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May 2016

# FEDERAL AIR MARSHAL SERVICE

## Actions Needed to Better Incorporate Risk in Deployment Strategy

# GAO Highlights

Highlights of [GAO-16-582](#), a report to congressional requesters

## Why GAO Did This Study

Following the September 11, 2001, hijacking of four U.S. airliners, individuals with terrorist ties have attempted attacks against the nation's civil aviation system. To help address such threats, FAMS, an office within TSA, is tasked with promoting confidence in the nation's civil aviation system through the deployment of air marshals to protect U.S. air carriers, airports, passengers, and crews. GAO was asked to review FAMS operations. This report examines the extent to which (1) FAMS deploys air marshals based on risk and (2) FAMS's performance measure reflects attributes of successful performance measures. GAO reviewed FAMS's strategy and performance measure documents, analyzed FAMS's fiscal years 2010 through 2014 flight coverage and performance measure data, and interviewed FAMS and TSA officials.

## What GAO Recommends

GAO recommends that FAMS (1) further incorporate risk into FAMS's method for dividing resources between international and domestic flights, (2) conduct a risk assessment to support certain domestic deployment decisions, (3) document the rationale for FAMS's selection of international deployment destinations, (4) adopt a consistent name and definition for the TSA coverage score, and (5) report performance results for all categories that comprise the score. DHS concurred with all of the recommendations.

View [GAO-16-582](#). For more information, contact Jennifer Grover at (202) 512-7141 or [groverj@gao.gov](mailto:groverj@gao.gov).

May 2016

## FEDERAL AIR MARSHAL SERVICE

### Actions Needed to Better Incorporate Risk in Deployment Strategy

## What GAO Found

The U.S. Federal Air Marshal Service (FAMS) deploys air marshals in part based on assessed risk, but could better incorporate risk in its deployment strategy. FAMS may deploy air marshals on flights with known risk—meaning certain higher risk flights where the Transportation Security Administration (TSA) or FAMS knows of an increase in the threat or consequence of a terrorist attack—as well as on other international and domestic flights of U.S. air carriers. However, GAO identified three ways FAMS could better incorporate risk into its deployment decisions, in accordance with Department of Homeland Security (DHS) and TSA risk management policy and guidance.

- FAMS considers its travel budget and number of personnel, but not risk when initially dividing its annual resources between domestic and international flights. With this approach, FAMS attempts to maximize the total number of flights it can cover, but because this model does not account for risk, FAMS cannot ensure it is devoting its resources to the highest risk flights overall.
- FAMS officials report that when FAMS revised its domestic deployment strategy in 2014, their choice of geographic focus areas and resource allocation levels were based on subject matter experts' professional judgment, not a risk assessment. FAMS officials stated this approach was appropriate because they were updating the strategy, not conducting a study. While providing perceptions of risk, the experts' input was not systematically collected and assigned risk values. Doing so would better position FAMS to ensure its resources are targeted using a risk-based approach.
- FAMS does not document rationales for its international deployment decisions because it has not identified a need to do so. Without documentation of the basis for these decisions, neither FAMS nor an external party can effectively oversee these decisions.

The performance measure FAMS has used to assess the extent to which it has met its flight coverage and resource use targets—the TSA coverage score—reflects some but not all attributes of successful performance measures. The TSA coverage score is a composite score for 11 performance categories, including air marshal coverage of certain domestic and international flights. The measure lacks clarity because the measure's name and definition are not consistent with the methodology used to calculate it. For example, the measure aggregates flight coverage and resource allocation information, which reduces the clarity of the score and makes it difficult to interpret. It also lacks objectivity because, as a composite measure, it does not show performance below or above desired levels in the 11 categories—information that would aid decision making. FAMS officials stated that they did not report scores for all categories to TSA or FAMS leadership because they were not asked to do so. Without clear and objective performance information, DHS, TSA, and FAMS leadership may be making decisions based on an inaccurate impression of FAMS's performance.

This is a public version of a classified report GAO issued in February 2016. Information that DHS deemed classified or sensitive has been omitted.

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**Abbreviations:**

ATSA	Aviation and Transportation Security Act
CONOPS	concept of operations
DOT	Department of Transportation
DHS	Department of Homeland Security
FAA	Federal Aviation Administration
FAMS	U.S. Federal Air Marshal Service
NSSE	National Special Security Events
OMB	Office of Management and Budget
SEAR	Special Event Assessment Rating
SMC	Special Mission Coverage
TSA	Transportation Security Administration

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May 31, 2016

Congressional Requesters:

Following the September 11, 2001, hijacking of four U.S. airliners, individuals with terrorist ties have attempted attacks against the nation's aviation system as demonstrated by aircraft bombing attempts or plots in 2001, 2006, and 2009.<sup>1</sup> To help address such threats, the U.S. Federal Air Marshal Service (FAMS), an office within the Department of Homeland Security's (DHS) Transportation Security Administration (TSA), is tasked with promoting confidence in the nation's aviation system through the deployment of air marshals to protect U.S. air carriers, airports, passengers, and crews.<sup>2</sup>

Given that there are many more U.S. air carrier flights each day than can be covered by air marshals, FAMS has developed a concept of operations (CONOPS) for deploying air marshals that considers risk.<sup>3</sup> FAMS relies on the methodology outlined in its CONOPS to assign air marshals to flights with identified security risks. Ensuring air marshals are deployed on the highest-risk flights is critical to the success of FAMS's mission.

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<sup>1</sup>In December 2001, Richard Reid attempted to detonate explosives hidden in his shoes while on a flight from Paris to Miami. A flight attendant and nearby passengers noticed his attempt to ignite the explosives' fuse and were able to subdue him before he could detonate the explosives. In 2006, terrorist cells in Great Britain planned to carry bomb materials—including liquid explosives—on flights from London to cities in the United States and Canada. These materials were to be assembled and detonated while in flight. Police were able to learn of the plot and arrest the plotters before any attacks were carried out. On Christmas Day 2009, while on a flight from Amsterdam to Detroit, Umar Farouk Abdulmutallab attempted to detonate explosives hidden in his underwear. Passengers were able to restrain him and prevent detonation.

<sup>2</sup>See Pub. L. No. 107-71, § 105, 115 Stat. 597, 606-08 (2001) (codified as amended at 49 U.S.C. § 44917).

<sup>3</sup>FAMS may deploy air marshals on U.S.-flagged carriers operating either within the United States or operating internationally if an agreement is in place with a destination country allowing for the arrival and departure of armed U.S. air marshals. In accordance with its statutory authorities, however, FAMS may not deploy air marshals on foreign-flagged carriers. U.S. and foreign-owned and controlled passenger air transportation operations are referred to as U.S. and foreign-flagged carriers, respectively.

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We were asked to assess the extent to which FAMS deploys air marshals consistent with a risk-based approach and review other aspects of FAMS operations. This report addresses the following questions:

- To what extent does FAMS deploy air marshals based on risk?
- To what extent does FAMS's performance measure reflect the attributes of a successful performance measure?

This report is a public version of the prior classified report that we provided to you. TSA deemed portions of information in the report as secret and sensitive security information, which must be protected from public disclosure. Therefore, this report omits this information, such as the specific details associated with FAMS's CONOPS, specific numbers of air marshals and requests for coverage, and the extent to which FAMS has covered flights. Although the information provided in this report is more limited in scope, it addresses the same questions as the classified report. Also, the overall methodology used for both reports is the same.

