

The Transportation of Hazardous Materials by Rail: A Recommendation for Reform

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I. INTRODUCTION

The United States Department of Transportation estimated that Americans transport over four billion tons of regulated hazardous materials each year.¹ In 1989, over 1.5 million carloads of hazardous materials originated for transportation by rail.² Between 1985 and 1989, the Federal Railroad Administration recorded 2121 accidents involving railcars carrying hazardous products, 254 of which resulted in a release of product.³ These 254 accidents represent a small fraction of the number of carloads of hazardous materials moved by rail. However, since these incidents often result in evacuations, property damage, or injuries to people and the environment, they have a high public profile. In response, federal, state, and local governments have imposed a system of regulation on the transportation of hazardous materials.

In order to rationally and efficiently reduce the number and severity of hazardous materials spills, a regulatory scheme should clearly delineate the duties of the various parties participating in a hazardous material movement and benefit those parties who fulfill their duties. In the event of an accident, the scheme should rationally compensate those injured at the expense of the parties at fault.

The current regulatory structure and the procedures for recovery of damages do none of the above well. The purpose of this article is to review the current regulatory and legal structure, propose reforms to promote the safer transportation of hazardous materials, promote rational compensation for those injured by releases of hazardous products, and encourage safer behavior by the transportation industry.

II. ACCIDENTS AND INVESTIGATIONS

There are several different interests involved in a movement of hazardous materials by rail. Those with interests include:

1. *The manufacturer of the car.* Railroads and shippers acquire their cars from railcar manufacturers. The manufacturers fabricate the cars, often purchasing components from other suppliers.
2. *The owner/lessor of the car.* The railroad or the shipper may own railcars directly or may lease the cars from a car leasing company. The lease may be a finance lease, under which the lessee is responsible for the maintenance of the car, or an operating lease, under which the leasing company maintains the car.

1. 49 U.S.C. § 1801 (Supp. I 1993).

2. National Transp. Safety Bd., *TRANSPORTATION OF HAZARDOUS MATERIALS BY RAIL*, Notation: 5488, at 1 & app. B (NTSB/SS-91/01, PB91-9107002, adopted May 16, 1991).

3. *Id.* at p.1 & table 1.

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3. *The manufacturer of the lading.* The manufacturer of the product carried in the car may or may not be directly involved in the shipment of that product.

4. *The shipper.* The shipper selects the appropriate car for the product, performs the necessary paperwork for shipment of the product, loads the car, and delivers the car to the carrier.

5. *The carrier.* The railroad moves the car from the loading site to the destination.

6. *Other parties to the transaction.* Any number of other parties may be involved in handling the lading, manufacturing, maintaining or repairing equipment, or other aspects in the transportation of the hazardous material.

While there is no such thing as a typical hazardous materials railroad accident, a common instance involves a derailment, the puncture of the tank shell or shearing off of a fitting, the release of product, and damages caused by that release.⁴ The damages include expenses of evacuation, damages to property, personal injuries, cleanup, and remediation of the environment.

When a railroad accident occurs, several regulatory agencies may become involved. On the federal level, the Federal Railroad Administration (FRA) and the National Transportation Safety Board (NTSB), both within the U.S. Department of Transportation, may investigate the accident. The FRA determines if there have been any violations of the regulations promulgated under the Accidents Reports Act,⁵ the Hazardous Materials Transportation Act,⁶ or the Federal Railroad Safety Act of 1970,⁷ and may levy civil or recommend criminal sanctions for violation of the regulations.⁸ The NTSB may hold hearings and issue non-binding recommendations.⁹ The Environmental Protection Agency (EPA) will become involved if a release of product has entered the environment,¹⁰ and OSHA will become involved if an employee is injured.¹¹ Different state agencies, as well as private agencies, such as the Association of American Railroads (AAR), may become involved in an investigation, depending upon the laws of the state in which the accident occurred. The result is the application of differing interpretations of laws and regulations, and often conflicting interests between the investigating bodies.

4. Transportation of Hazardous Materials by Rail, *supra* note 2, at app. D.

5. 45 U.S.C. §§ 38-43 (1986 & Supp. I 1993).

6. 49 U.S.C. app. § 1471 (1976 & Supp. I 1993).

7. 45 U.S.C. §§ 421, 431 (1986 & Supp. II 1993).

8. 45 U.S.C. § 438 (1988 & Supp. II 1991); 45 U.S.C. § 40 (1986); 49 U.S.C. app. § 1809 (1988).

9. 49 U.S.C. app. § 1471 (1976 & Supp. I 1993).

10. 42 U.S.C. §§ 9606-9675 (1983 & Supp. II 1993); *See text at infra* note 58.

11. Occupational Safety and Health Act, 29 U.S.C. § 651-678 (1985 & Supp. I 1993).

III. REGULATION

An unfortunate result of the current regulatory and enforcement scheme is the failure to maximize the very behavior which would reduce the likelihood of accidents. In order to motivate the parties involved in the transportation of hazardous products to maximize safe behavior, these parties need to know what their specific responsibilities are and that they will be rewarded for fulfilling these responsibilities. The current structure does neither. Rather, responsibilities are vague, and the prime motivating factor, in addition to the desire to prevent injury, is fear of massive and unpredictable verdicts and environmental remediation costs.

