



# **NATIONAL TRANSPORTATION SAFETY BOARD**

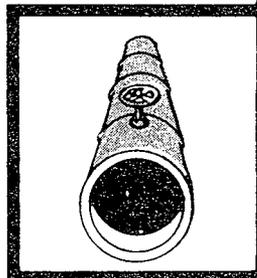
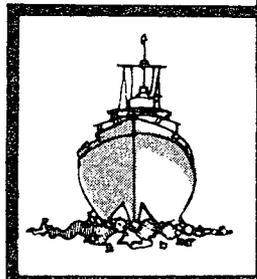
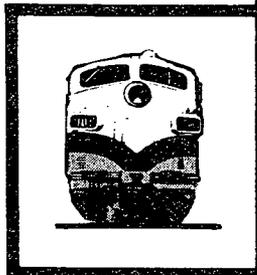
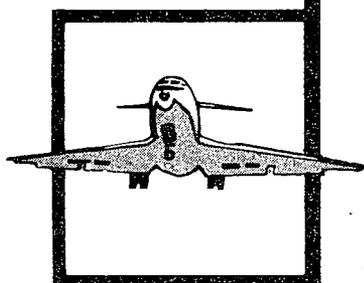
WASHINGTON, D.C. 20594

## **SPECIAL STUDY**

### **NONCOMPLIANCE WITH HAZARDOUS MATERIALS SAFETY REGULATIONS**

NTSB- HZM-79-2

UNITED STATES GOVERNMENT



TECHNICAL REPORT DOCUMENTATION PAGE

1. Report No. NTSB-HZM-79-2		2. Government Accession No.		3. Recipient's Catalog No.	
4. Title and Subtitle Special Study-- Noncompliance with Hazardous Materials Regulations				5. Report Date August 3, 1979	
				6. Performing Organization Code	
7. Author(s)				8. Performing Organization Report No.	
9. Performing Organization Name and Address National Transportation Safety Board Bureau of Technology Washington, D.C. 20594				10. Work Unit No. 2675A	
				11. Contract or Grant No.	
12. Sponsoring Agency Name and Address  NATIONAL TRANSPORTATION SAFETY BOARD Washington, D. C. 20594				13. Type of Report and Period Covered  Special Study	
				14. Sponsoring Agency Code	
15. Supplementary Notes					
16. Abstract  The Safety Board has investigated eight serious transportation accidents since 1972 which involved hazardous materials in transit. These accidents, which occurred in air, rail, and highway carrier operations, resulted in many injuries and fatalities as well as extensive property losses because of hazardous materials releases. During these investigations, noncompliance with the hazardous materials safety regulations was found in the areas of packaging, labeling, recordkeeping/documentation, and quantity limits in nearly every case. Since regulations governing the shipment of hazardous materials, which are currently published in titles 46 and 49 of the Code of Federal Regulations (CFR), have been in effect since 1900, the Safety Board completed this study to determine the reasons for non-compliance.  As a result of its findings in this special study, the National Transportation Safety Board made four recommendations to the U.S. Department of Transportation about hazardous materials safety regulations and compliance programs.					
17. Key Words				18. Distribution Statement This document is available to the public through the National Technical Information Service, Springfield, Virginia 22151	
19. Security Classification (of this report) UNCLASSIFIED		20. Security Classification (of this page) UNCLASSIFIED		21. No. of Pages 55	22. Price

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SPECIAL STUDY

Adopted: August 3, 1979

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NONCOMPLIANCE WITH  
HAZARDOUS MATERIALS REGULATIONS

INTRODUCTION

The Safety Board has investigated eight serious transportation accidents since 1972 which involved hazardous materials in transit (see appendix A). These accidents, which occurred in air, rail, and highway carrier operations, resulted in many injuries and fatalities as well as extensive property losses because of hazardous materials releases. During these investigations, noncompliance with the hazardous materials safety regulations was found in the areas of packaging, labeling, recordkeeping/documentation, and quantity limits in nearly every case. Since regulations governing the shipment of hazardous materials, which are currently published in titles 46 and 49 of the Code of Federal Regulations (CFR), have been in effect since 1900, the Safety Board completed this study to determine the reasons for noncompliance.

The issue of hazardous materials compliance involves many manufacturers both big and small, as well as every commercial laboratory and medical facility in the United States since they either ship or receive hazardous materials. It involves people working in the shipping, packaging, and freight forwarding industries as well as all types of carriers—aviation, railroad, marine, and highway. This complexity is compounded because the hazardous materials include a long list of products to which new items are added daily. These products possess differing characteristics of physical and chemical properties which may produce a variety of physiological effects. Further, the quantities of the shipments may range from a shipload to less than an ounce.

The data for this study were gathered from many sources. Published reports and information pertaining to compliance or noncompliance were reviewed, but little existing data were found that could be used to determine the extent of noncompliance with hazardous materials safety regulations or the reasons for noncompliance.

Information was obtained by questionnaire (see appendix B) from 11 Federal agencies that have a role in establishing or maintaining compliance with these regulations. The written responses to these questionnaires by the individual agencies, described herein, are accepted and used as the official position of that agency on noncompliance with the hazardous materials regulations. Interviews

were conducted nationwide with approximately 100 persons who work in the transportation industry including shippers, freight forwarders, crating companies, railroads, air carriers, steamship companies, truck lines, and local delivery firms. These interviews provided case histories of actual experiences with hazardous materials shipment problems, and the reasons for noncompliance with the regulations. The interviewees included owners, managers, traffic managers, salesmen, foremen, shipping clerks, hazardous materials specialists, packers, and loaders.

Although this sample selection process does not meet classic statistical criteria, the Safety Board believes that the wide range of sources provides a valuable insight into the reasons for noncompliance with hazardous materials regulations during daily shipping activities.

Also, organizations representing groups of individuals or firms, such as labor organizations and trade associations, were invited to furnish examples of reasons for noncompliance, together with the available background data for each reason submitted.

Existing Federal, State, and private compliance assurance programs and the U.S. Department of Transportation (DOT) compliance enforcement history are described briefly, and the data are analyzed to identify the reasons for noncompliance.

## REASONS FOR NONCOMPLIANCE

### Literature Search

The available written information about compliance with hazardous materials safety regulations was sparse and provided little useful data for this study. Also, none of the literature discussed the reasons why individuals do not comply with the regulations.

Only two studies pertaining to this subject were brought to the attention of the Safety Board by a Federal agency involved in the regulation of hazardous materials transportation. A 1977 Nuclear Regulatory Commission (NRC) report <sup>1/</sup> pertained to NRC's compliance problems in a general way. A 1978 NRC report <sup>2/</sup> described a surveillance program for radioactive materials shipments which was designed to provide training support for State personnel involved in the transportation of these materials. This report set forth, under existing regulations, the actual radiation exposure conditions and packaging and handling practices for the transportation of these materials.

<sup>1/</sup> "Phase I Report, Utility of Incentive System for Licenses," October 1977.

<sup>2/</sup> "Summary Report of the State Surveillance Program on the Transportation of Hazardous Materials," March 1978.

The Safety Board examined two General Accounting Office (GAO) studies that discussed hazardous materials. A 1973 report <sup>3/</sup> recommended that the Secretary of the DOT establish a management information system to develop and maintain data on hazardous materials movements; reassess the adequacy of the DOT hazardous materials effort as compared with the volume and danger of the materials being shipped; develop a plan for a more effective hazardous materials inspection and enforcement program; and present this plan to the Congress for evaluation and determination of needed resources. One result of the GAO report was a proposal by the DOT that the Congress change existing statutes to provide increased enforcement capabilities to the DOT. The Hazardous Materials Transportation Act of 1974 provided this added authority together with other measures. A 1977 GAO report <sup>4/</sup> discussed the DOT's Bureau of Motor Carrier Safety (BMCS) program for insuring compliance with all BMCS regulations, including those pertaining to the transportation of hazardous materials.

A 1974 report <sup>5/</sup> prepared by the Federal Aviation Administration (FAA) revealed that approximately 4 percent of the passenger flight departures carried hazardous materials, and that nearly 2 percent carried radioactive materials during the period of the investigation.

The results of an Air Line Pilots Association (ALPA) investigation, as reported in testimony before the House Government Operations Committee in 1973, cited numerous examples of noncompliance; however, no reasons were given for the conditions observed. The Materials Transportation Bureau (MTB), the Federal Railroad Administration (FRA), the Federal Highway Administration (FHWA), and the United States Coast Guard each reported to the Safety Board that they had not completed any recent studies that were directed specifically toward regulation compliance or noncompliance.

#### Federal Agency Views

The Safety Board requested information from the DOT and the other Federal agencies responsible for the regulation of hazardous materials about their views of the compliance problem. <sup>6/</sup>

In the DOT responses, the MTB provided eight reasons which it believed were the causes for noncompliance with the hazardous materials safety regulations:

1. "Field experience and telephone contacts reveal that many persons do not know the hazardous materials regulations exist." The MTB did point out that it believed the lack of awareness has decreased, however.

<sup>3/</sup> "Need for Improving Inspection and Enforcement in Regulating Transportation of Hazardous Materials," May 1, 1973.

<sup>4/</sup> "The Federal Motor Carrier System Program: Not Yet Achieving What the Congress Wanted," May 16, 1977.

<sup>5/</sup> "Survey To Determine the Percent of Passenger Aircraft Departures Carrying Hazardous Materials," June 20, 1974.

<sup>6/</sup> The information requested is shown in appendix B.

2. "Many persons who possess the regulations do not understand how to use them. In many cases the regulations sit on a shelf and are not used."
3. "Many cases are observed where the level of knowledge in a company is not broad enough to reach those who actually perform the work of preparing shipments. This situation allows noncomplying shipments to enter the transportation system."
4. "A segment of the regulated community consists of firms whose involvement with hazardous materials transportation is a small portion of their business. The diverse nature of their business frequently precludes the dedication and commitment to learn and stay current with the regulations."
5. "Many persons do not follow through with the regulations to the point where all applicable requirements are followed. This, in many cases, accounts for improper packaging."
6. "Many types of packaging manufacturers, until recently, knew little or nothing concerning the regulations since they were first brought under the jurisdiction of the DOT by the Hazardous Materials Transportation Act in 1975. This situation allowed noncomplying packaging materials to be marketed."
7. "In some cases, there is an economic incentive not to follow the regulations. Instances of misdescribing a hazardous material so as to avoid any regulation, or using a noncomplying packaging because of cost factors, are discovered."
8. "The impact of the total Federal hazardous materials compliance and enforcement effort is limited. Only a small percentage of the regulated population is being reached."

The Coast Guard replied:

"It appears that a general lack of knowledge or familiarization with the regulations is the primary reason for noncompliance. This is the explanation most often expressed to our hearing officers during the processing of civil penalty cases.

"This lack of knowledge or familiarization may include inadequate experience of employees (e.g., new employee, regular employee on vacation, etc.), difficulty in comprehending intent of the regulations, or a shipper's unfamiliarity with the unique problems of the various transportation modes."

The FHWA listed several reasons for noncompliance:

1. "Lack of knowledge of governmental regulations."
2. "Lack of ability on the part of carriers and shippers and their personnel to understand the regulations."

3. "Lack of training by carriers and shippers of their operating personnel who have responsibilities regarding the hazardous materials transportation regulations."
4. "Economic reasons. Many carrier/shipper branch facilities are operated as individual profit centers. If a manager can cut expenses on packaging, labeling, a simpler bill of lading, and related paperwork, it cuts costs and increases profits. Short-term immediate financial advantages often overshadow the long-term benefits of safe transportation policies. Many managers operate on the theory that it happens to the other guy."
5. "Regulatory changes which were effective January 1, 1977, have given the (BMCS) a means of enforcement action against packaging manufacturers. In the past, a package manufacturer could mark a package as meeting regulatory requirements and no action could be taken against this manufacturer if it did not meet the requirements. The regulations permitted the shipper to accept this marking as a certification of package compliance. The regulations as now written give jurisdiction to the (BMCS) over packaging and container manufacturers."
6. "Lack of an adequate inspection and enforcement staff by the (BMCS)."
7. "Dynamic nature of the industry, in which new hazardous materials are being developed continuously, results in a constant need for regulatory changes, operational changes and training."

The FAA replied:

"We believe that the primary reason for noncompliance with the hazardous materials regulations is the failure of shippers to instruct their personnel having responsibilities for preparing hazardous materials for shipment as to the applicable regulations. Investigation of DOT Form 5800.1, "Hazardous Materials Incident Report," reveals a number of unmarked packages that contain hazardous materials that are not shipped as such. Also, incidents involving passenger baggage have revealed hazardous materials carried on an aircraft were not in compliance with the hazardous materials regulations. These reports may be obtained from the Office of Hazardous Materials Operations."

The FRA responded, "Noncompliance by carriers, shippers, and others is caused by the large quantity of hazardous materials regulations."

In the responses of agencies outside the DOT, the NRC furnished a long list of reasons why its regulations were being complied with; however, no reasons were included for noncompliance. The Department of Energy (DOE) replied that it does not have an official policy on this matter, nor is it likely to. The General Services Administration (GSA) also did not provide reasons for noncompliance in its response.

The Department of Defense (DOD) said that "Valid psychological and socio-psychological research data on this subject is not readily available in DOD. However, based on DOD's many years experience in offering hazardous materials for transportation, it is our opinion that the major reasons for noncompliance are:

1. "Difficulty in reading and understanding the Hazardous Materials Regulations (46 and 49 CFR)."
2. "Inconsistencies between 46 and 49 CFR and International Maritime Dangerous Goods Code (IMDGC)."
3. "Difficulty in complying with 49 CFR for the movement of hazardous materials within the continental United States, conversion to IMDGC regulations for the export of hazardous cargo, and conversion from IMDGC to 49 CFR for regulating hazardous cargo imported into the United States."

The United States Postal Service stated:

"Compliance depends on mailer familiarity with and postal enforcement of the regulations. Instances of hazardous materials discovered in the mail have generally resulted from customer ignorance or misinterpretation of the regulations, although guidance is available both in the printed form and from postal personnel. The Postal Service takes the position that full responsibility rests with the mailer for any violation of law which may result from placing hazardous items in the mail (Title 18, USC, Section 1716)."

