



Final Report

STATE HAZARDOUS

MATERIALS COMPLIANCE

EFFECTIVENESS STUDY

To

Federal Motor Carrier Safety

Administration

U.S. Department of Transportation

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Table of Contents

Acknowledgements.....	1
1.0 Introduction.....	2
2.0 Review of State Hazardous Materials Transportation Compliance Programs.....	3
2.1 Review of FY 2001 MCSAP Commercial Vehicle Safety Plans	3
2.2 Survey of State Hazardous Materials Compliance and Enforcement Programs.....	5
State Regulatory Authority	5
State Hazardous Materials Compliance Programs.....	6
Resource Allocation.....	10
Specialized State Hazmat Safety Initiatives	10
Education, Training, and Outreach	10
Hazmat Transportation Security	13
Overview of State Survey Findings	14
3.0 Identification of States with Comprehensive Hazmat Transportation Compliance Programs and Exemplary Initiatives.....	15
3.1 Introduction.....	15
3.2 Selection Process for Identifying Comprehensive State Programs.....	15
3.3 State Site Visits and Interviews	18
4.0 Review of Selected State Hazmat Compliance Program Activities and Identification of Exemplary Practices.....	20
4.1 Introduction.....	20
4.2 Overview of Selected State Programs.....	20
4.3 Roadside Inspection Programs.....	24
Introduction.....	24
Selection of Qualified Inspectors.....	25
Increasing Hazmat-to-Total Motor Carrier Inspection Ratio.....	25
Establishing Performance Measures for Hazmat Roadside Inspections.....	26
Improving Agency Coordination on Hazmat Roadside Inspections.....	26
Establishing Objective Guidelines for Targeting Hazmat Vehicles for Inspection.....	27
Targeting High-Risk Areas for Hazmat Roadside Inspections.....	28
Targeting Special Classes of Hazardous Materials.....	29
Greater Use of Technology in Hazmat Vehicle Selection	30
Improving Penalty Assessment for Hazmat.....	32

- 4.4 Compliance Reviews33
 - Missouri Educational Contact and Compliance Review Program.....34
 - California Biennial Inspection of Terminals Program.....35
 - West Virginia Desk Audit of Alliance Permit Registration Applications36
- 4.5 Shipper Reviews37
 - South Carolina Shipper Review Program.....37
- 4.6 Training, Education, and Outreach38
 - 4.6.1 Training Programs 38
 - National Training Center Hazmat Training Program38
 - California Hazmat Training Program40
 - Missouri Hazmat Training Program41
 - Illinois On-the-Job Training42
 - Ohio Grant Program for Training42
 - 4.6.2 Education and Outreach..... 43
 - California Commercial Industry Education Program43
 - Missouri Industry Outreach Program.....43
 - New York State Judicial Outreach Program.....45
 - Illinois Outreach Program.....45
- 4.7 Hazmat Transportation Security45
 - Developing a Statewide Hazmat Transportation Security Plan.....46
 - Developing Hazard Mitigation Strategies.....47
- 4.8 Permitting, Registration, and Routing47
 - 4.8.1 Permitting and Registration 47
 - Alliance for Uniform Hazmat Transportation.....48
 - California Hazmat Licensing Program49
 - 4.8.2 Routing Programs 50
 - California Hazmat Routing Program50
 - Colorado Hazmat Routing Program.....51
- 4.9 Cargo Tank Inspection and Testing52
 - Illinois Cargo Tank Facility Inspection Program.....52
 - South Carolina Cargo Tank Facility Inspection Program.....52
- 4.10 Other Program Initiatives.....53
 - South Carolina Statewide Risk Management Plan53
 - Hazmat Package Inspection Program53
 - Hazmat Incident Compliance Enforcement53
- 5.0 Summary55

Appendix A. Survey Questionnaire56

Appendix B. Composite Measurement Index.....67

List of Tables

Table 1. Review of FY01 MCSAP Commercial Vehicle Safety Plans: Hazmat Programs 4

Table 2. State Agencies with Authority over Hazmat Carriers and/or Shippers 7

Table 3. Elements Routinely Checked in Roadside Hazmat Safety Inspections 8

Table 4. Hazmat Carrier Compliance Reviews..... 9

Table 5. State Selection Criteria Used for Carrier Compliance Reviews 9

Table 6. Performance Measures Used to Evaluate Hazmat Program Effectiveness..... 9

Table 7. Special Activities or Strategies Used for State Hazmat Compliance Programs 11

Table 8. State Hazmat Education and Outreach Program Descriptions 11

Table 9. State Hazmat Training Activities..... 12

Table 10. State Hazmat Security Activity Planned or Implemented 13

Table 11. Agency Responsibilities in the Eight Selected States for Each Program Element..... 21

Table 12. Hazmat Roadside Inspection Activity in Study States: 2000 26

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1.0 Introduction

The purpose of this project is to review the state of the practice for state hazardous materials (HM) transportation compliance programs and to identify exemplary initiatives and programs that could serve as a model for other states to consider. Battelle collaborated with the Commercial Vehicle Safety Alliance (CVSA) to conduct this study on behalf of the Hazardous Materials Division in the Federal Motor Carrier Safety Administration (FMCSA).

A two-step process was used to gather the required information: (1) a comprehensive survey and analysis of all state hazmat programs, and (2) a selection of eight states for more in-depth study to identify unique or exemplary initiatives that may be of interest to other states. It is recognized that most states have similar overall programs for regulating hazmat transportation in order to be consistent with Federal requirements and as part of the MCSAP grant program. However, not all states are the same in the manner in which they implement their programs and some state processes are more effective than others. Some states may have a different perspective and a unique way of achieving their program goals. The purpose of this project was to look across all state programs and identify highly effective or exemplary programs, as appropriate.

The first step was to review the status of state programs by extracting information related to hazardous materials from the Commercial Vehicle Safety Plans (CVSPs) submitted by each state as part of the Motor Carrier Safety Assistance Grant Program (MCSAP). Using this information, and working with CVSA and FMCSA, Battelle developed a survey/questionnaire to gather more detailed information on the state compliance and enforcement programs related directly to hazardous materials. This step and the results of the survey are discussed in Section 2 in this report.

The second step was to identify a select number of states for further in-depth review including site visits and interviews. It was not intended that these states necessarily have the “best” compliance programs, but that they have a comprehensive and effective overall program based on the results of the survey analysis. A methodology was developed to select eight states for site visits and this process is described in Section 3 of this report. In Section 4, we identify exemplary programs or initiatives based on the analysis of information gathered from the site visits and interviews.

Each of the individual programs highlighted in this report has been successfully implemented in their respective states and is believed to produce substantial benefits; however, they cannot be definitively shown to warrant immediate implementation in all jurisdictions. While some states were able to demonstrate measurable benefits, such as California with their Commercial Industry Education Program (CIEP), most states are not able to identify the benefits for each element of their overall programs. Each state presents its unique set of industries, geography, climate, hazmat traffic volumes, responsible agencies, and budgetary constraints. Programs that are effective in large states may prove to be hard to implement in smaller states with fewer resources. The CIEP, for example, involves 8 coordinators and 45 trained instructors and provides free training for up to 35,000 employees/drivers each year. Even after adjusting for state size, a smaller state may find such a program to be too large.

2.0 Review of State Hazardous Materials Transportation Compliance Programs

The technical approach taken by Battelle to document state hazmat compliance and enforcement initiatives was to: (a) review the FY01 Commercial Vehicle Safety Plans (CVSPs) submitted to FMCSA under the Motor Carrier Safety Assistance Program (MCSAP) and (b) develop a survey questionnaire for the states based on the information from the CVSPs for the purpose of updating and confirming information and to document each state's authority to conduct hazmat enforcement activities beyond roadside inspection such as shipper audits. CVSA, a member of the Battelle team, played a key role in the development of the questionnaire. Feedback from the FMCSA Contracting Officer's Technical Representative (COTR) was received and incorporated into the survey questionnaire.

2.1 Review of FY 2001 MCSAP Commercial Vehicle Safety Plans

The Motor Carrier Safety Assistance Program (MCSAP) provides funds to states and territories annually, on a Federal fiscal year (FY) basis. There are two components to MCSAP funding: a basic grant that is formula-driven by legislation and incentive grants that are performance-driven and discretionary. Commercial Vehicle Safety Plans (CVSPs) are required to be submitted under MCSAP certification for funds and the plans include state identification of performance measures to evaluate the programs. The CVSPs were considered by the Battelle team to be the best source of existing information on hazmat compliance and enforcement at the state level, although it was recognized that the hazmat information available in the CVSPs was limited.

The CVSPs for FY 2001 were reviewed to determine if the states included a specific reference to their hazmat compliance and enforcement programs or a description of activities related to hazmat inspection and enforcement initiatives. The information obtained from the CVSP review was used to assist in the development of the questions in the survey questionnaire. The review indicated that only a few states included mention of hazmat compliance and enforcement activities in their performance plan. For those states that included hazmat enforcement, little detail was given. Most states had no reference to their hazmat programs and a few included hazmat as a line item in the budget detail. Table 1 summarizes the results of the review.

Although little detail on hazmat is provided in the CVSPs as shown by Table 1, the information served as the initial baseline as to what importance some states may or may not place on the hazmat component of the overall state compliance program. It also indicates enforcement priorities as related to hazmat in some responding states.

Table 1. Review of FY01 MCSAP Commercial Vehicle Safety Plans: Hazmat Programs

State	Identified in CVSP	Description of Hazmat Enforcement Activities
Alabama	Y	Quarterly saturation HM inspections; HM training; details in high HMT areas
California	Y	HMT discussed in summary; carriers of HM licensed for chemical pesticides (5,218); reduced by 9 % HM incidents/crashes since 1995; HM training included
Connecticut	Y	Goal to increase compliance with HM by increasing inspection #
Maryland	Y	MdSP program includes HM Compliance Reviews; MDE program for HM Enforcement
Michigan	Y	Special HM Training Tank Program for responders, Fire Dept., responders
Minnesota	Y	Strategy to reduce # and severity of crashes is HM Shipper Compliance Reviews following Motor Carrier Dock audits.
New Hampshire	Y	HMT Permits required and are checked during inspection
New Jersey	Y	ID problem HM carriers for safety compliance activity
Nevada	Y	HM enforcement includes Nevada HP HM Core Team of 7; "Waste Isolation Pilot Plant" Program (LLRadwas)
Puerto Rico	Y	Objective to ID and reduce HM cargo tank OOS vehicles by 5% over 3 years starting in 1998/ID special problem carriers and corridors
South Carolina	Y	Compliance reviews for carriers and shippers; target repeat offenders
South Dakota	Y	Carrier education; public education and awareness effort
Vermont	Y	Canada/US border HM transport problem with OOS rate.
Arkansas	N	HM training included in plan
Arizona	N	HM training included in plan; data on incidence of crashes summarized in text;
Colorado	N	FY 2000 did not meet goal for # of HM inspections, approx. 50% fewer; monitor and target repeat offenders of HM violations
Dist of Columbia	N	
Delaware	N	Goal to reduce # of HM crashes at high crash locations
Florida	N	
Georgia	N	HM training
Iowa	N	Decrease in # of HM inspections in 1998 from 1997 Level I & III
Idaho	N	Inspection activity includes HM data
Illinois	N	HM details and training
Indiana	N	
Kansas	N	HM training
Kentucky	N	HM inspections failed to meet national requirement of 10% of inspections
Louisiana	N	HM training
Maine	N	
Massachusetts	N	
Mississippi	N	
Missouri		CVSP was not available
Montana	N	
North Carolina	N	HM training
North Dakota	N	
Nebraska	N	
New Mexico	N	
New York	N	
Ohio	N	Annual registration of HM carriers, verify insurance (PUCO)
Oklahoma	N	
Oregon	N	
Pennsylvania	N	
Rhode Island	N	
Tennessee	N	
Texas	N	
Utah	N	
Virginia	N	
Washington	N	
West Virginia	N	
Wisconsin	N	
Wyoming	N	POE records all HMT vehicles that are placarded in the database

2.2 Survey of State Hazardous Materials Compliance and Enforcement Programs

The Battelle Team developed a survey questionnaire in consultation with FMCSA. The questionnaire was organized into six sections:

- Section I. Regulatory Authority for State Program,
- Section II. Hazmat Compliance Program,
- Section III. Resource Allocation,
- Section IV. Other Hazmat Safety Programs,
- Section V. Education, Training, and Outreach, and
- Section VI. Hazmat Transportation Security.

