U.S. Department of Homeland Security
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Arlington, VA 20598

APR 3 0 2010

Transportation Security Administration

ACTION

MEMORANDUM FOR: Jerry Levine
Director
Departmental GAO/OIG Liaison Office

FROM: Gale D. Rossides
Acting Administrator

SUBJECT: Government Accountability Office (GAO) Draft Report GAO-10-157SU, *Aviation Security: Efforts to Validate TSA's Screening of Passengers by Observation Techniques (SPOT) Program Underway, But Opportunities Exist to Strengthen Validation and Address Operational Challenges*, March 2010

Purpose

To transmit the Transportation Security Administration's (TSA) response to GAO Draft Report GAO-10-157SU, *Aviation Security: Efforts to Validate TSA's Screening of Passengers by Observation Techniques (SPOT) Program Underway, But Opportunities Exist to Strengthen Validation and Address Operational Challenges*, which will be included in the final published report.

Background

Congressman John Mica, Ranking Member, House Committee on Transportation and Infrastructure, asked GAO to identify the following:

1) To what extent did TSA determine whether SPOT had a scientifically validated basis for identifying passengers before deploying it and how did TSA use recognized best practices during SPOT's development?

2) What management challenges, if any, have emerged during the implementation of SPOT at the Nation's airports?

3) To what extent has TSA measured SPOT's effect on aviation security?

4) To what extent has TSA incorporated the attributes of an effective training program into the training for SPOT?

GAO conducted the audit from June 2008 through March 2010. Based on the audit results, GAO questions the scientific underpinnings of the TSA's approach to behavior detection, indicating there is no consensus among the scientific community regarding the use of behavior detection for counterterrorism purposes in an airport environment.

GAO also found the following audit results:

- The validation study currently being performed by the U.S. Department of Homeland Security (DHS) Science & Technology Directorate (S&T) may lack methodological rigor because it uses data of questionable reliability from the SPOT database.

- TSA deployed SPOT without first obtaining scientific validation of its approach or behavior scoring checklist.

- TSA didn't deploy according to a comprehensive risk-based strategy.

- The strategic plan that was developed for SPOT falls short of National Infrastructure Protection Plan (NIPP) standards.

- Neither a cost benefit analysis (CBA) nor an alternatives analysis was completed.

- TSA lacks guidance regarding Transportation Information Sharing System (TISS) use and is not making full use of Transportation Security Operations Center (TSOC) databases.

- The Standardization Team recommendations are not tracked.

- No SPOT performance evaluation is in place for Behavior Detection Officers (BDOs).

GAO recommends that TSA take the following actions:

- DHS convene a panel to review the validation study methodology.

- Conduct a comprehensive risk assessment.

- Perform a CBA.

- Revise and implement the SPOT strategic plan.

• Study the feasibility of using airport video of individuals associated with terrorism-related offenses to better understand terrorist behaviors in the airport checkpoint environment.

• Provide guidance and a timeframe for inputting data into TISS.

• Develop a standardized process for communicating SPOT referral information with TSOC.

• Utilize all TSOC databases available for SPOT referrals.

• Develop a plan to establish outcome-oriented performance measures.

• Establish better SPOT database controls.

• Establish timeframes and milestones for its plan to systematically conduct evaluations of the SPOT training program on a periodic basis.

Discussion

TSA concurs with GAO's recommendations. The recommendations contained in the report provide TSA with a useful analysis of TSA's current approach, recognition of our progress to date, and additional guidance for success.

Recommendation

TSA recommends that you sign the attached letter to Mr. Steve Lord, Director, Homeland Security and Justice Issues, GAO.

Approve _____ Disapprove _____

Modify _____ Needs more discussion _____

Attachments

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

Dear Mr. Lord:

Thank you for the opportunity to review and comment on GAO-10-157SU, the draft report titled: *Aviation Security: Efforts to Validate Aspects of TSA's Screening of Passengers by Observation Techniques (SPOT) Program Underway, But Opportunities Exist to Strengthen Validation and Address Operational Changes.* The Transportation Security Administration (TSA) appreciates the U.S. Government Accountability Office's work in planning and conducting its review and issuing this report.

