

March 2006

UNDECLARED
HAZARDOUS
MATERIALS

New DOT Efforts May
Provide Additional
Information on
Undeclared Shipments



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Abbreviations

| | |
|------------|---|
| DHS | Department of Homeland Security |
| DOT | Department of Transportation |
| Hazmat | hazardous materials |
| SAFETEA-LU | Safe Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users |

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United States Government Accountability Office
Washington, D.C. 20548

March 29, 2006

The Honorable Ted Stevens
Chairman
The Honorable Daniel K. Inouye
Co-Chairman
Committee on Commerce, Science and Transportation
United States Senate

The Honorable Don Young
Chairman
The Honorable James L. Oberstar
Ranking Democratic Member
Committee on Transportation and Infrastructure
House of Representatives

More than 3 billion tons of regulated hazardous materials (hazmat)—including explosive, poisonous, corrosive, flammable, and radioactive materials—are transported in the United States each year. When these materials are properly packaged, labeled, and stowed, they can be transported safely, but when they are not, they can pose significant threats to transportation workers, emergency responders, and the general public because of the potential for accidents and incidents. Moreover, since the terrorist attacks of September 11, 2001, the security of such shipments, especially those that can be used as weapons of mass destruction, has attracted the attention of the transportation community, government officials, and emergency responders. In the wrong hands, hazardous materials could pose a significant security threat, and it is likely that terrorists who seek to use hazardous materials to harm Americans would move those materials as undeclared shipments.¹

Federal officials are aware that undeclared shipments of hazmat occur and can have serious consequences.² Federal hazmat experts believe that the most frequent explanations for undeclared shipments are (1) shipper's lack

¹We previously reported on undeclared hazmat related to air transportation in 2003. For more information, see GAO, *Aviation Safety: Undeclared Air Shipments of Dangerous Goods and DOT's Enforcement Approach*, [GAO-03-22](#) (Washington, D.C.: Jan. 10, 2003).

²Undeclared hazardous material refers to a material that is subject to hazard communication requirements and offered for transportation in commerce without any visible indication that a hazardous material is present.

of knowledge—an unawareness or misunderstanding of the requirements for properly declaring and transporting hazmat—and (2) economic—an attempt to avoid additional costs that may be associated with shipping regulated hazmat, including special placarding, packaging, additional training, and insurance. To the extent that such undeclared shipments are discovered, the discovery typically occurs in one of the following ways: as a result of an accident or incident, during a routine cargo inspection, or when a tip is provided to officials.

Two federal departments are involved in discovering undeclared hazmat entering the United States—Homeland Security (DHS) and Transportation (DOT). DHS—primarily through the Coast Guard and Customs and Border Protection—seeks to ensure the security of hazmat by reducing threats to transportation infrastructure and operations. DOT’s Pipeline and Hazardous Materials Safety Administration has the primary responsibility for regulating the safe and secure transportation of hazmat, and other modal administrations—most notably the Federal Railroad Administration, Federal Aviation Administration, and Federal Motor Carrier Safety Administration—are responsible for enforcing compliance with regulations once hazmat has entered the U.S. transportation system.

A good understanding of the frequency and impact of undeclared hazmat shipments is essential to identifying the extent of the problem and developing regulations and programs to mitigate the risk involved. The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) requires that we review existing options and determine additional options for discovering the amount of undeclared shipments of hazardous materials entering the United States.³ To respond to this mandate, this report (1) describes the current federal approach for discovering the amount of undeclared hazmat entering the United States, (2) identifies efforts under way to enhance the existing approach, and (3) determines whether any additional options could be employed.

To address these objectives, we interviewed and obtained information from a wide range of federal agencies and other sources, including the Pipeline and Hazardous Materials Safety Administration, Federal Railroad Administration, Federal Aviation Administration, Federal Motor Carrier Safety Administration, and the Office of the Secretary of Transportation within DOT. We also contacted the Coast Guard and Customs and Border

³Pub. L. 109-59, § 7130, 119 Stat. 1144, 1910.