The survey questionnaire was distributed by the FMCSA State Programs Office through the Division Administrators to the states, the District of Columbia, and U.S. Territories (American Samoa, Guam, Northern Mariana Islands, Puerto Rico, and U.S. Virgin Islands) on January 3, 2002. States were requested to complete and return the survey by February 15, 2002 to the State Directors who forwarded them to the contractor. Forty-seven states and two territories returned completed surveys.

The survey questionnaire is included as an attachment to this report (Appendix A). The survey included an assortment of questions that consist of open-ended, fill-in the blanks with data, check-off all that apply, and subjective responses. The latter include those in Section II that allow the respondents to identify their major regulatory compliance issues (question 1) and rate their state program (question 14). The survey was distributed to each state's MCSAP coordinator who further distributed it to the person(s) assigned to complete it. The survey questions cover many functional areas that required information on financial as well as legal and operational aspects of the agency programs. Consequently, responses to the questions varied between states, and in some cases, within a state where more than one agency was involved in the program. Potential weaknesses in the survey included unanswered or incomplete answers to individual questions and, in some cases, responses that resulted from questions being interpreted in a different way than was intended. These weaknesses were taken into account in the selection methodology for state visits and further study.

The information collected from the states that responded was entered into a Microsoft Excel worksheet and was used as the primary component in the selection process to identify states for further detailed study. A separate report on the state survey ("Results of the Survey of State Hazmat Compliance and Enforcement Programs") was prepared and delivered to FMCSA for their internal use. However, highlights of some of the findings are presented here to illustrate key information that was useful in selecting states for further review.

State Regulatory Authority

The responses to the first section of the survey offer a good overview of state regulatory authority over hazmat transportation. The survey requested information on the process the state used when it first adopted the federal hazardous materials regulations (HMRs) and how periodic changes were adopted (either by reference or by legislation). Adoption by reference means the state legislation adopting the federal HMRs made specific reference to the federal citation rather

than incorporating the language of the federal law verbatim (adoption by legislation). The responses received from the 47 states and 2 territories indicate that 30 states adopt by reference. Three of the 30 states (Kentucky, New Jersey, and Texas) indicated they also adopted by legislation. Twenty-one states adopted the HMRs by legislation and one by rulemaking. Changes to the federal HMRs are adopted automatically in 29 states, 11 states require legislative action, and 9 states adopt through a rulemaking process.

The survey asked states to identify all agencies in the state with enforcement authority over hazmat carriers. In 43 of the 49 responses, the State Police were listed, 14 states included the Department of Transportation, 7 states included the Department of Motor Vehicles, 20 states included an Environmental Agency, 10 states included the Public Utility/Service Commission, and 13 included other agencies (Fire Marshal, Port Authority, Health, Agriculture, and local law enforcement) and a majority of states have two agencies with authority over hazmat carriers.

The survey also requested information on state enforcement authority over hazmat shippers. In 25 states, the State Police has enforcement authority, as does the state environmental agency in 19 states. Only nine states do not have agencies with enforcement authority over hazmat shippers. Table 2 summarizes state authority over hazmat carriers and/or shippers by agency.

The authority of state enforcement officers to stop and open commercial motor vehicles (CMV) known or suspected to be transporting hazmat is considered by FMCSA to be essential to the effectiveness of a state program. Forty-six of the 49 states indicated they have authority to stop and open a CMV transporting hazmat, and 43 of the 49 have authority to stop and open a CMV suspected of transporting hazmat. Massachusetts, Nebraska, and Washington indicated they do not have authority to stop or open a CMV suspected of transporting hazmat.

State Hazardous Materials Compliance Programs

The second section of the survey involved various aspects of state compliance programs for hazmat. State hazmat transportation compliance programs consist of many components, including regulation, roadside inspections and enforcement, fines and penalties for violations, carrier and shipper compliance reviews, data management systems, and resource allocation. Responses for each of these areas are documented extensively in the separate state survey report.

The State Police is the primary agency conducting hazmat roadside inspections in 40 states. Other agencies with roadside inspection authority for hazmat include: DOTs (9 states), DMVs (5 states), Environment (2), Public Utility Commission (3), State Fire Marshal (Georgia) and Port of Entry (Colorado). Some states have overlapping inspection authority across agencies.

Responses to staffing levels dedicated to hazmat transportation roadside inspections varied considerably from a low of 4 in South Dakota to a high of 591 in California. Obviously, these responses involved differing interpretations for the definition of a hazmat inspector. For the most part, it is believed that these are the number of general motor carrier enforcement specialists with hazmat training, not inspectors “dedicated” to hazmat.

Table 2. State Agencies with Authority over Hazmat Carriers and/or Shippers

State	State Police	DOT	DMV	ENVR	PUC/PSC	Other	Total with Authority	
							Carriers	Shippers
Alabama	C, S				C		2	1
Arizona	C					C	2	0
Arkansas	C						1	0
California	C,S			C,S		C,S	3	3
Colorado	C,S				C,S	C,S	3	3
Connecticut	C,S		C				2	1
Delaware	C,S			C,S			2	2
Florida	C	C,S		C,S		C,S	4	3
Georgia			C,S	S		C,S	2	3
Hawaii		C,S				C,S	2	2
Idaho	C,S	C,S		C,S			3	3
Illinois	C,S	C,S					2	2
Indiana	C,S						1	1
Iowa		C,S					1	1
Kansas	C			C,S	C,S	C	4	2
Kentucky		C					1	0
Louisiana	C,S						1	1
Maine	C,S						1	1
Maryland	C,S			C,S		S	2	3
Massachusetts	C,S			C,S			2	2
Michigan	C,S			C			2	1
Minnesota	C,S	C,S		C,S		C,S	4	4
Mississippi					C,S		1	1
Missouri	C			C,S		C,S	3	2
Montana	C	C					2	0
Nebraska	C						1	0
New Hampshire	C,S		C,S				2	2
New Jersey	C,S			C,S		C	3	2
New Mexico	C	C,S					2	1
New York	C,S	C,S		C,S			3	3
North Carolina			C,S				1	1
North Dakota	C					C	2	0
Ohio	C			C,S	C,S	C,S	4	3
Oklahoma	C,S				C		2	1
Oregon	C	C				C,S	3	1
Pennsylvania	C	C	C	C,S	C		5	1
Rhode Island	C,S			C,S	S		2	3
South Carolina	C,S						1	1
South Dakota	C,S						1	1
Tennessee	C						1	0
Texas	C,S	S		C,S	C,S		3	4
Vermont	C		C				2	0
Virginia	C			C			2	0
Washington	C,S			C	C		3	1
West Virginia	C	C	C	C,S	C	S	5	2
Wisconsin	C			C,S			2	1
Wyoming	C,S	C		S	S		2	3
American Samoa	C,S						1	1
N. Mariana Is.	C					S	1	1
Total:	43,25	14,9	7,3	20,19	10,7	13,12		

C= Carrier S= Shipper

Table 3 shows the relative uniformity of roadside inspection across the states. All 49 respondents indicated they routinely check for mechanical (equipment), shipping paper, and placarding violations during roadside safety inspections of commercial vehicles transporting hazmat. Only 24 states routinely check carrier safety records. In addition to the roadside inspection elements specifically identified, 21 states also check for compliance with state requirements and laws such as RSPA permits, International Fuel Tax Agreement (IFTA), International Registration Plan (IRP), insurance, and operating authority.

Table 3. Elements Routinely Checked in Roadside Hazmat Safety Inspections

	Mechanical	Cargo Tanks/ Containers	Driver Qualification	Packaging	Carrier Safety Record	Shipping Papers, Placards	Other
Number of States	49	48	48	46	24	49	21

Thirty-five states indicated they perform hazmat carrier compliance reviews (CRs). Of the 34 states, seven of the states did not provide information on the portion of their CRs that were hazmat CRs. Of the remaining 27 states, 17 indicated that CRs for hazmat carriers comprised ten percent or less of all CRs in the state. Table 4 summarizes the hazmat CR component of the state programs that was reported.

The identification of carriers for hazmat compliance reviews are usually based one or more factors. States were asked to estimate what percent of hazmat inspections resulted from periodic inspections, carrier performance, random selection, or other (specified). Twenty-five states responded to this question and the results are shown in Table 5.

The states were asked to identify information sources used by them to identify which carriers required compliance action. Twenty-three states indicated that they use SafeStat as the primary source of data.

Finally, under the Compliance Program section of the survey, respondents were asked to identify the performance measures used to evaluate their hazmat program effectiveness. Table 6 summarizes the responses and shows what performance measures each state is using. Budget/Resources is the measure used by the fewest number of states.

