GAO

Testimony

Before the Subcommittee on Surface Transportation and Merchant Marine Infrastructure, Safety, and Security, Committee on Commerce, Science, and Transportation, U.S. Senate

For Release on Delivery
Expected at 10:00 a.m. EDT
Thursday, June 12, 2008

SUPPLY CHAIN SECURITY

Challenges to Scanning 100 Percent of U.S.-Bound Cargo Containers

Statement of Stephen L. Caldwell, Director,
Homeland Security and Justice

G A O
Accountability * Integrity * Reliability

GAO-08-533T

SUPPLY CHAIN SECURITY

Challenges to Scanning 100 Percent of U.S.-Bound Cargo Containers

Why GAO Did This Study

U.S. Customs and Border Protection (CBP), within the Department of Homeland Security (DHS), is responsible for preventing weapons of mass destruction from entering the United States in cargo containers that are shipped from more than 700 foreign seaports. The Security and Accountability for Every (SAFE) Port Act calls for testing the feasibility of scanning 100 percent of U.S.-bound cargo containers, and the Implementing Recommendations of the 9/11 Commission Act (9/11 Act) requires scanning 100 percent of U.S.-bound cargo containers by 2012. To fulfill these requirements, CBP created the Secure Freight Initiative (SFI) and has initiated a pilot program at seven seaports. This testimony discusses challenges related to the SFI pilot program and implementation of the requirement to scan 100 percent of U.S.-bound container cargo. This testimony is based on GAO products issued from July 2003 through April 2008 and ongoing work. To conduct this work, GAO reviewed reports from CBP and international partners on SFI and other container security programs, and interviewed CBP and foreign customs officials.

What GAO Recommends

GAO recommended in prior reports that DHS develop human capital plans, enhance performance measures, and gather information on the efficacy of host government systems. DHS generally concurred with our recommendations and is taking steps to address them.

To view the full product, including the scope and methodology, click on GAO-08-533T. For more information, contact Stephen Caldwell at (202) 512-9610 or caldwells@gao.gov.

What GAO Found

GAO identified challenges in nine areas that are related to the continuation of the SFI pilot program and the longer-term 100 percent scanning requirement:

- **Workforce planning**: The SFI pilot program could generate an increased quantity of scan data. Therefore, more CBP officers will be required to review and analyze data for participating seaports.
- **Host nation examination practices:** The SAFE Port and 9/11 Acts require DHS to develop standards for the scanning systems, but CBP lacks information on host nation equipment and practices.
- **Measuring performance**: CBP has had difficulties defining performance measures for its container security programs; therefore, it will be difficult to assess if 100 percent scanning achieves increased security.
- **Resource responsibilities:** Neither the SAFE Port Act nor the 9/11 Act specifies whether the United States would bear the costs of implementing 100 percent scanning.
- **Logistics**: Space constraints can require seaports to place scanning equipment miles from where cargo containers are stored, and some containers are only available for scanning for a short period of time and may be difficult to access.
- **Technology and infrastructure:** Environmental conditions can damage equipment and cause delays, and infrastructure capacity and equipment compatibility have presented difficulties in the SFI pilot program.
- **Use and ownership of data:** Legislation specifies that scan data should be available to CBP officials, but the data are often generated and collected by foreign seaports and, in some cases, will require international agreements for transfer to CBP officials.
- **Consistency with risk management:** International partners state that 100 percent scanning is inconsistent with accepted risk management principles and diverts resources away from other security threats.
- **Reciprocity and trade concerns:** Foreign governments could call for reciprocity of 100 percent scanning, requiring the United States to scan cargo containers, and some view this requirement as a barrier to trade.

Congested Conditions at Ports Present Challenges to 100 Percent Scanning of Containers

Source: GAO.

United States Government Accountability Office

Mr. Chairman and Members of the Subcommittee:

I am pleased to be here today to discuss challenges to 100 percent scanning of U.S.-bound cargo containers. More than 700 foreign seaports ship cargo containers to the United States and over 11 million oceangoing cargo containers arrived at U.S. seaports last year. The terrorist attacks of 2001 heightened concerns about the potential vulnerability of U.S.-bound cargo containers to terrorist exploitation, and the prevention of such activity became a goal for the federal government.

Within the Department of Homeland Security (DHS), U.S. Customs and Border Protection (CBP) is responsible for preventing terrorists and weapons of mass destruction (WMD) from entering the United States, including the potential WMD threat posed by the movement of oceangoing cargo containers. As it performs this mission, CBP maintains two overarching and sometimes conflicting goals—increasing security while facilitating legitimate trade. To address these goals, CBP has developed a layered security strategy that includes the Container Security Initiative (CSI) and the Customs-Trade Partnership Against Terrorism (C-TPAT). The CSI program, begun in 2002, aims to deter and detect the smuggling of WMD via cargo containers before they reach U.S. seaports. At the 58 seaports participating in the CSI program as of January 2008, foreign governments allow CBP personnel to be stationed at the seaports and use intelligence and automated risk assessment information to determine whether U.S.-bound shipments are at risk of containing WMD or other terrorist contraband—a process referred to as targeting. CBP personnel can then request that host government customs officials scan the identified high-risk cargo.[1] CBP also operates C-TPAT, a voluntary partnership with the trade community, in which member companies commit to improving the security of their supply chains and develop security profiles that outline the companies' security measures. Because of their cooperation, and after verification by CBP that such stronger measures are in place, C-TPAT members are generally subjected to reduced levels of CBP scrutiny of their shipments.

To further address container security concerns, Congress passed, and the President signed, the Security and Accountability for Every (SAFE) Port

---

[1]Examining cargo containers involves using radiation detection equipment or nonintrusive imaging equipment, which may include X-ray or gamma ray technology, or both, to determine if a cargo container poses a WMD risk.