In summary, the Federal agencies perceive six reasons for noncompliance with the hazardous materials safety regulations:

1. Personnel in the freight handling and transportation business often are not aware that the hazardous materials regulations exist, and that compliance is required by law.
2. The training, experience, and knowledge of those persons actually preparing the materials for shipment, and those handling these materials while in the transportation system, are not sufficient to assure compliance with the regulations.
3. Most of the regulations have parts which are difficult to understand and often are subject to different interpretation, which tends to discourage persons attempting to comply with them.
4. Economic factors in the rate structures and the packing costs often make it advantageous to ignore the regulations.
5. Inspection and enforcement is extremely difficult because of the size and complexity of the industry.

6. Small firms which ship hazardous materials infrequently find it expensive and inconvenient to remain current with the regulations.

#### Private Industry Views

The Safety Board interviewed 100 persons working in all areas of the transportation industry across the United States. <sup>7/</sup> The interviewees included company owners, managers, clerks, and cargo handlers involved in the movement of freight which includes hazardous materials. The most frequent reasons for noncompliance cited during these interviews were:

1. Indifference to regulations. This attitude originates largely from within companies which have small or infrequent shipments of hazardous materials. The companies which consistently do not comply with the regulations tend to use the rationale:
  - a. The regulations are impossible to understand and require knowledge and experience its personnel do not possess.
  - b. It would be expensive for the company to employ personnel trained in hazardous materials shipping, considering the size and infrequency of its shipments.
  - c. Its materials are not very hazardous.
  - d. If something happens, the carrier will fix the problem.
  - e. No one will ever know the company shipped it.
  - f. The carrier the company uses always accepts the freight and never mentions hazardous materials.
  - g. This would just get the company involved with the Federal government.
2. Compliance enforcement responsibility. This is the one element that was stressed most consistently by the carriers as a problem. While the DOT looks to the shipper to package his hazardous materials shipments and prepare the accompanying documentation in accordance with the safety regulations, the DOT looks to the carrier to examine the cargo it receives for shipment to make sure it conforms with the regulations.

When a carrier receives freight which includes hazardous materials, his alternatives are to:

<sup>7/</sup> Details of experiences obtained from some of these interviews are in appendix C.

- a. Determine if the freight complies with the regulations, and place those shipments which are not in compliance in a segregated area and call the DOT representative to initiate corrective action.
- b. Place the shipments which are not in compliance in a segregated area and contact the shipper for the necessary information to correct the problem.
- c. Reject the shipment and return it to the shipper.
- d. Forward the freight with or without the knowledge that it contains hazardous materials, or that the shipment is or is not in compliance with the regulations.

The exercise of these alternatives places a responsibility on the carriers in the area of compliance and enforcement.

3. Compliance decreases profits. The carrier's need to make a profit affects decisions on compliance. The shipper sells his product and then presses to have it delivered to his customer so that he is paid, and in anticipation of obtaining new business. If a freight forwarder or carrier who is authorized to transport hazardous materials delays the shipment by questioning its compliance with regulations, the shipper often finds another way to ship where he will not encounter this difficulty, usually with another carrier who will accept the shipment.

The forwarder and the carrier both recognize the expense of holding a shipment. Shipments held in a segregated area require extra handling, storage space, and problem-solving coordination—all of which diminish profit. Also, the customer who experiences delivery problems may develop an alternate source of supply.

4. Lack of knowledge. Persons interviewed reported instances where shipping, packaging, and carrier personnel process and ship hazardous materials without a knowledge or basic understanding of the requirements for the transportation of hazardous materials. Clerks who prepared shipping certification and other documentation and then signed them because their own management instructed them to do so expressed apprehension about what they were doing. Training had not been readily available to these persons in many of the cases cited. Often the manager had received training, but he did not insure that the personnel under him who were responsible for shipping were trained.

Other factors contributing to noncompliance that were mentioned less frequently than the four above, but which are important to consider were:

1. Ineffective government/industry relationships. Often when noncompliance is reported to the DOT inspector, the time required to effect a resolution is

longer than the carrier can afford. Also, it is difficult to obtain information on compliance with a specific regulation or an interpretation of a regulation. Finally, there is a certain amount of resistance by industry to becoming involved with the government, especially a regulatory agency.

2. Resistance to change.
3. Proprietary products. The perceived need to protect the secret formula of a product by using its trade name rather than the generic name results in noncomplying documentation.
4. System complexities. The differences in sizes and functions of the various companies doing business in the transportation field results in inconsistencies in the processing and handling of shipments. This makes compliance and enforcement difficult to accomplish and makes noncompliance difficult to detect.
5. Regulation interpretation. Unclear regulations or regulations that may be interpreted in more than one way lead to confusion. Either the regulation is incorrectly interpreted so that the packaging documentation is not in compliance, or it is not understood by the reader, who ignores it. For example, the differences that appear to exist between the CFR and the International Air Transport Association (IATA) tariff could result in noncompliance.
6. Unaware of the regulations. Only a few of the 100 interviewees said they did not know about the regulations for the transportation of hazardous materials.

Nearly all of the carriers interviewed expressed the belief that compliance with the regulations is necessary, not only because it is required by law but because of the possible consequences of noncompliance. The carriers had little to say about their role in assuring compliance, however.

#### Other Views

The Safety Board asked several trade and labor organizations for their viewpoints on reasons for noncompliance. One labor organization representing over 30,000 employees listed these reasons for noncompliance with hazardous materials transportation safety regulations:

1. Overly complex Federal regulations that require an improbable degree of expertise to assure compliance.
2. A cargo-handling labor force that has little access to training in hazardous materials requirements.
3. An operational system that emphasizes and depends upon speed for success. This is incompatible with the degree of care necessary to insure proper screening, handling, packaging, describing, and transporting of hazardous materials.

4. Imprecise regulatory description of matters such as crew access to hazardous materials.

A trade association representing over 50 companies which employ 900,000 people reported that most of its members would agree that the basic problem with compliance results from the regulations themselves. The association said that the CFR is so difficult to interpret 8/ that only large companies with fully trained and adequate staff are able to do so and to establish hazardous materials shipping procedures. It reported that even government employees have offered conflicting interpretations of the same rule. The association said that if violations are to be kept to a minimum, the rules must be simplified.

The association pointed out what it viewed as a conflict between DOT regulations and those of the Occupational Safety and Health Administration (OSHA) of the U.S. Department of Labor. It said the DOT places the responsibility for compliance with the shipper, while the OSHA appears to require that buyers must be responsible for the compliance of shipments from their suppliers. Until this conflict is resolved, the association said, smaller companies that do not have a technically trained and adequate staff will continue to have problems with the regulations.

The association cited employee turnover as a problem in insuring an adequately trained staff. Even where training is provided, the association said, there is no assurance that it is correct or complete. The association did not believe that DOT seminars meet the need or that privately developed training programs currently for sale met with DOT approval.

The association said classifications of hazardous materials are a problem. Most articles are known by their trade names, yet there is no cross-referencing system available. Member companies have been forced to develop in-house chemical vs. trade name listings. It can take a shipper up to 3 weeks to track down the chemical composition of the material distributed under the trade name.

According to the association, even when a hazardous article is properly packaged and ready for shipment, there is no guarantee that it will be accepted by a carrier because the shipper and carrier may interpret the regulations differently. The association believes that with the deregulation of air cargo rates by P.L. 95-163, carriers can attempt to discourage hazardous materials shipments by raising rates to unreasonable levels. This could produce noncompliance with the regulations through attempts by shippers to get packages aboard by such means as misdescription.

The association asserts that while the DOT has attempted to consolidate all applicable regulations, it has not been successful. Shippers must still comply with separate carrier, IATA, International Maritime Consultative Organization (IMCO), NRC, OSHA, and Environmental Protection Agency (EPA) rules. The association

8/ Appendix D gives an example of an interpretation of the CFR.

believes this fragmentation can only increase noncompliance and that only one agency's rules should apply. If necessary, these rules should include international requirements, and there should be only one necessary reference, according to the association.

The association pointed out that conflicting regulations pose a serious problem for intermodal shipments. A shipment from Los Angeles to New York for transloading to a foreign flight requires compliance with motor, domestic air, and IATA regulations. Many times the "lawful" description, packaging, and acceptable quantities are different. For example, products containing flammable compressed gas are forbidden domestically but are acceptable in international air movements.

Another organization representing 16 trade associations, which in turn represent firms with several thousand employees, provided views that indicate the complexity of the compliance decisions and considerations of both shippers and carriers of hazardous materials. It cited the example of one proposed tariff rule 9/ revision relating to hazardous materials that had the unintended effect of extending the definition of hazardous materials that are subject to higher rates to include all hazardous materials, regardless of their hazardous classification. Yet the risk to the carriers is not the same for each class of hazard, the organization said.

The shipper, according to this organization, views insistence on creating equality among hazards as another way of increasing revenues at the expense of the specialty shipper. In effect, the shipper is asked to pay a premium price for carriage because acceptance of freight is at the carrier's option. The change also may drive the not-so-scrupulous shippers undercover permanently, since in such an environment "the niceties of legal compliance must be equated against time and money, and may not serve a sufficient deterrent against outright falsification or even corruption," the organization said. In discussing a change which would make hazardous materials freight subject to the carrier's option of acceptance, the effects anticipated would be to simply "discourage the unwilling shipper from ever practicing full disclosure and encouraging the borderline or cost-conscious shipper to falsify data to ensure acceptance of his freight," according to the organization. Both outcomes would tend to intensify the carrier's risk of fines and discovery by spills or accidents, rather than reducing the risk.

Based on currently published data, the Safety Board estimates that there are more than 2 million employees of shippers, packagers, and carriers who must be aware of and know how to comply with the regulations for the transportation of hazardous materials and any amendments to these regulations. Many of these personnel may process one or two shipments per day that would be affected by these regulations, while others may handle only one or two per year. The problem of understanding and keeping current with the regulations becomes apparent.

9/ Tariff rules, which are established by the Interstate Commerce Commission and the Federal Maritime Commission, are concerned with the economic regulation of shipments by rail, sea, and highway.

## COMPLIANCE ASSURANCE PROGRAMS

### Federal Agencies

The DOT holds hazardous materials regulatory authority under the provisions of PL 88-710, 18 USC 831-835, and PL 93-633, 18 USC 1801-1812. Acting under these statutes, the DOT Secretary has delegated certain regulatory functions to the Coast Guard Commandant, the FAA Administrator, the FHWA Administrator, the FRA Administrator, and the MTB Director. The structuring of authority has resulted in the production and implementation of 10 sections of regulations in the CFR, including 2 for air shipments, 3 for marine, 3 for highway, 1 for rail, and 1 for all shipments. Thus, each of the five DOT administrations is involved in the enforcement of its own regulations.

The Coast Guard stated that it emphasizes the prevention of accidental or intentional damage to waterfront facilities and vessels in waters under U.S. jurisdiction. Compliance enforcement is achieved by:

1. Operations monitoring. Shipboard handling, stowing, and storing of all class A explosives, spent nuclear fuel elements, and other radioactive materials shipments is supervised.
2. Vessel boarding. Fifty percent of all vessels are boarded to assure compliance with the dangerous cargo regulations.
3. Waterfront facility inspection. Waterfront facilities designated for the storage, handling, and shipping of explosives, bulk combustible liquids, or other dangerous cargo are checked monthly and inspected each 6 months.
4. Harbor patrols. Patrols are conducted twice daily in high traffic areas and once each month in remote areas.

Evaluations of these task performances are accomplished by review of the port safety/marine and environmental protection quarterly activities report.

The FRA reported that its Office of Standards and Procedures, Hazardous Materials Division is responsible for enforcement and compliance with railroad hazardous materials regulations. This office has a field force of inspectors whose sole responsibility is surveillance of the loading and movement of rail and tank cars carrying hazardous materials. This effort is augmented by operating inspectors, and by motive power and equipment inspectors who look for irregularities and violations of the hazardous materials safety regulations in addition to their regular duties. Inspection procedures are described in the FRA's "Hazardous Materials Enforcement Manual."

The FHWA approach to achieving compliance with the hazardous materials safety regulations was described as a three-point program--education, inspection, and enforcement. Carriers and shippers are provided with copies of the Federal regulations. Packaging manufacturers, drum reconditioners, shipper facilities,

carriers, and freight forwarders are inspected for compliance. Roadside inspections of equipment actually moving hazardous materials are conducted to determine compliance under operating conditions. The enforcement actions are in the form of consent agreement and civil penalties. Criminal prosecution is generally reserved for those cases where repeated violations by the same shipper or carrier are found.

The FAA stated that it is responsible for regulation enforcement with air carriers. This enforcement program consists of three main elements. First, the aircraft operators who transport hazardous materials are inspected or surveyed to make sure they have up-to-date copies of the regulations and supporting documentation. Second, the shippers are surveyed and inspected to make sure they are complying with the regulations. Third, enforcement of noncompliance cases is accomplished by the use of warnings, civil action, or criminal action on a case-by-case basis.

The MTB reported that it performs inspection, compliance, and enforcement activities in those areas not covered by the modal administrations in their normal operations as described above. Hazardous materials incidents as reported by shippers, carriers, or container manufacturers on DOT Form 5800.1 are analyzed to determine where enforcement effort needs to be placed. Inspection, investigation, and enforcement are conducted through surveys of shippers, container manufacturers, retesters, sellers, and rebuilders.

Enforcement is achieved by the use of compliance orders, and civil or criminal action as each case warrants. Accidents are investigated in those cases where technical expertise in the area of the container, the packaging, or the hazardous material is needed.

Within all the modes and the MTB, the enforcement philosophy can be categorized as:

1. The regulations have been created and published, and by law must be complied with whenever hazardous materials are shipped.
2. The fundamental responsibility for compliance rests with the shipper who originates the shipment.
3. Enforcement is by economic incentives in the threat of civil or criminal penalties for noncompliance with the regulations.
4. Detection of noncompliance is achieved by inspection.

The results of this program for 1977 are recorded in table 1. In spite of the small number of full- and part-time inspectors used for the various modes for the entire United States, a large number of inspections were made, especially by the Coast Guard and the FAA. It should be noted however that no definition of what constitutes an "inspection" was provided by any government agency.

TABLE 1  
1977 SUMMARY OF DOT COMPLIANCE OPERATIONS <sup>1/</sup>

	CG Marine	FAA Air	FHWA Highway	FRA Rail All	MTB
HM Inspectors, Full-time	0	20	9	16	5
HM Inspectors, Part-time	717	129	128	42	3
HM Compliance Inspections	11,736	11,892	3,123	2,955	86
Civil Actions Initiated	1,836	105	*	14	14
Total Dollars Collected	130,620	72,600	*	23,225	3,850
Criminal Actions Initiated	0	0	*	18	0
HM Incident Reports	15	130	14,250	1,500	12
Vehicles Inspected	40,842	*	3,443	14,740	*
Facilities Inspected	1,736	11,892	2,123	2,955	86
Accidents Investigated	*	130	269	314	*

<sup>1/</sup> Source: Testimony of L.D. Santman, Director, Materials Transportation Bureau, before the Senate Committee on Commerce, Science and Transportation, April 18, 1978. Data include both shippers and carriers.

