HB

673

STATE OF ALASKA
THE LEGISLATURE

POUCH Y - STATE CAPITOL
JUNEAU, ALASKA 99811
907-465-3800

LEGISLATIVE AFFAIRS AGENCY

LEGISLATIVE REFERENCE LIBRARY

May, 1988

Copies of minutes listed below were originally included in this file. The minutes are available on the STAIRS database CMPR. In order to save space copies of minutes have not been left in the files.

Mary Van Nimwegen

5 CRA 5-11-86 12:40 pm

Sunday 5-11-86

C & R A Cmi Mtg — Sens. Coghill DeVries & Sturgulewski & V. Fischer were present.

Re: CS for HB 673 (Res) am
An Act re transportation of hazardous mtls

Doug Yates, Aide to Rep Koponen explained purpose of the bill

Sen V. Fischer moved the bill with indiv recs. There was no objection & bill passed out of committee.

Offered: 5/5/86
Referred: Rules

Original sponsors: Koponen, Hurley, Davis and Goll

IN THE HOUSE BY THE RESOURCES COMMITTEE

CS FOR HOUSE BILL NO. 673 (Resources) am

IN THE LEGISLATURE OF THE STATE OF ALASKA

FOURTEENTH LEGISLATURE - SECOND SESSION

A BILL

For an Act entitled: "An Act relating to transportation of hazardous materials."

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:

* Section 1. AS 29.35 is amended by adding a new section to read:

Sec. 29.35.143. TRANSPORTATION OF HAZARDOUS MATERIALS. (a) Consistent with federal law, a municipality that regulates transportation of hazardous materials shall

(1) establish reasonable routes for the transportation of bulk shipments of selected hazardous materials in the municipality, after completing

(A) a comparative safety analysis of alternative routes;

(B) a process involving substantive consultation with other jurisdictions, including the state, affected by the routing; and

(C) a process involving substantive consultation with the commercial carriers of hazardous materials to assure that at least one feasible route is permitted to and from commercial transportation facilities; and

(2) provide for the description, marking, labeling, and placarding of containers or vehicles used to transport bulk shipments of hazardous materials in the municipality, in a manner identical to the manner provided in 49 C.F.R. 172.200 - 172.558.

(b) Notwithstanding AS 29.35.200, 29.35.210, and 29.35.220, a

borough may exercise powers under this section on an areawide or nonareawide basis.

(c) In this section

(1) "bulk shipment of a hazardous material" means a shipment of 500 pounds or more of a hazardous material or, if less than 500 pounds, a quantity equal to or greater than the reportable quantity of the material specified in the Hazardous Materials Table in 49 C.F.R. 172.101;

(2) "hazardous material" has the meaning given in 49 C.F.R. 171.8; This definition does not apply to petroleum products that are lubricants or fuels; or to a mixture or solution containing a material identified by the letter "E" in Column 1 of the Table to 172.101 if it is in a concentration less than that shown in Column 2 of the Table;

(3) "person" has the meaning given in AS 01.10.060 and also includes a political subdivision, government agency, municipality, or other public or private entity.

* Sec. 2. AS 46.03 is amended by adding a new section to read:

Sec. 46.03.895. NOTICE OF HAZARDOUS MATERIALS. (a) If a vehicle carrying a bulk shipment of hazardous materials in the state is delayed because of an unscheduled interruption, such as mechanical failure of the vehicle, impassable road conditions, weather, or other emergency requiring the operator to leave the vehicle unattended in a location or for a period of time that creates an increased risk of harm to the public safety or health, then the operator of the vehicle or an agent of the carrier shall give prompt, oral notice to the division of state troopers, or to a person or agency designated by the Department of Public Safety, of the location and contents of the vehicle and the circumstances of the delay.

(b) Except as provided in (c) of this section, a consignee of a

bulk shipment of a hazardous material that is to be stored by the consignee for more than seven days shall, within 72 hours after receiving the shipment, send to a person or agency designated by the Department of Public Safety

(1) a copy of the description of the hazardous materials that is required to be on the shipping paper by the United States Department of Transportation under 49 C.F.R. 172.200 - 172.204; and

(2) a notice of the location at which the materials are to be used or stored.

(c) The notice and description required under (b) of this section for regularly scheduled bulk shipments of a hazardous material must be sent by April 15 each year, but are not required more than once a year, except that notice and descriptions are required within 72 hours after a significant change in the schedule, quantity, contents, or routing of a regularly scheduled bulk shipment. The Department of Public Safety shall adopt regulations specifying what constitutes a "significant change" under this subsection.

(d) In this section

(1) "bulk shipment of a hazardous material" means a shipment of 500 pounds or more of a hazardous material or, if less than 500 pounds, a quantity equal to or greater than the reportable quantity of the material specified in the Hazardous Materials Table in 49 C.F.R. 172.101;

(2) "hazardous materials" has the meaning given in 49 C.F.R. 171.8; This definition does not apply to petroleum products that are lubricants or fuels; or to a mixture or solution containing a material identified by the letter "E" in Column 1 of the Table to 172.101 if it is in a concentration less than that shown in Column 2 of the Table;

STATE OF ALASKA
THE LEGISLATURE

LEGISLATIVE AFFAIRS AGENCY

POUCH V, STATE CAPITOL
JUNEAU, ALASKA 99811
(907) 465-3800

MAY 09 1986

MEMORANDUM May 9, 1986

SUBJECT: Sectional analysis of CSHB 673 (Resources) am

TO: Representative Niilo Koponen

FROM: Edward H. Hein
Legislative Counsel

Section 1 establishes minimum requirements for municipalities that regulate the transportation of hazardous materials. In a manner consistent with federal law, chiefly U.S. Department of Transportation regulations, such municipalities must establish reasonable routes for transporting bulk shipments in the municipality. But first the municipality must complete (1) a comparative analysis of alternative routes, (2) substantive consultation with other jurisdictions affected by the routing, and (3) substantive consultation with commercial carriers to assure that there is at least one feasible route to and from commercial transportation facilities. Such municipalities also must provide for U.S. Department of Transportation descriptions, marking, labeling, and placarding of bulk shipment containers and vehicles.

This section also provides that a borough may regulate the transportation of hazardous materials on an areawide or a nonareawide basis. A definition section states that "bulk shipments" are 500 pounds or more, or if less than 500 pounds, the quantity equal to or greater than the reportable quantity. "Hazardous material" is defined as in U.S. Department of Transportation regulations, except that petroleum products used as lubricants or fuel, and a hazardous substances in quantity less than the reportable quantity specified in U.S.D.O.T. regulations, are excluded from the definition. "Person" is defined to include government agencies and municipalities, as well as other entities listed in the definition of person in AS 01.10.060.

Sec. 2 requires oral notice to the state troopers when a vehicle carrying hazardous materials is delayed because of an unscheduled interruption. The notice must be prompt, must be given by the operator of the vehicle or by an agent of the carrier, and must state the location and contents of the vehicle and the circumstances of the delay.

This section also requires consignees of bulk shipments of hazardous materials to send to a person or agency named by the Department of Public Safety a copy of the shipping paper description and a notice of location where the materials are to be stored or used. This information must be sent within 72 hours after the shipment is received, but applies only if the shipment is to be stored by the consignee for more than seven days. An exception to the 72-hour requirement is made for regularly scheduled bulk shipments. Notice and description of those shipments must be sent once a year by April 15. But a 72-hour notice is still required if there is a significant change in the schedule, quantity, contents, routing. "Bulk shipment" and "hazardous material" are defined as in section 1. "Vehicle" is defined to include motor vehicles and railroad cars.

EHH:mkr
m5/091

STATE OF ALASKA 1986 LEGISLATIVE SESSION
FISCAL NOTE

Revision Date : _____

REQUEST

Bill/Resolution No. : HB 673
Title : "An Act relating to transportation of hazardous substances in municipalities."
Sponsor : Representative Koponen
Requestor : House Community & Regional Affairs
Date of Request : 3/ /86

FISCAL DETAIL

Agency Affected : Public Safety
BRU : _____
Components : _____

EXPENDITURES/REVENUES : (Thousands of Dollars)

OPERATING	FY 86	FY 87	FY 88	FY 89	FY 90	FY 91
PERSONAL SERVICES						
TRAVEL						
CONTRACTUAL						
SUPPLIES						
EQUIPMENT						
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING		0	0	0	0	0
CAPITAL						
REVENU..						

FUNDING : (Thousands of Dollars)

GENERAL FUND		0	0	0	0	0
FEDERAL FUNDS						
OTHER						
TOTAL		0	0	0	0	0

POSITIONS :

FULL-TIME						
PART-TIME						
TEMPORARY						

ANALYSIS : Attach a separate page if necessary

Prepared by : Kathy Niles, Admin Assistant — Phone : 465-4336
Division : Commissioner's Office — Date : 3/21/86

Approved by Commissioner : _____ — Date : 3/21/86
Agency : Public Safety

Distribution (by Agency preparing fiscal note) :
- Legislative Finance
- Legislative Sponsor
- Requestor
- Office of Management and Budget
- Impacted Agency(ies)

10/25/85

REQ'D
5-10-86

House Bill 673 came into being after I was approached by emergency service personnel in the Fairbanks area concerned lack of information on their part about hazardous materials stored in their jurisdiction. Their only possible prudent action in responding to emergency incidents involving materials of unknown origin was to resort to viewing the fire from a distance and trying to guess what the origin of the purple smoke and green flames might be. Other options involved unnecessarily risking the lives and safety of personnel - often volunteers. Delays in response were often costly to property and the environment.

While protection of emergency services providers was my original motivation, HB 673 has a far wider application to public safety. Increasing use of hazardous materials in our highly technical society and the concomitant necessity to regulate how they may effect the environment, both short and long range is of vital interest. Originally there were two bills that dealt with these issues. House Bill 672 was rolled into 673 for simplicity's sake and to eliminate confusion. House Bill 673 does not regulate the transportation of fuels or lubricants although at some point it may be necessary to do so. The present trend is for states rather than the federal government to take the lead in management of the transportation of hazardous materials. However, this bill has been carefully crafted to avoid preemption by Federal D.O.T. and no interference with interstate commerce is anticipated.

Yes, it is a piece of regulatory legislation but one which is generally favored by the transportation industry. It helps define their liability and keeps the fly-by-nighters off the road. In the House Resource Committee, Rep. Cato, who chairs the House Transportation Committee, worked hard to come up with language that was acceptable to both the transportation industry, the bill's sponsors and emergency

personnel. The issue of transportion of hazardous materials is a highly complex area. There are more than 2400 listed hazardous materials and the number is growing daily. House Bill 673 is by no means a last word on the subject, but is it is one of several important measures considered by the Alaska Legislature this year which will make our state a safer place to live.

Considering the spate of recent incidents including Moose Pass/ Crown Point and poisoned water in Soldotna and Anchorage, this legislation addresses an issue high in the minds of the citizens of this state.

Let me direct you specifically to the bill. Section 1 gives the municipalities the option of adopting ordinances to regulate the transportation of hazardous materials in their jurisdiction.

Section 2 is state statute and under (b) an inventory of local hazardous materials stored in their area will accrue with local emergency service providers. This inventory will be a critical step in allowing for prompt and effective response to emergency incidents involving these materials. The safety of our emergency service providers will be enhanced by the knowledge of what, where and how much of any given hazardous material is present in their area. The effects of such incidents will be minimized and our citizens and environment will gain a protection which they currently lack.

I urge passage of House Bill 673.

Alaska State Legislature

Representative Niilo Koponen

Pouch V
Juneau, Alaska 99811
(907) 465-4992

542 4th Avenue, Suite C
Fairbanks, Alaska 99701
(907) 456-8161

MAY 08 1986

MEMO to Senator DeVries

From Niilo

5/8/86

Re: HB 673 Transportation of Hazardous Materials

This bill, which I introduced, reached the Senate floor today and was referred to your C&RA committee, Transportation, and Finance.

Due to the lateness of the hour and because I know you will not want to delay this important piece of safety legislation I am requesting you waive this bill on to the next committee. I 've received assurances from Senator Coghill that he intends to waive the bill when it reaches his committee.

Enclosed please find a copy of my floor speech which details my motivations in introducing the bill and what it will do if enacted.

Thank you.

cc: Rep. M.M. Miller

April 4, 1986

Representative Nilo Koponen
Pouch V
Juneau, Alaska 99811

Dear Representative Koponen,

The League of Women Voters of Alaska supports HB673, An Act relating to transportation of Hazardous Materials in municipalities. The League promotes energy-efficient and environmentally sound transportation systems that improve the well being of cities and other communities. HB673 creates a hazardous materials transportation system.

Hazardous materials are common place. Due to increased volumes being transported the League of Women Voters supports a program which allows emergency response teams to know what hazardous materials are on the scene of an accident, to identify the safest routes for hazardous material transport and to monitor amounts and kinds of hazardous materials withing the governmental enity at any given moment.

If hazardous materials are released into the environment by accident they immediately are classified as a hazardous waste. The League of Women Voters takes strong action to ensure the safe treatment, storage and disposal of all hazardous wastes. Cost of a hazardous waste spill are minimized when appropriate response is taken to contain and minimize exposure to hazardous waste. HB673 enables emergency preparedness.

HB673 allows the Municipalities the latitude to protect the wellbeing of citizens and minimize potential damage to the health and the environment within a community.

Sincerely,

Mary Core

Mary Core
Chairperson, Natural Resource Portfolio

Fairbanks
North
Star
Borough

Mayor: Juanita Helms

March 11, 1986

The Honorable Niilo Koponen
Alaska State Legislature
Pouch V
Juneau, AK 99811

Dear ~~Representative~~ Niilo Koponen:

I am writing in support of House Bills No. 672 and No. 673, relating to the transportation of hazardous materials within and into municipalities. The passage of these bills would enable the Fairbanks North Star Borough to track the arrival and movement of such materials in our community. Such information would be of great benefit to emergency responders in the community, and would ultimately result in a significant improvement in their ability to protect public health and welfare from accidents involving these materials.

Our one recommendation for inclusion in these bills would be a definition under HB 672 for "service district" (referenced in Section 46.03.895(b)) to ensure that all appropriate emergency responders are notified in accordance with the proposed regulations.

The Fairbanks North Star Borough endorses these bills and would like to urge your support of these measures.

Sincerely,

Juanita

Juanita Helms
Borough Mayor

JH/pld

P.O. Box 1267 Fairbanks, Alaska 99707 (907) 452-4761

RESOLUTION OF THE ALASKA MUNICIPAL LEAGUE

RESOLUTION NO. 86-09

A RESOLUTION SUPPORTING STATEWIDE
HAZARDOUS MATERIAL DISCLOSURE LEGISLATION.

WHEREAS, the handling, storage, transportation, use, processing, and disposal of hazardous materials and hazardous waste occurs in all communities in Alaska, and

WHEREAS, the potential impacts of accidents associated with hazardous materials and hazardous wastes can have devastating impacts on the public health and the environment, and

WHEREAS, knowledge of the types of hazardous materials and hazardous wastes are critical and central to a community's ability to recognize potentially dangerous situations, and

WHEREAS, firefighters, police officers and other public safety and medical professionals often lack the information necessary to respond quickly and safely to emergencies involving hazardous materials and hazardous waste, and

WHEREAS, the public has the right to know what hazardous materials and hazardous wastes are in their community;

NOW, THEREFORE BE IT RESOLVED that the Alaska Municipal League supports the adoption of state enabling legislation to allow local governments to establish a Hazardous Materials Disclosure (Community Right-to-know) Program. Such a Hazardous Materials Disclosure law should address minimum program requirements for a municipality, including:

a. Notification

b. Placarding

c. Transportation Routing

d. Transportation requirements for selected materials

e. Emergency Coordination Procedures

CHENA GOLDSTREAM VOL'NTEER FIRE DEPARTMENT
Box 80487
College, Alaska 99708
479-5672 479-5326
Emergency — 911

BARRY L. JENNINGS
Chief

CHUCK KALTENBACH
President

September 23, 1985

Gov. Bill Sheffield
Pouch A
Juneau, AK 99811

Dear Governor Sheffield,

Attached please find a copy of a resolution passed by the Board of Directors of the Chena-Goldstream Volunteer Fire Department on August 25, 1985.

