devices in air cargo shipments is significant, and the risk and likelihood of such an attack directed at passenger aircraft is high.² Created by the November 2001 Aviation and Transportation Security Act, TSA is responsible for the screening of all passengers and property, including cargo, U.S. mail, and carry-on and checked baggage, transported on passenger aircraft.³ In addition to TSA, U.S. Customs and Border Protection (CBP) plays a role in

¹For the purposes of this report, domestic cargo refers to cargo transported by air within the United States and from the United States to a foreign location by both U.S. and foreign air carriers, and inbound cargo refers to cargo transported by both U.S. and foreign air carriers from a foreign location to the United States. These cargo statistics were provided by the Transportation Security Administration from the Bureau of Transportation Statistics.

²Specific threat details are classified and are not discussed in this report. Generally, the threat that has been identified by TSA is that of an improvised explosive device.

³Pub. L. No. 107-71, 115 Stat. 597 (2001).

securing inbound cargo by selectively screening cargo upon its arrival in the United States.⁴

To help enhance the security of air cargo, the Implementing Recommendations of the 9/11 Commission Act of 2007 (9/11 Commission Act) mandated the Department of Homeland Security (DHS) to establish a system to physically screen 50 percent of cargo on passenger aircraft—including the domestic and inbound flights of foreign and U.S. passenger operations—by February 2009, and 100 percent of such cargo by August 2010.⁵ The 9/11 Commission Act defines screening for purposes of the air cargo screening mandate as a physical examination or nonintrusive methods of assessing whether cargo poses a threat to transportation security.⁶ The act also requires that such a system provide a level of security commensurate with the level of security for the screening of checked baggage. According to TSA, the mission of its air cargo security program is to secure the air cargo transportation system while not unduly impeding the flow of commerce. Although the mandate is applicable to both domestic and inbound cargo, TSA stated that it must address the mandate for domestic and inbound cargo through separate systems because of differences in its authority to regulate domestic and international air cargo industry stakeholders. This report will therefore address efforts to meet the screening mandate as it applies to domestic and inbound cargo separately.

You asked us to review TSA’s progress in meeting the air cargo screening mandate. In response to this request, this report addresses the following questions:

1. What progress has TSA made in meeting the 9/11 Commission Act screening mandate as it applies to domestic air cargo, and what related challenges, if any, does TSA face?
2. What progress has TSA made in meeting the 9/11 Commission Act screening mandate as it applies to inbound air cargo, and what related challenges, if any, does TSA face?

⁴CBP has primary responsibility for preventing terrorists and implements of terrorism from entering the United States.

⁵Pub. L. No. 110-53, § 1602, 121 Stat. 266, 477-80 (codified at 49 U.S.C. § 44901(g)).

⁶See 49 U.S.C. § 44901(g)(5). For the purposes of this report, physical screening is generally used to describe screening for purposes of the air cargo screening mandate.

To assess TSA's progress and challenges in implementing a system to meet the 9/11 Commission Act screening mandate as it applies to domestic cargo, we reviewed TSA's air cargo security policies and procedures, screening program documents, technology assessment procedures, TSA's Regulatory Activities Plan, the September 2009 air cargo interim final rule, and various DHS and industry stakeholder reports and testimony related to air cargo security, such as DHS Inspector General and industry reports.⁷ In addition, we conducted site visits to four category X U.S. commercial airports and one category I U.S. commercial airport that process domestic and inbound air cargo.⁸ We selected these airports based on the following criteria: airport size, passenger and air cargo volumes, location, and participation in TSA's screening program. At these airports, we observed screening operations and technologies and interviewed local TSA officials, airport management officials, and representatives from 7 air carriers, 24 freight forwarders, 3 shippers, and 2 handling agents to obtain their views on TSA's system to implement the screening mandate.⁹ We selected these air carriers, freight forwarders, shippers, and handling agents based on input from TSA and from industry stakeholders. We also interviewed TSA air cargo program officials, officials from DHS's Directorate for Science and Technology (S&T Directorate), TSA Office of Inspections officials, DHS Office of Inspector General officials, Department of Commerce officials, three air cargo industry consultants and experts, and

⁷The policies and procedures we reviewed include Aircraft Operator Standard Security Program, Change 5A, February 26, 2009; Aircraft Operator Standard Security Program, Change 9, April 1, 2010; Aircraft Operator Standard Security Program, Change 9A, June 3, 2010; Alternate Procedure to Indirect Air Carrier Standard Security Program (AP-IACSSP-08-002-C), February 25, 2009; Alternate Procedure to Indirect Air Carrier Standard Security Program (AP-IACSSP-08-001-E), February 25, 2009; Alternate Procedure to Indirect Air Carrier Standard Security Program (AP-IACSSP-08-002-E), April 19, 2010; Certified Cargo Screening Program Order, Change 2, February 26, 2009; Foreign Air Carrier Model Security Program, Change 8A, February 26, 2009; Foreign Air Carrier Model Security Program, Change 12, April 1, 2010; Foreign Air Carrier Model Security Program, Change 12A, June 3, 2010; and Indirect Air Carrier Standard Security Program, Change 3A, February 26, 2009.

⁸There are about 450 commercial airports in the United States. TSA classifies airports into one of five categories (X, I, II, III, and IV) based on various factors, such as the total number of takeoffs and landings annually, the extent to which passengers are screened at the airport, and other special security considerations. In general, category X airports have the largest number of passenger boardings, and category IV airports have the smallest.

⁹For the purposes of this report, the term freight forwarder only includes those freight forwarders that are regulated by TSA, also referred to as indirect air carriers. A freight forwarder is a company that consolidates cargo from multiple shippers onto a master air waybill—a manifest of the consolidated shipment—and delivers the shipment to air carriers for transport.

representatives from six air cargo industry associations that represent a variety of air cargo industry stakeholders.¹⁰ We selected these industry associations because they represent a large portion of the air cargo industry. We selected the industry consultants and experts based on their experience in the field of aviation security, and their recognition in the aviation security community. Our site visits and interviews with industry stakeholders were based on a nonprobability sample and are not generalizable to the entire air cargo industry. However, this sample allowed us to observe cargo screening operations and programs in various parts of the country with differing air cargo volumes and commodities, and thus provided important perspectives on TSA's air cargo screening program. We also analyzed TSA data on cargo screening levels and compliance violations from February 2009 through December 2009, and TSA data on compliance inspections from February 2009 through February 2010. We selected these date ranges because the air cargo screening requirement started in February 2009 and, at the time of our request, TSA data for cargo screening levels, compliance violations, and compliance inspections were only available through December 2009, December 2009, and February 2010, respectively. To assess the reliability of the data, we discussed quality control procedures with agency officials; reviewed TSA's data collection, entry, and analysis processes; and observed data entry and processing activities for screening data. We found the data to be sufficiently reliable to provide a general indication of cargo screening and compliance levels. We assessed TSA's efforts against criteria for successful project planning and standard practices for program management to determine if TSA's efforts evaluate staffing implications

¹⁰The associations whose officials we interviewed include one air carrier association that represents 16 of the principal U.S. air carriers and their affiliates, which transport more than 90 percent of U.S. air carrier passenger and cargo traffic; one air carrier association that represents about 230 U.S. and foreign air carriers that account for 93 percent of scheduled international air traffic; one air carrier association that represents 16 small U.S. air carriers, many of which fly all-cargo and charter aircraft; one freight forwarder association that represents 330 companies and about 3,000 offices out of approximately 4,500 domestic freight forwarders, and a variety of small, medium, and large domestic freight forwarders; one airport association whose commercial airport members represent more than 95 percent of domestic air carrier passenger and air cargo traffic in North America; and one pilots' association that represents 28,000 out of 90,000 pilots at U.S. air carriers.

and include time frames and milestones.¹¹ In addition, we assessed TSA efforts against qualification testing procedures and time frames established by TSA to determine its progress in completing qualification testing of air cargo screening technologies. We also assessed TSA's screening verification procedures against the Office of Management and Budget's guidelines for ensuring information quality to determine if TSA reviews and substantiates the integrity of information before it is disseminated.¹² In addition, we assessed TSA's efforts against the agency's policies and procedures and criteria for successful project planning to determine if the agency's plan considers all phases of the project and includes schedules and deadlines.¹³ Finally, we assessed TSA's plan for meeting the screening mandate as it applies to domestic cargo against criteria for comprehensive planning to determine whether it included contingency planning.¹⁴

To assess TSA's progress and challenges in implementing a system to meet the 9/11 Commission Act screening mandate as it applies to inbound air cargo, we reviewed TSA's air cargo policies and procedures and various DHS and industry stakeholder reports and testimony related to inbound air cargo security. We also interviewed local TSA officials, airport management officials, and representatives from seven air carriers at the five airports we visited to obtain their views on inbound cargo screening issues. In addition, we interviewed TSA air cargo program officials, including TSA international cargo inspectors, and representatives from six air cargo industry associations, and discussed TSA's plans with CBP

¹¹GAO, *2010 Census: Cost and Design Issues Need to Be Addressed Soon*, [GAO-04-37](#) (Washington, D.C.: Jan. 15, 2004). This report reviewed a number of guides to project management and business process reengineering to help determine the key elements for successful project planning. The guides include Project Management Institute Standards Committee, *A Guide to the Project Management Body of Knowledge* © (1996); Information Technology Resource Board, *Project Management for Mission Critical Systems: A Handbook for Government Executives* (Apr. 5, 2001); Carnegie Mellon Software Engineering Institute, *Capability Maturity Model Integration Project Planning Guide* (March 2001); and GAO, *Business Process Reengineering Assessment Guide*, Version 3, [GAO/AIMD-10.1.15](#) (Washington, D.C.: May 1997). See The Project Management Institute, *The Standard for Program Management* © (2006).

¹²Office of Management and Budget, *Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by Federal Agencies* (October 2001).

¹³[GAO-04-37](#).

¹⁴GAO, *Federal Law Enforcement Training Center: Capacity Planning and Management Oversight Need Improvement*, [GAO-03-736](#) (Washington, D.C.: July 24, 2003).

officials.¹⁵ We assessed TSA's plans for inbound cargo screening verification against standard practices for program management.¹⁶ We also assessed TSA's plan for inbound cargo screening against criteria for successful project planning to determine if the agency's plan considers all phases of the project and includes schedules and deadlines.¹⁷

We conducted this performance audit from September 2008 through June 2010 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.

Background

Approximately 16 percent of air cargo transported to, from, or within the United States is shipped on passenger aircraft, while the remainder is transported on all-cargo aircraft.¹⁸ Overall, approximately 20 million pounds of cargo is transported on domestic and inbound passenger aircraft daily.¹⁹ This cargo ranges in size from 1 pound to several tons and in type from perishable commodities to machinery. Air cargo can include such varied items as electronic equipment, automobile parts, clothing, medical supplies, fresh produce, and human remains. As seen in figure 1, cargo can be shipped in various forms, including unit load devices (ULD) that allow many packages to be consolidated into one large container or pallet that can be loaded onto an aircraft, wooden skids or crates, and individually wrapped/boxed pieces, known as loose or break bulk cargo.

¹⁵The six air cargo industry associations are those discussed earlier in this report.

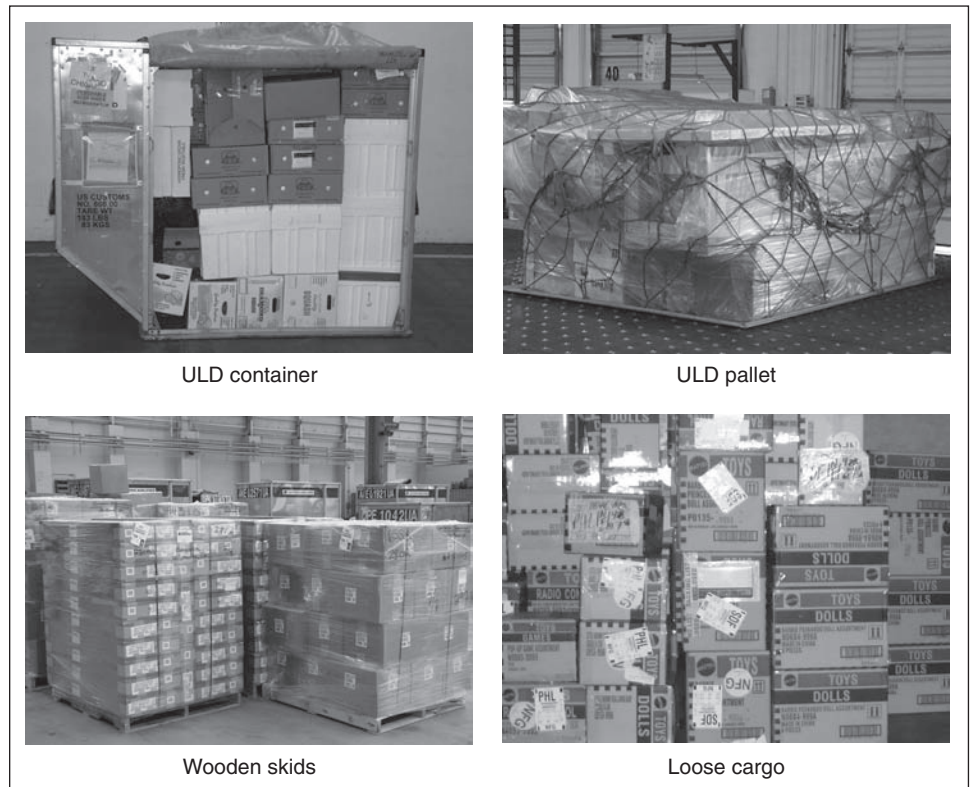
¹⁶The Project Management Institute, *The Standard for Program Management*.

¹⁷[GAO-04-37](#).

¹⁸All-cargo aircraft are aircraft that transport only cargo.

¹⁹These cargo statistics were provided by TSA from the Bureau of Transportation Statistics.

Figure 1: Various Types of Air Cargo



Source: GAO.

Participants in the air cargo shipping process include shippers, such as individuals and manufacturers of various product types; freight forwarders, such as a company that accepts packages and ships them on behalf of individuals or manufacturers; air cargo handling agents, who process and load cargo onto aircraft on behalf of air carriers; and air carriers that load and transport cargo. A shipper may take or send its packages to a freight forwarder that in turn consolidates cargo from many shippers onto a master air waybill—a manifest of the consolidated shipment—and delivers the shipment to air carriers for transport. A shipper may also send freight by directly packaging and delivering it to an air carrier’s ticket counter or sorting center, where the air carrier or a cargo handling agent will sort and load cargo onto the aircraft.