\* Not recorded.

Federal inspectors are trained in regulations and in compliance and enforcement procedures by the Transportation Safety Institute which conducts courses based on curricula approved by the MTB, the FAA, the FRA, and the FHWA. The Coast Guard maintains its own training program.

Compliance by the other Federal agencies such as the NRC, the DOE, the DOD, the GSA, and the Postal Service is unique to the individual mission of the agency. Enforcement is achieved by the assessment of penalties; however, in general, the total shipping environment is much more closely controlled by these agencies because of the individual procurement procedures.

### State Agencies

In order to achieve consistency, many States have adopted the Federal hazardous materials regulations, in total or in part, rather than develop their own. (See appendix E.) While this insures consistency, the breadth of the compliance problem increases substantially since intrastate carriers and traffic become involved once the State adopts the regulations.

The Safety Board has noted several compliance assurance efforts undertaken jointly by Federal and State agencies. For example, the BMCS is supporting the training of State enforcement personnel, and the NRC conducted a compliance survey of radioactive materials shipments with 10 States during a 3-year period. Some States have also actively enforced hazardous materials regulations, but the number of States that have implemented enforcement programs was not investigated during this study. Difficulties in the administration and achievement of compliance with hazardous materials regulations at the State level were listed by the Director of Traffic Safety of the Illinois Department of Transportation: 10/

1. The Federal mandate is unclear.
2. The hazardous materials threat varies greatly from State to State.
3. Among the States that adopted Federal regulations, the interpretation of State police power will differ.
4. Each State has a different government structure.
5. Reporting arrangements to the Federal government may vary as do State lead agencies for reporting hazardous materials information.
6. State officials often do not know the rules and their responsibilities.
7. Recruitment and training of a good staff is a continuing concern.

10/ Carsten J. Vieg, Director of Traffic Safety, Illinois Department of Transportation, "Trends and Problems in Regulations of Hazardous Materials by States," presented before the Hazardous Materials Advisory Committee, June 29, 1978, Washington, D.C.

8. The State effort must be above suspicion in its enforcement procedures, assuring that enforcement procedures will guarantee due process at every step.
9. The State cannot always control activities of out-of-State shippers.
10. The States lack knowledge of what other States and the private sector are doing in the field.

#### Private Industry

The Safety Board is aware of the many concerned and dedicated personnel with organizations in the private sector who are interested in assuring compliance. While these individuals have no responsibility in the area of enforcement, they are making a conscious effort within their sphere of influence to deter the movement of hazardous materials that are not in compliance with the regulations. For example, organizations such as the ALPA, the IATA, and the Air Transport Association of America all perform services for their members directed at assuring compliance with the regulations.

The Association of American Railroads' Bureau of Explosives has a dedicated program for assuring compliance, which includes information dissemination, laboratory testing, inspections, and consultation services for its members. Over 300 industrial firms currently hold membership in the Bureau as affiliate members.

Many private firms have been active in attempting to improve compliance levels. One widely respected program has been developed and implemented by Flying Tigers, Inc., which includes instruction (training) and internal surveillance for compliance. Also, company procedures for handling hazardous materials cargo have been carefully structured to support the regulations. The comprehensive compliance program developed by the E.I. du Pont de Nemours & Company is another example. This program features an executive commitment to company compliance with the regulations, which is implemented by personnel training, internal checklists, and manpower assignments to the task of hazardous materials shipping. Also, the functional elements of this program are offered, as a compliance assurance inspection service, to other companies who wish to upgrade their effort in this area.

#### DOT COMPLIANCE ENFORCEMENT HISTORY

The Safety Board reviewed the DOT enforcement records involving both civil and criminal charges for violations of the hazardous materials regulations to determine what could be learned about the reasons for noncompliance. 11/ The

11/ See appendix F for the tabular results of this review.

records from 44 cases were extracted from the period February 1974 through November 1978 as examples of the type of action taken by the DOT to enforce the regulations.

Two of the violations were processed by the MTB. The first involved the improper use of containers, and the second dealt with improperly marked shipping containers. No punitive action was taken in either of these cases.

Sixteen of the violations were processed by the FAA. Three of these involved passengers who checked unmarked hazardous materials on a flight as baggage; four pertained to incorrect documentation; six were for improper packaging; one was for incorrect testing of drums; one was for carrying unauthorized material; and one was for carrying contracted materials without a permit. Five fines, ranging from \$300 to \$750 for a total of \$2,450, were assessed.

Five violations were found by the FRA. Two of these were incorrect documentation, two involved faulty equipment, and one was the result of improper handling. One fine of \$3,500 has been paid, and a second fine of \$16,500 has been assessed.

Thirteen violations were processed by the FHWA. Six were for failure to correctly placard vehicles carrying hazardous materials; three involved incorrect documentation; two were for improper packaging; one was for failure to report an accident; and one was for improper handling. Six of these violations resulted in fines ranging from \$200 to \$750 for a total of \$20,200.

Eight violations were processed by the Coast Guard. Six were for incorrect documentation, and two involved improper handling. No fines were assessed or collected in any of the cases.

#### ANALYSIS

There is agreement between the government and the industry about perceived reasons for noncompliance with the hazardous materials safety regulations in six areas. These reasons are:

1. The regulations are complex and difficult to understand.
2. Industry interrelationship complexities.
3. Economic pressures.
4. Industry personnel often are unaware of the regulations.
5. Lack of available training for inexperienced personnel.
6. Indifference.

Although there is a broad overlapping of these reasons, each reason focuses on a problem area which requires a solution that is somewhat different from the others. For example, eliminating the complexity of the regulations will not improve industry personnel awareness of the regulations. Also, even with training, personnel could still be indifferent to their responsibilities.

### Regulation Understandability

Most large shippers accept responsibility for compliance with the regulations. The shipping personnel employed by these firms work with the regulations daily and have developed a thorough understanding of them as a result of constant use. However, personnel who only infrequently have a need to refer to the regulations were reported as finding them very difficult to understand. It is apparent that a high school graduate working as a shipping clerk could have difficulty in determining the correct hazardous materials shipping procedure using the current complex requirements of the hazardous materials regulations and the applicable revisions. If the regulations are to be followed faithfully in the shipping of hazardous materials so that the transfer is accomplished safely, as intended by the DOT, then the regulations must be written so that everyone who is expected to use them can understand them.

Currently, changes to regulations can occur weekly, and grants of exemptions can affect compliance for individual shippers and carriers almost any day of the year. (See appendix G.) In these circumstances, and considering the large number of individuals who must keep informed of these changes, annual or semiannual publication of regulatory changes would probably ease this burden and could probably be accomplished without sacrificing the level of safety under the regulations. When safety is affected, the use of emergency orders or orders issued under the "imminent hazard" provisions of section 111(b) of the Hazardous Materials Transportation Act could be used to correct the safety problem.

Also, there is the matter of regulations that are published by different agencies and that appear to conflict and require interpretation. In these cases the shipper's personnel must be current in all of the regulations so that judgments can be made as to which regulation takes precedence. (See appendix C, Issue 11.) If the carrier's personnel reach a different conclusion as to which regulation is applicable, the cargo is determined to be not in compliance with the regulations. Thus, the difficulty in understanding parts of the regulations combined with the necessity for interpretation tends to discourage relatively inexperienced shipping personnel from making a serious attempt to comply with any regulation.

### Industry Interrelationship Complexities

The complexity of both the shipping industry and the transportation industry relationships constitutes an environment which tends to encourage noncompliance. The range of shippers extends from the very large manufacturers or wholesalers who ship tons of hazardous materials daily in small or large lots, to the small organizations or individuals who ship these products infrequently or in small quantities.

The carriers include major trucking firms with large fleets of trucks, intermediate-size trucking firms servicing a relatively small geographic area, and small private carriers. There are air carriers, rail carriers, freight forwarders, and marine carriers on both the inland waterways and in overseas operations. Through this heterogeneous system pass varying quantities of hazardous materials shipments, each with its unique chemical and physical characteristics.

It is within this environment that the hazardous materials safety regulations function to control the packaging, labeling, documentation, and handling of this cargo. Since the regulations are in force and there still are instances of noncompliance, the approach to correction is by detection and enforcement. Yet this complexity of relationships adds greatly to the detection and enforcement difficulties.

#### Economic Pressures

The large number of small or infrequent shippers of hazardous materials may result in noncompliance. For example, the shipper may not be aware of the regulations, or he may not wish to invest in a trained staff and in the extra cost of preparing the materials for shipment.

Many carriers will accept freight which includes packages of hazardous materials in the shipment. The cargo is picked up and forwarded without inspection, without question, and without knowledge that the hazardous materials are there. Other firms will pick up and forward hazardous material shipments which are not prepared in compliance with the regulations. These carriers do not normally look for hazardous materials in the freight they transport since, in normal operations, the carrier owner usually does not see the freight. The shipment is picked up by a driver who has little or no knowledge of hazardous material and is started on its way. The noncomplying freight passes through the transportation system to its destination unless it is detected by an inspector or another carrier, which is quite unlikely, or unless an accident occurs which results in its release.

Therefore, there is no method for determining the amounts and the types of hazardous materials that are transported out of compliance and which move uneventfully from the point of origin to the point of delivery. Accordingly, it is impossible to determine the amount or extent of actual compliance in terms of percentages of shipments or ton-miles.

#### Unawareness of Regulations

Although the DOT perceived unawareness of the regulations as a primary cause of noncompliance, only a few of the 100 interviewees said they did not know about the regulations governing the shipment of hazardous materials. This sampling suggests that the industry does not attach the same significance to unawareness as a reason for noncompliance as does the DOT. However, as noted above, the actual amount of materials shipped out of compliance cannot be determined, and it is impossible to establish how many of these shipments are moved without the shipper's knowledge that the regulations exist.

### Training

The interviews revealed some significant information relating to training. For example, personnel preparing shipping documentation recognize that training in hazardous materials regulations would be invaluable in performing these tasks correctly. However, training courses are not readily available. Further, some companies are unwilling to make any substantive investment in training when courses are available. Often the persons who do receive the training are not the personnel working at the functional level where it is useful. It should be noted that industry views the lack of training as a reason for noncompliance much more strongly than the Federal agencies do, which suggests that the MTB might wish to examine the availability and industry use of its existing training courses.

### Indifference

Indifference to the regulations comes in a variety of areas and there is no clear pattern established that permits a definition of this problem. The reasons for indifference relate to five of the six reasons listed above. Noncomplying shipments which result from indifference are identified mainly when a problem with the shipment occurs either from detection by inspection or by a release. The total volume of this traffic is unknown.

### Compliance Achievement Responsibilities

Several carrier representatives were concerned with responsibilities for achieving compliance, although this was not mentioned in any of the government agencies' replies. While it is recognized that the responsibility for compliance rests with the shipper, it is the carriers who must deal with the problems of incorrect documentation or markings on the cartons and packaging. In order to do this, the carrier must inspect all incoming shipments, which requires that the carrier employ personnel who have some working knowledge of hazardous materials, the regulations, packaging, and compliance. When noncomplying shipments are found, the carrier may set them in a segregated area until the problem can be corrected, or return them to the shipper. If the carrier carries these noncomplying shipments and is detected, the carrier can be fined.

The act of inspecting the freight, detecting noncompliance, and correcting the problem means that the carrier is, in effect, performing a quality control function for both the shipper and the DOT. The rejection and return of the cargo to the shipper suggests that the carrier is performing a de facto enforcement function. It is at this point that the economic pressures have their impact. There is no easy way for the carrier to recover his costs for the trained personnel, the restricted storage space, the extra handling, and the necessary coordination with the shipper to correct the noncompliance. Clerks working to correct the deficiencies often are expected to prepare documentation and sign shipping certification about which they may have little knowledge. If the carrier returns the freight to the shipper, the shipper may decide to divert to another carrier; thus the carrier loses the business for his action.

## Compliance Programs

Each of the government agencies to which hazardous materials regulatory authority has been assigned has its own program of detection and enforcement of its regulations. Detection of noncompliance is accomplished by inspection. There are some difficulties with this method however, especially in the field inspections. For example, in highway the number of inspectors compared with the number of carriers and trucks that may be moving daily is very small. Also it is impossible to inspect a truck fully loaded with freight to determine whether it is carrying hazardous materials that are not in compliance with the regulations without unloading the truck and examining each piece of freight in detail. This suggests that the emphasis on inspection and detection should be on the carriers' terminals. The situation is generally the same in air, water, and rail shipments.

Enforcement by all agencies is achieved by the use of consent agreements and civil penalties in the form of fines. Criminal prosecution may be used in those cases where repeated violations by the same shipper or carrier are found. Part of the enforcement program is achieved by issuing citations after an accident has occurred. However, it is difficult to prove noncompliance from the wreckage of a trailer or truck that has exploded or burned. Further, even though the citation may prevent future accidents, it does not function to prevent the original event.

Since there is no way to determine the quantity and types of hazardous materials that pass through the transportation system out of compliance, it is impossible to measure just how effectively the DOT compliance and enforcement program is working. The success of the compliance with the regulations that is being achieved may be attributed to the conscientious efforts and dedication of both the government inspectors and of those many reputable shippers and carriers in the United States who enforce and obey the law. The noncompliances result from the exceptions.

## CONCLUSIONS

1. There is general agreement between the government and industry about perceived reasons for noncompliance with the hazardous materials safety regulations in six major areas.
2. Every product or commodity identified as a hazardous material must by law be documented, packaged, and shipped in accordance with the requirements of the regulations.
3. The regulations are difficult to understand, especially for those personnel who use them infrequently, and it is difficult to keep current on the latest revisions to the regulations.
4. The complexity of both the shipping and the carrier industries' interrelationships tends to create an environment that encourages noncompliance and makes detection of noncompliance for enforcement purposes extremely difficult.