The resolution addresses a serious deficiency in the Alaska statutes in that they do not require users or transporters of hazardous materials to notify local emergency service providers of their activities. Statutorial deficiencies of this nature in other states have led to serious injury and death among fire and medical service personnel.

Alaska has recognized the worker's right-to-know by enacting appropriate legislation. We feel strongly that the people who will be called on to help if those workers are caught in an emergency also have a right to know exactly what situation they are responding to. This prior knowledge will allow us to arrive with the proper gear and training; hence we will be in a better position to help.

Could you please help us by getting the appropriate legislation on the calendar this legislative session? Please contact me if you need further information on this matter, and thank you for your support.

Sincerely yours,

David M. Moll, Asst. Chief
Director of Fire Operations

cc: Sen. Fahrenkamp
Sen. Elisson
Rep. Koponen
Rep. Navarre

STATE OF ALASKA 1986 LEGISLATIVE SESSION
FISCAL NOTE

MAY 0 8 1986

Revision Date : _____

REQUEST

Bill/Resolution No. : CSHB 673 (Res) am
Title : "An Act relating to transportation of hazardous materials."

Sponsor : Kononen, Hurley, et al
Requestor : Senate C&RA
Date of Request : 5/08/86

FISCAL DETAIL

Agency Affected : Public Safety
BRU : Alaska State Troopers

Components : _____

EXPENDITURES/REVENUES : (Thousands of Dollars)

OPERATING	FY 86	FY 87	FY 88	FY 89	FY 90	FY 91
PERSONAL SERVICES		30.0	31.5	33.1	34.8	36.5
TRAVEL						
CONTRACTUAL		1.2	1.3	1.3	1.4	1.5
SUPPLIES		2.0	2.1	2.2	2.3	2.4
EQUIPMENT		2.2				
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING		35.4	34.9	36.6	38.5	40.4
CAPITAL						
REVENUE						

FUNDING : (Thousands of Dollars)

GENERAL FUND		35.4	34.9	36.6	38.5	40.4
FEDERAL FUNDS						
OTHER						
TOTAL		35.4	34.9	36.6	38.5	40.4

POSITIONS :

FULL-TIME		1	1	1	1	1
PART-TIME						
TEMPORARY						

ANALYSIS : Attach a separate page if necessary

The above costs represent the addition of one full-time Clerk IV, Range 9, in Anchorage to address the increased administrative responsibilities resulting from this legislation. No equipment costs are included after the first year. The 5% inflation factor is added to the other line items beginning in FY88. No additional enforcment activites are anticipated.

Prepared by : ~~Frank Allan~~ Phone : 269-5691
Division : ~~Alaska State Troopers~~ Date : 5/08/86

Approved by Commissioner : _____ Date : 5/8/86
Agency : Public Safety

Distribution (by Agency preparing fiscal note) :
Legislative Finance
Legislative Sponsor
Requestor
Office of Management and Budget
Impacted Agency(ies)

10/25/85

Position Title	No. of Positions	Range/Step	Barg. Unit	Gov.	Approv.	Disapp.
Clerk IV	1	9/A	GGU			

Time Status	Staff Months	RP Number	Location	Election District	Leg.		
PFT	12.0		ANCH	7-15			

Type of Expenditure		Amount
1	2	3
Salary	21,564	
Benefits	5,379	
Premium Pay		
Other	3,027	
Total Personal Services		30.0
Travel		
Contractual		1.2
Commodities		2.0
Equipment		2.2
Other		
Total Cost		35.4

Receipt Code	Funding Source		
	Federal Receipts	1002	
	G. F. Match	1003	
	General Funds	1004	35.4
	I-A Receipts	1005	
	Program Receipts	1028	
	CIP Receipts	1061	
	Other		

For B&M Use Only
Key Number __ __ - __ __ - __ __ - __ __ - __ __

Justification

This legislation requires that the Division of AST be notified by those transporting hazardous material by either motor vehicles or rail. Further, regulations must be formulated and adopted to determine what "significant changes" in schedule require additional notification to the Division.

In order to keep track of this important data, a Clerk IV is needed. The position must be able to independently handle this specialized data in cooperation with clerical personnel in each detachment and to consolidate the data and assure its constant availability to federal, state and local law enforcement and emergency medical personnel. The position will require knowledge of hazardous material classifications as well as law enforcement procedures.

Request For New Position

Agency: Public Safety
BRU: Alaska State Troopers
Component: Detachments & CIB

Revised Date

FY 87

DEPARTMENT OF PUBLIC SAFETY

POSITION PAPER

Support

May 8, 1986

CSHB673(Res)am-"An Act relating to transportation of hazardous materials."

Our interpretation of this legislation is that it is an attempt to provide for the keeping track of the movement of hazardous materials in order to rapidly provide vital information to emergency responders in the event of spills such as recently happened at Crown Point.

This legislation requires that the Division of Alaska State Troopers to be given notice of the movement of hazardous materials and for the Division to maintain this data. Movement of hazardous materials includes scheduled transportation and changes to those schedules. Transportation would be by either motor vehicle or by rail. This will require an additional clerical effort for which the Division is not currently staffed. One Clerk IV is requested to address this new responsibility. No additional enforcement activities are anticipated.

Robert J. Sundberg
Commissioner

STATE OF ALASKA 1986 LEGISLATIVE SESSION
FISCAL NOTE

Revision Date : _____

REQUEST

Bill/Resolution No. : HB 673
Title : "An Act relating to transportation of hazardous substances in municipalities."
Sponsor : Representative Koponen
Requestor : House Community & Regional Affairs
Date of Request : 3/21/86

FISCAL DETAIL

Agency Affected : Public Safety
BRU : _____
Components : _____

EXPENDITURES/REVENUES : (Thousands of Dollars)

OPERATING	FY 86	FY 87	FY 88	FY 89	FY 90	FY 91
PERSONAL SERVICES						
TRAVEL						
CONTRACTUAL						
SUPPLIES						
EQUIPMENT						
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING		0	0	0	0	0
CAPITAL						
REVENUE						

FUNDING : (Thousands of Dollars)

GENERAL FUND		0	0	0	0	0
FEDERAL FUNDS						
OTHER						
TOTAL		0	0	0	0	0

POSITIONS :

FULL-TIME						
PART-TIME						
TEMPORARY						

ANALYSIS : Attach a separate page if necessary

Prepared by : Kathy Niles, Admin Assistant — Phone : 465-4336
Division : Commissioner's Office — Date : 3/21/86

Approved by Commissioner : _____ — Date : 3/21/86
Agency : Public Safety

Distribution (by Agency preparing fiscal note) :
- Legislative Finance
- Legislative Sponsor
- Requestor
- Office of Management and Budget
- Impacted Agency(ies)

10/25/85

COMMITTEE REPORT

SENATE

TRANSPORTATION
FURTHER: FINANCE

5/8/86

Date 5-11-86

Mr. President

The Committee on C&RA considered CSHB 673(Res)am relating to transportation of hazardous materials.

and (a majority of the committee) (the committee) reports it back with the following recommendations:

[X] do pass

[ ] do pass with attached amendment(s)

[ ] replace with/or adopt CS for _____
[ ] new title
[X] same title and recommends _____

[ ] and attached a "LETTER OF INTENT" [ ] NEW FISCAL NOTE

[ ] reports it back without recommendation

[ ] recommends referral to Transportation Committee

MEMBERS SIGNING
DO PASS

MEMBERS HAVING
OTHER RECOMMENDATIONS

Chairman

Chairman recommendation

Offered: 5/5/86
Referred: Rules

Original sponsors: Koponen, Hurley, Davis and Goll

IN THE HOUSE BY THE RESOURCES COMMITTEE

CS FOR HOUSE BILL NO. 673 (Resources) am

IN THE LEGISLATURE OF THE STATE OF ALASKA

FOURTEENTH LEGISLATURE - SECOND SESSION

A BILL

For an Act entitled: "An Act relating to transportation of hazardous materials."

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:

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(1) establish reasonable routes for the transportation of bulk shipments of selected hazardous materials in the municipality, after completing

(A) a comparative safety analysis of alternative routes;

(B) a process involving substantive consultation with other jurisdictions, including the state, affected by the routing; and

(C) a process involving substantive consultation with the commercial carriers of hazardous materials to assure that at least one feasible route is permitted to and from commercial transportation facilities; and

(2) provide for the description, marking, labeling, and placarding of containers or vehicles used to transport bulk shipments of hazardous materials in the municipality, in a manner identical to the manner provided in 49 C.F.R. 172.200 - 172.558.

(b) Notwithstanding AS 29.35.200, 29.35.210, and 29.35.220, a

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COMMITTEE COPY

borough may exercise powers under this section on an areawide or nonareawide basis.

(c) In this section

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(3) "person" has the meaning given in AS 01.10.060 and also includes a political subdivision, government agency, municipality, or other public or private entity.

* Sec. 2. AS 46.03 is amended by adding a new section to read:

Sec. 46.03.895. NOTICE OF HAZARDOUS MATERIALS. (a) If a vehicle carrying a bulk shipment of hazardous materials in the state is delayed because of an unscheduled interruption, such as mechanical failure of the vehicle, impassable road conditions, weather, or other emergency requiring the operator to leave the vehicle unattended in a location or for a period of time that creates an increased risk of harm to the public safety or health, then the operator of the vehicle or an agent of the carrier shall give prompt, oral notice to the division of state troopers, or to a person or agency designated by the Department of Public Safety, of the location and contents of the vehicle and the circumstances of the delay.

(b) Except as provided in (c) of this section, a consignee of a

bulk shipment of a hazardous material that is to be stored by the consignee for more than seven days shall, within 72 hours after receiving the shipment, send to a person or agency designated by the Department of Public Safety

(1) a copy of the description of the hazardous materials that is required to be on the shipping paper by the United States Department of Transportation under 49 C.F.R. 172.200 - 172.204; and

(2) a notice of the location at which the materials are to be used or stored.

(c) The notice and description required under (b) of this section for regularly scheduled bulk shipments of a hazardous material must be sent by April 15 each year, but are not required more than once a year, except that notice and descriptions are required within 72 hours after a significant change in the schedule, quantity, contents, or routing of a regularly scheduled bulk shipment. The Department of Public Safety shall adopt regulations specifying what constitutes a "significant change" under this subsection.

(d) In this section

(1) "bulk shipment of a hazardous material" means a shipment of 500 pounds or more of a hazardous material or, if less than 500 pounds, a quantity equal to or greater than the reportable quantity of the material specified in the Hazardous Materials Table in 49 C.F.R. 172.101;

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H

(3) "vehicle" includes a motor vehicle and a railroad car.

STATE OF ALASKA 1986 LEGISLATIVE SESSION
FISCAL NOTE

Revision Date : _____

REQUEST

Bill/Resolution No. : HB 673
Title : "An Act relating to transportation of hazardous substances in municipalities."
Sponsor : Representative Kopponen
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Date of Request : 3/21/86

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Agency Affected : Public Safety
BRU : _____
Components : _____

EXPENDITURES/REVENUES : (Thousands of Dollars)

OPERATING	FY 86	FY 87	FY 88	FY 89	FY 90	FY 91
PERSONAL SERVICES						
TRAVEL						
CONTRACTUAL						
SUPPLIES						
EQUIPMENT						
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING		0	0	0	0	0
CAPITAL						
REVENUE						

FUNDING : (Thousands of Dollars)

GENERAL FUND		0	0	0	0	0
FEDERAL FUNDS						
OTHER						
TOTAL		0	0	0	0	0

POSITIONS :

FULL-TIME						
PART-TIME						
TEMPORARY						

ANALYSIS : Attach a separate page if necessary

Prepared by : Kathy Niles, Admin Assistant
Phone : 465-4336
Division : Commissioner's Office
Date : 3/21/86

Approved by Commissioner : _____
Date : 3/21/86
Agency : Public Safety

Distribution (by Agency preparing fiscal note) :
Legislative Finance
Legislative Sponsor
Requestor
Office of Management and Budget
Impacted Agency(ies)

10/25/85

HOUSE

COMMITTEE REPORT

(9)

Date referred: 4/7/86

5/5

FURTHER REFERRALS: Rules

DATE: 4/25/86

The RESOURCES Committee has considered HB 673

"An Act relating to transportation of hazardous substances in municipalities."

and recommends:

[ ] do pass

[ ] do not pass

[ ] do pass with attached amendment(s)

[ ] no recommendation

[✓] replace with CSHB 673 (Resources) [ ] same title [X] new title

and recommends DO PASS

[ ] further referral to the _____ Committee

and attaches: [ ] letter of intent
[ ] first fiscal note
[ ] new fiscal note
[ ] zero fiscal note

SIGNING DO PASS:

Herrmann Adelheid Herrmann

Cato Bette Cato

Pearce Irene Pearce

Sund John Sund

Wallis Kay Wallis

Thompson David W. Thompson

SIGNING OTHER RECOMMENDATIONS:

Dick Shultz Do Pass

Roger Jenkins No Rec

Co-Chairman Dick Shultz

HOUSE
COMMITTEE REPORT

(7)

Date referred: 2/17/86

FURTHER REFERRALS: RESOURCES

DATE: 4/2/86

The STATE AFFAIRS Committee has considered HB 672

"An Act providing for notice of hazardous materials."

and recommends:

[ ] do pass

[ ] do not pass

[ ] do pass with attached amendment(s)

[ ] no recommendation

[✓] replace with CS HB 672 (SA) [✓] same title

[ ] new title

and recommends do pass

[ ] further referral to the ______ Committee

and attaches:

[ ] letter of intent

[✓] first fiscal note

[ ] new fiscal note

[ ] zero fiscal note

SIGNING DO PASS:

Katie Hurley

[signature]

Bette Cato

[signature]

Mike Navarre

[signature]

SIGNING OTHER RECOMMENDATIONS:

Roger Jenkins No Rec

Katie Hurley

Chairman

HOUSE

COMMITTEE REPORT

(7)

Date referred: 2/17/86

FURTHER REFERRALS: RESOURCES

DATE: 4-4-86

The COMMUNITY AND REGIONAL AFFAIRS Committee has considered HB 673

"An Act relating to transportation of hazardous substances in municipalities."

and recommends:

[ ] do pass

[ ] do not pass

[ ] do pass with attached amendment(s)

[ ] no recommendation

[ ] replace with CS HB 673 [X] same title

[ ] new title

and recommends DO PASS

[ ] further referral to the _____ Committee

and attaches: [ ] letter of intent
[ ] first fiscal note
[ ] new fiscal note
[ ] zero fiscal note

SIGNING DO PASS:

SIGNING OTHER RECOMMENDATIONS:

Peter Joe

Chairman

DEPARTMENT OF PUBLIC SAFETY

POSITION PAPER - HB 673

Neutral

March 21, 1986

HB 673 - "An Act relating to transportation of hazardous substances in municipalities."

This bill does not materially effect or impact this Department.