Protection within DHS. We reviewed federal hazmat law and regulations, prior studies on the transportation of hazmat, and DOT hazmat incident reports for 2005. We also observed hazmat inspections and multiagency cargo and truck inspections. We conducted our work from October 2005 through January 2006 in accordance with generally accepted government auditing standards. On January 25, 2006, we briefed your staff on the results of our work. Appendix II contains the materials we presented at that time.

Results in Brief

The federal government has no specific program aimed at discovering the amount of undeclared hazmat entering the United States; undeclared hazmat is discovered mainly through inspection and regulatory efforts directed primarily at imported cargo. The two main departments involved in these efforts—DHS and DOT—play complementary roles. DHS finds undeclared hazmat through various programs and technologies for screening cargo entering the United States. For example, DHS has a container security initiative in which DHS staff work within host countries to prescreen high-risk containers, as well as use X-ray technology to screen trucks and containers as they enter the United States. DOT, on the other hand, finds undeclared hazmat while enforcing compliance with hazmat regulations—through inspections and penalties—for shipments that are in the nation’s transportation system. DOT officials inspect hazmat cargo to ensure proper paperwork, marking, labeling, and packaging; provide technical assistance intended to enhance the security of hazmat carriers; and issue security planning and training requirements for hazmat employees. Under this approach, however, information about the amount of undeclared hazmat entering the United States is limited. Neither DHS nor DOT could provide data about the amount of undeclared hazmat entering or discovered entering the country, even though their subordinate agencies maintain inspection databases.⁴

DOT has two new efforts under way that officials expect will enhance the current approach for discovering undeclared hazmat entering the United States:

⁴According to DOT officials, DOT and its modal administrations are working with Customs and Border Protection and other federal agencies to create a single federal database for all commercial international trade and transportation transactions requiring review or other federal action. This data system could provide more timely information that could be used to monitor undeclared hazmat entering the United States.

-
- Under SAFETEA-LU, DOT received enhanced authority to discover hidden shipments of hazmat. DOT expects to complete the rule-making process for implementing this expanded authority in late 2006, but the effective date is uncertain.⁵ The new authority allows DOT inspectors to open and inspect cargo when they have “an objectively reasonable and articulable belief that the package may contain a hazardous material.” Previously, they could not generally open and inspect packages without a warrant or the shipper’s consent.
 - In an attempt to quantify undeclared hazmat incidents and discoveries, DOT now requires individuals who discover undeclared hazmat in transportation to self-report the discovery. To implement this requirement, which began on January 1, 2005, DOT revised its hazardous materials incident reporting form (Form 5800.1).⁶ Data collected through this form can help in defining the extent of the problem and in developing programs to mitigate the risk of undeclared hazmat. Approximately 1,000 undeclared hazmat incidents were reported in 2005, with 70 of those involving undeclared shipments entering the United States.⁷

Although additional options exist for discovering undeclared hazmat entering the United States, each additional option, such as increasing the scope and frequency of inspections, poses costs that would need to be evaluated within the context of (1) the likely benefits of the additional efforts and (2) the comparative risks posed by undeclared hazmat relative to other types of threats. At this time, however, data for evaluating

⁵In the past, DOT has also sought authority to randomly inspect cargo at Customs and Border Protection ports of entry in order to determine the extent to which undeclared hazmat is being offered for transportation in commerce. DOT officials reported that this authority was sought because such inspections have historically been conducted in conjunction with the Coast Guard, but far fewer are now being done due to the additional security demands on the Coast Guard. According to DOT officials, there are currently no plans to further pursue this authority. DOT will instead focus on implementing the expanded inspection authority granted in SAFETEA-LU.

⁶The hazardous materials incident report gathers information on incidents that occur during transportation, including hazmat releases and their consequences. DOT uses this information to identify trends and provide basic program performance measures. These reports must be submitted within 30 days of the incident and may be submitted by mail, fax, or electronically. DOT performs some cross-checks of forms submitted electronically to ensure the logic of the responses.