A. HAZARDOUS MATERIALS TRANSPORTATION ACT AND REGULATIONS

Congress has adopted a number of laws regulating the transportation of hazardous materials.¹² The primary vehicle is the Hazardous Materials Transportation Act (HMTA),¹³ which was significantly amended in 1990 by the Hazardous Materials Transportation Uniform Safety Act of 1990.¹⁴ HMTA gives the Secretary of Transportation broad authority to "issue regulations for the safe transportation of hazardous materials in intrastate, interstate, and foreign commerce . . . govern[ing] any aspect of hazardous materials transportation safety which the Secretary deems necessary or appropriate."¹⁵ While HMTA contains a number of specific provisions, especially with respect to training of personnel,¹⁶ the transportation of hazardous materials by motor vehicle,¹⁷ and the transportation of radioactive materials,¹⁸ the emphasis in the Act is on the promulgation of regulations. HMTA specifically authorizes the Secretary of Transportation to establish criteria for hazardous materials handling, including:

a minimum number of personnel; a minimum level of training and qualification for such personnel; type and frequency of inspection; equipment to be used for detection, warning, and control of risks posed by such materials; specifications regarding the use of equipment and facilities used in the handling and transportation of such materials; and a system of monitoring safety assurance procedures for the transportation of such materials.¹⁹

12. See Lawrence W. Bierlein, *Increasing Complexity in the Regulation of Hazardous Materials Transportation* 54 *TRANS. PRAC. J.* 68 (1986); Stephen C. Goldberg, *Radioactive and Hazardous Materials Transportation Law: Alike with Differences* 57 *TRANS. PRAC. J.* 50 (1989).

13. 49 U.S.C. app. § 1801-1819 (Supp. I 1993).

14. Pub. L. No. 101-615, 104 Stat. 3244, 1990.

15. 49 U.S.C. app. § 1804 (a)(1) (Supp. I 1993).

16. *Id.* at § 1805.

17. 49 U.S.C., *supra* note 14, at § 1804(b)(c), § 1815.

18. *Id.* at § 1807, 1813.

19. 49 U.S.C., *supra* note 15, at § 1805(a).

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The Regulations under HMTA are located in 49 C.F.R. parts 170-179. The overriding principle is that no person²⁰ may transport or offer or accept for transportation a hazardous material²¹ or hazardous waste,²² except as in accordance with the appropriate regulations. Further, no person may represent, mark, certify, sell or offer a container as meeting the requirements of the regulations unless the container is manufactured, marked, maintained and repaired in accordance with the regulations.²³

While the general concept may appear simple, its implementation is complex. The determination of exactly what constitutes a hazardous material results in a patchwork of coverage. For example, 49 C.F.R. part 172 lists and classifies those materials which the Department of Transportation (DOT) has designated as hazardous materials, and prescribes the requirements for shipping papers, labeling, and placarding. In addition, the appendix lists materials which are listed or designated as hazardous substances under section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).²⁴ Hazardous wastes under the Resource Conservation and Recovery Act (RCRA),²⁵ while not specifically listed in part 172, are nevertheless covered under the regulations.²⁶ In addition, the Clean Air Act²⁷ and the Clean Water Act²⁸ have lists of hazardous or toxic substances, though these are not necessarily cross-referenced to HMTA, CERCLA or RCRA.

The regulations also address the activities of those persons who may in some way be involved with the transportation of hazardous materials. Part 173 sets forth the requirements for preparing and packaging hazardous materials for shipment and the responsibilities for persons who test or repair containers used for the transportation of hazardous materials.²⁹ Section 173.22 sets forth the shipper's responsibilities, providing that:

20. As defined in 49 C.F.R. § 171.8 (1992).

21. Defined as "a substance or material, including a hazardous substance, which has been determined by the Secretary of Transportation to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce, and which has been so designated." The term "hazardous substance" is defined by reference to the appendix to 49 C.F.R. §§ 171.8, 172.101 (1992).

22. Defined as any material which is subject to the Hazardous Waste Manifest Requirements of the U.S. EPA under RCRA. 49 C.F.R. § 171.8 (1992).

23. 49 C.F.R. § 171.2 (a) - (c) (1992).

24. 42 U.S.C. § 9601 (14) (1983 & Supp. I 1993).

25. 42 U.S.C. § 6901-6991i (1983 & Supp. I 1993).

26. 49 C.F.R. §§ 171.3, 171.8 (1992).

27. 42 U.S.C. §§ 7401-7642 (1983 & Supp. I 1993).

28. 33 U.S.C. §§ 1251-1376 (1986 & Supp. II 1993).

29. 49 C.F.R. § 173.1(a) (1992).

a person may offer a hazardous material for transportation in a packaging or container required by this part only in accordance with the following:

- (1) The person shall class and describe the hazardous material in accordance with Parts 172 and 173 of this Subchapter, and
- (2) The person shall determine that the packaging or container is an authorized packaging . . . and that it has been manufactured, assembled, and marked in accordance with [the appropriate DOT regulations].³⁰

The section then requires that in making the determination that a container has been authorized and appropriately manufactured, assembled and marked, a person may accept the "manufacturer's certification, specification, or exemption or marking."³¹ Section 173.31(b) requires that when tanks are loaded and prior to shipping, "the shipper must determine to the extent practicable, that the tank, safety appurtenances, and fittings are in proper condition for the safe transportation of the loading." The section also contains further details on the qualification and use of tank cars.³²

One element of potential confusion in the regulations is their failure to define the term "shipper." A dictionary definition of the word is "one that sends goods by any form of conveyance."³³ Under this definition, the responsible person is the one who has the economic interest in the goods and the shipment. The regulations, however, also use the phrase "person who offers hazardous materials for transportation" when identifying the person subject to regulation.³⁴ Using this definition, the responsible person is the one that performs the physical function of loading the car and presenting the car to the carrier. The Research and Special Programs Administration of the DOT addressed this ambiguity in a Formal Interpretation of Regulations, acknowledging that the word "shipper" was not defined in the regulations and is used as a layman's term rather than as a term of art. The interpretation further stated that the responsibility of parties under the Hazardous Materials Regulations is to be determined on a case by case basis.³⁵

Part 174 specifically addresses the transportation of hazardous materials by rail and states that, unless otherwise specified, "each carrier, including a connecting carrier, shall perform the duties specified and comply with each applicable requirement of this part, and shall instruct its employees in relation thereto."³⁶ The carrier is to inspect each loaded

30. *Id.* at § 173.22.

