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Resources, Community, and
Economic Development Division

B-275531

May 1, 1997

The Honorable Frank Wolf
Chairman, Subcommittee on
Transportation
Committee on Appropriations
House of Representatives

Subject: Aviation Security: FAA's Procurement of Explosives
Detection Devices

Dear Mr. Chairman:

This report responds to your request regarding the Federal Aviation Administration's (FAA) recent expenditures on advanced security devices at U.S. airports. Specifically, you asked us to address (1) how FAA is determining which explosives detection devices¹ to purchase and where to deploy them and (2) the extent to which FAA's purchase and deployment of these devices is adhering to its Acquisition Management System (AMS), which governs major capital procurements.

In summary, FAA's Security Equipment Integrated Product Team is purchasing explosives detection devices on the basis of the President's September 12, 1996, budget proposal, which called for funding numerous counterterrorist activities during fiscal year 1997. The President's proposal designated the type and number of devices to be purchased, and FAA's team has followed these designations. The proposal did not designate which airports should receive the devices. As a result, the team has made most preliminary deployment decisions

¹For the purposes of this report, an explosives detection device is defined as a device that, in most cases, has an automatic alarm that signals the operator if a potential explosive is detected. If the device does not have an automatic alarm, it has some other advanced capabilities to provide information to the operator, such as highlighting or color-coding a potential explosive.

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independently by analyzing information on the overall threat to U.S. civil aviation and combining it with data on the technical capabilities of the devices.

The team has not prepared certain planning documents required under FAA's April 1996 Acquisition Management System procurement guidelines and has pursued some noncompetitive procurements. However, the procurement guidelines allow exceptions from these requirements when they are determined to be in the agency's best interest. Currently, the team is seeking a formal waiver from the requirements and is preparing a written request justifying its approach. This request will document that congressional direction compels the team to purchase and install explosives detection devices under an accelerated timetable, which requires the devotion of all staff resources to the awarding of contracts as rapidly as possible. The team expects the Associate Administrator for Civil Aviation Security to approve its request for a waiver.

BACKGROUND

The unexplained crash of TWA Flight 800 in July 1996 sparked new concern about aviation security. In response to this event, the President established the White House Commission on Aviation Safety and Security (the Gore Commission). Under the direction of the Vice President, the Commission issued an initial report on September 9, 1996. This report contained 20 recommendations to strengthen aviation safety and security and suggested specific federal funding levels to implement some of them. The President's fiscal year 1997 budget proposal for counterterrorist activities largely incorporated these funding levels. The Congress appropriated \$144.2 million for FAA to purchase and install explosives detection devices at U.S. airports, along with an additional \$21 million for associated research and development activities. The Gore Commission's final report, issued in February 1997, recommended that FAA be appropriated \$100 million annually to continue purchasing these devices.

With the appropriation of funds to procure explosives detection devices, congressional direction stated that it was imperative for FAA to field the devices expeditiously and gain operational experience. In response, the Secretary of Transportation directed FAA to have most of the devices in place by September 1997 and to complete the program by December 1997.

Like other procurements by FAA, this purchase is subject to the agency's own set of guidelines governing major capital procurements. These guidelines, which require that FAA teams adhere to a variety of new principles designed to

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ensure timely, cost-effective procurements, constitute FAA's Acquisition Management System (AMS).

In October 1996, FAA created the Security Equipment Integrated Product Team (IPT) to purchase explosives detection devices and related services and to deploy the devices by the Secretary's deadline. This IPT brings together FAA staff from the offices of Civil Aviation Security and Research and Acquisitions, as well as airport and airline industry representatives. Specifically, the IPT is responsible for (1) developing an acquisition plan, (2) determining the type and number of explosives detection devices to purchase, (3) selecting the airlines and airport sites to receive the devices, and (4) overseeing the installation and integration of the devices into airports' existing security systems.

**THE IPT FOLLOWED THE PRESIDENT'S PROPOSAL
WHEN MAKING PURCHASING DECISIONS
BUT HAS MADE DEPLOYMENT DECISIONS INDEPENDENTLY**

The President's budget proposal for counterterrorist activities designated which type of explosives detection devices should be selected to screen checked and carry-on bags, as well as how many devices of each type should be purchased. The IPT used the proposal's designations as its basis for making purchasing decisions. However, the budget proposal did not designate where these devices should be deployed. The President's proposal followed recommendations made in the Gore Commission's initial report, which were based on FAA's estimates of the number of devices needed to cover key screening points at higher-risk airports.²

The IPT's planned purchases have mirrored the number of devices designated in the President's proposal. For example, the proposal specified that 54 FAA-certified devices that use a computed tomography technique to screen checked bags should be installed at airports nationwide, and the IPT has purchased 54 of them.³ In addition, the President's proposal designated that 489 devices designed to screen passengers' carry-on bags be installed, and the IPT plans to purchase at least this number. (See enc. I for a complete list of the purchases.)