⁷The other reported undeclared hazmat incidents were not discovered in shipments entering the United States.

additional options and costs is limited. There may be ways to utilize the inspection data currently collected by DOT's modal administrations and DHS agencies to provide additional information about the amount of undeclared hazmat entering the United States. However, according to DOT and DHS officials, the inspection data currently collected and reported is not designed to identify discoveries of undeclared hazmat. For example, data recorded by the Federal Motor Carrier Safety Administration includes such violations as "no placards/markings when required" or "no shipping papers"; while these may indicate the presence of undeclared hazmat, there is no violation category or data collected specific to discoveries of undeclared hazmat. Finally, DOT has recently revised its data collection tool and received new inspection authority, and more time is needed to observe and evaluate the impacts of these efforts on discovering the amount of undeclared hazmat entering the United States before pursuing additional options.

We requested comments on a draft of this report from DOT and DHS. DOT offered a number of technical comments that were incorporated, as appropriate. DHS did not provide comments on this report.

We are sending copies of this report to committees with jurisdiction over the transportation of hazardous materials, the Secretary of Homeland Security, and the Secretary of Transportation. We will also make copies available to others on request. In addition, the report is available at no charge on the GAO Web site at <http://www.gao.gov>.

If you or your staff have any questions about this report, please contact me at (202) 512-8984 or heckerj@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page

of this report. Key contributors to this report include Randall Williamson, Assistant Director; Heather MacLeod; Stan Stenersen; Friendly Vang-Johnson; and Pamela Vines.

A handwritten signature in black ink, reading "JayEtta Z. Hecker". The signature is fluid and cursive, with a long horizontal stroke at the end.

JayEtta Z. Hecker
Director, Physical Infrastructure Issues

Review of Undeclared Hazmat Entering the United States



Undeclared Hazmat Entering the United States

Briefing for the

Committee on Commerce, Science, and Transportation
U.S. Senate and the

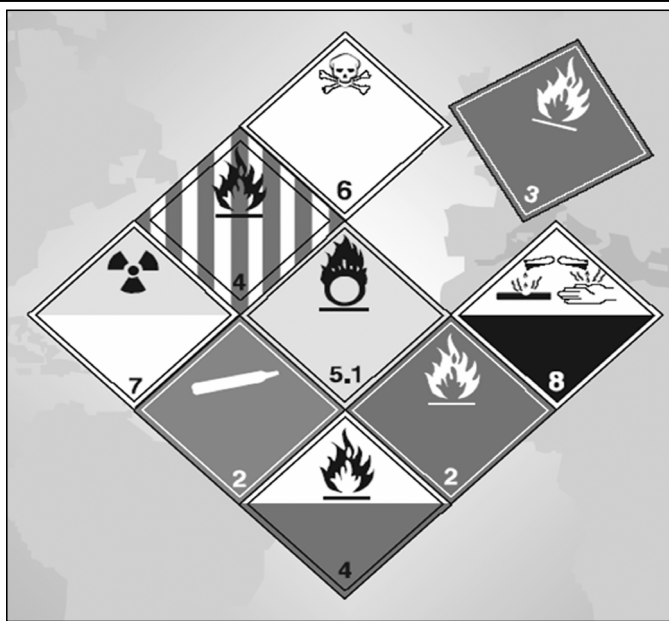
Committee on Transportation and Infrastructure
House of Representatives

January 2006



Overview

- Introduction
- Mandate and objectives
- Scope and methodology
- Background
- Findings





Introduction

Each year, an estimated 3 billion tons of regulated hazmat are transported in the U.S. Under federal law, these materials must be properly declared, packaged, and labeled. In addition, federal officials know that undeclared shipments of hazmat also occur, either out of shippers' lack of knowledge or economic motivations.

Shipments of undeclared hazardous materials—materials not properly packaged, labeled, and otherwise identified as hazardous—pose a serious safety and security concern for transportation workers, emergency responders, and the general public should an accident or incident occur.