Table 4. Hazmat Carrier Compliance Reviews

States Conducting Hazmat CRs	Agency	Staffing	Hazmat CRs as Percent of CRs
Arizona	Public Safety	8	5
Colorado	State Police	6	10
Connecticut	Motor Vehicle	1	
Florida	Dept. of Transportation	23	2
Georgia	Motor Vehicle Services	3	10
Idaho	State Police	5	1
Illinois	Dept. of Transportation	8	NA
Indiana	State Police	6	<1
Kansas	Highway Patrol & Corporation Commission	8	10
Kentucky	Division of Vehicle Enforcement	6	3
Louisiana	State Police	6	10
Maine	State Police	6	50
Michigan	State Police	15	NA
Minnesota	Department of Transportation	10	10
Mississippi	Public Service Commission	6	20
Missouri	Dept. of Economic Development; Dept. of Natural Resources	31	15
Montana	Highway Patrol	7	1-2
Nebraska	State Patrol	2	5
New Hampshire	State Police	3	NA
New Jersey	State Police	3	NA
New Mexico	Public Safety/Motor Transportation Division	3	7
New York	Dept. of Transportation	10	1
North Dakota	Highway Patrol	4	10-20
Ohio	Public Utilities Commission	26	40
Oklahoma	Highway Patrol	4	NA
Oregon	Dept. of Transportation	24	5
Rhode Island	State Police	1	NA
South Carolina	Transport Police	4	NA
Tennessee	Dept. of Safety	15	<10
Texas	Public Safety	60	10.9
Virginia	State Police	7	24
Washington	State Patrol	12	3
West Virginia	Public Service Commission	1	100
Wisconsin	State Patrol & Dept. of Natural Resources	24	5
Wyoming	Highway Patrol	2	19

Table 5. State Selection Criteria Used for Carrier Compliance Reviews

Number of States Responding = 25

	Periodic Inspection	Carrier Performance	Random Selection	Other
Number of States	8	15	6	14

Table 6. Performance Measures Used to Evaluate Hazmat Program Effectiveness

	Total Number of Hazmat Incidents	Severe Incident Trends	Hazmat Violations and Enforcement Actions	Hazmat Carrier/Shipper Inspection Trends	Budget/Resources Trends
Number of States	27	32	34	31	19

Resource Allocation

In Section III of the survey, respondents were asked to provide information on funding for fiscal year 2001 by major program component and source. Responses to this question indicate most states do not have the program broken into hazmat components in the budget. Twenty-three of the 49 provided no response or indicated the data were not available or not specified in the budget or was part of their MCSAP program.

States were asked to provide the funding by source, federal and state, and estimate the percentage of the overall program budget each represented in fiscal year 2001. Calculation of the percentages varied among the respondents. Of those responding, the majority indicated 80 percent of the funding was federal and 20 percent state. The hazmat programs in Arizona, California, and Idaho are 100 percent state funded according to the survey responses.

States were asked to provide an estimate of state and federal dollars spent on hazmat compliance and enforcement activities for a five-year period from fiscal year 1997 through 2001. Responses are reported in the separate state survey report but the accuracy varies considerably, mainly because of different state accounting and allocation practices. Credible budget and resource information directly related to hazmat compliance was difficult to obtain as part of this effort and is of limited value in constructing any kind of cost-benefit comparison of state programs.

Specialized State Hazmat Safety Initiatives

States were also asked to identify any state or regional activities such as special strike forces or other unique enforcement strategies for hazmat carrier and shipper compliance. The responses are summarized in Table 7. It appears that many states participating in some programs, such as the nationwide Security Sensitivity Visits, did not consider them worthy of mentioning, while others did.

Education, Training, and Outreach

Section V of the survey requested information from the states on their efforts to train enforcement personnel on federal hazmat regulations and regulatory updates and any additional state initiatives. In addition, information on efforts to promote public and industry education and training through outreach activities was requested. Industry education and outreach programs are becoming more significant components of state compliance programs. Table 8 summarizes the programs in responding states. In general, states that provide some type of training to industry do so upon request. All states but one provide training for hazmat enforcement as shown in Table 9.

Table 7. Special Activities or Strategies Used for State Hazmat Compliance Programs

Periodic or Random Strike Force	Multi-Agency Strike Force Activity	National Shipper or HM Check	CVSA Cargo Tank Inspection Day	Safety Sensitivity Visits (SSVs)	None Identified
Alabama California Connecticut Iowa Idaho Maryland Ohio South Carolina Texas Washington	Arkansas Florida Georgia Massachusetts Michigan Minnesota Missouri New Jersey Oklahoma Virginia American Samoa	Hawaii Kansas Louisiana Minnesota	Michigan	Colorado Indiana Louisiana Maine Tennessee	Arizona Delaware Illinois Kentucky Mississippi Montana North Dakota Nebraska New Hampshire New Mexico Oregon Rhode Island South Dakota Vermont Wisconsin West Virginia Wyoming N. Mariana Is.

Table 8. State Hazmat Education and Outreach Program Descriptions

State	Program Description
California	Commercial Industry Education Program
Florida	Website posting of HM regulations with links to FMCSA and federal sites
Hawaii	HM training to carriers provided 20 times a year by Transportation Association
Idaho	HM safety presentations to carriers and shippers
Iowa	Conduct 60-90 HM outreach sessions annually. Have HM Industry advisory group of about 30.
Kansas	NTC Basic HM courses
Massachusetts	Presentations at industry functions
Minnesota	Communication and Training Section of DOT/MCS trains public and private organizations
Missouri	Assist with Specialized HM seminars sponsored by MC Association
New Hampshire	Sponsor FMCSA HM class for industry
New Jersey	Presentations and demonstrations 3-4 times per month
Ohio	Exhibit at HM carrier/shipper trade shows, distribute material on HMT and compliance
South Dakota	Exhibit at trade shows, fairs; do mass mailings; have seminars
West Virginia	Participate in AUHMTP, which requires carrier to complete permit section of application tri-annually, which forces carrier to review the requirements for compliance with the safety fitness regulations. Has resulted in bringing deficient carriers into compliance.
Wyoming	Seminars with Wyoming Trucking Association
American Samoa	Provide lectures to carriers, drivers, owners at inspection sites and at motor vehicle department

Table 9. State Hazmat Training Activities

State	Training Conducted	
	Enforcement	Industry
Alabama	HM FMCSA Basic; Cargo Tank/Bulk Packaging;	Basic training on request
Arizona	SPCVE one-week basic; Bulk Packaging; CVSA Level VI; one-week basic HM training for local enforcement on request	Fill vacancies in Basic and Bulk courses
Arkansas	FMCSA/NTC Roadside enforcement; HP 2-day HM enforcement refresher	None
California	First Responder Awareness; HM Incident Command; HM Technician/specialist; HM Assistant Safety Officer; HM Rail Car Safety; RAM Response and Enforcement; Basic HM Inspection and compliance; Bulk packaging; Enhanced Level I (RAM)	Commercial Industry Education Program; Mexican Commercial Industry Education
Colorado	Response training per OSHA required	Safety talks
Connecticut	Courses offered by FMCSA or other specialized training as available*	CR and IRAP; invited presentations
Delaware	None	None
Florida	CVSA training for Enforcement	None
Georgia	40-hr HM NAS; 40-hr Cargo Tank; enhanced NAS for RAM; HMR updates, COHMED	Outreach seminars
Hawaii	Once a year Federal training on new regulations	None
Idaho	Various HM awareness training	SSVs with HM carriers
Illinois	In 2001 conducted 5 one-day HM training workshops	Seminars/workshops for industry
Indiana	NTC CVSA certified course for roadside inspections	None
Iowa	40-hr HM basic course; 40-hr Cargo Tank; Annual refresher course. HM awareness course given to all peace officers in law enforcement academy.	None
Kansas	PROs; Refresher	PROs
Kentucky	Basic HM Course	None
Louisiana	NAS Level I; NAS Roadside HM enforcement; NAS Cargo Tank/Bulk Packaging	HM response training for a fee at hands-on training center
Maine	Basic HM course	SSVs
Maryland	Initial certification of inspectors; recertification; specialized training as needed	Upon request
Massachusetts	Basic HM; Cargo Tank, Level VI inspections	Speaking at industry functions
Michigan	Cargo Tank/Bulk Packaging; CVSA enhanced RAD Inspection	HMR courses 3-4 times per year; ER to cargo tanks to Fire Dept.
Minnesota	HM incident response training; Hazardous waste transportation; Basic & Bulk Packaging	HM Communication & Packaging; Train the trainer; hazardous waste transportation; cargo tank compliance
Mississippi	Basic HM course; Bulk packaging; enhanced HM	None
Missouri	NTC scheduled as needed to enhance training; specialized courses	HM seminars with MC Association
Montana	Annually, 20-25 officers receive HM roadside inspection course; Cargo tank/Bulk packaging; All 200 MHP officers are trained in Emergency Response.	Training shipping papers, placarding, packaging HMRs on request
Nebraska	Refresher training for all inspectors	SSVs
New Hampshire	Awareness level training for all recruits	Awareness level training on request
New Jersey	NASTI Basic HM cargo tank	Education outreach program
New Mexico	Refresher training for all inspectors	As requested
North Dakota	Basic Emergency Response	None
Ohio	Basic HM; Cargo Tank inspection; Level VI inspections; OSHA HM technician training; RAM safety training	Attend carrier and shipper safety meeting
Oklahoma	NTC standards with annual refresher	Safety talks as requested
Oregon	HM certification; tank certification; annual HM refresher	None
Rhode Island	Region 1 Academy in Ma & in-service	Educational contacts
South Carolina	NTC courses, CVSA courses, DOE courses	Training with SC Trucking Assoc.
South Dakota	NTC Roadside HM inspection; Cargo tank	Outreach seminars
Tennessee	In-service training updates	On request
Texas	Basic 40-hour; 40-hour class on Bulk packaging, carrier inspections. Advanced refresher courses; annual recertification for city/county enforcement	Information and assistance on request
Vermont	Use Mass. SP Regional Training Academy	As requested
Virginia	Annual in-service training; NTC/CVSA basic courses for new personnel	As requested
Washington	CVSA 40-hr refresher	Safety talks
West Virginia	Basic HM course; Bulk packaging; In-service training annually	Upon request
Wisconsin	Basic HM and Bulk packaging training	Safety talks on request
Wyoming	Annual in-service for all inspectors	CR seminars for trucking assoc.
American Samoa	Basic	None
N. Mariana Is.	NR	Safe Transport of HM; Transport Safety; HM Transport; HAZWOPR

Hazmat Transportation Security

States were asked if they had implemented, or planned to implement, a plan for addressing hazmat security. Thirty-two respondents answered “none” to the question and 18 indicated they had either implemented or planned to implement a plan. This survey was conducted before the issuance of RSPA’s Docket HM-232 on the development of industry security plans.

Table 10 provides descriptions of the hazmat security activities identified by the respondents as planned or implemented.