Act in October 2006, which includes provisions that codified CSI and C-TPAT, both of which had been CBP initiatives but not previously required by law.[2] In addition, the act calls for the establishment of a pilot program to test the feasibility of scanning 100 percent of U.S.-bound cargo containers and directs CBP to require transmission of additional data from importers and cargo carriers for improved targeting of U.S.-bound cargo containers. CBP is implementing these requirements as part of its Secure Freight Initiative (SFI) program. The SAFE Port Act also requires that 100 percent of U.S.-bound cargo containers be scanned using nonintrusive imaging equipment and radiation detection equipment at foreign seaports as soon as feasible. The SFI pilot program tests the feasibility of using this equipment and implementing 100 percent scanning at seven foreign seaports. In August 2007, the Implementing Recommendations of the 9/11 Commission Act (9/11 Act) was enacted, which revised the SAFE Port Act provision on 100 percent scanning to require implementation by 2012, with possible exceptions for seaports for which DHS certifies that specified conditions exist.[3] These conditions include that adequate scanning equipment is not available or cannot be integrated with existing systems, a port does not have the physical characteristics to install the equipment, or use of the equipment will significantly impact trade capacity and the flow of cargo.

We have issued several reports over the past few years relating to cargo container security that include challenges that are also applicable to 100 percent scanning because of the similarities in the operations of the programs reviewed and their overall purpose to strengthen cargo security.[4] This statement discusses these and other challenges that relate to the continuation of the SFI pilot program and the longer-term requirement to scan 100 percent of all cargo containers bound for the United States.

The information in this testimony is based on GAO reports and testimonies issued from July 2003 through April 2008 addressing cargo container security operations and programs, as well as ongoing work concerning CBP's international efforts for the Senate Committee on Commerce, Science, and Transportation; the Senate Committee on Homeland Security and Governmental Affairs and its Permanent Subcommittee on

---

[2]Pub. L. No. 109-347, 120 Stat. 1884.

[3]Pub. L. No. 110-53, § 1701(a), 121, Stat. 266, 489-90 (amending 6 U.S.C. § 982(b)).

[4]See the end of this statement for a list of related GAO products.

Investigations; and the House Committee on Energy and Commerce, to be published later this year. For this ongoing work, we reviewed CBP documents, such as the report on the SFI program required by the 2007 DHS Appropriations Act.[5] We also reviewed documentation from the World Customs Organization (WCO) related to international initiatives for enhancing supply chain security.[6] We also analyzed documents from some of CBP's international partners, which include European Commission comments on the SFI Pilot Seaport at Southampton, United Kingdom (UK); a position paper from the Association of German Port Operators; and reports on 100 percent scanning issued by the World Shipping Council and the WCO. In addition, we reviewed available documentation, such as reports and international agreements, related to CBP's work in the international trade community. We also met in Washington, D.C., with CBP officials who have program responsibilities for international affairs and trade, as well as with representatives from the European Commission, the WCO, and industry representative groups to discuss multilateral and bilateral efforts to promote security of the supply chain—the flow of goods from manufacturer to retailer. We also visited six CSI seaports located overseas to meet with local customs officials, selecting the locations based on geographic and strategic significance, container volume to the United States, the dates when the seaports began conducting CSI operations. Although the perspectives of the officials we spoke with cannot be generalized across the wider population of countries that participate in the CSI or C-TPAT programs or that ship container cargo to the United States, they provided us with an overall understanding of how CSI operations were conducted, as well as views on scanning 100 percent of U.S.-bound cargo containers.

We conducted our work from May 2006 to June 2008 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 based on our audit objectives.

---

[5]In addition to this report, the SAFE Port Act also required that CBP produce a report on lessons learned from the SFI pilot program; however, this report was not available as of the time we prepared this statement.

[6]The WCO is an independent international organization whose mission is to enhance the efficiency and effectiveness of customs administrations.

Summary

In our previous and ongoing work on maritime container security issues, we have identified numerous challenges related to the continuation of the SFI pilot and the longer-term requirement to scan 100 percent of all cargo containers bound for the United States. These challenges are in the following nine areas:

- **Workforce planning:** Given the additional scanning equipment used—as well as the additional cargo containers to be scanned—the SFI pilot, as well as 100 percent scanning, program could generate an increased quantity of scan data. Therefore, CBP could face even greater staffing challenges because more CBP officers will be required to review and analyze these data for participating seaports. Furthermore, our past work on maritime container security found weaknesses in CBP's workforce planning.

- **Host nation examination practices:** While the SAFE Port and 9/11 Acts require DHS to develop operational and equipment standards for the scanning systems used for 100 percent scanning, CBP does not systematically collect information on the efficacy of host government examination systems.

- **Measuring performance:** While the intention of the SFI pilot program and 100 percent scanning is to increase security for the United States, CBP has had ongoing difficulties in defining performance measures for its maritime container security programs to indicate whether security is increased.

- **Resource responsibilities:** It is unclear who will pay for additional resources—including increased staff, equipment, and infrastructure—and who will be responsible for operating and maintaining the equipment used for the statutory requirement to scan 100 percent of U.S.-bound cargo containers at foreign seaports. Neither the SAFE Port Act nor the 9/11 Act specifies whether the federal government will bear the cost of scanning 100 percent of U.S.-bound cargo containers.

- **Logistics:** Scanning equipment is sometimes placed miles from where cargo containers are stored, which could add to the time and cost requirements for scanning these containers. Also, transshipment cargo containers—containers moved from one vessel to another—are only available for scanning for a comparatively short period of time and may be difficult to access.

- **Technology and infrastructure:** Issues, such as environmental conditions that damage equipment and cause delay, limited bandwidth capacity of local infrastructure, and compatibility with older equipment have presented difficulties in the SFI pilot program.

