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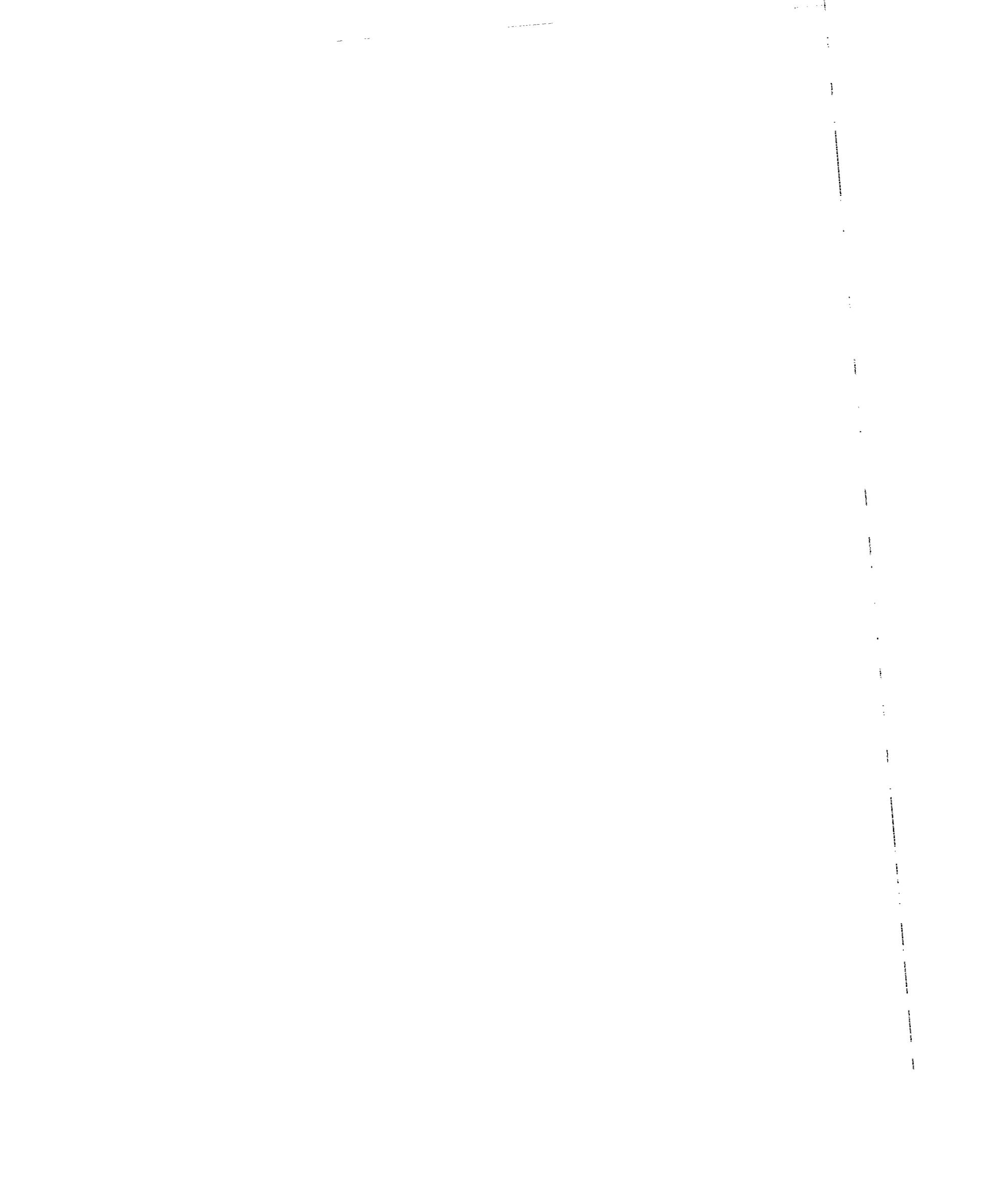
Report to the Ranking Minority Member,  
Committee on Merchant Marine and  
Fisheries, House of Representatives