TSA’s responsibilities for securing air cargo include establishing security requirements governing domestic and foreign passenger air carriers that transport cargo, and domestic freight forwarders. TSA is also responsible

for overseeing the implementation of air cargo security requirements by air carriers and freight forwarders through compliance inspections by transportation security inspectors (TSI)—staff within TSA responsible for aviation or cargo security inspections—and, in coordination with DHS’s S&T Directorate, for guiding research and development of air cargo security technologies. Of the over \$5.2 billion provided to TSA for aviation security in fiscal year 2010, approximately \$123 million is for air cargo security as called for in the Conference Report for the DHS Appropriations Act, 2010. Of this amount, TSA was directed to use \$15 million to test, evaluate, and deploy screening technologies; to expand canine teams operated by TSA by transferring 35 teams from those operated by local law enforcement; to deploy technologies to screen skids and pallets; and to increase the number of TSIs who oversee participants in the newly developed Certified Cargo Screening Program (CCSP)—a voluntary cargo screening program for freight forwarders, shippers, and other air cargo industry participants.²⁰ For fiscal year 2011, TSA has requested approximately \$118 million for its air cargo security efforts.

U.S. and foreign air carriers, freight forwarders, and certified cargo screening facilities (CCSF)—industry stakeholders that have joined the CCSP—are responsible for implementing TSA security requirements, including maintaining a TSA-approved security program that describes the security policies, procedures, and systems the air carriers, freight forwarders, and CCSFs must implement to ensure compliance. These requirements include measures related to the acceptance, handling, and screening of cargo; training of employees in security and cargo screening procedures; testing for employee proficiency in cargo screening; and access to cargo areas and aircraft. Air carriers, freight forwarders, and CCSFs must also abide by security requirements imposed by TSA through security directives and amendments to security programs.

In addition to TSA, CBP and foreign governments play a role in securing inbound cargo. Unlike TSA, which requires screening prior to departure,

²⁰H.R. Conf. Rep. No. 111-298, at 79 (2009). In fiscal year 2009, TSA allocated 85 proprietary canine teams—teams that are owned and operated full-time by TSA staff. TSA also has agreements with local law enforcement agencies, such as local police departments, for some of their canine teams to operate part-time in the air cargo environment. The transfer of 35 local law enforcement teams to TSA would increase the number of allocated TSA proprietary canine teams to 120. TSA tests technologies in laboratory and operational environments, evaluates the performance and effectiveness of technology against preset standards, and upon successful completion of the assessments, deploys the technology at airports and air cargo facilities.

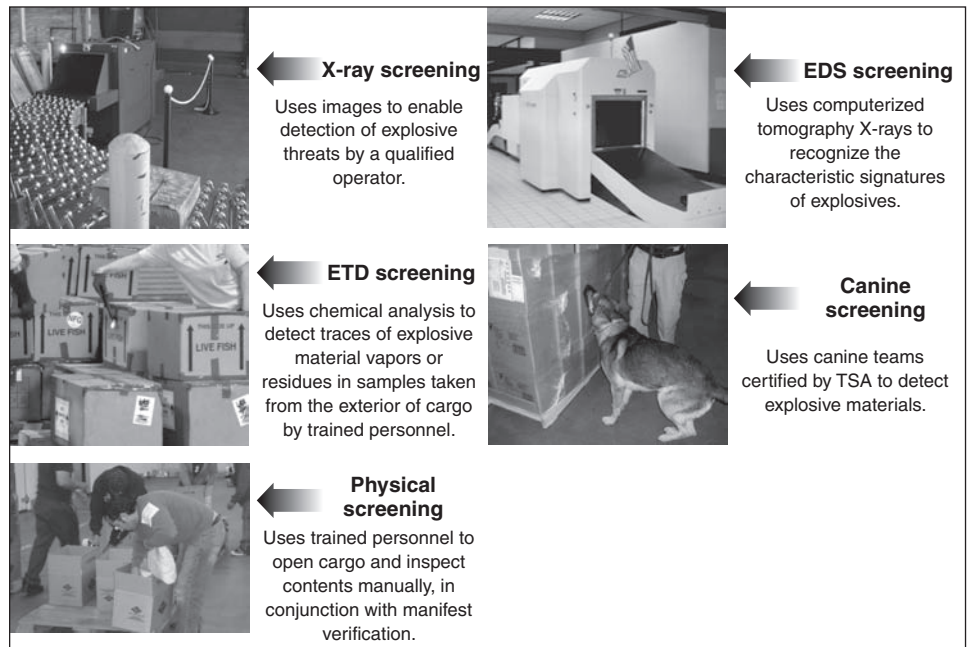
CBP determines the admissibility of cargo into the United States and is authorized to inspect inbound air cargo for terrorists or weapons of mass destruction upon its arrival in the United States.²¹ Foreign governments may also impose their own security requirements on cargo departing from their airports.

The 9/11 Commission Act specifies that air cargo screening methods include X-ray systems, explosives detection systems (EDS), explosives trace detection (ETD), explosives detection canine teams certified by TSA, physical search together with manifest verification, and any additional methods approved by the TSA Administrator.²² However, solely performing a review of information about the contents of cargo or verifying the identity of the cargo's shipper does not constitute screening for purposes of satisfying the mandate. Figure 2 shows some approved screening methods.

²¹A weapon of mass destruction could include nuclear, biological, chemical, or radiological devices.

²²See 49 U.S.C. § 44901(g)(5). EDS uses computer-aided tomography X-rays to examine objects inside baggage and identify the characteristic signatures of threat explosives. ETD requires human operators to collect samples of items to be screened with swabs, which are chemically analyzed to identify any traces of explosive material. Certified explosives detection canine teams have been evaluated by TSA and shown to effectively detect explosive devices. Physical search together with manifest verification entails comparisons between air waybills and cargo contents to ensure that the contents of the cargo shipment match the cargo identified in documents filed by the shipper.

Figure 2: Approved Air Cargo Screening Methods



Source: GAO.

TSA Has Made Progress toward Screening 100 Percent of Domestic Cargo Transported on Passenger Aircraft, but Remaining Challenges Highlight the Need for a Contingency Plan

TSA has made progress in meeting the 9/11 Commission Act air cargo screening mandate as it applies to domestic cargo, and has taken several key steps in this effort, such as increasing the amount of domestic cargo subject to screening, creating a voluntary program—the CCSP—to allow screening to take place at various points along the air cargo supply chain, and taking steps to test air cargo screening technologies, among other actions. However, TSA faces several challenges in fully developing and implementing a system to screen 100 percent of domestic air cargo. For example, shipper participation in the CCSP has been lower than targeted by TSA. Furthermore, TSA lacks information to help ensure that it has the inspection resources it may need to provide effective oversight of CCSP entities. In addition, there is currently no technology approved or qualified by TSA to screen ULD pallets or containers, and TSA is working to complete qualification testing of several air cargo screening technologies to provide reasonable assurance of their effectiveness. Questions also exist about the reliability of the data used to calculate screening levels reported by TSA. Moreover, in-transit cargo—such as cargo that is transferred from an inbound to a domestic passenger flight—is not currently required to undergo physical screening. Finally, TSA has not

developed a contingency plan to address CCSP participation and screening technology challenges, which could be implemented should TSA's current efforts not be sufficient to achieve the 100 percent screening mandate without impeding the flow of commerce.

Progress in Meeting the 100 Percent Screening Mandate as It Applies to Domestic Cargo

TSA has taken several steps to address the air cargo screening mandate.

TSA increased the amount of domestic cargo subject to screening. Effective October 1, 2008, several months prior to the first mandated deadline of 50 percent screening by February 2009, TSA established a requirement for 100 percent screening of nonexempt cargo transported on narrow-body passenger aircraft.²³ In 2008, narrow-body flights transported about 24 percent of all cargo on domestic passenger flights.²⁴ Effective February 1, 2009, pursuant to the 9/11 Commission Act, TSA also required air carriers to ensure the screening of 50 percent of all nonexempt air cargo transported on all passenger aircraft. Furthermore, effective May 1, 2010, air carriers were required to ensure that 75 percent of such cargo was screened. Although screening may be conducted by various entities, according to TSA regulations, each air carrier must ensure that the screening requirements are fulfilled. Furthermore, TSA eliminated or revised most of its screening exemptions for domestic cargo. For example, TSA eliminated the screening exemptions for palletized shrink-wrapped skids, effective February 2009, and for sealed pharmaceuticals and certain electronics, effective September 2009. As a result of the elimination of exemptions, most domestic cargo is now subject to TSA screening

²³TSA exempts some categories of air cargo from physical screening and requires alternative methods of screening, such as verifying shipper and cargo information and visually inspecting the cargo shipment, rather than opening the shipment and physically searching its contents or screening it with technology. TSA determines whether domestic cargo is subject to alternative methods of screening based on professional judgment and the results of the air cargo vulnerability assessments. For the purposes of this report, the phrase "exempt cargo" and the word "exemption" refer to cargo that is subject to such alternative screening measures. Narrow-body aircraft, such as Boeing 737s and Airbus 320s, are defined by fuselage diameter, and most narrow-body aircraft have only one aisle. Narrow-body aircraft that fly in the United States do not carry ULDs that allow packages to be consolidated in a container or pallet. Wide-body aircraft are also defined by fuselage diameter and can carry ULDs.

²⁴According to statistics provided by TSA from the Bureau of Transportation Statistics, narrow-body aircraft make up 97 percent of passenger flights and transport more than 90 percent of passengers traveling on domestic passenger flights.

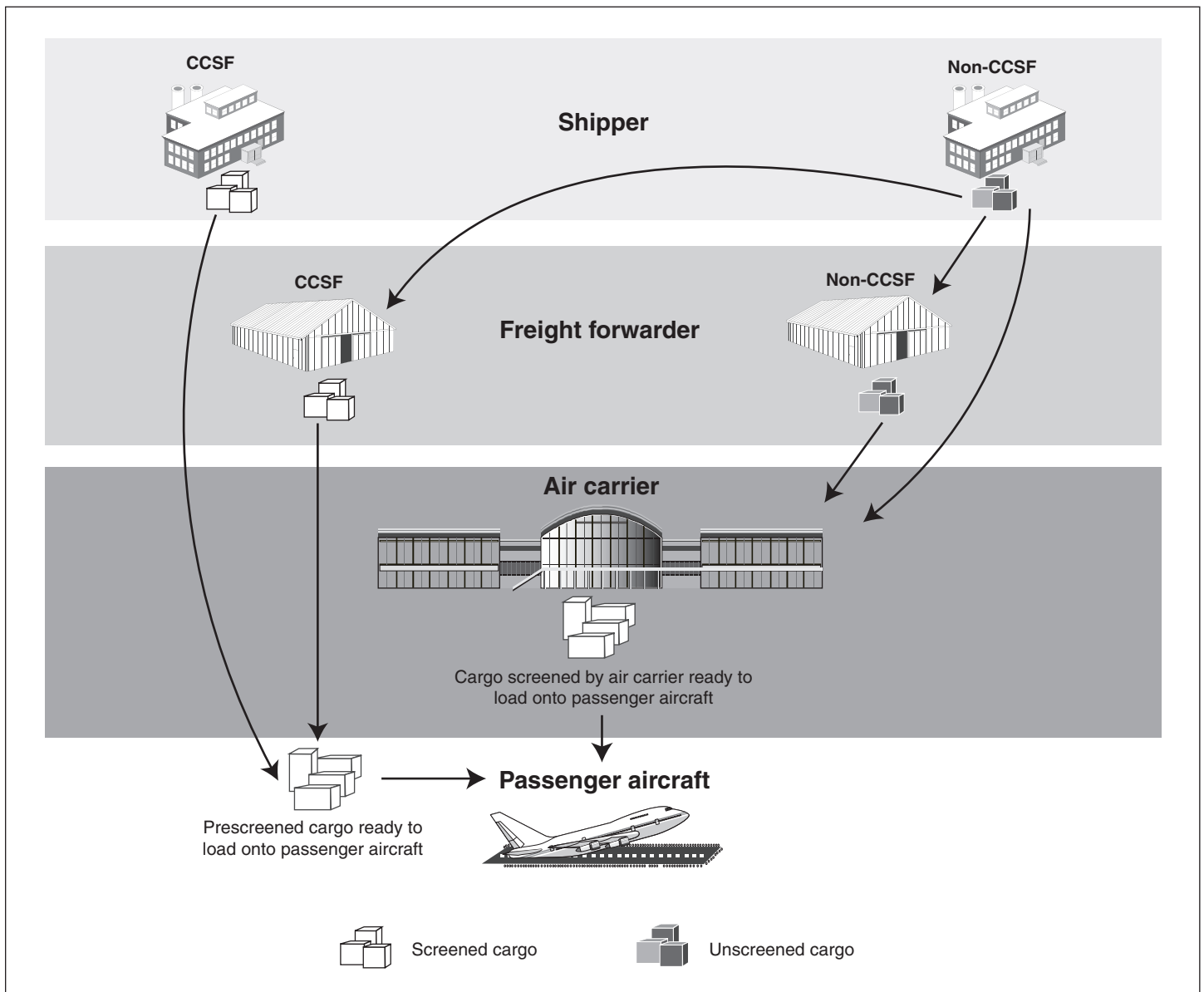
requirements. However, TSA is retaining several of the screening exemptions that apply to sensitive cargo.²⁵

TSA created a voluntary program to facilitate screening throughout the air cargo supply chain. Since TSA concluded that relying solely on air carriers to conduct screening would result in significant cargo backlogs and flight delays, TSA created the voluntary CCSP to allow screening to take place earlier in the shipping process, prior to delivering the cargo to the air carrier (see fig. 3). Under this decentralized approach, air carriers, freight forwarders, shippers, and other entities each play an important role in the screening of cargo. Under the CCSP, facilities at various points in the air cargo supply chain, such as shippers, manufacturers, warehousing entities, distributors, third-party logistics companies, and freight forwarders that are located in the United States, may voluntarily apply to TSA to become CCSFs. Once in the program, they are regulated by TSA. According to TSA officials, sharing screening responsibilities across the air cargo supply chain is expected to minimize the potential increases in cargo transit time, which could result if the majority of screening were conducted by air carriers at the airport. While the CCSP allows for a number of entities to conduct air cargo screening, according to TSA regulations, air carriers are responsible for ensuring that all domestic cargo transported on passenger aircraft is screened.²⁶ TSA officials stated that effective August 2010, unscreened domestic cargo would not be transported on passenger aircraft.

²⁵Details on TSA's screening exemptions are Sensitive Security Information and are not discussed in this report.

²⁶49 C.F.R. §§ 1544.205(g)(1)(ii), 1546.205(g)(1)(ii).

Figure 3: Flow of Cargo Screening at CCSFs and Air Carriers



Sources: GAO (analysis), Art Explosion (clip art).

Note: After screening at a shipper CCSF, cargo may be transported to a freight forwarder for purposes other than screening, such as consolidation. However, this figure shows the locations of cargo screening and does not show cargo routes for purposes other than screening.

TSA initiated the CCSP at 18 U.S. airports that process high volumes of air cargo, and then expanded the program to all U.S. airports in early 2009.