TSA deployed the SPOT program in an effort to mitigate the threat of individuals with potentially hostile intent from boarding a commercial airplane and causing harm. Congress has encouraged the use of behavior recognition to enhance aviation security and has provided resources to support its implementation and expansion. The SPOT program fulfills the mandate of Section 1611 of the Implementing Recommendations of the 9/11 Commission Act, P.L. 110-53, that "TSA shall provide advanced training to the transportation security officers for the development of specialized security skills, including behavior observation and analysis ... in order to enhance the effectiveness of layered transportation security measures."

Intelligence continues to show there is no specific terrorist profile. In a March 10, 2010, hearing before the Senate Homeland Security and Governmental Affairs Committee, TSA Acting Administrator Gale Rossides highlighted the challenge faced by TSA leaders in "balancing the requirement to screen all passengers and to actually focus our officers' attention on the right passengers." TSA designed SPOT to increase its ability to focus on the "right passengers" by identifying persons exhibiting behaviors and appearances that may indicate stress, fear, and deception, and distinguish them from other travelers.

SPOT is Based on Scientific Research and Law Enforcement Practices

TSA's development and deployment of SPOT was a planned and deliberate process based on more than 3 years of operational test-bed assessment of SPOT at Boston's Logan International Airport from June 2003 until nationwide rollout began in fiscal year (FY) 2007. TSA carefully developed SPOT by using selective behaviors recognized within both the scientific and law enforcement communities as displaying stress, fear, and deception. A SPOT working group,

made up of various TSA and U.S. Department of Homeland Security (DHS) components,[1] was created in February 2004. Other organizations, such as the Massachusetts State Police, the Federal Bureau of Investigation (FBI) Behavioral Sciences Unit, and the Federal Law Enforcement Training Center, were also involved in SPOT development. Through these working groups, TSA has developed and finalized SPOT standard operating procedures (SOPs) for a common ability to assess behaviors indicating hostile intent for both aviation and mass transit modes of transportation. TSA continues to consult with its SPOT working group partners as it updates the procedures and science behind the program.

Decades of scientific research have shown the behaviors to be universal in their manifestation. In fact, the DHS Science and Technology Directorate (S&T) completed a study on suicide bomber indicators in July 2009 that illustrates a very high degree of overlap between operationally reported suicide bomber indicators and TSA SPOT behaviors. This result further bolsters TSA's contention that the SPOT program draws from the best practices of many defense, intelligence, and law enforcement organizations.

SPOT Scientific Validation is Ongoing

S&T began research in 2007 to examine the validity of the SPOT program. The series of studies involved in this research is designed to assess the validity of the SPOT scoring system, including the use of individual behavioral indicators to identify high-risk travelers. More specifically, S&T's research plan aims to examine the extent to which these behavioral indicators are appropriate for screening purposes and lead to appropriate and correct security decisions. When this study is complete, SPOT will be one of the most, if not the most, rigorously tested behavior-based security screening programs in existence.

Results of this work will establish a scientific basis of the **extent** to which the SPOT program, including its instrument and methods, such as the SPOT Referral Report and SOPs, are valid. Although it is challenging to establish the validity of a deterrent program in which the outcomes of interest are extremely rare, critical elements of reliability and validity will be rigorously assessed. Of particular importance is the evaluation of criterion-related validity, or the extent to which travelers are correctly selected for screening based on the SPOT scoring system. Establishing this degree of classification accuracy justifies the use of the SPOT program to discriminate high-risk travelers from low-risk travelers. Regardless of any other metrics, the extent to which the SPOT scores accurately identify high-risk travelers is critically important to program validity.

Following criterion-related validity, the next central element of validity is the consistency of implementation of the instrument and program. This will be examined in a variety of ways, including an investigation of the consistency in the operational use of SPOT behavioral indicators Behavior Detection Officers (BDOs) and across locations and time periods, all of which represents reliability assessment. Finally, construct-related validity, or the extent to which the SPOT program behaviors truly represent the expressions of high-risk travelers, will be examined by comparing the SPOT behaviors to similar instruments in use for the same purpose.