²Higher-risk airports are those that FAA classifies as Category X and Category 1 airports. These airports have a high traffic volume and complex security programs.

³Computed tomography can develop a clear multidimensional image of an object located inside a piece of baggage.

FAA's IPT has independently made most decisions about where to deploy the explosives detection devices. To develop its preliminary deployment plan, the IPT sponsored a 4-day workshop in January 1997. At the workshop, all team members, including representatives of major airlines and airports, were invited to help develop the plan. Workshop participants were provided information about overall threats to civil aviation and the technical capabilities of explosives detection devices. In addition, participants reviewed individual airports' plans for counteracting identified security vulnerabilities.

Workshop participants used this information to make preliminary decisions about which airports should receive the devices and when installation would be feasible. Although participants found that information on overall threats and the capabilities of the devices was helpful, they were largely unable to use the data contained in the airports' action plans. According to the leader of the IPT, only a limited number of action plans were meaningful to the team during its deliberations on deployment because many airport officials do not have access to crucial information on threats or do not possess sufficient expertise about these devices to determine their own equipment needs.

The IPT has received comments on its draft deployment plan from a variety of interested parties, including other FAA officials and representatives of aviation industry groups. It expects to release a final deployment plan in May 1997.

**FAA IS USING AN EXPEDITED PROCESS
TO MAKE PURCHASES QUICKLY**

FAA's IPT plans to comply with guidelines governing the procurement of major capital equipment and is moving quickly to purchase and deploy explosives detection devices in response to congressional direction and the Secretary's December 1997 deadline. The team plans to request a waiver from planning requirements ordinarily called for under the AMS and expects FAA's Director of Civil Aviation Security to grant this waiver. The request will explain that the IPT must devote all of its resources to contract awards in order to respond to congressional direction, which calls for the devices to be purchased and installed as rapidly as possible. Planning requirements ordinarily include preparing (1) a mission needs statement; (2) a requirements document; (3) an investment analysis report; (4) an acquisition program baseline report; (5) an acquisition strategy paper; and (6) an integrated program plan.⁴ Together, these documents are designed to assist any FAA team in ensuring that a project is

⁴See enc. II for descriptions of the six major planning requirements.

consistent with the agency's overall mission, which includes maximizing cost-effectiveness when selecting and deploying capital equipment. According to the IPT's acquisition manager, the time required to prepare these documents would have kept the team from completing its purchases during 1997.⁵

In addition, under the AMS guidelines, an IPT may make noncompetitive procurements when there is a rational basis and when they are determined to be in FAA's best interest. This IPT has purchased and plans to purchase some explosives detection devices and related services through a noncompetitive process. For example, the team has purchased computed tomography devices without soliciting competitive bids. According to the leader of the IPT, the price that the team has paid for these devices is fair and reasonable. Only one vendor, InVision Technologies of Foster City, California, currently manufactures FAA-certified devices that use computed tomography to screen checked baggage. The IPT conducted a price comparison analysis, which AMS procurement guidelines require. Specifically, it used data from the sale of identical InVision devices to six foreign customers during 1996. On the basis of these data, the IPT negotiated a per-unit base price of \$900,000, which compares favorably with the average per-unit base price of about \$995,000 paid by the foreign customers. Likewise, the IPT's price compares favorably with InVision's own published catalog price of \$1,028,000 per unit. In addition, according to FAA's Deputy Assistant Chief Counsel, Procurement Law Division, the \$900,000 base price is for equipment with certain capabilities and features that the models sold to foreign airports do not contain.

FAA's IPT is also contracting for the purchase of at least 489 devices designed to screen carry-on items for explosives. These devices can detect minute amounts of explosives' residue on the surfaces of various objects. Congressional direction has encouraged FAA to provide for operational testing. Accordingly, the IPT has already purchased 40 devices from five vendors. During 1997, the IPT will solicit bids for the remaining devices. The team intends to award contracts, in part on the basis of results of the initial tests, to any vendor whose device can perform to FAA's requirement for effectiveness in airport operations. Vendors whose devices perform to this level will be listed as qualified to compete for an FAA contract. According to the IPT acquisition manager, the team is likely to purchase devices from each of the qualified vendors, but will use price and initial performance data to determine the number of each device to be purchased. The IPT plans to install these devices

⁵In April 1997, the IPT team leader acknowledged that the installation of the 54 checked-baggage screening devices will not be complete until February 1998.

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at major U.S. airports and will select 94 high-risk checkpoints for priority delivery. By December 1997, FAA and the airports will have generated airport-specific operational data for approximately 1 year on the performance of these devices.

The market for some explosives detection devices promises to become more competitive during the coming year. This should benefit FAA's ongoing effort to receive a good value for its investment. For example, the leader of the IPT has told us that by January 1998, the Lockheed-Martin Specialty Components Corporation is expected to have ready for commercial use an FAA-certified checked-baggage screening device that uses computed tomography. According to FAA and aviation industry officials, this device may contain several new features that enhance performance.