CCSP participants were certified to begin screening cargo as of February 1, 2009. The shipper participants were regulated pursuant to an order, and the rules for freight forwarder participants were instituted through an amendment to their security programs.²⁷ On September 16, 2009, TSA issued an interim final rule (IFR) that effective November 16, 2009, regulates the shippers, freight forwarders, and other entities participating in the CCSP.²⁸ According to the IFR, to become a CCSF, a facility's screening measures must be evaluated by TSA or a TSA-approved validation firm. Under its certification process, TSA requires each CCSF to demonstrate compliance with its security standards that include facility, personnel, procedural, perimeter, and information technology security.

Prior to certification, the CCSP applicant must submit for review and approval its training programs related to physical screening, facility access controls, and chain of custody, among other things. CCSF applicants must also implement TSA-approved security programs and appoint security coordinators before they can become certified. CCSFs must ensure that certain employees have undergone TSA-conducted security threat assessments; adhere to control measures for storing, handling, and screening cargo; screen cargo using TSA-approved methods; and implement chain of custody requirements.²⁹ Once certified, CCSFs must apply for recertification, including a new examination by TSA or a TSA-approved validator, every 36 months.

As part of the current program, and using TSA-approved screening methods, freight forwarder CCSFs must screen 50 percent of cargo being delivered to wide-body passenger aircraft and 100 percent of cargo being delivered to narrow-body passenger aircraft. According to TSA, although shipper CCSFs are not required to screen shipments to be delivered to a passenger aircraft, when they choose to conduct screening, such shipments must be screened at 100 percent.³⁰ In addition, each CCSF must

²⁷The agency issued an interim order in December 2008 to allow shippers and other entities that were previously not regulated by TSA to screen, accept, and transfer air cargo.

²⁸74 Fed. Reg. 47672, September 16, 2009.

²⁹A security threat assessment is a check of personnel against intelligence records and databases, including terrorist watch lists, and a limited immigration check, to verify that they do not pose a security threat.

³⁰Beginning in August 2010, at the 100 percent screening deadline, TSA officials told us that freight forwarder CCSFs will also be required to screen 100 percent of cargo being delivered to wide-body aircraft.

deliver the screened cargo to air carriers while maintaining a secure chain of custody to prevent tampering with the cargo after it is screened. In fiscal year 2009, entities that were certified by TSA to participate in the CCSP were subject to annual inspections by TSIs and additional inspections at TSA's discretion. According to the 2010 TSI Regulatory Activities Plan, the agency plans to conduct at least two comprehensive inspections a year (i.e., a review of the implementation of all air cargo security requirements) for each CCSP participant. In addition, the agency plans to conduct more frequent inspections based on each entity's compliance history, among other factors.

TSA is in the process of clarifying CCSF screening and training requirements. During the course of our site visit conducted in July 2009, we identified two instances where CCSFs misinterpreted CCSP screening requirements. For example, a freight forwarder representative with whom we spoke stated that the freight forwarder's certified facilities have flexibility in the levels of cargo they have to screen, such as screening a percentage of cargo on some days while not screening any cargo on others. This interpretation is contrary to the view of senior TSA officials who are responsible for implementing the program, that freight forwarder CCSFs must screen a percentage of cargo on a daily basis, as required in their TSA-approved security programs. While the extent to which misinterpretation of the CCSP requirements occurs among program participants is unclear, the instances we identified indicated that freight forwarder CCSFs may not be applying TSA screening requirements consistently. When we brought this issue to the attention of a senior TSA official, he stated that the agency would benefit from strengthening and clarifying CCSP screening requirements. In March 2010, TSA officials reported that the agency has taken steps to clarify the requirements, though they did not specify what those steps were, and said the agency is planning to communicate these clarifications to relevant stakeholders.

During our site visits conducted in June and July 2009, we also observed two cases where training materials used by freight forwarder CCSFs to educate their employees on the use of technology to screen cargo may not have been consistent with TSA screening procedures. For example, one freight forwarder representative we interviewed during our site visit stated that his company compiled training materials on how to screen cargo with ETD technology from public information found on the Internet. However, TSA has no way of knowing whether the public information gathered from the Internet or from other sources used to develop training materials is reliable or consistent with TSA policies and procedures. After we brought this issue to the attention of TSA officials, TSA reported that the agency

plans to clarify the CCSF training requirements regarding how to use technology to screen air cargo. Specifically, TSA plans to update these requirements in amendments to the freight forwarder CCSF policies and procedures. TSA officials also stated that the agency is considering providing CCSFs with a TSA-approved technology training package or a list of approved training vendors that CCSP participants can use to facilitate the training of their employees. The agency is in the early stages of this effort and has not yet developed time frames for when this effort will be completed.

TSA is conducting outreach efforts to air cargo industry stakeholders. Starting in September 2007, TSA began outreach to freight forwarders and subsequently expanded its outreach efforts to shippers and other entities to encourage participation in the CCSP. While industry participation in the CCSP is central to TSA's approach to spread screening responsibilities across the U.S. supply chain and, ultimately, meet the screening mandate, attracting shippers and freight forwarders to join the program is challenging because of the effect of the economic downturn on their resources and cargo volume, and the perception by some in the shipping and freight forwarder industry that screening costs and delays associated with air carriers conducting cargo screening will be minimal. TSA is focusing its outreach on particular industries, such as producers of perishable foods, pharmaceutical and chemical companies, and funeral homes, which may experience damage to their cargo if it is screened by a freight forwarder or an air carrier. TSA officials stated that they reach out to entities through a combination of conferences, outreach meetings, Internet presentations, and information posted in numerous trade association newsletters and on Web sites.

To enhance its outreach efforts, TSA established a team of 12 TSA field staff, or CCSP outreach coordinators, to familiarize industry with the air cargo screening mandate and the CCSP, as well as educate potential CCSP applicants on the program requirements.³¹ In addition, outreach coordinators are responsible for certifying cargo screening facilities.³² They visit the facilities of the CCSP applicants to assess their ability to

³¹TSA refers to CCSP outreach coordinators as principal cargo security analysts.

³²Under the IFR, TSA plans to engage TSA-approved third-party firms to validate and certify CCSP applicants. TSA refers to these third-party validators as third-party assessment validation firms. According to TSA officials, CCSP outreach coordinators plan to manage the oversight and certification of the third-party validators.

meet program requirements and to address any deficiencies identified during the assessment. To complete the certification process, the outreach coordinator ensures that the facility has appropriate procedures and training in place to screen cargo. According to TSA officials, in February 2009, the agency also began using its air cargo TSIs in the field to conduct outreach. Officials from the one domestic passenger air carrier association and the one freight forwarder association with whom we spoke reported that TSA's staff has been responsive and helpful in answering questions about the program and providing information on CCSP requirements.³³

TSA is taking steps to test technologies for screening air cargo. The 9/11 Commission Act specifies that the permitted methods of air cargo screening are X-ray systems, EDS, ETD, explosives detection canine teams, physical search together with manifest verification, and any additional methods approved by the TSA Administrator. However, TSA is responsible for determining which specific equipment models are authorized for use by industry stakeholders. We reported in March 2009 that TSA and DHS's S&T Directorate were pilot testing a number of technologies to screen air cargo.³⁴ For example, to test select screening technologies among CCSFs, TSA created the Air Cargo Screening Technology Pilot in January 2008, and selected some of the nation's largest freight forwarders to use these technologies and report on their experiences.³⁵ The screening that pilot participants perform counts toward meeting TSA screening requirements and in turn the air cargo screening mandate. In a separate effort, in July 2009, DHS's S&T Directorate completed the Air Cargo Explosives Detection Pilot Program that tested the performance of select baggage screening technologies for use in screening air cargo at three U.S. airports. TSA officials stated that the

³³The other industry association officials with whom we spoke did not comment on this issue.

³⁴GAO, *Aviation Security: Preliminary Observations on TSA's Progress and Challenges in Meeting the Statutory Mandate for Screening Air Cargo on Passenger Aircraft*, [GAO-09-422T](#) (Washington, D.C.: Mar. 18, 2009).

³⁵Initially, the Air Cargo Screening Technology Pilot, or the Indirect Air Carrier technology pilot as it is named in the IFR, was limited to high-volume freight forwarders (i.e., freight forwarders processing at least 200 shipments annually per location that contain cargo consolidated from multiple shippers). However, in November 2008, TSA issued a second announcement seeking additional high-volume freight forwarders and independent cargo screening facilities to apply for the pilot. Moreover, entities that do not participate in the pilot will not receive TSA funding to purchase screening technology.

agency will be reviewing the pilot results and conducting additional testing on the technologies identified in the resulting S&T Directorate report.

Furthermore, TSA initiated a qualification process to test the technologies that it plans to allow air carriers and CCSP participants to use in meeting the August 2010 screening mandate against TSA technical requirements. In November 2008, in addition to the canine and physical search screening methods permitted by TSA to screen air cargo, as an interim measure, TSA issued to air carriers and CCSFs a list of X-ray, ETD, and EDS models that the agency approved for screening air cargo until August 3, 2010.³⁶ TSA approved these technologies based on its subject matter expertise and the testing and performance of these technologies in the checkpoint and checked baggage environments. In March 2009, TSA initiated a laboratory and field-based qualification testing process to ensure effectiveness of approved and other technologies in the air cargo environment and qualify them for use after August 3, 2010.³⁷ Once the initial stage of the qualification testing process is accomplished, TSA's policy is to add successful candidates to a list of qualified products for industry stakeholders to utilize when purchasing technologies. For example, TSA added X-ray technologies to the list of qualified products in October 2009. TSA recommends that industry stakeholders purchase technologies from a list of qualified products because the technologies that do not pass the qualification testing process within 36 months of becoming approved are to be removed from a list of products authorized to screen air cargo. After issuing the list of qualified products, TSA plans to conduct additional stages of qualification testing and evaluation to determine the suitability of the screening equipment in an operational setting. During the qualification testing process, TSA expects to utilize the results of the Air Cargo Screening Technology Pilot and conduct additional operational tests independent of the pilot. A description of several programs to test screening technologies for air cargo and their status is included in table 1.

³⁶In December 2009, TSA extended the expiration date of the approved technologies to January 2012. For the purposes of this report, when discussing TSA's approved or qualified technology lists, X-ray refers to X-ray, advanced technology X-ray, or both.

³⁷The qualification process will also test future technologies not currently on the approved list once they mature and become approved.

Table 1: TSA and DHS Directorate for Science and Technology Programs to Test Technologies to Screen Air Cargo

Program	Description	Status
Air Cargo Screening Technology Pilot	Pilot participants—freight forwarder CCSFs and independent cargo screening facilities—operationally test ETD and X-ray technologies to determine their ability to screen high volumes of various cargo types and test chain of custody procedures. TSA provided the first round of participants with reimbursements up to \$375,000 for purchasing technology, and the second with reimbursements up to \$300,000.	As of December 31, 2009, 76 of 113 pilot participants were reporting screening data to TSA, such as cargo throughput, the number of equipment alarms triggered and resolved during screening, and chain of custody methods and their cost. TSA plans to complete the pilot in August 2010.
Air Cargo Explosives Detection Pilot	DHS tested the effectiveness, cost, and throughput of technologies and methods approved for screening checked baggage—EDS, ETD, standard X-ray machines, canine teams, and manual screening—in the air cargo environment.	In July 2009, DHS’s S&T Directorate submitted the final report to Congress that identified some challenges related to applicability of technologies to the air cargo environment, such as the limited ability of ETD systems to detect threats in an air cargo environment, and recommended further technology testing.
Air Cargo Qualification Testing	TSA plans to test the capabilities of four technologies to identify a small amount of explosives in air cargo—X-ray, ETD, electronic metal detection (EMD), and EDS. ^a TSA determines the effectiveness of a particular technology through tests in laboratory and operational settings.	TSA reported that several X-ray technologies have successfully passed initial qualification testing and announced which X-ray devices qualified in December 2009. In addition, TSA qualified EDS technologies based on past testing results, and will initiate qualification testing after August 2010. TSA planned to begin initial qualification testing for the ETD, EMD, and additional X-ray technologies in early 2010, and anticipates qualifying these technologies by summer of 2010.

Source: GAO analysis of information provided by TSA.

^aEMD devices are capable of detecting metallic-based explosive components, such as wires, within a variety of perishable commodities at the cargo piece, parcel, and pallet levels.

TSA expanded its explosives detection canine program. TSA has taken steps to expand the use of TSA-certified explosives detection canine teams. According to TSA, in fiscal year 2009, TSA canine teams screened over 145 million pounds of cargo, which represents a small portion of domestic air cargo.³⁸ As of February 2010, TSA had 113 dedicated air cargo

³⁸TSA canine teams conduct primary and secondary screening of cargo. Primary screening counts toward meeting the air cargo screening mandate. Secondary screening provides spot checks of the screening already conducted by air carriers and CCSFs. TSA could not provide a breakdown of the 145 million pounds of cargo between primary and secondary screening. Based on 2008 cargo totals, 145 million pounds of cargo represents about 3 percent of domestic air cargo.

screening canine teams—operating in 20 major airports—and is in the process of adding 7 additional canine teams.³⁹ TSA worked with air carriers to identify peak cargo delivery times, in order to schedule canine screening during times that would be most helpful to air carriers. TSA also deployed canine teams to assist the Pacific Northwest cherry industry during its peak harvest season from May through July 2009, to help air carriers and CCSFs handling this perishable commodity to meet the 50 percent screening requirement without disrupting the flow of commerce.

TSA established a system to verify that screening is being conducted at the mandated levels. The agency established a system to collect and analyze data from screening entities to verify that requisite levels for domestic cargo are being met. Effective February 2009, TSA adjusted air carrier reporting requirements and added CCSF reporting requirements to include monthly screening reports on the number and weight of shipments screened. Based on reporting guidance issued by the agency, air carriers and CCSFs provided to TSA the first set of screening data in mid-March 2009, to be used as the basis for TSA’s quarterly reports to Congress.⁴⁰ Under TSA’s current process, screening data are manually reviewed and analyzed to determine if the screening is conducted at the mandated levels. According to TSA officials, the agency plans to transition from a manual process to automated data collection, review, and analysis by mid-2010. Based on these preliminary data, TSA has determined that over 50 percent of air cargo (by weight and number of shipments) transported on domestic passenger aircraft has been screened since the 50 percent requirement went into effect. For fiscal year 2009, TSA submitted its 2nd Quarter report, due in May 2009, on October 2, 2009, verifying these screening levels.⁴¹ The 3rd Quarter report, due in August 2009, was submitted on January 7, 2010. The 4th Quarter report, due in November 2009, is undergoing Office of Management and Budget review.

³⁹In fiscal year 2010, TSA projects a total of 805 canine teams in aviation, mass transit, and maritime systems. In the fiscal year 2011 budget justification, TSA is requesting funding for an additional 275 explosives detection canine teams to operate in the area of aviation security.

