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AVIATION SECURITY

9/11 Anniversary Observations on TSA's Progress and Challenges in Strengthening Aviation Security

Statement of Stephen M. Lord, Director
Homeland Security and Justice Issues

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AVIATION SECURITY

9/11 Anniversary Observations on TSA's Progress and Challenges in Strengthening Aviation Security

Why GAO Did This Study

Securing commercial aviation operations remains a daunting task, with hundreds of airports, thousands of aircraft, and thousands of flights daily carrying millions of passengers and pieces of carry-on and checked baggage. The attempted terrorist bombing of Northwest flight 253 on December 25, 2009, and the October 2010 discovery of explosive devices in air cargo packages on an all-cargo aircraft bound for the United States from Yemen highlight the continuing need for effective passenger, cargo, and baggage screening. This statement discusses actions TSA has taken to (1) validate the scientific basis of its behavior-based passenger screening program (the Screening of Passengers by Observation Techniques, or SPOT); (2) strengthen the security of inbound air cargo (3) acquire checked baggage screening technology in accordance with established guidance; and (4) vet foreign nationals training at U.S. flight schools. This statement is based on GAO's work issued from September 2009 through July 2012, and includes selected updates on air cargo screening conducted from July through September 2012. For the selected updates, GAO interviewed TSA officials.

What GAO Recommends

GAO is not making any new recommendations. GAO has previously recommended that TSA take actions to improve aviation security. In general, TSA concurred with the recommendations, and is taking actions to address them.

What GAO Found

The Transportation Security Administration (TSA) has taken actions to validate the science underlying its behavior-based passenger screening program, the Screening of Passengers by Observation Techniques, or SPOT, program, but more work remains. GAO reported in May 2010 that (1) TSA deployed SPOT before first determining whether there was a scientifically valid basis for using behavior and appearance indicators to reliably identify passengers who may pose a risk; and (2) it is unknown if the SPOT program has ever resulted in the arrest of anyone who is a terrorist, or who was planning to engage in terrorist related activity, although there is other evidence that terrorists have transited through SPOT airports. GAO recommended in May 2010 that the Department of Homeland Security (DHS) convene an independent panel of experts to review the methodology of the ongoing validation study on the SPOT program to determine whether it is sufficiently comprehensive to validate the program. DHS concurred and subsequently revised its validation study to include an independent expert review. DHS's study, completed in April 2011, found that SPOT was more effective than random screening to varying degrees; however, DHS noted limitations to the study, such as that it was not designed to comprehensively validate whether SPOT can be used to reliably identify individuals who pose a security risk. GAO is currently reviewing the program and will issue our report next year.

TSA has taken actions to enhance the security of cargo on inbound aircraft, but challenges remain. For example, TSA issued new screening requirements aimed at enhancing the security of cargo on aircraft, such as prohibiting the transport of air cargo on passenger aircraft from Yemen. In June 2010, GAO recommended that TSA develop a mechanism to verify the accuracy of all screening data. TSA concurred in part and required air carriers to report inbound cargo screening data, but has not yet fully addressed the recommendation. In June 2012, TSA required air carriers to screen 100 percent of inbound air cargo transported on passenger aircraft by December 3, 2012. However, air carriers and TSA face challenges in implementing this requirement and in providing reasonable assurance that screening is being conducted at reported levels.

DHS and TSA have experienced difficulties establishing acquisition program baselines, schedules, and cost estimates for the Electronic Baggage Screening Program (EBSP). For example, GAO reported in July 2011 that TSA had established a schedule for the acquisition of the explosives detection systems (EDS) TSA deploys to screen checked baggage, but it did not fully comply with leading practices. GAO recommended that DHS develop and maintain a schedule for the EBSP in accordance with leading practices. DHS concurred.

GAO reported in July 2012 that TSA has worked to enhance general aviation security, such as though issuing regulations, but there are weaknesses in its process for vetting foreign flight school student applicants, and in DHS's process for identifying flight school students who may be in the country illegally. For example, TSA's program to help determine whether flight school students pose a security threat does not determine whether they entered the country legally. GAO recommended actions that DHS and TSA could take to address these concerns, with which DHS and TSA have concurred, and are starting to take actions.

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United States Government Accountability Office

Chairman Rogers, Ranking Member Jackson-Lee, and Members of the Subcommittee:

I appreciate the opportunity to participate in today's hearing on the anniversary of the September 11, 2001, terrorist attacks to discuss our work examining key layers of aviation security: (1) the Transportation Security Administration's (TSA) behavior-based passenger screening program; (2) the security of air cargo on flights bound for the United States from foreign countries (known as inbound air cargo); (3) the deployment of checked baggage screening technology; and (4) the federal government's vetting process for individuals training at U.S. flight schools. This work may help inform future deliberations about any potential challenges and corrective actions regarding U.S. aviation security.