Hazmat shipments can originate outside as well as inside the U.S. DOT officials report that since the terrorist attacks of September 11, 2001, the security of such shipments, especially those that can be used as weapons of mass destruction, has attracted the attention of the transportation community, government officials, and emergency responders.



Undeclared hazmat mandate (P.L. 109-59)

SEC. 7130. DETERMINING AMOUNT OF UNDECLARED SHIPMENTS OF HAZARDOUS MATERIALS ENTERING THE UNITED STATES.

(a) **STUDY.**—The Comptroller General shall review existing options and determine additional options for discovering the amount of undeclared shipments of hazardous materials (as defined in section 5101 of title 49, United States Code) entering the United States.

(b) **REPORT.**—Not later than 1 year after the date of enactment of this Act, the Comptroller General shall transmit to the Committee on Transportation and Infrastructure of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate a report on the results of the study.



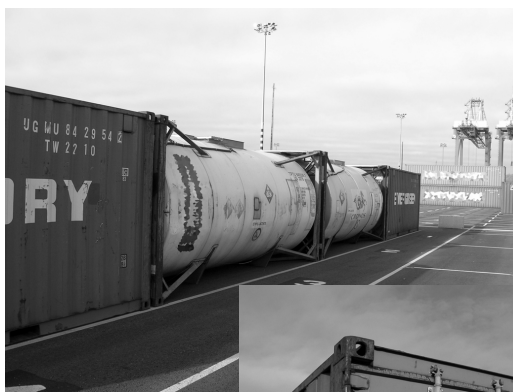
Reporting objectives

1. Describe the current approach for discovering the amount of undeclared hazmat entering the U.S.;
 2. Identify efforts currently under way to enhance the existing approach; and
 3. Determine whether any additional options could be employed.
-



Scope and methodology

- Interviewed DOT and DHS officials
- Analyzed the results of studies on hazmat transportation
- Reviewed literature and hazmat laws and regulations
- Analyzed DOT hazmat incident reports for 2005
- Observed field inspections by federal agencies
- Conducted our review according to generally accepted government auditing standards



Source: GAO.



DOT uses a United Nations classification system to divide all hazmat into nine hazard classes

| Hazard class | Description | Example material |
|--------------|---|----------------------|
| Class 1 | Explosives | Fireworks |
| Class 2 | Gases | Propane |
| Class 3 | Flammable liquids | Paint |
| Class 4 | Flammable solids | Safety matches |
| Class 5 | Oxidizers and organic peroxides | Ammonium nitrate |
| Class 6 | Toxic materials and infectious substances | Pesticides |
| Class 7 | Radioactive materials | Uranium hexafluoride |
| Class 8 | Corrosive materials | Batteries |
| Class 9 | Miscellaneous dangerous goods | Asbestos |

Source: GAO.

- DOT regulates the transportation of all hazmat under the Hazardous Materials Transportation Act of 1975 (P.L. 93-633 and subsequent amendments) and helps ensure that U.S. regulations are harmonized with international regulations.
- DOT classifies individual materials by type of hazard, but not necessarily by relative degree of hazard.



Four key components to the system of hazard communication involving hazmat shipments

| Component | Description |
|-----------------|---|
| Shipping papers | The shipping document contains information to identify the hazard of the materials that can be used in the mitigation of an incident. Shipping documents are kept in the motor vehicle, in a holder on a ship, or by an aircraft pilot or train crew member. |
| Labeling | Additional package labeling is required for certain materials that are explosive, poisonous, and infectious. Labels must be placed in a clearly visible manner on the hazmat packaging. |
| Marking | Markings provide additional information for certain bulk commodities and other materials such as materials poisonous by inhalation, marine pollutants, and elevated temperature materials. Application of these markings varies according to the volume or class of the hazmat shipment. At a minimum, markings are required on two opposing sides of the vehicle or container. |
| Placards | The primary function of placards is to provide initial warning information in the event of an incident involving a hazmat shipment. Placards must be placed on both ends and both sides of trucks, railcars, and intermodal containers that contain hazmat. |