⁴⁰The DHS Appropriations Act, 2009, requires TSA to report to the House and Senate Appropriations Committees quarterly on the actual screening conducted, by airport and air carrier. See Pub. L. No. 110-329, § 515(d), 122 Stat. 3574, 3683.

⁴¹Through an agreement with the House and Senate Appropriations Committees, TSA did not provide a 1st Quarter report.

TSA is developing a covert testing program to identify security vulnerabilities in the air cargo environment. TSA conducts undercover, or covert, tests that are designed to approximate techniques that terrorists may use in order to identify vulnerabilities in the people, processes, and technologies that make up the aviation security system. TSA officials reported that the agency plans to carry out a covert testing program for the air cargo environment in two phases and will conduct tests at shipper, freight forwarder, and air carrier facilities.⁴² Both phases are scheduled to begin in 2010. TSA is in the early stages of developing the testing protocols and thus has not yet established a timetable for their completion. According to TSA officials, the agency plans to use the results of these tests to identify and remedy vulnerabilities in the air cargo system.

In addition, TSA operates a risk-based Air Cargo Vulnerability Assessment program to identify weaknesses and potential vulnerabilities in the domestic air cargo supply chain. As of March 2010, TSA has conducted assessments at 33 U.S. airports and completed assessments at all domestic category X airports in December 2009. After completing these assessments, TSA stated that it will utilize the results to refine policy for air cargo security.

Challenges in Meeting the Screening Mandate as It Applies to Domestic Air Cargo

TSA faces industry participation, oversight, technology, and other challenges, and could benefit from a contingency plan to identify alternatives for meeting the air cargo screening mandate.

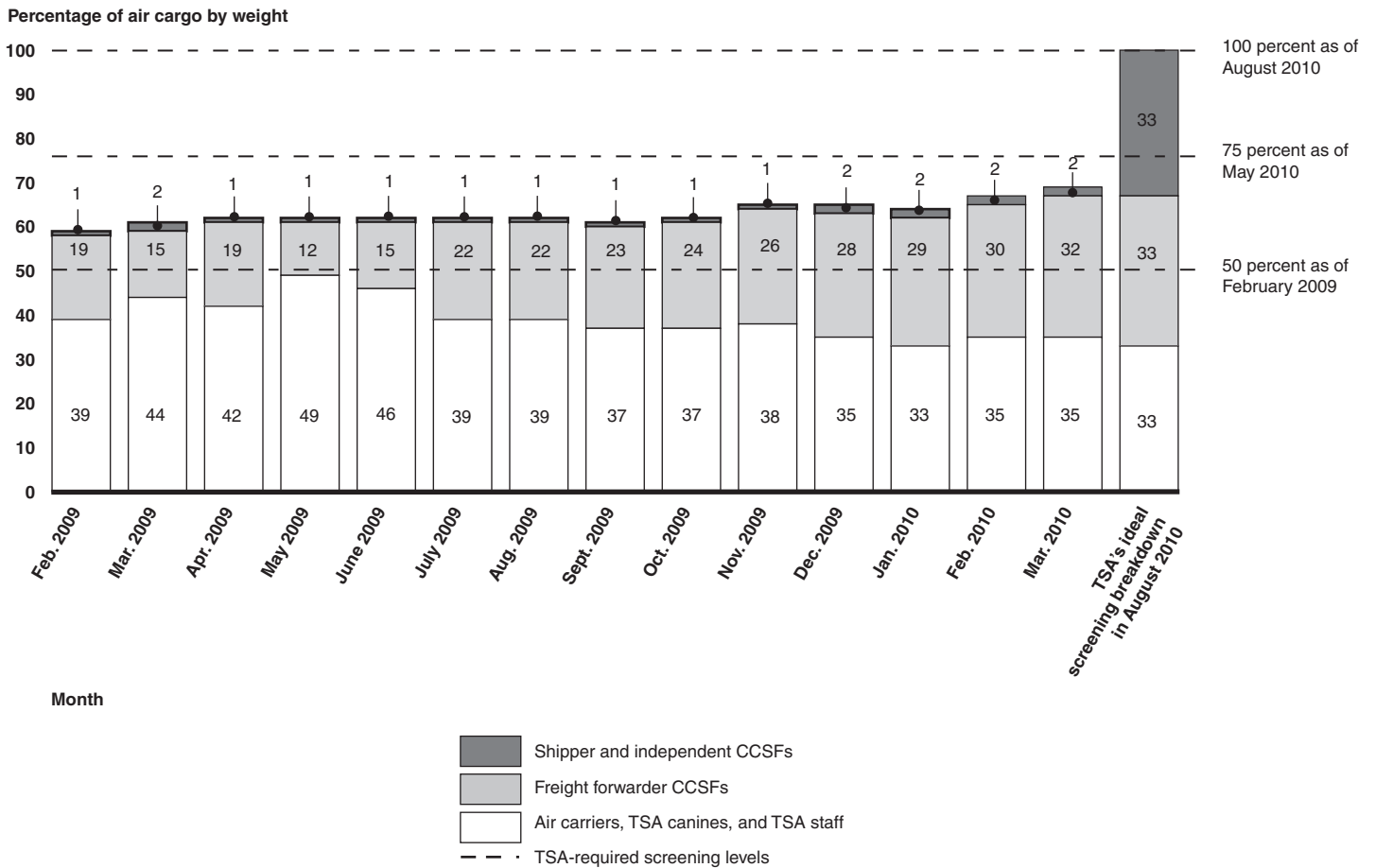
⁴²Details on TSA's covert testing program are Sensitive Security Information and are not discussed in this report.

Lower-Than-Targeted Levels of Shipper Participation in the CCSP Could Affect TSA Progress in Meeting the Screening Mandate

Although TSA is relying on the voluntary participation of industry stakeholders to meet the screening mandate, some stakeholders have not participated in the program at targeted levels. As shown in figure 4, TSA officials have estimated that an ideal mix of screening to achieve the 100 percent mandate as it applies to domestic cargo without impeding the flow of commerce would be about one-third of cargo weight screened by air carriers, one-third by freight forwarders, and one-third by shippers and independent CCSFs.⁴³ The air carrier portion includes a small amount of screening by TSA canine teams and by TSIs at the smaller category II through IV airports. TSA officials emphasized that this estimated ideal mix is not precise but is intended to illustrate that balanced industry participation is needed to achieve the goals of the program.

⁴³The CCSP allows air cargo industry stakeholders, such as an air cargo handling agent, to establish independent cargo screening facilities to provide screening services for shippers or freight forwarders that have not joined the program and do not want the air carriers to screen their cargo. These independent facilities screen cargo for a fee, according to CCSP guidelines. For the purposes of this report, we refer to independent cargo screening facilities as independent CCSFs.

Figure 4: TSA's Reported and Ideal Screening Percentage Breakdowns for Domestic Air Cargo Transported on Passenger Aircraft from February 2009 through March 2010



Source: GAO analysis of TSA screening data and information.

Notes: TSA was not able to provide us with screening data more recent than March 2010. We found these industry-reported data to be sufficiently reliable to provide a general indication of cargo screening levels. The reported and ideal screening breakdown percentages have been rounded to the nearest percentage point. The ideal screening breakdown percentages actually sum to 100 percent. The reported screening percentages for December 2009 actually sum to 64 percent, for February 2010 actually sum to 66 percent, and for March 2010 actually sum to 68 percent.

However, as of March 2010, the percentage of cargo reported as screened by shipper and independent CCSFs remained at 2 percent—far lower than the 33 percent TSA cites as the portion these entities should ideally screen. To achieve TSA's ideal mix of screening by August 2010, shipper and independent CCSF screening efforts would need to increase by over sixteenfold. Moreover, as shown in figure 4, the total percentage of reported screened cargo rose on average by less than a percentage point

per month (from 59 to 68 percent) from February 2009 through March 2010.⁴⁴ At these rates, it is questionable whether TSA's screening system will achieve 100 percent screening of domestic cargo by August 2010 without impeding the flow of commerce. Effective May 1, 2010, TSA requires that 75 percent of air cargo transported on passenger aircraft be screened. However, even if this requirement is met, an additional 25 percent of domestic passenger air cargo would still need to be screened in the 3 months prior to the August 2010 deadline, including some of the most challenging types of cargo to screen, such as ULD pallets and containers.

In March 2010, TSA officials stated that they surveyed current CCSFs and CCSP applicants to estimate these air cargo industry stakeholders' capacity for screening domestic cargo—this could help predict the industry's success in meeting the 100 percent screening deadline.⁴⁵ According to TSA officials, the survey indicated that current and prospective CCSFs have the potential capacity needed to screen cargo so that short-term delays at only the nation's 18 major airports will result when the 100 percent deadline goes into effect. However, TSA did not have supporting documentation of the survey's methodology or results. Thus, we were unable to independently verify TSA's assertions or the rigor of TSA's methodology and analysis. For example, it is unclear whether TSA's survey and estimation took into account cargo that is inherently difficult to screen, such as ULD pallets or containers, or whether it focused primarily on loose cargo that is being screened with relative ease. It is also important to note that having the potential capacity to screen air cargo does not ensure that this capacity will be fully utilized to meet the air cargo screening mandate.

In addition, TSA officials stated that they did not develop milestones to monitor CCSP progress because air cargo screening by industry stakeholders is driven by market forces that are beyond the control of the government and are impossible to forecast. Further, according to TSA officials, if the CCSP participants cannot contribute the amount of screening needed to achieve 100 percent screening by the August 2010

⁴⁴The screening percentages in fig. 4 have been rounded to the nearest percentage point. However, the actual percentages for March 2010 sum to 68 percent.

⁴⁵According to TSA, as of March 2010, the agency had certified 397 freight forwarder CCSFs, 143 shipper CCSFs, and 43 independent CCSFs out of an estimated population of 4,500 freight forwarders at 12,000 locations and 15,000 shippers at 2 million locations.

deadline, the air carriers will be responsible for screening any remaining unscreened cargo at the airport or ensuring that it does not fly on a passenger aircraft. However, according to officials from the two major air carrier industry associations and the one freight forwarder association with whom we spoke, if the volume of cargo is too great for air carriers to handle, it could significantly disrupt the air cargo industry because of delays from cargo screening at the airport and the shift of unscreened cargo to alternate modes of transportation, such as all-cargo aircraft or trucks. Officials from one major air carrier industry association further noted that this would particularly be a problem if the volume of large cargo configurations—such as ULD pallets or containers—that air carriers have to disassemble and screen is too great for air carriers to handle. As discussed earlier, according to TSA officials, these disruptions will be short term and limited to 18 major airports. However, these 18 airports process 65 percent of domestic cargo transported on passenger aircraft, which suggests that disruptions may be substantial. TSA’s rationale for creating the CCSP, and spreading screening responsibilities throughout the supply chain, is to mitigate the risks of these sorts of disruptions. However, these CCSP participation challenges demonstrate that TSA could benefit from developing a contingency plan, as we will discuss later, should it become clear that participation rates are not sufficient to achieve the screening mandate without impeding the flow of commerce.

Regulatory and Economic Factors May Affect Industry Participation in the CCSP

According to TSA officials, some shippers have expressed interest in the CCSP, particularly those in certain industries, such as the pharmaceutical industry, whose cargo would be compromised if opened and screened by others. However, TSA and industry officials reported that several factors, such as lack of economic and regulatory incentives, are contributing to low shipper participation levels. For example, TSA and the freight forwarder industry association official with whom we spoke reported that flexibility in applying current TSA screening requirements—such as the ability to screen only easier-to-screen cargo and leave more challenging cargo unscreened—and low cargo volumes have minimized screening-related cargo delays and cargo screening costs. For example, until the 100 percent screening mandate goes into effect in August 2010, air carriers may be able to meet TSA screening requirements by screening mostly loose or break-bulk cargo and not the more challenging and time-consuming cargo, such as ULD pallets and containers or large wooden crates.

Officials from the domestic passenger air carrier association and freight forwarder industry association with whom we spoke reported that because of the difficult economic environment and flexibility stakeholders

have in choosing what cargo to screen, most air carriers are not currently charging freight forwarders or shippers for cargo screening in order to attract and retain customers. As a result, TSA and the domestic passenger air carrier and freight forwarder industry association officials we interviewed stated that many shippers and freight forwarders are not incurring significant screening costs from air carriers, which decreases the financial pressure on the entities to join the CCSP and invest resources into screening cargo, factors that are making TSA's outreach efforts more challenging.

Moreover, the freight forwarder industry association official with whom we spoke stated that some industry participants may not be able to join the program because of potential program costs. TSA has estimated in the IFR that the total cost for industry participation in the CCSP will be about \$2.2 billion over a 10-year period, though the agency has not provided per capita cost estimates for industry. The freight forwarder industry association official with whom we spoke reported that business models of large freight forwarders require them to purchase time-saving screening equipment so that screeners can avoid physically opening and examining each piece of cargo.⁴⁶ However, TSA and this industry official agreed that the majority of small freight forwarders—which handle 20 percent of the cargo but make up 80 percent of the total number of freight forwarding companies—would likely find the costs of joining the CCSP, including acquiring expensive technology, hiring additional personnel, conducting additional training, and making facility improvements, prohibitive. Moreover, shippers that distribute products from other companies in addition to or instead of their own manufactured goods might also find it cost prohibitive to join the CCSP if they were required to purchase screening equipment. However, TSA officials stated that most shippers can incorporate physical searches into their packing and shipping processes to satisfy TSA screening requirements, thereby avoiding such capital expenses.

TSA established the Air Cargo Screening Technology Pilot program to make some financial reimbursement available to large freight forwarders and independent CCSFs for the technology they have purchased. TSA reported that it targeted high-volume facilities (i.e., facilities processing at least 200 ULDs or their equivalent weight of approximately 500,000 pounds

⁴⁶A freight forwarder's size is determined by its annual sales. For example, a freight forwarder with \$5 million or less in annual sales is considered to be small.

annually, shipments annually that contain cargo consolidated from multiple shippers) for the pilot in order to have the greatest effect in helping industry achieve the new screening requirements. As of February 2010, 113 CCSFs have joined the pilot. However, the majority of CCSFs do not ship large enough volumes of consolidated cargo to qualify for the pilot, and thus cannot receive funding for technology or other related costs. The freight forwarder industry association official with whom we spoke expressed concerns regarding the cost of purchasing and maintaining screening equipment. In response to concerns of medium and small freight forwarders that they might not be able to join the program because of potential costs, TSA officials stated that the agency is allowing independent CCSFs to join the CCSP and screen cargo on behalf of freight forwarders and shippers. In this scenario, small freight forwarders or shippers would not need to join the CCSP or purchase technology to avoid screening at the airport, but could send their cargo for a fee to an independent CCSF for screening. However, TSA and the freight forwarder industry association official with whom we spoke stated that the independent CCSFs are having difficulties attracting clientele in the current depressed economic environment. According to these officials, shippers and other supply chain participants might use independent CCSFs to screen their cargo once the 100 percent screening requirement goes into effect, if cargo volumes increase before that time or if cargo experiences screening delays. Many of the challenges in attracting industry participation in the CCSP are outside of TSA's control, and agency officials stated that they are working to raise industry awareness of the benefits of joining the program through TSA's ongoing outreach efforts.