In the years that have passed since TSA assumed responsibility for aviation security, TSA has spent billions of dollars and implemented a wide range of initiatives to strengthen aviation security. Our work has shown that TSA has enhanced aviation security with respect to passenger, checked baggage, and air cargo screening, among other areas. Securing commercial aviation operations, however, remains a daunting task—with hundreds of airports, thousands of aircraft, and thousands of flights daily carrying millions of passengers and their property, as well as cargo. The attempted terrorist bombing of Northwest flight 253 on December 25, 2009, and the October 2010 discovery of explosive devices in air cargo packages on an all-cargo aircraft bound for the United States from Yemen provides a vivid reminder that civil aviation remains an attractive terrorist target and highlights the continuing need for effective passenger, cargo, and baggage screening. According to the President's *National Counterterrorism Strategy,* released in June 2011, aviation security and screening is an essential tool in our ability to detect, disrupt, and defeat plots to attack the homeland.[1]

My statement today discusses actions TSA has taken to (1) validate the scientific basis of its behavior-based passenger screening program (known as the Screening of Passengers by Observation Techniques, or SPOT program), (2) strengthen the security and screening of inbound air cargo, (3) acquire checked baggage screening technology in accordance with established guidance, and (4) vet foreign nationals seeking to

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[1] *National Strategy for Counterterrorism*, (Washington, D.C.: June 28, 2011).

undertake flight training at U.S. flight schools,[2] as well as the challenges associated with implementing these actions.

This statement is based on our prior work issued from May 2010 through July 2012, and includes selected updates conducted from July 2012 through September 2012 on TSA's efforts to improve security of inbound air cargo.[3] Our previously published products contain additional details on the scope and methodology, including data reliability, for these reviews. For the updated information on air cargo screening, we obtained TSA views on our findings and incorporated technical comments where appropriate. We conducted our work in accordance with generally accepted government auditing standards.

Background

The Aviation and Transportation Security Act established TSA as the federal agency with primary responsibility for securing the nation's civil aviation system, which includes the screening of all passenger and property transported by commercial passenger aircraft.[4] At the more than 450 TSA-regulated airports in the United States, prior to boarding an aircraft, all passengers, their accessible property, and their checked baggage are screened pursuant to TSA-established procedures. TSA relies upon multiple layers of security to deter, detect, and disrupt persons posing a potential risk to aviation security. These layers include behavior detection officers (BDOs), who examine passenger behaviors and appearances to identify passengers who might pose a potential security

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[2] Flight schools fall within the general aviation community, which also includes nonscheduled aircraft operations such as air medical-ambulance, corporate aviation, and privately owned aircraft—generally, aircraft not available to the general public for transport.

[3] See GAO, *Aviation Security: Efforts to Validate TSA's Passenger Screening Behavior Detection Program Underway, but Opportunities Exist to Strengthen Validation and Address Operational Challenges*, GAO-10-763 (Washington, D.C.: May 20, 2010); *Aviation Security: TSA Has Deployed Optimal Systems at the Majority of TSA-Regulated Airports, but Could Strengthen Cost Estimates*, GAO-12-266 (Washington, D.C.: Apr. 27, 2012); *Aviation Security: Actions Needed to Address Challenges and Potential Vulnerabilities Related to Securing Inbound Air Cargo*, GAO-12-632 (Washington, D.C.: May 10, 2012); and *General Aviation Security: Weaknesses Exist in TSA's Process for Ensuring Foreign Flight Students Do Not Pose a Security Threat*, GAO-12-875 (Washington, D.C.: July 18, 2012).

[4] See Pub. L. No. 107-71, 115 Stat. 597 (2001). For purposes of this testimony, "commercial passenger aircraft" refers to U.S. or foreign-flagged air carriers operating under TSA-approved security programs with regularly scheduled passenger operations to or from a U.S. airport.

risk at TSA-regulated airports;[5] travel document checkers, who examine tickets, passports, and other forms of identification; transportation security officers (TSO), who are responsible for screening passengers and their carry-on baggage at passenger checkpoints using x-ray equipment, magnetometers, Advanced Imaging Technology, and other devices, as well as for screening checked baggage; random employee screening; and checked baggage screening systems.[6] The Implementing Recommendations of 9/11 Commission Act of 2007 further mandates that the Secretary of Homeland Security establish a system to screen 100 percent of cargo transported on passenger aircraft, and defines screening for purposes of meeting this mandate, in general, as a physical examination or the use of nonintrusive methods to assess whether cargo poses a threat to transportation security.[7] Such cargo ranges in size from 1 pound to several tons and ranges in type from perishable commodities to machinery. In 2011, all-cargo carriers transported approximately 66 percent (6.9 billion pounds) of the total cargo (10.4 billion pounds) transported to the United States.[8] Additionally, TSA has responsibilities for general aviation security, and developed the Alien Flight Student Program (AFSP) to help determine whether foreign students enrolling at flight schools pose a security threat.[9] U.S. government threat assessments have discussed plans by terrorists to use general aviation aircraft to conduct attacks. Further, analysis conducted on behalf of TSA has indicated that larger general aviation aircraft may be able to cause significant damage to buildings and other structures.