5. As the result of economic pressures on certain shippers and carriers, hazardous materials that are not in compliance with the regulations are introduced into the transportation system.
6. It is impossible to measure the effectiveness of the detection and enforcement programs because the amount of hazardous materials being shipped that are not in compliance with the regulations is unknown.
7. The DOT perceived unawareness of the regulations as one of the primary reasons for noncompliance; however, this reason was not cited by many industry interviewees.
8. Industry views the lack of training as a reason for noncompliance more strongly than the Federal agencies do.
9. Certain carriers perform a significant role in hazardous materials detection and regulations enforcement that has not been fully acknowledged by the government.

#### RECOMMENDATIONS

As a result of its findings in this special study, the National Transportation Safety Board recommended that the U. S. Department of Transportation:

"Expedite the ongoing DOT program of evaluating every hazardous materials safety regulation with the objective of revising each regulation so that the persons who need to use them can understand them. (Class II, Priority Action) (I-79-1)

"Publish all nonemergency amendments to the regulations, simultaneously and at regular intervals such as semiannually, with a cross-reference index that also includes all previously released emergency amendments. (Class II, Priority Action) (I-79-2)

"Expand the MTB compliance program to work through the executives of shipping companies as a means of improving compliance with regulations through increased industry awareness and as a means of eliciting from these executives information on the effectiveness of the regulations. (Class II, Priority Action) (I-79-3)

"Expand the hazardous materials regulations compliance assurance program by formalizing compliance policies and management systems that will serve as a model for other departments with regulatory responsibility, and that ultimately will lead to the ability to measure the effectiveness of the program. (Class III, Longer Term Action) (I-79-4)"

BY THE NATIONAL TRANSPORTATION SAFETY BOARD

/s/ JAMES B. KING  
Chairman

/s/ FRANCIS H. McADAMS  
Member

/s/ G.H. PATRICK BURSLEY  
Member

PATRICIA A. GOLDMAN, Member, dissented. ELWOOD T. DRIVER, Vice Chairman, did not participate.

August 3, 1979

Appendix A

ACCIDENTS INVOLVING HAZARDOUS MATERIALS

Location	Mode	Parties not Complying	Problem Area	NTSB Report Reference	Report Date
Boston, Ma.	Air Carrier	Shipper/Carrier Forwarder - Packer	Packaging; labeling documentation; quantity limit	NTSB-AAR 74-16	12/3/74
N.Y. to Houston	Air Carrier	Shipper/Carrier	Package maintenance storage; documentation	NTSB-AAS 72-4	4/26/72
Menatchee, Wa.	Rail Carrier	Shipper	Special permit terms; car inspection	NTSB-RAR	2/2/76
Lynchburg, Va.	Highway	Driver	Routing; licensing	NTSB-HAR 73-3	5/5/76
Eagle Pass, Tex.	Highway	Carrier	Driver qualification	NTSB-HAR 76-4	5/5/76
Gretna, Fla.	Highway	Shipper/Carrier Container Manufacturer	Package; packaging; cargo tiedown; placarding	NTSB-HAR 72-3	6/1/72
Houston, Texas	Highway	Driver	Excessive speed - State	NTSB-HAR 77-1	5/24/77
Buffalo, N.Y.	Air Taxi	Shipper	Documentation; packaging; labeling	No formal report	

APPENDIX B

NATIONAL TRANSPORTATION SAFETY BOARD  
SPECIAL STUDY ON THE SAFE TRANSPORTATION  
OF HAZARDOUS MATERIALS

AGENCY COMPLIANCE ASSURANCE PROGRAM INFORMATION REQUEST

1. Please furnish a complete list of CFR titles and sections containing regulations of your agency which affect safety in the transportation (as defined in PL 93-633) of hazardous materials in commerce. What percentage of nonbulk hazardous materials shipments do you estimate are in compliance with your hazardous materials regulations? Please give the basis for your estimates.
2. Please name the official(s) in your organization to whom responsibilities have been assigned for managing activities designed to achieve compliance with your hazardous materials regulations affecting transportation safety.
3. Please state the objectives of your organization's compliance assurance program. When were they adopted? When were they last reviewed? Are they presently scheduled for review? If so, why, when, by whom and under what circumstances?
4. Please describe how you approach the achievement of these objectives. What are the elements which constitute your compliance assurance program, listed or grouped in the order of importance in achieving your objectives? What are the general principles, concerns, and assumptions that form the basis for your approaches, your program, and each of its major elements?
5. Describe briefly your agency's present compliance assurance program operations, including aspects such as your operating philosophy; budget; manpower; specific kinds and estimated count of the outputs of each program; how performance of each program is evaluated; and cooperative or supportive activities with other agencies that affect your program.
6. Please furnish a copy of any agency orders or official documents assigning to members of your organization their compliance assurance responsibilities and duties for hazardous materials regulations affecting transportation safety.
7. Furnish examples describing the step-by-step operations of each element of your compliance assurance program, including at least one example where your desired objectives were achieved and one where they were not achieved. Explanations why operations were successful or unsuccessful are requested.
8. Please furnish a list of your views of reasons why persons operating under the regulations comply or do not comply with your hazardous materials regulations affecting transportation safety, with a brief explanation of your organization's rationale for each reason listed.

9. Please furnish one copy of any studies specifically addressing compliance problems, conducted by or for your agency.
10. Please furnish any additional information which you believe the Safety Board needs to adequately understand your compliance assurance approaches, assumptions or procedures; and to evaluate opportunities for improving the level of compliance with safety regulations affecting hazardous materials safety in the future.

## APPENDIX C

### CASE STUDIES FROM INTERVIEWS WITH TRANSPORTATION INDUSTRY WORKERS

1. Issue: Misclassification of Shipment

Facts: The manager for an air carrier with offices in a midwestern city described an experience wherein a shipment containing hazardous materials was received at his dock for shipment, accompanied by the pertinent documentation, from a freight forwarding agent. The air carrier personnel checked the air bill, shipper certification, and packaging list. It was noted that the freight forwarder had not used the correct shipping names to describe the commodities offered for shipment as required by the CFR. Also, the forwarding agent had abbreviated some of the commodity names.

The carrier personnel advised the forwarding agent that the freight could not be accepted for shipment until the proper classification was used. When questioned, the freight forwarder stated that abbreviations were used because the list of commodities was so long. Since the shipment was being delayed, one of the carrier's representatives called the shipper and explained the problem. The shipper then contacted the freight forwarding agent and advised him that unless he complied with the regulations, the shipper would choose a new agent. The forwarder corrected the documentation to comply with the CFR, although the forwarder's agent stated that the carrier's insistence on adherence to the CFR meant future shipments would be made through another carrier who was not so insistent on correctly labeled freight.

The air cargo manager stated that his company always attempted to comply with the regulations because it is required by law. Further, he hopes the regulatory agencies will "force the cheater to comply."

2. Issue: Responsibility for Classification of Shipment

Facts: The owner of a trucking firm that serves as an agent for local air carriers in a southwestern city reported that small manufacturers, shippers, and freight forwarders tend not to use the proper shipping name when shipping hazardous materials. For example, this owner has structured part of his business to pick up freight for air shipments. Once the freight is in his possession, he makes sure that the paperwork, including the hazardous materials certification, is correct before delivering the shipment to the carrier. This owner said that he never refuses a shipment. His approach is to discuss the matter with the airline personnel, explaining what he believes the situation to be. The airline then coordinates with

the shipper on the shipment. Then when the shipper gives him the freight accompanied by the documentation, resulting from coordination with the airline, he delivers the cargo to the airline. The truck company owner has no knowledge or interest as to what is in the package or the paperwork.

3. Issue: Economic Pressures

Facts: Two billing department employees of a freight forwarder reported that their company had never provided training for persons handling hazardous materials. Further, they stated that they had no knowledge of what the CFR was until an air carrier salesman explained it to them. As an example of the difficulties the forwarder encounters with hazardous materials shipments, these employees discussed one of the company's customers, a large chemical company whose main office is in an eastern city with plants located in other States. When a shipment of hazardous materials is to be made to one of the plants, the shipper's main office notifies the forwarder, usually providing him with the bill of lading and certification before he receives the freight. Once a shipment arrived for the shipper bearing a "caution" label on the cartons. When one of the forwarder's dock personnel picked up one of the cartons, some of its contents spilled on his arm. Soon a skin rash appeared on his arm where the material had spilled. The forwarder called the shipper's main office to explain what had happened. The shipper's personnel who had prepared the documentation for the shipment without ever seeing it, asked the forwarder what labels were on the boxes. When advised that the boxes had yellow "caution" labels, which signify a flammable solid oxidizing material, the shipper instructed the forwarder to remove the caution labels and forward the shipment as documented on the bill of lading. The shipper's instructions were followed because the forwarder was concerned that, if not, he might lose the shipper's business. A doctor later examined the rash on the employee's arm and diagnosed it as a chemical burn; however, he could not identify the chemical that had caused the burn.

4. Issue: Training

Facts: A manufacturer delivered an export shipment to a forwarder in his own truck. Upon receipt, the dock foreman checked the freight and found there were no markings on the cartons as required by the CFR. Since the billing showed hazardous materials, the foreman called the shipper and questioned the shipment. The shipper instructed the forwarder's employee to mark

"12b" 13/ on each carton. The forwarder complied and delivered the shipment to the carrier who accepted it.

This forwarder's office employees requested approval from their supervisor to attend a hazardous materials transportation training seminar because they recognized they were uninformed in this area. For example, they were convinced they should not sign a shipper's certification simply because the shipper instructed them to do so. It was reported that their supervisor approved their request so long as the cost did not exceed \$45 and no overnight travel was involved. These limitations emphasized the supervisor's lack of interest in hazardous materials handling, and practically precluded attendance at a seminar.

In a related example, a carrier representative reported that he knew of a major company shipping hazardous materials which required its clerks to prepare and sign the shipper certification without knowing the contents of the shipment and without having a knowledge of the regulations. The regulatory expertise in this company rested with the traffic manager who attempted to keep current with changes to the regulations. Unfortunately, he did not provide this information to the shipping clerk preparing the documentation. This carrier representative believed that among the reasons for noncompliance, training of the wrong personnel is predominate. Training seminars are educational and helpful, but only if they are given to the employees who actually do the work, he said.

5. Issue: Identification and Packing

Facts: The owner of an export packaging company engaged in preparing all types of commodities for shipment in any of the various modes described the types of problems he encounters. For example, when shipments are received at his facility, a checker physically checks each item. When the checker encounters a shipment he believes to be a hazardous material, he brings it to the attention of the company's hazardous materials specialist. When this specialist is uncertain as to whether the item is hazardous, for example, spray cans or oils for which flash points are not shown, he sets the shipment aside in a designated area and contacts the originator for additional information.

Typically a shipper will either tell the specialist to pack the shipment and promise to call him with the information needed, or tell the specialist to use his own judgment and package the item any way he wants to.

13/ 49 CFR assigns the designation "12b" to fiberboard boxes.

The owner stated that he requires shippers who are hesitant about accepting responsibility for their freight to furnish his company with a letter which confirms the instructions and the commodity description that was furnished his employees.

Other examples described by the owner further illustrate this problem. Epoxy resins are sometimes sent to the packaging company, without identification, for crating or repackaging. Shipments originated by wholesale electrical companies who do not realize that some of the items are hazardous materials as defined by the CFR are received. When asked why these materials were not identified as hazardous, the typical answer was: "We have been doing this for years and didn't have a problem. We have been shipping these items all over the world and no one has ever said anything to us before." When asked if they knew about the hazardous materials regulations in the CFR, a frequent answer was "never heard of it."

In another instance, a cylinder of compressed gas was received for shipment. Upon inspection it was noted that the required markings on the cylinder had been worn off or painted over so they could not be distinguished. When the shipper was contacted, one of his employees told the packing company what types of cylinders he thought they were. This information was accepted as furnished, and the cylinders were marked accordingly and shipped.

Another example involved a breathing apparatus that the company was asked to package. This equipment often contains a cylinder loaded with oxygen which is not listed on the documentation. When the shipper questioned the originator, he received the standard response: "We have always shipped this way and have never had any problem. Why all the fuss now?" Usually they have not heard of the CFR. The owner reports that he now requires shipper certification from persons tendering such shipments.

The owner stated that only in rare cases does his company delay a shipment which is in the gray area—that is, not clearly established as a hazardous material. He reports that while he wants to comply, he probably overlooks some discrepancies because he is concerned that he may lose all of the shipper's business which includes much more than just hazardous materials.

Another packaging firm reported that crating companies have "a tough time in responsibility" because of the number of companies that may become involved in a particular shipment. For example, a manufacturer sells a product to a wholesaler or to a manufacturer's agent. He in turn sells the product to a local supplier for resale to his customers. The item then proceeds to a trucker for delivery to a crating or packaging company. If the shipment were

assigned to an out-of-State customer, the trucker delivers it to a freight forwarder who in turn sends it to a crating company for packaging. The crating company many times does not know from whom information about the commodity may be obtained. Therefore, in order to move the shipment, they have to make their own description without knowledge of the product, and hope the classification is correct.

The manager of another crating company illustrated the difficulties he encounters with the example of a cylinder of nitrogen that his company once received. The cylinder's weight was not recorded on the accompanying paperwork. Since DOT regulations specify weight limitations, the crating company representative called his customer, a freight forwarder, to inquire about the net weight in the cylinder. He was advised that the forwarder did not know and that, "it's a real shipment so get it moving and use gross pounds as net pounds," which the shipper felt was the safe way to handle the shipment.

The manager of this company stated that his firm will not sign a shipper certification unless they have a power of attorney from the company with whom they are dealing. In his view some of the reasons for noncompliance are:

- (1) People do not take time to understand the regulations and they do not feel it is important to do so.
- (2) Some manufacturers hesitate to give information concerning their products, even if it constitutes a hazardous material, for proprietary reasons.
- (3) Personnel tend to use the IATA tariff instead of the CFR because it is easier to read and understand.
- (4) Small shippers often are unaware of the regulations.

This manager stated that his company tries to comply with the regulations because "it's the law," but he has "an awful time trying to convince their customers to comply."

6. Issue: Placard use

Facts: The CFR requires any truck transporting hazardous materials to bear placards on the outside of the truck. As a rule, the trucker is expected to supply and affix the placards. In many cases a driver is instructed to pick up a load of freight about which he has no information other than its gross weight. The carrier's terminal manager expects the shipper to tell the driver when hazardous

materials are included, thereby totally relying on the shipper to do the right thing.

This carrier made no effort to segregate hazardous materials shipments while they were in his custody. None of his office staff or drivers have had training in hazardous materials regulations or handling. Thus, without training in the regulations, there is no way to interpret them when questions arise about specific shipments. Employees are provided with written company instructions which define what is expected of them in the performance of their job. Each employee is asked to sign a copy of these instructions, which is retained in his personnel folder.