April 1994

## COAST GUARD

# Program to Inspect Intermodal Containers Carrying Hazardous Materials Can Be Improved







United States  
General Accounting Office  
Washington, D.C. 20548

**Resources, Community, and  
Economic Development Division**

B-256559

April 27, 1994

The Honorable Jack Fields  
Ranking Minority Member  
Committee on Merchant Marine  
and Fisheries  
House of Representatives

Dear Mr. Fields:

The U.S. Coast Guard, which oversees marine transportation, estimates that up to 2.1 million intermodal freight containers carrying hazardous materials, such as explosives and poison gas, pass through our nation's seaports each year. During limited inspections in 1992 and 1993, the Coast Guard found at least one violation of transportation regulations in over 40 percent of the containers carrying hazardous materials. The Coast Guard developed draft procedures for inspecting hazardous materials containers, which have been implemented in pilot programs in two ports. These procedures are being implemented nationwide in April 1994.

Since the Coast Guard is responsible for ensuring regulatory compliance in marine transportation, you asked us to review its inspection program, including its implementation of the draft procedures to regulate the transportation of hazardous materials in intermodal containers. Specifically, we evaluated (1) the Coast Guard's inspection strategy, (2) the Coast Guard inspectors' familiarity with the regulations that they must enforce, and (3) how often inspectors notify shippers of violations. We also examined the U.S. Customs Service's inspection program, in general, to determine if that program can be beneficial to the Coast Guard.

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## Results in Brief

The effectiveness of the Coast Guard's new nationwide program will be limited unless several problems are addressed. First, the Coast Guard's approach of inspecting relatively few containers, using locally developed selection procedures, will not achieve the maximum regulatory compliance for the inspection resources invested. A better approach would be to target high-risk shipments, such as those of shippers with a history of noncompliance. Coast Guard headquarters officials said they would consider the need to target high-risk containers.

Second, Coast Guard inspectors are uncertain about how to interpret some of the thousands of regulations to be enforced, and this uncertainty

could cause incorrect enforcement decisions. Coast Guard headquarters officials believe that some planned actions, such as assigning full-time container inspectors to field units, will improve inspections.

Third, in most cases, shippers are not notified of violations that are corrected on the spot. As a result, they may be unaware of the problem and may repeat the same mistakes. Coast Guard headquarters officials plan to require field inspectors to notify shippers of all violations.

Finally, under an agreement between the Coast Guard and Customs, Coast Guard inspectors are to train Customs inspectors on transportation regulations, and Customs inspectors are to refer possible violations to the Coast Guard for enforcement. However, the provisions of the agreement have not been implemented. Coast Guard headquarters officials told us that the agreement will be implemented under its new program.

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## Background

The Hazardous Materials Transportation Act (49 app. U.S.C. sec. 1808) assigns the Secretary of Transportation responsibility for ensuring the safe transportation of hazardous materials. In turn, the Secretary has delegated the responsibility for coordinating the hazardous materials program and for promulgating regulations to the Research and Special Programs Administration (RSPA).<sup>1</sup> RSPA and the several modal administrations, such as the Federal Highway Administration, the Federal Railroad Administration, and the Coast Guard, are responsible for enforcing the regulations. Shippers, carriers, and packaging manufacturers who violate the hazardous materials regulations may be issued a letter of warning or be subject to civil or criminal penalties. Civil penalties can be imposed for up to \$25,000 per violation, and criminal penalties can result in fines and imprisonment.

In addition, the Customs Service is responsible under its statutes and regulations for ensuring that imports and exports of hazardous materials conform to regulations. However, it has no enforcement authority to cite a violation under the transportation regulations. Rather, the Customs Service, by agreement with the Coast Guard, is to refer cases of possible violations to the Coast Guard for investigation and, if necessary, enforcement action.

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<sup>1</sup>There are thousands of regulated chemicals that can be packaged and shipped in containers. The purpose of the regulations is to (1) ensure the safe transportation of hazardous materials through the use of proper packaging and handling and (2) effectively communicate to carriers and those responding to emergencies the hazards of the materials and the appropriate procedures for managing emergencies.