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[5] TSA designed SPOT to provide BDOs with a means of identifying persons who may pose a potential security risk at TSA-regulated airports by focusing on behaviors and appearances that deviate from an established baseline and that may be indicative of stress, fear, or deception.

[6] Advanced Imaging Technology screens passengers for metallic and non-metallic threats including weapons, explosives, and other objects concealed under layers of clothing. At airports participating in TSA's Screening Partnership Program, screeners employed by private sector entities under contract to and overseen by TSA, and not TSOs, perform the passenger and checked baggage screening function in accordance with TSA requirements. See 49 U.S.C. § 44920.

[7] See 49 U.S.C. § 44901(g).

[8] Based on 2011 TSA data.

[9] See 49 C.F.R. pt. 1552, subpt. A.

TSA Has Taken Actions to Validate the Science Underlying Its Behavior Detection Program, but More Work Remains

We reported in May 2010 that TSA deployed SPOT nationwide before first determining whether there was a scientifically valid basis for using behavior and appearance indicators as a means for reliably identifying passengers who may pose a risk to the U.S. aviation system.[10]

According to TSA, SPOT was deployed before a scientific validation of the program was completed to help address potential threats to the aviation system, such as those posed by suicide bombers. TSA also stated that the program was based upon scientific research available at the time regarding human behaviors. We reported in May 2010 that approximately 14,000 passengers were referred to law enforcement officers under SPOT from May 2004 through August 2008.[11] Of these passengers, 1,083 were arrested for various reasons, including being illegal aliens (39 percent), having outstanding warrants (19 percent), and possessing fraudulent documents (15 percent). The remaining 27 percent were arrested for other reasons such as intoxication, unruly behavior, theft, domestic violence, and possession of prohibited items. As noted in our May 2010 report, SPOT officials told us that it is not known if the SPOT program has ever resulted in the arrest of anyone who is a terrorist, or who was planning to engage in terrorist-related activity. More recent TSA data covering the period from November 1, 2010, to April 18, 2012, indicates that SPOT referred 60,717 passengers for additional screening, which resulted in 3,803 referrals to law enforcement officers and 353 arrests. Of these 353 arrests, 23 percent were related to immigration status, 23 percent were drug-related, 9 percent were related to fraudulent documents, 22 percent were related to outstanding warrants, and 28 percent were for other offenses.[12]

A 2008 report issued by the National Research Council of the National Academy of Sciences stated that the scientific evidence for behavioral monitoring is preliminary in nature.[13] The report also noted that an

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[10] See GAO-10-763.

[11] See GAO-10-763.

[12] These percents add to more than 100 percent (specifically, 105 percent) because some of the passengers were arrested for multiple offenses.

[13] National Research Council, Protecting Individual Privacy in the Struggle Against Terrorists: A Framework for Assessment (Washington, D.C.: National Academies Press, 2008). We reviewed the approach used and the information provided in this study and found the study and its results to be reliable for the purposes for which we used it in this report.

information-based program, such as a behavior detection program, should first determine if a scientific foundation exists and use scientifically valid criteria to evaluate its effectiveness before deployment. The report added that such programs should have a sound experimental basis and that the documentation on the program's effectiveness should be reviewed by an independent entity capable of evaluating the supporting scientific evidence.[14]

As we reported in May 2010, an independent panel of experts could help DHS determine if the SPOT program is based on valid scientific principles that can be effectively applied in an airport environment for counterterrorism purposes. Thus, we recommended that the Secretary of Homeland Security convene an independent panel of experts to review the methodology of DHS's Science and Technology Directorate's ongoing validation study on the SPOT program being conducted to determine whether the study's methodology is sufficiently comprehensive to validate the SPOT program. We also recommended that this assessment include appropriate input from other federal agencies with expertise in behavior detection and relevant subject matter experts.[15] DHS concurred and stated that its validation study, completed in April 2011, included input from a broad range of federal agencies and relevant experts, including those from academia.[16] DHS's validation study found that SPOT was more effective than random screening to varying degrees. For example, the study found that SPOT was more effective than random screening at identifying individuals who possessed fraudulent documents and identifying individuals who law enforcement officers ultimately arrested.[17]

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[14] A study performed by the JASON Program Office raised similar concerns. The JASON Program Office is an independent scientific advisory group that provides consulting services to the U.S. government on matters of defense science and technology.