- **Use and ownership of data:** While the SAFE Port Act specifies that scan data produced in the SFI pilot program should be available for review by U.S. officials, legal restrictions in foreign countries may make it difficult to share this information with CBP. In some cases, transferring such information to U.S. officials could require new international agreements.

- **Consistency with risk management:** International partners state that 100 percent scanning is inconsistent with widely accepted risk management principles, and some CBP international partners have stated that the requirement could potentially reduce the security of the supply chain by diverting scarce resources away from other essential security measures.

- **Reciprocity and trade concerns:** Foreign governments could call for reciprocity of 100 percent scanning, requiring the United States to scan container exports to those countries. This will be a challenge, as CBP officials have stated that the agency does not have the resources to scan other countries' exports leaving the United States. Further, some view this scanning requirement as a barrier to trade.

Background

CBP Has Developed a Layered Security Strategy to Help Implement Its Risk Management Approach

CBP has developed a layered security strategy that provides multiple opportunities to mitigate threats and allows CBP to focus its limited resources on cargo containers that are the most likely to pose a risk to the United States. Risk management is a strategy called for by federal law and presidential directive and is meant to help policymakers and program officials most effectively mitigate risk while allocating limited resources under conditions of uncertainty. This layered security strategy is composed of different but complementary initiatives and programs, such as CSI and C-TPAT, which build on each other and work with other federal security programs, such as the Department of Energy's (DOE) Megaports

Initiative.[7] This layered strategy attempts to address cargo container security comprehensively while ensuring that security attention is directed toward the highest-risk containers within the supply chain.

The Container Security Initiative

CBP's CSI program aims to identify and examine U.S.-bound cargo that pose a high risk of concealing WMD or other terrorist contraband by reviewing advanced cargo information sent by ocean cargo carriers. As of January 2008, CBP operated CSI in 58 foreign seaports, which, at the time, accounted for 86 percent of all U.S.-bound cargo containers. As part of the CSI program, CBP officers, usually stationed at foreign seaports, seek to identify high-risk U.S.-bound cargo containers by using information from cargo carriers as well as reviewing databases and interacting with host government officials. When requested by CBP, host government customs officials examine the high-risk container cargo by scanning it using various types of nonintrusive inspection (NII) equipment, such as large-scale X-ray machines, or by physically searching a container's contents before it is sent to the United States.[8]

Customs-Trade Partnership against Terrorism

Initiated in November 2001, the C-TPAT program aims to secure the flow of goods bound for the United States by developing a voluntary antiterrorism partnership with stakeholders from the international trade community.[9] To join C-TPAT, a company submits a security profile, which CBP compares to its minimum security requirements for the company's trade sector. CBP then reviews the company's compliance with customs laws and regulations and any violation history that might preclude the approval of benefits—which includes reduced scrutiny or expedited processing of the company's shipments. CBP data show that from 2004

---

[7]Begun in 2003, DOE's Megaports Initiative complements CBP's layered security strategy by providing foreign nations with radiation detection equipment, such as radiation portal monitors, to scan cargo containers moving through their seaports. As of February 2008, the Megaports Initiative was fully operational at 12 foreign seaports and in various stages of implementation at 17 others.

[8]There are generally two types of CSI cargo container examinations—scanning with NII equipment and physical searches. To scan cargo containers, CSI depends on imaging equipment, which may use X-rays or gamma rays to create images of the container's contents, and radiation detection equipment. CBP officials, along with host government officials, may review the information produced with the scanning equipment to determine the presence of WMD. Depending on the results of the scans, physical searches may be conducted.

[9]Stakeholders of the international trade community include importers; customs brokers; air, sea, and land carriers; and other logistics service providers, such as freight consolidators.

through 2006, C-TPAT members were responsible for importing about 30 percent of U.S.-bound cargo containers, specifically importing 29.5 percent of the 11.7 million oceangoing cargo containers off-loaded in the United States in the first 9 months of 2007. As of May 2008, there were over 8,400 C-TPAT members from the import trade community that had various roles in the supply chain.

The Importance of International Partnerships

To more effectively implement the components of its layered security strategy, CBP has worked to promote international partnerships to enhance security so that high-risk cargo can be identified before it arrives in the United States. For the CSI program, CBP has negotiated and entered into nonbinding, reciprocal arrangements with foreign governments, specifying the placement of CBP officials at foreign seaports and the exchange of information between CBP and foreign customs administrations. These arrangements allow participating foreign governments the opportunity to place their customs officials at U.S. seaports and request inspection of cargo containers departing from the United States that are bound for their respective countries. CBP also works with other customs organizations to enhance international supply chain security. For example, CBP has taken a lead role in working with foreign customs administrations and the WCO to establish and implement international risk-based management principles and standards, similar to those used in the CSI and C-TPAT programs, to improve the ability of member customs administrations to increase the security of the global supply chain while facilitating international trade. The member countries of the WCO, including the United States, adopted such risk-based principles and standards through the WCO Framework of Standards to Secure and Facilitate Global Trade (commonly referred to as the SAFE Framework), in June 2005.

The SAFE Port Act Requires a Pilot Program to Test the Feasibility of 100 Percent Scanning

To improve maritime container security, the SAFE Port Act was enacted in October 2006 and requires, among other things, that CBP conduct a pilot program to determine the feasibility of scanning 100 percent of U.S.-bound containers. It also specifies that the pilot should test integrated scanning systems that combine the use of radiation portal monitors and NII equipment, building upon CSI and the Megaports Initiative. To fulfill this and other requirements of the SAFE Port Act, CBP and DOE jointly announced the formation of SFI in December 2006. The first phase of SFI is the International Container Security project—commonly known as the

SFI pilot program.[10] The SFI pilot program tests the feasibility of 100 percent scanning of U.S.-bound container cargo at seven overseas seaports and involves the deployment of advanced cargo scanning equipment and an integrated examination system. The advanced cargo scanning equipment—NII and radiation detection equipment—produce data to indicate the presence of illicit nuclear and radiological material in containers. The integrated examination system then uses software to make this information available to CBP for analysis. According to CBP, it will review the scan data at the foreign seaport or at CBP's National Targeting Center–Cargo (NTCC) in the United States.[11] If the scanning equipment indicates a potential concern, both CSI and host government customs officials are to simultaneously receive an alert and the specific container is to be further inspected before it continues on to the United States.