Robert J. Sundberg

STATE OF ALASKA 1986 LEGISLATIVE SESSION
FISCAL NOTE

Revision Date : _____

REQUEST

Bill/Resolution No. : HB 673
Title : "An Act relating to transportation of hazardous substances in municipalities."
Sponsor : Representative Koponen
Requestor : House Community & Regional Affairs
Date of Request : 3/21/86

FISCAL DETAIL

Agency Affected : Public Safety
BRU : _____
Components : _____

EXPENDITURES/REVENUES : (Thousands of Dollars)

OPERATING	FY 86	FY 87	FY 88	FY 89	FY 90	FY 91
PERSONAL SERVICES						
TRAVEL						
CONTRACTUAL						
SUPPLIES						
EQUIPMENT						
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING		0	0	0	0	0
CAPITAL						
REVENUE						

FUNDING : (Thousands of Dollars)

GENERAL FUND		0	0	0	0	0
FEDERAL FUNDS						
OTHER						
TOTAL		0	0	0	0	0

POSITIONS :

FULL-TIME						
PART-TIME						
TEMPORARY						

ANALYSIS : Attach a separate page if necessary

Prepared by : K Niles Kathy Niles, Admin Assistant — Phone : 465-4336
Division : Commissioner's Office — Date : 3/21/86

Approved by Commissioner : [signature] — Date : 3/21/86
Agency : Public Safety

Distribution (by Agency preparing fiscal note) :
- Legislative Finance
- Legislative Sponsor
- Requestor
- Office of Management and Budget
- Impacted Agency(ies)

10/25/85

POSITION PAPER/Department of Health & Social Services

Position Paper

CS for House Bill No. 673 (C&RA)

For an Act entitled: "An Act relating to transportation to hazardous materials in municipalities."

This bill would enable municipalities to establish a system to monitor transportation of hazardous materials; provide for routing the transportation of selected hazardous materials; provide for the description, marking, labeling, and placarding of bulk containers on vehicles used to transport hazardous materials in the municipality; and require persons transporting a bulk shipment of hazardous material to notify the municipality of the hazardous material as provided in the local ordinance.

POSITION

The Department of Health and Social Services supports the general concepts of CSHB 673 (C&RA) and feels that it will enable municipalities to better plan for potential hazardous materials emergencies, because local officials will be notified of the existence of various hazardous materials substances and can propose transportation routing to ensure optimum protection of the public.

Recommended by: Elizabeth Ward

Elizabeth Ward, M.N.
Director
Division of Public Health

Date: April 9, 86

Recommended by: John R. Pugh

John R. Pugh, Commissioner
Department of Health and
Social Services

Date: 4/16/86

ADOPTED RESOLUTIONS OF ASMA
HAINES, ALASKA - 1985

562-2662

Adopted By the Alaska State Medical Association House of Delegates at Its Annual Meeting In Haines, Alaska June 7, 1985

Resolution No. 85-1
Subject: Salute to Joseph Rude, M.D.

Whereas,Dr. Joseph Rude has recently celebrated his 90th birthday, and has also marked the milestone of 56 years of the practice of medicine in Alaska; and

Whereas, Joe Rude has enjoyed 64 years of devoted marriage to Amy, and this union has produced 4 children and 11 grandchildren, and 5 greatgrandchildren; and

Whereas, "Doc" Rude has been an extremely active member of a wide variety of community groups, having been on the Board of his Lutheran Church for numerous years, been active in the Boy Scout movement for 50 years, and the Salvation Army Board for 40 years, a charter member of the Juneau Lions Club, and a member of the school boards in both Petersburg and Juneau; and

Whereas, in addition to the practice of medicine in Alaska, Dr. Rude has served the missions of the Lutheran Church; and

Whereas,"Doc" continues to be an active skier at Eaglecrest, continues to bag moose each year up the Taku River, and until recently, captained the "Doughboy" on numerous cruises; therefore be it

Resolved, that the Alaska State Medical Association salutes Dr. Rude on his many milestones; and be it further

Resolved, that the Alaska State Medical Association wishes him well and Godspeed with his continuing activities; and be it yet further

Resolved, that the rest of us will try to do better.

Resolution No. 85-3
Subject: Use of Pesticides

Whereas, some pesticides are highly toxic to humans and other non-target organisms, and

Whereas, the inappropriate use of some pesticides may endanger the public health, and

Whereas, present State regulations
- -have not been revised in ten years,
- -contain no guidelines for application of unrestricted pesticides,
- -are silent regarding qualifications for commercial operators,
- -are not specific regarding authority for search and seizure,
- -provide no authority to ban specific compounds from use in Alaska,
- -do not require registration of pesticides used in Alaska,
- -directions for use on labels, therefore be it

Resolved, that the Alaska State Medical Association urges the Governor to appoint a task force to include representatives from the Alaska State Medical Association, Department of Environmental Conservation, Department of Health and Social Services, Municipal Health Departments, and other appropriate groups and agencies to review and, if necessary, to develop new regulations regarding the application of pesticides in urban and rural settings.

Resolution No. 85-4
Subject: Community Right-To-Know

Whereas, hundreds of thousands of gallons of hazardous substances are released into Alaskan Air, lands and water by hundreds of documented industrial and transportation accidents each year (1); and

Whereas, residents and entire communities may be exposed to these accidentally released hazardous substances and physical agents as a result of industrial and transportation accidental release of hazardous substances or physical agents; and

Whereas, the public health can be best served by a preventative approach whereby members of the general community, emergency responders, and health care providers have adequate information regarding the existence and identity of hazardous substances and physical agents in their communities; and

Whereas, several states and municipalities have adopted or are considering for adoption community right-to-know legislation including New Jersey, Cincinnati, San Diego, New York, Connecticut, and Massachusetts (2); Therefore be it

Alaska MUNICIPAL League

TELEPHONE
(907) 586-1325

105 MUNICIPAL WAY, SUITE 301
JUNEAU, ALASKA 99801

TO: Representative Peter Goll, Chairman
Members of the House Community and Regional Affairs Committee

FROM: Scott A. Burgess, Executive Director

DATE: March 24. 1986

SUBJECT: HB 673 - Transportation of Hazardous Substances in Municipalities

Attached is Alaska Municipal League Resolution #86-09 in support of the State giving municipalities additional authority to develop and enforce a community right-to-know program for hazardous materials handled, stored, transported, used, processed and disposed of in their communities. Based on this resolution, the League supports HB 673. The legislation authorizes, but does not require, action by municipalities who have a problem and the resources to carry out a community right-to-know program.

This legislation, if passed, along with several other pieces of legislation before the Legislature dealing with other aspects of the hazardous waste issue, will enable the State and the municipalities to better address the threat posed by hazardous substances in our communities and in Alaska.

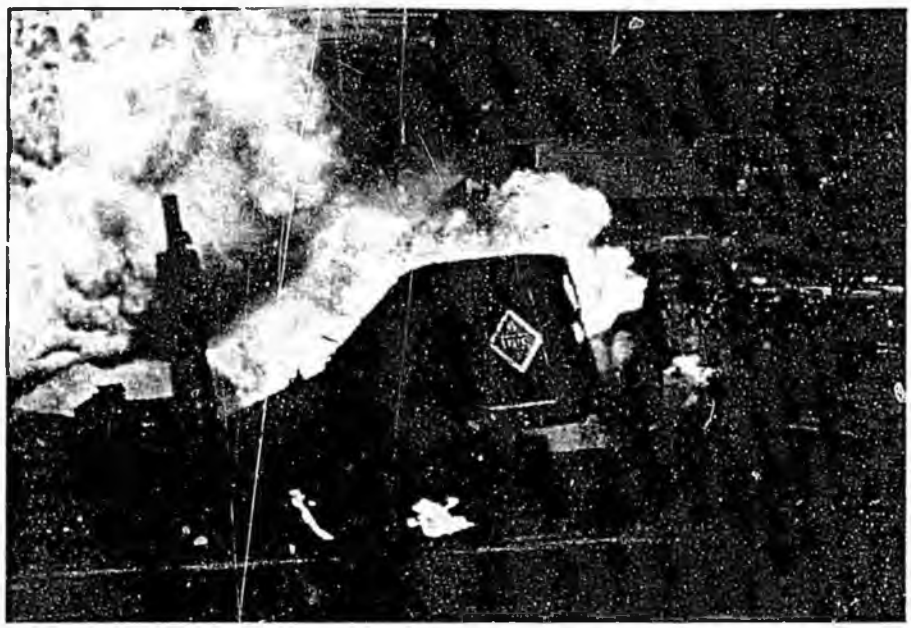
On a related issue, I have also attached a copy of AML Resolution #86-05.

Again, the League supports HB 673. Thank you.

Hazardous Materials

By MARK MICHAELS

Tanker Crash Ignites Inferno on Frisco Freeway



Photos Dave Chapman

The fire, involving 8000 gallons of gasoline, melted the double-trailer aluminum tanker.

The scenario: In the early-morning darkness, moments before thousands of commuters fill the freeway, a double-trailer tanker truck filled with 8000 gallons of gasoline crashes into the center divider on U.S. Highway 101, just south of the city limits of San Francisco, near a critical junction point with several other freeways. Both tanks are punctured, and the spreading pool of gas is ignited by a passing car. Luckily, the driver is able to crawl away from the wreck with only minor injuries, and no other vehicles are caught up in the inferno. But responding fire units must now contend with a huge blaze extending across the multi-lane freeway, fed by gas leaking out of the tanker at a rate of about 100 gallons per minute.

Fortunately, the incident occurs almost directly in front of the San Francisco International Airport. Crash rigs from the airport, carrying thousands of gallons of foam, respond to the scene in minutes and quickly stop the spread of the flaming fuel. The next step is obvious: apply foam to the tanker, pick up the debris when it cools and go back to business as usual.

Or is it?

Mark Michaels is a Firehouse *correspondent based in Orinda, California.*

San Francisco International Airport Fire Chief Ray Landi was faced with the situation described above on January 7 of this year. The Airport FD is a division of the San Francisco Fire Department, that, although staffed by San Francisco firefighters, is in many ways a separate department, with its own budget, tactics and specialized equipment.

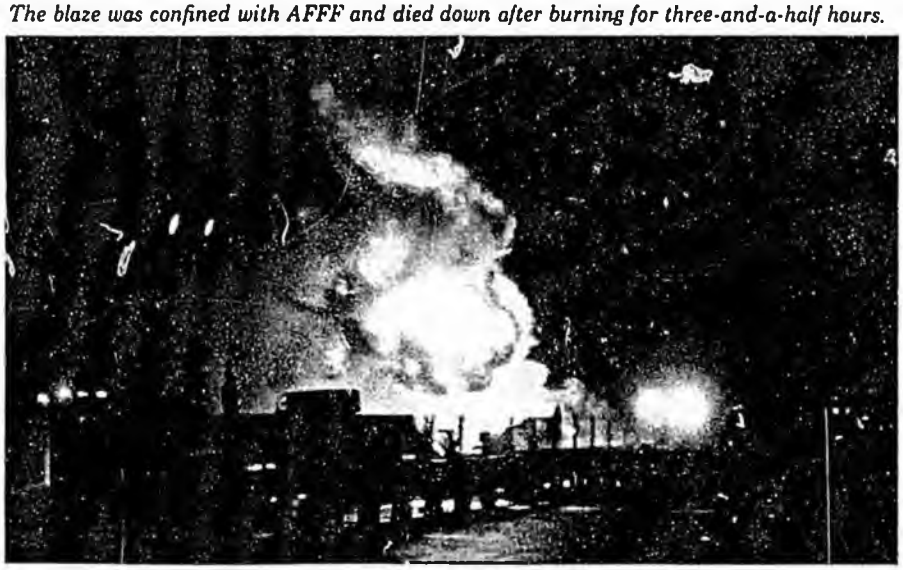
Landi was at home in San Francisco when he was notified of the emergency. Says he: "We first got this as a plane crash behind the Western Airlines maintenance facility. The control tower saw the huge column of black smoke and assumed it was a plane."

Responding to the fire, Landi requested assistance from communities surrounding the airport and freeway, which are part of the city of San Francisco though they are located in San Mateo County. A strike team made up of fire units from San Bruno, South San Francisco, Millbrae, Redwood City and Burlingame was dispatched, along with a full assignment from San Francisco proper, consisting of three engines, two trucks and two chiefs.

Although he had more than enough resources, given the airport crash rigs, to extinguish the blaze within a few minutes, Landi decided to let the truck burn itself out. Explains he: "It's always a tough choice to not put a fire out. But if we'd gone ahead and done that, we would have been faced with a very dangerous situation. We had, in effect, two big bathtubs full of gasoline with holes in the bottoms. The fuel that was flowing out was being consumed at the rate it was leaking. The fire was equalized; it wasn't getting any bigger.

"Take the fire away, and you've still got the stuff leaking out, only now it's expanding into a bigger and bigger pool.

The blaze was confined with AFFF and died down after burning for three-and-a-half hours.



That would have required a diking operation, which would've meant that highway workers with loaders would be in close proximi y to the pool. You get a spark in th wrong place and BOOM! There goes everybody—firefighters, highway workers—the whole works.

"Obviously, if there had been people trapped in the wreckage, or the possibility of a BLEVE, we would have reacted differently. But that wasn't the case," he notes.

In addition to the life hazard, Landi cites other reasons for letting the fire burn itself out. "From an environmental point of view," he says, "it was better to have the smoke column, which was carried out towards the ocean rather than inland, than to have gasoline get into sewer lines and into San Francisco Bay itself. And if we'd put it out and gotten it diked, there would still have been a four-hour wait for the special truck they use to syphon up the gas. From the financial end," Landi continues, "I was told that a diking and cleanup would have cost somewhere in the neighborhood of $100,000."

Aside from the danger to personnel, one of Landi's primary concerns was the threat to exposures, particularly a section of an on-ramp under construction, which was several hundred feet long and a couple hundred feet from the crash. "The ramp consisted of heavy, unprotected timbers," says Landi. "If those timbers had gotten involved, it would have taken a major effort to put them out."

With the careful use of AFFF, crews were able to confine the flames to an area of about 500 square feet. As the fire progressed, the aluminum trailer tanks melted down into shriveled balls of metal; the only recognizable part of the truck remaining was the cab. After three-and-a-half hours, during which one of the largest traffic tie-ups in recent California history had formed, the fire died out. Firefighters moved in with handlines to cool down the debris, and Caltrans crews removed the wreckage and began making repairs to the roadway. The freeway was open in time for the evening commute. Sadly, one man who got caught in the tremendous traffic jam suffered a heart attack and was transported to a local hospital, where he later died.

"If this had happened only a half hour later," says Landi, "we could have had a major disaster, with many people killed or injured. As it was, it was a very scary situation. There were some people in the local media who couldn't see why we just didn't move in and get the thing cleared up, but, if we were faced with the same situation tomorrow, I'd do exactly what we did."

Hazardous Materials Incidents Documented

by Lawrence Weiss, Executive Director
Alaska Health Project

The image of Alaska as a relatively unblemished, pristine wilderness is rapidly eroding as increasing attention is being paid to the problems of hazardous materials throughout the state. In a recent study done by the Alaska Health Project, 1,330 incidents involving hazardous materials were documented during a one year period beginning July 1, 1983.

Until this study there was no one source listing the variety of incidents involving hazardous materials in Alaska. For example, an oil spill on the North Slope is buried in Department of Environmental Conservation (DEC) statistics, while a truck wreck involving spilled PCB's might be documented only in the newspapers. A worker who is burned by a caustic chemical is typically reported only in workers' compensation records.

Since all these known incidents involving hazardous materials are scattered throughout the state in a few large data bases, and dozens of smaller ones, no one really knows the extent of the problem. The Alaska Health Project decided to collect these case histories of incidents from a variety of sources and put them all together in one unified data base, the Hazardous Materials Incidents Survey.

The survey is not comprehensive, but rather a first attempt to begin to realize the magnitude of the problem in Alaska, and to understand what types of incidents are happening and what types of hazardous materials are involved.

Information for the survey was gathered from a variety of sources, including the Anchorage Daily News and Anchorage Times, the Workers' Compensation Division of the Department of Labor, the DEC, the Epidemiology Office of the Department of Health and Social Services, and the Anchorage Fire Department.

Survey Highlights

** The incidents were not spread evenly throughout the state, but were predictably distributed along the major roadways and in the industrialized North, with nearly 80 percent of the incidents occurring in these areas.

