UNITED STATES DEPARTMENT OF HOMELAND SECURITY
TRANSPORTATION SECURITY ADMINISTRATION
Statement of
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before the
SUBCOMMITTEE ON TRANSPORTATION SECURITY AND
INFRASTRUCTURE PROTECTION
COMMITTEE ON HOMELAND SECURITY
UNITED STATES HOUSE OF REPRESENTATIVES
on
AIRPORT CHECKPOINT SCREENING:
TECHNOLOGY & ADVANCED SCREENING METHODS

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Good afternoon Chairman Jackson-Lee, Ranking Member Dent, and distinguished Members of the Subcommittee. Thank you for the opportunity to appear today to discuss the technology utilized at passenger screening checkpoints at United States airports. The attempted attack on Northwest Flight 253 on December 25 was a powerful reminder that terrorists will go to great lengths to defeat the security measures that have been put in place since September 11, 2001. As Secretary of Homeland Security Janet Napolitano has testified at recent hearings regarding the attempted attack, this Administration is determined to thwart terrorist plots and disrupt, dismantle, and defeat terrorist networks.

Today I will give an overview of passenger screening technologies currently in place and discuss the Transportation Security Administration's (TSA) ongoing development and deployment of new technologies, in coordination with the Department of Homeland Security (DHS) Science and Technology Directorate (S&T), the Transportation Security Laboratory (TSL), and other key Federal agencies and academic and private sector centers of research. I will discuss some of the promising technologies we are currently developing, and how we are working to ensure that the technological advances we are making in the United States become available to enhance screening by our partners abroad.

Response to Northwest Flight 253

Following the attempted attack on Northwest Flight 253, President Obama made clear that we need to take additional actions to address the systemic vulnerabilities highlighted by that failed attack. At the President's and Secretary Napolitano's direction, to enhance the safety of the traveling public, DHS will pursue several key steps in which technology plays a critical role:

- Accelerate deployment of advanced imaging technology to provide greater explosives detection capabilities and encourage foreign aviation security authorities to do the same.

- Establish a partnership on aviation security between DHS and the Department of Energy and its National Laboratories in order to develop new and more effective technologies to deter and disrupt known threats and proactively anticipate and protect against new ways by which terrorists could seek to board an aircraft.

- Work with international partners to strengthen international security measures and standards for aviation security.

Accelerate Technology Deployment

TSA has already made great strides in accelerating the deployment of technology to enhance both checkpoint screening (for passengers and carry-on baggage) and checked baggage screening. The $1 billion in American Recovery and Reinvestment Act (ARRA) funds provided to TSA in 2009 has played a major role in this effort. Of the $1 billion allocated to TSA for aviation security projects, approximately $700 million was dedicated to checked baggage screening technology, including in-line Explosives Detection Systems (EDS), and approximately $300 million was allocated for checkpoint explosives detection technology.

TSA uses a comprehensive research, testing, and deployment process to ensure that technology deployed to U.S. airports is effective in detecting threats and can withstand the operational and environmental rigors of a system that screens nearly 2 million passengers each day. The technology development lifecycle takes time – several years in some cases. While TSA and its vendors are working to deploy the latest aviation security technology to U.S. airports as quickly as possible, there are development logistical limits to how quickly new technologies become available.

As is the case with TSA's approach to overall security, the objective in technology development and deployment is to find the most effective means to detect threats while facilitating travel and commerce and respecting personal privacy. The following are some of the technologies that we are deploying in pursuit of that goal.

<u>Advanced Imaging Technology (AIT)</u>

One of the most promising current technologies for detecting small quantities of explosives concealed on passengers is AIT. AIT safely and effectively screens passengers for metallic and nonmetallic threats, including weapons and explosives, without physical contact. TSA has assessed multiple types of AIT systems, including backscatter X-ray and millimeter wave.

Currently, 40 AIT units are deployed at 19 U.S. airports for both primary and secondary screening. Through ARRA funding, we procured 150 additional units, which will be deployed principally for primary screening purposes starting in early 2010, and we are in the process of procuring an additional 300 AIT units in FY 2010. TSA has also budgeted for an additional 500 AIT units in FY 2011, which will bring the total to approximately 1,000 nationwide.