As shown in table 1, under the SFI pilot program, three SFI seaports are to scan 100 percent of U.S.-bound container cargo that passes through those seaports, while the other four seaports are to deploy scanning equipment in a more limited capacity.

---

[10]The second phase of SFI is still in development. This phase involves the advance transmission of cargo information from importers and cargo carriers.

[11]According to CBP, the National Targeting Center (NTC) was established in response to the need for proactive targeting aimed at preventing acts of terror and to seize, deter, and disrupt terrorists and implements of terror. NTC originally combined both passenger and cargo targeting in one facility. It was later divided into NTCC and the National Targeting Center–Passenger. For purposes of this report, we use NTCC in our references since its mission is to support CBP cargo-targeting operations.

Table 1: Information on the Seven Foreign Seaports Participating in the SFI Pilot Program

SFI port	Deployment level when pilot operational	Testing date[a]	Operational date[b]	Volume of U.S.-bound containers, fiscal year 2006
Qasim, Pakistan	Full[c]	March 2007	October 12, 2007	2,058
Puerto Cortez, Honduras	Full[c]	April 2007	October 12, 2007	77,707
Southampton, UK	Full[c]	August 2007	October 12, 2007	31,780
Busan, South Korea	Limited[d]	April 2008 (projected)	To be determined	610,061
Salalah, Oman	Limited[d]	May 2008 (projected)	To be determined	81,333
Singapore	Limited[d]	June 2008 (projected)	To be determined	376,846
Hong Kong	Limited[d]	November 2007	January 2008	1,333,812

Source: U.S. Customs and Border Protection.

[a]Testing date is defined as the date when the scanning systems are in place and operational testing begins.

[b]Operational date is defined as the date when the SFI scanning data are transmitted successfully to the local central alarm station and to the CBP network in the United States.

[c]Fully operational seaports are to scan 100 percent of U.S.-bound container cargo under the SFI pilot program.

[d]Limited operation seaports are to scan less than 100 percent of U.S.-bound container cargo. For these seaports, CBP plans to conduct SFI operations at a reduced level, typically limited to one terminal in the port, such as Gamman Terminal in Busan.

As required by the SAFE Port Act, CBP was to issue a report in April 2008 on the lessons learned from the SFI pilot program and the need and feasibility of expanding the 100 percent scanning system to other CSI seaports, among other things.[12] As we prepared this statement, CBP had not yet issued this report. Every 6 months after the issuance of this report, CBP is to report on the status of full-scale deployment of the integrated scanning systems at foreign seaports to scan 100 percent of U.S.-bound cargo.

---

[12]6 U.S.C. § 981(d). The DHS Appropriations Act for fiscal year 2007, enacted shortly before the SAFE Port Act, also required a pilot program to test 100 percent scanning at three ports, and established similar, but not identical, requirements for the program. For example, the report to Congress on lessons learned is to include a plan and schedule to expand the scanning system developed under the pilot to other CSI ports rather than an assessment of the need and feasibility of such an expansion.

The SFI Pilot Program and 100 Percent Scanning Face a Number of Challenges

We identified challenges in nine areas that are related to the continuation of the SFI pilot program and the longer-term 100 percent scanning requirement: (1) workforce planning, (2) the lack of information about host government cargo examination systems,(3) measuring performance outcomes, (4) undefined resource responsibilities for the cost and labor for implementation, (5) logistical feasibility for scanning equipment and processes, (6) technological issues, (7) the use and ownership of scanning data, (8) a perceived disparity between 100 percent scanning and the risk management approach of CBP's international partners, and (9) potential requests for reciprocity from foreign governments.

Workforce Planning Will Be Critical to Success

In our prior work examining the CSI and C-TPAT programs, we reported that CBP faced challenges identifying an appropriate number of positions for the programs and finding enough qualified people to fill these positions.[13] For example, we reported in 2005 and again in 2008 that CBP's human capital plan did not systematically determine the optimal number of officers needed at each CSI seaport to carry out duties that require an overseas presence (such as coordinating with host government officials or witnessing the examinations they conduct) as opposed to duties that could be performed remotely in the United States (such as reviewing databases).[14] Determining optimal staffing levels is particularly important since CBP reports facing ongoing challenges identifying sufficient numbers of qualified employees to staff the program. For example, CBP officials reported that 9 qualified applicants applied for 40 permanent positions at CSI seaports. We also reported that according to CBP officials, to fill open CSI positions, officers have in some cases been deployed who have not received all required training. We recommended in April 2005 that CBP revise the CSI staffing model to consider (1) what functions need to be performed at CSI seaports and what can be performed in the United States, (2) the optimum levels of staff needed at CSI seaports to maximize

---

[13]For our prior recommendations and observations on C-TPAT's workforce challenges, see GAO, *Container Security: Expansion of Key Customs Programs Will Require Greater Attention to Critical Success Factors*, GAO-03-770 (Washington, D.C.: July 25, 2003). Also, see GAO, *Cargo Security: Partnership Program Grants Importers Reduced Scrutiny with Limited Assurance of Improved Security*, GAO-05-404 (Washington, D.C.: Mar. 11, 2005).