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Prior to 1992, the Coast Guard had done little, except during a brief inspection period in 1985, to open and check containers carrying hazardous materials for compliance with the transportation regulations. Beginning in 1992, multiagency strike-force operations concerning hazardous materials, led by the Coast Guard and the Federal Highway Administration, were undertaken at four major ports to determine the degree of compliance with the regulations on containers. The Coast Guard's inspection strategy essentially relied on field inspectors to use their judgment to choose which containers to inspect. Inspecting 640 containers, the strike forces found violations in 340 containers—a noncompliance rate of 53.1 percent.

As a result of the strike forces' findings in 1992, Coast Guard headquarters issued draft policies and procedures in January 1993 for conducting container inspections and began pilot-testing these instructions in two field offices. For a 3-month test period, several inspectors who were dedicated to container inspections checked 223 containers and found 47 violations—a noncompliance rate of 21.1 percent. When these results are combined with the strike forces' results, the overall noncompliance rate for the limited inspections conducted in 1992 and 1993 was 44.8 percent.

Overall, the Coast Guard has about 600 personnel in field offices who are responsible for carrying out port safety and marine environmental protection activities. However, although they are responsible for ensuring compliance with the hazardous materials transportation regulations, these personnel are primarily committed to investigating water pollution incidents and inspecting waterfront facilities and vessels.<sup>2</sup> As a result of its pilot inspection program and a belief that container inspections needed more emphasis, the Coast Guard received fiscal year 1994 funding for 76 additional personnel. In March 1994, the Coast Guard finalized the draft procedures issued in January 1993 and, in April, initiated a nationwide program using these procedures to routinely check hazardous materials containers nationwide.

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<sup>2</sup>Coast Guard inspectors initially learn about hazardous materials regulations and how to inspect containers in a 3-day segment of training during the Marine Safety Petty Officer's Course in Yorktown, Virginia.

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## Nationwide Inspection Program Needs Better Planning, Execution, and Follow-Up

While the Coast Guard is initiating its nationwide program, it must address several problems in order to effectively regulate an expanding chemical transportation industry with its available inspection resources. First, the Coast Guard inspectors are not focusing on the highest-risk containers. Second, these inspectors are uncertain about how to interpret some of the thousands of regulations. Finally, the Coast Guard is not notifying shippers found to be in violation that there is a need to correct their procedures for shipping hazardous materials.

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## Procedures Do Not Target High-Risk Shipments

According to estimates by the Coast Guard, its inspectors will check from 10,500 to 21,000 containers each year. Field inspectors will use selection strategies that are developed locally in choosing which containers to inspect. The Coast Guard does not require that, under these strategies, inspectors identify and inspect the highest-risk shipments.<sup>3</sup> We believe that when only a relatively few items can be checked, a better approach would be to require targeting high-risk containers for most inspections. The Coast Guard could use statistical sampling procedures to randomly select a proportion of the 10,500 to 21,000 containers it plans to inspect. Information could then be developed from these inspections to determine the characteristics common to those containers often found to be in violation. For example, first-time shippers may have a higher rate of violation than other categories of shippers. Characteristic such as this one could then be used to select additional containers for inspection, with the knowledge that they have a high risk of violating the regulations. By using this approach, the Coast Guard could maximize the effectiveness of its inspection effort.

To effectively target high-risk shipments for inspection, the Coast Guard must know the shippers and systematically analyze the results of its inspections in order to identify the characteristics of high-risk shipments. It could, for example, (1) develop an inventory of importers with such relevant information as the owner's name and address, products imported, and history of past violations; (2) centrally analyze the results of shipments found to be in violation to identify common characteristics, such as the importer, product, and country of origin; and (3) incorporate the characteristics that signal high risk into a selection system that triggers inspections of future shipments with these characteristics.

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<sup>3</sup>In this report, we use the term "high-risk" to describe containers that carry very dangerous materials, such as poison gas, and containers that have a high potential, based on past inspection results, for regulatory noncompliance.

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The Customs Service, which is responsible for enforcing numerous laws and regulations, such as collecting tariffs on imported goods, also has to deal with an overwhelming number of containers needing inspection and has implemented a targeting system. Customs is continuing to develop a system that uses statistical sampling to randomly select for inspection less than 1 percent of the cargo shipments entering the country. Using the results of these random inspections, Customs is refining criteria (common characteristics of the cargos found to be in violation) and using these criteria to target for examination another 7 percent of the shipments having these characteristics. Customs estimates that in its tariff program, the voluntary compliance rate is 96 percent.