[1] Includes TSA's Office of Civil Rights, Office of Chief Counsel, and Privacy Office, and DHS's Policy Office and Transportation Security Laboratory.

S&T's July 2009 study of suicide bomber indicators was the first step in evaluating construct-related validity.

This research is expected to be completed in FY 2011. TSA understands that after this validation is complete, there will be other areas where further research should be conducted, and it is TSA's intention to complete this research.

National Academy of Sciences (NAS) Report Does Not Represent an Exhaustive or Definitive Review of the Research or Operational Literature on Behavioral Screening

TSA would like to specifically address a few comments in the GAO-10-157SU report that we believe are inaccurate. The report draws heavily from a National Academy of Sciences (NAS) report which is being improperly relied upon. As the sponsor of the NAS study, DHS S&T questioned its findings, stating that the study lacked sufficient information for its conclusions because the NAS study principally focused on privacy as it relates to behavioral surveillance–not on behavioral surveillance technology itself. The study was not intended to, and the results do not represent an exhaustive or definitive review of the research or operational literature on behavioral and physiological screening, including recent findings from unpublished DHS, defense, and intelligence community studies. Furthermore, it should be noted that the report did not study the SPOT program, nor did any of the researchers conduct interviews with SPOT program personnel.

Additionally, GAO states that "DHS S&T could not provide us with specific contacts related to the sources of this research." This statement is not accurate. The record should reflect that DHS S&T provided all requested documents that represented S&T-sponsored research and for which S&T possessed the requisite release authority. DHS was not able to release specific documents related to research for which it was not the originator.

The report further states that the audit team was unable to use the SPOT referral data to assess whether any behavior or combination of SPOT behaviors could be used to reliably predict the final outcome of an incident involving the use of SPOT. However, DHS S&T was able to successfully conduct some preliminary analysis of the SPOT referral database. Prior to analysis of the SPOT reports, S&T worked with TSA to verify the scores assigned to each indicator with the SPOT score sheets and to rescore the pertinent sections and total accordingly for nearly 100,000 operational reports from 2008. While random errors were noted, errors in large databases that require manual entry are not uncommon. Convention suggests that large databases like this typically include an error rate of 3 to 5 percent. As long as such errors are random, the analytical method is robust enough to account for random errors in this range.

In conclusion, TSA strongly believes that behavior detection is a vital layer in its aviation security strategy, and will continue to strengthen as the program matures. Leaders within the community of behavior detection researchers agree. TSA appreciates GAO's work to identify opportunities to enhance the SPOT program, and we will continue to work diligently to address the issues identified by GAO. Our ongoing progress demonstrates our commitment to TSA's mission of securing our Nation's transportation systems.

We also appreciate the opportunity to provide you with, in collaboration with DHS S&T, the attached comments to GAO's audit recommendations.

Sincerely yours,

Jerry Levine
Director
DHS GAO/OIG Liaison Office

Attachment

The Transportation Security Administration (TSA) Response to Recommendations of

Government Accountability Office (GAO) Draft Report GAO-10-157SU

Aviation Security: Efforts to Validate Aspects of TSA's Screening of Passengers by Observation Techniques (SPOT) Program Underway, But Opportunities Exist to Strengthen Validation and Address Operational Changes

Recommendation 1: To help ensure that SPOT is based on valid scientific principles that can be effectively applied in an airport environment, we (GAO) recommend that the Secretary of Homeland Security convene an independent panel of experts to review the methodology of the S&T Directorate study on the SPOT program before the study is implemented to determine whether the study's methodology is sufficiently comprehensive to validate the SPOT program. This assessment should include appropriate input from other federal agencies with expertise in behavior detection and relevant subject matter experts.

Concur. The U.S. Department of Homeland Security (DHS) Science & Technology Directorate's (S&T) current validation process includes an independent and comprehensive review of the ongoing SPOT study to be conducted in support of and in collaboration with the TSA SPOT program. The assessment will include input from other Federal agencies with expertise in behavior detection and relevant subject matter experts. S&T will work with TSA to present the SPOT validation project to the panel, produce a report summarizing the panel's recommendations, and implement pertinent suggestions in FY 2010.