[14]GAO, *Container Security: A Flexible Staffing Model and Minimum Equipment Requirements Would Improve Overseas Targeting and Inspection Efforts*, GAO-05-557 (Washington, D.C.: Apr. 26, 2005) and GAO, *Supply Chain Security: Examinations of High-Risk Cargo at Foreign Seaports Have Increased, but Improved Data Collection and Performance Measures Are Needed*, GAO-08-187 (Washington, D.C.: Jan. 25, 2008).

the benefits of targeting and inspection activities in conjunction with host nation customs officials, and (3) the cost of locating targeters overseas at CSI seaports instead of in the United States.[15] CBP agreed with our recommendation on CSI's staffing model and said that modifications to the model would allow program objectives to be achieved in a more cost-effective manner. CBP said that it would evaluate the minimum level of staff needed at CSI seaports to maintain ongoing dialogue with host nation officials, as well as assess the staffing levels needed domestically to support CSI activities. However, as of January 2008, CBP's human capital plan did not systematically make these determinations.

The ability of the SFI pilot program—and by extension the 100 percent scanning requirement of the SAFE Port and 9/11 Acts—to operate effectively and enhance maritime container security depends, in part, on the success of CBP's ability to manage and deploy staff in a way that ensures that critical security functions are performed. Under the CSI program, CBP operated and conducted cargo container scanning at 58 foreign seaports as of January 2008; however, given that additional scanning equipment will be used in the SFI pilot program, and fulfilling the 100 percent scanning requirement will naturally increase the number of containers to be scanned at the more than 700 seaports that ship cargo to the United States, the SFI pilot program and 100 percent scanning requirement will generate an increased quantity of scan data. According to European customs officials, for there to be value added in these additional scans, the scan data must be reviewed. Therefore, in implementing the 100 percent scanning requirement, CBP will face staffing challenges because more CBP officers will be required to review and analyze these data from participating seaports.

CBP Generally Lacks Key Information on Host Government Examination Systems Because of Sovereignty Constraints

As we reported in January 2008, CBP does not systematically collect information on CSI host governments' examination equipment or processes.[16] We noted that CBP must respect the sovereignty of countries participating in CSI and, therefore, cannot require that a country use specific scanning equipment or follow a set of prescribed examination practices. Thus, while CBP has set minimum technical criteria to evaluate the quality and performance of equipment being considered for use at domestic seaports, it has no comparable standards for scanning equipment

---

[15]GAO-05-557.

[16]GAO-08-187.

used at foreign seaports. In addition, CBP officials stated that there are no plans to evaluate examination equipment at foreign seaports against the domestic criteria. CBP officials added, however, that the capabilities of scanning equipment are only one element for determining the effectiveness of examinations that take place at CSI seaports. It is better, in their view, to make assessments of the processes, personnel, and equipment that collectively constitute the host governments' entire examination systems. However, in January 2008, we reported that CBP does not gather this type of information and recommended that CBP, in collaboration with host government officials, improve the information gathered at each CSI port by (1) establishing general guidelines and technical criteria regarding the minimal capability and operating procedures for an examination system that can provide a basis for determining the reliability of examinations and related CSI activities; (2) systematically collecting data for that purpose; and (3) analyzing the data against the guidelines and technical criteria to determine what, if any, mitigating actions or incentives CBP should take to help ensure the desired level of security. CBP partially concurred with this recommendation in terms of improving the information gathered about host governments' examination systems. In particular, CBP agreed on the importance of an accepted examination process and noted that it continues to improve the information it gathers. CBP did not indicate that it would systematically pursue information on these host government examination systems. It did state that it was working through the WCO to address uniform technical standards for equipment. We reported that while CBP engaged with international trade groups to develop supply chain security requirements, these requirements do not specify particular equipment capabilities or examination practices.

Both the SAFE Port and 9/11 Acts require DHS to develop technical and operational standards for scanning systems; therefore, the challenges that CSI has faced in obtaining information about host governments' examination systems are relevant to the SFI pilot program and the 100

percent scanning requirement.[17] However, as noted earlier in this statement, the United States cannot compel foreign governments to use specific equipment for the SFI pilot program or the 100 percent scanning requirement, thus challenging CBP's ability to set and enforce standards. In addition, because CBP does not systematically collect information on the efficacy of host governments' examinations systems, it lacks reasonable assurance that these examinations could reliably detect and identify WMD unless it implements our January 2008 recommendation to determine actions to take to ensure the desired level of security. This is particularly important since currently, under CSI, most high-risk cargo containers examined at international seaports are not re-examined upon arrival at domestic seaports.

Measuring Performance, Particularly Outcomes, Will Be Difficult

In our reviews of the CSI and C-TPAT programs, we identified challenges with CBP's ability to measure program performance because of, among other things, the difficulty in determining whether these programs were achieving their desired result of increasing security for the United States.[18] In the past, we and the Office of Management and Budget (OMB) have acknowledged the difficulty in developing outcome-based performance measures for programs that aim to deter or prevent specific behaviors.[19] In the case of C-TPAT, we noted in our March 2005 and April 2008 reports that CBP had not developed a comprehensive set of performance measures and indicators for the programs, such as outcome-based

---

[17]The SAFE Port Act directs DHS to (1) establish technical criteria and standard operating procedures for the use of NII equipment at CSI seaports and (2) require CSI seaports to operate the equipment in accordance with the criteria and operating procedures established by DHS. The act states that the technical criteria and operating procedures should not be designed to conflict with the sovereignty of host countries, but it did not address host government s' sovereignty related to requirements for CSI seaports to operate the equipment in accordance with the criteria and procedures. The 9/11 Act directs DHS to establish technological and operational standards for systems to conduct 100 percent scanning of containers and to ensure that this and other actions taken to implement 100 percent scanning are consistent with the United States' international obligations.

[18]For more information on the difficulty that CSI has had in developing outcome-based performance measures and in measuring the deterrence effect of the program, see GAO-08-187.