[15] See GAO-10-763.

[16] See DHS, *SPOT Referral Report Validation Study Final Report Volume I: Technical Report*, (Washington, D.C.: Apr. 5, 2011). DHS's study was conducted to determine the extent to which SPOT was more effective than random screening at identifying security threats and how the program's behaviors correlate to identifying high-risk travelers. The study defines high-risk passengers as travelers that knowingly and intentionally try to defeat the security process including those carrying serious prohibited or illegal items, such as weapons, drugs, or fraudulent documents; or those that were ultimately arrested by law enforcement.

[17] The extent to which SPOT is more effective than random screening at identifying fraudulent documents and individuals ultimately arrested by law enforcement officers is deemed sensitive security information by TSA.

According to DHS's study, no other counterterrorism or screening program incorporating behavior and appearance-based indicators is known to have been subjected to such a rigorous, systematic evaluation of its screening accuracy. However, DHS noted that the identification of high-risk passengers was rare in both the SPOT and random tests. DHS's study also noted that the assessment was an initial validation step, and was not designed to fully validate whether behavior detection can be used to reliably identify individuals in an airport environment who pose a security risk. According to DHS, further research will be needed to comprehensively validate the program.

In addition, DHS determined that the base rate, or frequency, of SPOT behavioral indicators observed by TSA to detect suspicious passengers was very low and that these observed indicators were highly varied across the traveling public. Although details about DHS's findings related to these indicators are sensitive security information, the low base rate and high variability of traveler behaviors highlights the challenge that TSA faces in effectively implementing a standardized list of SPOT behavioral indicators. In addition, DHS outlined several limitations to the study. For example, the study noted that BDOs were aware of whether individuals they were screening were selected as the result of identified SPOT indicators or random selection. DHS stated that this had the potential to introduce bias into the assessment. DHS also noted that SPOT data from January 2006 through October 2010 were used in its analysis of behavioral indicators even though questions about the reliability of the data exist.[18]

The study also noted that it was not designed to comprehensively validate whether SPOT can be used to reliably identify individuals in an airport environment who pose a security risk. The DHS study also made several additional recommendations related to strengthening the program and conducting a more comprehensive validation of whether the science can be used for counterterrorism purposes in the aviation environment.[19] Some of these recommendations, such as the need for a comprehensive

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[18] DHS officials stated that this historical SPOT data was not used in their analysis to determine whether SPOT was more effective than random screening.

[19] The study made recommendations related to SPOT in three areas: (1) future validation efforts, (2) comparing SPOT with other screening programs, and (3) broader program evaluation issues. TSA designated the specific details of these recommendations sensitive security information.

program evaluation including a cost-benefit analysis, reiterate recommendations made in our prior work. In March 2011, we reported that Congress may wish to consider the study's results in making future funding decisions regarding the program.[20] TSA is reviewing the study's findings and assessing the steps needed to address DHS's recommendations. If TSA decides to implement the recommendations in the April 2011 DHS validation study, it may be years away from knowing whether there is a scientifically valid basis for using behavior detection techniques to help secure the aviation system against terrorist threats given that the initial study took about 4 years to complete. We are conducting a follow-on review of TSA's behavior detection program, and its related variant, the so-called "Assessor Program", which incorporates more extensive verbal interactions ("chat downs") with the traveling public. The Assessor program is currently being test piloted in Boston and Detroit. Our follow-on report on this program will be issued early next year.

DHS and TSA Have Taken Actions to Enhance the Security of Cargo on Inbound Aircraft, but Challenges Remain

DHS and TSA have taken four primary actions to enhance the security of inbound cargo on passenger and all-cargo aircraft following the October 2010 bomb attempt originating in Yemen.

TSA issued new screening requirements aimed at enhancing the security of cargo on passenger and all-cargo aircraft. Beginning in October 2010, TSA imposed new risk-based security procedures on passenger and all-cargo aircraft aimed at focusing more detailed screening measures on high risk shipments and, among other things, prohibited the transport of cargo on passenger aircraft from Yemen and Somalia due to threats stemming from those areas.[21]

DHS instituted working groups with air cargo industry stakeholders to identify ways to enhance air cargo security. In January 2011, the Secretary of Homeland Security established an Air Cargo Security Working Group to obtain advice and consultations from air cargo security

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[20] See GAO, *Opportunities to Reduce Potential Duplication in Government Programs, Save Tax Dollars, and Enhance Revenue*, GAO-11-318SP (Washington, D.C.: Mar. 1, 2011).