31. *Id.* at § 173.22(a), (e) (1992).

32. 49 C.F.R. § 173.31(b) (1992).

33. WEBSTER'S SEVENTH NEW COLLEGIATE DICTIONARY (1970).

34. *Cf.* 49 C.F.R. §§ 173.1(b), 173.22(a) (1992).

35. 55 Fed.Reg. §§ 6760-62 (1990).

36. 49 C.F.R. § 174.4 (1992).

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and placarded railcar before acceptance at the originating point and when received in interchange, to see that it is not leaking and that the brakes and running gear are in proper condition.³⁷ Each car immediately adjacent to the loaded and placarded car must also be inspected.³⁸ All carriers and shippers must have the shipping papers on file.³⁹ Part 174 contains detailed operational rules for loading, unloading, and moving railcars containing hazardous materials.⁴⁰

Part 179 prescribes the specifications for tanks that are part of tank cars. The car builder, and any other person who modifies or repairs the car, must perform his function in accordance with this part.⁴¹ In marking a tank with a DOT classification, the builder certifies that it complies with the provisions of Part 179.⁴² The builder is required to notify any person to whom the tank is transferred of any requirements which have not been met at the time of transfer.⁴³ The authority for the approval of tank car design is granted under the regulations to the Mechanical Division of the AAR,⁴⁴ which also approves welding procedures, welders, fabricators, and establishes procedures to be followed in making repairs and alterations.⁴⁵

As a general rule, HMTA, and any regulation thereunder, preempt any state or local law or rule.⁴⁶ The Act provides, however, for specific procedures under which any person may apply to the Secretary of Transportation for a determination of whether a particular law or rule is preempted by the Act. Recourse to a court of competent jurisdiction for a determination of preemption is specifically allowed.⁴⁷

The fundamental conceptual flaw in the regulatory scheme under HMTA is that while everyone has responsibility for the safe transportation of hazardous materials, that responsibility is fragmented and not clearly delineated. For example, the shipper may rely on the car builder or the carrier to adequately inspect the car and the lading, while the carrier may be relying on the shipper or the car builder. The general lan-

37. 49 C.F.R. § 174.9(a) (1992).

38. 49 C.F.R. § 174.8(b) (1992).

39. 49 C.F.R. § 174.24 (1992).

40. 49 C.F.R. § 174 (1992).

41. 49 C.F.R. § 179.1(d) (1992).

42. 49 C.F.R. § 179.1(e) (1992).

43. 49 C.F.R. § 179.1(f) (1992).

44. 49 C.F.R. § 179.3 - 179.5 (1992).

45. 49 C.F.R. §§ 179.9, 179.11 (1992).

46. 49 U.S.C. app. 1804(a)(4), 1811 (1988). See also Case Comment, *Preemption of Local Laws by the Hazardous Materials Transportation Act*, 53 U. CHI. L. REV. 654 (1986); Stuart C. Thompson, *The Hazardous Materials Transportation Act: Chemicals at Uncertain Crossroads*, 15 TRANSP. L.J. 411 (1987).

47. 49 U.S.C. app. § 1811(c) (1976 & Supp. II 1993). The regulations governing preemption are found in 49 C.F.R. Part 107 Subpart C.

guage of the regulations, and the absence of a specification of duties, lead to confusion.

B. RAILROAD REGULATION

A number of federal laws apply directly to the regulation of railroad operational safety. Among these laws are: the Safety Appliances Act,⁴⁸ which addresses safety appliances on railroad equipment and braking systems; the Locomotive Inspection Act,⁴⁹ which addresses the inspection and condition of locomotives and their appurtenances; and the Accidents Reports Act,⁵⁰ which requires railroads to report accidents and authorizes the FRA to investigate accidents.

The major legislation, however, addressing railroad safety is the Railroad Safety Act of 1970,⁵¹ which has been revised several times since its adoption, most recently by the Rail Safety Improvement Act of 1988.⁵² The stated intent of the Railroad Safety Act is "to promote safety in all areas of railroad operations and to reduce railroad-related accidents, and to reduce deaths and injuries to persons and to reduce damage to property caused by accidents involving any carrier of hazardous materials."⁵³

As with HMTA, the emphasis under the Railroad Safety Act is for the issuance of regulations. The Act requires the Secretary of Transportation to promulgate regulations covering a number of specific items relating to railroad operations and safety, such as: licensing and certification of engineers, certification of automatic train control systems, and providing for use of event recorders.⁵⁴ The Railroad Safety Act and its regulations preempt any state or local law, other than those to "eliminate or reduce an essentially local safety hazard . . . when not incompatible with any Federal law, rule, regulation, order, or standard, and when not creating an undue burden on interstate commerce."⁵⁵ The Federal Railroad Administration regulations covering railroad safety and operations are located at 49 C.F.R., Chapter II.

48. 45 U.S.C. § 1-16 (1986 & Supp. II 1993).

49. 45 U.S.C. §§ 22-34 (1986 & Supp. II 1993).

50. 45 U.S.C. §§ 38-43 (1986 & Supp. II 1993).