Because the Coast Guard does not plan to use selection criteria based on its experience as does Customs, its inspectors may not check the highest-risk shipments and shippers. Customs inspectors in Seattle, Washington, which was the only Customs office we visited with a program to check hazardous materials, told us that companies from certain Pacific Rim countries had a history of noncompliance with laws and regulations on safety and environmental protection. Coast Guard inspectors in Seattle were unaware of this information and did not consider it in selecting containers for inspection. However, if it used a systematic approach to target high-risk shipments for inspection, the Coast Guard could consider future shipments from these countries for inspection, even if the importers use a different port of entry.

We discussed the need for random and targeted container inspections with Coast Guard headquarters officials. These officials agreed that targeting would increase the effectiveness of the container inspection program. However, they said it would take some time to develop and test a targeting strategy before implementation. They also indicated that they will develop an evaluation plan to measure the effectiveness of the new container inspection program. The plan will include data requirements and consider the need to target high-risk containers.

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### Inspectors Are Uncertain About How to Interpret Some Regulations

Coast Guard inspectors are faced with enforcing regulations covering thousands of chemicals with diverse characteristics, and the inspectors have been uncertain about whether some conditions are violations. The result of this uncertainty is that inspectors may make incorrect enforcement decisions.

We observed inspections at six field offices, including those using the draft policies and procedures. At five of the six field offices we visited,<sup>4</sup> inspectors frequently discussed various conditions at length while consulting the regulations, often without resolving whether or not these conditions were a violation of the regulations. Inspectors told us that the regulations were complex and that they were uncertain about how to interpret some of them. Some uncertainty revolved around complex technical issues, such as how to interpret the lengthy and technically detailed tables in the transportation regulations; other uncertainty revolved around more straightforward issues. While accompanying Coast Guard inspectors in one port, for example, we saw a container with placarding printed in French.<sup>5</sup> The Coast Guard inspectors said they were uncertain whether such placarding was acceptable. A Coast Guard headquarters official researched the situation and concluded that non-English words on placarding were not prohibited. He stated, however, that this example demonstrated the complexity of interpreting the regulations.

We discussed our observations on how inspections were being conducted with Coast Guard headquarters officials, who said they were also concerned. These officials stated that inspectors, after being trained, return to their field units and, as part of their multimission duties, primarily have to perform other types of inspections, such as vessel inspections, and do not perform many container inspections. And, over time, inspectors' knowledge of container regulations fades. In the field offices we visited, we found this to be true. Newly trained inspectors were expected to become proficient in other areas, such as pollution investigations, through on-the-job training before becoming involved with lower-priority container inspections, which were relatively few in number.

Coast Guard headquarters officials discussed several planned actions that they believe would improve inspections. For example, the Coast Guard plans to assign 51 of the 76 additional personnel funded in fiscal year 1994 to 27 field offices to inspect only containers. In addition, the Coast Guard plans to form a national strike force of 10 people to provide field offices with additional training and assist them with container inspections.

<sup>4</sup>At the remaining field office, Coast Guard inspectors curtailed inspections and initiated a spill response when material was observed leaking from a container labeled as hazardous.

<sup>5</sup>Placarding is marking required on the outside of a hazardous materials container to communicate the hazards posed by the materials.

## Shippers Are Not Notified of Violations

Although Coast Guard inspectors require that violations be corrected on the spot by facility or other personnel, in most cases shippers are not notified of violations discovered by the Coast Guard container inspectors working at waterfront facilities. The Coast Guard does not require notification of the shipper, but instead leaves the decision to recommend a warning or penalty to the discretion of local officials. At all six field offices we visited, inspectors did not notify shippers of violations in most cases. Consequently, shippers may not be aware of the need to correct similar problems in future shipments or of the existence of an enforcement program. For example, we found that for the 387 violations detected by the strike forces and during pilot tests, the Coast Guard followed up on only 81, or 20.9 percent, with recommendations for letters of warning or penalties.

