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AVIATION SECURITY

Vulnerabilities Exposed Through Covert Testing of TSA's Passenger Screening Process

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Highlights

Highlights of GAO-08-48T, a testimony before the Committee on Oversight and Government Reform, House of Representatives

Why GAO Did This Study

In August 2006, the Transportation Security Administration (TSA) substantially modified its passenger screening policies based on the alleged transatlantic bomb plot uncovered by British authorities. With the aim of closing security gaps revealed by the alleged plot, the revised policies severely restricted the amount of liquids, gels, and aerosols TSA allowed passengers to bring through the checkpoint.

At the Committee's request, GAO tested whether security gaps exist in the passenger screening process. To perform this work, GAO attempted to (1) obtain the instructions and components needed to create devices that a terrorist might use to cause severe damage to an airplane and threaten the safety of passengers and (2) test whether GAO investigators could pass through airport security checkpoints undetected with all the components needed to create the devices.

GAO conducted covert testing at a nonrepresentative selection of 19 airports across the country. After concluding its tests, GAO provided TSA with two timely briefings to help it take corrective action. In these briefings, GAO suggested that TSA consider several actions to improve its passenger screening program, including aspects of human capital, processes, and technology. GAO is currently performing a more systematic review of these issues and expects to issue a comprehensive public report with recommendations for TSA in early 2008.

To view the full product, including the scope and methodology, click on GAO-08-48T. For more information, contact Gregory D. Kutz at (202) 512-6722 or kutzg@gao.gov.

What GAO Found

GAO investigators succeeded in passing through TSA security screening checkpoints undetected with components for several improvised explosive devices (IED) and an improvised incendiary device (IID) concealed in their carry-on luggage and on their persons. The components for these devices and the items used to conceal the components were commercially available. Specific details regarding the device components and the methods of concealment GAO used during its covert testing are classified by TSA; as such, they are not discussed in this testimony.

Using publicly available information, GAO investigators identified two types of devices that a terrorist could use to cause severe damage to an airplane and threaten the safety of passengers. The first device was an IED made up of two parts—a liquid explosive and a low-yield detonator. Although the detonator itself could function as an IED, investigators determined that it could also be used to set off a liquid explosive and cause even more damage. In addition, the second device was an IID created by combining commonly available products (one of which is a liquid) that TSA prohibits in carry-on luggage. Investigators obtained the components for these devices at local stores and over the Internet for less than $150. Tests that GAO performed at a national laboratory in July 2007, in addition to prior tests in February 2006 that GAO performed in partnership with a law enforcement organization in the Washington, D.C., metro area, clearly demonstrated that a terrorist using these devices could cause severe damage to an airplane and threaten the safety of passengers.

Investigators then devised methods to conceal the components for these devices from TSA transportation security officers, keeping in mind TSA policies related to liquids and other items, including prohibited items. By using concealment methods for the components, two GAO investigators demonstrated that it is possible to bring the components for several IEDs and one IID through TSA checkpoints and onto airline flights without being challenged by transportation security officers. In most cases, transportation security officers appeared to follow TSA procedures and used technology appropriately; however, GAO uncovered weaknesses in TSA screening procedures and other vulnerabilities as a result of these tests. For example, although transportation security officers generally enforced TSA's policies, investigators were able to bring a liquid component of the IID undetected through checkpoints by taking advantage of weaknesses identified in these policies. These weaknesses were identified based on a review of public information. TSA determined that specific details regarding these weaknesses are sensitive security information and are therefore not discussed in this testimony. GAO did not notice any difference between the performance of private screeners and transportation security officers during our tests.

Mr. Chairman and Members of the Committee:

Thank you for the opportunity to discuss our latest test of airport security. In March 2006, we reported on the results of covert security vulnerability testing at 21 airports across the country. These tests clearly demonstrated that our nation's airlines were vulnerable to a suicide bomber using commercially available materials to detonate an explosive device onboard an airplane. During these covert tests, our investigators passed through airport security checkpoints carrying prohibited explosive components without being caught by Transportation Security Administration (TSA) security officers.[1] Later that year, in August 2006, British authorities uncovered the alleged transatlantic bomb plot. The discovery of this bomb plot, in which terrorists allegedly sought to detonate improvised explosive devices (IED)[2] in airplanes as they crossed the Atlantic Ocean, caused TSA to substantially modify its screening procedures—all liquids, gels, and aerosols with some exceptions were banned from being carried through passenger screening checkpoints and onto aircraft until the plot was further investigated. These restrictions were later relaxed to allow small amounts of liquids, gels, and aerosols through the checkpoint.