Table 10. State Hazmat Security Activity Planned or Implemented

State	Description
California	Industry driver security awareness; Safe delivery of fuels being reviewed
Colorado	Increased alert and inspections for hazmat
Connecticut	Increased inspections of hazmat carriers, Safety Security Visits (SSV) following FMCSA directive.
Florida	Numerous plans/programs started or proposed. No details given.
Georgia	Including security in hazmat plan for DMVS
Hawaii	No description provided
Idaho	SSVs to carriers and shippers in the state
Illinois	SSVs conducted, increased Level III hazmat roadside inspections
Kansas	SSVs conducted
Kentucky	Follow lead of FMCSA. Willing to participate in activities.
Louisiana	SSVs to carriers and shippers. High level of hazmat roadside inspections. Developing system to pass intelligence information on terrorism to industry via Louisiana Industrial Counter-Terrorism Information Council
Maine	SSVs to hazmat carriers
Maryland	Motor Vehicle Administration introducing legislation for background checks for CDL hazmat endorsements
Michigan	Hazmat driver licensing by Michigan Dept. of State to include background checks
Minnesota	SSVs to hazmat carriers, hazmat transportation security training module added, increased awareness by inspectors
Missouri	New Homeland Security Office created
Montana	All officers involved in CMV enforcement perform at least a Level III driver inspection on hazmat vehicles
Nebraska	SSVs to hazmat carriers and fertilizer associations
New Hampshire	Distributing safety points from FMCSA
New Jersey	Emergency Management plan
North Dakota	Conduct Level III inspections on all hazmat carriers
Ohio	Planning for hazmat security is done through cooperative measures with FMCSA, OSHP, and PUC. Concentrated hazmat SSVs conducted at request of FMCSA. Provide escorts for Class 7 hazmat
Tennessee	Offering security tips to carriers and industry
Texas	Participate in SSVs, encourage cities to review or implement hazmat routing
Vermont	General higher level of awareness
Virginia	Task Force formed to look at hazmat transportation as related to homeland security
West Virginia	DPS is implementing a plan for homeland security; PSC is active in this initiative. Working with AUHMTP, CVSA to improve hazmat security
Wyoming	Emergency Management Agency is preparing a state plan

Overview of State Survey Findings

The results of the state surveys provided significant insight into the overall state hazmat compliance “state-of-the-practice.” Although the data collected for some areas of the survey (e.g., Program Budget and Resources) was spotty and inconsistent, the information collected does provide a good overall snapshot of state hazmat compliance programs – both similarities and differences. The results were also useful in providing the baseline information from which to begin to identify effective state programs and exemplary activities and initiatives as discussed in the next section.

3.0 Identification of States with Comprehensive Hazmat Transportation Compliance Programs and Exemplary Initiatives

3.1 Introduction

The next step in the project was to select state programs that are considered “comprehensive” in their approach to hazmat compliance based on the survey data. These programs were considered most likely to include unique or particularly effective initiatives or individual programs that could serve as examples for other states as best practices. The comprehensive database of information collected from the state surveys was utilized as the foundation for this activity. As clearly demonstrated in the separate state survey report, the great majority of state programs are very similar. Nevertheless, there are also some important variations in individual programs from state to state. The project team developed an approach to be able to identify exemplary state programs from this comprehensive yet disparate database of information.

An objective approach was developed to select the sample states based on different types of initiatives that each state employs, the resources allocated, and their results. A common approach for integrating varying components into a single comparison is by combining normalized or unitless measures. This is the approach taken here, wherein different aspects of a state hazmat compliance program are assigned numerical values based on its level of implementation or magnitude, and these values are integrated into a single relative index for comparison. For this project, a Composite Measurement Index (CMI) was created. The selection of program components to be measured and the weights assigned to each are primarily subjective on the part of the project team. This process merely allows a reasonable way of differentiating between the many, disparate state programs and is discussed in more detail in the following sections.

3.2 Selection Process for Identifying Comprehensive State Programs

The Battelle team carefully reviewed potential components of a hazmat compliance program in order to determine criteria to be used to develop the CMI. Two categories of program components were developed – baseline program components and “enhanced” HM program components. The “enhanced” program components were assigned a higher weighting than the baseline. Program components that the project team considered baseline components of a hazmat compliance program include the following:

- Random enforcement – random inspections and compliance reviews was identified as one essential element of an effective state compliance program.
- Terminal inspections – inspections of carrier facilities beyond the principal place of business (primarily terminals) was considered an indication of a progressive state hazmat compliance program.
- Cargo tank testing facility inspection program – established programs for inspecting cargo tank testing facilities were also considered a baseline element.

- Authority to stop vehicles – the authority to stop vehicles suspected of carrying hazmat was considered especially critical to an effective compliance program.
- Authority to open vehicles – the authority to open vehicles suspected of carrying hazmat was also considered an important indication of a highly effective state program
- HM carrier complaint tracking – states with a system for keeping track of carrier complaints was considered an indication of a progressive state inspection targeting program.
- Active HM training program – an active and creative training program was considered a requirement as a baseline program component.
- HM security plan – having a plan in place or under development was considered an important and progressive hazmat system component at the state level.
- High HM registrants – the project team sought to include consideration of states with a large number of hazmat carriers and shippers as one criterion.

In addition to these baseline components, the project team selected “enhanced” program components that evidenced a more comprehensive state program oriented toward hazmat compliance. These include the following:

- Performance measurement – states that indicated they had established their own internal and external performance metrics were considered more progressive.
- Reviews based on quantitative data – the use of quantitative and objective data to aid in the selection of compliance reviews was considered a plus.
- Uniform HM permitting program – involvement in a uniform permitting program specifically directed at hazmat was considered evidence of a progressive state program.
- HM inspector ratio – a high ratio of HM inspectors to total motor carrier inspectors was considered an “enhanced” attribute.
- Serious highway HM incident reduction – a key discriminator to identify effective HM compliance programs was seen to be the reduction in serious HM incidents.
- Inspectors/inspections to HM registrants ratio – the project team identified several ratios related to the number of HM registrants that could be indicators of comprehensive state hazmat programs including both inspectors and total inspections.
- HM shipper reviews – performing HM shipper reviews was considered an enhanced HM compliance attribute.

The CMI is determined by summing the values assigned to each of the program components discussed above. The baseline components receive a value of 1 if the criteria are met and 0 otherwise. The “enhanced” hazmat program components are given greater weight and receive a

value of 2 if the criteria are met and 0 otherwise. States with limited programs in these areas are given 0s. The range of CMI values is from 0 to 24.

Baseline Components that are assigned a value of either 0 or 1

States that reported on the survey that they had the following elements:

1. random enforcement
2. terminal inspections (port inspections are included)
3. cargo tank facility inspections or cargo tank testing programs
4. authority to stop vehicles
5. authority to open vehicles (i.e., break seals)
6. state hazmat carrier complaint tracking (if compliance reviews are conducted based in part on complaints received)
7. active hazmat training program
8. state has or is implementing an hazmat security plan
9. number of state hazmat registrants is in the top 20% of all states

“Enhanced” Program Components that are assigned a value of either 0 or 2

States that reported on the survey that they had the following elements:

1. performance measurement (determined by Section II, question 15 of the survey: a “1” would be given for a check in either items a or b AND any of items c, d, or e – i.e., one external measure and one internal measure). For example, a state that tracks the total number of incidents (item a) and examines trends in hazmat inspection trends (item d) would receive 1 point for this item.
2. carrier, shipper, or roadside inspections or reviews that are based on quantitative data analysis
3. uniform hazmat permitting program
4. ratio of state employees conducting hazmat roadside inspections compared to those conducting general truck roadside inspections is in the top 20% of all states
5. percentage reduction in serious highway hazmat incidents (RSPA data) over the last five years is in the top 20% of all states
6. ratio of inspectors to the state hazmat registrants is in the top 20% of all states
7. ratio of inspections to the state hazmat registrants is in the top 20% of all states
8. hazmat shipper reviews

The table in Appendix B provides the results of applying the CMI index for each of the program elements to each of the survey states. In the left hand side of the table, the states are ranked according to their CMI scores. As would be expected, the scores are not widely distributed, given the similarity in state programs. Also, many states have identical scores as would be expected from the type of index (i.e., scores of 0 to 2 on many different criteria) that was employed. However, there was enough variation to allow the project team to identify a group of states for consideration for further analysis.

The project team was looking to identify from five to eight states for further interviews. A convenient cutoff point was a CMI score of 13 or higher. As shown in Appendix B, this resulted in twelve states with scores from 13 to a high of 17. These states included Ohio, Missouri, New York, California, Colorado, Illinois, South Carolina, Kentucky, Minnesota, Rhode Island, Texas, and West Virginia. Battelle worked with CVSA and FMCSA to subjectively narrow this list down to eight states for site visits and detailed interviews. The final eight states selected through this process were: Ohio, Missouri, New York, California, Colorado, Illinois, South Carolina, and West Virginia.

Obviously, there is not a lot of difference in the quality of programs among all 12 of the top scoring states. The subjective process used to narrow the list to eight states included consideration mainly of geography and size of state to have representative programs from all regions of the country and from both large and small state programs. All of these 12 states were considered to have comprehensive hazmat compliance programs based on the multi-attribute index used. In fact, the next grouping of states (which included 17 states with scores from 10-12 as shown in Appendix B) were also considered at the same level of comprehensiveness and quality as the top 12, given the degree of confidence in the methodology used. Nevertheless, the project team was satisfied that the results of the ranking exercise provided a good sample of eight states with comprehensive and effective hazmat compliance programs for further investigation.

The right side of the table in Appendix B provides some quantitative data for each state for some of the criteria used in the CMI scoring and further illustrates the relative difference in various elements of the hazmat compliance programs from state to state. The numbers above each of these columns containing the supplemental calculation data indicate which CMI component made use of that data, if any. In addition, the largest, most desirable number in each column is highlighted (except for the incident reduction column, in which the lowest number—indicating the greatest reduction—is highlighted).

3.3 State Site Visits and Interviews

The project team visited the eight selected states to gather more detailed information and gain more insights on effective state hazmat compliance programs and exemplary initiatives being undertaken. As mentioned previously, these states were Ohio, Missouri, New York, California, Colorado, Illinois, South Carolina, and West Virginia. The site visits were coordinated in advance with the FMCSA COTR and with the state FMCSA hazmat directors. The key contact point within each state hazmat program was then identified and contacted. With the help of the state contact point, a series of interviews was scheduled with key staff from each state in each of the seven program areas of interest: (1) roadside inspections; (2) compliance reviews; (3) shipper reviews; (4) education, training, and outreach; (5) hazmat security; (6) permitting, registration, and routing; and (7) cargo tank inspection and testing. One member of the project team visited each state for one to two days over the period of July 2002 to October 2002.

Extensive interview notes and program material was gathered from each state site visit and has been documented in another report prepared for FMCSA (“Results of State Site Visits on Hazmat Transportation Compliance Programs”). From this information, the Battelle team has identified a number of exemplary state practices that could be considered model elements of a

comprehensive and effective state hazmat compliance program. These are discussed in more detail in the next section.

4.0 Review of Selected State Hazmat Compliance Program Activities and Identification of Exemplary Practices

4.1 Introduction

This section presents the results of the site visits to the eight states selected for further analysis as discussed in Section 3.0. Once again, these eight states were selected based upon a very subjective measurement index, not because they necessarily represent the “best” state programs. As the ranking exercise shows in Appendix B, many states were very close in their scoring. However, the project team believes that these eight states do offer an excellent sample set with comprehensive and effective hazmat compliance programs from which to identify and call out exemplary program activities that other states may want to consider.

This section is organized according to the seven program areas identified above. After an overview of each of the states’ overall hazmat compliance programs, we identify a program feature or initiative that represents an example of a “best practice” that is being performed in that state. It is recognized that other states not interviewed may already have similar initiatives. While there may be other “best practices” among other states, it is also recognized those mentioned in this report are representative of effective hazmat compliance program activities that all states may want to consider. First, however, we will present an overview of the eight state programs to serve as context.