Inspectors at four field offices we visited told us that processing a violation—resulting in a letter of warning or a civil penalty—entailed too much paperwork, detracting from available time to do additional field inspections. These inspectors also said that the Coast Guard would like to develop a cooperative relationship with industry rather than an adversarial one. In addition, inspectors require an on-the-spot correction, which they consider as fulfilling their responsibility. However, on container inspections, Coast Guard inspectors do not deal directly with shippers' representatives, who control compliance with important regulations on, for instance, classification and container packing. Rather, the inspectors deal with facility representatives, who receive sealed containers that were packed by the shippers. As a result, shippers are not aware of corrections needed in future shipments unless they are notified of violations on current shipments.

For comparison purposes, we asked RSPA officials about letters of warning and penalties because RSPA is the coordinating agency for the Department of Transportation's enforcement of hazardous materials regulations. RSPA, according to these officials, requires that written notification be provided to all responsible parties and that action be taken on violations detected by its inspectors. RSPA officials viewed the administrative effort needed to process a letter of warning or civil penalty as a necessary ingredient of an effective enforcement program.

We discussed this problem with Coast Guard headquarters officials, who agreed that a need exists to inform shippers of problems and to revise the agency's procedures to require official action on all identified violations. To accomplish this, officials said, a hazardous materials discrepancy

report has been developed as part of the Coast Guard's new program. This report will be used to provide notification to all shippers and other involved parties of discrepancies discovered during container inspections.

## Customs Inspectors Also Have Oversight Responsibility

In 1989, the Coast Guard and the Customs Service, whose inspectors routinely encounter hazardous materials when inspecting cargo in containers, signed a memorandum of understanding (MOU). The MOU states that the Coast Guard will train Customs inspectors on hazardous materials transportation regulations and that Customs inspectors will notify the Coast Guard of potential violations.<sup>6</sup> Coast Guard inspectors would then investigate the potential violation and take appropriate action. This arrangement would extend federal oversight of containers carrying hazardous materials because Customs has 1,600 inspectors in our nation's seaports.

At the six locations we visited, however, the Coast Guard had not trained Customs inspectors on transportation regulations and Customs inspectors were not identifying and referring possible violations to the Coast Guard. Most of the Customs inspectors we interviewed were unfamiliar with the transportation regulations and the agreement. Coast Guard field officials in all six field offices we visited said that training was not provided to Customs inspectors because the officials were not aware of the MOU and therefore had not implemented it. Also, Coast Guard field officials explained that prior to 1992, the Coast Guard had done little to inspect containers carrying hazardous materials.

Coast Guard headquarters officials agreed that the provisions of the MOU had not been implemented in the field. They also told us that working with Customs, in accordance with the MOU, is important and will be emphasized in the new nationwide container inspection program.

## Conclusions

The Coast Guard's program to routinely inspect containers carrying hazardous materials will be of limited effectiveness unless several problems are addressed.

First, because of staffing limitations, Coast Guard inspectors can only check a small percentage of these containers. In addition, they will select containers on the basis of locally developed inspection strategies, which

<sup>6</sup>A reciprocal arrangement provides for Customs to train Coast Guard inspectors, who are to report possible Customs violations, such as contraband, to Customs.

are not required to target high-risk cargo. A better approach is to require that available inspection resources be used to target high-risk cargo. In this way, the Coast Guard can focus most inspections on the highest-risk cargos. The Coast Guard agreed that targeting is a better approach and agreed to begin addressing these issues.

Second, the regulations are complex and cover thousands of different chemicals. Coast Guard inspectors are uncertain about how to interpret some of these regulations and therefore may make erroneous enforcement decisions. According to the Coast Guard, inspectors receive adequate classroom training, but their knowledge fades over time because they are primarily responsible for conducting other types of inspections, such as vessel inspections. To help resolve this problem, the Coast Guard is (1) increasing its inspection work force, (2) assigning a few dedicated container inspectors to 27 field offices, and (3) forming a national strike force to provide training and expertise in container inspections.