51. 45 U.S.C. §§ 421, 431 (1986 & Supp. II 1993).

52. Pub.L. No. 100-342, 102 Stat. 624 (1988).

53. 45 U.S.C. § 421 (1986 & Supp. II 1993).

54. 45 U.S.C. § 431 (1986 & Supp. II 1993); *see also* CSX Transportation, Inc. v. Lizzie Beatrice Easterwood, 113 S. Ct. 1732 (1993).

55. 45 U.S.C. § 434 (1986 & Supp. II 1993).

C. AAR RULES

A significant element in the regulation of the rail transportation of hazardous material is performed by private industry. The predominant organization is the AAR, a trade association made up of the major and minor American railroads. The AAR has been delegated significant regulatory responsibility under the hazardous materials regulations. The rules of the AAR also govern major areas of responsibility, other than those reflected in the DOT regulations such as the required condition of cars moving in interchange and the method of reimbursing a car owner for a car destroyed on a carrier's line.⁵⁶ The DOT regulations also incorporate by reference the procedures and policies of numerous trade and professional groups in addition to the AAR.⁵⁷ Reliance on the expertise of private industry is probably the only way the DOT can create and maintain a comprehensive regulatory policy. The various industrial groups have an extensive knowledge of the business and technology as it applies to rail transportation of hazardous materials. It would be impossible for a governmental agency to hire the necessary trained staff to review and issue regulations. This reliance, however, adds to some of the regulatory confusion, as each industry group positions itself for some advantage in the morass of regulation and liability.

D. ENVIRONMENTAL LAWS

The basic federal statute governing liability for releases of hazardous materials into the environment is the Comprehensive Environmental Response Compensation and Liability Act of 1980 ("CERCLA"), as amended by the Superfund Authorization and Recovery Act of 1986.⁵⁸ CERCLA authorizes the Environmental Protection Agency ("EPA") to act whenever there is a release or threatened release of "hazardous substances" or any other "pollutants or contaminants" into the environment,⁵⁹ and authorizes civil actions to recover cleanup costs for releases of "hazardous substances."⁶⁰ In addition, the EPA is authorized to engage in a number of investigative, evaluative, and cleanup activities.⁶¹

56. See FIELD MANUAL OF THE INTERCHANGE RULES ADOPTED BY THE ASSOCIATION OF RAILROADS, MECHANICAL DIVISION (1991).

57. 49 C.F.R. § 171.7 (1992).

58. 42 U.S.C. §§ 9606-9675 (1983 & Supp. II 1993).

59. 42 U.S.C. § 9604 (1983 & Supp. II 1993).

60. *Id.*

61. 42 U.S.C. §§ 9601(9)(A), (22) (1983 & Supp. II 1993).

CERCLA liability is imposed on "covered persons," which includes the "owner and operator" of a facility,⁶² generators of hazardous substances, transporters of hazardous substances, and persons who owned the facility at the time of the release.⁶³ For the purposes of CERCLA, rolling stock is a "facility," and a "release" is broadly defined to cover any discharge into the environment.⁶⁴ The term "hazardous substance" is defined both by reference to definitions in other federal environmental statutes and designation pursuant to section 102 of CERCLA.⁶⁵

Liability under CERCLA is strict,⁶⁶ and joint and several.⁶⁷ The only defenses available are those set forth specifically in CERCLA, which require that the potentially responsible party establish by a preponderance of the evidence that the release was:

caused solely by

- (1) an act of God;
- (2) an act of war;
- (3) an act or omission of a third party other than an employee or agent of the defendant, or than one whose act or omission occurs in connection with a contractual relationship, existing directly or indirectly, with the defendant (except where the sole contractual arrangement arises from a published tariff and acceptance for carriage by a common carrier by rail), if the defendant establishes . . . that . . . (a) he exercised due care with respect to the hazardous substance concerned, . . . and (b) he took precautions against foreseeable acts or omissions of any such third party⁶⁸

62. The term "owner and operator" has been consistently construed in the disjunctive. *See* United States v. Fleet Factors Corp., 901 F.2d 1550 (11th Cir. 1990); United States v. Maryland Bank & Trust Co., 632 F. Supp. 573 (D. Md. 1986).

63. 42 U.S.C. § 9607 (1983 & Supp. II 1993).

64. 42 U.S.C. §§ 9601(9)(A), (22) (1983 & Supp. II 1993).

65. In addition to being designated as such under CERCLA, a material is a "hazardous substance" covered by CERCLA if it is:

1. listed as a hazardous air pollutant under Section 112 of the Clean Air Act, 42 U.S.C. § 7412 (1983 & Supp. II 1993);
2. a "hazardous waste" listed or having characteristics identified under the Solid Waste Disposal Act, 42 U.S.C. § 6921 (1983 & Supp. II 1993);
3. a toxic pollutant as otherwise designated under the Federal Water Pollution Control Act, 33 U.S.C. § 1317 (1986 & Supp. II 1993); or
4. subject to action under Section 7 of the Toxic Substance Control Act, 15 U.S.C. § 2606 (1983 & Supp. I 1993).

66. 42 U.S.C. § 9607 (1983 & Supp. II 1993). *See, e.g.* United States v. Monsanto Co., 858 F.2d 160 (4th Cir. 1988), *cert. denied*, 109 S. Ct. 3156 (1989).

67. *See* United States v. A & F Materials Co., Inc., 578 F. Supp. 1249 (S.D. Ill. 1984); United States v. Chem-Dyne Corp., 572 F. Supp. 802 (S.D. Ohio 1983).

68. 42 U.S.C. § 9607(b) (1983 & Supp. II 1993).