7. Issue: Compliance Philosophy

Facts: The traffic manager of a west coast manufacturer reported that he had attended one hazardous materials seminar. The personnel reporting to him had no training. This manager stated that he wanted to comply with the regulations so he could "stay out of jail." However, in some cases where he did not understand a regulation, he felt it was "a lot easier to ignore the regulations than to try to figure them out." He asserted that he was afraid to call one of the regulatory agencies for help because "the first thing you know they will be out here finding fault." On the one occasion when he did contact a local DOT representative for clarification of a hazardous materials question, he was told to look in a specific section of the CFR. When he told the DOT representative that he had checked that section and did not understand the requirement with respect to his commodity, he was advised that "it's all in there." From this point on, the traffic manager made no further attempts to obtain assistance from the DOT.

This problem is not limited to domestic traffic in the private sector. The manager of an international freight forwarder stated that his firm was holding at least 37 shipments tendered by the GSA for the DOD because the airlines would not accept the shipments without a shipper's certification and the government employees would not provide the forwarder with the required certification.

8. Issue: Hazardous materials handling

Facts: A trailer loaded with hazardous materials arrived at a west coast carrier's pier in Oakland, California via piggyback. The railroad unloaded the trailer and it was attached to a tractor which delivered it to the ocean carrier's pier. The bill of lading described the shipment as "solvent type adhesive w/green drums, red label applied" and "two drums solvent type adhesive w/green

olive dye (synthetic resin)." The bill of lading also showed "solvent MEK Heptain." When the trailer arrived at the pier, fumes were noted emanating from it. The odor was so powerful that the carrier's employees could not approach the trailer. At this point, the carrier called the Bureau of Explosives of the Association of American Railroads since a rail shipment had been involved. The Bureau inspector suggested that the carrier contact the DOT. Concurrently, the carrier contacted the shipper and advised him of the problem. The shipper's response was that it had never experienced this trouble with the other ocean carriers.

Examination of the shipment by the DOT inspector disclosed that 50 percent of the drums were leaking. The bungs on all of the drums had been left loose to allow venting and when the bungs were sealed the cover of the drum would rupture from high pressure. The inspection was difficult to accomplish. The documentation showed that the flash point was 20! F when actually it was -20! F, 40! F lower than reported. Also, the drums did not meet DOT specifications.

The DOT inspector told the carrier that since the shipment originated in New York it was out of his jurisdiction so he would ask the New York DOT office to handle the problem and take it up with the shipper. The DOT inspection was made in mid-July 1977. As of mid-October of that year, the carrier had received no further communication from DOT representatives.

The hazardous materials specialist for this carrier stated that in his opinion the reasons for noncompliance with the regulations were:

- (1) Federal inspectors do not get out to see their operations often enough.
- (2) People handling the shipments don't understand the regulations.
- (3) Dock personnel can't understand the regulations and claim they're too complex, so they feel that it is easier to ignore them.
- (4) Freight forwarders that make deliveries to this ocean carrier claim it costs them time and money to train their people, so they ignore the regulations whenever they can.

He estimated that about 10 percent of the hazardous materials received for shipment by his company show no indications that identify them as such. Frequently the bill of lading shows "red label applied" or "yellow label applied" when the correct label

should be "flammable" or "oxidizer." Shippers tend to become annoyed when told of their mistakes.

Another problem arises when speculators buy up large quantities of products such as insecticides or pesticides for resale to a foreign country or in one of the large agricultural States. Once the speculator sells the product, "he could care less how it is packaged or marked," and 90 percent of the time these are hazardous materials. The most common mistakes encountered by this ocean carrier were improper shipping name, no certification, labeling inaccuracies, misclassification, and the use of improper packagings. Should the carrier complain too loudly, the shipper simply diverts to another carrier.

9. Issue: Undetected noncomplying shipments

Facts: The consequences of hazardous materials which are not packaged in accordance with the regulations, and which escape detection and correction as they pass through the transportation system, were described in an example given by another ocean carrier. Once a load of material bearing a "poison B" label, and described in the documentation by a five-digit alphanumeric code number was received at the carrier's pier. The shipment was a 20-foot container loaded with drums and weighing almost 18 tons. Because of the constraints caused by dock storage limitations, crew working hours, and ship stability and trim considerations, the container was accepted with this designation and loaded onto the ship. Two days before the ship arrived at its destination, a poisonous resin material began leaking out of the container. After several telephone calls to the shipper, personnel of the carrier company were able to learn the correct chemical name and the toxic properties of the product, and to determine the best way for the ship's crew to clean up the leaked poison without endangering themselves.

10. Issue: Incorrect documentation

Facts: In another instance, a shipment of solid corrosive identified as "not otherwise specified (NOS)" was delivered to a steamship company's pier. The carrier noted that in this shipment the trade name was used rather than the proper shipping name, that the packages bore no corrosive labels, and that the certification was signed by a clerk instead of a traffic manager. When the shipper was informed of these discrepancies by the carrier, his first question was whether the shipment would make the next sailing, which was an indication of his primary concern. When informed that the shipment could not move until these discrepancies were corrected, the shipper quickly supplied corrected freight documentation and dispatched personnel to apply the proper labels to

the containers so that the shipment could make the next departure.

A manager of another carrier described an experience with a customer who had its corporate headquarters in one State and plants that ship products located in numerous other States. This shipper employed a computerized system geared to product stock numbers to order shipments. Often, when freight arrived at the carrier's dock, the documentation was found to be incorrect. The entries in the computer were outdated, which resulted in incorrect paperwork, with the result that often both the markings and the label were wrong. When the carrier found materials not designated by the correct shipping names, a correction list was made, the shipment was rejected, and the trucker who brought the freight was instructed to return it to the shipper. In this case, the carrier was actually acting to enforce the law by refusing to accept the shipment. When informed of the carrier's action by telephone, the shipper acknowledged he was aware of the problem and was attempting to correct it; however, this shipper had used hazardous materials labels that had been outdated for over a year.

As another example, a different carrier received a shipment described on the bill of lading as "poultry vaccine." This product had moved approximately 1,500 miles from the shipper to the carrier's destination terminal. When the freight was unloaded from the aircraft, one of the packages was found to be leaking. Inspection of the contents revealed that it was an "insecticide, class B poison." The carrier placed the shipment in a restricted area, notifying first the DOT modal representative and then the shipper. The shipper reportedly offered the explanation that his shipping clerk had packaged and shipped the wrong merchandise. However, past experience with this company make his explanation suspect, and now all freight from this shipper is inspected before acceptance.

11. Issue: Inconsistent regulation interpretation and enforcement

Fact: One major scheduled airline contended that under its interpretation of the regulations, it will transport a class B poison only in a cargo aircraft, while another carrier, based on its interpretation will carry it in a passenger aircraft. The personnel from this scheduled airline stated their belief that some shippers simply do not understand the regulations, while others take a chance and ship without mentioning the materials are hazardous. The philosophy is: Unless the shipment is damaged or the packaging fails and it begins to leak, the carrier will never know.

12. Issue: Compliance and enforcement

Facts: The sales manager of a freight forwarder that had just opened an office in a southwestern city reported that his company has encountered difficulty in getting carriers to accept shipments because of the questionable packaging of hazardous materials, even though he has a shipper's certification. This forwarder is afraid not to accept the freight for fear of losing the account. Should the shipment be questioned, the forwarder would prefer that the line haul carrier make the refusal decision. While this position does not jeopardize the forwarder's business relationship with the shipper, it does place the entire burden of compliance enforcement upon the carrier. This same sales manager stated that he did not have a copy of the CFR in his office, and that he thought the Civil Aeronautics Board regulated all hazardous materials transportation. Further, he stated that he had never heard of the DOT. He held the view that shippers should be responsible for their shipments, and that his forwarding firm has no responsibility, even if the shipper does not live up to his responsibility to package, label, and document correctly.

In a related experience, a Federal inspector was making a routine check at a carrier's facility when he observed a bill of lading from a local chemical firm which revealed that the firm was not complying with the CFR. The inspector visited the chemical plant that same day to correct the problem he had uncovered. During his inspection, he found several management personnel responsible for shipping who were not aware of the hazardous materials safety regulations. The inspector was advised that these personnel knew the regulations existed; however, they did not have copies, and they did not know where to get them. The managers noted that the shipping practices observed had been used for a long time and were considered to be standard procedures. The practices were corrected after the Federal inspector's visit.

13. Issue: Disinterest in compliance

Facts: The terminal manager of a major air cargo carrier in a large city provided further insight into the training problem. A large chemical firm located in the immediate area delivered a shipment to the air carrier's terminal in its own truck. Both the air bill and the shipment were marked "oxidizer" and "organic peroxide," an extremely hazardous material. The shipper failed to include the necessary certification and the packages bore only a "caution" label. A representative of the carrier contacted the shipper to determine precisely what was being shipped. He learned that the shipper had no knowledge of either the CFR or IATA regulations.

The shipper considered these shipments to be samples and had been moving them in this manner for a long time. This freight was returned to the shipper. The terminal manager subsequently scheduled a meeting with the shipper's traffic manager at which time he showed him the regulations and informed him that future hazardous materials shipments must be in compliance. The traffic manager's only question and concern expressed at this meeting was why his shipment had not moved. The obvious conclusion was that the traffic manager was not interested in the regulations. The air carrier stated they were no longer receiving freight from this shipper and that if he were still shipping, his cargo is now moving via a surface forwarder to the port of debarkation.

The executive of a shipper's association described another example of disinterest in compliance to achieve expediency. His association consolidated individual small shipments, notifying carriers when trailers were loaded and ready for departure. The initial carrier notification of the shipment by the association is oral and the paperwork from the association follows several days after the trailers actually depart. The carriers never actually see the shipments the association loads into the carrier's trailers. If the carriers find any errors in the documentation, it is too late to correct them because the shipment is in transit. Stopping the trailer for inspection would defeat the purpose of the shipper-association consolidation activities.

14. Issue: The conscientious operator

Facts: The assistant manager of a freight forwarding company operated by an owner who is highly respected in this field, said his company's policy is to reject a shipper found deliberately avoiding compliance with the hazardous materials regulations. The owner expressed concern about fly-by-night operators who operate until a problem arises and then close their doors to reopen elsewhere under another corporate name, leaving the larger firms to recover from the bad name that results. She considers her company to be a highly reputable firm, and in order to maintain this reputation she has established that part of her responsibility is to adhere to the hazardous materials safety regulations.

She expressed concern regarding the obvious confusion as to where the responsibility for achieving compliance rests, especially when so many small firms in the shipping and transportation industry plan on passing this responsibility to the carrier. Confusion between the requirements of the CFR and those of the IATA regulations also was cited as a problem. The need for all the regulations also was questioned. A case in point was the complex

regulations for articles such as aerosol spray cans which have been shipped for years in enormous quantities without a major incident. This operator assigns accounts to specific individuals in her firm who are expected to service them completely, including meeting the hazardous materials requirements. To achieve compliance she reserves the right for these individuals to open and inspect any freight before shipping it.

APPENDIX D

INTERPRETATION OF HAZARDOUS MATERIALS REGULATIONS

Subject: 49 CFR 173.29, Empty Packages, Portable Tanks,  
Cargo Tanks, and Tank Cars.

The following is extracted from an interview with Lawrence W. Bierlein, attorney and author of The Red Book on Transportation of Hazardous Materials, in the October 1977 issue of Traffic Management (TM) magazine which deals with the subject CFR section.

Q: How does one ship an "empty" cylinder, barrel, drum, or other package that formerly contained a hazardous material?

A: Although this is a simple question, it has a very complicated answer, caused by several errors in the adoption and printing of the current edition of the DOT regulations. What appears in print in the rules is so internally inconsistent and ambiguous that it gives no guidance whatsoever. The agency's intent is to leave the safety assessment to the shipper. If he feels that the container which last held a hazardous material still contains sufficient residue to warrant regulatory control in transportation, he should treat it as if it were still regulated.

In other words, the label that appeared on the full container should continue to remain on the "empty" container, and that container should be shipped with proper shipping papers showing the words "EMPTY: Last contained \_\_\_\_\_," placing the proper DOT shipping name and classification of the last contents in the blank, or by stating the shipping name and class followed by the word "EMPTY." (See 49 CFR 172.203(3)) The paper must bear the shipper's certificate of compliance.

If the shipper determines, however, that the empty hazardous materials containers do not contain sufficient residue to warrant treating them as regulated products, then the DOT hazard labels that had appeared on the packaging should be removed or obliterated (49 CFR 173.29). The square "empty" label prescribed in 49 CFR 172.450 may be used to cover or obscure the previous hazard label.

Covering or obliteration of the previous label is not required for carload or truckload shipments made in closed railroad cars or van-type motor vehicles when loaded by the shipper and unloaded by the consignee or its authorized agents. If the shipper has made his determination that the package is sufficiently empty to treat it as unregulated in this way, he need not accompany that shipment with shipping papers complying with the DOT documentation requirements.