[19]According to OMB, outcome measures describe the intended result of carrying out a program or activity. For example, for a tornado warning system, a measure of outcome could be the number of lives saved and amount of property damage averted.

measures, to monitor the status of program goals.[20] A senior CBP official stated that developing these measures for C-TPAT, as well as other CBP programs, has been difficult because CBP lacks the data necessary to determine whether a program has prevented or deterred terrorist activity. We recommended that CBP complete the development of performance measures, to include outcome-based measures and performance targets, to track the program's status in meeting its strategic goals. CBP agreed with our recommendation on developing performance measures, and had developed initial measures relating to membership, inspection percentages, and validation effectiveness. However, as we reported in April 2008, CBP had yet to develop measures that assess C-TPAT's progress toward achieving its strategic goal to ensure that its members improve the security of their supply chains pursuant to C-TPAT security criteria.

Given that, as with CSI and C-TPAT, the purpose of the SFI pilot program and the 100 percent scanning provision is to increase security for the United States, the same challenges related to defining and measuring performance could also apply to the SFI pilot program and the 100 percent scanning provision. Without outcome-based performance measures, it will be difficult for CBP and DHS managers and Congress to effectively provide program oversight and determine whether 100 percent scanning achieves the desired result—namely increased security for the United States.

Resource Responsibilities for Implementing 100 Percent Scanning Have Not Been Determined

While CBP and DOE have purchased security equipment for foreign seaports participating in the SFI pilot program, it is unclear who will pay for additional resources—including increased staff, equipment, and infrastructure—and who will be responsible for operating and maintaining the equipment used for the statutory requirement to scan 100 percent of U.S.-bound cargo containers at foreign seaports. According to CBP, the average cost of initiating operations at CSI seaports was about $395,000 in 2004 and $227,000 in 2005.[21] By comparison, CBP reported that it and DOE

---

[20]GAO-05-404 and GAO, *Supply Chain Security: U.S. Customs and Border Protection Has Enhanced Its Partnership with Import Trade Sectors, but Challenges Remain in Verifying Security Practices*, GAO-08-240 (Washington, D.C.: Apr. 25, 2008).

[21]CBP had used the average cost per CSI port to achieve operational status as a performance measure. However, agency officials told us that they stopped using the measure in 2006 because at that point, the majority of CSI seaports had already become operational and because there were too many variables beyond CBP's control in the calculation.

have spent approximately $60 million, collectively, to implement 100 percent scanning at the three foreign seaports fully participating in the SFI pilot program.[22] The SAFE Port and 9/11 Acts did not require nor prohibit the federal government from bearing the cost of scanning 100 percent of U.S.-bound cargo containers.[23] According to customs officials in the UK who participated in the SFI pilot program at the Port of Southampton, resource issues will inhibit their ability to implement permanently the 100 percent scanning requirement. For example, these customs officials commented that to accommodate the SFI pilot program at the Port of Southampton, existing customs staff had to be reallocated from other functions. The UK customs officials further stated that this reallocation was feasible for the 6-month pilot program, but it would not be feasible on a permanent basis. Similarly, a customs official from another country with whom we met told us that while his country does not scan 100 percent of exports, its customs service has increased its focus on examining more exported container cargo, and this shift has led to a 50 percent increase in personnel.

European government officials expressed concerns regarding the cost of equipment to meet the 100 percent scanning requirement, as well as the cost of additional personnel necessary to operate the new scanning equipment, view and transmit the images to the United States, and resolve false alarms. Though CBP and DOE have provided the bulk of equipment and other infrastructure necessary to implement the SFI pilot program, they have also benefited from host nation officials and port operators willing to provide, to varying degrees, the resources associated with additional staffing, alarm response protocols, construction, and other infrastructure upgrades. However, according to CBP, there is no assurance that this kind of mutual support is either sustainable in the long term or exists in all countries or at all seaports that export goods to the United States.

---

[22]Under the SFI pilot program, three seaports will scan 100 percent of U.S.-bound container cargo while the remaining four will scan less than 100 percent of U.S.-bound container cargo. CBP will conduct a reduced level of SFI operations at these four seaports, typically limited to one terminal in the port, such as Gamman Terminal in Busan or the Brani Terminal in Singapore.

[23]The Congressional Budget Office assumed in its analysis of estimates for implementing this requirement that the cost of acquiring, installing, and maintaining systems necessary to comply with the 100 percent scanning requirement would be borne by foreign seaports so that they could maintain trade with the United States.

Logistical Feasibility Could Vary by Seaport

Logistical issues, such as crowded terminal facilities and the variety of transportation modes at terminals, could present challenges to the SFI pilot program and implementation of 100 percent scanning. Seaports may lack the space necessary to install additional scanning equipment needed to comply with the 100 percent scanning requirement. For example, we observed that scanning equipment at some seaports is located several miles away from where cargo containers are stored, which could add to the time and cost requirements for scanning these containers. Similarly, while some seaports have natural bottlenecks that allow for container scanning equipment to be placed such that all outgoing containers would have to pass through the equipment, not all seaports are so configured, and the potential exists for containers to be shipped to the United States without being scanned. Another potential logistical vulnerability is related to the transportation modes by which cargo containers arrive and pass through seaports. For example, cargo containers that arrive at a seaport by truck or rail are generally easier to isolate, whereas transshipment cargo containers—those moved from one vessel to another—are only available for scanning for a comparatively short time and may be more difficult to access.[24] For example, UK customs officials stated that it was not possible to route transshipment containers that arrived by sea through the SFI equipment. As a consequence, the scanning of transshipment containers has not begun at the Port of Southampton. CBP and European customs officials evaluating the SFI pilot program stated that while the pilot has been comparatively successful at relatively lower-volume seaports, such as Southampton, implementing 100 percent scanning would be significantly more challenging at seaports with a higher volume of cargo container traffic or greater percentages of transshipment cargo containers.