GAO further recommends that if this research determines that the SPOT program has a scientifically validated basis for using behavior detection for counterterrorism purposes in the airport environment, then the TSA Administrator take the following actions:

Recommendation 2: Conduct a comprehensive risk assessment to include threat, vulnerability, and consequence of airports nationwide to determine the effective deployment of SPOT if TSA's ongoing Aviation Modal Risk Assessment lacks this information.

Concur. TSA's Aviation Modal Risk Assessment (AMRA) is designed to evaluate the transportation security risk landscape and compare it to other modes. However the AMRA does not evaluate risk effectiveness of countermeasures or optimal deployment strategies. For the Aviation mode, TSA uses the Risk Management Analysis Tool (RMAT), a risk simulation model based on laboratory and operational data that evaluates risk using threat inputs, vulnerability information, and consequence estimates. TSA is in the process of conducting an initial risk analysis on the SPOT program using RMAT. The risk analysis is based on the initial SPOT validation results and will be updated as the validation study results are finalized.

Recommendation 3: Perform a cost-benefit analysis of the SPOT program including a comparison of the SPOT program with other security screening programs, such as random screening, or already existing security measures.

Concur. The SPOT program will use RMAT to perform a cost-benefit analysis of Behavior Detection Officers (BDOs) as a countermeasure. The first step in the process is the initial risk assessment that is being conducted on the SPOT program using RMAT. For the cost-benefit analysis, costs will be defined as the 5-year total cost of the countermeasure across the aviation system. Benefit will be defined as risk-reduction across the aviation security system against a portfolio of scenarios. TSA is currently developing an initial cost-benefit analysis for a variety of passenger-screening countermeasures including BDOs using the RMAT tool as a basis for analysis. BDOs' flexibility across a variety of risk scenarios suggests that behavior detection is a cost-effective countermeasure.

Recommendation 4. Revise and implement the SPOT strategic plan by incorporating risk assessment information, identifying cost and resources, linking it to other related TSA strategic documents, describing how SPOT is integrated and implemented with TSA's other layers of aviation security, and providing guidance on how to effectively link the roles, responsibilities and capabilities of federal, state, and local officials providing program support.

Concur. The RMAT risk analysis of the BDO program is assisting the SPOT program in identifying other countermeasure capabilities that are linked to the behavior detection capability. This analysis will allow the SPOT program to develop a revision to the SPOT strategic plan that will incorporate the elements identified in the recommendation.

Recommendation 5: Study the feasibility of using airport checkpoint-surveillance video recordings of individuals transiting checkpoints, and who were later charged with or pleaded guilty to terrorism-related offenses, to enhance its understanding of terrorist behaviors in the airport checkpoint environment.

Concur. TSA will study the feasibility of using checkpoint surveillance video recordings of individuals transiting checkpoints, and who were later charged with or pleaded guilty to terrorism-related offenses. TSA agrees that this could be a useful tool in understanding terrorist behaviors in the checkpoint environment.

Additionally, TSA is currently working with DHS S&T/Human Factors to conduct operational video validation of the SPOT program. TSA will use a variety of video case studies to validate the SPOT program including, if possible, reviewing video of terrorists transiting the TSA checkpoint. It is exceedingly rare, however, for video cameras to capture terrorists transiting TSA checkpoints. Unfortunately, this factor significantly reduces the feasibility of conducting these case studies.

GAO also recommends that concurrent with the DHS S&T Directorate study of SPOT, and an independent panel assessment of the soundness of the methodology of the S&T study, the TSA Administrator take the following actions:

Recommendation 6: Provide guidance in the SPOT SOP or other TSA directive to BDOs, or other TSA personnel, on inputting data into the Transportation Information Sharing System (TISS) and set milestones and a timeframe for deploying Transportation Information Sharing System access to SPOT airports so that TSA and intelligence community entities have information from all SPOT Law Enforcement officer (LEO) referrals readily available to assist in "connecting the dots" and identifying potential terror plots.