Determining the Level of Inspection Resources Needed to Effectively Oversee CCSP Entities Could Help TSA Efforts to Ensure the Program's Success

While TSA has amended its Regulatory Activities Plan to include inspections of CCSP participants, the agency has not completed its staffing study to assess its staffing needs and determine how many inspectors will be necessary to provide oversight of the additional program participants when the 100 percent screening mandate goes into effect.⁴⁷ TSA's compliance inspections range from reviews of the implementation of all air cargo security requirements (i.e., comprehensive) to a more frequent review of at least one security requirement (i.e., supplemental). TSA recognized that the creation of the CCSP added additional regulated entities to TSI oversight responsibilities, and incorporated additional

⁴⁷TSA's Regulatory Activities Plan establishes the minimum number of inspections, depending on airport size and other factors, TSIs are to conduct for each type of regulated entity.

inspection requirements into the TSI Regulatory Activities Plan. Beginning under the plan for fiscal year 2009, TSIs are to perform compliance inspections of new regulated entities, such as shippers and manufacturers, that voluntarily become CCSFs, as well as new inspections of freight forwarder CCSFs that are in addition to inspections related to their freight forwarder responsibilities. In addition to their pre-CCSP inspection responsibilities, under the plan for fiscal year 2010, TSIs are to conduct at least two comprehensive inspections a year for each CCSF to verify compliance with the program requirements.⁴⁸

As of March 2010, TSA had 1,258 TSIs, of which 533 were dedicated cargo TSIs or cargo TSI canine handlers. The agency was authorized 50 new cargo TSI positions in fiscal year 2010 to provide additional oversight of CCSP operations. TSA officials reported that they have developed an interim program-level methodology to allocate these TSIs to airports based on CCSP participation and cargo volume, among other factors, and that they believe they have a sufficient number of inspectors to ensure compliance with the CCSP. However, the agency staffing study, which would determine the resources necessary to provide CCSP oversight, is not yet complete. According to TSA, the agency's staffing study is continuing through fiscal year 2010 and is therefore not yet available to provide guidance in helping to plan for inspection resources needed to provide oversight.

Complicating TSA efforts to determine the level of inspection resources needed is the extent to which market forces will affect CCSP participation and therefore how many additional CCSFs will join the program and thus be subject to TSA's inspection requirements. As of March 1, 2010, 583 entities had joined the CCSP. Given this level of participation, TSA's TSI workforce must conduct at least 1,166 comprehensive inspections of CCSFs per year. According to our analysis of TSA data, in the next year, inspectors will need to at least double their comprehensive inspections of

⁴⁸During the 90-day nonenforcement period following certification—during which CCSFs are not required to screen at mandated levels while they are developing their screening systems—TSA field offices may also require TSIs to visit CCSFs in their areas of responsibility to provide guidance on the TSA screening requirements that the entities must implement. TSA field offices are to schedule comprehensive inspections after the 90-day period expires.

CCSFs to reach this target.⁴⁹ Moreover, according to our analysis of TSA data, approximately one-quarter to one-third of CCSFs have not received a comprehensive inspection.⁵⁰

According to TSA officials, CCSFs that have never been inspected are deemed high risk and must be inspected by the following quarter. However, since TSA officials anticipate that CCSP participation will continue to grow, and that there could be a groundswell in CCSP participants as the 100 percent screening deadline approaches, TSIs may be challenged in dealing with the increased inspection workload once the screening mandate goes into effect in August 2010. For example, the IFR stated that about 5,600 entities are expected to join the CCSP. Based on these figures, TSA would be required to conduct 11,200 comprehensive inspections annually. TSA officials questioned the accuracy of this estimate, and stated that for workforce planning purposes, a more realistic near-term estimate for the number of CCSFs TSA is expected to oversee is the number of current CCSFs and CCSP applicants. However, TSA did not provide us this total figure. Moreover, as discussed earlier, TSA does not know how many CCSFs will join the program in the future, and does not plan to estimate the number of CCSP participants needed to meet the 100 percent screening mandate. Without this key information, it will be difficult for TSA to obtain a reasonable estimate of the number of inspectors that will be needed to oversee the CCSP participants—highlighting the need for a staffing study that considers various scenarios.

In addition, according to TSA data, of the CCSF compliance inspections conducted from February 1, 2009, to December 29, 2009, some resulted in at least one violation of CCSF security requirements—and a percentage of

⁴⁹According to TSA data, inspectors conducted 553 comprehensive inspections of CCSFs from February 1, 2009, through February 22, 2010, as the program was developing. Therefore, in the next year, inspectors will need to at least double their comprehensive inspections of CCSFs to reach the 1,166 target. Additional CCSFs and extra comprehensive inspections will further affect this increase.

⁵⁰We analyzed inspection data from February 1, 2009, through February 22, 2010. As of February 22, 2010, TSIs had performed inspections on 68 percent (392 of 576) of all certified CCSFs and approximately 77 percent (392 of 508) of those eligible for inspection that were beyond the 90-day nonenforcement period. We also calculated that as of February 22, 2010, 146 CCSFs had received two annual inspections. Because CCSFs are not eligible for inspection within 90 days of certification, and some CCSFs had been certified for less than 6 months and had not had their second required annual inspections, we calculated that 445 CCSFs were enrolled approximately 6 months prior to February 22, 2010, and at least 285 CCSFs were enrolled 9 months prior to February 22, 2010.

these violations were screening related.⁵¹ Having the resources needed to provide effective oversight will be critical to ensuring that CCSFs are comprehensively inspected soon after being certified, in order to identify violations and provide TSA with some assurance that CCSFs are conducting their new screening activities in accordance with TSA requirements.

As we reported in prior work, successful project planning should evaluate staffing implications.⁵² Since fiscal year 2008, TSA officials have reported on a planned TSI staffing study, and air cargo program officials stated that this study would include an analysis of the resources necessary to provide CCSP oversight and would incorporate information on the number of CCSFs to be inspected in order to assess workforce needs. Officials stated in March 2010 that the study would continue through fiscal year 2010. However, the agency has not established an estimated completion date or interim milestones (i.e., dates and related tasks) for completion of the study, and officials did not provide an explanation for why this has not yet occurred. Standard practices for program management call for the establishment of time frames and milestones.⁵³ Creating time frames with milestones could help ensure completion of the staffing study, the results of which should better position TSA to ensure that the inspectors it needs are in place in order to oversee effective CCSF implementation of TSA security requirements.

TSA and Industry Stakeholders Face Challenges in Screening Certain Types of Cargo, and TSA Is Working to Test the Effectiveness of Screening Technologies

TSA faces challenges related to screening certain types of cargo, qualification testing of technology, and securing the chain of custody.

Screening Cargo in ULD Pallets and Containers

There is currently no technology approved or qualified by TSA to screen cargo once it is loaded onto a ULD pallet or container—both of which are common means of transporting air cargo on wide-body passenger aircraft. Cargo transported on wide-body passenger aircraft makes up 76 percent of domestic air cargo shipments transported on passenger aircraft.⁵⁴ Prior to

⁵¹Details on the number and type of CCSF compliance inspection violations are Sensitive Security Information and are not discussed in this report.

⁵²[GAO-04-37](#).

⁵³The Project Management Institute, *The Standard for Program Management*.

⁵⁴Cargo may be screened before it is loaded onto ULD pallets or containers.

May 1, 2010, canine screening was the only screening method, other than physical search, approved by TSA to screen such cargo. Canine teams were deployed to 20 airports to assist air carriers with such screening. In addition, the 2009 S&T Directorate technology pilot study reported canine teams to be an effective method of screening ULD pallets and containers, but it identified an urgent need to find other effective methods for screening such cargo because of the shortage of available canine teams. TSA officials, however, still have some concerns about the effectiveness of the canine teams, and effective May 1, 2010, the agency no longer allows canine teams to be used for primary screening of ULD pallets and containers. Instead, TSA allows canines to conduct primary screening of only loose cargo and 48-by-48-inch cargo skids. Canine teams still may be used for secondary screening of ULD pallets and containers; however, secondary screening does not count toward meeting the air cargo screening mandate.

TSA officials reported that they have conducted preliminary assessments of technologies that are capable of screening ULD pallets and containers but that commercially available technologies do not exist that effectively detect explosives in the amounts described in TSA standards. TSA officials stated that TSA continues to work with technology vendors on developing technologies that will be able to effectively screen ULD pallets and containers. In the interim, TSA officials indicated that the agency is encouraging industry stakeholders through the CCSP to screen such cargo earlier in the supply chain, before cargo is consolidated. However, according to representatives of the two major air carrier industry associations and the one freight forwarder association with whom we spoke, technology available to screen consolidated or palletized cargo, including cargo in a ULD, is critical in meeting the 100 percent screening mandate given that such cargo represents a primary means for transporting cargo transported on passenger aircraft. Moreover, while industry participation in the CCSP may help ensure that screening takes place earlier in the supply chain, which will help alleviate the challenges posed by ULD pallets and containers, to date, far fewer shippers have joined the CCSP than TSA anticipated, and these ULD pallets and containers currently make up about 76 percent of domestic air cargo transported on passenger aircraft, with no efficient method to screen them. These technology challenges suggest the need for TSA to consider alternative approaches to meet the screening mandate without unduly affecting the flow of commerce, as we will discuss later.

TSA Is Working to Qualify Some Air Cargo Screening Technologies

In addition, TSA is working to complete qualification testing of air cargo screening technologies; thus, until all stages of qualification testing are concluded, the agency may not have reasonable assurance that the technologies that air carriers and program participants are currently allowed to use to screen air cargo are effective. Qualification tests are designed to verify that a technology system meets the technical requirements specified by TSA. TSA qualified several X-ray technologies for purchase by industry stakeholders based on initial test results and qualified EDS technologies based on their past performance in other testing processes. TSA has not yet qualified ETD and other X-ray technologies that TSA allows program participants to use to screen air cargo. Once these technologies have been added to the list of qualified products, the agency is to conduct additional stages of qualification testing. TSA officials expressed confidence in the initial qualification test results because the commercial off-the-shelf technologies being used for cargo screening have a proven record in the passenger checkpoint and checked baggage environments. However, TSA acknowledged that if the results of additional stages of qualification testing do not meet its technical requirements, these technologies can be removed from the list of qualified products.

Furthermore, because of the mandated deadlines, TSA is conducting qualification testing to determine which screening technologies are effective at the same time that air carriers are using these technologies to meet the mandated requirement to screen air cargo transported on passenger aircraft. For example, according to TSA, ETD technology will undergo the initial phase of qualification testing in the air cargo environment in 2010, although many air carriers and CCSFs are currently using it to screen air cargo. Moreover, technology reports and TSA officials disagree as to the effectiveness of ETD technology. For example, a pilot program completed by DHS's S&T Directorate in July 2009 found that the ability of ETD technology to detect explosive threats in cargo by sampling the external surfaces of cargo shipments for explosive residue—the standard ETD protocol required by TSA—is poor. According to TSA officials, external sampling of cargo shipments is a method of screening preferred by freight forwarders and air carriers in order to avoid opening all cargo pieces, which can result in possible damage to the contents and significantly greater screening time. The pilot program recommended further research to evaluate the applicability and efficacy of external sampling using ETD systems, as well as other screening systems, to detect threats, such as explosives, in air cargo. However, TSA officials disputed

the findings of this S&T Directorate study. They also stated that other S&T Directorate reports support the acceptance of ETD technology; however, we were unable to review these reports since this information was provided late in our review.⁵⁵ The lack of consensus within DHS regarding the effectiveness of ETD technology in the air cargo environment suggests the need for additional study.

Although TSA officials stated that simultaneous testing and use of technology by the industry is not ideal, they noted that this was necessary to meet the screening deadlines mandated by the 9/11 Commission Act. While we recognize that certain circumstances, such as mandated deadlines, require expedited deployment of technologies, our prior work has shown that programs with immature technologies have experienced significant cost and schedule growth.⁵⁶ For example, we reported in October 2009 that TSA deployed a passenger checkpoint technology—the explosives trace portal (ETP)—to airports without proving its performance in an operational environment, contrary to TSA’s acquisition guidance, which recommends such testing.⁵⁷ The agency purchased hundreds of these machines but was forced to halt their deployment because of performance, maintenance, and installation issues. All but 9 ETPs have been withdrawn from airports and 18 remain in inventory. TSA determined that the remainder of the ETPs was excess capacity.

Since TSA plans to issue a list of qualified technologies before all stages of qualification testing are complete, the industry lacks assurance that the qualification status of technologies established by TSA for use after August 2010 will not change. Further testing could result in modifications to the list of qualified technologies authorized for use after August 3, 2010, and to the list of technologies approved by TSA for use through January 2012.

⁵⁵According to TSA officials, these other S&T Directorate reports include *Test and Evaluation Report for Trace Explosives Detection for Cargo Screening* of September 2008, and *Comparative Report of Eight Explosive Trace Detection Systems in Particle Mode for Cargo Screening* of September 2009.

⁵⁶See GAO, *Defense Acquisitions: Measuring the Value of DOD’s Weapon Programs Requires Starting with Realistic Baselines*, [GAO-09-543T](#) (Washington, D.C.: Apr. 1, 2009). For an additional example of such programs, see GAO, *Secure Border Initiative: DHS Has Faced Challenges Deploying Technology and Fencing Along the Southwest Border*, [GAO-10-651T](#) (Washington, D.C.: May 4, 2010).

⁵⁷See GAO, *Aviation Security: DHS and TSA Have Researched, Developed, and Begun Deploying Passenger Checkpoint Screening Technologies, but Continue to Face Challenges*, [GAO-10-128](#) (Washington, D.C.: Oct. 7, 2009).

TSA has reserved the option of revising the status of any particular technology or system in the event that its performance in an operational environment indicates that it is losing effectiveness or suitability to an unacceptable degree as it ages or that constantly evolving threats require new detection capabilities. The domestic passenger air carrier and freight forwarder industry association officials with whom we spoke expressed concerns about purchasing technology from the lists of approved and qualified technologies that are subject to change. TSA officials stated that the agency is accelerating its testing timeline and the release of the qualification testing results for these technologies to meet the screening deadlines mandated by Congress. For example, TSA originally planned to release the X-ray qualification results after completing all stages of qualification testing. Because of approaching deadlines, however, in December 2009 and based on initial test results, TSA announced the qualification of certain X-ray technologies. It is unclear, however, whether the challenges TSA faces in issuing a list of fully qualified screening technologies will allow the industry to make informed decisions about technology purchases to meet the screening requirements of the 9/11 Commission Act.