APPENDIX E

STATUS OF FEDERAL MOTOR CARRIER SAFETY REGULATIONS  
ADOPTED BY STATES AS OF OCTOBER 31, 1977

STATE	SECTION NUMBERS						
	391	392	393	394	395	396	397
ALABAMA	B	B	B	C	B	B	C
ALASKA	A	A	A	C	A	A	D
ARIZONA	A	A	A	A	A	A	A
ARKANSAS	A	A	A	A	A	A	A
CALIFORNIA	B	B	B	C	B	B	A
COLORADO	A	A	A	A	A	A	A
CONNECTICUT	C	C	C	C	C	C	C
DELAWARE	C	C	B	C	D	D	C
DISTRICT OF COLUMBIA	C	C	B	C	C	C	C
FLORIDA	A	A	A	A	B	A	A
GEORGIA	B	A	A	C	A	A	A
HAWAII	A	A	A	A	A	A	A
IDAHO	A	A	A	A	A	A	A
ILLINOIS	C	C	B	C	B	C	C
INDIANA	A	A	A	C	A	A	A
IOWA	A	A	A	A	A	A	A
KANSAS	A	A	A	A	A	A	A
KENTUCKY	B	A	A	A	C	A	A
LOUISIANA	D	D	D	D	D	D	D
MAINE	D	C	C	C	B	C	B
MARYLAND	B	B	B	B	D	B	A
MASSACHUSETTS	D	D	D	C	C	D	D
MICHIGAN	D	C	C	C	C	D	C
MINNESOTA	A	A	A	A	A	A	A
MISSISSIPPI	A	A	A	A	A	A	A

Key Explanation: A - Adopted in Toto      C - Has Similar Rule  
B - Adopted in Part                      D - Has No Rule

STATE	SECTION NUMBERS						
	391	392	393	394	395	396	397
MISSOURI	A	A	A	A	A	A	A
MONTANA	A	A	A	A	A	A	A
NEBRASKA	C	C	C	C	C	C	C
NEVADA	B	A	A	A	B	A	A
NEW HAMPSHIRE	C	C	C	C	D	C	C
NEW JERSEY	D	D	A	C	D	A	D
NEW MEXICO	A	A	A	A	A	A	A
NEW YORK	D	A	A	A	C	A	C
NORTH CAROLINA	A	A	A	A	A	A	A
NORTH DAKOTA	B	B	B	D	B	D	D
OHIO	A	A	A	A	A	A	A
OKLAHOMA	D	C	C	C	D	D	C
OREGON	A	A	A	C	A	A	A
PENNSYLVANIA	A	A	A	C	A	A	A
RHODE ISLAND	A	A	A	A	A	A	A
SOUTH CAROLINA	A	A	A	A	A	A	A
SOUTH DAKOTA	A	A	A	A	A	A	A
TENNESSEE	C	A	A	C	A	A	A
TEXAS	A	A	A	A	A	A	A
UTAH	A	A	A	A	A	A	A
VERMONT	C	C	C	C	D	D	D
VIRGINIA	C	C	C	D	D	D	C
WASHINGTON	D	D	B	B	B	D	C
WEST VIRGINIA	A	A	A	C	B	A	A
WISCONSIN	C	C	C	C	D	D	C
WYOMING	A	A	A	A	A	A	A

Key Explanation: A - Adopted in Toto      C - Has Similar Rule  
 B - Adopted in Part                      D - Has No Rule

APPENDIX F

SUMMARY OF VIOLATIONS IN DOT COMPLIANCE RECORDS

Date	State	Source	Violation	Source - Reason	Fine	MTB	FAA	FRA	FHMA	USCG
5/25/78	Mass.	Passenger on Air Carrier	Leaking container of flammable liquid, not marked or labeled, checked baggage leaking	(Attorney) No procedures for the handling of hazardous materials	No action noted		•			
7/27/76	N.H.	Passenger on Air Carrier	Checked baggage which contained a hazardous material (flammable liquid) leaking. No labels no markings, etc.	(Attorney) Ignorance of the hazardous materials regulations	No action noted		•			
2/13/74	Tenn.	Air Carrier	Accepting Class B poison shipment that was prohibitive aboard passenger carrying aircraft	(Inspector) Lack of training in the handling of hazardous materials regulations	No action		•			
2/28/74	Texas	Air Carrier	Notification of pilot - not made out properly - no description of hazardous materials	(Inspector) Lack of training with hazardous materials regulations	No action		•			
8/18/75	Mass.	Air Carrier	Import shipment of cigarette lighters without Bureau of Explosives approval, no labels, no inspection, no markings	(Inspector) Lack of training with hazardous materials	No action		•			

SOURCE: DOT Compliance Records

Key: MTB = Materials Transportation Bureau  
 FAA = Federal Aviation Administration  
 FRA = Federal Railroad Administration  
 FHMA = Federal Highway Administration  
 USCG = U.S. Coast Guard  
 • Indicates responsible Federal agency.

SUMMARY OF VIOLATIONS IN DOT COMPLIANCE RECORDS (Continued)

Date	State	Source	Violation	Source - Reason	Fine	FRA	FRA	MTB	USCS
1/17/76	Mass.	Air Carrier	Import shipment of cigarette lighters. No labels, not properly marked	(Inspector) Lack of training for inspection of shipment of hazardous materials	No action	•			
5/5/76	Mass.	Foreign Air Carrier	Import shipment of non-flammable gas - failure to certify - no labels	(Inspector) Failure to train foreign air carriers in U.S. regulations	No action	•			
7/28/78	Mass.	Foreign Air Carrier	Import shipment of flammable gas. No Bureau of Explosives permit. Not properly marked no FS labels	(Shippers) Lack of adequate instructions to their subsidiary in foreign country	No action	•			
2/26/75	N.C.	Shipper	Hazardous Materials not properly described on shipping papers	(Inspector) No concern at corporate level - This is reflected at all of these plants	Case is before U.S. Attorney 6/17/77	•			
5/12/77	N.Y.	Railroad	Not performing the required inspection of 49 CFR Sections 174.8 - 174.9. Inoperative Air Brakes	(Railroad Inspector) Carrier claims storms in February made repair facilities inoperative	Paid \$3,500	•			
1/4/78	Ill.	Railroad	Transporting flammable trailers without shipping papers	(Company) Claim that computer broke down	\$16,500 accessed, not yet settled	•			
7/28/78	W.Va.	Railroad	Cutting off while in motion tank car without head shields. EOM5	(Inspector) Lack of proper training of companies hazardous materials inspector. No follow up on shipper	None	•			

SUMMARY OF VIOLATIONS IN DOT COMPLIANCE RECORDS (Continued)

Date	State	Source	Violation	Source - Reason	Fine	MTB	FAA	FRA	FHMA	USSC
1/25/78	No.	Railroad	Leaking tank car of nitric acid. Improper preparation of tank car. 13 persons overcome by fumes	(Attorney) Company hazardous materials procedure not adequate. Inspector said repeated violations - Not followed up	No action as to date			•		
8/10/77	Tex.	Truck Line	Failure to placard vehicle	(Inspector) Carrier's terminal manager on vacation	Notice was \$5,000 settled for \$3,500				•	
8/12/77	Vt.	Truck Line	Failure to inspect MC-306 tanks every 2 years	(Company) Lack of supervision, and forgot to check tanks	Notice was \$10,000 settled for \$2,500				•	
11/29/77	Ohio	Truck Line	No placards improper format on shipping papers. Failure to have corrosive accessible for removable	(Company) Contemptuous disregard for its responsibilities to effect compliance with the regulations	Notice was \$15,000 settled for \$3,000				•	
8/17/77	Ala.	Truck Line	No placards improper format on shipping papers. Failure to have corrosive accessible for removable	(Company) Contemptuous disregard for its responsibilities to effect compliance with the regulations	Notice was \$15,000 settled for \$7,500				•	
2/3/78	Ga.	Truck Line	Failure to instruct employees; failure to placard vehicle, transporting radioactive material, yellow label III	(Attorney) Lack of training and instructions when transporting hazardous materials	Notice was \$10,000 settled for \$3,500				•	
7/31/75	Mass.	Shipper	Shipping Flammable liquid in recondition drums. Drums did not meet DOT requirements	(Shipper) When a registration number is on a drum. That the drum is in compliance	Fined \$200 criminal				•	

SUMMARY OF VIOLATIONS IN DOT COMPLIANCE RECORDS (Continued)

Date	State	Source	Violation	Source - Reason	Fine	NTB	FAA	FRA	PHMA	USCG
1/3/78	Mass.	Shipper	Failure to show proper classification of hazardous materials on shipping papers	(Inspector) It was oversight on shipper's part	No action taken				•	
3/29/77	Mass.	Shipper	Transporting hazardous waste in tank trailer - No placards - No shipping papers. Filled for bankruptcy	(Shipper) Unaware of unsafe conditions of vehicle. (Inspector) Said owner was aware but disregarded the regulations	Case closed				•	
3/27/77	Penn.	Truck Line	Failure to report accident	(Inspector) Lack of training in the handling of hazardous materials regulations	No action				•	
3/22/78	Texas	Shipper	Improper shipping papers	(Inspector) Not enough help	No action				•	
2/9/78	Penn.	Shipper	Failure to take - failure to offer placards to carrier	(Shipper) Not familiar with the new regulation changes	No action				•	
2/21/78	Ill.	Shipper	Failure to test cargo tanks failure to test cylinders	(Inspector) Employees were overtaxed with other duties	No action				•	
4/17/78	Calif.	Shipper	Unloading spill	(Shipper) Negligence by employee	No action				•	
6/10/73	Hawaii	Steamship Company	No dangerous cargo manifest aboard	(Company) Manifest was to be mailed but was never received	No action					•
5/6/75	Hawaii	Steamship Company	Improper stowage of NCH, improper labeling	(Company) Confusion over apparent discrepancies within USCG policy. Port of San Francisco allowed this stowage	No action					•

SUMMARY OF VIOLATIONS IN DOT COMPLIANCE RECORDS (Continued)

Date	State	Source	Violation	Source - Reason	Fine	MTB	FAA	FRA	FHMA	USCS
8/5/76	S.C.	Steamship Company	Master failed to sign dangerous cargo manifest	(Inspector) Captain knew the regulations but just had not signed	Fined \$50					•
4/25/77	N.Y.	Shipper	Improper shipping name on dock receipt	(Shipper) Contended that regulations were not in effect. (Inspector) Not so, shipping name the same for old or new	No action					•
5/30/78	Hawaii	Shipper	Incompatible stowage within freight container	(Inspector) Ignorant of regulations. Regulations different by water than by other modes	Checking in New York					•
5/15/78	N.J.	Freight Forwarder Shipper	16th time this company in violation. Improper shipping name and label improper documentation	(Inspector) Needs more investigation, at shipper facility in New York	Need more information					•
3/29/78	N.J.	Shipper	Improper shipping name - should be toluene and methyl ethyl ketone a flammable packaging	(Inspector) Misinterpretation of the hazardous commodity	No action					•
9/16/77	N.J.	Stevedoring Company Shipper	Improper shipping name. Improper packaging	(Inspector) Needs further investigation	Notice was \$50,000					•
11/18/78	N.J.	Shipper	Failing to package poison B liquid in proper DOT metal containers	(Supplier) of drums assured the shipper that drums were authorized	No action	•				

SUMMARY OF VIOLATIONS IN DOT COMPLIANCE RECORDS (Continued)

Date	State	Source	Violation	Source - Reason	Fine	MTB	FAA	FRA	FHMA	USCG
11/8/78	D.C.	Shipper	Shipping containers not in compliance with DOT registration number. No shipping name on containers	(Shipper) Stated that BMS inspector from a mid-western office had been inspecting the containers several times without comment.	No action	•				
11/3/78	Va.	Gov. Whse. Shipper	Unauthorized testing procedure for reconditioned drums	(Shipper) Said this was contrary to company policy, and has been inadvertently caused	Fined \$750		•			
11/17/78	Md.	Shipper	Marking drums as having been reconditioned. When the drums were not authorized	(Shipper) Did not think it was a violation to mark a drum as having been reconditioned when the drum had not authorized. (Open Head)	Fined \$300		•			
4/19/78	Tenn.	Air Carrier	Improper packaging, a 5 gallons of flammable liquid leaking	(Carrier) Lack of instructions concerning hazardous materials	No action		•			
4/17/78	Tenn.	Passenger on Air Carrier	Government employee shipped hazardous materials. No label. No shipping papers. Various other violations	(Inspector) Government employee checked baggage on passenger air craft containing nitric acid. (Carrier) Should be checked further	Need more information		•			
3/22/78	Tenn.	Air Carrier	Leaking containers. Employee dropped package less than four feet	(Inspector) Carriers appear to be under the assumption that hazardous materials containers can be dropped four feet	No action		•			

SUMMARY OF VIOLATIONS IN DOT COMPLIANCE RECORDS (Continued)

Date	State	Source	Violation	Source - Reason	Fine	MTB	FAA	FRA	FHMA	USCG
7/4/77	Colo.	Shipper	Package of silver nitrate on a passenger carrying aircraft	(Attorney) Negligence on part of the shipper to establish procedures for hazardous materials	Fined \$500		•			
12/1/76	N.Y.	Shipper	Various chemicals - HCl sulfuric acid, menthano] etc. on passenger aircraft without required markings, shipping papers	(Attorney) Negligence on part of the shipper to establish procedures for hazardous materials	Fined \$500		•			
9/22/77	N.Y.	Shipper	Corrosive liquid NOS leaded because of improper packaging	(Attorney) Negligence on part of the shipper to assure closures to prevent spillage during transportation	Fined \$400		•			

APPENDIX G

EXAMPLE OF COMPLEXITY OF HAZARDOUS MATERIALS REGULATIONS AND CHANGES TO THE REGULATIONS



DEPARTMENT OF TRANSPORTATION  
MATERIALS TRANSPORTATION BUREAU  
WASHINGTON, D.C. 20590

Title 49—Transportation

CHAPTER I—MATERIALS TRANSPORTATION BUREAU, DEPARTMENT OF TRANSPORTATION

[Docket No. HM-108; HM-112; Amdt. Nos. 171-82, 172-29, 173-94, 174-26, 175-1, 176-1, 177-35]

CONSOLIDATION OF HAZARDOUS MATERIALS REGULATIONS

Extension of Mandatory Compliance Dates

On April 15, 1976, the Materials Transportation Bureau (MTB) published a final consolidation of hazardous materials regulations (41 FR 15972). That amendment becomes effective July 1, 1976. Under the terms of the effective date provision appearing in the April 15, 1976 publication, compliance with certain portions of the amendment was not required until January 1, 1977, July 1, 1977, or July 1, 1978 (the latter date applicable to the use of preprinted shipper's certifications).

Since the April 15 publication, 36 petitioners have addressed the effective date provision in 51 separate submissions, either directly requesting reconsideration of the provision or noting some difficulty in the application of that provision. Based upon the discussions provided in support of such petitions and other comments, and upon further consideration by the MTB, it appears appropriate to amend the effective date provision as it relates to portions of the amendment subject to delayed mandatory compliance. These alterations are accomplished herein by substituting a new effective date provision in place of the one originally appearing in the April 15 publication.

Requests for relief included recommendations in some cases as to compliance dates for specific problem areas, and in other cases as to the time and mechanics necessary to implement HM-112 in its entirety. Of those dealing with the matter of total implementation, comments fell into two general categories. One group of comments favored use of a single mandatory compliance date, usually preceded by a period of voluntary compliance. The single dates recommended were generally January 1, 1978, July 1, 1977, or July 1, 1978, in rough order of frequency. Those recommending a single date frequently suggested that it be twelve or eighteen months after any final corrections to HM-112 are published. The order of the listing above is based on MTB publication of those corrections by July. A document for that purpose is presently nearing completion within the Office of Hazardous Materials Operations.