** 47 incidents involved amounts of hazardous materials exceeding 1,000 pounds and/or 1,000 gallons.

** A total of 539,358 gallons, and 456,125 pounds of hazardous materials are documented in the incident.

** The branch of industry with the largest number of gallons of hazardous materials involved in incidents is Water Transportation with 253,248 gallons.

** Southcentral East, principally the Anchorage, Kenai Peninsula, and Kodiak area, logged the highest amounts of hazardous materials involved in incidents: 241,800 gallons, and 456,125 pounds.

** A "key word" search of the incident descriptions found that 56 incidents were recorded as being related to tanks, and 65 were specifically related to vehicles.

** The Oil and Gas Extraction industry had the largest number of recorded incidents by far with 327. Water transportation claimed a distant second with 145.

** The month of August recorded the highest number of incidents, with 137, while December had the lowest number with 82.

Daily News-Miner, Fairbanks, Alaska, Monday, March 10, 1986 9

Training for toxics accidents called lax

WASHINGTON (AP)—Three-fourths of the nation's police and firemen are inadequately trained to respond to accidents involving transportation of hazardous materials, a new congressional study says.

And even if a trained team reaches the scene of a ruptured tank truck, improper labeling of the vehicle's contents can produce a wrong, dangerous response, the Office of Technology Assessment said in a study released today.

OTA quoted state officials as saying that from 25 percent to 50 percent of the identification placards required on hazardous material shipments are incorrect and that shipping documents "are sometimes incomplete or inaccessible."

"Emergency crews must assess the risks of the hazardous material and make decisions on how to respond based on information that may or may not be accurate," said OTA, a nonpartisan congressional agency.

"The wrong response to a hazardous material endangers both emergency personnel and the neighboring communities," said the study, which urged adoption of federal training and response standards to replace a mishmash of state requirements.

Asked why so many placards are incorrect, Edith Page, who directed the study, said: "In some cases it's ignorance. In some cases it's carelessness."

OTA said the most pressing need is to develop better ways of training safety personnel to handle accidents involving the 500,000 daily shipments of hazardous materials on U.S. highways, rail lines and waterways.

"Three-quarters of the first responders are not adequately trained to deal with hazardous substances," Ms. Page told a news briefing.

She said that a joke among response personnel is that you bring tennis shoes and binoculars to a toxic or nuclear material spill — using the shoes to quickly get a safe distance away and the binoculars to read the placard.

"Then you call for expert help," Ms. Page said. "This is often said in jest, but there's a strong element of truth in it."

OTA said that while some states and metropolitan areas have good response programs, "most first responders in smaller urban and rural areas have not been trained to deal with hazardous materials, despite many existing training programs.

"No national standards for training programs are currently in place, leading to the independent development of different training programs, some of which are inadequate," the study said.

Although it did not specifically urge more federal spending, OTA said continued support for state enforcement programs "is important, since federal inspection forces are shrinking due to budget constraints."

OTA recommended better training and a national license for operators of vehicles carrying hazardous substances in an effort to reduce the average of 11,462 accidens the Transportation Department says occurred yearly between 1973 and 1983.

In most states, Ms. Page said, a truck driver needs no special license for hazardous cargoes. "The nephew or son of the owner can drive a gasoline truck," she said.

Ms. Page said OTA doesn't trust Transportation Department figures indicating that the incidence of accidents involving hazardous materials is decreasing.

"The data collected is so poor we don't know whether things are getting better or worse," said Ms. Page, adding that OTA found "substantial underreporting" in federal accident statistics.

HB 673

for your information—

Nita Kyzar

"Freight container" means a reusable container having a volume of 64 cubic feet or more, designed and constructed to permit being lifted with its contents intact and intended primarily for containment of packages (in unit form) during transportation.

"Fuel tank" means a tank other than a cargo tank, used to transport flammable or combustible liquid, or compressed gas for the purpose of supplying fuel for propulsion of the transport vehicle to which it is attached, or for the operation of other equipment on the transport vehicle.

"Gross weight" means the weight of a packaging plus the weight of its contents.

"Hazardous material" means a substance or material 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.

"Hazardous substance", for the purposes of this subchapter, means a material, and its mixtures or solutions, that is identified by the letter "E" in Column 1 of the Table to § 172.101 when offered for transportation in one package, or in one transport vehicle if not packaged, and when the quantity of the material therein equals or exceeds the reportable quantity (RQ). This definition does not apply to petroleum products that are lubricants or fuels or to a mixture or solution containing a material identified by the letter "E" in Column 1 of the Table to § 172.101 if it is in a concentation less than that shown in the following table based on the reportable quantity (RQ) specified for the materials in Column 2 of the Table to § 172.101:

RQ pounds	RQ kilograms	Concentration by weight	
		Percent	PPM
5000	2270	10	100,000
1000	454	2	20,000
100	45.4	0.2	2,000
10	4.54	0.02	200
1	0.45	0.002	20

"Hazardous waste", for the purposes of this subchapter, means any material that is subject to the hazardous waste manifest requirements of the EPA specified in 40 CFR part 262 or would be subject to these requirements absent an interim authorization to a state under 40 CFR Part 123, Subpart F.

"Hermetically sealed" means closed by fusion, gasketing, crimping, or equivalent means so that no gas or vapor can enter or escape.

"IAEA" means International Atomic Energy Agency.

"IATA" means International Air Transport Association.

"ICAO" means International Civil Aviation Organization.

"IM Tank Table" means the table (with preface) listing hazardous materials approved by the Associate Director of HMR for carriage in IM portable tanks under special conditions specified therein.

"IMO" means International Maritime Organization.

"Intermodal container" means a freight container designed and constructed to permit it to be used interchangeably in two or more modes of transport.

"Intermodal portable tank" or "IM portable tank" means a specific class of portable tanks designed primarily for international intermodal use.

"Irritating material" See § 173.381.

"Limited quantity," when specified as such in a section applicable to a particular material, with the exception of Poison B materials, means the maximum amount of a hazardous material for which there is a specific labeling and packaging exception.

"Magnetic materials" See § 173.1020.

"Magazine vessel" means a vessel used for the receiving, storing, or dispensing of explosives.

"Marking" means applying the descriptive name, instructions, cautions, weight, or specification marks or combination thereof required by this subchapter to be placed upon outside containers of hazardous materials.

"Mixture" means a material composed of more than one chemical compound or element.

"Mode" means any of the following transportation methods; rail, highway, air, or water.

"Motor vehicle" includes a vehicle, machine, tractor, trailer, or semi-

trailer, or any combination there
propelled or drawn by mechani
power and used upon the highways
the transportation of passengers
property. It does not include a vehic
locomotive, or car operated exclusive
on a rail or rails, or a trolley bus op
ated by electric power derived from
fixed overhead wire, furnishing lo
passenger transportation similar
street-railway service.

"MTB" means the Materials Tra
portation Bureau, U.S. Department
Transportation, Washington, D
20590.

"Name of contents" means t
proper shipping name as specified
§ 172.101 or § 172.102 (when auth
ized).

"Navigable waters" means, for t
purposes of this subchapter, waters
the United States, including the te
torial seas.

"Net weight" means a measure
weight referring only to the conte
of a package, and does not include t
weight of any packaging material.

"N.O.S." means not otherwise sp
fied.

"NPT" means an American Stand
taper pipe thread in compliance w
the requirements of Federal Stand
H28, Part II, Section VII. S
§ 171.7(d)(12).

"NRC (non-reusable containe
means a container whose reuse is
stricted in accordance with the pr
sions of § 173.28.

"Occupied caboose" means a rail
being used to transport non-passen
personnel.

"Officer in Charge, Marine Insp
tion" means a person from the civil
or military branch of the Coast Gu
designated as such by the Comm
dant and who under the supervis
and direction of the Coast Guard I
trict Commander is in charge of a
ignated inspection zone for the p
formance of duties with respect to
enforcement and administration
Title 52, Revised Statutes, acts ame
atory thereof or supplemental ther
rules and regulations thereunder,
the inspection required thereby.

"Operator" means a person who c
trols the use of an aircraft, vessel
vehicle.

"Organic peroxide" See § 173.151.

Hazardous materials emergencies: response and control

Sandra A. Barker, BSIT
Executive Director
Eastern Connecticut EMS Council, Inc
Norwich, Connecticut

EMERGENCY MEDICAL services (EMS) personnel are often not prepared to adequately and safely respond to an emergency that involves a hazardous material. Much attention has been paid to the risks these materials pose to the community and its residents, by all levels of government and the private sector. However, most EMS providers have done little to protect themselves against the many dangerous materials they may encounter in rendering prehospital care. The *Code of Federal Regulations* (Title 49) defines these hazardous materials as any substance or material capable of posing an unreasonable risk to health, safety, and property.[1–3]

Major disasters involving these materials—such as the toxic release from the Union Carbide plant in India that killed more than 2,000 persons and other disasters of lesser magnitude—have gained the attention of local, state, and federal officials. Pending legislation, law suits, and stricter regulations, as well as more effective methods of enforcement are being considered as a result of such tragic events. In addition industry's loss of credibility will be difficult to overcome.[1–3]

ECQ, 1986 2(1), 1–14

Other incidents involving hazardous materials happen every day on railways and highways, in industry, and at home. The threat of acute exposure to these materials requires that certain precautions be implemented early in the incident.

Western life style has created a dependency on the tens of thousands of chemicals used every day. While these chemicals bring economic benefits to society they also pose a public safety problem. Swimming pools need chlorine to purify the water; farms and home gardens use various quantities and strengths of pesticides; motorists use gasoline; homes are heated by fuel or natural gas; industry uses various chemicals to manufacture products; and research and medical facilities use nuclear and chemical products to improve overall health conditions.

More than 70,000 chemicals are produced, and the number increases by 1,000 chemicals annually.[1] These materials are manufactured, stored, transported, and used in every community in the United States. The Chemical Manufacturers Association estimates that more than 250 million tons of chemicals are produced every year resulting in more than 90 million shipments of hazardous materials, which clearly demonstrates their importance to the nation's economy.[5–9] Most people would be surprised to know exactly how many dangerous materials are shipped every day by truck, air, ship, and rail through their community.

EMS response personnel and other public safety providers become at risk when they are dispatched to the incident that may result in fire or toxic threats, or trauma, as well as effects that may not be manifested for days or weeks. An incorrect action early in the incident can result in immediate death; dangerous chemicals carried to the emergency department can injure or kill hospital workers; and although the danger may not be immediate, long-term health hazards may result.

John Cashman, author of *Hazardous Materials Emergencies—Response and Control*, cites the following examples of EMS responses, some resulting in further consequences for the emergency department and its staff:[7]

June 13, 1981, Lancaster, Pennsylvania. Two emergency medical technicians (EMTs) and a volunteer fireman died trying to save a young boy who had attempted to get a grass catcher he had dropped into an abandoned septic tank. The septic tank had been used for some time to dispose of grass clippings which decompose and produce methane gas. The first medic to enter the tank was overcome. The second medic wore an air pac and was able to secure a rope to the boy, but he removed his air pac to assist his partner and was also overcome. Two volunteer firefighters followed; one was also overcome while the other rescued the boy.

November 4, 1981, Castiac, California. When a degreasing agent leaked from a truck 58 persons were sent to the hospital with nausea and dizziness. 11 were admitted, including 3 hospital emergency department workers who breathed fumes from the patients while assisting in patient care.

January 26, 1982, San Diego, California. Three sailors died and seven were injured from exposure to freon gas. Six were crewmen, but the seventh was a naval hospital corpsman who became ill after administering mouth-to-mouth resuscitation to the injured.

December 17, 1980, San Diego, California. Rescuing three victims from a vehicle accident required a lengthy extrication. During the process, containers of pesticides thrown from the truck were discovered. Paramedics and victims of the accident suffered from delayed effects of pesticide poisoning.

EMS IMPLICATIONS

Hazardous materials properly contained or controlled do not present a problem to EMS responders. However, when an accident occurs, hazardous materials containers may leak, rupture, or be punctured. Once this occurs the leaking substance, combined with the atmosphere or other substances, can become unstable and very dangerous. For example, a derailed train carrying a variety of chemicals can pose a hazard to responders, residents, and essential community services. It may also contaminate the water supply making it unsafe for human consumption for an extended period of time. Decisions must be made ranging from initial response procedures to caring for the injured to evacuating everyone in the surrounding area. These decisions must be based on the identity of the chemical and its potential hazard to the safety of the responders, the injured, and the community residents. To be considered are questions of who should be notified, who is in charge, where patients will go, and certainly who will pay for services and damage.

Accidents of this magnitude attract a variety of agencies. In a report completed for the Federal Emergency Management Agency, 23 serious hazardous materials incidents were investigated. It was determined that at a typical rail accident as many as 260 officials from 17 different agencies may respond. EMS officials make up 14% of this response (Fig 1).[1,5–7] This is a significant planning fact for the EMS system.

The local community relies on its public safety network to manage the incident until responsible agencies arrive and provide the necessary technical expertise. The majority of physical injuries are received in the first few minutes of the incident. However, the first responders are least likely to have the proper training. Although the majority of hazardous materials incidents are managed by the fire chief, technical expertise is available from various agencies. This expertise may arrive in a timely fashion, but the local responders are quite alone for the initial minutes no matter what the magnitude of the event.

It is the response techniques required during the initial stages of an accident that the EMS personnel must address. Although the overall tactical responsibility for such an incident rests with the fire service or with the agency or person who holds jurisdictional authority for hazardous materials response, the fact remains that the first person to respond to the scene in many parts of the country may very well be an EMT. The EMT is relied on not only to provide patient care to the sick and wounded, but also to assist fellow responders should they be overcome or injured.

Without an overall awareness of the potential dangers, EMS personnel find it difficult to overcome the "rush-in" urge to provide patient care. At this point an EMT can quickly become part of the overall problem rather than an integral part of the solution, for the untrained are often the victims. A hazardous materials incident may pose the ultimate in danger for emergency services personnel.[8–9]

In an effort to provide the same standard of care as in "routine" emergencies, the predictable response is to rush in and render lifesaving measures.[9] Without a defined, safe approach to a hazardous materials incident, injury and death may occur as well as unnecessary damage to personal property and the environment.

Informal interviews with over 150 fire and EMS officials throughout the nation revealed three major concerns: EMS personnel have not had educational exposure to the serious nature of some of the chemicals they may encounter; EMS personnel often have no protective clothing and self-contained breathing apparatus to protect themselves against dangerous chemicals, or the training to use them; EMS personnel have not been trained in the

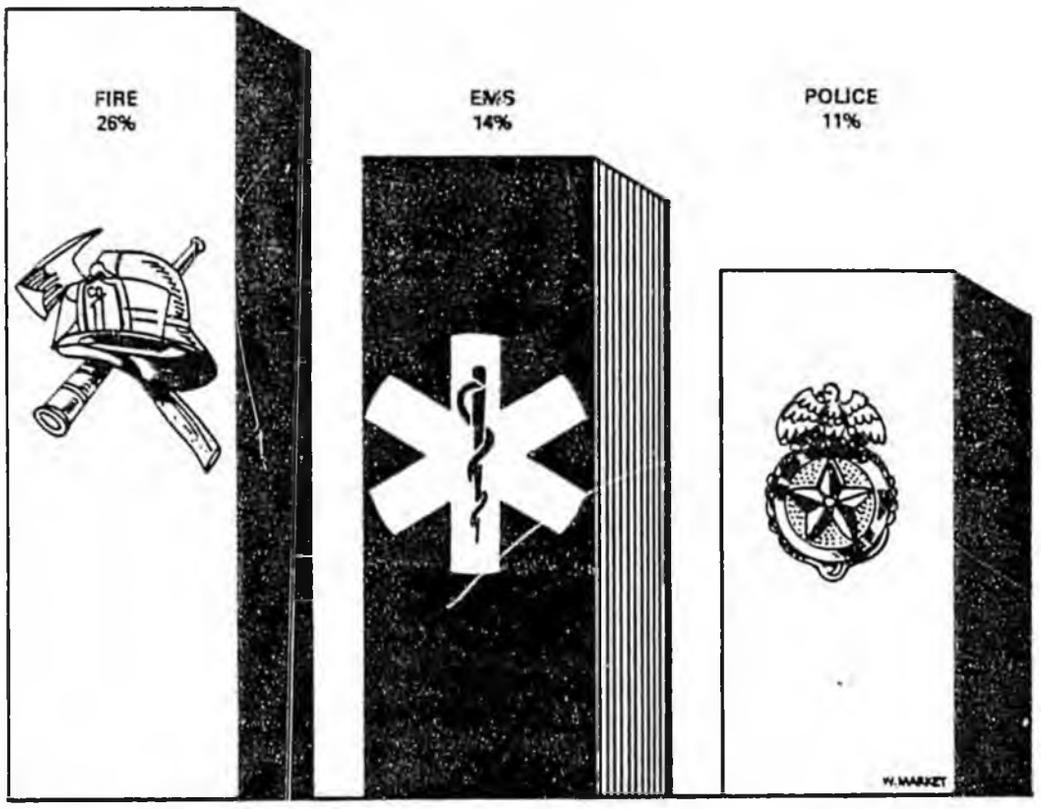


Fig 1. Responders to a hazardous materials incident at a typical rail accident.[1,5,6]

necessity and principles of contamination control and field decontamination. The validity of these concerns is evidenced in part by the previous examples.