Securing the Chain of Custody in the Air Cargo Shipping Process

With regard to technology, another area of concern in the transportation of air cargo is the chain of custody between the various entities that handle and screen cargo before it is loaded onto an aircraft. TSA officials stated that the agency has taken steps to analyze the chain of custody under the CCSP, and has issued cargo procedures to all entities involved in the CCSP to ensure that the chain of custody of cargo is secure. We found that the procedures issued by TSA to the CCSFs include guidance on when and how to secure cargo with tamper-evident technology, but do not include standards for the types of technologies that should be used. TSA officials noted that they are in the process of compiling a list of existing tamper-evident technologies and their manufacturers. Once the list is complete, TSA plans to test and evaluate these technologies and issue recommendations to the industry. TSA has not yet set any time frames for issuing such recommendations because, according to TSA officials, they need to explore cost-effective technologies first.

Securing the chain of custody for cargo screened under the CCSP takes on additional significance in light of the DHS Inspector General's 2009 report

findings that TSA could improve its efforts to secure air cargo during ground handling and transportation.⁵⁸ For example, the report determined that industry personnel were accessing, handling, or transporting cargo without the required background checks. In addition, the report stated that TSA's inspection process has not been effective in ensuring that requirements for securing air cargo during ground transportation are understood or followed. In response to the DHS Inspector General report, TSA concurred with the recommendation to improve the security threat assessment process and stated that the IFR requires recordkeeping for security threat assessments. TSA also concurred with the DHS Inspector General recommendation to revise the Regulatory Activities Plan to allow more time for inspectors to provide support and education to regulated entities to ensure that air cargo security requirements are understood and implemented. TSA reported that the fiscal year 2010 Regulatory Activities Plan addresses this concern.

TSA Is Working to Verify That Domestic Screening Is Being Conducted at the Requisite Levels, but Questions Exist about the Reliability of the Reported Data

While TSA reported to Congress that industry achieved the February 2009 50 percent screening deadline as it applies to domestic cargo, questions exist about the reliability of the screening data, which are self-reported by industry representatives. TSA has been collecting and analyzing data from screening entities, such as air carriers, freight forwarders, and shippers, since March 2009 to verify that domestic screening is being conducted at the requisite levels. As of March 2010 TSA reported that 68 percent of domestic cargo by weight had been screened. After receiving data from screening entities, TSA performs preliminary data quality checks, such as viewing the data to identify missing or duplicate values. However, TSA does not have a mechanism to verify the accuracy of the data reported by the industry.⁵⁹ TSA stated that as part of its compliance inspections for air carriers and CCSFs, TSIs check industry screening logs—which include information on how and by whom a specific shipment was screened—to verify that the required screening levels have been met. However, TSIs do not compare these screening logs to the reports that air carriers and CCSFs submit to TSA with their screening levels because according to senior TSA officials, such comparisons would be significantly burdensome to the industry. Specifically, senior TSA officials stated that the air carrier

⁵⁸Department of Homeland Security, Office of Inspector General, *Security of Air Cargo During Ground Transportation*, OIG-10-09 (Washington, D.C., November 2009).

⁵⁹We used the industry-reported data in fig. 4 of this report because we found them to be sufficiently reliable to provide a general indication of cargo screening levels. However, as discussed here, questions exist about the accuracy of the industry-reported data.

reports do not contain details on specific shipments, thus verification is not feasible. However, senior TSA officials agreed that it is important to verify the accuracy of the data reported by the industry through random checks or other practical means, and that greater coordination among TSA program and compliance officials is necessary to ensure that these checks are taking place. The Office of Management and Budget's guidelines for ensuring quality of information call for agencies to develop procedures for reviewing and substantiating the integrity of information before it is disseminated.⁶⁰ Given that TSA uses the data submitted by screening entities to verify its compliance with the mandate as it applies to domestic cargo and to report to Congress, ensuring the accuracy of the self-reported data is of particular significance. In order to do this, TSA could, for example, adopt a program similar to CBP's compliance measurement program, which is used to determine the extent to which importers are in compliance with laws and regulations. As part of this program, CBP conducts regular quality reviews to ensure accuracy in findings and management oversight to validate results. Verifying the accuracy of the self-reported screening data could better position TSA in providing reasonable assurance that screening is being conducted at reported levels.

TSA Requirements Do Not Ensure That In-Transit Cargo Transferred from an Inbound to a Domestic Flight Is Physically Screened

Cargo that has already been transported on one leg of a passenger flight—known as in-transit cargo—may be subsequently transferred to another passenger flight without undergoing screening. For example, cargo transported on an inbound flight, a significant percentage of which is exempt from screening, can be transferred to a domestic flight without physical screening.⁶¹ According to TSA officials, though the agency does not have a precise figure, industry estimates suggest that about 30 percent of domestic cargo is transferred from an inbound flight. According to TSA officials, the agency had determined that additional screening of this cargo was not required, in part because an actual flight mimics a screening method that until recently was approved for use.⁶²

⁶⁰Office of Management and Budget, *Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by Federal Agencies*.

⁶¹Details on TSA's screening exemptions are Sensitive Security Information and are not discussed in this report.

⁶²Details on TSA's approved screening methods are Sensitive Security Information and are not discussed in this report.

A senior TSA official also stated that because in-transit cargo transferred from an inbound flight has flown under a TSA-approved passenger aircraft security program, it is in compliance with TSA screening requirements. However, a significant amount of inbound cargo is exempt from screening.⁶³ In contrast, TSA's policies and procedures require all cargo flown on domestic flights to be screened at 75 percent, effective May 1, 2010. As a result, despite being flown under a TSA-approved security program, in-transit cargo originating in foreign countries is not required to be screened at the same levels as cargo transported on domestic flights. Therefore, TSA lacks assurance that this cargo is being screened in accordance with 9/11 Commission Act required screening levels.

In response to our questions as part of this review, TSA officials stated that transporting in-transit cargo without screening could pose a vulnerability, but as of February 2010, the agency was not planning to require in-transit cargo transferred from an inbound flight to be physically screened because of the logistical difficulties associated with screening cargo that is transferred from one flight to another. However, these logistical difficulties could be minimized if more cargo were screened prior to departure from a foreign location. Thus, addressing the potential security vulnerability posed by in-transit cargo is directly linked to TSA's efforts to secure and screen inbound cargo, which is discussed later in this report. Although TSA officials stated that they plan to explore measures for screening in-transit cargo in the future, these officials did not provide documentation of these measures or information on milestones for their implementation. A successful project plan—such as a plan that would be used to establish such measures—should consider all phases of the project, and clearly state schedules and deadlines.⁶⁴ Developing a plan with milestones that addresses how in-transit cargo will be screened in accordance with 9/11 Commission Act requirements could better position TSA to meet the mandate and reduce potential vulnerabilities associated with such cargo.

⁶³TSA requirements to screen inbound cargo will be discussed in further detail in a later section of this report. Details on TSA's screening exemptions are Sensitive Security Information and are not discussed in this report. For additional information on the issue of screening exemptions, see GAO, *Review of the Transportation Security Administration's Air Cargo Screening Exemptions Report*, [GAO-08-1055R](#) (Washington, D.C.: Aug. 15, 2008).

⁶⁴[GAO-04-37](#).

Contingency Planning Could Help TSA Identify Alternatives for Meeting the Air Cargo Screening Mandate

Although TSA faces industry participation and technology challenges that could impede the CCSP's success and the agency's efforts to meet the 100 percent screening mandate, the agency has not developed a contingency plan that considers alternatives to address these challenges. As discussed earlier, as of December 2009, the percentage of cargo screened by shipper and independent CCSFs remains far lower than the percentage TSA cites as the portion these entities should ideally screen. Without adequate CCSP participation, industry may not be able to screen enough cargo prior to its arrival at the airport to maintain the flow of commerce while meeting the mandate. Likewise, without technology solutions for screening cargo in a ULD pallet or container—which makes up about 76 percent of cargo transported on domestic passenger aircraft—industry may not have the capability to effectively screen 100 percent of air cargo without affecting the flow of commerce. TSA is continuing to work with vendors on developing technology to effectively screen ULD pallets and containers, and in the interim, is encouraging industry stakeholders as part of the CCSP to screen such cargo earlier in the supply chain, before it is loaded onto ULDs, but such actions will not ensure that such cargo is screened. We have previously reported that a comprehensive planning process, including contingency planning, is essential to help an agency meet current and future capacity challenges.⁶⁵ Alternatives could include, but are not limited to, mandating CCSP participation for certain members of the air cargo supply chain—instead of relying on their voluntary participation—and requiring the screening of some or all cargo before it is loaded onto ULD pallets and containers. Developing a contingency plan that addresses the participation and technology challenges that could impede the screening program's success, and identifies alternate or additional security measures to implement in case the program is unable to effectively facilitate the screening of sufficient amounts of cargo prior to reaching air carriers at the airport, could better position TSA to meet the requirements in the air cargo screening mandate.

With regard to the consideration of alternatives to the CCSP, TSA reported that it considered requiring air carriers to bear the full burden of the screening mandate and also considered creating TSA-operated screening facilities at airports, but determined that both strategies would result in severe disruptions to commerce because of limited airport space for screening. Representatives of the two major air carrier associations with whom we spoke stated that additional TSA screening by canine teams

⁶⁵ [GAO-03-736](#).

would be helpful, and industry stakeholders have also identified the option of using private companies to provide canine screening in order to expand the number of canines available for screening. According to TSA, the agency is considering whether to pursue this option because of concerns regarding certification of canines that have not been trained by TSA and are not handled by TSA staff. In addition, TSA officials stated that the agency does not plan to provide canine teams as a long-term primary screening method once the CCSP grows and industry develops more capacity to screen cargo, as industry, not the federal government, is responsible for screening air cargo under TSA's regulations.

TSA officials also stated that alternative or additional screening measures will not be necessary because unscreened cargo will simply not be transported on passenger aircraft, that is, "will not fly." Although this approach would ensure that 100 percent of air cargo transported on passenger aircraft is screened, part of TSA's mission is ensuring the flow of commerce. Not transporting unscreened cargo could place the air cargo transportation industry at risk of experiencing economic disruptions, including shifts of cargo to other modes of transportation, which could negatively affect the air cargo business. In order to help ensure that it fulfills its mission and meets the 9/11 Commission Act mandate, TSA could benefit from identifying alternative measures in a contingency plan, should it become clear that the CCSP will not achieve the screening mandate while maintaining the flow of commerce.

TSA Has Made Progress but Faces Several Challenges and Lacks a Plan for Achieving 100 Percent Screening of Inbound Cargo

TSA has made progress toward meeting the screening mandate as it applies to inbound cargo by taking steps to increase the percentage of inbound air cargo that has undergone screening. However, the agency faces several challenges in ensuring that 100 percent of inbound air cargo is screened, which will prevent it from meeting the mandate by the August 2010 deadline. While TSA is aware that it is unable to meet the screening mandate as it applies to inbound cargo, it has not yet determined when or how it will eventually meet the deadline.

TSA Has Taken Several Steps to Increase the Percentage of Inbound Cargo Being Screened

TSA has taken several steps to increase the percentage of inbound air cargo being screened. For example, TSA revised its requirements for foreign and U.S. air carrier security programs, effective May 1, 2010, to generally require air carriers to screen a certain percentage of shrink-wrapped and banded inbound cargo and 100 percent of inbound cargo that

is not shrink-wrapped or banded.⁶⁶ According to our analysis of TSA information, shrink-wrapped and banded cargo makes up approximately 96 percent of inbound cargo, which means that a significant percentage of inbound air cargo is not required to be screened.⁶⁷ According to TSA, implementation of this requirement will result in the screening of 100 percent of inbound cargo transported on narrow-body aircraft since none of this cargo is shrink-wrapped or banded.⁶⁸

Since TSA does not have the same regulatory reach to the supply chain in foreign countries as it does in the United States, it is taking a different approach to implementing the screening mandate as it applies to inbound cargo. This approach focuses on harmonizing its security standards with those of other nations.⁶⁹ For example, TSA is working with foreign governments to increase the amount of screened cargo, including working bilaterally with the European Commission (EC) and Canada, and quadrilaterally with the EC, Canada, and Australia. As part of these efforts, TSA recommended to the United Nations' International Civil Aviation Organization (ICAO) that the next revision of Annex 17 to the Convention of International Civil Aviation include an approach that would allow screening to take place at various points in the air cargo supply chain.⁷⁰

⁶⁶Details on TSA's screening requirements are Sensitive Security Information and are not discussed in this report. Prior to May 1, 2010, TSA generally required air carriers to screen 50 percent of nonexempt inbound cargo transported on passenger aircraft and a certain percentage of all inbound cargo transported on passenger aircraft.

⁶⁷Banded cargo is cargo with heavy-duty metal, plastic, or nylon bands that secure all sides of the cargo shipment or secure the cargo shipment to a skid. While TSA officials could not provide a precise estimate of what percentage of inbound cargo this shrink-wrapped or banded cargo represents, about 96 percent of inbound cargo arrives in the United States on wide-body aircraft—the vast majority of which is transported on shrink-wrapped or banded skids.

⁶⁸According to statistics provided by TSA from the Bureau of Transportation Statistics, in 2008, narrow-body flights made up 69 percent of inbound flights and transported 45 percent of inbound passengers.

⁶⁹TSA does not regulate foreign freight forwarders, or individuals or businesses that have their cargo shipped by air to the United States. The term harmonization is used to describe countries' efforts to coordinate their security practices to enhance security and increase efficiency by avoiding duplication of effort. Harmonization efforts can include countries mutually recognizing and accepting each other's existing practices—which could represent somewhat different approaches to achieve the same outcome—as well as working to develop mutually acceptable uniform standards.

⁷⁰ICAO is a specialized agency of the United Nations with the primary objective to provide for the safe, orderly, and efficient development of international civil aviation.