Concur. TSA is currently undergoing a revision of the SPOT Standard Operating Procedure (SOP). The SOP will provide guidance directing the input of BDO data into TISS. TSA anticipates release of the updated SPOT SOP in FY 2010. Additionally, TSA is currently drafting a formal plan to include milestones and a timeframe for deploying TISS access to all SPOT airports.

Recommendation 7: Implement the steps called for in the TSA Office of Security Operations Business plan to develop a standardized process for allowing BDOs or other designated airport officials to send information to TSA's Transportation Security Operations Center (TSOC) about passengers whose behavior indicates that they may pose a threat to security, and provide guidance on how designated TSA officials are to receive information back from the Transportation Security Operations Center.

Concur. TSA has convened a working group made up of members of the Office of Security Operations, Office of Chief Counsel, Office of Intelligence, and the Office of Law Enforcement/Federal Air Marshal Service (FAMS) to address this recommendation. TSA is developing a system and procedure for sending and receiving information from the TSOC and anticipates having a system in place in FY 2010. It should be noted that information from BDO referrals has been transmitted to the TSOC previously; however, TSA agrees to institute a standardized process.

Recommendation 8: Utilize all of the databases available to the Transportation Security Operations Center when running passengers who rise to the level of a LEO referral against intelligence and criminal databases.

Concur in principle. TSA has convened a working group composed of members of the Office of Security Operations, Office of Chief Counsel, Office of Intelligence, and the Office of Law Enforcement/FAMS to address this recommendation. This group will conduct a feasibility study during FY 2010 to examine if this recommendation can be fully implemented. This study will look at the various authorities, permissions, and limitations of each of the databases or systems cited in this audit. Access to some of the systems, such as Criminal History Record Check (CHRC), requires more justification than a BDO referral. Because some of the databases or systems contain classified information, TSA will also need to adopt a communication strategy to transmit the passenger information back and forth between the BDO and TSOC. TSA will work on a process to collect the passenger information, verify the passenger's identity, through checks of databases, and analyze that information to determine if the passenger is the subject of an investigation and may pose a risk to aviation.

Recommendation 9: Establish a plan that includes objectives, milestones, and timeframes to develop outcome-oriented performance measures to help refine the current methods used by Behavior Detection Officers for identifying individuals who may pose a risk to the aviation system.

Concur. TSA understands the value of outcome-oriented performance measures. However, as noted by GAO, there is difficulty in establishing these measures for a deterrence-based program. Nonetheless, TSA will consult with industry experts to develop outcome-oriented performance measures. TSA will establish a plan that includes objectives, milestones, and timeframes, with an end result of producing outcome-oriented performance measures to help refine the current methods used by BDOs for identifying individuals who may pose a risk to the aviation system.

Recommendation 10: Establish controls to help ensure completeness, accuracy, authorization, and validity of data collected during SPOT screening.

Concur. In March 2010, TSA migrated the SPOT database to TSA's Performance Management Information System. This migration greatly enhances the SPOT program's capabilities, as they relate to completeness, accuracy, authorization, and validity of data collected during SPOT screening. Additional controls have been put in place to address the shortcomings of the previous database which were highlighted by GAO. TSA is also examining a technology solution to allow one-time transcription of all SPOT referral data. This will reduce the possibility of errors due to incorrect transcription from one medium to another.

Recommendation 11: Establish timeframes and milestones for its plan to systematically conduct evaluations of the SPOT training program on a periodic basis.

Concur. DHS S&T, in conjunction with TSA has sponsored a BDO Job Task Analysis (JTA). Outputs of the JTA will include Knowledge, Skills, Abilities, and Other characteristics of BDOs and Training Learning Objectives. These two items will enable TSA to conduct an in-depth training gap analysis. This analysis will begin immediately following completion of the JTA and will take approximately three months to complete. Upon completion of the training gap analysis, TSA will develop detailed project plans with milestones and schedules based on the scope of the overall curriculum development/revision effort.