[21] TSA imposed requirements on both U.S. and foreign-flagged passenger and all-cargo carriers. All-cargo carriers are generally aircraft configured solely for the transport of cargo (e.g., FedEx and United Parcel Service).

stakeholders on ways to enhance the security of the air cargo system.[22] The Air Cargo Security Working Group briefed the Secretary of Homeland Security, the Commissioner of U.S. Customs and Border Protection (CBP), and the TSA Administrator in April 2011 on proposed solutions, and recommended that TSA reevaluate the agency's implementation plan, timeline, and resources related to TSA's program to recognize the security programs of foreign countries, known as the National Cargo Security Program (NCSP). According to TSA officials, participants of this working group have reconvened as part of the Aviation Security Advisory Committee, which held its first meeting in May 2012, and the committee will meet again in mid-September 2012 to discuss the implementation of the recommendations.

DHS initiated an Air Cargo Advance Screening (ACAS) pilot to identify high-risk cargo for screening prior to transport to the United States. The aim of the pilot, which is ongoing, is to determine whether it is feasible for air carriers to submit air cargo manifest data to CBP prior to departure from all foreign last point of departure airports to allow CBP to analyze, target, and, if needed, issue instructions to air carriers to provide additional cargo information or take additional security measures before such cargo is loaded onto aircraft. DHS initially focused on all-cargo express carriers and companies due to the elevated risk highlighted by the October 2010 incident.[23] As of August 2012, the ACAS pilot included 3 passenger air carriers and 4 all-cargo carriers that service the United States and is focused on about 189 geographic locations. Under existing CBP requirements, CBP must receive manifest data for air cargo shipments from air carriers no later than 4 hours prior to the flight's arrival in the United States or no later than the time of departure (that is, "wheels

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[22] DHS's Air Cargo Security Working Group consists of four subgroups: (1) Information subgroup, whose objective is to, among other things, enhance intelligence and information sharing among federal stakeholders and between the U.S. government and private sector entities; (2) technology and capacity building subgroup, whose objective is to review technology standards and develop suggestions for addressing technology limitations; (3) global cargo programs subgroup, whose objective is to review and explore opportunities for enhanced public-private coordination as DHS works to address statutory requirements for screening 100 percent of inbound air cargo; and (4) global mail subgroup, whose objective is to, among other things, identify potential vulnerabilities for global mail and propose alternative processes and procedures to ensure the safety of mail transported by air.

[23] All-cargo express carriers and companies focus on transporting cargo under quick time frames.

up" and en route directly to the United States) from locations in North America.[24] Under the pilot program, however, participants provide manifest data prior to loading cargo aboard aircraft.

TSA developed a program to recognize foreign air cargo security programs. TSA has developed the NCSP recognition program to review and recognize the air cargo security programs of foreign countries if TSA deems those programs as providing a level of security commensurate with TSA's air cargo security standards. In May 2012, TSA recognized Canada as providing a level of security commensurate with U.S. air cargo security standards, and in June 2012, the agency recognized the European Union and Switzerland as also providing this same level of security based on the principle of "mutual recognition."[25] TSA officials stated that the NCSP recognition program is a key effort in meeting the 100 percent screening mandate because it will eliminate the need for air carriers to comply with two countries' security programs.

Despite these actions, air carriers and TSA face three key challenges that, among other things, could limit TSA's ability to meet the 9/11 Commission Act mandate to screen 100 percent of cargo transported on passenger aircraft as it applies to inbound air cargo and to provide reasonable assurance that screening is being conducted at reported levels.[26] All-cargo carriers subject to TSA regulation also reported facing challenges in implementing new TSA screening requirements established after the October 2010 Yemen incident.

Passenger air carriers reported logistical challenges implementing proposed screening requirements. In January 2011, TSA proposed changes to passenger aircraft security requirements outlined in the Aircraft Operator Standard Security Program and the Model Security Program to further enhance the security of air cargo departing foreign locations by requiring 100 percent screening of inbound cargo previously exempt from screening. TSA requirements currently call for air carriers to

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[24] See 19 C.F.R. § 122.48a(b).

[25] TSA had previously recognized France and the United Kingdom as providing a level of security commensurate with U.S. air cargo security standards.

[26] See 49 U.S.C. § 44901(g).

screen a certain percentage of all cargo.[27] TSA proposed changes that would require passenger air carriers to screen 100 percent of cargo as part of its efforts to meet the 9/11 Commission Act mandate. Passenger air carriers expressed concerns about being able to meet the 100 percent screening mandate as it applies to inbound cargo stating that it would cause significant disruptions in the air cargo supply chain, among other issues. In response to these concerns, TSA officials stated that they revised the proposed requirements and issued new passenger security requirements in June 2012. Agency officials said they plan to require air carriers to screen 100 percent of inbound air cargo transported on passenger aircraft by December 3, 2012.