According to TSA, ICAO's Aviation Security Panel met in March 2010 to finalize revisions to Annex 17, including TSA's proposed revision to add "screening" as a supply chain security concept. TSA has also supported the International Air Transport Association's (IATA) efforts to establish a secure supply chain approach to screening cargo for its member airlines and IATA's efforts to have these standards recognized internationally.⁷¹

In addition, TSA is working with CBP to leverage an existing CBP system, known as the Automated Targeting System (ATS), to identify and target elevated-risk inbound air cargo. ATS is a model that combines information from inbound cargo manifest lists and entry declaration information into shipment transactions and uses historical and other data to help target cargo shipments for inspection.⁷² While CBP currently uses ATS to identify cargo for screening once it arrives in the United States, according to officials, TSA has established a TSA-CBP working group to focus on using ATS to target inbound air cargo for possible screening prior to departure from foreign locations. TSA and CBP officials stated that the working group met regularly since June 2009, though agency officials did not specify how frequently they met. As of February 2010, TSA and CBP officials stated that they were conducting an exercise at Dulles International Airport for TSA to observe CBP's use of ATS, understand the full capabilities of ATS, and determine whether ATS can assist TSA's inbound air cargo screening efforts. TSA officials said that they were not in a position to provide time frames for completing the exercise since the effort is in the early stages. Should TSA determine that ATS is effective for targeting the screening of inbound air cargo, TSA plans for air carriers to conduct the screening of shipments identified as elevated risk prior to the cargo's transport to the United States. The air carriers will also be

⁷¹IATA is an industry association that represents about 230 air carriers constituting 93 percent of international scheduled air traffic. IATA's approach, called Secure Freight, is an attempt to create an air cargo industry comprising certified secure operators in secure supply chains operating to international cargo security standards recognized by relevant state authorities. A pilot of the Secure Freight program is scheduled to begin in the first half of 2010.

⁷²Air carriers departing from any foreign location in the Americas, including Mexico, Central America, and areas of South America north of the equator, must submit manifest information to CBP no later than the time of flight departure (the time at which wheels are up on the aircraft and the aircraft is en route directly to the United States). In the case of air carriers departing from any other foreign location, CBP requires that manifest information be submitted 4 hours prior to the flight's arrival in the United States. Unlike TSA's planned efforts to screen cargo prior to departure, CBP screens cargo once it enters the United States.

responsible for providing TSA with the results. In discussing how a system to target certain, elevated-risk shipments for screening will fit into TSA's overall plans to screen 100 percent of inbound air cargo, officials stated that ATS would provide an additional layer of scrutiny for all cargo entering the United States.⁷³

To help assess the rigor and quality of foreign screening practices, TSA is also in the process of obtaining information from foreign countries on their respective air cargo screening levels and practices. According to officials, the agency has developed an assessment methodology in a question and answer format to collect information on each foreign country's air cargo security practices, and it has used the new methodology to collect initial information from one country. TSA has indicated that it will use the methodology to identify key security practices and that the information collected will also help determine if these practices are comparable to TSA requirements, which will provide TSA with details that can help determine how foreign standards align with TSA standards. TSA officials indicated that the methodology used to collect the information is part of a larger process that will involve collecting initial information, analyzing what was received, and submitting additional questions to the foreign countries. TSA anticipates storing the information gathered in a database, which it has not yet created. TSA officials were unable to provide time frames for use of the assessment methodology or completing the database because the effort is in the early stages.

TSA Faces Several Challenges in Meeting the Screening Mandate as It Applies to Inbound Cargo

While TSA has taken steps to increase the percentage of inbound cargo that has undergone screening, the agency faces several challenges in meeting the mandate. Consequently, TSA has stated that it will not be able to meet the screening mandate as it applies to inbound cargo. For example, in a March 4, 2010, hearing before the Subcommittee on Homeland Security, House Committee on Appropriations, in responding to questions, the Acting TSA Administrator stated that it could take several years before 100 percent of inbound cargo is screened. According to TSA,

⁷³We have previously reported on TSA and CBP efforts regarding securing inbound cargo and recommended that the agencies improve coordination and information sharing. TSA and CBP's collaboration on ATS is a response to this recommendation. In addition, CBP created the International Air Cargo Strategic Plan in June 2007 to assist the agency in increasing aviation security related to inbound air cargo. For more information, see GAO, *Aviation Security: Federal Efforts to Secure U.S.-Bound Air Cargo Are in the Early Stages and Could Be Strengthened*, [GAO-07-660](#) (Washington, D.C.: Apr. 30, 2007).

screening inbound air cargo poses unique challenges, related, in part, to TSA's limited ability to regulate foreign entities. As such, TSA officials stated that the agency is focusing its air cargo screening efforts on domestic cargo and on screening elevated-risk inbound cargo as it works to address the challenges it faces in screening 100 percent of inbound cargo.

Inbound air cargo is currently being screened at lower levels than domestic air cargo. For example, while TSA removed almost all its screening exemptions for domestic cargo, TSA requirements continue to exempt from screening a significant amount of shrink-wrapped air cargo transported to the United States, which represents about 96 percent of all inbound cargo.⁷⁴ Effective May 1, 2010, TSA requires that a certain percentage of this cargo be screened. In April 2007, we reported that TSA's screening exemptions for inbound cargo could pose a risk to the air cargo supply chain and recommended that TSA assess whether these exemptions pose an unacceptable vulnerability and, if necessary, address these vulnerabilities. TSA agreed with our recommendation, but beyond expanding its requirement to screen 100 percent of inbound air cargo transported on narrow-body aircraft and a certain percentage of inbound cargo that is shrink-wrapped or placed on banded skids, has not yet reviewed, revised, or eliminated screening exemptions for cargo transported on inbound passenger flights, and did not provide a time frame for doing so.⁷⁵ We continue to believe that TSA should assess whether these exemptions pose an unacceptable security risk. TSA officials stated that once the modified ATS is in place, screening exemptions will be less relevant because air carriers will be more able to target the screening of elevated-risk cargo as an interim measure before 100 percent screening is achieved. However, the 9/11 Commission Act requires that all air cargo be physically screened and does not make exceptions for cargo that is not elevated risk.

TSA faces challenges in meeting the 100 percent screening mandate as it applies to inbound air cargo. For example, although TSA is authorized under U.S. law to ensure that all air carriers, foreign and domestic, operating to, from, or within the United States maintain the security measures included in their TSA-approved security programs and any

⁷⁴Details on TSA's screening requirements and exemptions are Sensitive Security Information and are not discussed in this report.

⁷⁵[GAO-07-660](#).

applicable security directives or emergency amendments issued by TSA, this authority is limited.⁷⁶ Also, TSA has no legal jurisdiction over foreign nations. Specifically, TSA has been authorized by Congress to set standards for aviation security, including the authority to require that inbound cargo be screened before it departs for the United States. However, the agency also relies on foreign governments to implement and enforce—including conducting actual screening, in some cases—TSA’s regulatory requirements.

Harmonizing TSA regulatory standards with those of foreign governments may be challenging because these efforts are voluntary and some foreign countries do not share the United States’ concerns regarding air cargo security threats and risks. TSA officials caution that if TSA were to impose a strict cargo screening standard on all inbound cargo, many nations likely would be unable to meet such standards in the near term. This raises the prospect of reducing the flow of cargo on passenger aircraft. According to TSA, the effect of imposing such screening standards in the near future could result in increased costs for international passenger travel and for imported goods and possible reduction in passenger traffic and foreign imports. According to TSA officials, this could also undermine TSA’s ongoing cooperative efforts to develop commensurate security systems with international partners. TSA’s ongoing efforts to harmonize security standards with those of foreign nations are essential to achieving progress toward meeting the 100 percent screening mandate as it applies to inbound air cargo.

Identifying the precise level of screening being conducted on inbound air cargo is difficult because TSA lacks a mechanism to obtain actual data on all screening that is being conducted on inbound air cargo. TSA officials estimate that 55 percent of inbound cargo by weight is currently being screened and that 65 percent of inbound cargo by weight will be screened

⁷⁶See 49 U.S.C. §§ 44903, 44906; see also 49 C.F.R. §§ 1544.3, 1546.3. Although TSA security requirements follow the ICAO standards and recommended practices, TSA may subject air carriers operating to, from, or within the United States to any requirements necessary and assess compliance with such requirements, as the interests of aviation and national security dictate. See 49 U.S.C. § 44906.

by August 2010.⁷⁷ However, these estimates are based on the current screening requirements of certain countries and are not based on actual data collected from air carriers or other entities, such as foreign governments, on what percentage of cargo is actually being screened.⁷⁸ For example, if a country requires that 100 percent of its cargo be screened, as the United Kingdom does, TSA counts all the cargo coming from that country as screened. While TSA officials stated that they discuss screening percentages with foreign government officials, the agency does not conduct any additional data verification to assess whether screening is conducted at, above, or below the required levels. In addition, because TSA's efforts to complete assessments of other countries' screening requirements are ongoing, the agency does not always know whether the screening requirements are consistent with TSA standards. The DHS Appropriations Act, 2009, requires TSA to report on the actual screening being conducted, by airport and air carrier.⁷⁹ To improve data collection efforts, as of May 2010, TSA requires air carriers to report on their actual screening levels for inbound air cargo, and TSA officials stated that an automated cargo reporting tool would be operational in May 2010 for this purpose. The May 2010 security program changes only require air carriers to report on the screening that they conduct and not on the screening conducted by other entities in the air cargo supply chain to meet the air cargo screening mandate. TSA officials stated that it may be challenging to obtain screening data from some foreign governments and other entities that conduct cargo screening. As such, TSA officials also stated that the agency may still use estimates, such as the current screening requirements of certain countries, when reporting data to Congress. Officials could not

⁷⁷This includes both exempt and nonexempt cargo, under TSA's definitions. Since the screening of inbound cargo is conducted based on the standards of each individual country, it may not be conducted in accordance with TSA standards. For example, at least one country allows the use of large X-ray machines to inspect entire pallets of cargo that will be transported on passenger aircraft, without requiring the pallets to be broken down. In addition, two European countries use canines in a different manner than TSA to inspect air cargo for explosives. Specifically, these countries are using the Remote Air Sampling for Canine Olfaction technique, which involves the use of highly trained dogs to sniff air samples collected from air cargo or trucks through a specially designed filter. Such screening standards may produce different results from TSA's screening standards. See [GAO-07-660](#) for more details.

⁷⁸According to TSA officials, the agency does not know the screening requirements for every country that transports air cargo into the United States. TSA assumes that other countries are in compliance, at a minimum, with TSA's regulation that a certain percentage of inbound air cargo be screened.

⁷⁹Pub. L. No. 110-329, § 515(d), 122 Stat. 3574, 3683.

provide information on milestones or time frames for obtaining actual screening data for all inbound screening, including that conducted by air carriers and other entities in the air cargo supply chain, because the agency is still working to overcome inbound regulatory challenges. However, establishing time frames for implementing a plan is consistent with standard practices for program management.⁸⁰ Finalizing a plan to obtain actual screening data could help TSA obtain greater assurance that mandated screening levels are being met.

TSA Has Not Yet Determined How It Will Meet the Screening Mandate as It Applies to Inbound Cargo

TSA has not yet determined how it will meet the screening mandate as it applies to inbound air cargo. Although TSA has taken steps to increase the percentage of inbound cargo transported on passenger aircraft that is screened, the agency has not developed a plan, including milestones, for meeting the mandate as it applies to inbound cargo. While TSA officials have stated that the agency does not expect to meet the mandate as it applies to inbound cargo by the August 2010 deadline, TSA has not provided estimates of when the mandate will be met or when steps toward its achievement will be completed. Moreover, the steps that the agency is taking to enhance inbound air cargo security do not fully support the 100 percent cargo screening mandate. For example, TSA is focusing on developing its ability to utilize CBP's ATS to target elevated-risk cargo for screening. While we recognize this as a reasonable step to strengthen inbound air cargo security, TSA does not have a plan that articulates how this and other steps it is taking will fit together to achieve 100 percent screening.

The 9/11 Commission Act requires the establishment of a system to screen 100 percent of cargo transported on passenger aircraft, including inbound cargo. As we have reported in our prior work, a successful project plan—such as a plan that would be used to establish such a system—should consider all phases of the project and clearly state schedules and deadlines.⁸¹ TSA reported that it is unable to identify a timeline for meeting the mandate for inbound cargo, stating that its efforts are long term, given the extensive work it must conduct with foreign governments and associations. However, interim milestones could help the agency provide reasonable assurance to Congress that it is taking steps to meet the mandate as it applies to inbound cargo. A plan that considers all phases of

⁸⁰The Project Management Institute, *The Standard for Program Management*.

⁸¹[GAO-04-37](#).

the project and clearly states schedules and deadlines could help position TSA to better measure progress it is making toward meeting the 9/11 Commission Act mandate as it relates to inbound air cargo and provide reasonable assurance that its efforts are implemented in a relatively timely manner.

Conclusions

Meeting the August 2010 mandate to establish a system to physically screen 100 percent of air cargo transported on passenger aircraft is a daunting task. In August 2010, unscreened cargo will not be allowed to fly on passenger aircraft, but leaving behind such cargo could affect the flow of commerce. Although the CCSP should help TSA meet the mandate as it applies to domestic cargo, addressing certain challenges could strengthen agency efforts and help ensure the CCSP's success. For example, TSA might benefit from developing a contingency plan should it become clear that participation levels are not sufficient to achieve the screening mandate without disruptions to the flow of commerce. Establishing milestones for completion of a staffing study to determine the number of inspectors needed to oversee CCSP participants could provide results that should better position TSA to obtain these inspection resources and help ensure that air carriers and CCSFs comply with TSA requirements. Moreover, the technology challenges TSA faces in screening cargo once it is loaded onto ULD pallets and containers highlight the need for a contingency plan in the event that industry stakeholders do not have the capacity to screen such air cargo. In addition, verifying industry-reported screening data could better position TSA in providing reasonable assurance that screening is being conducted at reported levels. Furthermore, developing a plan and milestones for screening in-transit cargo, which is not currently required to undergo physical screening, could help ensure that such cargo is screened in accordance with 9/11 Commission Act requirements and mitigate a risk to the air cargo transportation system. Developing a contingency plan that considers additional or alternative security measures will better position TSA to meet the mandate without disrupting the flow of commerce should it become clear that the challenges related to CCSP participation and screening technology will hinder the agency's efforts.

With regard to inbound air cargo, while TSA has taken some positive steps to increase the percentage of cargo that is screened, the agency could better address the challenges to screening this cargo. For example, finalizing its plans to obtain actual screening data for all inbound cargo screening, including time frames and milestones, could provide greater assurance that mandated screening levels are being met. In addition,

determining how it will meet the screening mandate as it applies to inbound air cargo, including related milestones, could better position TSA in providing reasonable assurance that the agency is making progress toward meeting the screening mandate in a timely manner.

Recommendations for Executive Action

To enhance efforts to secure the air cargo transportation system and establish a system to screen 100 percent of air cargo transported on passenger aircraft, we are recommending that the Administrator of TSA take the following five actions:

- Establish milestones for the completion of TSA's staffing study to assist in determining the resources necessary to provide CCSP oversight.
- Develop a mechanism to verify the accuracy of all screening data, both self-reported domestic data and inbound cargo data, through random checks or other practical means. For inbound air cargo, complete the agency's plan to obtain actual data, rather than estimates, for all inbound screening, including establishing time frames and milestones for completion of the plan.
- Develop a plan, with milestones, for how and when the agency intends to require the screening of in-transit cargo.
- Develop a contingency plan for meeting the mandate as it applies to domestic cargo that considers alternatives to address potential CCSP participation shortfalls and screening technology limitations.
- Develop a plan, with milestones, for how and when the agency intends to meet the mandate as it applies to inbound cargo.