UNDERSTANDING THE HAZARDS

The overall seriousness of the hazardous material problem is difficult to assess because of the lack of a uniform reporting system. However, this does not apply to the area dealing with transportation of these products because federal law requires that all accidents, leaks, or spills that occur during transportation of hazardous materials be reported to the Department of Transportation. A data bank has been established at the Department of Energy's Transportation Technology Center at Sandia National Laboratories in New Mexico for incidents involving radiologic materials.[1]

One study revealed that between 1970 and 1983 there were 157,792 transportation accidents involving hazardous materials. These accidents caused 741 deaths, 11,886 injuries, and $250 million in property damage.[1] According to Department of Energy statistics for the 10-year period between 1970 and 1980, 101 radioactive materials accidents were reported. The many different types of radioactive materials shipped by the government were not included in these figures. Furthermore, of the 1,114 individual packages of radioactive material involved in the accidents,

Table 1. Reported hazardous materials incidents, 1971 to 1975[1,5,6,11]

Classification	No of reports	Percentage
Flammable liquid	16,406	51.27
Corrosive materials	10,672	33.33
Poisons, class B	2,026	6.32
Flammable compressed gas	718	2.24
Oxidizing material	644	2.01
Nonflammable compressed gas	535	1.67
Miscellaneous and unknown	472	1.47
Flammable solid	183	0.57
Radioactive material	144	0.45
Explosives	122	0.38
Combustible liquid	69	0.21
Poisons, class A	27	0.08
Total	32,018	100

58 were damaged, releasing radioactive material.[10] However, the records also indicate that although some injuries and deaths resulted from the incidents, all were from causes directly related to the accident itself and not to exposure to radioactive materials. Table 1 outlines the reported accidents by hazard class.[1,5,6,11]

The above figures reflect transportation accidents only. The Oak Ridge Associated Universities Radiation Assistance Center in Oak Ridge, Tennessee, maintains a radiation accident registry that monitors accidents, mostly in free world countries. Data from this registry indicate that between 1948 and 1983, 450 persons received doses of radiation considered to be serious—21 of these exposures were fatal. The registry also includes data on those exposed to fallout resulting from the 1954 atomic weapon testing near the Marshall Islands.[1] Nuclear weapons transported in various ways and the loss or theft of such a weapon also pose a radiologic threat. Response to these accidents, although highly controlled by the U.S. government for security reasons, may also present a radiation danger for a provider of emergency services. The significant factor in these studies is that no incident has been reported in which EMTs or other responders have been injured by radiation.[11–13]

Other peacetime incidents involving radioactive materials can potentially affect emergency responders. There are 95 nuclear reactors in 35 states, either active or under construction.[1,13] Although a large amount of radiation is present, the radiation release possibilities are quite low. Communities and states involved have done considerable planning for such an occurrence and the industry itself is heavily regulated to protect the general population.

Teaching hospitals and universities use research and medical isotopes which have diagnostic and treatment functions. Radiopharmaceutical shipments, most often in packages containing low-level radiation, pose a potential threat of contamination to responders, equipment, and the emergency departments. Radioactive sources used in therapy for cancer treatment contain higher levels of radiation, but the probability of an incident involving them is much lower than that involving radiopharmaceuticals.[1]

Industrial uses of radioactive material involve many different isotopes used for different purposes, the most common being radi-

ography. Radiography is an x-ray–like process used for quality assurance in production. The amount of radiation required to achieve this function is high and the accident and health hazard potential becomes more significant if the source is left out of its container and not shielded by dense metal. According to the Nuclear Regulatory Commission, more than 10,000 people work in more than 1,000 companies licensed to do radiography. The emotional issues resulting from a lack of understanding of radiation are key to the concern of emergency responders even though, according to the Federal Emergency Management Agency, accidents involving radioactive materials make up only 1/50 of the documented hazardous materials incidents.[1,12]

Dealing with hazardous materials requires that EMS personnel understand the potential dangers. Health effects are not always immediate and may not occur until hours or even days or weeks after the incident occurs. In adequate response procedures, freeing the patient of dangerous chemicals, or decontamination, carries with it the threat of exposing staff, patient, and visitors in the emergency department to those same dangers. Without knowing the nature of the material and its potential danger, the hazardous chemical effects may result in a fatal outcome for both victim and rescuer.

In dealing with a hazardous materials incident, early coordination is imperative. Carefully laid out plans and procedures must be addressed before the incident occurs.[9,14–16] Each emergency responder must be able to predict the response of other emergency workers. Management of this type of emergency must begin with the safety of the responder. EMTs must be able to detect what the hazard's capability is, and then determine the correct response alternatives. The hazardous material can be identified by its required placards, occupancy and location, container shapes, markings and colors, or shipping papers or labels. Placards may not present the hazard potential. In transportation accidents, for example, most dangerous substances must be placarded only if there are 1,000 lb or more.[2] However, less than 1,000 lb or a combination of many chemicals still poses a health hazard. In addition there are "gypsies," or transporters who ignore regulations; if a truck is not placarded, it does not mean that a dangerous chemical is not present. The fact is, there is no guarantee; however, the starting point is the shipping paper contained inside the cab if shipped by truck, but it may be difficult to reach without proper clothing. Lives may be endangered while trying to identify the hazardous material. However, all accidents involving trucks should be considered to involve hazardous materials until proven otherwise.

DECISION MAKING

A decision-making process must be taught to EMS personnel to assist them in evaluating and assessing the scene and choosing the appropriate alternatives (Fig 2). The question is: Under what circumstances does the EMT go in? Upon arrival, using binoculars from a safe distance is most important to identify or rule out any possibility of a hazardous substance before entering the scene. Once the substance is identified, the determination can be made whether to enter the scene. The type of material and the need for protective clothing for that particular material must be assessed before entering the scene.

Because of the vast number of chemicals in use, it is impossible for any responder to know specific patient care required. It is therefore most helpful to understand broad management principles, to be able to use appropriate reference books, and to establish medical control early in the incident.

In assessing the hazards when placarding or other identification means of the material are

available, the Department of Transportation Emergency Response Guide is a recommended reference for all responders. It should be carried in every emergency vehicle. This guide allows the EMT to identify the placard on the vehicle and outlines initial emergency actions based on the material involved. At this point the decision is made whether to go in or to wait. To assist the responder in reading the placard information it is helpful to carry binoculars in the vehicle so that the situation can be assessed initially from a safe distance. Once the material is identified, the information should be communicated to the dispatcher, who will have access to additional resources that will provide more complete information. Once the decision is made to enter the scene normal safety considerations should be adhered to.

RESPONSE TO CHEMICAL EMERGENCIES

As outlined in Fig 2, a well-calculated decision must be made even to enter the scene. Personal protective clothing should be worn as well as self-contained breathing apparatus if indicated for chemical emergencies. EMS personnel who have the training and proper clothing to enter the scene should do so on the "buddy system" with someone, appropriately clothed, ready to enter the scene if he or she needs help.[5,14]

Chemicals may cause additional complications to the patient's condition. However, triage is performed in the same manner as in other emergencies, using mechanical breathing aids as necessary.[14,15] After the primary assessment, life-saving emergency care should be given immediately, establishing medical control as soon as possible. The patient should then be removed from the area of the dangerous substance and decontaminated. After being disrobed, the patient should be washed with the appropriate solution. If water is used, or even passed into the "hot" or contaminated area, it should be contained to prevent further contamination. For example, water used to wash the patients can be con-

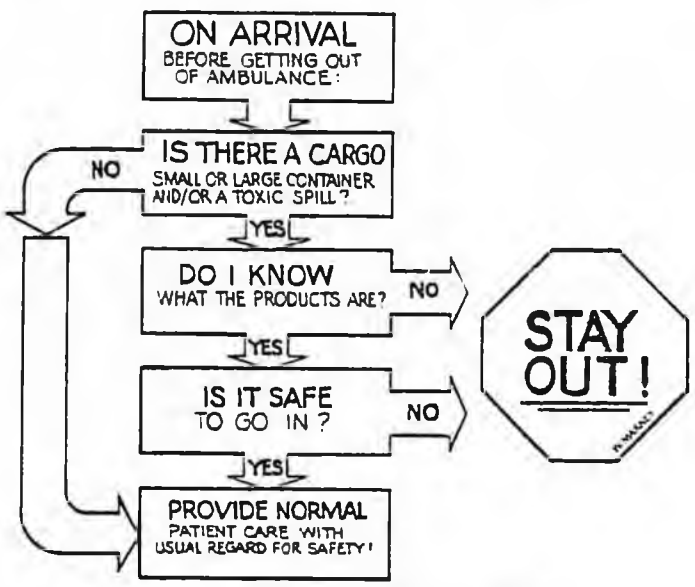


Fig 2. Decision tree for EMS responders.

tained in a child's wading pool or in a tarpaulin supported by a partially charged line in a figure-eight pattern. All equipment and personnel in the "hot" area must undergo decontamination procedures as well.

After the patient is washed or decontaminated, he or she should be wrapped in a clean blanket and transferred into a "clean" area where additional medical care can be given.

If the patient does not require advanced life support, then a basic-level EMS unit should be used to transport the patient. All unnecessary equipment should be removed to facilitate decontamination and a timely return to service. Lining or draping the floor and walls of the ambulance may help clean-up later.

Notification that the patient has been exposed to a chemical must be given early in the incident. This will allow hospitals to gather the necessary information, and the physician responsible for medical control can be contacted for treatment decisions. The hospital emergency departments must also consider a separate entrance and treatment area to better control any contamination that may still be present. In addition, personal protective clothing is necessary for emergency department personnel.[12] Special holding tanks are necessary to contain decontamination solutions, and floor drains in this area should not be connected directly to the sewer system. The goal is to contain all contamination at the scene and keep the ambulance and the emergency department as "clean" as possible (Fig 3).

RESPONSE TO A RADIATION ACCIDENT

As a result of the accident at Three Mile Island in 1979, opportunities for training medical responders to respond to an accident at a nuclear power plant have increased, particularly within the 10-mi emergency planning zone of a nuclear power plant. Participation in emergency preparedness exercises conducted by the utilities, as required by the Nuclear Regulatory Commission, has focused on an integrated community response to an unplanned event or release of a radioactive material. However, as with chemical emergencies, little training is brought to medical responders who may be present at an industrial accident, transportation accident, or medical or research facility accident.

The decision process presented earlier also applies to the radiation accident. Because some radioactive materials are combined with chemical substances, it is important that the EMT have this information before entering the scene.[11–13,15]

Once it is determined that the radiation is not combined with other harmful chemicals the primary mission of emergency medical responders is to provide life-saving care to the victims.[12] Once life-threatening injuries are attended to, the victim can be moved a safe distance from the radiation. Life-saving treatment should not be delayed in the attempt to decontaminate the victim.[11,12,15]

A victim may have been exposed to radiation but not contaminated. For example,

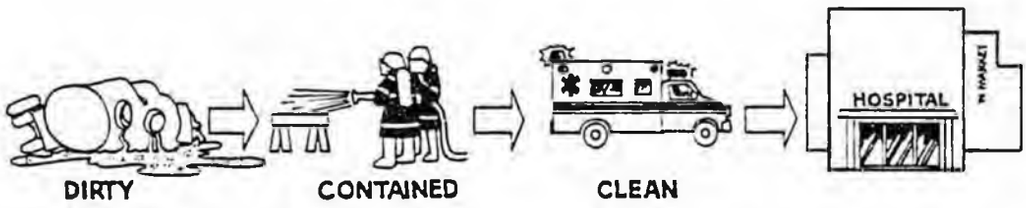


Fig 3. Response to a hazardous materials emergency.

exposure to radiation occurs when someone is near an unshielded gamma source such as is used in radiography. Occasionally at an accident scene, contamination occurs when radioactive particulate matter becomes airborne. If a radioactive material spills, it combines with dust; the dust may become airborne and contaminates anything or anyone it falls on.

As in chemical emergencies, full protective clothing should be worn to protect the rescuer from radioactive contamination. The protective clothing can easily be removed, aiding decontamination. However, it affords no protection against gamma radiation. For this reason, it is important to control the length of time of exposure and the distance from the radiation source, and to use any shielding available. Again, the first priority is the patient. Sound judgment should be used and emergency medical care rendered. If contamination is present or there is a threat of exposure to radiation, a "hot" zone should be established. The boxed information[12] outlines the recommended response for emergency medical personnel to radiation accidents.

Field Operation Protocols for Radiation Accidents[12]

1. Approach site with caution—look for evidence of hazardous materials.
2. If radiation hazard is suspected, position personnel, vehicles, and command post at a safe distance (200–300 feet) upwind of the site.
3. Notify proper authorities and hospital.
4. Put on protective gear and use dosimeters and survey meters if immediately available.
5. Determine the presence of injured victims.
6. Assist and treat life-threatening injuries immediately. Do not delay advanced life support if victims cannot be moved or to assess contamination status. Perform routine emergency care during extrication procedures.
7. Move victims away from the radiation hazard area, using proper patient transfer techniques to prevent further injury. Stay within the controlled zone if contamination is suspected.
8. Expose wounds and cover with sterile dressings.
9. Victims should be monitored at the control line for possible contamination only after they are medically stable. Radiation levels above background indicate the presence of contamination. Remove the contaminated accident victims' clothing.
10. Move the ambulance cot to the clean side of the control line and unfold a clean sheet or blanket over it. Place the victim on the covered cot and package for transport. Do not remove the victim from the backboard if one was used.
11. Package the victim by folding the stretcher sheet or blanket over and securing the victim in the appropriate manner.
12. Before leaving the controlled area, rescuers should remove protective gear at the control line. If possible, the victim should be transported by personnel who have not entered the controlled area. Ambulance personnel attending victims should wear gloves.
13. Transport victims to the hospital emergency department. The hospital should be given additional, appropriate information, and the ambulance crew should ask for any special instructions the hospital may have.
14. Follow the hospital's radiologic protocol upon arrival.
15. The ambulance and crew should not return to regular service until the crew, vehicle and equipment have undergone monitoring and necessary decontamination by the radiation safety officer.
16. Personnel should not eat, drink, smoke, etc. at the accident site, in the ambulance, or at the hospital until they have been released by the radiation safety officer.

AN EMS SYSTEMS PROBLEM

Local, county, and state EMS officials must address hazardous-materials response as a systems problem. Should EMS have a role and, if so, what measures must be implemented to help ensure a successful, safe response?

The decision tree for EMS personnel is one result of comprehensive planning. This protocol or guideline outlines a community's intended response. It clearly defines the decision process, basing actions—agreed on ahead of time—on the nature of the incident.