Technology and Compatibility Issues Could Present Challenges

The SFI pilot program currently faces technology challenges, such as mechanical breakdowns of scanning equipment because of environmental factors, inadequate infrastructure for the transmission of electronic information, and difficulties in integrating different generations of scanning equipment. Environmental conditions at some sites can compromise the effectiveness of radiation detection equipment used in the SFI pilot program. For example, two of the three seaports fully participating in the SFI pilot program experienced weather-related mechanical breakdowns of scanning equipment. Specifically, at the Port of

---

[24]Similarly, it may be difficult to scan cargo containers that remain on board a vessel as it passes through a foreign seaport.

Southampton, a piece of radiation scanning equipment failed because of rainy conditions and had to be replaced, resulting in 2 weeks of diminished scanning capabilities. Additionally, Port Qasim in Pakistan has experienced difficulties with scanning equipment because of the extreme heat. Because of the range of climates at the more than 700 other international seaports that ship cargo to the United States, these types of technological challenges could be experienced elsewhere.

The limited infrastructure at some foreign seaports poses a challenge to the installation and operation of radiation detection equipment, as well as to the electronic transmission of scan data to CBP officers in the United States. Many seaports are located in remote areas that often do not have access to reliable supplies of electricity or infrastructure needed to operate radiation portal monitors and associated communication systems. For example, at Port Salalah in Oman, a key challenge has been the cost of data transmission, because of low bandwidth communications infrastructure, to send data to the CBP officers who review the scans. Prior to SFI, the CSI office in Port Salalah already used transmission technology that cost annually about 10 times that of other SFI seaports. To participate in SFI, CBP originally planned to procure additional technology costing approximately $1.5 million each year to transmit the SFI data from Port Salalah. However, CBP was able to devise a lower-cost option that involved sharing communications infrastructure with existing CSI operations at the port because U.S.-bound container volume is relatively low in Oman. While CBP reported that this solution could keep data transmission costs down at other low-volume seaports, it is unclear whether this could be accomplished at higher-volume seaports. In addition to compatibility with existing infrastructure, SFI seaports have experienced compatibility issues with equipment from different generations. According to CBP, there are various manufacturers of equipment used at CSI seaports, and although the integration of equipment and technology at SFI pilot program seaports has generally been successful, it has not been without challenges. For example, at Port Salalah integration of a large number of new pieces of equipment by new vendors caused operational delays.

Use and Ownership of Data Have Not Been Determined

The legislation that mandated the SFI pilot program and 100 percent scanning does not specify who will have the authority or responsibility to collect, maintain, disseminate, view, or analyze scan data collected on cargo containers bound for the United States. While the SAFE Port Act specifies that SFI pilot program scan data should be available for review by U.S. government officials, neither it nor the 9/11 Act establishes who is

to be responsible for managing the data collected at foreign seaports. Other unresolved questions include ownership of data, how proprietary information is to be treated, and how privacy concerns are to be addressed. For example, officials from UK Customs stated that UK privacy legislation barred sharing information on cargo containers with CBP unless a specific risk was associated with the containers. To comply with UK laws, while still allowing CBP to obtain scan data on container cargo, UK Customs and CBP negotiated working practices to allow CBP to use its own handheld radiation scanning devices to determine whether cargo containers emitted radiation, but this was only for purposes of the SFI pilot program. According to the European Commission, for 100 percent scanning to go forward, the transfer of sensitive information would have to take place systematically, which would only be possible if a new international agreement between the United States and the European Union (EU) was enacted. In the absence of agreements with the host governments at the more than 700 seaports that ship cargo to the United States, access to data on the results of container scans could be difficult to ensure.

CBP International Partners Have Stated That 100 Percent Scanning Is Inconsistent with Widely Accepted Risk Management Practices

Some of CBP's international partners, including foreign customs services, port operators, trade groups, and international organizations, have stated that the 100 percent scanning requirement is inconsistent with widely accepted risk management principles, and some governments have expressed to DHS and Congress that 100 percent scanning is not consistent with these principles as contained in the SAFE Framework.[25] Similarly, some European customs officials have told us that the 100 percent scanning requirement is in contrast to the risk-based strategy behind CSI and C-TPAT, and the WCO has stated that implementation of 100 percent scanning would be "tantamount to abandonment of risk management." In addition, some of CBP's international partners have stated that the requirement could potentially reduce security. For example, the European Commission noted that there has been no demonstration that 100 percent scanning is a better means for enhancing security than current risk-based methods. Further, CBP officials have told us that the 100 percent scanning requirement may be a disincentive

[25]Currently, the CSI program employs a risk management approach to identify cargo containers at high risk of containing WMD for scanning with nonintrusive imaging equipment and possible physical inspection before being placed on vessels bound for the United States. In contrast, the 100 percent scanning approach subjects to all U.S.-bound cargo containers to scanning with nonintrusive imaging equipment regardless of risk.

foreign countries or companies to adopt risk-based security initiatives, such as CSI, C-TPAT, or the SAFE Framework. Similarly, in April 2008, the Association of German Seaport Operators released a position paper that stated that implementing the 100 percent scanning requirement would undermine mutual, already achieved, security successes and hinder maritime security by depriving resources from areas that present a more significant threat and warrant closer scrutiny.