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The defenses under CERCLA have been narrowly construed and are difficult to prove.⁶⁹ Thus, the intent and operation of CERCLA puts the shipper, the carrier, and the car owner all at risk of strict joint and several liability for cleanup costs in the event of a release.

The involved parties may sue each other or third parties for contribution for the costs of cleanup. In resolving these actions, "the court may allocate response costs among liable parties using such equitable factors as the court determines are appropriate."⁷⁰ Thus, assuming that the involved parties are solvent, they may litigate with each other to resolve the issue of contribution. Many states have statutes similar to CERCLA, allowing the state to recover its cleanup costs and damages for injury to natural resources.

CERCLA does not regulate petroleum, natural gas, or their fractions.⁷¹ Prior to 1990, oil spills into the navigable waters of the United States were covered by section 311 of the Clean Water Act,⁷² which had proven to provide an inadequate remedy. Oil spills into or upon "the navigable waters or adjoining shorelines or the exclusive economic zone" of the United States are now primarily covered by the Oil Pollution Act of 1990, which, in part, amended section 311 of the Clean Water Act.⁷³ The Oil Pollution Act,⁷⁴ which also covers discharges from rolling stock, is in many respects similar to CERCLA, though limited to discharges into water.

Section 7003 of the Resource Conservation and Recovery Act⁷⁵ authorizes the Administrator of the EPA to file suit to prevent or remediate "an imminent and substantial endangerment to health or the environment." This provision is very similar to section 106 of CERCLA, though it covers certain substances regulated under RCRA, such as petroleum products, which are not regulated under CERCLA. While the Toxic Substances Control Act (TOSCA)⁷⁶ and the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)⁷⁷ do not specifically address the transportation of hazardous materials, they do regulate the introduction of chemicals into commerce. The manufacturer of the regulated product is responsible for compliance with the requirements of TOSCA or FIFRA before shipping the material.

69. See *United States v. Aceto Agricultural Chemicals Corp.*, 872 F.2d 1373 (8th Cir. 1989).

70. 42 U.S.C. § 9613(f) (1983 & Supp. II 1993).

71. 42 U.S.C. § 9601 (14) (1983 & Supp. II 1993).

72. 33 U.S.C. § 1321 (1986 & Supp. II 1993).

73. 33 U.S.C. § 2701 (Supp. II 1993).

74. *Id.*

75. 42 U.S.C. § 6973 (1983 & Supp. II 1993).

76. 15 U.S.C. §§ 2601-2629 (1988).

77. 7 U.S.C. § 135 *et seq.* (1980).

CERCLA specifically provides for private cost recovery suits in which a party may recover its response costs from other responsible parties.⁷⁸ In addition, most federal environmental laws passed since 1970 authorize private parties to file actions to compel compliance with environmental laws, though the procedural prerequisites differ from statute to statute.⁷⁹

E. PUBLIC NUISANCE - CRIMINAL SANCTIONS

In addition to civil enforcement actions under environmental laws, the federal government (and state governments under state environmental statutes) may bring criminal actions. CERCLA,⁸⁰ RCRA,⁸¹ and the Clean Water Act⁸² (which includes criminal penalties for violation of the Oil Pollution Act of 1990) each provide for criminal sanctions in the event of violations. Criminal liability may be imposed on a corporate entity and on individuals who were directly involved in the criminal violation or were responsible for the corporation's compliance with environmental laws. Outside of the environmental laws, the state may be able to impose sanctions for environmental contamination under other criminal laws. These laws may run from public nuisance⁸³ to murder.

The problem with the regulatory scheme imposed by environmental and criminal laws in the context of transportation of hazardous materials is that the laws are not primarily directed towards the regulation of transportation and the prevention of releases. These laws rarely state how to protect the environment. Rather, they tend to focus on punishing polluters or cleaning up the environment at a minimal cost to the government and a maximum cost to private parties. The application of strict and joint and several liability for cleanup costs, while perhaps effective in recovering the cost of remediation, may result in a party with a relatively minor amount of fault being responsible for a large share of the damages if other financially viable parties are not available. Again, the regulatory scheme does not clearly delineate responsibility in a multiparty transportation transaction, and does not benefit a party who complies, or attempts to comply, with the law.

78. 42 U.S.C. § 9607 (1983 & Supp. II 1993).

79. Susan M Cooke, ed. *THE LAW OF HAZARDOUS WASTE* 16.03 (1991). ("Cooke").

80. 42 U.S.C. § 9603 (1983 & Supp. II 1993).

81. 42 U.S.C. § 6928 (1983 & Supp. II 1993).

82. 33 U.S.C. § 1319, 1321 (1986 & Supp. II 1993).

83. A public nuisance "is a species of catch-all criminal offense consisting of an interference with the rights of the community at large, which may include anything from the construction of a highway to a public gaming house of indecent exposure." W. PAGE KEETON ET AL., *PROSSER AND KEATON ON THE LAW OF TORTS* § 86, at 618 (5th ed. 1984).

IV. PRIVATE ACTIONS

The civil courts decide the amount of damages caused by a hazardous materials accident and allocate those damages among the parties involved. This use of the courts is costly and inefficient. The injured parties sue one or more of the potential defendants, and the parties initially sued generally bring in the others through third party actions. The plaintiffs often request punitive damages. Spilled product must be cleaned up under the auspices of the appropriate regulatory agency, and the parties to actions filed by the regulatory agencies sue each other for contribution or indemnity. Generally the defendants are jointly and severally liable for the damages regardless of how the judge or jury allocates fault. Discovery can be lengthy, and, at the conclusion of years of litigation, cases are often settled on a basis which has little relationship to the causation of the accident or the damages actually incurred.