TSA faces challenges verifying screening data on inbound passenger cargo. TSA relies on data submitted to the agency by air carriers to determine the amount of inbound air cargo screened in accordance with TSA screening requirements. As of September 2011, TSA officials stated that air carrier-reported screening percentages—which they estimate to be about 80 percent—are based on actual data reported by air carriers, but agreed that it is difficult to verify the accuracy of the screening data reported by air carriers with reasonable assurance. According to TSA, as of August 2012, the air carrier data have not been independently verified for accuracy since TSA has not developed a mechanism to cross-reference local screening logs with screening reports submitted by air carriers to TSA that do not contain such information. To more accurately identify the level of screening being conducted on inbound air cargo, we recommended in June 2010 that TSA develop a mechanism to verify the accuracy of all screening data through random checks or other practical means.[28] TSA concurred in part and stated that as of May 1, 2010, they had issued changes to air carriers' standard security programs that require air carriers to report inbound cargo screening data to TSA. Specifically, TSA officials told us that in May 2010 the agency created a reporting requirement for air carriers to provide screening data on a monthly basis. TSA also stated that inspectors review screening data, among other things, when inspecting air carriers as part of the agency's air carrier compliance inspections. However, since TSA still has not developed a mechanism to verify accuracy of the

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[27] Details on TSA's screening requirements are deemed sensitive security information and not included in this statement.

[28] GAO-10-446.

data reported by air carriers, the agency has not yet fully met the intent of the recommendation. It will be important for TSA to continue to work towards ensuring verification of inbound air cargo screening data submitted by air carriers and that inbound air cargo is screened in accordance with the mandate.

Reporting screening data could facilitate oversight of all-cargo carrier compliance requirements. TSA relies on data submitted by passenger carriers to determine the amount of air cargo screened on inbound passenger aircraft but there is no requirement for all-cargo carriers to report comparable screening data to TSA, even though most of the cargo shipped from abroad into the United States is shipped on all-cargo carriers. Thus, TSA does not know the extent to which all-cargo carriers are screening cargo or meeting the enhanced screening requirements introduced after the October 2010 incident in Yemen. Officials from two global all-cargo carriers said that submitting such information to TSA would be feasible because they are already collecting this data internally, but officials from two other all-cargo carriers stated that reporting screening data to TSA would be challenging because of staffing limitations or because such data may not be available. TSA officials said that TSA does not require that all-cargo carriers submit screening data because it has focused its efforts on collecting data from passenger air carriers in support of meeting the 100 percent mandate. TSA officials stated that TSA may consider opportunities to capture additional inbound air cargo information, but has not yet weighed the costs and benefits of doing so because it has focused its efforts on establishing the ACAS pilot program, which DHS established to more readily indentify high-risk cargo. The pilot program is a key effort to identify high-risk cargo prior to aircraft departing from foreign airports, but is not intended to provide TSA with screening data, which if collected and verified, could provide additional assurance that all-cargo carriers are complying with TSA's enhanced screening requirements. To help TSA better determine what actions are needed, if any, to ensure that all-cargo carriers are complying with the agency's enhanced screening requirements, we recommended in May 2012 that DHS assess the costs and benefits of requiring all-cargo carriers to report data on screening conducted.[29] DHS concurred with the recommendation and is taking actions to address it.

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[29] See GAO-12-632.

DHS and TSA Have Experienced Difficulties Establishing Acquisition Program Baselines, Schedules, and Cost Estimates for Checked Baggage Screening Systems

TSA's Electronic Baggage Screening Program (EBSP) reports that 76 percent of the airports (337 of 446) the agency regulates for security have a mix of in-line and stand-alone baggage screening configurations that best meet airport needs (i.e., optimal systems). Our prior work on TSA's checked baggage screening program—EBSP—identified a number of shortcomings in DHS and TSA's process for establishing program baselines, program schedules, and cost estimates.

Acquisition program baselines. We found that realistic acquisition program baselines with stable requirements for cost, schedule, and performance are among the factors that are important to successful acquisitions delivering capabilities within cost and schedule.[30] Further, we reported in April 2009 that program performance metrics for cost and schedule can provide useful indicators of the health of acquisition programs and, when assessed regularly for changes and the reasons that cause changes, such indicators can be valuable tools for improving insight and oversight of individual programs as well as the total portfolio of major acquisitions.[31] According to DHS's acquisition guidance, the program baseline is the contract between the program and departmental oversight officials and must be established at program start to document the program's expected cost, deployment schedule, and technical performance. By tracking and measuring actual program performance against this baseline, management can be alerted to potential problems, such as cost growth or changing requirements, and has the ability to take corrective action.