4.2 Overview of Selected State Programs

This section presents an overview of the structure of the hazmat compliance programs at the eight states selected for in-depth interviews. An outline of the various agencies involved in each state and their primary responsibilities is provided as a frame of reference for the program components discussed in subsequent sections. Table 11 summarizes the state agencies and their responsibilities. In some cases, the responsibilities indicated in the table are limited in some way. For example, the Illinois Department of Nuclear Safety’s activities apply only to shipments of spent fuel and high-level radioactive materials. In all states listed except Missouri, the lead agency for the FMCSA’s MCSAP program is actually involved in compliance activities. However, Missouri’s Department of Public Safety only administers their MSCAP program.

California

The California Highway Patrol (CHP) is the law enforcement agency with statewide oversight and transportation enforcement authority for hazardous materials. The CHP program includes licensing, high priority random cargo tank inspection, roadside inspections, compliance reviews, biennial terminal inspections, records inspections, and inspections of carrier hazmat and driver records. Additionally, the CHP regulates the highway routing of radioactive materials and spent nuclear fuel. The state agency with oversight for the hazardous waste program is the Department of Toxic Substances Control (DTSC). The DTSC requires hazardous waste transporters to register. Statewide, the hazmat compliance program budget in California is approximately \$6.5 million.

Table 11. Agency Responsibilities in the Eight Selected States for Each Program Element

Agency (lead MCSAP agency in italics)	Hazmat Compliance Program Components						
	Roadside Inspections	Compliance Reviews	Shipper Reviews	Education/Training, and Outreach	Hazmat Transportation Security	Permitting, Registration, or Routing	Cargo Tank Facility Inspection
California							
<i>California Highway Patrol</i>	X	X			X	X	X
California Department of Toxic Substances Control						X	
State Fire Marshal's Office				X			
Colorado							
<i>Department of Public Safety, Colorado State Patrol</i>	X	X	X	X	X	X	
State Fire Marshal's Office							
Department of Revenue, Port of Entry Division	X						
Public Utilities Commission						X	
Illinois							
<i>Illinois Department of Transportation (MCSAP)</i>	X	X	X	X	X	X	X
Illinois State Police	X				X		
Illinois Environmental Protection Agency						X	
Illinois Department of Nuclear Safety	X	X	X		X		
Missouri							
<i>Missouri Department of Public Safety, Division of Highway Safety (MCSAP)</i>							
Missouri State Highway Patrol, Commercial Vehicle Enforcement Division	X			X	X		
Missouri Department of Transportation, Motor Vehicle Services Division		X			X		
St. Louis and Kansas City Police Departments, Commercial Vehicle Enforcement	X						
New York							
<i>New York Department of Transportation (MCSAP), Motor Carrier Safety Bureau</i>	X	X		X			
New York State Police, Commercial Vehicle Enforcement Unit – Hazardous Materials	X			X			
Ohio							
<i>Public Utilities Commission of Ohio</i>	X	X	X	X	X	X	
Ohio State Highway Patrol	X				X		
South Carolina							
<i>South Carolina Department of Public Safety, State Transport Police</i>	X	X	X	X			X
West Virginia							
<i>Public Service Commission of West Virginia, Transportation Division, Motor Carrier Section</i>	X	X		X		X	

Colorado

The Hazardous Materials Truck Transportation Compliance Program in Colorado is conducted by three Colorado agencies: the Department of Public Safety, Colorado State Patrol, Hazardous Materials and Motor Carrier Safety Sections; The Department of Revenue, Port of Entry Division; and the Public Utilities Commission (PUC). The Colorado State Patrol receives about 3 million dollars annually in MCSAP funding for the state and distributes 27% of it to the Port of Entry. The statewide hazmat compliance program budget is approximately \$750,000. The State Patrol conducts compliance reviews, roadside inspections, adopts permitting, routing, and safe transportation rules and regulations, develops designated hazmat routes, enforces permitting and hazmat rules, and provides mitigation expertise and other types of technical assistance at hazmat incidents. The Port of Entry also conducts roadside inspections and checks for hazmat permits. The PUC serves as the agency that issues the hazmat permit for all hazmat carriers that use the state highways.

A Joint Resolution of the Colorado House intended to improve the coordination of commercial vehicle regulation and safety activities in the state passed recently. The resolution directs all of the agencies involved in commercial motor carrier transportation to coordinate their activities under the authority of the State Patrol.

Illinois

The Illinois Department of Transportation (IDOT) is designated the MCSAP lead agency and has a memorandum of understanding (MOU) with the Illinois State Police for roadside enforcement. Both agencies have enforcement authority over carriers and shippers of hazardous materials. The IDOT conducts carrier reviews and audits shippers and their Hazardous Material Compliance Unit reviews cargo tank facilities' compliance with hazmat regulations. The hazmat compliance program budget in Illinois is approximately \$1.6 million.

The Illinois State Police (ISP) is authorized to have 89 officers assigned and dedicated to commercial motor vehicle enforcement. Functionally, the officers are assigned to the Commercial Vehicle Enforcement Unit for conducting roadside inspections. The ISP works with the Illinois Department of Nuclear Safety (IDNS) for inspection of radioactive material shipments, who is the lead agency for the program. At the border, these shipments are inspected by both IDNS and ISP inspectors, with the IDNS inspectors focusing on the radioactive aspects.

Missouri

While the MCSAP program is administered by the Division of Highway Safety in the Missouri Department of Public Safety, the two primary agencies responsible for implementing the state's hazmat compliance and enforcement program are the State Highway Patrol (SHP), Division of Commercial Vehicle Enforcement (CVE) and the Missouri Department of Transportation (MoDOT), Motor Carrier Services (MCS) Unit. The Missouri hazmat compliance program budget is approximately \$400,000.

The current MCS was created in July 2002 combining four separate state agencies. These agencies were the existing MoDOT MCS Unit, the Department of Revenue's Highway Reciprocity Commission, the Department of Economic Development's Division of Motor Carrier

and Railroad Safety, and part of the Department of Natural Resources' solid and hazardous waste management program. The reorganization provides a single state point of contact for motor carriers.

New York

There are three state agencies in New York with authority over motor carriers transporting hazardous materials: the New York Department of Transportation (NYDOT), New York State Police (NYSP), and New York Department of Environmental Conservation (NYDEC). The latter agency regulates hazardous waste shipments. Of the three agencies, only the NYSP has police powers and the authority to stop vehicles and/or issue citations. The NYDEC does not have a presence during roadside inspections. Cooperation and coordination is required for the program to work effectively and the two agencies emphasized that they work closely as “partners” in the program. New York adopted the federal hazmat regulations in 1986 and is required by its constitution to update the regulations with legislative action as changes occur; automatic adoption is specifically prohibited. New York is not able to identify the costs specifically associated with their hazmat program.

Ohio

The Hazardous Materials (Hazmat) Truck Transportation Compliance Program in Ohio is a cooperative effort between the Public Utilities Commission of Ohio (PUCO) and the Ohio State Highway Patrol (State Patrol). The PUCO conducts compliance reviews and roadside inspections while the State Patrol conducts only inspections. Funding for these activities is primarily from MCSAP monies. The PUCO receives about \$7 million per year in MCSAP funding and distributes about \$4.5 million to the State Patrol to finance their activities; hazmat-specific figures are not available.

The PUCO hazmat function is under the Transportation Department, which is divided into five divisions: Compliance Division, Railroad Division, Enforcement Division, Data Systems Division, and Motor Carrier Registration Division. The Ohio State Highway Patrol is a division of the Ohio Department of Public Safety. The State Patrol is directed by uniformed sworn officers but also has civilians in responsible positions within the hazmat program. Hazmat inspection activities are under the Office of Licensing and Commercial Standards.

South Carolina

All commercial motor vehicle enforcement in South Carolina is the responsibility of the State Transport Police (STP), including all activities related to hazardous materials transportation. The STP was created in July 1993 as a division within the South Carolina Department of Public Safety (SCDPS). The STP brought together the enforcement unit of the South Carolina Public Service Commission and the Size and Weight Unit of the South Carolina Highway Patrol.

The STP administers the MCSAP program for SCDPS, which is the lead agency for the state. Their hazmat program budget is approximately \$170,000. The STP administers all interstate and intrastate commercial motor vehicle (CMV) regulatory programs and all its officers have full arrest authority and the authority to enforce all state laws. In this regard, their responsibility

extends well beyond transportation enforcement. The STP is comprised of four principal components: field enforcement, administration, logistics, and motor carrier services.

There are seven districts in South Carolina and each is led by a district sergeant. One Lieutenant oversees four districts and another oversees three districts. The field enforcement personnel conduct roadside safety inspections, size and weight enforcement, CMV traffic enforcement, and data compilation. They also inspect and escort high-level radioactive waste (HLRW) through the state. A Special Operations Unit is folded into the field enforcement component and it has three components: the commercial vehicle investigative (CVI) unit, the hazardous materials (HM) unit, and the strategic traffic, alcohol, and radar (STAR) unit. The CVI is responsible for compliance reviews and investigating complaints of intrastate motor carriers. The HM unit focuses on CMVs transporting HM, HM accidents, and HM shipper investigations. The STAR unit deals with CMV traffic enforcement and illegal drug interdiction.

West Virginia

There are five agencies in West Virginia with enforcement authority over motor carriers: State Police, Division of Highways, Division of Motor Vehicles, Department of Environmental Protection, and Public Service Commission (PSC). Of the five, only one has authority over hazardous materials transportation, the Public Service Commission. The Department of Environmental Protection has authority over hazardous materials incident remediation. Statewide, the hazmat compliance program budget is approximately \$360,000.

The organizational structure of the PSC's Motor Carrier Section, which is within the Transportation Division, consists of a Manager, and two units: the Motor Carrier Administration and Policy Unit and the Motor Carrier Enforcement and Safety (MCES) Unit. West Virginia PSC is a member of the Alliance for Uniform Hazmat Transportation and the PSC hazardous materials enforcement program follows the uniform procedures manual for registration of hazmat carriers. The PSC enforcement of the federal motor carrier safety regulations involves 46 officers under the MCES unit and is dedicated to hazardous materials carriers and all safety inspections are hazmat inspections. The enforcement officers verify the carrier compliance with the Alliance permit and hazmat registration with the U.S. Department of Transportation. Of the 46 officers, hazmat compliance reviews are conducted by five specially certified officers.

4.3 Roadside Inspection Programs

Introduction

Roadside inspections are the primary enforcement method used in the states to verify compliance with federal hazardous materials transportation law and regulations. The inspections are conducted following guidelines adopted through the Commercial Vehicle Safety Alliance (CVSA). The purpose of the guidelines is to promote uniform application and interpretation of the regulations. The six levels of inspection are Level I (North American Standard), Level II (walk-around), Level III (driver only), Level IV (special), Level V (terminal), and Level VI (hazmat – radioactive). All states indicated they do not routinely focus on a specific class of hazmat during roadside inspections.

In states that conduct roadside inspections with mobile units or teams, scheduling requires advance planning. In states that conduct all inspections at fixed (permanent) facilities such as weigh/inspection stations or a port of entry (POE) and operate 24 hours seven days a week (24/7), advance planning is less critical. In the eight states studied in greater depth, only Colorado and Missouri operate both a POE/weigh station system as well as mobile roadside enforcement. The other six states operate with mobile units or teams at rest areas, weigh stations, and other pre-established sites.