Since the elements of private claims are governed by state law and differ in detail from jurisdiction to jurisdiction, the following analysis is only an outline of the primary theories on which private tort claims may be brought as a result of a release of hazardous materials.

A. NEGLIGENCE

The classic requirements to establish a cause of action for negligence are:

- (a) the interest invaded is protected against unintentional invasion, and
- (b) the conduct of the actor is negligent with respect to the other, or a class of persons within which he is included, and
- (c) the actor's conduct is a legal cause of the invasion, and
- (d) the other has not so conducted himself as to disable himself from bringing an action for such invasion.⁸⁴

The requirements have also been described as follows:

1. A duty, or obligation, recognized by the law, requiring the actor to conform to a certain standard of conduct, for the protection of others against unreasonable risks.
2. A failure to conform to the standard required. . . .
3. A reasonably close causal connection between the conduct and the resulting injury. . . .
4. Actual loss or damage resulting to the interests of another.⁸⁵

Success in a negligence action requires that the plaintiff prove each of the requisite elements. Experience has shown that such proof is often difficult and plaintiffs generally rely on other theories requiring less stringent proof in order to prevail.

84. RESTATEMENT (SECOND) OF TORTS § 281 (1965).

85. W. PAGE KEETON ET AL., PROSSER AND KEATON ON THE LAW OF TORTS § 30, at 164-65 (5th ed. 1984).

B. STRICT LIABILITY

There are several theories on which strict liability may rest. The most common is the application of strict liability to the manufacturer, vendor, or owner of a product, based on Section 402A of the Restatement (Second) of Torts which states:

- (1) One who sells any product in a defective condition unreasonably dangerous to the user or consumer or to his property is subject to liability for physical harm thereby caused to the ultimate user or consumer, or to his property, if
 - (a) the seller is engaged in the business of selling such a product, and
 - (b) it is expected to and does reach the user or consumer without substantial change in condition in which it is sold.
- (2) The rule stated in Subsection (1) applies although
 - (a) the seller has exercised all possible care in the preparation and sale of his product, and
 - (b) the user or consumer has not bought the product from or entered into any contractual relation with the seller.⁸⁶

The defect can be in fabrication or in design.⁸⁷ Once the prerequisites have been proven, liability is found notwithstanding the care taken by the defendant.

A second application of strict liability in hazardous materials cases occurs when a court determines that an activity performed is so inherently dangerous that the party should be held responsible for the consequences of that activity regardless of the care taken. One line of cases follows the holding in *Rylands v Fletcher*⁸⁸ as set forth in the Restatement of Torts § 519:

[O]ne who carries on an ultrahazardous activity is liable to another whose person, land or chattels the actor should recognize as likely to be harmed by the unpreventable miscarriage of the activity for harm resulting thereto from that which makes the activity ultrahazardous, although the utmost care is exercised to prevent the harm.⁸⁹

An activity is ultrahazardous if it:

- (a) necessarily involves a risk of serious harm to the person, land or chattels of others which cannot be eliminated by the exercise of the utmost care, and
- (b) is not a matter of common usage.⁹⁰

Another, more recent, line of cases follows the Restatement (Second) of Torts which provides:

86. RESTATEMENT (SECOND) OF TORTS § 402A (1965).

87. Kristine Cordier Karnezis, Annotation, *Products Liability: Modern Cases Determining Whether Product is Defectively Designed*, 96 A.L.R. 3d 22 (1979).

88. *Rylands v. Fletcher*, 3 H. & C. 774, 159 Eng. Rep. 737 (1865).

89. RESTATEMENT (SECOND) OF TORTS § 519 (1965).

90. *Id.*

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- (1) One who carries on an abnormally dangerous activity is subject to liability for harm to the person, land or chattels of another resulting from the activity, although he has exercised the utmost care to prevent the harm.
- (2) This strict liability is limited to the kind of harm, the possibility of which makes the activity abnormally dangerous.⁹¹

The Restatement (Second) continues to list a series of factors to consider in determining whether a given activity is abnormally dangerous. These are the:

- (a) existence of a high degree of risk of some harm to the person, land, or chattels of others;
- (b) likelihood that the harm that results from it will be great;
- (c) inability to eliminate the risk by the exercise of reasonable care;
- (d) extent to which the activity is not a matter of common usage;
- (e) inappropriateness of the activity to the place where it is carried on; and
- (f) extent to which its value to the community is outweighed by its dangerous attributes.⁹²

Individual courts have substantial discretion in deciding whether and to the extent these factors apply to a given situation.

While ultrahazardous activity results in strict liability, the Restatement (Second) provides that the doctrine of ultrahazardous activity should not be applied to a common carrier acting in pursuance of its public duty.⁹³ This position is premised on the theory that it would be unjust to hold a common carrier strictly liable for performing its legal obligations. The contrary position is premised on the theory that the carrier is in the best position to prevent accidents and spread the cost of any losses. The Restatement (Second) rule has been applied in some jurisdictions but rejected in others.⁹⁴

C. FAILURE TO WARN

Another theory used to apply liability in a hazardous material release is the failure of a party to warn the users of a product of the hazards of that product. This principle is set forth in the Restatement (Second) of Torts as follows:

- One who supplies directly or through a third person a chattel for another to use is subject to liability to those whom the supplier would expect to use the chattel with the consent of the other or to be endangered by its probable use, for physical harm caused by the use of the chattel in the manner for which and by a person whose use it is supplied, if the supplier
- (a) knows or has reason to know that the chattel is or is likely to be dangerous for the use for which it is supplied, and

91. *Id.*

92. RESTATEMENT (SECOND) OF TORTS § 519 (1965).

93. *Id.* at § 521.