A second group of comments favored retaining the "phased" implementation approach that was followed in the original effective date provision but recommended changes in timing and mechanics. That group generally recommended that a period of voluntary compliance

commencing July 1, 1976, be followed by a January 1, 1977 mandatory compliance date for marking, labeling and packaging requirements, and that shipping paper and placarding requirements be made mandatory January 1, 1978. The second group also recommended a "grandfather" provision allowing packages filled before January 1, 1977, to be shipped under the old regulations until January 1, 1978.

In general, comments placed in the docket since publication of the final HM-112 amendment take issue with the original effective date provision in several areas. The provision is said to provide insufficient time to retain shipper and carrier personnel; to allow persons affected by the amendment to adequately analyze it; to allow the MTB itself to evaluate and act on petitions for reconsideration; to allow depletion of old stocks of shipping paper and merchandise; and to allow preparation of tariff amendments reflecting the new regulatory requirements. Those complaints have been exacerbated by apparent delays in the availability of additional copies of the April 15 *Federal Register* publication.

Discussions provided in support of requests for relief from the effective date provision have tended to be somewhat conclusory in nature. While the implementation of the provisions of HM-112 in some cases may prove burdensome, requiring those subject to it to undergo training, to alter old equipment or acquire new equipment, and in some cases to alter manner of shipment, the MTB continues to believe that an expedited implementation schedule is in the best interest of the public. Whenever two differing sets of regulatory requirements may apply to the same situation, obvious difficulties exist which should be minimized as far as possible. It is for this reason that proposals for a single mandatory compliance date, preceded by a year or more of optional voluntary compliance, have been rejected. However, a general six-month period of optional voluntary compliance has been provided in recognition of the need for some degree of latitude for persons subject to the amendment to reach full compliance in a deliberate but timely manner. Delayed compliance beyond that six-month period has been provided for certain specific requirements of the amendment for which additional time appears justified. In general, those requirements for which additional voluntary compliance has been authorized are the same that appeared in the original effective date provision, although a "grandfather" provision for stocks of merchandise and packagings has been added. That provision allows packages filled, marked or labeled before July 1, 1976, in accordance with regulations in effect on June 30, 1976 (old regulations), to be shipped until July 1, 1977. July 1, 1976, has been selected as the cut-off date for package qualification under

this provision, rather than January 1, 1977, the end of the voluntary compliance period, to avoid encouraging continued reliance on the old regulations rather than the amendment. Additionally, authorization for delayed compliance with shipping paper requirements has been widened and is coterminous with the "grandfather" provision. It should be noted that during the period from July 1, 1976, until July 1, 1977, during which time it is possible that packages may be shipped and shipping paper prepared in accordance with either the old regulations or in accordance with the amendment, the labeling and marking of packages must be consistent with the hazard class and description shown on the accompanying shipping paper. This limitation is necessary to insure a consistent presentation of hazard information in the event of an emergency response situation.

(1) *Review and training.* As noted, necessary corrections to the amendment are expected to be published by July. The new effective date provision provides a six-month voluntary compliance period that may be used for a phased implementation program at the discretion of persons subject to the hazardous materials regulations.

(2) *Depletion of stock: packages and shipping paper.* A package which has been filled, marked or labeled before July 1, 1976, may be offered for transportation, or transported, between July 1, 1976, and July 1, 1977, provided that it conforms to old regulations as to the package, marking and labeling.

The provisions of the amendment that specify either the content or format of a shipping paper are not mandatory until July 1, 1977. This mandatory date applies to everything that appears on a shipping paper, including format (except preprinted shipper's certifications). Prior to the mandatory date, format and content may comply with either the old regulations or the amendment. However, entries must be internally consistent (i.e. conform to either old or new requirements). In addition, for any package the hazard class on the package label and the description marked on the package must be the same as that shown on the shipping paper entry. So long as that condition is observed, an entry conforming to either old regulations or the amendment is acceptable.

For example, consider a packaging not yet filled or marked, but labeled on June 1, in accordance with regulations that continued in existence through June 30, 1976. That packaging could be filled, marked and relabeled in accordance with the amendment and shipped. Alternatively, the packaging could be filled and marked in accordance with the old regulations and shipped. In either case, shipping paper format may conform to old regulations or to the amendment, as may

the shipping paper entry (so long as the entry shows the same hazard class as the package label, and the same description as the package marking). Assuming an old or a new shipping paper format will accommodate it, an entry conforming to the old regulations, and an entry conforming to the amendment, can both appear on the same shipping paper.

(3) *Tariffs.* It appears that changes in the effective date provision made effective herein will provide sufficient time for republication of all domestic tariffs pertaining to the transportation of hazardous materials. The International Air Transport Association (IATA) has requested that the HM-112 effective date provision be changed to July 1, 1977, to allow time for the amendment to be incorporated in the IATA Restricted Articles Regulations. In the interest of early implementation of the amendment, that request is denied. The IATA may wish to consider the publication of a supplement containing those changes it determines appropriate and necessary to obtain consistency with the HM-112 amendment.

In connection with this modification of the effective date provision and the overall implementation of the amendment, it is obligatory that the hazardous materials tariffs, which are required to conform to the hazardous materials regulations, also accurately reflect those portions of the new effective date provision that allow voluntary or alternate methods of compliance. This is essential so that the advantages of voluntary phased implementation will not be encumbered or confused by limiting tariff provisions.

(4) *Placarding.* Placarding amendments are not mandatory until July 1, 1977, except for tank car placarding of combustible liquids. The table of equivalent old and new placards is provided to facilitate rail handling requirements for placarded rail cars and to insure appropriate rail car handling from July 1, 1976, to July 1, 1977, when placarding may occur under either old or new requirements (especially after January 1, 1977, when the new requirements for the handling of placarded cars becomes mandatory). The table may not be used in connection with provisions outside of Part 174 (such as section 172.203(g)), as consistency between placard and placard notation information should be maintained in the event of an emergency response situation.

(5) *Exemptions.* There are presently outstanding certain exemptions from regulations relocated, renumbered or revoked as part of the Docket HM-112 consolidation. To avoid any possibility that those exemptions may be construed as having been terminated, and also to

facilitate the application of delayed compliance authority contained in the new effective date provision, that provision includes a statement expressly continuing such exemptions. Exemption applications filed before July 1, 1976, and issued or denied after that date will be evaluated and handled as filed.

Accordingly, in FR Doc. 76-9662, appearing at pages 15972-16131 in the *Federal Register* of April 15, 1976, the effective date provision, appearing at page 16131, is changed to read as follows:

Effective date: This amendment is effective July 1, 1976. However—

(1) Except as provided in paragraphs (2) through (4), compliance with the provisions of this amendment is not mandatory until January 1, 1977.

(2) Compliance with the provisions of this amendment pertaining to the information required to appear on a shipping paper or the format of a shipping paper is not mandatory until July 1, 1977. (See note to 49 CFR 172.204(a) regarding delayed compliance with that section's required use of a newly worded shipper's certification.)

(3) A package filled, marked or labeled before July 1, 1976, in accordance with regulations in effect on June 30, 1976, may be offered for transportation and transported, even though it does not comply with the package marking and labeling provisions of this amendment if it (i) is offered for transportation before July 1, 1977, and (ii) complies with the package marking and labeling regulations in effect on June 30, 1976.

(4) Compliance with the provisions of this amendment appearing in Subpart F of Part 172 (Placarding) is not mandatory until July 1, 1977, except that compliance with the placarding requirements issued under Docket HM-102 (38 FR 1768, January 24, 1974; 40 FR 57423, December 10, 1975), pertaining to tank cars containing combustible liquids is required on and after January 1, 1977.

(5) Under the authority of any of the preceding four numbered paragraphs:

(i) When a provision of this amendment is not complied with, the comparable provision (if any) of the regulations in effect on June 30, 1976, shall be complied with; however,

(ii) The hazard class and description of a material indicated on a shipping paper must be the same as the hazard class indicated on the label (if any) displayed, and the description marked, on the package containing that material.

(6) For purposes of the application of Part 174 (except § 174.25) to rail cars from July 1, 1976, to July 1, 1977, placards specified in this amendment, and placards specified under regulations in effect on June 30, 1976, may be treated as equivalent according to the following table:

Hazard class (material)	Placard adopted under docket No. HM-102/112	Equivalent placard required by pt. 174 on June 30, 1976
Explosives A.....	EXPLOSIVES A.....	EXPLOSIVES
Explosives B.....	EXPLOSIVES B.....	DANGEROUS
Explosives C.....	FLAMMABLE.....	None
Flammable liquid.....	FLAMMABLE.....	DANGEROUS
Flammable solid.....	FLAMMABLE SOLID.....	DANGEROUS
Oxidizer.....	OXIDIZER.....	DANGEROUS
Corrosive liquid.....	CORROSIVE.....	DANGEROUS
Nonflammable gas.....	NONFLAMMABLE GAS.....	DANGEROUS
Flammable gas.....	FLAMMABLE GAS.....	DANGEROUS
Poison A.....	POISON GAS.....	POISON GAS
Poison B.....	POISON.....	DANGEROUS
Radioactive material.....	RADIOACTIVE.....	DANGEROUS-RADIOACTIVE
Organic peroxide.....	ORGANIC PEROXIDE.....	DANGEROUS MATERIAL
Combustible (Chlorine).....	COMBUSTIBLE.....	DANGEROUS
(Chlorine).....	CHLORINE.....	DANGEROUS
(Oxygen, bromine liquid).....	OXYGEN.....	DANGEROUS

(7) This amendment does not terminate any outstanding exemption issued under 49 CFR, Part 107 or its predecessor authorities. Any exemption from a regulatory requirement in effect on June 30, 1976, which is modified or replaced by this amendment, continues in effect:

(i) By its own terms, to the extent that continued compliance with that regulatory requirement is required or authorized by this amendment; and

(ii) For any provision of this amendment which is equivalent to that regulatory requirement.

(18 U.S.C. 834, 46 U.S.C. 170(7), 49 U.S.C. 1472 (h) (1), 49 CFR 1.53 (f)-(h))

Issued in Washington, D.C., on June 1976.

JAMES T. CURTIS, Jr.,  
Director, Materials  
Transportation Bureau.

(FR Doc. 76-18345 Filed 6-21-76; 2:55 pm)

FEDERAL REGISTER, VOL. 41, NO. 123-

-THURSDAY, JUNE 24, 1976



DEPARTMENT OF TRANSPORTATION  
MATERIALS TRANSPORTATION BUREAU  
WASHINGTON, D.C. 20590

28888

## Title 49—Transportation

## CHAPTER I—MATERIALS TRANSPORTATION BUREAU, DEPARTMENT OF TRANSPORTATION

[Docket No. HM-103/112; Amendments]

## CONSOLIDATION OF HAZARDOUS MATERIALS REGULATIONS

## Extension of Placarding Compliance Date

AGENCY: Materials Transportation Bureau, DOT.

## ACTION: Final rule.

**SUMMARY:** This rule extends the date after which the new diamond shaped hazardous materials placards prescribed last year under this docket must be displayed on transport vehicles, freight containers and portable tanks, from July 1, 1977, to January 1, 1978. This action is taken because the Bureau has concluded that the new placards may not be available to certain shippers and carriers by the current July 1, 1977, mandatory compliance date. The extension will provide an additional six months to assure that an adequate supply of placards is available and distributed to both shippers and carriers.

**EFFECTIVE DATE:** This amendment altering the mandatory compliance date is effective on June 6, 1977.

## FOR FURTHER INFORMATION CONTACT:

Dr. C. H. Thompson, Acting Director,  
Office of Hazardous Materials Operations,  
2100 Second Street SW., Wash-  
ington, D.C. 20590, Phone 202-426-  
0656.

## SUPPLEMENTARY INFORMATION:

On December 30, 1976, the Materials Transportation Bureau (MTB) published its final document under Docket No. HM-103/112. However, since that time, additional information has come to the MTB's attention through petitions which indicate that additional consideration should be given to the mandatory compliance date for placarding. Generally, petitioners contend that, for a variety of reasons, more time is needed to assure be available by the mandatory compliance date.

Because of the difficulties not only of obtaining placards but also of having them distributed to all shippers and carriers, the MTB is granting a limited extension to the mandatory compliance date to assure that full compliance is possible at the time compliance is required. As a consequence of this amendment, the new placarding requirements

established last year in Subpart F of Part 172 need not be complied with until January 1, 1978, provided that placarding requirements in effect on June 30, 1976, are complied with instead.

This document is a relaxation of existing requirements and does not impose new requirements. For this reason, and because of the need for the Department to act in advance of the existing July 1, 1977, compliance date, public notice is dispensed with. This action is not expected to increase costs to Federal, State, or local governments, to consumers, or to the businesses affected, and should not have any significant environmental impact. Primary drafters of this document are Joseph T. Horning and Chris Caseman, Office of Hazardous Materials Operations, Regulations Development Branch, and Douglas A. Crockett, Office of the Assistant General Counsel for Materials Transportation Law.

In consideration of the foregoing, the 103/112 (41 FR 15972, April 15, 1976), effective date provision in Docket HM-103/112 appearing at 41 FR 16131, as amended at 41 FR 26014 (June 24, 1976), 41 FR 40691 (September 20, 1976), and 41 FR 57018 (December 30, 1976), is further amended by revising the fourth numbered paragraph and amending the sixth numbered paragraph to read as follows:

Effective date:

(4) Compliance with the provisions of this amendment appearing in Subpart F of Part 172 (Placarding) need not be complied with until January 1, 1978.

(6) For purposes of the application of Part 174 (except § 174.25) to rail cars from July 1, 1976, to January 1, 1978, placards specified in this amendment, and placards specified under regulations in effect on June 30, 1976, may be treated as equivalent according to the following table:

(18 U.S.C. 1803, 1804, 1808; 49 CFR 1.83(e).)

**NOTE.**—The Materials Transportation Bureau has determined that this document does not contain a major proposal requiring preparation of an Economic Impact Statement under Executive Order 11821 and OMB Circular A-107.

Issued in Washington, D.C., on June 2, 1977.

JAMES T. CURTIS, Jr.

Director.

Materials Transportation Bureau.