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We provided copies of a draft of this report to the Department of Transportation for review and comment. The Department generally agreed with the facts presented. FAA's Security Equipment IPT, which is procuring advanced security devices and related services on the Department's behalf, provided some suggested technical and clarifying language. We have incorporated these changes as appropriate.

We discussed the issues addressed in this report with members of FAA's Security Equipment IPT and with the Associate Administrator of FAA's Office of Civil Aviation Security and his staff. We also reviewed FAA's April 1996 procurement guidelines, as embodied in the AMS, and identified key elements for comparison against the IPT's decision-making process. Furthermore, we reviewed files relevant to all contracts awarded through March 31, 1997, as well as data related to the IPT's decisions about deploying explosives detection devices. Finally, we held discussions with officials representing major commercial airlines, higher-risk U.S. airports, and manufacturers of explosives detection devices. We conducted our review from November 1996 through April 1997 in accordance with generally accepted government auditing standards.

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As requested, unless you publicly announce its contents earlier, we plan no further distribution of this report for 30 days. At that time we will send copies to appropriate congressional committees and make copies available to others on request. If you or your staff should have any questions about the procurement of explosives detection devices, please call me at (202) 512-3650. Major contributors to this report were Mike Bollinger, Aaron Casey, Dave Hooper, Marnie Shaul, and Howard Veal.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Gerald Dillingham", with a long horizontal flourish extending to the right.

Gerald L. Dillingham
Associate Director, Transportation Issues

Enclosures - 3

THE FEDERAL AVIATION ADMINISTRATION'S
SECURITY EQUIPMENT PROCUREMENT PLAN

Event	Contractor(s)	Award amount (dollars in millions)	Quantity	Award date
Procurement of screening devices for checked baggage				
Computed tomography devices	InVision	\$52.3	54 devices	12/24/96
Advanced X-ray devices	EG&G, Heimann, Vivid	7.1	20 devices	5/30/97
Quadrupole resonance devices	Quantum Magnetics	1.0	5 devices	5/30/97
Procurement of screening devices for carry-on items	Barringer, C-PAD, Graseby, Ion Track, Thermedics	40.0	489 devices	5/2/97
Installation of equipment at airports	Lockheed-Martin, Raytheon	17.0	2 contracts	12/20/96
Procurement of training services for operators of computed tomography devices	TBD	10.2	1 contract	9/30/97
Additional funding for all equipment installation	N/A			
Procurement of training services for operators of conventional X-ray equipment (SPEARS)	EG&G, Rapiscan	5.3	1 contract	5/30/97
Procurement of passenger-profiling services				
Pilot project	Northwest Airlines	2.1	1 grant	10/22/96
Remainder of project	TBD -- multiple awards	7.8	multiple awards	8/30/97
Procurement of technical support services	JIL	0.7	1 contract	11/27/96
Procurement of quality assurance services	TBD	0.3	1 contract	5/30/97
Procurement of analytical evaluation services	Raytheon	0.4	1 contract	4/25/97
Total		\$144.2		

DESCRIPTIONS OF REQUIRED PLANNING DOCUMENTS
FOR THE ACQUISITION MANAGEMENT SYSTEM

Mission need statement: This document describes the current capability of systems, facilities, equipment, and other assets needed to fulfill an identified mission.

Requirements document: This document establishes the performance baseline for an acquisition program. Critical performance parameters are incorporated into a baseline report and are then used as a basis for operational testing. The document serves as the basis for conducting market research to identify the commercial availability of capital equipment and for determining the best overall approach to satisfying the identified mission.

Investment analysis report: This document is key to making investment decisions. It addresses all reasonable alternative solutions impartially. Its intent is to quantify and display the strengths and weaknesses of various investment options. The evaluation criteria should include the cost, schedule, performance, benefits, supportability, infrastructure requirements, and risk.

Acquisition program baseline report: This document establishes the framework within which an acquisition program will be implemented. It establishes critical performance parameters for a program and sets boundaries for the cost and schedule within which the program is authorized to proceed.

Acquisition strategy paper: This document defines the strategy by which the acquisition program will be executed. It describes the contracting strategy that will be employed (e.g., competitive or sole-source contracting). It also describes the testing strategy that will be used to integrate systems and equipment in a facility and to certify them for operational use.

Integrated program plan: This document is the key planning instrument for all aspects of a program's implementation. It describes all essential elements of implementation, including funding allocations, the schedule, the roles and responsibilities of key personnel, internal controls and review, contracting, maintenance, logistical support, and testing and evaluation.

RELATED GAO PRODUCTS

Aviation Security: Technology's Role in Addressing Vulnerabilities (GAO/T-RCED/NSIAD-96-262, Sept. 19, 1996).

Terrorism and Drug Trafficking: Technologies for Detecting Explosives and Narcotics (GAO/NSIAD/RCED-96-252, Sept. 4, 1996).

Aviation Security: Development of New Security Technology Has Not Met Expectations (GAO/RCED-94-142, May 19, 1994).

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