94. Annotation, *Carrier's "Public Duty" Exception to Absolute or Strict Liability Arising out of Carriage of Hazardous Substances*, 31 A.L.R. 4th 658 (1986).

- (b) has no reason to believe that those for whose use the chattel is supplied will realize its dangerous condition, and
- (c) fails to exercise reasonable care to inform them of its dangerous condition or of the facts which make it likely to be dangerous.⁹⁵

The duty to warn may apply to all parties involved in the transportation of hazardous materials, depending on their sophistication and their relevant contractual and regulatory obligations.

In addition, when a hazardous material release occurs, neighboring landowners may have a right to sue for nuisance⁹⁶ or trespass⁹⁷ for the damages to their property.

D. PUNITIVE DAMAGES

The conduct prerequisite to establishing liability may also result in a finding of behavior so egregious that a jury would impose punitive damages on a defendant.⁹⁸ The threat of punitive damages complicates any case by adding a threat of irrationality to the result of a trial. Any behavior, however reasonable it may seem at the time performed, may be cast as reprehensible conduct in the aftermath of a chemical release.

E. COMPLIANCE WITH CUSTOM, LAW OR REGULATION

While compliance with law or regulation may be evidence toward proving reasonable and proper conduct, such compliance is not a complete defense in a civil action.⁹⁹ Even if all the parties to the transportation of the hazardous material did all that was required of them under the regulations, the parties could still be held liable. For example, the fact that a label or warning conforms to state or federal requirements is not a defense, but merely a factor to be considered by the jury along with all other facts.¹⁰⁰ Mandated warnings are regulatory in nature while the purpose of a tort action is to compensate the injured party.¹⁰¹ Even the attempt to prove that the product conformed to industry custom or standards or complied with standards set forth in governmental regulations is not admissible in certain jurisdictions.¹⁰² Some courts, however, have

95. RESTATEMENT (SECOND) OF TORTS § 388 (1965).

96. See *Cooke*, *supra* note 79 at 17.01(2).

97. See *Cooke*, *supra* note 79 at 17.01 (3).

98. 22 AM. JUR. 2d, *Damages* §§ 731-818 (1988).

99. See RESTATEMENT (SECOND) OF TORTS §§ 285-288B (1965).

100. *Burch v. Amsterdam Corp.*, 366 A.2d 1079 (D.C. 1976).

101. *Ferebee v. Chevron Chemical Corp.*, 736 F.2d 1529 (D.C. Cir. 1984).

102. Thomas R. Malia, Annotation, *Products Liability: Admissibility of Defendant's Evidence of Industrial Custom or Practice in Strict Liability Actions*, 47 A.L.R. 4th 621 (1986).

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held that federal safety regulations preempt state tort law if there is a clear intention to establish uniform regulation.¹⁰³

V. FAILURE OF THE CURRENT SYSTEM

There are generally two forms of formal regulation of conduct: "standard-setting," in which acceptable levels of risk are defined and standards set accordingly, and "screening," in which the introduction of products is screened to assure that the products are not harmful.¹⁰⁴ The regulation of hazardous materials transportation has primarily concentrated on standard-setting.¹⁰⁵ It has been criticized in three ways. First, DOT is dependent on the transportation industry for its information and therefore does not write efficient safety standards. Second, its standards are not implemented effectively. Third, the standards cannot be enforced.¹⁰⁶

Strict enforcement is unlikely because budget restrictions will always limit the personnel and other resources available to the DOT. The causes of ineffective implementation are more complex. First, the selection of what to regulate and how it is to be regulated is as much a matter of politics as of safety. Legislatures often act in a piecemeal fashion after a publicized disaster to regulate the causes of that disaster rather than address the problems of an industry as a whole. Second, the promulgation and implementation of standards is a slow process. Third, safety standards are complex and often difficult for the regulated community to understand. Fourth, standard-setting discourages innovation. A transporter of hazardous materials is more likely to follow the rules than attempt to adopt an improved system. Fifth, high compliance costs may make it more economical for the regulated community not to comply. Finally, standard-setting fails to take into account the effect of liability laws on the behavior of the regulated community.¹⁰⁷

In addition to the issues raised in this general critique, the current system imposed by federal legislation on the transportation of hazardous materials has other deficiencies. Regulations are incomplete and imprecise. While in some instances, for example, a shipper or a carrier may have specific responsibilities, in many others it is unclear which party is

103. *CSX Transp., Inc. v. Public Utilities Comm'n*, 701 F. Supp. 608 (S.D. Ohio 1988), *aff'd* 901 F.2d 497 (6th Cir. 1990), *cert. denied* 111 U.S. 781 (1991).

104. Robert H. Hahn, *Regulation: Past, Present, and Future*, 13 HARV. J.L. & PUB. POL'Y 167 (1990).

105. Note, however, that certain legislation such as TOSCA and FIFRA emphasize regulation through screening.

106. Bradley M. Marten, *Regulation of the Transportation of Hazardous Materials: A Critique and a Proposal*, 5 HARV. L. REV. 345, 367 (1981).

107. Marten, *supra* note 106 at 362-65.

primarily responsible to perform a particular function, or the matter is not regulated at all. Federal environmental laws rarely attempt to assign specific roles concerning the transportation of hazardous materials (other than for transporters under RCRA). Rather, they concentrate on remediation of the environment and cost recovery after a release. Turf struggles among regulatory agencies further complicate matters, and it is almost impossible to get consensus among the regulated community.