To address the first objective, we determined how and why FAMS selects flights for air marshal deployment by analyzing TSA and FAMS priority-setting documents, including FAMS's 2007 and 2015 CONOPS strategy documents and other policies related to air marshal deployment. We also reviewed FAMS documentation of air marshal deployment in response to designated high-risk events—such as the liquid explosives plot in August 2006—and interviewed FAMS officials to learn the extent to which risk informs FAMS's policies and deployment decisions. We then compared FAMS's deployment strategy with DHS risk management policy, guidance, and principles as documented in DHS's 2011 *Homeland Security Risk Management Fundamentals* and 2010 *Policy for Integrated Risk Management*, among others.<sup>4</sup> We also compared FAMS's approach with guidance in TSA's 2010 *Transportation Systems Sector-Specific Plan* and the goals and objectives stated in DHS, TSA, and FAMS's

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<sup>4</sup>See DHS, *Risk Management Fundamentals: Homeland Security Risk Management Doctrine* (Washington, D.C.: April 2011). According to DHS, this document is an authoritative statement on principles and process of homeland security risk management and is intended for homeland security leaders and others as they apply risk management to planning, preparing, and executing organizational missions. See also a memorandum establishing DHS's policy for integrated risk management: *DHS Policy for Integrated Risk Management* sent by Janet Napolitano on May 27, 2010.

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current strategic plans.<sup>5</sup> Additionally, we analyzed flight data from FAMS's Aircrews mission-scheduling notification system to determine the number of domestic and international flights FAMS covered in fiscal year 2014 and analyzed FAMS data on Special Mission Coverage (SMC) requests for the period fiscal years 2010 through 2014 to determine the extent to which FAMS has covered these flights and the reasons some SMCs were not covered.<sup>6</sup> To assess the reliability of these data, we reviewed documentation and interviewed agency officials. We determined that the data were sufficiently reliable for the purposes of our report.

To address the second objective, we reviewed documentation of FAMS's composite performance measure for flight coverage and resource use—the TSA coverage score—including internal FAMS memorandums that describe how FAMS measures flight coverage; presentations of FAMS's flight coverage goals prepared for the Office of Management and Budget (OMB); and the FAMS Performance Measure Definition Form prepared by TSA's Budget and Performance Division that describes the coverage targets, how coverage will be measured, and the reliability of the data used. We also met with knowledgeable FAMS staff in the Office of Flight Operations; the Domestic Planning Unit; the International Planning Unit; and the Studies, Research, and Analysis Group to discuss the development of the TSA coverage score and how the measure is calculated and used. Additionally, we analyzed FAMS's TSA coverage score data for the period fiscal years 2010 through 2014 to identify performance trends and better understand how the measure has been calculated. We assessed the reliability of these data by reviewing documentation and interviewing agency officials and found the data to be sufficiently reliable for the purpose of this report. To determine the extent to which the TSA coverage score reflected the attributes of a successful measure, we compared the TSA coverage score against five of nine

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<sup>5</sup>See DHS, *Transportation Systems Sector-Specific Plan: An Annex to the National Infrastructure Protection Plan* (Washington, D.C.: 2010). This document establishes a national strategic risk management framework for the transportation sector. See also DHS, TSA, and FAMS strategic plans that establish goals and objectives to guide FAMS operations: DHS, *Department of Homeland Security Strategic Plan: Fiscal Years 2012-2016* (Washington, D.C.: Feb. 2012); TSA, *TSA Strategic Plan: FY2015-FY2018* (Washington, D.C.: May 2015); and TSA, *Office of Law Enforcement/Federal Air Marshal Service Strategic Plan: FY2015-FY2018* (Washington, D.C.: Jan. 2015).

<sup>6</sup>One of FAMS's objectives is to deploy air marshals on flights that have a known or suspected terrorist on board. When FAMS assigns air marshals to cover such flights, it refers to these flights as SMC assignments.

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attributes we previously identified for successful performance measures: linkage, measurable target, reliability, clarity, and objectivity.<sup>7</sup>

We conducted this performance audit from August 2014 to May 2016 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.

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## Background

Created in 1961 to counter hijackers, the organization that is now FAMS was expanded in response to the September 11, 2001, terrorist attacks.<sup>8</sup> On September 11, 2001, 33 air marshals were operating on U.S. flights. Since then, FAMS staff grew significantly and, as of March 2016, FAMS employed thousands of air marshals. FAMS appropriations have also increased each fiscal year from 2002 through 2012—peaking at an appropriation of \$966 million in fiscal year 2012. Since 2012, however, FAMS has experienced a reduction in amounts appropriated. Specifically, FAMS received appropriations amounting to \$908 million in fiscal year

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<sup>7</sup>Our prior work establishes nine key attributes of successful performance measures which we developed from various sources, including earlier GAO work, OMB circular No. A-11, and performance management literature, among others. GAO, *Tax Administration: IRS Needs to Further Refine Its Tax Filing Season Performance Measures*, [GAO-03-143](#) (Washington, D.C.: November 2002). We excluded four of the nine attributes because, while important, they are best used when reviewing more than one measure. These four attributes are core program activities, limited overlap, balance, and government-wide priorities.

<sup>8</sup>Since the 2001 attacks, FAMS has undergone various organizational transfers. Initially situated within the Department of Transportation's (DOT) Federal Aviation Administration (FAA), FAMS transferred within DOT from FAA to the newly created TSA pursuant to the Aviation and Transportation Security Act. See Pub. L. No. 107-71, 115 Stat. 597 (2001). In March 2003, FAMS transferred with TSA to the newly established Department of Homeland Security. See Pub. L. No. 107-296, § 403(2), 116 Stat. 2135, 2178 (2002). In November 2003, FAMS transferred within DHS from TSA to U.S. Immigration and Customs Enforcement and then in October 2005 transferred back to TSA.



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2013, \$819 million in fiscal year 2014, and approximately \$790 million in fiscal year 2015.<sup>9</sup>

In accordance with the Aviation and Transportation Security Act (ATSA), as amended, TSA is authorized to deploy federal air marshals on every passenger flight of a U.S. air carrier and is required to deploy federal air marshals on every such flight determined by the Secretary of Homeland Security to present high security risks, with nonstop, long-distance flights, such as those targeted on September 11, 2001, considered a priority.<sup>10</sup> Accordingly, ATSA provided FAMS its initial flight coverage priorities, and in January 2005, FAMS formalized those priorities internally in its initial CONOPS. This initial strategy focused on placing air marshals on large aircraft flying to and from areas that FAMS determined to be highest risk. The goal of this coverage was to prevent further hijackings of domestic commercial airline flights to be used as weapons against ground targets. Shortly thereafter, however, a series of plots and attempts to detonate explosives onboard commercial aircraft flying from overseas to the United States led FAMS to reconsider its overall priorities. More recently, in 2014, the OMB requested that FAMS develop an updated proposal for flight coverage.<sup>11</sup> This led FAMS to develop its latest CONOPS, which was approved in March 2015.

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<sup>9</sup>Amounts appropriated in support of FAMS reflect amounts indicated in annual DHS appropriations acts or accompanying report language, as appropriate, and do not reflect any applicable rescissions, transfers or reprogrammings, sequestration, continuing resolutions, or supplemental appropriations. For fiscal years 2004 through 2014, FAMS was funded through its own separate appropriated account. See, e.g., Pub. L. No. 113-76, 128 Stat. 5, 254 (2014). In fiscal year 2015, FAMS was funded through TSA's appropriated account for aviation security. See 161 Cong. Rec. H281 (daily ed. Jan. 13, 2015) (accompanying Pub. L. No. 114-4, 129 Stat. 39 (2015)).