In reviewing the results of the sample state interviews, the project team identified a number of state practices that are believed to represent model approaches or initiatives that could enhance the state hazmat roadside inspection efforts. These practices are summarized in this section.

Selection of Qualified Inspectors

One important prerequisite for developing an effective roadside inspection program is selecting high quality personnel during the application process and before specialized staff training begins for new employees. States with effective programs have raised entrance requirements in order to obtain more qualified staff. For example, in Ohio, to join the Public Utilities Commission (PUCO) as a PUCO hazmat specialist, an applicant needs a four-year degree in either the sciences or law or comparable experience. Because of their staff's high level of preparation before being hired, PUCO officials consider these hazmat specialists to be easily trained in specialized hazmat programs, especially adaptive to new situations and highly effective in enforcing both existing and new regulations.

The Motor Carrier Services (MCS) Unit of the Missouri Department of Transportation also requires a four-year degree for all their inspectors, although they only perform vehicle inspections as part of a compliance review or educational contact (discussed in Section 4.4). This establishes a quality threshold that they believe allows them to maintain a highly effective program.

Increasing Hazmat-to-Total Motor Carrier Inspection Ratio

Obviously one important consideration for an effective hazmat program is to have a greater focus on hazmat as part of the overall motor carrier roadside inspection program. Table 12 provides data on the hazmat inspection activity for 2000 in the study states.

Several of the study states have a high emphasis on increasing the focus on hazmat as part of their overall motor carrier inspection program. The Illinois State Police is authorized to have 89 officers assigned and dedicated to commercial motor vehicle enforcement. Functionally, the officers are assigned to the Commercial Vehicle Enforcement Unit for conducting roadside inspections. This has helped Illinois to have the highest percentage of hazmat inspections of total inspections in 2000 among all eight states (17.2 percent).

Roadside inspection personnel in Ohio are from the Public Utilities Commission of Ohio (PUCO) and Ohio State Highway Patrol. Sixty-five thousand inspections are conducted each year of which about five to seven thousand are hazmat. PUCO personnel (13 hazmat specialists) conduct both compliance reviews and inspections while State Patrol personnel (121 inspectors) only conduct inspections. In 2000, 10.5 percent of Ohio's roadside inspections were of vehicles

carrying hazmat. Ohio had the largest percentage of hazmat out-of-service OOS orders in 2000 at 1.9 percent.

Table 12. Hazmat Roadside Inspection Activity in Study States: 2000

State	All Inspections	Hazmat Inspections	Percent of All Inspections	Hazmat OOS	OOS Percent of Hazmat Inspections
California	464,644	15,421	3.3	268	1.7
Colorado	52,703	3,734	7.1	19	0.5
Illinois	68,796	11,847	17.2	41	0.3
Missouri	71,804	4,111	5.7	30	0.7
New York	65,860	5,202	7.9	36	0.7
Ohio	63,306	6,674	10.5	125	1.9
South Carolina	32,787	2,731	8.3	49	1.8
West Virginia	21,943	1,373	6.2	7	0.5
Total	841,843	51,093	6.1	575	1.1
US Total	2,451,977	161,044	6.6	1,312	0.8
<i>% of US</i>	<i>34.3</i>	<i>31.7</i>		<i>43.8</i>	

Source for data: U.S. Department of Transportation, Federal Motor Carrier Safety Administration, State Reports, available at <http://ai.volpe.dot.gov>, as of Oct. 17, 2002.

The Colorado State Patrol (CSP) Hazmat Section has 24 FMCSA certified technicians that conduct approximately 15,000 Level I inspections each year and 5,500 Level II or III inspections. Approximately 10-15 percent of the total inspections are hazmat vehicles.

Establishing Performance Measures for Hazmat Roadside Inspections

The Illinois State Police (ISP) requires all officers to complete at least 24 Level I inspections and 12 hazmat inspections (may be Level I or II) each month. In practice, the inspectors complete many more than the minimum required. All inspectors work under a performance point system that measures the effectiveness of the system.

The goal of the Colorado POE inspection program is to have hazmat vehicles represent ten percent of all vehicles selected and officers may select hazmat vehicles to achieve this goal. In practice, inspector experience and judgment play significant roles in selecting trucks to inspect. Knowledge of the safety record of a particular carrier and the appearance of a vehicle as it moves over the scales are factors often used. Of course, the inspector may select a vehicle if he sees an obvious violation as the vehicle drives by.

Improving Agency Coordination on Hazmat Roadside Inspections

In most states, the authority to regulate hazmat transportation and to conduct roadside inspections is shared across two or more state agencies. Coordination among these agencies is one of the areas where progress could result in improved overall performance.

New York is a good example of a state making efforts to improve this critical area. The New York State Department of Transportation (NYSDOT) is the lead agency for MCSAP and its safety inspectors perform the bulk of the roadside inspections. The New York State Police (NYSP) Commercial Vehicle Enforcement (CVE) officers are responsible for site security, prescreening trucks as they enter the facility, and issue the citations when required.

In 1997, the NYSP reorganized and pulled three motor carrier safety programs into the new CVE Unit. This was done primarily for administrative purposes, but it has also improved the program effectiveness according to on-site interviews. There are 97 uniformed officers in the CVE Unit, 27 of which are funded under MCSAP. The NYSDOT has about 50 certified inspectors that perform roadside inspections in coordination with NYSP CVE officers and there are 20 certified inspectors at the local police level.

Roadside inspection details are coordinated and scheduled about six weeks in advance at the region/troop level. The NYSP has 11 troops, each with a CVE Unit of 8 to 11 trained officers for the enforcement of hazmat. The NYSDOT also has 11 regional offices with MCSAP inspectors, including those that enforce hazmat regulations.

Another NYSP initiative is the SHARE Program special inspections that include all agencies with any role in regulating trucks. Generally, hazmat commodities flowing through the state are regional, such as oil and gas from the port of Albany and chemicals. The New York DOT is developing a plan to assign New York State DOT numbers to solely intrastate carriers in commerce. The USDOT has given them a block of numbers to use for this purpose.

Establishing Objective Guidelines for Targeting Hazmat Vehicles for Inspection

All states have established practices for targeting carriers and vehicles for inspections. Ohio offers a good example of establishing a clear, objective set of program criteria for targeting vehicles for roadside inspections specifically for hazardous materials.

Inspections conducted by the Ohio State Highway Patrol take place primarily at the 19 platform scales. If possible, “high crash” areas are selected for inspection locations. Vehicles are selected for inspection by a combination of techniques that include:

1. Random, where every 5th vehicle is selected (considerable judgment is actually used)
2. Targeting bad carriers (carriers with a known record of frequent violations)
3. Using the new ISS (Inspection Selection System) system tied into the ASPEN software. The system informs the inspector with: *Inspect*, *Optional*, or *Pass*
4. Using PrePass (which employs the old, more stringent, ISS criteria)

In addition to the selection techniques cited above, the following initiatives are being employed by PUCO hazmat specialists in Ohio to select commercial motor vehicles for inspection:

- Targeting of bulk packages including all intermediate bulk containers (IBC), portable tanks, and cargo tank vehicles carrying hazmat in order to check for compliance with 49 CFR bulk package regulations and identify patterns of hazmat violations associated with specific carriers.

- Targeting carriers carrying non-bulk packages in order to identify hazardous materials regulation violations that could lead to leaks and spills of hazmat.
- Targeting of hazardous waste carriers with special emphasis on 40 CFR 262 requirements for hazardous waste manifests and labeling. Hazmat specialists are targeting hazardous waste transfer facilities and terminals for their inspections.
- Targeting of all motor carriers that transport Class 7 materials with an emphasis on radiological surveys to ensure that regulations are complied with.
- Targeting of non-placarded commercial vehicles that are operated by motor carriers known to carry hazmat in order to determine compliance with placarding and marking regulations.
- Targeting hazmat vehicles that are using routes that are restricted for hazardous materials transportation.
- Targeting for inspection carriers that are under special investigation by the FMCSA.
- Targeting for inspection carriers that are identified in the PUCO inspection record database with a poor history of compliance to the hazardous materials regulations.
- Targeting at railroad grade crossings for at least a Level II inspection, vehicles that fail to comply with 392.10 of the Federal Motor Carrier Safety Regulations (FMCSR).

Targeting High-Risk Areas for Hazmat Roadside Inspections

Another “best practice” identified from the state interviews was targeting high-risk areas for hazmat inspections. The Illinois State Police (ISP) targets high-risk areas such as the East St. Louis Area, the Chicago Area, and the Tri Cities Area for concentrated enforcement for hazmat. The activity, which is three years old, has semi-annual sessions. Each session includes one half day for training and two days of concentrated enforcement. The inspection staff in the state are usually divided and approximately half are assigned to each high-risk area. In each area, teams are based at the fixed scales and some rove. The inspectors also have Illinois DOT hazmat specialists on their teams. During the last targeting of hazmat trucks in the East St. Louis Area, approximately 600 inspections were conducted of which about 70% were hazmat vehicles. The same numbers of hazmat inspections were conducted in the northern area. The ISP has also worked with the Missouri State Patrol in a targeted enforcement operation that focused on rail yards and piggyback trucks.

The semi-annual focus of resources in the high-risk areas appears to have two major benefits:

- Provides an excellent on-the-job training session for less experienced inspectors. They are able to conduct inspections with the assistance and advice of the most experienced inspectors and instructors from both the ISP and IDOT.
- Makes carriers more cognizant of hazmat safety requirements and may make them more proactive since the high-risk area inspections are unannounced and occur annually on different dates.

In Ohio, to identify high-risk traffic areas for enforcement and inspections, the PUCO is implementing a risk-based plan for traffic enforcement and compliance review. Finally, the State Highway Patrol has identified 20 high-traffic accident areas as preferred locations for more intensive inspections and enforcement.

In New York, special details such as strike forces are initiated periodically by the New York State Police that target enforcement based on data reviewed and analyzed from USDOT/RSPA incident databases (by county) for interstate and intrastate carriers.

Targeting Special Classes of Hazardous Materials

A number of states have included consideration of specific classes of hazmat in their overall strategy for hazmat compliance, especially for roadside inspections. These hazard classes primarily include radioactive materials and hazardous waste.

In Illinois, roadside inspections and escorts are required for all high-level radioactive waste, spent nuclear fuel, and transuranic waste shipments. The Illinois Department of Nuclear Safety (IDNS) is the lead agency for the program. As soon as the IDNS learns about a shipment, they notify the ISP. At the border, the shipment is inspected by IDNS and ISP inspectors with the IDNS inspectors focusing on the radioactive aspects. The ISP also provides a patrol car to escort the shipment through the state. The IDNS has four people who inspect and escort radioactive shipments as part of their job responsibilities. Although the number of these shipments has been small, about ten per year, numbers are expected to increase dramatically when more shipments begin to move to the Waste Isolation Pilot Plant (WIPP) in New Mexico.