Similarly, the current system for determination and allocation of liability is flawed. Judges and juries often appear to act irrationally. Joint and several liability and the imposition of punitive damages, which make trials risky even for defendants with limited exposure, add to the pressure to settle on terms favorable to plaintiffs. Also troublesome is that even if the parties involved in the transportation of hazardous materials comply with the regulations intended to govern that activity, plaintiffs are entitled to argue that these parties should have maintained a higher standard of care, and each judge and jury is free to impose its own concept of the appropriate standard.

Academic critics have emphasized the efficiency of regulation through the imposition of tort liability on the parties to a given transaction. Such imposition delegates the decision-making to the parties with the knowledge, opportunity, and motivation to optimize safety. Failure to operate safely would result in payment of damages to the injured parties.¹⁰⁸ Risk distribution analysis maintains that by holding the parties to an activity strictly liable, the societal costs of the activity are distributed through higher prices charged by the parties benefitting from the activity.

These theories may make sense in instances in which only one party benefits from the activity or where the law allocates liability on the basis of fault and the price of the transaction as a whole covers the risks. However, where several parties are involved in a transaction, and any one of them may be held strictly, jointly and severally liable for an accident, the risk allocation costed to the transaction will be a multiple of the costs allocated if only one party were involved. Also, no one party will likely be able to raise its prices sufficiently to cover its potential risks.

Another argument in support of the current system is that the parties engaging in a hazardous activity are in a better position to evaluate and safeguard against injury than are the injured parties. Again, this argument may be valid when only one party is involved. However, in a multiparty activity, no one party is able to direct all aspects of the transaction. Without specific rules and regulations setting forth each party's obligations, no one party can individually determine its own duties. Requiring each party to be responsible for providing safety for the

108. See Hahn, *supra* note 104, and Marten, *supra* note 106.

entire activity is inefficient and confusing. It multiplies the cost of regulation, and is, in general, impractical.

In general, tort and environmental laws do not directly regulate the hazardous activity, but rather, stress the compensation of parties for any harm they may have incurred by reason of that activity. The system attempts to motivate safe behavior through the threat of punitive damages, strict and joint and several liability, and massive cleanup costs and verdicts.

VI. REFORM

The primary goals of regulation of hazardous materials, as stated earlier, are to prevent accidents and releases of hazardous materials while rationally compensating any party injured by a release at the cost of the parties causing the release. In order to accomplish these goals, the regulatory system should:

- a. set forth the duties of each of the parties involved in the transportation of hazardous materials with the greatest degree of specificity possible;
- b. provide certainty that compliance with the regulatory system will result in a benefit to the party so complying;
- c. maximize the efficiency and economy of regulation;
- d. spread the cost of regulation throughout the regulated community; and
- e. compensate injured parties fairly and rationally.

The current system of regulation of the transportation of hazardous materials needs to be revised to accomplish these goals. Notwithstanding the difficulties inherent in the regulatory process, governmental regulation of the transportation of hazardous materials is necessary. Such regulation should be specific, realistic, and directed to safe operation and the prevention of releases. Regulation should recognize that hazardous materials spills are random events which, however, may result in extraordinary damages.¹⁰⁹ The regulations should specifically delineate the duties of each party and these duties should not overlap. New regulations, adopted with the advice of industry, can be implemented over time so as not to be disruptive to the transportation industry.

Amendments to standard-setting regulations are only part of the needed reforms. The tort system must also be reformed in order to complement standard-setting regulations as well as compensate injured par-

109. Gary M. Bowman, *Judicial Ordering of Intergovernmental Roles in Hazardous Materials Transportation*, 18 *TRANSP. L.J.* 31 (1989).

ties. While reform of the tort system is complex and controversial,¹¹⁰ there are changes which would significantly add to the effectiveness of the regulatory scheme.

The first is to reform the allocation of liability. One method is to impose strict liability on the carrier¹¹¹ and eliminate liability for the other parties. The carrier would thereby pass the costs of compliance on to the users of the hazardous materials, and impose and enforce stringent standards on other parties such as shippers, railcar manufacturers and lessors. An alternative is to allocate liability on the basis of fault, and do away with joint and several liability. It is irrational and inequitable to regulate an industry by making one actor, who may have done little wrong, financially responsible for everyone.

Another reform is to prohibit punitive damages if a party uses due diligence to comply with applicable laws and regulations. The purpose of punitive damages is to punish a party for egregious activity. If a party uses due diligence to comply with the law, that party should, by definition, not have engaged in egregious conduct.¹¹²

VII. CONCLUSION

Rail accidents involving releases of hazardous materials are of low frequency but may cause widespread harm. As a result, this activity has been subjected to intense scrutiny and regulation. Current law applicable to the transportation of hazardous materials by rail, however, has generally failed. Neither formal regulation nor tort law, independently or in concert, provide a fair, efficient system to both minimize accidents and equitably compensate injured parties. Only by working toward a comprehensive reform of existing law will the transportation industry create a system that works.

110. See REPORT OF THE SENATE COMM. ON COMMERCE, SCIENCE AND TRANSPORTATION, S. REP. 102-215 ON THE PRODUCT LIABILITY FAIRNESS ACT, S.640, 102d Cong., 1st Sess. (1991).

111. See, e.g. *Indiana Harbor Belt Railroad v. American Cyanamid Co.*, 517 F. Supp. 314 (N.D. Ill. 1981).

112. Certain of these suggested reforms are contained in the proposed PRODUCT LIABILITY FAIRNESS ACT, S. 640, 102d Congress, 1st Sess. (1991), though not applicable directly to rail transportation of hazardous materials.