100 Percent Scanning Could Lead to Calls for Reciprocity and Be Viewed as a Barrier to Trade

Implementation of the 100 percent scanning requirement could result in calls for reciprocity of scanning activities from foreign officials and be viewed as a barrier to trade. European customs officials, as well as officials from the WCO, have objected to the unilateral nature of the 100 percent scanning requirement, noting that this requirement contrasts with prior multilateral efforts CBP has implemented. Similarly, the Association of German Port Operators published a position paper stating that the legislative requirement inherently ignores the international character of global maritime trade and is a classic example of an issue that should have been discussed with and passed by the legislative body of an international organization, such as the WCO. In its report on the SFI pilot program, the European Commission expressed concern that it would be difficult for EU customs administrations to implement a measure designed to protect the United States that would divert resources away from strengthening EU security. Customs officials from Europe, as well as members of the World Shipping Council and the Federation of European Private Port Operators, indicated that should implementation of the 100 percent scanning requirement be pursued, foreign governments could establish similar requirements for the United States, forcing U.S. export cargo containers to undergo scanning before being loaded at U.S. seaports. According to CBP officials, the SFI pilot program, as an extension of CSI, allows foreign officials to ask the United States to reciprocate and scan 100 percent of cargo containers bound for their respective countries. CBP officials told us that CBP does not have the personnel, equipment, or space to scan 100 percent of cargo containers being exported to other countries, should it be requested to do so.

In addition to the issue of reciprocity, European and Asian government officials, as well as officials from the WCO, have stated that 100 percent scanning could constitute a barrier to trade. For example, the Association of German Seaport Operators stated that the 100 percent mandate would amount to an unfair nontariff trade barrier between the United States and foreign seaports. Similarly, senior officials from the European Commission expressed concern that a 100 percent scanning requirement placed on

foreign seaports could disrupt the international trading system.[26] Further, the WCO passed a unanimous resolution in December 2007, expressing concern that implementation of 100 percent scanning would be detrimental to world trade and could result in unreasonable delays, port congestion, and international trading difficulties.[27]

Mr. Chairman and members of the subcommittee, this concludes my prepared statement. We look forward to working with CBP and the Congress to track progress of the SFI pilot and to identify the way forward for supply chain security. I would be happy to respond to any questions you may have.

Contacts and Acknowledgments

For information about this testimony, please contact Stephen L. Caldwell, Director, Homeland Security and Justice Issues, at (202) 512-9610 or caldwells@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this statement. This testimony was prepared under the direction of Christopher Conrad, Assistant Director. Other individuals making key contributions to this testimony include Frances Cook, Stephanie Fain, Emily Hanawalt, Valerie Kasindi, Robert Rivas, and Sally Williamson.

---

[26]The European Commission is the EU's policy-making and executive engine. The commission is composed of 27 commissioners, one from each member state. Among its many powers, the commission proposes legislation for approval by the EU Council and European Parliament in matters relating to economic integration, ensures that EU laws are applied and upheld throughout the EU, implements the budget, and represents the European community in international trade negotiations.

[27]The United States abstained from the vote.

Related GAO Products

Supply Chain Security: U.S. Customs and Border Protection Has Enhanced Its Partnership with Import Trade Sectors, but Challenges Remain in Verifying Security Practices. GAO-08-240. Washington, D.C.: April 25, 2008.

Supply Chain Security: Examinations of High-Risk Cargo at Foreign Seaports Have Increased, but Improved Data Collection and Performance Measures Are Needed. GAO-08-187. Washington, D.C.: January 25, 2008.

Maritime Security: The SAFE Port Act: Status and Implementation One Year Later. GAO-08-126T. Washington, D.C.: October 30, 2007.

Maritime Security: One Year Later: A Progress Report on the SAFE Port Act. GAO-08-171T. Washington, D.C.: October 16, 2007.

Maritime Security: The SAFE Port Act and Efforts to Secure Our Nation's Seaports. GAO-08-86T. Washington, D.C.: October 4, 2007.

Combating Nuclear Smuggling: Additional Actions Needed to Ensure Adequate Testing of Next Generation Radiation Detection Equipment. GAO-07-1247T. Washington, D.C.: September 18, 2007.

Maritime Security: Observations on Selected Aspects of the SAFE Port Act. GAO-07-754T. Washington, D.C.: April 26, 2007.

Customs Revenue: Customs and Border Protection Needs to Improve Workforce Planning and Accountability. GAO-07-529. Washington, D.C.: April 12, 2007.

Cargo Container Inspections: Preliminary Observations on the Status of Efforts to Improve the Automated Targeting System. GAO-06-591T. Washington, D.C.: March 30, 2006.

Combating Nuclear Smuggling: Efforts to Deploy Radiation Detection Equipment in the United States and in Other Countries. GAO-05-840T. Washington, D.C.: June 21, 2005.

Homeland Security: Key Cargo Security Programs Can Be Improved. GAO-05-466T. Washington, D.C.: May 26, 2005.

Maritime Security: Enhancements Made, but Implementation and Sustainability Remain Key Challenges. GAO-05-448T. Washington, D.C.: May 17, 2005.

Container Security: A Flexible Staffing Model and Minimum Equipment Requirements Would Improve Overseas Targeting and Inspection Efforts. GAO-05-557. Washington, D.C.: April 26, 2005.

Preventing Nuclear Smuggling: DOE Has Made Limited Progress in Installing Radiation Detection Equipment at Highest Priority Foreign Seaports. GAO-05-375. Washington, D.C.: March 31, 2005.

Cargo Security: Partnership Program Grants Importers Reduced Scrutiny with Limited Assurance of Improved Security. GAO-05-404. Washington, D.C.: March 11, 2005.

Homeland Security: Process for Reporting Lessons Learned from Seaport Exercises Needs Further Attention. GAO-05-170. Washington, D.C.: January 14, 2005.

Port Security: Better Planning Needed to Develop and Operate Maritime Worker Identification Card Program. GAO-05-106. Washington, D.C.: December 10, 2004.

Maritime Security: Substantial Work Remains to Translate New Planning Requirements into Effective Port Security. GAO-04-838. Washington, D.C.: June 30, 2004.

Homeland Security: Summary of Challenges Faced in Targeting Oceangoing Cargo Containers for Inspection. GAO-04-557T. Washington, D.C.: March 31, 2004.

Container Security: Expansion of Key Customs Programs Will Require Greater Attention to Critical Success Factors. GAO-03-770. Washington, D.C.: July 25, 2003.