The Missouri State Highway Patrol (SHP) Field Operations Bureau provides escorts of radioactive material in Missouri. Typically, a single car follows the shipment, with nothing in front. Any greater escort presence would attract excessive attention and cause traffic problems; these large problems are too much for a single trooper to handle. Any spent nuclear fuel shipment is mandated by the governor to be inspected when it enters the state, experiences mechanical problems, is involved in a crash, or when it meets other Level VI guidelines. Nuclear material leaving the state, typically from the University of Missouri–Columbia, is inspected before it leaves its origin. Fourteen CMV inspectors are trained in Level VI procedures and are placed strategically throughout the state. Missouri has three nuclear reactors, including one power plant. There is also a nuclear power plant across the Nebraska border from Missouri. Through shipments have scheduled stops at weigh stations within the state but are not formally inspected there. An inspector, however, will always be present at these locations and will look for obvious problems.

South Carolina is the largest per capita receiver and storage site for hazardous waste and materials in the nation, according to their FY 2002 CVSP. The State Transport Police (STP) shares a close relationship with the state FMCSA office, which provides considerable support and guidance to their program. Through encouragement from FMCSA, South Carolina's hazmat program is risk-based rather than performance-based, as it was in the past.

South Carolina's STP has 13 officers that have radioactive Level VI training. The STP has a memorandum of understanding with the South Carolina Energy Office and the State Emergency Response Commission to share responsibility for inspection of radioactive material shipments in the state. The STP received a grant from Waste Isolation Pilot Plant (WIPP) Project to purchase additional equipment necessary for inspection of vehicles. This equipment included sophisticated radiological detectors. One STP officer was promoted to deal with these

radioactive material shipments, is permanently assigned to the traffic management office of the SHP, and interfaces with them and the state law enforcement division.

A corollary to targeting special classes of hazmat is to target a special program or situation where hazmat transportation may be of a greater concern. In California, a special emphasis is being placed on hazmat at the border with Mexico. The California Highway Patrol extended the operating hours to 24-hours for five to seven days a week at inspection facilities near the border with Mexico and operated strike forces during off-hours as part of a 1999 special federal grant. The California Highway Patrol obtained a special federal grant in 1999 for strike force inspection of hazardous materials and cargo tank inspections at inspection facilities located near the border with Mexico. In calendar year 2000, 32 strike force operations were conducted.

A Cargo Tank Inspection Program initiated in Missouri in the early 1990s targets small bobtail trucks that carry small loads of diesel or propane and typically operate rurally and not on the Interstate system. These vehicles do not normally get roadside inspections. The Missouri Department of Agriculture's Weights and Measures unit meets with all cargo trucks and tanks with meters to ensure that the meters are accurate. They certify these meters annually. Missouri's Motor Carrier Services (MCS) Division is notified of the locations that these meter certifications will take place (the carriers are summoned to central locations throughout the state) and will sometimes accompany the Department of Agriculture there. They are able to conduct full Level I inspections and can place vehicles OOS. Approximately 300 to 600 of these inspections are conducted each year. Drivers who leave when seeing the MCS are followed to their home terminal, where the carrier would receive a full compliance review. The OOS ratio for these carriers has been reduced significantly since this program began.

Greater Use of Technology in Hazmat Vehicle Selection

FMCSA has put great emphasis on increasing the use of technology in its overall motor carrier inspection program. Several states have become leaders in the use of this technology as it relates to hazmat compliance.

In Colorado, more than 6 million trucks pass through the ten POEs each year. All POEs operate fixed weigh stations; trucks passing on the highway are checked under the PrePass system, which includes the weigh-in-motion (WIM) system on the highway before entering the POE. When trucks enter the weigh station, the last eight characters of the vehicle identification number (VIN) are read from the transponder into the POE business computer, which then determines if the vehicle has a hazmat permit issued to the power unit. The POE Business System databank includes the following carrier and vehicle information:

- Hazmat permit
- Size and weight
- Oversized permit
- Tax delinquency
- Placards

Once the vehicle enters the POE, the inspector can select a vehicle for inspection. There are two ways that a vehicle may be selected: a computerized Inspection Selection System (ISS) or

random. The ISS was developed as part of the ASPEN roadside inspection software and uses prior carrier safety data to guide the selection of vehicles and drivers for roadside inspections. ASPEN operates on a laptop and includes electronic transfer of inspection results and electronic access to carrier safety performance data and commercial driver license status data.

Missouri is completing training on PrePass and will have it operational at 19 sites in the near future (some of these sites include both directions of travel). The Commercial Vehicle Enforcement Division estimates that 55-60 percent saturation of PrePass subscribers is required before they will see a noticeable difference in their operations. In addition to PrePass, two of their facilities have slow speed weigh-in-motion (WIM) scales. At these locations utilizing this older technology, all trucks are directed off the highway and, based on the WIM readings, are directed to the static scales or the bypass lanes. The slow-speed WIM is set for a two percent tolerance above axle or gross weight. It is standard procedure to turn off the "open" sign for the weigh stations when the queue reaches a certain point on the approach ramps so that the trucks on the roadway that have passed the sign will not back up into the roadway. Some of their facilities experience roadway volumes of 10,000 trucks per day. Ultimately, they will have high-speed, mainline WIM at all PrePass facilities.

Their PrePass criteria for inspection, based on score, are:

0 – 49	5% random selection
50 – 74	25% random selection
75 – 95	the lowest 50% of carriers in this range are selected at a 50% random rate and the rest are selected at 100% until their score drops below 75
96 – 100	100% selection – no bypass

Missouri has implemented an intrastate SafeStat system, but it is not folded into PrePass. Their numbering system does not conform to the national SafeStat system, but it is consistent. It is updated twice a year and does not contain the management of program component that the federal SafeStat does (driver, vehicle, and accident components are included). Missouri also gives added weight to carriers hauling hazmat and even more weight for spills involving hazmat. The intrastate numbers are typically only checked during an inspection, they are not used in selecting vehicles for inspection. An unwritten policy has the CVE inspecting all trucks that receive a red PrePass light.

The Ohio PUCO has developed new cellular modems for its field personnel that enable the hazmat specialists in the field to access the CDLIS (commercial driver license information system) in real time and to send the ASPEN information directly to SAFER and SafetyNet.

The PUCO recently tested the wireless service to transmit data from roadside inspections. Their trial utilized a special wireless card that plugs into a laptop like a typical communications card. During the trial, the FMCSA and vendors modified existing systems to support wireless service. The use of the wireless modem by four inspectors has permitted the inspectors to access current data, such as driver license information in CDLIS, in real time. On several occasions, inspectors not at a scale location have been able to identify and apprehend violators because of the currency of the data. One advantage of the system is that it allows the inspector to upload the inspection results into ASPEN immediately so that if another inspection is conducted shortly afterward that

inspector will be able to use the results of the previous inspection. Another advantage of the system is that it can be used to allow the carrier to e-mail any needed shipping papers. At a scale site with fixed modem connections, wireless modems are not needed. The state will be supplying all of the PUCO inspectors with the wireless modems shortly.

Ohio is the first state to have a successful test of the wireless system. The wireless modem also facilitates the rapid download of data into MCMIS. The PUCO states that four days from the collection of the data it must be deposited in MCMIS.

Improving Penalty Assessment for Hazmat

One important outcome of many of the interviews conducted in the study states was the recommendation of the need for an effective penalty system for violations of hazmat transportation regulations as a critical component of a good hazmat compliance system. Several of the study states reported important new initiatives in this area.

Prior to July 2002, Colorado did not have a program to assess civil penalties for intrastate hazmat truck compliance violations. Citations ranged from a class "B" traffic infraction for not having a permit to a class 4 felony for intentional spilling of hazmat including fines up to \$250 and/or a summons to appear in court. It is still too early to assess the impact of the newly instituted civil penalties for intrastate transportation instituted in Colorado beginning on July 1, 2002. Civil penalties will continue to go to the state's highway user tax fund.

Last year Illinois did approximately 108,000 roadside inspections and of these about 35,000 were hazmat inspections. Among the hazmat roadside inspections, about 3,500 involved violations. Each inspection is documented on a driver/vehicle inspection report and sent to IDOT for assessment of penalties. The Hazmat Compliance Unit receives the inspection report, reviews the notices of apparent violation issued on the roadside, and determines culpability. This culpability may relate to the shipper, carrier, or driver. Illinois DOT's investigation may include phone calls and letters. Penalty determination is based on the nature of the violation(s) (including how serious it is and whether there has been a pattern of repeated violations) and the manner in which the responsible parties have responded. Penalties may be as high as \$10,000 per day per violation for cases involving fatalities.

This system of assessing civil penalties in Illinois has three major advantages:

- The roadside inspectors (Illinois State Police) are freed from attending to the penalty phase of a violation and can devote their time to roadside inspections.
- The determination and assessment of violations is conducted in a thorough and impartial manner by staff with expertise in the regulations.
- The penalties, when awarded, may be substantial and can act as a deterrent to future violators.

Missouri had a problem with out-of-service (OOS) runners, so they employed covert operations. Word of their operations quickly spread and the problem disappeared. The Commercial Vehicle Enforcement (CVE) Division has five covert vehicles that are rotated among the nine troops so that they will not be recognized. The chief of each troop is responsible for scheduling their use.

These vehicles are typical passenger vehicles and have none of the typical characteristics of unmarked police vehicles. Marked vehicles are always used, however, to actually pull over OOS violators.

In Missouri, fines for roadside violations are set by the individual county judge and all fines go to offset revenue allocated from the state treasury to the local school fund. Court costs are distributed according to state law (prosecutors fund, sheriff's office, court system, etc.).

In Ohio penalties for hazardous materials violations are based on the federal criteria contained in 49 CFR 107.331, that include: the nature and circumstances of the violation, the extent and gravity of the violation, the degree of the respondent's culpability, the respondent's prior violations, the respondent's ability to pay, the effect on the respondent's ability to continue in business, and such other matters as justice may require.

Violations are assessed monetary penalties, "civil forfeitures" up to \$10,000 per violation for hazardous materials violations, and up to \$1,000 per violation for safety violations. A carrier, shipper, and/or a driver can be assessed individually from one inspection. A "Notice of Intent to Assess Civil Forfeiture" letter is sent by certified mail to the party who committed the violation. A party has 30 days in which to make payment or request a conference. Most conferences are held by telephone, although in-person conferences are occasionally requested. The Civil Forfeiture program allows company representatives to discuss violations with PUCO compliance officers during the conference.

The Ohio program provides an opportunity to employ penalties as an effective tool for encouraging a high level of compliance to the regulations. In approximately 600 cases annually, penalties are increased due to the history of a carrier. Penalties are also decreased for carriers with a good history of violations. PUCO staff may hold substantial monetary penalties in abeyance, a form of "probation," to ensure overall safety improvement by a carrier. Money held in abeyance provides an incentive for carriers to correct violations.

4.4 Compliance Reviews

Compliance reviews, along with roadside inspections, form one of the two pillars of an effective state hazardous materials truck transportation compliance program. The compliance reviews of carriers at their offices and terminals enable states to monitor safety related record keeping for both vehicles and drivers. The reviews may also include actual vehicle inspections.