This report responds to your request that we test whether security vulnerabilities exist in the TSA passenger screening process. To perform this work, we attempted to (1) obtain the instructions and components needed to create devices that a terrorist might use to cause severe damage to an airplane and threaten the safety of passengers and (2) test whether investigators could pass through airport security checkpoints undetected with all the components needed to create the devices.

To obtain instructions on creating devices a terrorist might use, we reviewed publicly available information and performed Internet searches. We obtained components for these devices at local stores and over the Internet. We devised methods to conceal the prohibited components using public information about TSA policies and procedures and obtained items to conceal the components at local stores and over the Internet. We then conducted our covert tests at a nonrepresentative selection of 19 airports

[1]Our March 2006 report is classified, but TSA has authorized this limited discussion.

[2]An IED is an apparatus or contraption placed or fabricated without detailed manufacturing that incorporates destructive, lethal, noxious, pyrotechnic, or incendiary chemicals and is designed to destroy, incapacitate, or distract through high-speed projectiles and overpressure.

across the country. The criteria we used to select the airports resulted in our testing a variety of U.S. commercial airports, some of which employed private screeners.[3]

Our work was not intended to evaluate the overall design and effectiveness of TSA's airport security program, which contains multiple layers of security. Rather, our work was performed to test specific security vulnerabilities related to the three major elements of TSA's passenger screening process—human capital (i.e., people), processes, and technology employed at the checkpoint. We tested the effectiveness of our explosive device at a national laboratory in July 2007. We had previously tested the effectiveness of less powerful explosive and incendiary devices in the Washington, D.C., metro area with help of a local law enforcement organization. We conducted work for this investigation from March 2007 through July 2007 in accordance with quality standards for investigations as set forth by the President's Council on Integrity and Efficiency.

Summary

Our investigators succeeded in passing through TSA security screening checkpoints undetected with components for several IEDs and an improvised incendiary device (IID)[4] concealed in their carry-on luggage and on their persons. The components for these devices and the items used to conceal the components were commercially available. Specific details regarding the device components and the methods of concealment we used during our covert testing are classified by TSA; as such, they are not discussed in this testimony.

Using publicly available information, our investigators identified two types of devices that a terrorist could use to cause severe damage to an airplane and threaten the safety of passengers. The first device was an IED made up of two parts—a liquid explosive and a low-yield detonator. Although the detonator itself could function as an IED, investigators determined that it could also be used to set off a liquid explosive and cause even more

[3]Specific details about which airports employed private screeners as opposed to transportation security officers are considered sensitive security information and are not included in this testimony. Therefore, the term transportation security officer is used throughout this testimony, but may, in some cases, also refer to private screeners that we tested.

[4]A IID is an apparatus or contraption placed or fabricated without detailed manufacturing that incorporates destructive, lethal, noxious, pyrotechnic, or incendiary chemicals and is designed to destroy, incapacitate, or distract by creating intense heat or fire.

damage. In addition, the second device was an IID created by combining commonly available products (one of which is a liquid) that TSA prohibits in carry-on luggage. Investigators obtained the components for these devices at local stores and over the Internet for less than $150. Tests that we performed at a national laboratory in July 2007, in addition to prior tests in February 2006 that we performed in partnership with a law enforcement organization in the Washington, D.C., metro area, clearly demonstrated that a terrorist using these devices could cause severe damage to an airplane and threaten the safety of passengers.

Investigators then devised methods to conceal the components for these devices from TSA transportation security officers, keeping in mind TSA policies related to liquids and other items, including prohibited items. By using concealment methods for the components, two investigators demonstrated that it is possible to bring the components for several IEDs and one IID through TSA checkpoints and onto airline flights without being challenged by transportation security officers. In most cases, transportation security officers appeared to follow TSA procedures and used technology appropriately; however, we uncovered weaknesses in TSA screening procedures and other vulnerabilities as a result of these tests. For example, although transportation security officers generally enforced TSA's policies, investigators were able to bring a liquid component of the IID undetected through checkpoints by taking advantage of weaknesses identified in these policies. These weaknesses were identified based on a review of public information. TSA determined that specific details regarding these weaknesses are sensitive security information and are therefore not discussed in this testimony. We did not notice any difference between the performance of private screeners and transportation security officers during our tests.

We provided TSA officials with two timely briefings to help them take corrective action. While we understand that TSA faces a significant challenge in balancing security concerns with efficient passenger movement, we are recommending that the Secretary of Homeland Security consider several actions to improve aspects of TSA's passenger screening program, including elements of human capital, processes, and technology.

Background

TSA is responsible for securing all modes of transportation while facilitating commerce and freedom of movement for the traveling public. In performing its responsibilities, TSA is guided by risk-based planning, which generally involves a consideration of threats, vulnerabilities, and the criticality or consequence of an attack if it were to be carried out.