<sup>10</sup>See 49 U.S.C. § 44917(a)(1)-(2),(b).

<sup>11</sup>Specifically, OMB requested that TSA develop an updated proposal for FAMS flight coverage to inform development of the fiscal year 2016 budget. OMB requested that the proposal be based on a thorough risk analysis, including the most likely threat scenarios and revised assumptions regarding vulnerability and consequences. OMB further requested that TSA work with the Department's Offices of Strategy, Planning, Analysis, and Risk and Program Analysis and Evaluation as needed. OMB requested that TSA provide an update on the approach by March 15, 2014, and the proposal by July 31, 2014.

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## FAMS Deploys Air Marshals Based in Part on Assessed Risk but Could Better Incorporate Risk in Its Deployment Strategy

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### FAMS Deploys Air Marshals Based in Part on Assessed Risk

According to FAMS officials knowledgeable about FAMS's deployment strategy, FAMS deploys air marshals based in part on assessed risk. Flights FAMS considers to be higher risk include those with known risk—meaning certain flights where TSA or FAMS knows of an increase in the threat or consequence of a terrorist attack. Specifically, FAMS officials consider flights with known risk to include:

**Surge events:** In the event of an unforeseen special event, to counter a threat, or respond to an incident, the TSA Administrator or designee may initiate a surge operation that redirects some or all FAMS resources as needed. For example, in response to the liquid explosives plot in August 2006, TSA initiated a surge that required FAMS to increase its coverage of U.S.-bound flights departing from the United Kingdom for a specific time period.

**Special Mission Coverage (SMC):** FAMS may deploy air marshals on flights for which a known or suspected terrorist is ticketed, such as those identified by Secure Flight—a TSA passenger prescreening program—as individuals who must undergo enhanced screening at airport checkpoints before being permitted to board aircraft.<sup>12</sup> These flights—referred to as SMCs—are generally identified by FAMS using data from Secure Flight

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<sup>12</sup>Through Secure Flight, TSA screens passengers against federal government watchlists, including the No Fly and Selectee subsets of the Terrorist Screening Database—the federal government's consolidated list of known and suspected terrorists. In general, the No Fly List includes identities of individuals who are prohibited from boarding flights and the Selectee List includes identities of individuals who must undergo enhanced screening at airport checkpoints before being permitted to board aircraft. See GAO, *Secure Flight: TSA Should Take Additional Steps to Determine Program Effectiveness*, [GAO-14-531](#) (Washington, D.C.: Sept. 2014).

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and are also requested by other agencies when, for example, a subject of interest in an ongoing terrorism or national security investigation, but who is not on a watchlist used by Secure Flight, plans to fly.<sup>13</sup> The number of SMC requests increased significantly from fiscal year 2010 to fiscal year 2014.

**National Special Security Events (NSSE) and Special Event Assessment Rating (SEAR) Level 1 and 2 Events:** FAMS may also deploy air marshals in response to certain planned large gatherings that merit special security concern. These gatherings include events such as Presidential inaugurations and major international summits held in the United States. TSA is notified of these events and then identifies specific flights for FAMS coverage, depending on location, aircraft size, and other variables.<sup>14</sup>

According to FAMS officials knowledgeable about FAMS's deployment strategy, selected international flights of U.S. flagged-carriers are also assessed as higher risk. FAMS officials reported that at quarterly meetings they determine how to divide FAMS's international flight coverage resources among international destinations (i.e., what percentage of U.S. carrier flights to cover into and out of specific countries and airports). FAMS officials reported that at these meetings, officials from FAMS, TSA Office of Intelligence and Analysis, TSA Office of Global Strategies, and other TSA officials review the latest intelligence reporting, threat information, and the prior quarter's international planning roster and determine whether to revise their prior allocations in light of known or suspected threats and vulnerability areas, such as information indicating that certain international airports have limited screening capability because of equipment limitations. FAMS officials reported that they then confirm and, if needed, revisit these location decisions at

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<sup>13</sup>FAMS guidance issued on July 10, 2015, sets forth FAMS's policy and selection criteria for requested SMCs—both those requests generated by Secure Flight and those requested by other agencies.

<sup>14</sup>The interagency Special Events Working Group—which includes representatives of DHS, the Federal Bureau of Investigation, U.S. Secret Service, and Federal Emergency Management Agency—identifies and categorizes special events not designated NSSE and coordinates federal support to those events. This working group uses a documented methodology to rate events from 1 to 5 based on the level of risk associated with the event. In addition to NSSE and SEAR events, FAMS has also provided additional support to TSA in certain emergencies, such as natural disasters and large scale accidents. These events, called Critical Incident Management Group events, were activated by the TSA Administrator or Deputy Administrator.

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monthly planning meetings before selecting specific international flights for coverage. FAMS then analyzes the proposed international flights using a computer program to ensure there is no predictability in how air marshals are being deployed.<sup>15</sup>

FAMS officials reported that, to the extent that resources permit, they also deploy air marshals on selected domestic flights.

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### FAMS Revised Its Domestic Deployment Strategy to Expand Focus beyond 9-11-Style Attacks and Plans to Further Refine Its Approach

In response to an OMB request that FAMS develop an updated proposal for flight coverage, in 2014 FAMS, TSA, and DHS subject matter experts reviewed the 2009 CONOPS and decided to revise FAMS's domestic deployment strategy and make no changes to their approach to known risk (surge, SMC, SEAR) or international flights. Specifically, the new CONOPS, which FAMS began piloting in October 2014, made several changes to domestic deployment.<sup>16</sup> First, FAMS revised its flight coverage targets—moving from flight coverage targets to resource allocation targets. According to FAMS officials, specifying how FAMS intends to divide its domestic flight coverage resources, rather than specifying the percentages of certain commercial flights it intends to cover, enables FAMS to reach its targets, independent of resource levels. Second, FAMS expanded its geographic focus. The new CONOPS focuses FAMS coverage on flights into and out of several geographic areas rather than the previous more limited geographic focus.

FAMS has stated plans to review and further refine the new CONOPS as TSA moves toward its goal of assessing risk-by-flight, a method of assigning each domestic flight a relative risk score to assist in identifying high-risk flights. FAMS officials explained that the risk-by-flight tool will probably be ready for use within 7 to 10 years.

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<sup>15</sup>According to FAMS officials, FAMS uses a computer program called Intelligent Randomization in Scheduling to mathematically randomize its international flight coverage and increase unpredictability.

<sup>16</sup>The CONOPS was approved by OMB and signed by the TSA Acting Administrator in March 2015.

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## FAMS Could Better Incorporate Risk in Its Deployment Strategy

While FAMS has the goal of increasing risk-based decisions to strengthen aviation security, we identified three areas in which FAMS could better incorporate risk into its decisions, in accordance with DHS risk management policy, guidance, and principles: (1) FAMS does not factor in risk when initially dividing its annual resources between domestic and international flights; (2) aspects of FAMS's domestic deployment strategy are based on professional judgment, not risk assessment; and (3) FAMS does not document rationales for its international deployment decisions.