In its deployment of AIT across the country, TSA has implemented strong safeguards—reviewed by the DHS Privacy Officer—to ensure the protection of passenger privacy and anonymity. TSA requires manufacturers to include software algorithms in AIT systems that blur the face on the image of the body during screening. Additionally, TSA requires that AIT machines in operation at airports cannot store images of screened passengers; storage capability is activated only for testing purposes. Furthermore, the Transportation Security Officer (TSO) who views the AIT image is located separately from the TSO at the screening location who assists the passenger through screening, to avoid a specific individual from being associated with the image. Finally, the passenger may choose whether to undergo screening by this technology or proceed through a walk-through metal detector (WTMD) followed by a pat down. Current data shows that over 98 percent of passengers opt for AIT screening.

TSA continues to explore additional privacy protections through automated threat detection, which would transmit images only when an alarm is triggered. In collaboration with DHS S&T, the security technology industry, and our international partners, software development is currently underway and will be followed by testing to ensure effective detection with minimal false alarms.

Explosives Trace Detectors (ETD)

ETD equipment can detect a wide range of explosives, including Pentaerythritol tetranitrate (PETN), a key explosive used in the attempted attack on Northwest Flight 253. ETDs have previously been used to examine carry-on baggage for the presence of explosives residue and are currently being piloted at five airports for use on passengers' hands. Approximately 2,000 units are currently deployed in airports nationwide for passenger screening and the President's FY 2011 budget includes a request for $60M for approximately 800 portable ETD machines ($39M) and associated checkpoint consumables ($21M). Expanding the use of ETD beyond checkpoints and throughout airports will enhance the unpredictability of screening and increase overall screening effectiveness.

Advanced Technology (AT) X-Ray

Advanced technology (AT) X-ray machines are the latest technology to screen carry-on baggage. AT X-ray provides multiple views and a greatly enhanced display that is much clearer and more detailed than that provided by current X-ray technology. The latest version, which is ready for testing in the field, includes automated detection algorithms for bulk explosives and liquid explosives—capabilities that will be retrofitted to the 922 AT X-ray machines currently deployed to 81 airports nationwide. TSA anticipates having contracts in place by the end of FY 2010 to purchase approximately 1,300 machines, enough to cover remaining U.S. airports, with deployment to be completed in early 2011. In FY 2011, we plan to buy 25 additional units and will upgrade the existing fleet with new software algorithms that bring that equipment in line with the new equipment.

Next Generation Bottled Liquid Scanner (BLS-2) Technology

Bottled liquid scanners provide TSA with enhanced liquid detection capability by screening carry-on luggage to detect potential explosive liquid or gel threats. BLS-2 systems can work either in conjunction with AT X-ray screening or as stand-alone devices to conduct primary screening of liquids. TSA has already purchased 500 units and has started deployment to airports, with plans to procure and deploy an additional 800 BLS-2 systems to all U.S. airports by the end of 2010.

DHS Aviation Security Partnership with the Department of Energy and its National Laboratories

As a result of the President's directive on aviation security following the attempted attack on Christmas Day, DHS has built on its partnership with the Department of Energy (DOE) and its National Laboratories in order to develop new and more effective technologies to deter and disrupt known threats and proactively anticipate and protect against new ways by which terrorists could seek to board an aircraft. We have established joint working groups to bring the laboratories' technical expertise to bear on three critical areas: aircraft vulnerabilities, systems analysis of our approach to detection and screening, and new technology with potential application to aviation security.

In addition, a number of interagency initiatives are already underway including: research and development to increase screener efficiency and effectiveness; enhanced detection of passengers who intend to do harm and personnel who may pose insider threats; next-generation fully automated checkpoints for detecting weapons and explosives on individuals for aviation, mass transit, large public venues or other potentially high-risk buildings; enhanced automatic imaging systems and trace explosives detection equipment that screen for explosives and other prohibited items; and new tools for biometric identification and credential validation.

Many of these projects are expected to show significant progress in the near-term as similar or related projects were already underway. Other projects, such as developing next-generation fully automated checkpoints for detecting weapons and explosives on people, will likely take several years to become operational.