When several communities in New England were preparing for a hazardous materials exercise, response organizations held many meetings to determine just what individual agency roles would be. Would EMS units be involved in patient care during initial rescue operations? The decision was no, because of the lack of training and protective clothing. EMS responders would receive the patient after initial decontamination had been performed. Considered were the expense and storage of fully encapsulated suits on the emergency vehicle. This process helped all community leaders to address the issue of the danger faced by EMS personnel when responding to a vehicle accident where gasoline or other substances could cause fire. New procedures were implemented for routine calls as well until protective clothing could be purchased and provided to EMS responders.

The final decision made before the exercise was the definition and assignment of roles. The fire service would perform rescue and initial decontamination. EMS providers would receive the patient, establish medical control, and provide patient care before and during transport. Although this planning was done as an exercise, it clearly outlined the value of identifying roles and responsibilities ahead of time. Decisions were made and agreed on ahead of time, through comprehensive planning that outlined the communities' intended response.

Local communities must plan extensively to cope with a hazardous materials situation. Many community, state and federal agencies will respond to this type of incident and should be coordinated before the incident occurs.[18,19] Hazardous materials planning requires a comprehensive approach to define the roles of all players.

As seen in Fig 4 a survey based on Department of Transportation[1] data from 1971 to 1983 shows that 54% of deaths and 19% of injuries were caused by flammable liquids. These figures represent all reported injuries. They become very significant for EMS because they are frequently responded to and often without protective clothing. When gasoline has been spilled during a vehicle accident, accepted procedure is for the fire department to wear full protective clothing.[20] Firefighters hold a charged line (water-pressurized hose) on the vehicle in case of fire. However, should a fire occur, analysis of past accidents shows that the recommended protective clothing effectively protects against flammability.

In many communities, EMS personnel participate in rescue operations without protective clothing and therefore stand a greater chance of injury than firefighters. No one suit can protect against all hazardous materials[1,3]; nevertheless, EMS personnel need protective clothing against toxic fires and explosions. Protection from the dangers of routine vehicle accidents must be integrated into the system at a minimum. Without this basic protection, rescue operations should be left to those best equipped and trained to handle them.

As the EMS systems address these problems the question will arise of whose responsibility it is to ensure that personal protective clothing is worn. This responsibility must be shared by everyone in the system. It is the service's responsibility to provide equipment appropriate for its planned response; it is the chief or EMS scene commander's responsibility to see

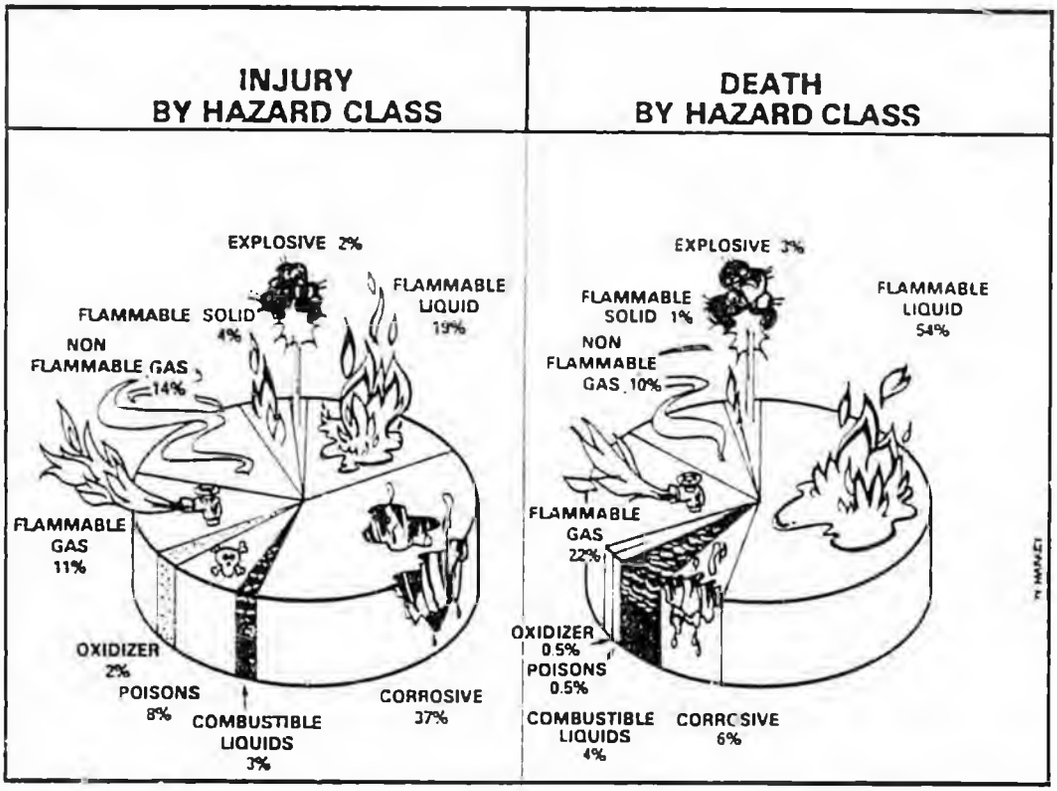


Fig 4. Percentages of deaths and injuries resulting from hazardous materials by classification of the material.

that the equipment is used; and it is the EMT's responsibility to wear it, get the required training, and keep it in good condition and use it as directed.

Training programs can be designed and provided for medical responders. At a minimum, training programs should focus on overall awareness, the necessity and use of personal protective clothing, and the use of the Department of Transportation's *Emergency Response Guide Book*. Overall awareness of the hazard is necessary to make the correct decisions that determine all future actions. A responder must have the necessary information to support the decision of choosing the right response procedures.

Because of the vast number of chemicals in use, it is practical to plan and train for the chemicals that are most likely to exist in the particular community.[1,15,16] Valuable resources should not be committed until the hazard is analyzed. In states that have "right to know" legislation, industry is required to reveal the names of chemicals stored and used on the premises. The hazard is analyzed regularly by emergency program managers. If the local EMS chief participated in this activity, he or she would have first-hand knowledge of the hazardous materials likely to pose a threat to the community.

Training programs need not be expensive. Many volunteer providers are using the many resources available to them in the community, such as local industry representatives, spill response contractors, local and state health

departments and environmental agencies, colleges and universities, and fire services instructors.[5,15] The training can be conducted by modules addressing the specific concerns of a particular community. The fire service offers many courses for first responders in hazardous materials awareness. Although much of the information may be directed to the firefighter, EMS personnel can gain an appreciation and overall awareness of the importance of knowing the chemicals they are dealing with.

EMS professionals must also encourage active participation of the community hospitals in training and ensuring effective interactions between prehospital and hospital providers. Clearly defined patient care procedures must be established, trained for, and exercised. A community exercise of its hazardous materials plan is an ideal way to identify not only community deficiencies, but EMS system deficiencies that can hinder safe, effective patient care.

Prehospital care workers must identify what their role will be, and, as important, what is expected of them by the community. Once their role is defined and an analysis of the hazards completed, EMS providers can begin to assess the resources necessary to do the job safely and correctly. Training can then be directed toward this defined role; equipment purchases will be based on the need of the particular service in carrying out its community-assigned role.

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EMS providers stand a greater chance of injury than firefighters because of lack of training and protective clothing. Not only is there a danger from toxicity of a chemical, but a routine auto accident poses a flammability hazard. Because of a lack of awareness of potential dangers and lack of protective clothing, EMS is generally not equipped to handle such an emergency safely.

The radiologic materials accidents that must be responded to require the same level of awareness as chemical accidents. But radiation itself generally does not pose an immediate health hazard to responders or patients if not combined with other forms of hazardous materials.

In either case, careful protective measures should be implemented while rescuing and treating the victim. Contamination should be contained in a designated area. The hospital should be notified in advance and the patient transported to a medical facility. Although EMS personnel have a role in these situations also, they must clearly define that role based on their existing training and resources.

The New England Council for Emergency Medical Services (NECEMS) has found that an incorrect response on the part of a first responder can be the cause of a multicasualty or mass casualty incident. In 1984 the NECEMS implemented a registry of mass casualty incidents. A preliminary view of the first six months of data showed that of the reported mass casualty events that involved hazardous materials, none of the injured were community residents or bystanders; they were responders to the incident who may have been untrained and unprepared.

Present trends indicate increasing interaction between public safety personnel and dangerous hazardous materials. It is the responsibility of the EMS system to respond to these trends by incorporating the necessary training, resulting in an ability to determine what they can and cannot handle.

Community leaders should be made aware of the liability they may face if public safety agencies respond without the proper training or equipment. Communities become inured to the more frequent accidents such as multicasualty injuries on the highways, however, a

bizarre accident, such as deaths of either responders or residents caused by a hazardous material, raises a public outcry.[21,22]

Emergency response officials must have the support of community officials to provide public safety workers with the appropriate equipment and training to protect them from physical injury. These officials must have the same support to protect the community from the liability it may face if these workers are "expected" to provide this level of response without proper training and equipment.

Planning is key—whether the hazardous material is chemical or radiologic. The planning process must include businesses or industries that are the source of the hazard, as well as those that must respond to the hazard.[23–24] Through this partnership and sharing of knowledge and expertise, a community can define for itself how it plans to deal with hazardous materials.

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these sources did not have a common standardized format, and sources reporting the same incident often varied considerably. The U.S. Coast Guard Pollution Incident Reporting System for spills on navigable water was found to be particularly useful since it contained detailed and comprehensive reporting of date, time, location, material, quantity, source, cause, and anticipated cleanup costs.

The DOT Office of Hazardous Materials Transportation (OHMT) maintains a file of all reported incidents involving spills of hazardous materials in interstate commerce, and State and local agencies have access to this information. Because OHMT's reporting rules do not, in most cases, require reports on spills in intrastate commerce, many truck accidents of considerable local significance do not show up in OHMT's file. It is the responsibility of each transportation company involved in an incident involving a spill of hazardous materials, as defined by Federal regulations, to report it to OHMT. Currently no effective enforcement exists for this Federal regulation, so, in effect, accident reporting is voluntary. In addition to the OHMT incident file, the FHWA Bureau of Motor Carrier Safety maintains a truck registry list and monitors the accident record of trucking companies as part of its inspection program. It also uses this registry to report to the Interstate Commerce Commission on the safety record of carriers applying for an additional license.

State and local researchers trying to analyze accident records for their area studies report that the OHMT incident file is not useful to them, however. A New York City study found that when 30 major spills widely reported in the press were tracked through the OHMT records, only 12 were found. The 18 unreported incidents, according to press reports, had resulted in 18 deaths, 9 persons missing, and 187 injured.[29] Even if a State keeps complete accident records, local staffs are usually unaware of this resource, and many communities find their own accident data incomplete. Niagara County, for example, had too few recorded hazardous materials transportation accidents to draw significant inferences. On the other hand, Memphis planners found a wealth of information in the 972 incidents recorded by the city fire department in a single year.

[29]Scanlon, op. cit., p. 48.

FINDINGS

- **Financial assistance for data collection and planning activities is needed by many localities.** Potential sources of funds include Federal, State, and local government cooperative programs with industry, and registration or user fees.
- **Hazardous materials storage facility inventories provide important background for hazardous materials transportation planning, as well as data for response and prevention planning.** Data may be developed from questionnaire surveys, public records, and industrial directories. Questionnaires often require followup and are most effective when sent out under the auspices of public agencies such as fire departments.
- **Local advisory committees can be very helpful in identifying the hazardous substances to be inventoried and in soliciting the cooperation of the private business sector.**
- **Data on commodity flow is needed by State and local governments for hazard assessments and planning.** Databases pertaining to commodity flow are kept by various Federal agencies, but the agencies do not use the same commodity identification codes, and the databases are not interactive. Consequently, the data are not useful to State and local governments.
- **Because of the absence of a reliable national hazardous materials transportation database, State and local governments have undertaken their own studies to determine what is transported near, within, and through their communities.**
  - —Successful State surveys combine truck and cargo inspection with driver interviews. Visual counts of placarded trucks have several drawbacks, because many trucks are placarded incorrectly or not at all.

—Rail commodity flow data are increasingly available as the industry computerizes.
—Data on types and quantities of hazardous materials transported by air and water do not appear to be major concerns for States and local communities.

- A reliable, comprehensive Federal accident record system is needed. Current Federal efforts are too fragmented to be useful to State and local agencies.

- Department of Defense and Department of Energy shipments of explosives or radioactive materials are of concern to State and local governments, which understand the need for secrecy about such shipments, but want guarantees that Federal enforcement and emergency response efforts will be adequate when an accident occurs.

OTA REPORT BRIEF

March 1986

Transportation of Hazardous Materials: State and Local Activities

Accidents involving hazardous materials occur at least weekly in major metropolitan areas. Although a large urban jurisdiction that has had many such accidents may have a trained hazardous materials response team, about three-quarters of the Nation's first responders are not adequately trained to deal with hazardous materials.

The most pressing national need in emergency response is finding an effective way to train first responders to handle different types of hazardous materials. Despite the existence of many training programs, no national guidelines for them are currently in place, and some of the programs are inadequate. National emergency response guidelines or standards are needed to ensure adequate training. Furthermore, financial assistance for training and for maintaining emergency response capabilities is needed by many localities.

More than 180 million shipments of hazardous materials are made in the United States each year, about 500,000 each day, according to Department of Transportation figures. These shipments contain a wide variety of dangerous and unfamiliar substances: more than 2,400 chemicals, explosives, wastes, and radioactive materials are listed as hazardous materials in the Code of Federal Regulations—and the list is growing.

Gasoline and petroleum products account for more hazardous materials transportation accidents, injuries and damages than other classified commodities, because they are the most frequently transported hazardous cargo. Additional safety measures and training programs for drivers and handlers could reduce the incidence of such accidents.

Although most hazardous materials accidents do not cause deaths, they often cause serious injury and substantial damage in addition to being frightening and spectacular. Concern about the risks involved has motivated public demand for improved emergency response capabilities and strong enforcement of safety rules.

To help prevent accidents and protect public safety, State and local governments have restricted the routes that hazardous materials shippers use or the hours that shipments are permitted. They may also require licensing, registration, or permits; advance notification of shipment or other special procedures; and escorts for hazardous materials movements. These requirements and restrictions vary from State to State, leaving transporters unsure whether they are complying with local regulations.

Many industry representatives as well as State and local governments strongly support establishment of a national truck driver's license and uniform guidelines for registration, permit, and shipment notification requirements. They also feel that penalties for violating regulations should be consistent across governmental and jurisdictional levels and substantial enough to discourage future infractions. Continued Federal support for States' hazardous materials enforcement activities is important, since Federal inspection forces have been reduced annually for several years.

To plan for accident prevention and to improve their emergency response, States and localities need to know what types of hazardous materials accidents might occur in their areas, which locations have the highest risk, and what types of materials are most likely to be involved. Because of the lack of a reliable national hazardous materials transportation database, State and local governments are performing their own studies to determine what is transported near, within, and through their communities. These data collection and planning activities serve to coordinate and improve communication between the numerous separate groups that are concerned with hazardous materials transportation and emergency response.

Information accompanying hazardous materials is often faulty or insufficient, posing additional problems for public safety personnel. State enforcement officials have found that 25 to 50 percent of placards on hazardous materials shipments are incorrect. Shipping papers are sometimes incomplete or inaccessible. Emergency crews must assess the risks of the hazardous material and make decisions on how to respond based on information that may or may not be accurate. The wrong response to a hazardous materials accident endangers both emergency personnel and the neighboring communities.

Copies of the OTA report, "Transportation of Hazardous Materials: State and Local Activities," are available from the U.S. Government Printing Office. The GPO stock number is 052-003-01016-0; the price is $3.75. Copies of the report for congressional use *are available by calling 4-8996. Summaries of reports are available at no charge from the Office of Technology Assessment.*

The Office of Technology Assessment (OTA) is an analytical arm of the U.S. Congress whose basic function is to help legislators anticipate and plan for the positive and negative impacts of technological changes.
Address: OTA, U.S. Congress, Washington, DC 20510. Phone: 202-224-9241. John H. Gibbons, *Director*.