First, FAMS officials reported that they consider risk when selecting specific domestic and international flights to cover, but we found that they did not consider risk when deciding how to initially divide their annual resources between domestic and international flights. Rather, each year FAMS considers two variables—travel budget and number of air marshals—to identify the most efficient way to divide the agency's resources between domestic and international flights.<sup>17</sup> With this approach, FAMS attempts to maximize the total number of flights it can cover with its budget. However, because this model does not account for risk, FAMS cannot reasonably ensure that the agency is devoting resources to the highest-risk flights, overall. It is possible that if FAMS considered both resources and risk in this model, FAMS would choose to cover fewer total flights, but overall higher-risk flights. DHS, TSA, and FAMS's current strategic plans all identify the expansion of risk-based decisions as a top area of focus in their efforts to strengthen aviation security, and DHS guidance states that risk management should be a key component of an evidence-driven approach to requesting and allocating resources.<sup>18</sup> When we asked FAMS officials whether they had considered incorporating risk into this method for dividing resources between domestic and international flights, they stated that risk is considered in the selection of specific flights. They further explained that they can adjust

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<sup>17</sup>FAMS officials reported that they use an optimization graph to determine the division of resources between international and domestic flights considering two key constraints: travel budget and number of air marshals.

<sup>18</sup>See strategic plans at DHS, *Department of Homeland Security Strategic Plan: Fiscal Years 2012-2016* (Washington, D.C.: Feb. 2012); TSA, *TSA Strategic Plan: FY2015-FY2018* (Washington, D.C.: May 2015); and TSA, *Office of Law Enforcement/Federal Air Marshal Service Strategic Plan: FY2015-FY2018* (Washington, D.C.: Jan. 2015). See also DHS, *Risk Management Fundamentals: Homeland Security Risk Management Doctrine* (Washington, D.C.: April 2011). According to DHS, this guidance is intended for homeland security leaders, program managers, analysts, and operational personnel as they apply risk management to planning, preparing, and executing organizational missions in defense of national security.

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their resource allocations in response to events, such as the 2009 underwear bombing attempt. However, in addition to considering risk in these ways, FAMS could better incorporate risk into its current resource allocation methodology by, for example, considering resource levels first, as it currently does, and then applying risk weights to its allocation of domestic and international targets to more heavily prioritize whichever group of flights FAMS considers riskier. FAMS could then continue its current reported practice of revising its annual resource allocations in response to updated risk information, as needed. This approach, or another that incorporates risk at the outset, would improve FAMS's ability to ensure it is targeting its resources on the highest-risk flights and better align with FAMS's stated goal of using risk-based decisions to guide mission operations.

Second, FAMS officials who led the development of the new CONOPS reported that the choice of domestic geographic focus areas and resource allocation levels were based on professional judgment, not risk assessment. DHS defines risk assessment as a product or process that collects information and assigns values to risks for the purpose of informing priorities, developing or comparing courses of action, and informing decision making.<sup>19</sup> With regard to the geographic focus areas, these FAMS officials explained that they did not conduct a risk assessment to inform this decision, but rather selected these areas in consultation with 30 subject matter experts from various offices within TSA based on their intuitive, qualitative perceptions of threats, vulnerabilities, potential impacts, history, and the demographics of the areas. Similarly, FAMS officials stated that they did not conduct a risk assessment to inform the specific domestic resource allocations established in the CONOPS, but relied upon subject matter experts' professional judgment.

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<sup>19</sup>DHS's 2010 *Risk Lexicon Guidance* explains that risk assessment can be either qualitative—assessing risk based on non-numerical categories or levels, such as “low risk,” “medium risk,” or “high risk”—or quantitative, which assesses risk based on numbers where the meanings and proportionality of values are maintained inside and outside the context of the assessment. This guidance also distinguishes between risk assessment, as defined here, and risk analysis, which is the systematic examination of the components and characteristics of risk. The guidance notes that in practice, risk analysis is generally conducted to produce a risk assessment. Risk analysis can also involve aggregation of the results of risk assessments to produce a valuation of risks for the purpose of informing decisions. In addition, risk analysis can be done on proposed alternative risk management strategies to determine the likely impact of the strategies on the overall risk. See DHS, *Risk Lexicon Guidance: 2010 Edition* (Washington, D.C.: September 2010).

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FAMS officials who led the development of the new CONOPS explained that they believe this approach was appropriate and noted that they did not interpret OMB's request that FAMS develop an updated proposal for FAMS flight coverage to call for a formal study but rather an updated consideration of their deployment strategy. In addition, FAMS officials involved in this process explained that though they did not conduct a risk assessment to inform the development of the new CONOPS, some of the subject matter experts they consulted were from TSA offices that had previously conducted separate risk assessments related to transportation security. FAMS officials stated that these prior studies likely informed the subject matter experts' professional judgment and, therefore, the development of the new CONOPS. However, while prior studies may have been relevant and worthy of consideration, none systematically collected information on and assigned value to current risks for the purpose of informing air marshal deployment priorities, developing or comparing courses of action, and informing decision making. Further, FAMS officials said that in 7 to 10 years risk-by-flight, as envisioned, may provide a tool to assist in prioritizing domestic flights based on risk. In the interim, without documented risk assessment supporting FAMS's domestic deployment decisions, FAMS cannot fully demonstrate to both internal and external audiences the rationale for why the agency deploys air marshals on certain flights and not others.

Our prior work has shown the importance of data collection and analyses to support agency decision making, and we have commended prior TSA efforts to add data and metrics to its tool kit for evaluating the impacts of certain changes as a good way to supplement the use of professional judgment in making decisions.<sup>20</sup> DHS's *Policy for Integrated Risk Management* states that it is the department's policy to use risk information and analysis to inform decision making, make its assumptions more transparent, encourage creative thinking, and provide defensible decisions.<sup>21</sup> Further, TSA's *Transportation Systems Sector-Specific Plan* states that it is TSA's objective to focus aviation security resources on the highest-priority protection and resiliency needs using both risk and

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<sup>20</sup>GAO, *Aviation Security: Risk, Experience, and Customer Concerns Drive Changes to Airline Passenger Screening Procedures, but Evaluation and Documentation of Proposed Changes Could Be Improved*, [GAO-07-634](#) (Washington, D.C.: April 2007). See also GAO, *Aviation Security: TSA Should Take Additional Action to Obtain Stakeholder Input when Modifying the Prohibited Items List*, [GAO-15-261](#) (Washington, D.C.: Feb. 2015).

<sup>21</sup>See memorandum establishing *DHS Policy for Integrated Risk Management* sent by Janet Napolitano on May 27, 2010.

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economic analysis as decision criteria.<sup>22</sup> Conducting and documenting a systematic risk assessment for domestic deployment, which could supplement FAMS subject matter experts' professional judgment, will better position FAMS officials to ensure they are targeting the office's resources in the most effective manner using a risk-based approach as called for in DHS and TSA guidance.