We reported in April 2012 that TSA has not had a DHS-approved acquisition program baseline for EBSP since the program's inception more than 8 years ago.[32] Further, DHS did not require TSA to complete an acquisition program baseline until November 2008. TSA officials said they have twice submitted an acquisition program baseline to DHS for approval—first in November 2009 and again February 2011. However, according to DHS officials TSA did not have a fully developed life cycle cost estimate. In November 2011, DHS told TSA that it needed to revise the life cycle cost estimates as well as its procurement and deployment

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[30] GAO-10-588SP.

[31] *Defense Acquisitions: Measuring the Value of DOD's Weapon Programs Requires Starting with Realistic Baselines*, GAO-09-543T (Washington, D.C.: April 1, 2009).

[32] GAO-12-266.

schedules to reflect budget constraints. DHS officials told us that they could not approve the acquisition program baseline as written because TSA's estimates were significantly over budget. An approved baseline will provide DHS with additional assurances that TSA's approach is appropriate and that the capabilities being pursued are worth the expected costs. TSA officials stated that TSA is working with DHS to amend the draft program baseline and plans to resubmit a revised life cycle cost estimates with a revised acquisition program baseline by December 31, 2012. As we reported, establishing and approving a program baseline, as DHS and TSA plan to do for the EBSP, could help DHS assess the program's progress in meeting its goals and achieve better program outcomes.

Schedules. In July 2011, we reported that TSA had established a schedule for the acquisition of the explosives detection systems (EDS) TSA deploys to screen checked baggage, but it did not fully comply with leading practices, and TSA had not developed a plan to upgrade its EDS fleet to meet the 2010 explosives detection requirements.[33] We noted that some of TSA's approximately 2,200 deployed systems met 2005 explosive requirements while the remainder met 1998 explosive detection requirements.[34] Leading practices state that the success of a large-scale system acquisition, such as TSA's EDS acquisition, depends in part on having a reliable schedule that identifies when the program's set of work activities and milestone events will occur, amongst other things. We reported that the schedule for the EDS acquisition is not reliable because it does not include a timeline to deploy EDS or plans to procure EDS to meet subsequent phases of explosive detection requirements. We stated that developing a reliable schedule would help TSA better monitor and oversee the progress of the EDS acquisition. DHS concurred with the recommendation to develop and maintain a schedule for the entire EBSP in accordance with the leading practices we identified for preparing a schedule. DHS commented that TSA had already begun working with key stakeholders to develop and define requirements for a schedule and to ensure that the schedule aligns with the leading practices. In April 2012,

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[33] GAO, *Aviation Security: TSA Has Enhanced Its Explosives Detection Requirements for Checked Baggage, but Additional Screening Actions Are Need,* GAO-11-740, (Washington, D.C.: July 11, 2011).

[34] The specific number of EDS operating at particular detection levels is considered sensitive security information.

TSA stated that it had secured contractor resources to support development of an integrated master schedule in accordance with our and industry best practices, and that it anticipated completion of this schedule by September 2013.

Cost estimates. In April 2012, we reported that TSA's methods for developing life cycle cost estimates for the EBSP did not fully adhere to best practices for developing these estimates.[35] We reported in March 2009 that a high-quality, reliable cost estimation process provides a sound basis for making accurate and well-informed decisions about resource investments, budgets, assessments of progress, and accountability for results and thus is critical to the success of a program.[36] We reported that TSA's estimates partially met three characteristics and minimally met one characteristic of a reliable cost estimate. [37] DHS concurred with the recommendation that TSA ensure that its life cycle cost estimates conform to cost estimating best practices, and identified efforts underway to address it.

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[35] See GAO-12-266.

[36] *GAO Cost Estimating and Assessment Guide: Best Practices for Developing and Managing Capital Program Costs.* (Supersedes GAO-07-1134SP). GAO-09-3SP, (Washington, D.C.: Mar. 2, 2009).

[37] Specifically, we found their life cycle cost estimate to be partially comprehensive, partially documented, partially accurate, and minimally credible: (1) Partially comprehensive because the cost estimate does not incorporate costs associated with all security threats, lacks a detailed scope of work, and lacks a single technical baseline; (2) partially documented because TSA did not adequately document many assumptions or methodologies underlying its cost model, and provided little or no evidence that the assumptions and methodologies underlying the cost estimate were approved by management; (3) partially accurate because differences between planned and actual costs are not fully documented, explained, or reviewed; and (4) minimally credible because TSA did not complete relevant activities, such as an independent cost estimate, - to ensure that the estimate accounts for bias and uncertainty. See GAO-12-875.

TSA Established a Process for Vetting Foreign Flight Students but Weaknesses Remain

As we reported in July 2012, TSA has worked with industry and other stakeholders to enhance general aviation security, such as issuing regulations and enhancing outreach and awareness, but there are weaknesses in the agency's process for vetting foreign flight student applicants and in DHS's process for identifying flight students who may be in the country illegally. We recommended two actions that DHS and TSA could take to address these concerns, with which DHS concurred.