Transportation of Hazardous Materials: **State and Local Activities**

A Special Report

CONGRESS OF THE UNITED STATES
Office of Technology Assessment
Washington, D C 20510

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Chapter 1

Introduction and Findings

Each year, more than 4 billion tons of hazardous products and waste are transported throughout the United States.* The safe handling and carriage of these materials—which include explosives, flammables, corrosive or toxic chemicals, poisons, spent reactor fuel and low-level waste, and disease-causing biological agents—are of major concern to Federal, State, and local agencies charged with public safety and to the industries that produce, ship, and use hazardous materials.**

The safe and efficient transport of hazardous materials depends on three principal activities: accident prevention (including regulation and enforcement), emergency response when accidents occur, and research and planning. While emergency response activities arouse the most intense public interest, all three activities are interdependent and necessary. Maintaining transport safety and efficiency is technologically demanding—a task made complex by the variety and volume of materials transported and by the interlocking responsibilities of Federal, State, and local governments and the multitude of private firms involved.***

Historically, the Federal Government has taken a lead role in regulation of hazardous materials transportation and safety enforcement. State and local governments, however, are assuming greater responsibilities in this area, prompted by a growing awareness of the dangers posed by hazardous materials transportation and recognition that emergency response—at least initially—almost always falls to State and local agencies. The Senate Committee on Commerce, Science, and Transportation, mindful of heightened public concern about chemical spills and accidents involving radioactive materials and toxic substances, requested that the Office of Technology Assessment (OTA) undertake a study of hazardous materials transportation. The study, directed specifically at the issues of container technology, accident data collection and recordkeeping, and training programs for personnel involved in hazardous materials transportation or in emergency response to hazardous materials accidents, will be completed in early 1986. This review of State and local activities provides background information for analysis of the issues to be addressed in the larger study.

*This estimate includes hazardous materials carried in pipelines.

**Hazardous materials are substances or matter transported in commerce that pose risks to human safety, property, and the environment if accidentally released. Hazardous materials transported by pipeline or generated or used in military or other defense-related activities are similar in nature and pose similar risks but are excluded from this discussion.

***This document summarizes Federal programs and identifies State and local concerns. The OTA Final Report will examine in detail Federal regulations and technical programs and assess the extent to which they meet the needs identified in this report.

HAZARDOUS MATERIALS TRANSPORTATION

Statistics gathered by the Office of Hazardous Materials Transportation (OHMT)* of the U.S. Department of Transportation (DOT) indicate that there are more than 180 million shipments of hazardous materials in the United States each year. The variety of these substances is enormous and growing. Currently, more than 2,400 substances are listed in the Federal Code of Regulations as hazardous commodities; many of the more than 70,000 chemical products on the market today have not been reviewed for inclusion.[1]

Chemical products are but one kind of hazardous material. There are also biological products, fuels, petroleum products, explosives, acids, fertilizers, gaseous substances, and various forms of industrial waste. Radioactive substances are another major form of hazardous materials. More than 20,000 medical and academic institutions, laboratories, government agencies, industrial enterprises,

*Until Nov. 1, 1985, OHMT was called the Materials Transportation Bureau (MTB); OHMT is a part of the DOT's Research and Special Programs Administration.

[1]See 49 CFR 172.101.

and utilities operating nuclear powerplants generate low-level radioactive waste, amounting to an annual volume of 77,000 cubic meters and containing 500,000 curies of radioactive material.[2] A recent study by the Department of Energy (DOE) projects that this volume could double by 1990.[3] These figures do not include the high-level radioactive waste now shipped by utilities, the Department of Defense (DOD), and DOE. They also do not include the increased high-level radioactive commercial waste that will be shipped in the late 1990s once Federal storage facilities have been established or the low-level waste that will be generated as present nuclear reactors are decommissioned and dismantled. According to a recent estimate, the remains from decommissioning a single large reactor would fill well over 1,000 trucks, equaling one-quarter of all the low-level nuclear waste now generated yearly in the United States.[4]

All of these hazardous materials move by land, sea, and air modes of transportation at a rate of about 500,000 shipments per day. Truck transport accounts for about half of all hazardous materials shipments. The types of vehicles carrying hazardous materials on the Nation's highways range from tank trucks, bulk cargo carriers, and other specially designed mobile containers to conventional tractor-trailers and flat beds that carry packages, cylinders, drums, and other small containers. Rail shipments (equaling about 80 million tons a year) are commonly bulk commodities, such as liquid or gaseous chemicals and fuels, carried in tank cars. Most hazardous materials transported by barge on inland waterways are also bulk cargo. The Corps of Engineers estimates that the total inland waterborne volume is approximately 60 million tons a year. Coastal and inland waterborne volumes, combined, reach 550 million tons annually. DOT estimates that about 600,000 vehicles and vessels are regularly used to transport hazardous materials in bulk, and 700,000 carry portable containers. The transport of hazardous materials by air (either in all-cargo aircraft or in belly compartments of passenger aircraft) is insignificant in tonnage—an estimated 175,000 tons annually—but constitutes a high number of shipments. A 1980 Federal Aviation Administration study found that roughly 5 percent of air cargo at 39 major airports (amounting to 300,000 packages) contained hazardous materials, typically rather small parcels of high-value or time-critical material.

The safety record of hazardous materials carriers, as reported to the Office of Hazardous Materials Transportation, is summarized in table 1-1. For the period 1973-83, there was an annual average of 11,462 reported incidents—a rate of 1.25 incidents per 10,000 shipments.* Most of these were accidental releases during handling and loading and not vehicle accidents en route. The reported deaths and injuries caused by exposure to hazardous materials are similarly low, equaling about two fatalities per 1,000 incidents, a result both of the regulations governing hazardous materials transportation and the degree of care exercised by shippers, carriers, and others involved in accident prevention and response.** The

[2]Under the present classification system, low-level waste includes dry trash; used equipment; and solidified and absorbed liquids, gases, and sludges. Items range from spent resins from ion-exchange processes, filter materials, lubricating oils, and contaminated tools, clothing, and packaging (all of which have relatively low levels of radioactivity); to sealed sources such as Cobalt 60 for radiation treatments; to irradiated reactor components such as in-core instrumentation and control rods (which typically have higher levels of radioactivity). Taylor Moore, "The Great State of Uncertainty in Low-Level Waste Disposal," The Electric Power Research Institute (EPRI) Journal, March 1985, p. 24.

[3]U.S. Department of Energy, *Spent Fuel and Radioactive Waste: Inventories, Projections and Characteristics*, DOE/RW-0006 (Washington, DC: September 1984).

[4]Steve Olson, "Nuclear Undertakers," *Science 84*, vol. 5, No. 7, September 1984, p. 57.

*These figures are for incidents *reported* to OHMT. Some experts estimate there may be as many as three to four times as many incidents that are unreported.

**In recent years, there has been an annual average of 24 deaths and 663 injuries in hazardous materials accidents reported to DOT. Even taking into account evidence of incomplete data, to be addressed in OTA's Final Report, the death and injury toll in automobile accidents in the same period was 2,000 times greater.

Table 1-1.—Incidents Involving Transport of Hazardous Materials, 1973-83 (as reported to DOT)

Mode	Annual average			
	Incidents	Deaths	Injuries	Damages[a] (millions of dollars)
Highway	10,289	19.3	419.2	$ 8.15
Rail[b]	975	4.0	221.8	4.67
Water	26	0	3.3	0.07
Air	150	0.4	9.0	0.43
Freight forwarder	2	0	1.9	(c)
Other	20	0	7.8	0.01
Total	11,462	23.7	663.0	$13.33

[a]Property damage estimates reported to MTB within 15 days after an accident.
[b]The rail safety record improved during the period because of an increase in the number of Federal rail inspectors and equipment improvements during the early 1980s.
[c]Less than $0.01 million.

SOURCE: U.S. Department of Transportation, Materials Transportation Bureau. *Annual Report on Hazardous Materials Transportation, Calendar Year 1983.*

true costs of hazardous materials accidents are difficult to determine. A large number of incidents are not reported to OHMT, and the costs of those that are appear to be greatly underestimated. Interstate carriers are required to report any spill except those of certain consumer goods and paints and batteries to DOT within 15 days, usually long before full costs are known. Typically, carriers report only their direct costs. The annual damage cost for incidents reported to OHMT from 1973 to 1983 was $13 million. This figure is undoubtedly too low, perhaps by a factor of as much as 10,[3] if all costs associated with hazardous materials accidents are considered, including long-term cleanup costs.

Still, it is the risk of death and injury that causes the deepest concern. Hazardous materials accidents are often spectacular, although loss of life is relatively rare. No State or local official can erase the memory of an overturned load of explosives or tanker of chemicals in an area for which he or she is responsible. These experiences and the almost weekly news reports of a hazardous materials spill somewhere in the Nation, more than the official statistical record, drive the demand for strong enforcement of safety rules and improved emergency response capabilities.

[1] An OTA contractor studying accident report data has found that DOT damage reports are consistently low. For example, the National Transportation Safety Board (NTSB) listed damages of $597,000 for a February 1978 rail accident; the DOT report of the accident listed damages of $11,000. For a May 1983 rail hazardous materials accident, NTSB records showed $570,000 damages; DOT record did not show the accident at all.

[3] Mark Abkowitz and George F. List, "Hazardous Materials Transportation: Commodity Flow and Information Systems," report prepared for U.S. Congress, Office of Technology Assessment, December 1985

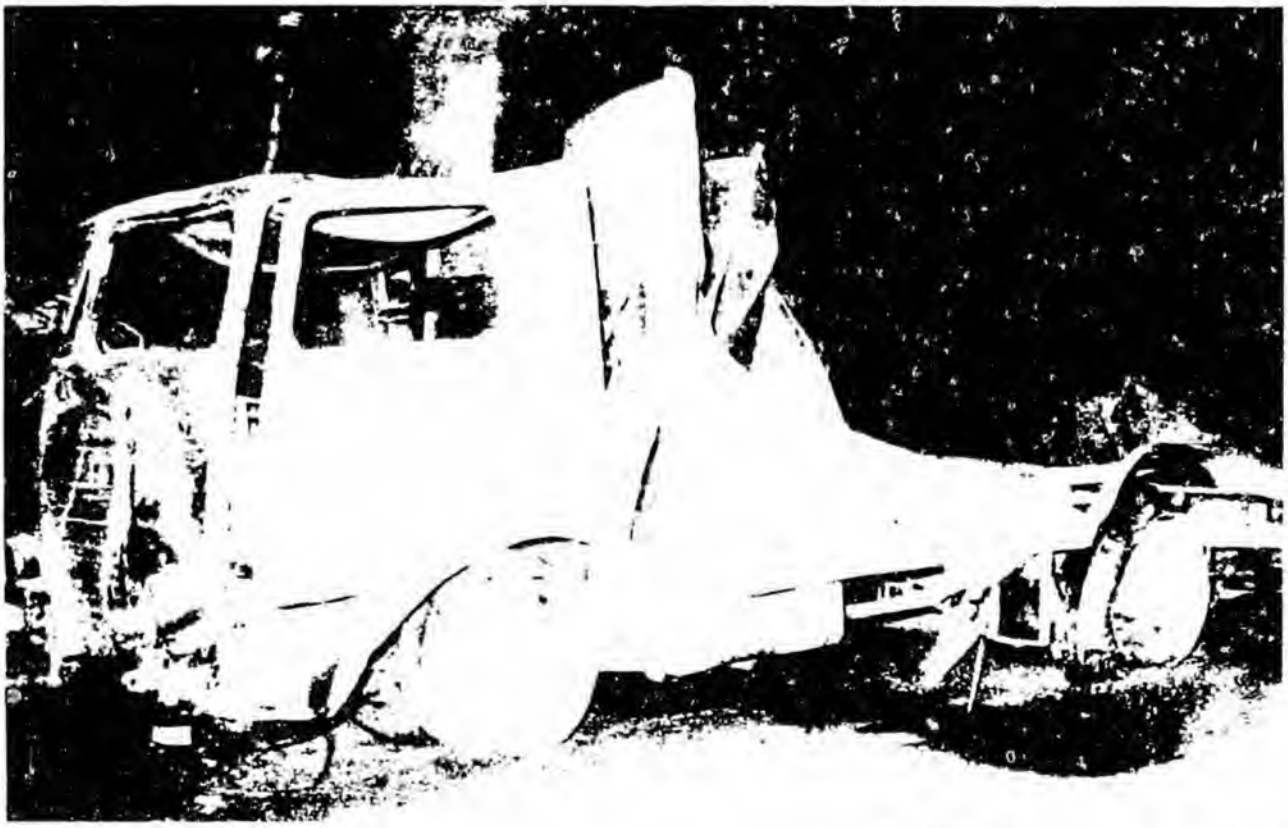


Photo credit: Research and Special Programs Administration, DOT

The remains of a truck that had been carrying chemicals, after an accident.

GOVERNMENT AND INDUSTRY ROLES

Federal

The Federal Government has four roles with regard to hazardous materials transportation: regulation, enforcement, emergency response and planning, and data collection. Responsibility for these functions is distributed among numerous departments and agencies. The departments and agencies operate under a complex set of agreements and coordination procedures, with no single agency having sole responsibility or authority over all aspects of hazardous materials production, shipment preparation, and transportation. In some instances, jurisdictions overlap. In others, responsibility is assigned depending on the type of material involved, the mode of transport, or the nature of Federal regulation.

DOT is the designated lead agency for establishment and enforcement of regulations regarding safe transportation of hazardous materials. The DOT Research and Special Programs Administration (RSPA) has authority to issue regulations on most aspects of hazardous materials transportation containers. It must coordinate with the modal administrations, the Federal Highway Administration, the Federal Railroad Administration, the Federal Aviation Administration, the National Highway Traffic Safety Administration, and the U.S. Coast Guard, which have authority over the vehicles or vessels themselves. This intra-agency fragmentation notwithstanding, DOT as an agency is responsible for identification of hazardous materials, regulation of hazardous materials containers, handling and shipments, development of standards and testing procedures, inspection and enforcement, and data collection.

Another group of agencies—DOE, DOD, the Nuclear Regulatory Commission (NRC), and the Environmental Protection Agency (EPA)—has jurisdiction over other aspects of hazardous materials transportation. DOE is largely concerned with fuels; DOD, with materials used for military purposes. NRC has jurisdiction over high-level radioactive substances in the civil sector, while EPA has responsibilities for chemicals and hazardous nonnuclear wastes. These agencies also undertake training activities and safety awareness programs, and provide technical support for State and local governments.

The Federal Emergency Management Agency is responsible for coordinating Federal assistance, planning, and training activities for emergency response with State and local governments. The Departments of Justice and Labor also have designated responsibilities and areas of interest.

The data collection function similarly is spread among several Federal agencies. The various databases maintained by those agencies record accidents and spills and monitor compliance and sometimes carrier performance. OHMT is the principal agency collecting data on hazardous materials transportation spills, but every other Federal entity keeps records pertaining to its area of interest. There is no central clearinghouse to collect and analyze hazardous materials transportation information.

State

The States mirror Federal functions and responsibilities to a degree, but the structure is by no means uniform or even comparable from State to State. Some States have extensive programs of regulation, enforcement, emergency planning, and training. In others, programs are still in a formative stage. The functions and activities listed in table 1-2 indicate the range and nature of State involvement, not the situation in every State. State programs, like their Federal counterparts, are characterized by a multiplicity and diversity of activities and areas of jurisdiction, complicated in many instances by differences between Federal and State agencies as to definitions of hazardous materials, regulatory requirements, transportation restrictions, and stringency of enforcement.