Third, FAMS officials knowledgeable about FAMS's deployment strategy reported that they select international destinations to cover and the proportion of flights to cover in each destination based upon intelligence and vulnerability information. These officials report that they document the results of these decisions—the number and percentage of U.S.-flagged air carrier flights air marshals will cover by country and specific airport—in a planning roster, but they do not document the rationales for these decisions because they have not identified a need to do so. DHS's *Integrated Risk Management Framework* establishes transparency and documentation as important characteristics of homeland security risk management.<sup>23</sup> The framework further states that to effectively inform decision making, risk management information must have a degree of transparency during assessment, analysis, and development of alternative strategies to ensure openness to scrutiny of the methodology and the data. The framework also states that documentation enables critical analyses of the approach. Without documentation of the basis for these decisions, neither FAMS nor an external party can determine the extent to which the decisions are intelligence-driven and risk-based, and management's directives are being carried out. The absence of documentation limits oversight over these decisions. A FAMS official knowledgeable about FAMS's deployment strategy stated that because of the sensitivity of the information involved, documentation of such decisions would likely be classified at a very high level, and therefore be of limited use operationally. However, even if classified at the highest

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<sup>22</sup>See DHS, *Transportation Systems Sector-Specific Plan: An Annex to the National Infrastructure Protection Plan* (Washington, D.C.: 2010). TSA developed the 2010 *Transportation Systems Sector-Specific Plan* to conform to requirements in DHS's *National Infrastructure Protection Plan*, which required sector-specific agencies to develop strategic risk management frameworks for their sectors.

<sup>23</sup>See DHS, *Risk Steering Committee: Interim Integrated Risk Management Framework* (Washington, D.C.: January 2009) and updated articulation of these principles in DHS, *Transportation Systems Sector-Specific Plan: An Annex to the National Infrastructure Protection Plan* (Washington, D.C.: 2010), which establishes a national strategic risk management framework for the transportation sector.



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levels, documentation of these decisions would create records that would allow FAMS and parties with authorized oversight responsibilities to review and learn from these important resource allocation decisions.

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## FAMS's Performance Measure Does Not Reflect Two Key Attributes of Successful Performance Measures

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### FAMS Measures Its Flight Coverage and Resource Use Performance Using the TSA Coverage Score

FAMS has relied on a performance measure called the TSA coverage score to assess the extent to which FAMS has covered the flights it has identified as high risk.<sup>24</sup> The TSA coverage score is a composite score reflecting FAMS's performance in meeting its flight coverage targets across multiple categories of flights, including air marshal coverage of certain domestic and international flights.<sup>25</sup> FAMS has calculated the TSA coverage score by determining the percentage of flights it actually covered as a proportion of its target for that category, and averaging these percentages. (See app. I for more information on this calculation.)

In March 2015, FAMS proposed changes to the TSA coverage score to align with the new CONOPS and in October 2015, upon OMB's approval of the changes, FAMS adopted the revised measure. The revised coverage score is generally based on the percentage of FAMS resources

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<sup>24</sup>FAMS also produces monthly reports containing output metrics that FAMS officials reported using to monitor various aspects of the agency's flight and field office operations, such as field office mission days (each day an air marshal covers a flight) per day and per month, attrition, and the number of domestic and international flights covered per month.

<sup>25</sup>These categories are generally consistent with statutory requirements that TSA prioritize the deployment of air marshals to nonstop, long distance flights, such as those targeted on September 11, 2001. See 49 U.S.C. § 44917(a)(2), (b). Further detail about these categories has been designated sensitive security information and thus cannot be included in a public report.

devoted to each of the 11 categories of flights rather than the percentage of flights covered.

**FAMS’s Measure of Effectiveness Has Some Attributes of Successful Measures, but Lacks Two Key Characteristics**

Our prior work has identified nine key characteristics of successful performance measures and the potentially adverse consequences agencies face when omitting these attributes from their measurement design.<sup>26</sup> Five of the nine attributes—clarity, reliability, linkage to strategic goals, objectivity, and measurable targets—are attributes that may be used most effectively when reviewing performance measures individually, as in the case of the TSA coverage score.<sup>27</sup> As shown in table 1, the revised TSA coverage score has several of the attributes of successful performance measures, but FAMS could enhance the usefulness of the performance measure by improving its clarity and objectivity.

**Table 1: GAO Comparison of Transportation Security Administration (TSA) Coverage Score with Key Attributes of Successful Performance Measures**

<b>Key attributes of successful performance measures</b>	<b>Potentially adverse consequences of not featuring attributes</b>	<b>Attribute met<sup>a</sup></b>	<b>GAO Assessment of TSA coverage score</b>
<b>Linkage to strategic goals</b> Measure is aligned with program goals.	Behaviors and incentives created by measure do not support achieving division- and agency- wide goals or mission.	✓	FAMS has the goal of strengthening its operations, programs, and business practices by applying and expanding the use of risk-based principles and capabilities to all facets of the organization. FAMS has relied on the TSA coverage score to assess the extent to which FAMS is covering the flights it has identified as high risk.
<b>Measurable target</b> Measure has a numerical target.	Cannot tell whether performance is meeting expectations.	✓	FAMS has established a quantifiable, numerical goal of 100 percent, which it uses to assess performance.

<sup>26</sup>See GAO, *Tax Administration: IRS Needs to Further Refine Its Tax Filing Season Performance Measures*, [GAO-03-143](#) (Washington, D.C.: Nov. 22, 2002).

<sup>27</sup>The remaining four attributes—limited overlap, balance, government-wide priorities, and core program activities—were not applicable for this review because they are best used when reviewing a complete set of measures. These attributes also can provide useful guidance when establishing or revising a set of performance measures as a whole.

Key attributes of successful performance measures	Potentially adverse consequences of not featuring attributes	Attribute met <sup>a</sup>	GAO Assessment of TSA coverage score
<b>Reliability</b> Measure produces the same result under similar conditions.	Reported performance data are inconsistent and add uncertainty.	✓	FAMS has a process in place to check the reliability of the data used to calculate the TSA coverage score. FAMS officials also report that they review the resulting TSA coverage score each month and discuss any performance anomalies, which serves as a reasonableness check. <sup>b</sup>
<b>Clarity</b> Measure is clearly stated and the name and definition are consistent with the methodology used to calculate it.	Data could be confusing and misleading to users.	<input type="checkbox"/>	The meaning of the TSA coverage score is not clear because the name and definition are not consistent with the methodology used to calculate it. For example, the targeted performance categories FAMS has developed to align with its new CONOPS do not all measure flight coverage.
<b>Objectivity</b> Measure is reasonably free from significant bias or manipulation that would distort the accurate assessment of performance.	Performance measures may be systematically over- or understated.	<input type="checkbox"/>	The TSA coverage score, as a composite measure, does not provide an accurate assessment of FAMS's performance—it does not show performance that is below or above the target level in each of the 11 categories.

Source: GAO analysis of GAO-03-143 and information from the Federal Air Marshal Service. | GAO-16-582

<sup>a</sup>A checkmark denotes that the TSA coverage score has the attribute.

<sup>b</sup>FAMS has stated that the agency cannot accurately calculate all FAMS flights canceled because of weather. FAMS does not have access to any database that accurately captures all canceled flights during major weather events. As a result, FAMS has to calculate coverage percentages as a reduced number of FAMS flights divided by the originally scheduled number of flights, even though FAMS is aware that the denominator in the equation can be smaller.