Federal regulations define undeclared hazmat

Undeclared hazardous material means a hazardous material that is:¹

(1) Subject to any of the hazard communication requirements in subparts C (Shipping Papers), D (Marking), E (Labeling), and F (Placarding) of Part 172 of this subchapter, or an alternative marking requirement in Part 173 of this subchapter (such as §173.4(a)(10) and 173.6(c)); and

(2) offered for transportation in commerce without any visible indication to the person accepting the hazardous material for transportation that a hazardous material is present, on either an accompanying shipping document, or the outside of a transport vehicle, freight container, or package.

¹49 CFR § 171.8.



Undeclared hazmat shipments occur for two main reasons, according to officials

- Lack of knowledge: Domestic and foreign shippers may be unfamiliar with hazmat regulations and laws.
 - *This generally occurs with smaller or infrequent shippers of hazmat.*
- Economics: Shippers may not declare hazmat to avoid additional costs.
 - *This generally occurs because declared hazmat shipments require special placarding, packaging, additional training, carrier surcharges, and insurance.*



Two key federal departments are involved in discovering undeclared hazmat

| Department | Homeland Security (DHS) | Transportation (DOT) |
|------------------|--|--|
| Role | Seeks to ensure the security of hazardous materials by reducing threats to transportation infrastructure and operations. | Regulates the safe and secure transportation of hazardous materials. |
| Responsibilities | Screens cargo entering the U.S. and verifies that hazmat is clearly marked and labeled as it enters the U.S. | Promulgates and enforces hazmat transportation laws and regulations. |

Source: GAO.



Key DHS agencies involved in discovering undeclared hazmat

U.S. Coast Guard (CG)

Ensures maritime safety, security, and environmental protection on both inland and ocean waters. CG is responsible for enforcing DOT hazmat regulations in the maritime sector.

U.S. Customs and Border Protection (CBP)

Secures U.S. borders while facilitating the legitimate flow of people and goods. CBP is responsible for screening cargo, prior to its entry into the U.S.

Source: GAO.



Key DOT agencies involved in discovering undeclared hazmat

| | | | |
|--|--|---|---|
| <p>Pipeline and Hazardous Materials Safety Administration (PHMSA)</p> <p>Promulgates and implements federal laws governing hazmat transportation for all modes.</p> | <p>Federal Railroad Administration (FRA)</p> <p>Promulgates and enforces railroad safety regulations.</p> | <p>Federal Aviation Administration (FAA)</p> <p>Regulates civil aviation and is responsible for enforcing compliance with regulations for hazmat shipments by air.</p> | <p>Federal Motor Carrier Safety Administration (FMCSA)</p> <p>Implements legislation and enforces regulatory programs pertaining to large trucks and motor carriers.</p> |
|--|--|---|---|

Each of the DOT agencies above enforces federal hazmat law and DOT hazardous materials regulations.

Source: GAO.



Objective 1: Current approach

What is the current approach for discovering the amount of undeclared hazmat entering the U.S.?

- The federal government has no specific program aimed at discovering undeclared hazmat entering the U.S., but inspection and detection efforts directed generally at imported cargo can lead to its discovery.
 - *DHS discovers undeclared hazmat through its numerous programs and technologies that screen imported cargo.*
 - *DOT finds undeclared hazmat through its efforts to ensure the safe transportation of cargo within the U.S.*
- Under the current approach, information about the amount of undeclared hazmat entering the U.S. is limited.