Vetting foreign flight student applicants. Under AFSP, foreign nationals seeking flight training in the United States undergo a TSA security threat assessment before receiving flight training to determine whether each applicant is a security threat to the United States. According to TSA officials, when a foreign national applies to AFSP to obtain flight training, TSA uses information submitted by the foreign national—such as name, date of birth, and passport information—to conduct a criminal history records check, a review of the Terrorist Screening Database, and a review of the Department of Homeland Security's TECS system.[38] According to TSA officials, most foreign nationals taking training from a U.S. flight training provider will apply for a Federal Aviation Administration (FAA) airman certificate (pilot's license) once their flight training is completed. Information obtained by FAA as part of this application for certification is placed in the airmen registry. From January 2006 through September 2011, 25,599 foreign nationals had applied for FAA airman certificates, indicating they had completed flight training. However, TSA computerized matching of FAA data determined that some known number of foreign nationals did not match with those in TSA's database, raising questions as to whether they had been vetted.[39]

Since 2009, TSA has vetted all new and existing FAA airman certificate holders against the Terrorist Screening Database on an ongoing basis, which would include the foreign nationals identified through TSA's

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[38]Information in the Terrorist Screening Center's consolidated database of known or suspected terrorists—the Terrorist Screening Database—is used for security-related screening of foreign nationals applying to AFSP, among other purposes. TECS, an updated and modified version of the former Treasury Enforcement Communications System, is an information-sharing platform that allows users to access different databases relevant to the antiterrorism and law enforcement mission of numerous other federal agencies.

[39] The exact number is considered to be sensitive security information.

analysis. However, this vetting does not occur until after the foreign national has obtained flight training. Thus, foreign nationals obtaining flight training with the intent to do harm—such as three of the pilots and leaders of the September 11, 2001, terrorist attacks—could have already obtained the training needed to operate an aircraft before they received any type of vetting.[40] We recommended that TSA take steps to identify any instances where foreign nationals receive FAA airman certificates without first undergoing a TSA security threat assessment and examine those instances so that TSA can identify the reasons for these occurrences and strengthen controls to prevent future occurrences. DHS concurred with this recommendation and stated that TSA signed a memorandum of understanding with FAA in February 2012 to help address this issue. The memorandum outlines a process for FAA to provide certain data from its airmen registry on a monthly basis and authorizes TSA to use the data to ensure flight training providers are providing TSA with information to conduct background checks prior to flight instruction. This is an important step toward addressing the first part of our recommendation, provided that TSA uses the data to identify instances where foreign nationals receive FAA airman certificates without first undergoing a TSA security threat assessment, identifies reasons for these occurrences, and strengthens controls to prevent future occurrences, as we recommended.

Identifying flight students entering the country illegally. We also reported that AFSP is not designed to determine whether a foreign flight student entered the country legally; thus, a foreign national can be approved for training through AFSP after entering the country illegally. A March 2010 U.S. Immigration and Customs Enforcement (ICE) investigation of a flight school led to the arrest of six such foreign nationals, including one who had a commercial pilot's license. As a result, TSA and ICE jointly worked on vetting names of foreign students against immigration databases, but had not specified desired outcomes and time frames, or assigned individuals with responsibility for fully instituting the program as of July 2012. Thus, this weakness still exists today. Having a

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[40] TSA likewise does not vet flight student applicants claiming U.S. citizenship. H.R. 6159—the Flight School Security Act of 2012, introduced in July 2012—would require, among other things, a determination by TSA that the individual seeking training is a non-threat to aviation prior to beginning flight training. See H.R. 6159, 112th Cong. (2d Sess. 2012). The bill, sponsored by Representative Bennie G. Thompson, was referred to the Committee on Homeland Security, Subcommittee on Transportation Security.

road map, with steps and time frames, and assigning individuals the responsibility for fully instituting a pilot program could help TSA and ICE better identify and prevent potential risk. We recommended that TSA and ICE develop a plan, with time frames, and assign individuals with responsibility and accountability for assessing the results of their pilot program to check TSA AFSP data against information DHS has on applicants' admissibility status to help detect and identify violations by foreign flight students, and institute that pilot program if it is found to be effective. DHS concurred and stated that TSA will prepare a plan by December 2012 to assess the results of the pilot program with ICE to determine the lawful status of the active AFSP population. We believe that these are positive actions that could help TSA address the weaknesses identified in our report. We will continue to monitor TSA's progress on the proposed solutions as the agency proceeds.

Chairman Rogers, Ranking Member Jackson-Lee, and Members of the Subcommittee, this concludes my prepared statement. I look forward to responding to any questions that you may have.

GAO Contact and Staff Acknowledgements

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