With regard to clarity, the TSA coverage score name and definition are not consistent with the methodology used to calculate the measure. FAMS and TSA use different names for the score—FAMS refers to it internally as the TSA coverage score and TSA refers to it more formally as “the percentage of risk-based flight coverage by the FAMS.” However, both of these names are inconsistent with the methodology used to calculate the score. These names would have previously been more accurate when, under the 2009 CONOPS, all categories that comprised the score reflected dimensions of flight coverage. However, under the new CONOPS, FAMS calculates the score by aggregating disparate performance information—three measures of flight coverage and eight measures of resource allocation. This reduces the clarity of the TSA coverage score, making it difficult for decision makers to interpret its meaning and diminishing its usefulness. FAMS officials responsible for developing the coverage score stated that they had not been asked for further explanation of the coverage score and therefore assumed that FAMS and TSA leadership understood the measure. Officials in FAMS’s Director’s Office told us that the coverage score provides FAMS leadership with a metric to assess whether the agency is achieving its

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flight coverage and resource allocation goals. However, we found that because the TSA coverage score is a composite measure that combines flight coverage and resource allocation metrics into a single number, it does not provide clear information on either flight coverage or resource allocation, rendering it of limited use to FAMS leaders for this purpose. In the absence of such clarity, the measure could be confusing and misleading to users, including DHS leadership, who rely on the measure to help them oversee and assess FAMS's performance.

With regard to objectivity, the TSA coverage score, as a composite measure, is misleading in that it does not show performance below or above the desired level. FAMS has set a target of 100 percent but considers scores greater than 90 percent to be "good." During fiscal years 2010 through 2014, FAMS's TSA coverage score—which at that time was composed of 10 categories of flight—was 90 percent or higher in all but 1 month.<sup>28</sup> With this information, managers could get the impression that FAMS has been consistently performing well, nearly always receiving a good score as defined by FAMS. However, within the 10 categories contributing to the score, FAMS did not exceed 90 percent about 12 percent of the time—in 74 of the 598 instances where a category's performance was measured for a particular month.<sup>29</sup> In one category, FAMS did not exceed a score of 90 percent about 67 percent of the time during fiscal years 2010 through 2014.

TSA and FAMS leadership do not have visibility into FAMS performance in most of the categories that comprise the TSA coverage score, but TSA officials who review FAMS's performance reported that this would be useful. FAMS officials responsible for flight operations stated that in addition to providing TSA management and the FAMS Director with information on the overall TSA coverage score, they have reported the performance information for two high- priority flight categories.<sup>30</sup> The

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<sup>28</sup>In the one instance in which FAMS's TSA coverage score was below 90 percent, the TSA coverage score was 89.5 percent.

<sup>29</sup>This number reflects performance within 10 categories over 5 years—60 months, which is a total of 600 instances analyzed. There were 2 months, however, October 2009 and October 2010, where there was no score calculated or reported for one category because there were few or no flights planned by airlines for the category. As a result, the analysis is out of 598 total instances.

<sup>30</sup>FAMS directly reports on two flight categories of the TSA coverage score to TSA monthly and the FAMS Director daily. FAMS officials said they reported this information within and separately from the TSA coverage score because it was a high priority for the organization.

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officials stated that they did not report performance information on all 10 categories to TSA management or the FAMS Director because they were not asked to do so and from their perspective performance information for each of the categories was better suited to operational decision making than management oversight. Officials in the FAMS Director's office agreed, stating that they did not see a clear use for performance information on all 10 categories because, according to them, the underlying causes and impacts of being low in particular categories were generally known to be beyond FAMS's control. With information on all 10 categories, however, officials in the FAMS Director's office would be better positioned to know what specific performance changes caused any month-to-month variance in the TSA coverage score and whether the causes were within FAMS's control. TSA officials responsible for reviewing FAMS performance data acknowledged that it would be useful to have information for the individual categories. These TSA officials stated that on those occasions when they had reviewed information on all 10 performance categories, for any categories in which FAMS was not meeting its performance goal, they asked FAMS to explain the reasons the agency did not meet its goal and the steps it had taken or planned to meet the goal in the future. Without having objective and complete information on FAMS performance, DHS, TSA, and FAMS leadership may be making decisions based on an inaccurate impression of FAMS's performance and may lack information they need to follow up on and identify possible corrective action where FAMS's performance is below targets.

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## Conclusions

Given that FAMS cannot deploy air marshals on all flights operated by U.S.-flagged air carriers, it is important for FAMS to determine which flights have the greatest risk. Since the September 11, 2001, terrorist attacks, the federal government's understanding of the threats against U.S. commercial aviation has changed and available intelligence about these threats has matured. In this context, DHS, TSA, and FAMS officials have increasingly emphasized the importance of intelligence-driven, risk-based decisions. FAMS has incorporated risk into many aspects of its deployment strategy. However, without fully incorporating risk when dividing resources between domestic and international flights and when determining geographic priorities, FAMS cannot reasonably ensure it is targeting its resources to the highest-risk flights. Further, without documentation of the basis for such decisions, neither FAMS nor an external party is positioned to oversee the extent to which FAMS's resource allocation decisions align with risk.

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Further, the amount of federal resources devoted to FAMS—approximately \$790 million in fiscal year 2015—and the nature of FAMS’s mission necessitate that those charged with overseeing FAMS’s performance have accurate, clear, and objective information that permits them to assess whether FAMS is achieving its targets. FAMS’s performance measure for assessing flight coverage and resource use—the TSA coverage score—is measurable and reliable and links to FAMS’s strategic goals, but is neither clear nor objective. As a result, the measure may confuse or mislead users, including DHS leadership, who may make decisions based on an inaccurate impression of FAMS’s performance.

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## Recommendations for Executive Action

We recommend that the Director of FAMS take five actions.

To better ensure that FAMS uses its resources to cover the highest-risk flights, we recommend the following three actions:

- in addition to considering risk when determining how to divide FAMS’s international flight coverage resources among international destinations, incorporate risk into FAMS’s method for initially setting its annual target numbers of average daily international and domestic flights to cover,
- conduct and document a risk assessment—systematically collecting information on and assigning value to current risks—to further support FAMS’s domestic resource allocation decisions, including the identification of high-priority geographic areas, and
- document the rationale for FAMS’s selection of international destinations for air marshal deployment and the proportion of flights to cover at each destination.

To improve the usefulness of the performance information DHS, TSA, and FAMS leadership use to oversee FAMS performance in achieving its mission priorities, we recommend the following two actions:

- adopt a consistent name and definition for the performance measure referred to as the TSA coverage score that accurately reflects its calculation method and composite nature, and
- report the performance results for each of the subcategories that comprise the TSA coverage score to FAMS and TSA leadership.

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## Agency Comments and Our Evaluation

We provided a draft of this report to DHS for comment. In its written comments, reproduced in appendix II, DHS concurred with each of the recommendations. DHS also provided technical comments that we incorporated, as appropriate.

DHS concurred with our first recommendation, that FAMS should incorporate risk into its methodology for initially setting annual target numbers of average daily international and domestic flights to cover. DHS officials stated that FAMS is currently working on ways to use additional risk factors when allocating resources between international and domestic flight coverage. However, in the agency response letter DHS officials stated that FAMS does consider risk at the outset of dividing resources between international and domestic missions. In the course of our review, we thoroughly discussed FAMS's target-setting process with cognizant FAMS officials on multiple occasions and reviewed all documentation FAMS provided about its methodology for setting these targets. As noted in this report, FAMS officials told us that they can adjust their resource allocations in response to events, such as the December 2009 underwear bombing attempt. However, when initially setting its annual targets for average daily domestic and international flights, we consistently found that FAMS considered two variables—travel budget and number of air marshals—but not risk. DHS's agency response letter further stated that FAMS is working to utilize additional risk factors to include enhanced flight selection criteria. Further refining the risk basis for selecting flights for FAMS coverage is a positive step, but if FAMS does not consider risk when initially setting its annual target numbers of average daily international and domestic flights to cover, FAMS will not have addressed this recommendation and will continue to lack reasonable assurance that they are targeting their resources to the highest-risk flights.