Regulatory activities are a major feature of many State programs. State regulations may require licensing or registration of hazardous materials transporters, imposition of fees and taxes (often as an extension of the licensing function), prenotification, and routing restrictions. States also maintain inspection and enforcement programs and may require special safety procedures.

Other important State functions are planning and training for emergency preparedness and response. Training is conducted in cooperation with local

Table 1-2.—Hazardous Materials Assistance Commonly Available From State and Local Agencies

State:
Civil Defense: Communications, coordination, evacuation, radiological monitoring.
State Police: Traffic control, communications, evacuation.
Environmental: Chemists, environmental scientist meteorologists, lab services, some equipment, knowledge of contractors.
Public Works: Construction equipment and operators.
Public Health: Health specialists.
Agriculture: Pesticide and/or fertilizer experts.
Fire Marshal or Fire Academy: Fire suppression advice.

Local:
Fire Department: Trained firefighters and specialized equipment for: 1) suppressing fires, 2) rescuing injured or trapped persons and 3) dealing with select hazardous materials.
Public Works: Equipment and personnel to contain spills by digging trenches or constructing dikes. Can usually provide sand—an excellent sorbent for spilled hazardous materials.
Police: Communications equipment and traffic/crime control at scene of spill.
Civil Defense: Equipment for monitoring radioactivity. Will usually coordinate the response of various agencies.
Public Health Agency: Advice on the chemical properties of the materials and human health effects.

SOURCE: U.S. Department of Transportation, Research and Special Programs Administration, *Community Teamwork: Working Together to Promote Hazardous Materials Transportation Safety: A Guide for Local Officials*, May 1983, p. 58.

agencies and often with some technical assistance and financial support from the Federal Government and industry. Since States are also responsible for emergency programs, civil defense, police, fire, environmental, and public works agencies may all play roles in State hazardous materials activities, making program coordination difficult. In rural areas and small towns, State agencies may constitute the first response team.* In metropolitan areas, local governments usually assume this function.

Local

Diversity of function and concern also exists at the regional and local levels of government. Some major cities and metropolitan areas exercise regulatory, inspection, enforcement, and licensing functions akin to those of Federal and State agencies. Many have undertaken emergency planning and training activities, either on their own or with assistance from Federal and State hazardous materials offices. The most important and most nearly universal local function, however, is emergency response.

Almost 75 percent of the U.S. population lives in metropolitan areas, where the majority of hazardous materials are produced, transported, and used. Local fire and police departments constitute the first line of response in the event of a hazardous materials accident, and local hospitals and health officials bear the brunt of treating accident victims. Local resources are also the first used to prevent the spread of contamination or to evacuate the area around an accident site.

The diversity of local functions is equaled by a wide range of capabilities. Some locales have well-developed emergency plans, adequately trained and equipped response teams, and sufficient resources for hazardous materials containment and cleanup. Others, particularly small urban and rural jurisdictions, must rely on local fire and police departments that most often have little or no training or experience in dealing with hazardous materials.

Industry

An important adjunct to Federal, State, and local government resources are the safety-related programs and capabilities of the industries that produce and transport hazardous materials. Some of the more than 50 national industry associations are made up of hazardous materials producers and users—e.g., the Chemical Manufacturers Association, the National Agricultural Chemicals Association, and the American Petroleum Institute. Others are transportation associations such as the American Trucking Associations, the American Waterways Operators, the Association of American Railroads, and the Air Transport Association.

Industry programs provide employee, client, and contractor training in the handling and transport of hazardous materials and in emergency response. Some industries maintain special response teams to aid State and local authorities at an accident site; others offer funding for training and equipping State and local first response teams. Industry associations and individual firms also contribute to State and local planning, prevention, and education efforts, either by underwriting part of the cost of such programs or by providing technical support. Voluntary standard setting in support of hazardous materials safety varies widely from company to company.

*First responders are those agencies, such as police or fire, that are called initially when an accident involving hazardous materials occurs. They may be followed by State and local health authorities and environmental cleanup crews.

ORGANIZATION AND SCOPE OF REPORT

This special report, which documents findings pertaining to State and local activities, is the outgrowth of an OTA workshop held on May 30, 1985, and a series of meetings between OTA and government, industry, and academic experts on hazardous materials. The workshop examined the results of OTA's initial research and literature review of State and local capabilities and activities in the areas of accident prevention and emergency response. The comments of workshop participants, supplemented by follow-up interviews and analysis of key points by OTA staff and an extensive review process, form the basis for the material and findings presented here.

Concerns of State and local governments about the transportation of hazardous materials focus on accident prevention and enforcement, emergency response, and collection of information to support planning for emergency preparedness. OTA found that while a hazardous materials accident in any mode of transportation will involve State and local public safety officers, highway and rail hazardous materials accidents tend to concern public officials the most. No other public organization, such as a port authority or the Coast Guard, is likely to be available to provide immediate assistance to State and local public safety personnel for either truck or rail accidents.

This report will emphasize truck transportation because it is of greatest concern to State and local officials. Trucks carry more hazardous materials than any other mode of transportation, and there are many more trucks than other vehicles or vessels carrying hazardous materials. Finally, trucks travel on public rights of way through every jurisdiction, mingling with other traffic and thus increasing spill and accident risks.

Three subjects are addressed in the chapters that follow:

- State prevention and enforcement programs;
- emergency response training, planning, and implementation; and
- information collection for State and local planning.

General findings are presented below. Detailed findings and supporting material are contained in each chapter. It should be noted that the findings presented in this special report will be considered in the context of Federal programs and other resources in a second OTA report to Congress, *Transportation of Hazardous Materials*. The second report will include policy options for consideration by Congress in 1986.

GENERAL FINDINGS

Financial assistance for enforcement and response training and planning activities is needed by many localities. Potential sources of funds include Federal, State, or local assistance, cooperative programs with industry, and registration or user fees.

Movements of gasoline and petroleum products, by far the most frequently transported hazardous materials,* account for more hazardous materials transportation accidents, injuries, and damage than transport of any of the other classified commodities. State and local enforcement, emergency response, and planning personnel should focus on this problem in cooperation with industry representatives. Attention should be given to developing additional safety measures and programs to promote better awareness and training of drivers, handlers, and enforcement personnel. Generally, emergency response personnel are already trained to handle gasoline incidents.

State and local enforcement and emergency response personnel are dissatisfied with the information accompanying hazardous materials shipments. Placarding requirements should more accurately reflect the degree of hazard of the material, and shipping papers should include more information on the nature of the hazard posed and accident mitigation techniques.

Prevention and Enforcement

National standards establishing uniform State hazardous materials requirements and regulations would simplify and improve compliance by shippers, carriers, and State and local enforcement

*According to data provided by the American Petroleum Association and OTA calculations, these products comprise about 50 percent of total hazardous materials movements.

activities. State, regional, and local agency concerns as well as those of industry should be considered in formulating standards. The areas where uniformity is most needed are:

- **Licensing** to ensure that drivers and others handling hazardous materials are qualified and have been properly trained. Some form of a national truck driver's license is favored by many State, local, and industry officials.
- **Permit or registration requirements** to obtain information and collect fees in a coordinated manner that does not unduly burden transporters and ensures that money collected is used to meet related needs.
- **Shipment notification systems** that provide useful information for localities without unduly burdening carriers.

Penalties for regulatory violations, including failure to report hazardous materials incidents, should be consistent across governmental and jurisdictional levels and sufficiently large to discourage future infractions. An effective enforcement program requires that legislatures, enforcement agencies, and courts be aware of the death, injury, property damage, and environmental harm that could result from accidental release of hazardous materials and set penalties accordingly.

State and local enforcement personnel need additional training and current information on hazardous materials regulations for all modes of transportation. Methods used by the Federal Government to deliver this information to State and local officials need to be improved and strengthened. Programs to educate shippers and carriers on safety measures and regulatory compliance need strengthening as well.

Emergency Response

An effective way to deliver hazardous materials training to first responders is the most pressing national need in emergency response. Many different and successful training programs exist, but they are not reaching sufficient numbers of first responders, especially in the smaller urban and rural areas. Moreover, some training programs are simply inadequate.

Maintaining existing response programs through refresher training and training of new personnel to fill vacancies created by turnovers in response teams is financially difficult for most jurisdictions.

National guidelines for different levels of training and national certification standards for responders are needed. Advanced hazardous materials training is appropriate for personnel in large jurisdictions, along major transportation corridors, or in States with heavy concentrations of hazardous materials industries. The numerous existing training programs need to be systematically examined and evaluated.

National equipment guidelines for emergency response are needed to assist response organizations in equipment selection.

When formulating hazardous materials emergency response plans, communities should consider formal, written mutual aid agreements with regional and adjacent local jurisdictions and Good Samaritan laws to protect first responders from liability when they respond to incidents for which they are not responsible.

Planning and Data Collection

Improved data on hazardous materials storage and commodity flow is needed by State and local governments for analyzing accident prevention techniques such as routing and planning for emergency response. Federal databases pertaining to commodity flow are kept by a wide variety of Federal agencies, but the agencies do not use the same commodity identification codes, and the databases are not interactive. The data are not useful to State and local governments, some of which have undertaken data collection on their own. Data collection efforts would be improved by coordinating existing Federal data resources and providing State and local access to them. National guidelines on hazard assessment data collection for local government would also be valuable. In the absence of national legislation, right-to-know laws should be considered by jurisdictions. Such laws are an important aid in gathering information on the identities and associated hazards of the chemicals most likely to be encountered.

A reliable, comprehensive Federal accident record system is essential. Current Federal efforts are too fragmented to be useful to State and local agencies, or to carriers, which could use the findings to develop or modify their own safety programs. Existing Federal databases that record data on accidents, violations, and shippers and carriers that do not comply with regulations would be more useful if they were interactive and were made accessible to State enforcement personnel. The SAFETYNET Program, being developed by the Federal Highway Administration, and the National Driver's License Registry, being developed by the National Highway Traffic Safety Administration, should help, but their full implementation is at least a decade away.

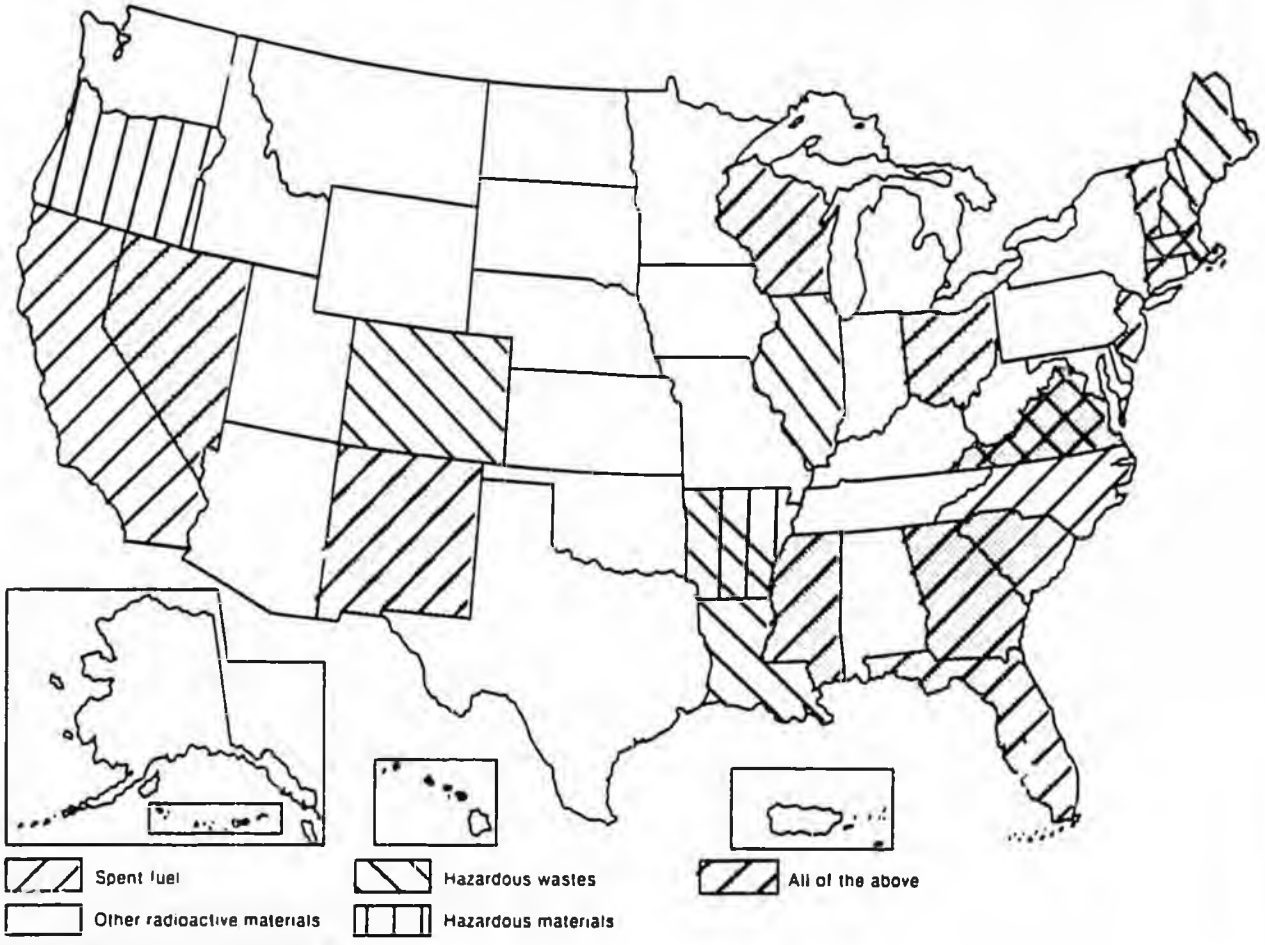
A more clearly defined and smoothly functioning Federal authority for hazardous materials transportation is needed. The current designation of DOT as lead agency and RSPA as lead group within DOT has not resulted in clear lines of authority or intermodal coordination for transporting hazardous and radioactive commodities and wastes. While a number of federally sponsored activities have made important contributions to the development of municipal and State programs, the absence of effective Federal program coordination means that jurisdictions have difficulty gaining access to available information, planning, and financial resources.

The lack of interagency coordination at the Federal level is often replicated at the State level, compounding the difficulties of regional and local jurisdictions.

Up-to-date technical information is needed for planning emergency response. Current toxicological, chemical, and health data should be compiled, updated regularly, and made accessible to planners and responders.

State and local officials are concerned about shipments of chemical weapons and explosives or radioactive materials by DOD and DOE. While these officials understand the need for secrecy about such shipments, they seek guarantees that Federal enforcement will be stronger and when an accident occurs, emergency response efforts will be adequate.

Figure 2-3.--States With Hazardous Materials Notification Requirements by Type of Material, 1985



SOURCE: Office of Technology Assessment

regulation or had the potential to cause transportation delays or traffic diversions.[39]

Routing

Routing is an important tool for local governments to use in preventing or reducing the consequences of hazardous materials accidents and increasing numbers of cities, counties, and townships are adopting ordinances requiring hazardous materials carriers to use designated routes. Careful routing decisions mean that hazardous materials shipments are restricted to the safest routes, often interstate highways and beltways, thus reducing the overall risk of an accident as well as risks on local streets and highways. In addition, routing is a low-cost prevention measure that local police can enforce without additional equipment or training. On the other hand, routing requirements may lengthen and complicate trips for truckers, and sometimes bring local governments into conflict with each other or with Federal regulations protecting interstate commerce.

The only Federal requirement pertaining to routing of nonradioactive hazardous materials is general:[40]

> Unless there is no practicable alternative, a motor vehicle which contains hazardous materials must be operated over routes which do not go through or near heavily populated areas, places where crowds are assembled, tunnels, narrow streets, or alleys.

[39]See for example IR-16, 50 F.R. 20871, May 20, 1985. DOT has adopted the NRC notification requirements.

[40]49 CFR 397.9(a).