Last, the Coast Guard does not generally notify shippers of violations because inspectors feel that the required paperwork is too time-consuming and because violations are corrected on the spot by waterfront personnel. However, on-the-spot corrections by personnel at waterfront facilities will not preclude future noncompliance because shippers, who control compliance with important hazardous materials regulations, are not being told about the problems with their procedures. Coast Guard headquarters officials said that follow-up would be required for all identified problems.

Furthermore, an MOU between the Coast Guard and Customs, whereby Customs would refer possible violations of transportation regulations to the Coast Guard, has not been implemented. Nationwide implementation of this agreement could aid the Coast Guard in its responsibility to enforce hazardous materials regulations because Customs has over 1,600 inspectors in seaports, who can supplement Coast Guard inspectors in checking for compliance. Coast Guard headquarters officials said steps will be taken to emphasize the MOU in their new program.

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## Recommendations to the Secretary of Transportation

We recommend that the Secretary of Transportation direct the Commandant of the Coast Guard to

- develop a strategy to target the agency's inspections by (1) selecting and inspecting a random sample of containers, (2) analyzing the results of

- these inspections to identify the characteristics of high-risk shipments, and (3) using those characteristics to select high-risk containers for inspection;
- monitor the performance of its container inspectors to ensure that inspections are adequate; and
  - require field officials to notify all shippers of violations identified by inspectors.

We also recommend that the Secretary direct the Commandant of the Coast Guard, as part of the new inspection program, to work with the Customs Service to train its inspectors so they can assist the Coast Guard in its enforcement of hazardous materials container regulations.

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## Agency Comments

We discussed the factual content of our report with the Chief of the Coast Guard Office of Marine Safety, Security and Environmental Protection and with headquarters officials of the U.S. Customs Service Office of Inspection and Control. These officials generally agreed with our findings and conclusions, and their specific comments have been incorporated throughout the report. However, as requested, we did not obtain written agency comments on a draft of this report.

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## Scope and Methodology

To evaluate whether the Coast Guard can improve inspections in order to better enforce hazardous materials container regulations, we interviewed headquarters and field officials of the Coast Guard, Customs, and other Department of Transportation agencies. Field audit work was done in Houston, Texas; Los Angeles, California; New York, New York; Philadelphia, Pennsylvania; San Francisco, California; and Seattle, Washington. These six ports provided a cross section in terms of geographic location, volume of container shipments, and the experience level of the relevant Coast Guard field office in inspecting containers. To evaluate the Coast Guard's inspection program, we examined (1) laws and regulations; (2) policies and procedures; (3) statistics on hazardous materials transportation, inspections, violations, and incidents; (4) staffing levels and responsibilities of inspectors; and (5) inspection and incident reports. While working at each field location, we accompanied Coast Guard and Customs inspection personnel to see inspection procedures firsthand.<sup>7</sup> We performed our review from April 1993 through April 1994 in accordance with generally accepted government auditing standards.

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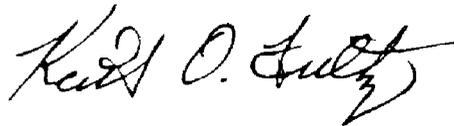
<sup>7</sup>We did not accompany Customs inspection personnel in Houston and Seattle because of time constraints.

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As arranged with your office, we will send copies of this report to the Secretaries of Transportation and the Treasury, the Commandant of the Coast Guard, the Administrator of RSPA, the Commissioner of Customs, and other interested parties. We will also make copies available to others on request.

This work was performed under the direction of Kenneth M. Mead, Director, Transportation Issues, who can be reached at (202) 512-2834 if you or your staff have any questions. Major contributors to this report are listed in appendix I.

Sincerely yours,

A handwritten signature in cursive script, reading "Keith O. Fultz". The signature is written in black ink and is positioned above the printed name and title.

Keith O. Fultz  
Assistant Comptroller General

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# Major Contributors to This Report

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**Resources,  
Community, and  
Economic  
Development  
Division, Washington,  
D.C.**

Allen Li, Associate Director  
Emi Nakamura, Assistant Director  
Steven R. Gazda, Assignment Manager

---

**Philadelphia Regional  
Office**

Joseph A. Kredatus, Regional Management Representative  
William S. Justice, Evaluator-in-Charge  
James J. Ungvarsky, Staff Evaluator

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