DHS concurred with our second recommendation, that FAMS conduct and document a risk assessment to further support FAMS's domestic allocation decisions, including the identification of high-priority geographic areas. DHS officials noted that TSA's risk-by-flight initiative is under development and, as its development matures, it will be used as a decision aid for the deployment of air marshals. However, as noted in our report, FAMS officials have stated that the envisioned risk-by-flight tool is 7 to 10 years from completion. In the interim, it will be important that FAMS conduct a risk assessment to support its domestic resource allocation decisions for the 7 to 10 years until the risk-by-flight tool is realized.

DHS concurred with our third recommendation, that FAMS document the rationale for its selection of international destinations for air marshal

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deployment and the proportion of flights to cover at each destination. In its agency response letter, DHS officials stated that FAMS documented this selection in October 2015 and will continue to monitor and update that documentation moving forward, as appropriate. Documenting the rationale for these decisions and the proportion of flights to cover at each destination each time FAMS officials revise their selection of international destinations will address the intent of this recommendation.

DHS concurred with our fourth recommendation, that FAMS adopt a consistent name and definition for the performance measure referred to as the TSA coverage score that accurately reflects its calculation method and composite nature. In its response letter, DHS officials stated that FAMS will work with the TSA Chief Financial Officer to officially rename the measure to more accurately reflect its purpose and method of calculation. This action, if implemented effectively, should address our recommendation and enhance the clarity of the measure.

DHS concurred with our fifth recommendation, that FAMS officials report to both FAMS and TSA leadership the performance results for each of the subcategories that comprise the TSA coverage score. In its response letter, DHS officials stated that since October 2015, all 11 categories have been reported to FAMS senior leadership on a regular basis. This reported step would partially address the intent of this recommendation. However, in addition to providing this information to FAMS leadership, it will also be important that FAMS officials provide TSA leadership with the disaggregated performance results on a regular basis. We will continue to monitor DHS's efforts.

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We are sending copies of this report to appropriate congressional committees, the Secretary of Homeland Security, the TSA Administrator, and other interested parties. In addition, this report will be available at no charge on the GAO Web site at <http://www.gao.gov>.

If you or your staff have any questions about this report, please contact me at (202) 512-7141 or [groverj@gao.gov](mailto:groverj@gao.gov). Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made key contributions to this report are listed in appendix III.



Jennifer Grover, Director,  
Homeland Security and Justice Issues



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List of Requesters

The Honorable Ron Johnson  
Chairman  
The Honorable Thomas R. Carper  
Ranking Member  
Committee on Homeland Security and Governmental Affairs  
United States Senate

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

The Honorable Jason Chaffetz  
Chairman  
Committee on Oversight and Government Reform  
House of Representatives

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

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# Appendix I: Explanation of the Transportation Security Administration (TSA) Coverage Score

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The Federal Air Marshal Service (FAMS) has relied on a performance measure, known as the TSA coverage score, to assess the extent to which FAMS is covering the flights it has identified as high risk. The TSA coverage score is a composite score reflecting FAMS's performance in meeting its targets across multiple categories of flights. FAMS has set a target of a 100 percent score but considers scores greater than 90 percent to be good. This appendix provides additional information on how FAMS calculates the TSA coverage score.

During fiscal years 2010 through 2014, FAMS's TSA coverage score was composed of 10 categories of flight.<sup>1</sup> Figure 1 demonstrates how FAMS officials calculate the TSA coverage score using illustrative data. FAMS determines the percentage of flights in each flight category it actually covered as proportions of its targets, and averages these percentages. A few steps in the computation merit additional explanation. Specifically, in step 2, where FAMS exceeds its target in any specific category, FAMS rounds down the percentage to 100. For example, if FAMS met 150 percent of its target in a specific category, it would round this down to 100 percent for the purpose of this calculation. This step implies that exceeding and exactly meeting FAMS's targets are equally desirable outcomes and it reduces the effect that exceeding the target in one or more categories would have on the overall TSA coverage score. Further, as shown in steps 3 through 6, FAMS calculates the TSA coverage score as the quadratic mean rather than the arithmetic mean of the percentages for each of the contributing categories. The FAMS official who developed the TSA coverage score reported that when determining whether to use the arithmetic or quadratic mean, the official opted to use the quadratic mean based upon professional judgment.

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<sup>1</sup>FAMS identified five risk levels in the prior CONOPS. Risk level 1 flights—the highest-risk flights—were broken down into 10 categories and assigned specific performance targets. Further detail about these 10 categories has been designated as sensitive security information. FAMS officials stated that the agency did not establish coverage targets for flights in risk levels 2 through 5 because the agency's focus was on covering the risk level 1 flights.

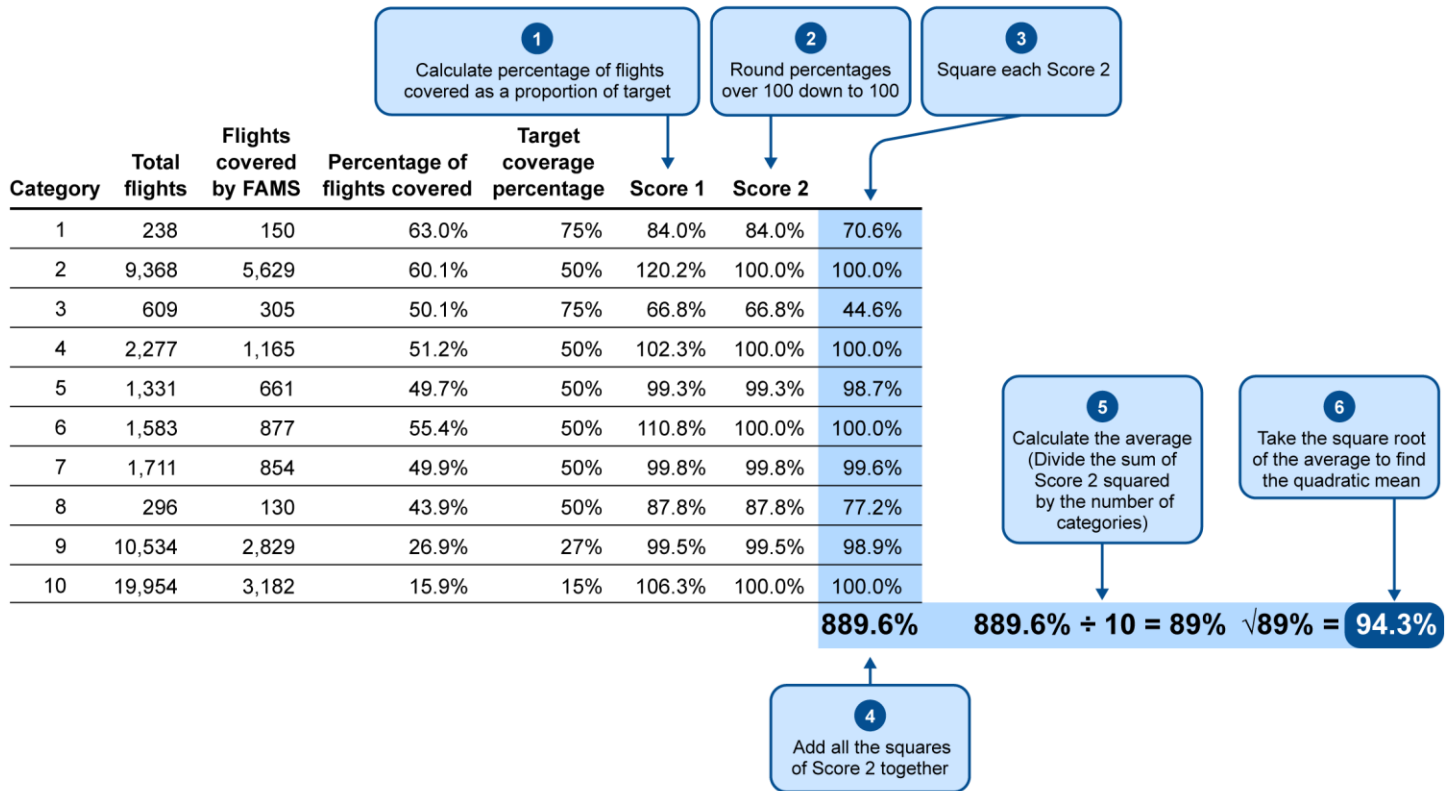
Figure 1: Example Calculation of Transportation Security Administration Coverage Score Using Prior Flight Coverage Targets