Objective 1: Current approach

Various DHS programs may help to discover undeclared hazmat

| Program or technology ^a | Description |
|--|---|
| Advanced electronic cargo manifest | Mandatory submission of cargo manifest data; time frames vary by mode |
| Nonintrusive inspection (NII) technologies | These include the Vehicle and Cargo Inspection System (VACIS) and truck X-ray systems |
| Container security initiative (CSI) | CBP officers collaborate with host country customs officers to prescreen high-risk containers |
| Automated targeting system | Assigns risk scores to cargo; certain scores flag cargo for human inspection |
| Known shipper program | Air shipments from unknown sources are more closely scrutinized |

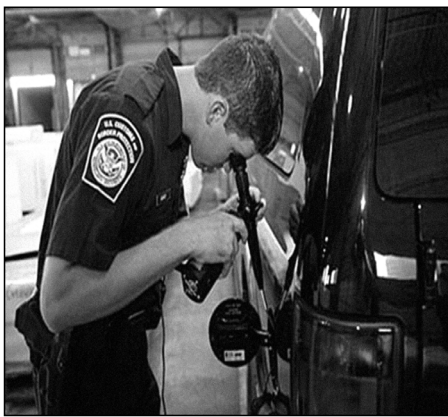
^aNone of these efforts or technologies was designed specifically to discover undeclared hazmat.

Source: DHS.



Objective 1: Current approach

DHS inspection technologies: examples



A CBP officer uses a high-tech device to peer inside a vehicle gas tank.



A truck X-ray machine in action.

Source: DHS.



Objective 1: Current approach

DHS inspection programs: an example

Multiagency Strike Operation Led by DHS, Port of Tacoma, November 16, 2005



CG, CBP, and local firefighting officials opening a container on a truck



Personal radiation detector carried by CG and CBP officers

Source: GAO.



Objective 1: Current approach

DOT inspection efforts: an example



At a Port of Seattle facility, an FRA inspector opens a placarded hazmat container filled with drums of paint before it is loaded on an outbound freight train.

Source: GAO.



Objective 1: Current approach

Information about undeclared hazmat is limited

- Neither DOT nor DHS could provide data on the amount of undeclared hazmat entering or discovered entering the U.S.
- While agencies maintain individual inspection databases, the existing data addresses violations, citations, and incidents—and is not necessarily specific to undeclared hazmat.



What efforts are currently under way to enhance the existing approach?

- DOT has new inspection authority, but efforts to implement this authority are just getting under way.
 - DOT's hazmat incident reporting system has begun capturing data on the discovery of undeclared hazmat.
-



Objective 2: Enhancing the existing approach

New inspection authority may assist DOT in discovering undeclared hazmat

- New inspection authority, granted in SAFETEA-LU (P.L. 109-59), may enhance DOT's ability to discover hidden shipments of hazmat.
- This new authority states that DOT inspectors may open and inspect cargo when they have "an objectively reasonable and articulable belief that the package may contain a hazardous material." Previously, DOT inspectors could generally not open and inspect packages without a warrant or consent.
- Rule-making process to implement the authority is currently under way. DOT expects to complete an interim final rule in late 2006, but the effective date is uncertain.



Objective 2: Enhancing the existing approach

Revised hazmat incident form may assist DOT to quantify undeclared hazmat incidents

- Since January 1, 2005, DOT has required individuals who discover undeclared hazmat in transportation to self-report using Form 5800.1, the hazardous materials incident form.
- Data obtained through reporting can help in defining the extent of the problem and in developing programs to mitigate the risk.
- Nearly 1,000 undeclared hazmat incidents were reported in 2005, with 70 of those involving undeclared shipments entering the U.S.²

²The other reported undeclared hazmat incidents were not discovered in shipments entering the United States.



What additional options, if any, could be employed?

- While additional options, such as increasing the scope and frequency of inspections exist, any additional efforts should be based on analysis of (1) likely benefits of the additional efforts, and (2) comparative risk posed by undeclared hazmat relative to other types of threats.
- There may be ways to utilize inspection data to provide additional information about undeclared hazmat, but it is unclear whether the existing data would be useful for this purpose.
- It is too early to evaluate the impact of the new inspection authority and data collection tool on DOT's ability to discover the amount of undeclared hazmat entering the U.S.

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