[FR Doc.77-16052 Filed 6-3-77; 8:45 am]



DEPARTMENT OF TRANSPORTATION

MATERIALS TRANSPORTATION BUREAU

WASHINGTON, D.C. 20590

58522

Title 49—Transportation

CHAPTER I—MATERIALS TRANSPORTATION BUREAU, DEPARTMENT OF TRANSPORTATION

[Docket No. HM-103/112; Amdt. No. 172-89]

PART 172—HAZARDOUS MATERIALS TABLE AND HAZARDOUS MATERIALS COMMUNICATIONS REGULATIONS

Extension of Placarding Compliance Date AGENCY: Materials Transportation Bureau, DOT.

ACTION: Final rule.

SUMMARY: Under this rule, rectangular hazardous materials warning placards (and equivalent markings) formerly required to be displayed on highway vehicles carrying hazardous materials may be used in place of the square-on-point placards which have superseded them. The rule will be effective from January 1, 1978 through June 30, 1978 only, and is intended to give additional time for compliance with recent changes in placarding requirements. This action is based upon considerations raised in petitions and in the course of a hearing that was held on July 21, 1977.

EFFECTIVE DATE: This amendment is effective on January 1, 1978.

FOR FURTHER INFORMATION CONTACT:

Mr. Donnell W. Morrison, Chief, Vehicle Requirements Branch, Bureau of Motor Carrier Safety, Federal Highway Administration, Washington, D.C. 20590, 202-426-1700.

SUPPLEMENTARY INFORMATION: On July 21, 1977, the Materials Transportation Bureau (MTB) conducted a hearing to receive public comment on the merits of the American Trucking Associations, Incorporated's (ATA) and the National Oil Jobbers Council's (NOJC) petitions to delay mandatory placarding for those vehicles equipped with permanent placarding systems. Written comments were also solicited in the June 6, 1977 notice which announced the July 21 hearing (42 FR 28951). Both oral and written comments were considered in the drafting of this amendment.

The NOJC's petition requested that the effective date of the new placarding requirements be delayed until September 1, 1978, for vehicles currently in use. Since this amendment effectively delays mandatory use of the new placards until July 1, 1978, most of the relief sought in the NOJC petition in effect has been granted for reasons stated elsewhere in this document. However, the MTB believes the NOJC has not justified its petition.

The NOJC contends its membership recently expended over 9 million dollars to bring its vehicles into compliance with the new flammable and combustible liquids definition which became effective January 1, 1973, under Docket No. HM-102. They contend an additional outlay

of 6 million dollars is now required for removal of old rectangular placards, painting vehicles, and applying new square-on-point placards. The 9 million dollars spent to comply with HM-102 has already been incurred, and since there is no requirement that a rectangular placard communicating the proper hazard be removed, costs for removing old placards and repainting of vehicles is not necessary to achieve compliance with the new placarding requirements. Based on the foregoing, the NOJC's petition to delay the mandatory placarding effective date until September 1, 1978, for vehicles currently in use, is hereby denied.

The ATA petitioned for a "grandfather provision which would allow motor carriers presently using permanent type rectangular placarding systems to continue using such systems for the useful life of either the permanent placard itself or the vehicle upon which the set is attached, whichever period is shorter." The ATA also petitioned for a delay of the mandatory effective date for the square-on-point placards for certain vehicles until January 1, 1978, which was granted by an amendment to this docket published on June 6, 1977 (42 FR 28888). Since similar relief until July 1, 1978 is provided by this amendment, those aspects of the ATA's petition need not be discussed further.

The ATA contends that failure to grant a grandfather provision will require carriers "to collectively absorb millions of dollars in undue costs." Those costs are enumerated by the ATA as including the value of existing permanent placarding sets, cost of new placard sets, labor for removal of existing placarding, labor to apply new placards, and "down time," during which a vehicle is not in use to generate revenue. As stated earlier, monies spent on existing placard sets is an expense already incurred and existing placard sets need not be removed provided conflicting hazards are not displayed. Concurrently, the alleged "down time" would be reduced if these functions need not be performed in conjunction with application of new placard sets.

The ATA contends a precedent for grandfathering safety devices was established within the Department by the Federal Highway Administration's Bureau of Motor Carrier Safety when a replacement program for new warning devices for stopped vehicles allowed continued use of earlier type warning devices until the vehicle or device was replaced. The MTB acknowledges the Department's prior use of grandfather provisions, but does not agree that a parallel situation exists. Emergency warning devices are not used as often as are placards, and more important, they are not a device or means to communicate information to emergency response personnel information that such personnel need to guide them in responding to emergency situations. The use of two different types of warning devices for stopped vehicles would not create the confusion in relaying information as

would the use of two different hazardous materials communications systems. As evidence to this fact, the MTB has received indications that several of the States that have adopted the Federal placarding requirements, or have similar placarding requirements, are experiencing problems in achieving compliance now because of the present mixing of rectangular and square-on-point placarding systems.

Several commenters at the public hearing in opposition to the ATA's petition pointed out that permanent placarding devices are not required and that nonpermanent placards could be used, although some comments questioned whether an adequate supply of nonpermanent placards is available. The MTB agrees with the ATA's contention that permanent type placarding may result in a higher degree of compliance. The relief granted by this amendment will provide more time for the distribution and installation of permanent placarding sets, and for the adjustment of State regulations where needed.

In previous amendments and notices to this docket, the MTB stated its rationale for revising the shipping paper, labeling, marking, and placarding requirements. While the desire to have a unified placarding system among the modes was a major factor in that project, it was only part of the overall aim to establish a communications system to convey to persons handling hazardous materials, including emergency response personnel, the hazards associated with the materials. All segments of that planned systematic approach to hazard communication are now in effect except for placarding. A further extensive delay in full implementation of the new placarding requirements would continue some of the uncertainties that have hampered the ability of carriers to comply with the regulations because of their interrelationship with shippers as established by § 172.506. An extended delay also would increase the potential for confusion on the part of State and local enforcement personnel that may impede commerce. In light of these factors, as well as our review of the economic arguments offered by ATA, the petition of ATA to grandfather existing permanent placarding systems is hereby denied.

The amendment provided herein is intended to give persons subject to highway placarding requirements more time to conform to the recent changes and to insure adequate availability and distribution of the necessary placards. The amendment is also intended to allow during the first six months of 1978 the use of mixed placarding in a manner that is more easily enforceable than has been the case to date. In view of this, the MTB believes that the interests of States and localities are adequately served by the rule published herein and advises that State or local requirements inconsistent with the rule may detract from the Department's compliance and

- 2 -

enforcement efforts. The MTE urges State and local agencies concerned with highway placarding to examine their placarding requirements critically to ascertain the impact of those requirements on persons subject to the Department's Hazardous Materials Regulations.

This amendment adds a new paragraph to § 172.506 to allow some of the rectangular placards specified for use before June 30, 1976, to be used on motor vehicles transporting hazardous materials by highway only, in substitution for the square-on-point placards specified by the new placarding regulations issued under Docket HM-112. Between January 1, 1978 and July 1, 1978, the new placarding regulations must be followed, but where those regulations specify use of a square-on-point placard which is identified in the table added by this amendment to § 172.506(c), the comparable rectangular placard identified in that table may be used in place of the square-on-point placard. This amendment does not authorize continued reliance on the old placarding regulations, but merely allows the old format rectangular placards to be used as specified in place of the new square-on-point placards. Thus, shippers and carriers are bound, after January 1, 1978, by the placarding regulation issued under Docket HM-112, including those rules that specify when and what kind of placard may be required for a particular transport vehicle, but at their option during the first six months of 1978, they may substitute comparable rectangular placards for square-on-point placards.

This amendment applies to all placards identified in the table, regardless of whether the placard in question is of permanent or nonpermanent construction, and regardless of whether the placard is presently mounted on a transport vehicle.

For example, if under Subpart F a square-on-point NONFLAMMABLE GAS placard is required, a rectangular COMPRESSED GAS placard or marking prescribed by § 172.823 in effect on June 30, 1976 may be used until July 1, 1978.

After July 1, 1978, only the square-on-point placards may be used to comply with the requirements of Subpart F. Placards already mounted on transport vehicles need not be removed if they do not convey hazard information that conflicts with information on the new placards. The table provided in this amendment may be used to make that determination. Except for the fact that many old rectangular placards need not be removed, carriers and shippers should conduct their operations recognizing that as of July 1, 1978 rectangular placards will not be authorized for any purpose.

This document is a relaxation of existing requirements and does not impose new requirements. For this reason, and because of the public hearing held on July 21, 1977, at which the petitions of the ATA and the NOJC were discussed, further public notice is dispensed with. This action is not expected to increase costs to Federal, State, or local governments, to consumers, or to impose undue costs on the businesses affected, and should not have any significant environmental or inflationary impact. Primary drafters of this document are David B. Goodman, Bureau of Motor Carrier Safety, Federal Highway Administration, and Gerald M. Tierney, Motor Carrier and Highway Safety Law Division, Office of Chief Counsel, Federal Highway Administration.

In consideration of the foregoing, § 172.506 of Title 49 CFR is amended as follows:

In § 172.506 paragraph (a)(1) is redesignated paragraph (b) and a new paragraph (c) is added. As revised, § 172.506 reads as follows:

§ 172.506 Providing and affixing placards: Highway.

(a) Each person offering a motor carrier a hazardous material for transportation by highway shall provide to the motor carrier the required placards for the material being offered prior to or at the same time the material is offered for transportation, unless the carrier's motor

vehicle is already placarded for the material as required by this subpart.

(b) No motor carrier may transport a hazardous material in a motor vehicle unless the placards required for the hazardous material are affixed thereto as required by this subpart.

(c) Until July 1, 1978, a placard or marking meeting the requirements of § 177.823 of this subchapter in effect on June 30, 1976, may be substituted in accordance with the following table for a placard required by this subpart to be affixed to a motor vehicle transporting a hazardous material by highway:

*The motor vehicle may be marked or placarded in the format, letter size and color prescribed in 49 CFR 177.823 in effect on June 30, 1976:*

*If this subpart requires the motor vehicle to be placarded:*

EXPLOSIVES A.....	EXPLOSIVES A.
EXPLOSIVES B.....	EXPLOSIVES B.
NONFLAMMABLE	COMPRESSED GAS.
GAS.....	FLAMMABLE GAS.
FLAMMABLE GAS....	COMBUSTIBLE OR
COMBUSTIBLE.....	FLAMMABLE.
FLAMMABLE.....	FLAMMABLE.
FLAMMABLE SOLID..	FLAMMABLE.
CORROSIVE.....	CORROSIVES.
POISON.....	POISON.
OXIDIZER.....	OXIDIZERS.
RADIOACTIVE.....	RADIOACTIVE.
DANGEROUS.....	DANGEROUS.

(49 U.S.C. 1803, 1804, 1808; 49 CFR 1.53(e)).

*Note.*—The Materials Transportation Bureau has determined that this document does not contain a major proposal requiring preparation of an Economic Impact Statement under Executive Order 11821 and OMB Circular A-107.

Issued in Washington, D.C. on November 3, 1977.

JOHN J. PEARNIDES,  
Acting Director,  
Materials Transportation Bureau.

[FR Doc. 77-32522 Filed 11-3-77; 8:45 am]



DEPARTMENT OF TRANSPORTATION  
MATERIALS TRANSPORTATION BUREAU  
WASHINGTON, D.C. 20590

24845

[Docket No. HM-103/112; Amdt. No. 172-43]

**PART 172—HAZARDOUS MATERIALS  
TABLE AND HAZARDOUS MATERI-  
ALS COMMUNICATIONS REQUIRE-  
MENTS**

**Placarding Extension for Nurse Tanks**

**AGENCY:** Materials Transportation Bureau, DOT.

**ACTION:** Final rule.

**SUMMARY:** This action provides a 30-day placarding extension for highway carriage of agricultural anhydrous ammonia in nurse tanks. The extension is due to a late corn planting season resulting from unusually wet soil. The extension is intended to avoid the necessity of removing nurse tanks from agricultural service for replacarding before fertilizing operations are essentially completed.

**EFFECTIVE DATE:** This amendment is effective on June 8, 1978.

**FOR FURTHER INFORMATION CONTACT:**

Alan I. Roberts, Associate Director for Hazardous Materials Regulation, Materials Transportation Bureau, 2100 Second Street SW., Washington, D.C. 20590, 202-426-0656.

**SUPPLEMENTARY INFORMATION:** By letter of May 22, 1978, the Fertilizer Institute, a national association representing about 90 percent of the fertilizer producers as well as certain associated interests, asked the Office of Hazardous Materials Regulation for a 30-day delay in the July 1, 1978 mandatory placarding compliance date (49 CFR 172.506(c), see HM-103/112, 42 FR 58522, November 10, 1977). The Institute states that a late planting season for corn, dictated by weather conditions, is likely to require the continued use of fertilizer nurse tanks into July, with the result that a July 1, 1978, compliance date will necessitate removal and replacarding of the tanks when they are needed in service. The Institute states that anhydrous ammonia distributors generally serve an area within a 15-mile radius of bulk storage facilities and that the low

speeds, limited distances, sparse rural populations and overall safety record associated with the highway transport of anhydrous ammonia nurse tanks indicate that a limited extension will not prejudice safety.

By letter dated May 25, 1978, the Acting Secretary of Agriculture also expressed similar concerns with probable conflict between the mandatory placarding compliance date and fertilizer needs resulting from late planting, urging that a delay until August 1, 1978, be considered.

The MTB has concluded that such an extension is in the public interest. Because of the limited time remaining before the new placarding requirements become effective, and since this extension is a relaxation of an existing requirement, public notice has not been provided and this amendment is effective without delay. The amendment will not result in any significant environmental or economic impact.

In consideration of the foregoing, Part 172 of Title 49, code of Federal Regulations, is amended as follows:

In § 172.506, a new paragraph (d) is added to read as follows:

§ 172.506 Providing and affixing placards: Highway.

(d) Until August 1, 1978, the provisions of paragraph (c) of this section continue to apply to any cargo tank (commonly known as a nurse tank and considered an implement of husbandry) transporting anhydrous ammonia, and operated by a private carrier exclusively for agricultural purposes.

(49 U.S.C. 1803, 1804, 1808; 49 CFR 1.53(e).)

**NOTE.**—The Materials Transportation Bureau has determined that this document does not contain a major proposal requiring the preparation of an economic impact statement under Executive Order 11821, as amended by Executive Order 11949, and OMB Circular A-107 nor an environmental impact statement under the National Environmental Policy Act (49 U.S.C. 4321 et seq.).

Issued in Washington, D.C., on June 5, 1978.

L. D. EASTMAN,  
Acting Director,  
Materials Transportation Bureau.  
[FR Doc. 78-15932 Filed 6-7-78; 8:45 am]