Metric calculation

$$\sqrt{\frac{1}{10} \left( \sum_{1-i}^{10} P_i^2 \right)}$$

$P_i = A_i / T_i$  = Percentage attainment of target  $i$ , ( $i = 1$  to  $10$ ), where  
 $A_i$  = Actual coverage percentage for risk category  $i$ , ( $i = 1$  to  $10$ ), and  
 $T_i$  = Target coverage percentage for risk category  $i$ , ( $i = 1$  to  $10$ )

Calculation example



Source: GAO analysis of Federal Air Marshal Service (FAMS) documents. | GAO-16-582

In March 2015, FAMS adopted a new deployment strategy and proposed corresponding revisions to the categories that compose the TSA coverage score. FAMS officials report that in October 2015, the Office of Management and Budget approved the revised measure and FAMS has

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**Appendix I: Explanation of the Transportation  
Security Administration (TSA) Coverage Score**

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since adopted it.<sup>2</sup> Aside from the categories that comprise the score, the method for calculating the TSA coverage score will remain the same.

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<sup>2</sup>The new coverage score includes 11 categories of flight. The prior coverage score, which was in place from October 2008 through October 2014 was comprised of 10 categories of flight. Further detail about these categories has been designated sensitive security information and thus cannot be included in a public report.

# Appendix II: Comments from the Department of Homeland Security

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



**Homeland  
Security**

May 11, 2016

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

Re: Draft Report GAO-16-582, "FEDERAL AIR MARSHAL SERVICE: Actions Needed to Better Incorporate Risk in Deployment Strategy"

Dear Ms. Grover:

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

The Department notes GAO's recognition of the complex scheduling necessary for deployment of Federal Air Marshals and that the Transportation Security Administration (TSA) does link its performance measures of the Federal Air Marshal Service in three key areas: Linkage of Strategic Goals, Measurable Targets, and Reliability. DHS also notes that GAO found that TSA's Office of Law Enforcement / Federal Air Marshal Service (OLE/FAMS) prioritized the deployments of air marshals on flights with known risk. Since an in-depth discussion of the issues reviewed would involve classified information, further comment here would not be appropriate.

As mentioned, the scheduling of Federal Air Marshals is extremely complex and detailed in its methodology. GAO spent 18 months conducting a broad examination of OLE/FAMS, resulting in the five recommendations listed below with which the Department concurs. Specifically, GAO recommended that the Director of FAMS:

**Recommendation 1:** Incorporate risk into FAMS's method for initially setting annual target numbers of average daily international and domestic flights to cover.

**Response:** Concur. TSA OLE/FAMS is currently working on ways to use additional risk factors when allocating resources between international and domestic flight coverage. However, it should be noted that OLE/FAMS does consider risk at the outset of dividing resources between international and domestic missions.

OLE/FAMS uses the risk analysis set forth in the Transportation Security Sector Risk Assessment to identify the number and priority of international flight coverage. This leads directly to considerations regarding where resources should be allocated when considering international/domestic flights.

In addition, OLE/FAMS regularly meets with Senior Intelligence Officers and Senior International Security Experts who assess FAMS international deployments and assist in determining the destinations and total number of international flights that FAMS covers. The participants at these meetings use risk factors such as current intelligence, vulnerability of flights, and analysis of the current threat environment and evolving risks in making coverage determinations.

Furthermore, OLE/FAMS also makes immediate adjustments as necessary when risk factors warrant. For example, when intelligence determines that flights need to be increased at certain international or domestic locations, FAMS adjusts international/domestic resource allocations accordingly.

OLE/FAMS is working to utilize additional risk factors to include enhanced flight selection criteria such as travel patterns by known or suspected terrorists, trends in TSA Pre-Check passenger data, airport screening capabilities, and other factors. The incorporation of such data sources into regular mission scheduling will be based on data availability and coordination with the TSA Chief Risk Officer. Estimated Completion Date (ECD): March 31, 2017.

**Recommendation 2:** Conduct and document a risk assessment—systematically collecting information on and assigning value to current risks—to further support FAMS’s domestic resource allocation decisions, including the identification of high-priority geographic areas.

**Response:** Concur. TSA’s Risk-by-Flight initiative is under development, and as it matures, it will be used as a decision aid for the deployment of Federal Air Marshals. ECD: March 31, 2017.

**Recommendation 3:** Document the rationale for FAMS’s selection of international destinations for air marshal deployment and the proportion of flights to cover at each destination.

**Response:** Concur. Since October 2015, OLE/FAMS has documented this selection process and will continue to monitor and update that documentation moving forward, as appropriate. Related discussions and documentation are classified but can be provided upon request. We request that GAO consider this recommendation resolved and closed.

**Recommendation 4:** Adopt a consistent name and definition for the performance measure referred to as the TSA coverage score that accurately reflects its calculation method and composite nature.


**Response:** Concur. OLE/FAMS will work with the TSA Chief Financial Officer (CFO) to officially rename the metric to more accurately reflect its purpose and method of calculation. The timeline for submission of Fiscal Year 2017 performance measure changes to the TSA CFO is May 31, 2016, to allow time for review and submission to DHS CFO by June 30, 2016. The period from July to September 2016 will be used for further coordination, if necessary, between TSA, the Department, and the Office of Management and Budget. ECD: September 30, 2016.

**Recommendation 5:** Report the performance results for each of the subcategories that comprise the TSA coverage score to FAMS and TSA leadership.

**Response:** Concur. Since October 2015, all 11 categories are being included and briefed during monthly flight coverage meetings with the FAMS Flight Operations Division and OLE/FAMS senior leadership. Additionally, TSA has been providing these reports to the GAO audit team with the March 2016 report being the most recent. We request that GAO consider this recommendation resolved and closed.

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

Sincerely,



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

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# Appendix III: GAO Contact and Staff Acknowledgments

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## GAO Contact

Jennifer Grover, (202) 512-7141 or [groverj@gao.gov](mailto:groverj@gao.gov)

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## Staff Acknowledgments

In addition to the contact named above, Maria Strudwick (Assistant Director), Jonathan Bachman (Analyst-in-Charge), Chuck Bausell, Claudia Becker, Juli Digate, Michele Fejfar, Eric Hauswirth, Michael Lenington, Benjamin Licht, and Tom Lombardi made key contributions to this report.



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