Agency Comments and Our Evaluation

We provided a draft of our report to DHS and TSA on May 19, 2010, for review and comment. On June 23, 2010, DHS provided written comments from the department and TSA, which are reprinted in appendix I. In commenting on our report, TSA stated that it concurred with three recommendations, concurred in part with one recommendation, and did not concur with another recommendation. For the recommendations for which TSA concurred or concurred in part, the agency identified actions taken or planned to implement them. Although TSA concurred with part of our second recommendation, the actions TSA reported that the agency has taken do not fully address the intent of this recommendation.

Regarding our first recommendation that TSA establish milestones for the completion of its staffing study to assist in determining the resources necessary to provide CCSP oversight, TSA concurred. TSA stated that as part of the staffing study, the agency is working to develop a model to identify the number of required TSIs and that this effort would be completed in the fall of 2010. If this model includes an analysis of the resources needed to provide CCSP oversight under various scenarios, it will address the intent of our recommendation.

TSA concurred in part with our second recommendation that the agency develop a mechanism to verify the accuracy of domestic and inbound screening data, including obtaining actual data on all inbound screening. TSA concurred with the need to capture data for inbound cargo and stated that as of May 1, 2010, the agency issued changes to air carriers' standard security programs that require air carriers to report inbound cargo screening data to TSA. However, as noted in this report, these requirements apply to air carriers and the screening that they conduct and not to the screening conducted by other entities, such as foreign governments. Thus, TSA will continue to rely in part on estimates to report inbound cargo screening levels. We recognize that it may be challenging for TSA to obtain cargo screening data from foreign governments; however, the agency could require air carriers to report on cargo screening for all inbound cargo they transport, including the screening conducted by foreign governments or other entities. This would be similar to air carriers' domestic cargo screening reporting requirements which require air carriers to report on cargo that they screen as well as cargo screened by CCSFs. We continue to believe that it is important for TSA to obtain data for all screening conducted on inbound cargo so that it can provide assurance to Congress that this cargo is being screened in accordance with the 9/11 Commission Act screening mandate. TSA stated that verifying the accuracy of domestic screening data will continue to be a challenge because there is no means to cross-reference local screening logs—which include screening information on specific shipments—with screening reports submitted by air carriers to TSA that do not contain such information. We acknowledge TSA's potential challenges in cross-referencing screening logs with screening reports and have modified the report to reflect this challenge. However, as noted in this report, TSA could consider a quality review mechanism similar to the compliance measurement program used by CBP, which includes regular quality reviews to ensure accuracy in findings and management oversight to validate results. TSA could also develop another mechanism for verifying the accuracy of the screening data through random checks—other than those of the screening logs—or other practical means. Doing so would

address the intent of our recommendation. Given that the agency uses these data to report to Congress its compliance with the screening mandate as it applies to domestic cargo, we continue to believe that verifying the accuracy of the screening data is important so that TSA will be better positioned to provide reasonable assurance that screening is being conducted at reported levels.

TSA concurred with our third recommendation that TSA develop a plan for how and when the agency intends to require the screening of in-transit cargo. TSA stated that the agency has implemented changes, effective August 1, 2010, that will require 100 percent of in-transit cargo to be screened unless it can otherwise be verified as screened. TSA's action is an important step toward addressing the potential security vulnerability associated with in-transit cargo and if implemented effectively, will address the intent of our recommendation. Because this is a significant change and potentially operationally challenging, it will be important to closely monitor the industry's understanding and implementation of this requirement to help ensure that 100 percent screening of in-transit cargo is being conducted.

TSA did not concur with our fourth recommendation to develop a contingency plan for meeting the mandate as it applies to domestic cargo that considers alternatives to address potential CCSP participation shortfalls and screening technology limitations. TSA stated that a contingency plan is unnecessary since effective August 1, 2010, 100 percent of domestic cargo transported on passenger aircraft will be required to be screened. The agency also stated that there is no feasible contingency plan that can be implemented by TSA that does not compromise security or create disparities in the availability of screening resources. However, the agency noted that several alternatives are available to and are currently being exercised by industry. The agency also stated that TSA developed the CCSP in collaboration with industry stakeholders to alleviate the burden on airlines to screen 100 percent of cargo while still meeting the mandate. We disagree that a contingency plan is unnecessary and unfeasible. As noted in this report, although TSA's approach would ensure that 100 percent of domestic cargo transported on passenger aircraft is screened, not transporting unscreened cargo could negatively affect the flow of commerce. In addition, while we recognize the CCSP as a positive and critical step toward achieving the screening mandate as it applies to domestic cargo, we continue to believe that there are feasible alternatives that TSA should consider to address potential CCSP participation shortfalls and screening technology limitations. Such alternatives discussed in this report include mandating CCSP participation

for certain members of the air cargo supply chain and requiring the screening of some or all cargo before it is loaded onto ULD pallets and containers. Effective May 1, 2010, TSA embraced one of the alternatives cited in this report by requiring freight forwarder CCSFs to screen all cargo before it is loaded onto ULD pallets and containers. Expanding this requirement to additional industry stakeholders could be a feasible alternative to address both CCSP participation shortfalls and screening technology limitations. Moreover, although many industry stakeholders may support the CCSP, key partners in the program—shippers—have not joined the program at the levels targeted by TSA, thus jeopardizing its success. Therefore, we continue to believe that it is prudent that TSA consider developing a contingency plan for meeting the air cargo screening mandate without disrupting the flow of commerce.

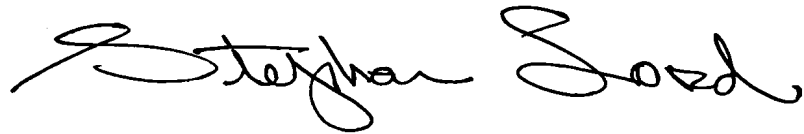
Finally, in regard to our fifth recommendation that TSA develop a plan for how and when the agency intends to meet the mandate as it applies to inbound cargo, TSA concurred and stated that TSA is drafting milestones as part of a plan that will generally require air carriers to conduct 100 percent screening by a specific date. If implemented effectively, this plan will address the intent of our recommendation.

In addition, DHS noted in its written comments that CCSFs have reported to TSA that they have the capacity to screen nearly the entire remaining unscreened cargo volume and that air carriers have reported to TSA that they do not anticipate any major disruptions to the transport of air cargo on August 2010. We were not able to verify these assertions because TSA did not provide supporting documentation. It is also important to note that having the potential capacity to screen air cargo does not ensure that this screening will take place when the 100 percent screening mandate goes into effect in August 2010.

TSA also provided us with technical comments, which we considered and incorporated in the report where appropriate.

As we agreed with your offices, unless you publicly announce the contents of this report earlier, we plan no further distribution until 2 days from the report date. At that time, we will send copies to the Secretary of Homeland Security, interested congressional committees, and other interested parties. The report also will be available at no charge on the GAO Web site at <http://www.gao.gov>.

If you or your staffs have any questions about this report or wish to discuss these matters further, please contact me at (202) 512-4379 or lords@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. Major contributors to this report are listed in appendix II.

A handwritten signature in black ink that reads "Stephen Lord". The signature is written in a cursive, flowing style.

Stephen M. Lord
Director, Homeland Security and Justice Issues

Appendix I: Comments from the Department of Homeland Security

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



**Homeland
Security**

June 22, 2010

Mr. Steve Lord
Director, Homeland Security & Justice Issues
U.S. Government Accountability Office (GAO)
441 G Street, NW
Washington, DC 20548

Dear Mr. Lord:

Thank you for the opportunity to review and comment on GAO 10-446, the draft report titled: *Aviation Security: TSA Has Made Progress But Faces Challenges in Meeting the Statutory Mandate for Screening Air Cargo on Passenger Aircraft*. The Transportation Security Administration (TSA) appreciates the professionalism demonstrated by GAO's team members in conducting this difficult and broad-ranging review. TSA also values the investigative panel's review of this agency's efforts to enable the air cargo industry to achieve the 100 percent air cargo screening mandate of the Implementing Recommendations of the 9/11 Commission Act (9/11 Act).

Since August 2007, when TSA was tasked with establishing a system to screen 100 percent of cargo transported on passenger aircraft, we have implemented a major new security program called the Certified Cargo Screening Program (CCSP), issued regulations and security program amendments to incrementally increase the level of screening of cargo transported on passenger aircraft departing U.S. locations, engaged in a broad-based campaign to educate industry on the 100 percent screening requirement and the benefits of CCSP participation, and significantly increased the number and types of technologies approved for screening air cargo to support the screening mandate.

TSA has certified over 720 entities as Certified Cargo Screening Facilities (CCSFs) since the CCSP was initiated as a pilot program in 2008. These entities currently are screening more than 40 percent of the cargo, by weight, carried on passenger aircraft departing U.S. airports. They have reported to TSA that they have the capacity to screen nearly the entire remaining unscreened volume as we approach the August 2010 deadline. Additionally, air carriers are continuing to invest in screening equipment, and have also reported that they do not anticipate any major disruptions.

In October 2008, TSA began increasing the level of screening required on cargo transported on passenger aircraft in the United States by establishing a requirement to screen 100 percent of cargo transported on narrow body aircraft. This measure fully protects 96 percent of all domestic passenger aircraft flights, which carry more than 86

percent of all aircraft passengers in the United States. Subsequent updates to TSA security programs required 50 percent screening by February 1, 2009, and most recently, 75 percent screening by May 1, 2010. Both levels have been successfully met by industry.

Appendix I: Comments from the Department
of Homeland Security

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TSA has reached out to more than 100,000 entities on the 100 percent screening requirement and the CCSP, working largely through major industry associations to engage stakeholders through webinars, conferences, newsletters, articles and advertisements in trade journals and the popular press.

When the 9/11 Act was passed, no equipment had been tested or approved specifically for cargo screening. TSA has since created an approved technologies list that contains more than 50 technologies, including Advanced Technology (AT) X-ray capable of screening large cargo configurations, as well as Explosives Trace Detection (ETD), Explosive Detection Systems (EDS), and most recently Electromagnetic Devices (EMD).

While industry has not yet achieved 100 percent screening for international inbound cargo due to the challenges of implementing a supply chain screening program internationally, TSA intends to require an increased level of screening for international inbound cargo as we continue to facilitate industry's achievement of 100 percent screening in the next few years. A combination of incremental increases in the screening requirements for carriers as well as recognition of foreign national cargo security programs, are key components of that strategy.

TSA appreciates the work of GAO in its review of TSA Air Cargo Programs, and we will continue to address the issues identified by GAO. Our continued progress demonstrates our commitment to TSA's mission of securing our Nation's transportation systems and ensuring the freedom of movement of people and commerce. TSA's specific responses to GAO's recommendations are below.

Recommendation 1: Establish milestones for the completion of TSA's staffing study.

TSA concurs. As part of the Transportation Security Inspector (TSI) study, TSA is working to develop a demand model to be used to identify the number of TSIs needed at a particular location based on various factors, to include the number of regulated entities, such as CCSFs. This is expected to be completed in the Fall of 2010. TSA has already established an interim model that determines a ratio of inspectors to entities and that also considers other factors, such as cargo volume. TSA has already used the interim model in order to develop a plan for deployment of 50 TSI-Cargo (TSI-C) in fiscal year 2010.

Recommendation 2: Develop a mechanism to verify the accuracy of all screening data, both self-reported domestic data and inbound cargo data, through random checks or other practical means. For inbound cargo data, complete the agency's

plan to obtain actual data, rather than estimates, on all inbound screening, including establishing timeframes and milestones for completion of the plan.

TSA concurs in part. TSA concurs with the need to capture data for inbound cargo and as of May 1, 2010, TSA issued changes to the standard security programs that require this data to be reported to TSA. However, the ability to verify the accuracy of screening data provided by regulated parties will continue to be a challenge. While TSI-C's can obtain specific screening logs for screening activity, there is currently no means to cross-reference local screening logs (which provide information as to how and by whom a particular shipment was screened) with carrier-level reports. Carrier reports themselves are a compilation of statistics provided by multiple locations. No specific shipment numbers are required as part of this process, and to add such a requirement would be a significant

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burden to industry. TSA will verify the accuracy of this data through random checks and inspections of screening logs.

Recommendation 3: Develop a plan, with milestones, for how and when the agency intends to require the screening of in-transit cargo.

TSA concurs. TSA has already taken significant steps to accomplish this objective, and has implemented changes to the Foreign Air Carrier Model Security Program and the U.S. Aircraft Operator Standard Security Program; effective August 1, 2010, 100 percent of all cargo transported on passenger aircraft from U.S. airports will be required to be screened.

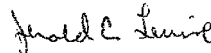
Recommendation 4: Develop a contingency plan for meeting the mandate as it applies to domestic cargo that considers alternatives to address potential CCSP participation shortfalls and screening technology limitations.

TSA does not concur. Effective August 1, 2010, 100 percent of all cargo transported on passenger aircraft from U.S. airports will be required to be screened; to develop a contingency plan that suggests otherwise is unnecessary. TSA contends that there is no feasible contingency plan that can be implemented by TSA that does not compromise security or create disparities in the availability of screening resources among airports and/or commodity sectors. However, based on each entity's business model, there are alternatives that an entity can use including earlier shipment delivery times by air carriers for unscreened cargo, as well as the use of all cargo aircraft or surface alternatives. TSA has developed the CCSP in collaboration with industry stakeholders to alleviate the burden on airlines to screen 100 percent of cargo while still meeting this mandate. Industry supports this decision to screen cargo earlier in the supply chain before reaching the airlines.

Recommendation 5: Develop a plan, with milestones, for how and when the agency intends to meet the mandate as it applies to inbound cargo.

TSA concurs. TSA is drafting a set of milestones that will require all carriers to attain 100 percent screening by a specific date, unless other national cargo security programs are submitted, reviewed, and accepted as providing commensurate levels of security. We will be happy to share this plan with GAO when it is completed.

Sincerely yours,



Jerald E. Levine
Director
Departmental GAO/OIG Liaison Office

Appendix II: GAO Contact and Staff Acknowledgments

GAO Contact

Stephen M. Lord, (202) 512-4379 or lords@gao.gov

Acknowledgments

In addition to the contact named above, Steve D. Morris, Assistant Director, and Rebecca Kuhlmann Taylor, Analyst-in-Charge, managed this review. Scott M. Behen, Erin C. Henderson, Elke Kolodinski, Linda S. Miller, Matthew Pahl, and Yanina Golburt Samuels made significant contributions to the work. David K. Hooper and Thomas Lombardi provided legal support. Stanley J. Kostyla assisted with design and methodology. Pille Anvelt and Tina Cheng helped develop the report's graphics. John W. Cooney, Elizabeth C. Dunn, Richard B. Hung, Brendan Kretzschmar, and Amelia B. Shachoy also provided support.

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