Working With Our International Partners

DHS is also working with international partners, law enforcement and the aviation industry to enhance international aviation security standards and practices—particularly for international flights bound for the United States. The FY 2011 budget requests funding to further expand TSA's international presence and enhance support to countries that seek assistance, including $40 million and 74 positions (37 FTE) to manage international programs at 15 of our 19 existing offices around the globe. The 74 new positions, which include 34 Transportation Security Specialists, 10 International Industry Representatives, and a 10-person Rapid Response Team, will be strategically placed in high risk areas such as the Middle East and Africa.

In January, Secretary Napolitano dispatched Deputy Secretary Lute on an international trip during which she and other senior Department officials consulted with dozens of ministers, deputy ministers, and senior officials from 13 countries across six continents to review security

procedures and technology being used to screen passengers on flights bound for the United States and work with our international partners on ways to collectively bolster our international aviation security system.

As a result of this trip, the Spanish Minister of Interior Minister invited Secretary Napolitano to participate in the first organizational meeting of the Spanish EU Presidency of Justice and Home Affairs ministers, a plenary of 33 countries in Toledo, Spain. At this meeting, there was broad consensus and a clear sense of urgency to take immediate action to strengthen security measures. Specifically, Secretary Napolitano and her European counterparts signed a joint declaration affirming their collective commitment to strengthening information sharing and passenger vetting, deploying additional proven security technologies, and bolstering international aviation security standards. Secretary Napolitano found a similarly strong consensus in Geneva where she met with the leaders of the airlines that are part of the International Air Transport Association—which represents approximately 230 airlines and more than 90 percent of the world's air traffic. All attendees agreed that government and the private sector must work collaboratively both to develop enhanced international security standards and—most importantly—to effectively implement them.

These meetings were the first in a series to bring about international agreement on stronger aviation security standards and procedures. For example, the International Civil Aviation Organization, the United Nations agency that focuses on international civil aviation, has facilitated several regional aviation security meetings – including one in Mexico City, jointly hosted by Mexico and Brazil and one in Tokyo– to build on the progress made in Toledo and Geneva.

The discussions from these meetings and the Deputy Secretary's trip will culminate in an international ministerial meeting, being planned for later this year, to develop, review, and ultimately adopt key measures and proposals for increasing aviation security worldwide.

TSA and S&T also work closely with our international partners through a number of working groups, task forces, and other committees focused on improving aviation security, identifying promising technologies, and harmonizing technology standards and processes. These groups include:

- **DHS Explosives Standards Working Group (ESWG)**. The ESWG is co-chaired by TSA and the DHS Office of Infrastructure Protection, Protective Security Coordination Division (PSCD). This group provides DHS agencies a forum for collaboration and information exchange with other Federal, State, and local government agencies and non-government entities on explosives countermeasure standards and conformity assessment measures. This group also drives explosives standards requirements and policy.

- **European Civil Aviation Conference (ECAC) Technical Task Force**. ECAC is an intergovernmental organization comprised of 44 Member States throughout Europe. TSA meets with ECAC representatives multiple times throughout the year to partner on technology standards and policy development related to aviation security.

- **Technical Support Work Group (TSWG)**. TSA participates in the TSWG, a group sponsored by the Defense Department, with an emphasis on technology research, engineering, and development for aviation security-related projects. The group has significant influence internationally and funds projects submitted from both U.S. and non-U.S. members.

- **NATO Explosives Detection Group**. TSA meets with other NATO member countries to collaborate on next generation explosives detection technology and to share best practices.

Conclusion

Technology is critical to aviation security; however, it is just one element in a multi-layered strategy that includes Behavior Detection Officers, Bomb Appraisal Officers, Federal Air Marshals, canine teams, well-trained personnel and a ready and engaged traveling public. The attempted attack on Christmas Day failed due in no small part to passengers and crewmembers who acted quickly and courageously to subdue the attacker and gain control of the situation.

While new technologies offer great promise in DHS's ongoing efforts to secure our homeland, no technology is a silver bullet against the threat of a terrorist attack. This reality makes it all the more critical that we are working together at all levels —Federal, State and local governments, our international partners, and the American public — to counter threats.

The Department of Homeland Security and the Transportation Security Administration are using every tool at our disposal to prevent, detect and deter terrorism and protect the traveling public.

Thank you for your continued assistance to TSA and for the opportunity to speak with you today. I would be pleased to respond to your questions.