A compliance review typically includes examination of the following:

- Driver qualification files
- Training records
- Driver log books
- Records of duty status
- Vehicle maintenance files
- Insurance records
- Shipping papers
- Packaging

All of the eight states visited for follow-up interviews include compliance review programs as part of their overall hazmat compliance and enforcement program. For this report, Missouri's Educational Contact (EC) Program, California's Biennial Inspection of Terminals (BIT) Program, and West Virginia's Desk Audit of Alliance Permit Registration Applications are highlighted as good examples or unique programs that would be of interest to other states.

Missouri Educational Contact and Compliance Review Program

Compliance reviews (CRs) and educational contacts (ECs) are performed by the Motor Carrier Services (MCS) Unit of the Missouri Department of Transportation. Educational contacts are similar to compliance reviews, but are conducted on carriers wishing to begin operations who have applied for operating authority from the state. The EC program is felt to significantly improve carrier compliance and their knowledge of hazmat safety in general. If, during a visit, it appears that a carrier has actually been in operation, the educational contact is converted into a full compliance review.

The educational contacts can take a full day to complete and approximately 400 to 600 are conducted each year. Since 9/11, security issues such as those discussed during the FMCSA Security Sensitivity Visits are incorporated into the educational contacts and compliance reviews.

The MCS has 32 staff, of which 27 do CRs and ECs 85 percent of the time. The other 15 percent includes training and other duties such as industry outreach. Approximately 70 percent of the CR/EC time is spent on CRs and 30 percent on ECs. The inspectors are divided among seven sections across the state. MCS inspectors have no authority to conduct roadside inspections and are limited to terminal-based inspections. The law enforcement background of most inspectors helps them in their investigations during CRs. In addition, all MCS staff are required to have a four-year degree, which is felt to provide a significant benefit.

CRs are conducted on intrastate carriers in a similar fashion to the federal system. MCS headquarters staff ensure that the CRs are conducted consistently and review all enforcement actions. Level V vehicle inspections are conducted when at terminal facilities as part of CRs and ECs. Missouri has defined "terminal" to include loading and unloading operations and destinations so inspections can occur in these locations. As long as a carrier is going to some location to "do work," that location is considered a "terminal." For these inspections, since a driver is present, a full Level I inspection is conducted.

The MCS Unit has their own legal counsel and administrative law judge. They have their own fine structure controlled by state statute and do not use the uniform fine assessment program. Their penalty structure is tiered and ranges from (a) private carriers who have never been visited before, (b) for-hire carriers who have never been visited before, (c) carriers with prior MCS contact, and (d) carriers with prior enforcement actions. The penalties increase from one tier to the next and depend on whether the offense is deemed recordkeeping or non-recordkeeping. While the federal system places a lot of weight on a carrier's gross revenue in setting penalties, Missouri does not. They do not want to penalize carriers based on profit, only on the offense.

CRs are prioritized based on the FMCSA assignment list, which is derived from a SafeStat report generated every six months. The focus is on the A, B, and hazmat lists as well as carriers with unsatisfactory and conditional ratings. MCS works with FMCSA on the assignment of CRs and, typically, carriers that are predominately intrastate would have their CRs conducted by MCS rather than FMCSA. Some CRs are triggered by ECs, as mentioned above. Another component of the process for obtaining operating authority includes a review of economic issues regarding the carrier and the findings from that investigation might suggest that a CR is necessary. Any complaint received in writing, including from MVS staff, can trigger an investigation and possibly a CR. Hazmat carriers are not considered separately in determining which carriers receive CRs and less than 20 percent of all CRs are conducted on hazmat carriers.

The ECs follow the same general procedure as a CR. The inspector completes a standard form on their laptop during the EC that contains information on the carrier, the carrier's operation, cargo classification, equipment and driver information, the individuals interviewed, and specific details on whether they comply with and understand the relevant regulations. These regulations include controlled substance and alcohol testing; CDL and operating license standards; accident register requirements; driver qualifications; hours of service rules; vehicle inspection, repair, and maintenance; hazmat regulations; and hazardous waste regulations. Full Level I vehicle inspections are conducted as part of the EC. The EC includes a discussion on security issues for all carriers, even those not carrying hazmat. Deficiencies noted during an EC must be corrected and certified in writing within 14 days in order to continue the process for obtaining operating authority.

Missouri follows the nationwide practice of verifying OOS repairs in which the carrier certifies in writing that the repairs have been completed. Computer runs are made monthly to identify OOS for which the certification has not been received and letters are sent out. The Inspection Repair Audit Program (IRAP) is folded into the compliance reviews, as CVE does not have the authority to go onto private property.

All OOS violations issued by Missouri's Motor Carrier Services (MCS) Division are verified by on-site visits, although the written certification of repairs is still required to provide headquarters a record of the repair. The on-site verification visits may trigger a full compliance review. For vehicles placed OOS, maintenance and dispatch records might be examined to determine if the vehicle was never removed from revenue service long enough to effect the repairs.

MCS evaluates their performance by the number of carriers with a less than satisfactory rating that they bring into satisfactory compliance. They are currently experiencing second-visit satisfactory ratings around 97 percent.

California Biennial Inspection of Terminals Program

The California Highway Patrol (CHP) calls their Compliance Review Program the Biennial Inspection of Terminals or BIT. This is based on a California state law that requires an inspection of motor carrier terminals at least once every two years. Instead of conducting "compliance reviews" at a motor carriers' principal place of business, CHP actually conducts site visits to every motor carrier terminal located in the State of California. This includes out-of-state

carriers with facilities in California. This program has been underway since 1989 and is an extension of CHP's "off-highway program" which has been conducted since 1965.

CHP conducts a review of all aspects of the carrier operations at each terminal. This includes vehicle conditions, vehicle maintenance practices and procedures, driver records, and employee training records and procedures, including hazmat training if the carrier is involved in hazmat transportation.

The BIT program is extensive. There are 52,000 motor carrier terminals located in California. CHP has to visit each terminal once every other year. This works out to an average of 500 terminal inspections a month. These include both interstate and intrastate operators. Of this total, about 1,200 terminals involve hazardous materials carriers. During these reviews, over 46,000 trucks are inspected every two years. The CHP program that manages BIT includes 206 motor carrier specialist and 10 full time managers.

CHP prioritizes the selection of carriers for BIT reviews mostly based on the biennial schedule – the statutory requirement to visit each terminal every two years. CHP maintains records of BIT reviews using the Management Information System of Terminal Evaluation Records (MISTER). Inspections are based on data output from MISTER. One drawback of this system is that it is not linked to any of the Federal motor carrier databases; SafeStat is not used to prioritize carrier inspections. Hazmat carrier and shipper reviews have been moved to "Priority One" since September 11 largely because of security not safety concerns.

There are some very convincing arguments for looking at the BIT program as a potential "best practice" among State hazmat compliance programs. First, the BIT program is more comprehensive overall than a straightforward compliance review. This is because every carrier terminal is inspected, not just the principal place of business of the state-based carriers. Secondly, the BIT program includes terminal inspections of carriers whose principal place of business may be out-of-state. Finally, CHP strongly argues that focusing on terminals rather than the carrier principal place of business results in the inspection of many more vehicles than would otherwise be the case. CHP argues that the BIT program is making a real difference in compliance – CHP makes 1 to 2 recommendations per month to shut down a carrier based on the terminal inspections.

California also has an effective, "continuous driver monitoring" program that contributes to carrier compliance, although not directly part of a compliance review program. This is the "DMV Driver Pull Notice Program." The California Department of Motor Vehicles conducts an annual review of all drivers' history and provides automatic notification to the motor carrier when a driver picks up any kind of violation, either personal or CMV.

West Virginia Desk Audit of Alliance Permit Registration Applications

The administration of the Alliance Permit program starts with the receipt of an application for registration, which is required for both intrastate and interstate carriers transporting hazardous materials in or through West Virginia. The application requires a carrier to provide extensive information about its operation, including their U.S. DOT registration number, types of hazardous materials transported, vehicle fleet information, corporate structure, record of any

violations and/or suspensions related to transportation of hazmat, and their U.S. DOT safety rating.

When an application is received by the Public Service Commission (PSC), Motor Carrier Section, it undergoes a complete review for completeness, accuracy, and any indication that a carrier should receive a compliance review audit. The desk audit alone provides valuable insight into the carrier's operation. The State believes that small carriers would not undergo roadside inspections often enough to have a SafeStat rating and show up on their radar as carriers in need of a compliance review. The PSC considers the audits of hazmat carriers to be "educational visits" and does not assess monetary sanctions for violations discovered during an audit. Carriers that do not receive a satisfactory rating at the conclusion of an audit are generally rechecked within 45 days to see if they have taken steps to come into compliance and are given a new rating.

4.5 Shipper Reviews

A shipper review resembles a compliance review for the most part, with the exclusion of driver records, log books, and vehicle records. Specific attention is placed on employee training, proper packaging of hazardous materials, and shipping papers. Most states will ensure that the shipper has registered, if required, with RSPA. At most shipper locations, the inspectors will also be able to examine packages currently being prepared for shipping.

Employee training is required for all "hazmat employees," which includes anyone preparing shipping papers as well as those responsible for actually preparing the packaging and loading the product. Often, shippers do not properly identify hazmat employees and provide them with the appropriate training.

Most states conducting shipper reviews obtain their primary list of targeted shippers from roadside inspections. Some of the violations uncovered during these inspections apply not to the driver or carrier, but to the shipper. In these cases, shipper information is captured from the shipping papers and entered via the ASPEN software. Lists of shippers with violations can then be generated from either the federal SafetyNet system or an intrastate-based state-level implementation. These lists could include the specific violations and the materials involved.

Carrier compliance reviews can also identify shippers that should be added to the inspection list based on an examination of the carrier's documentation or observed shipper violations for active loads at a carrier's terminal. Of course, complaints or referrals from other agencies may also lead to shipper reviews.

Both Missouri and Illinois also select shippers for reviews based on information obtained from the annual Hazardous Materials Package Inspection Program. South Carolina is particularly active in conducting hazmat shipper reviews and their program is reviewed below as an example of an exemplary program.

South Carolina Shipper Review Program

The South Carolina State Transport Police (STP) focuses, of course, only on shippers that are in South Carolina and provides a good example of a shipper review program. Shippers on the STP

list are compared to the list of shippers provided periodically by FMCSA. Occasionally, STP will negotiate with FMCSA as to which agency will conduct a compliance review on a specific shipper.

Currently, the STP has two officers that conduct shipper reviews and they are primarily (but not exclusively) focused on the Charleston area, which has a significant amount of hazardous materials currently moving through that part of the state. They hope to add some additional hazardous materials unit officers to the shipper review team soon; the long, very intense training has made it difficult to expand their staff. FMCSA on-the-job training, for example, extends for one year following classroom training. Officers cannot conduct shipper reviews alone during their on-the-job training period.

The STP is just beginning to track the compliance and enforcement history of shippers to better identify problem shippers. Currently, their state list of shippers with violations is regenerated twice a year. One of the goals for an ongoing risk management grant effort is to develop a clearinghouse of data from all relevant agencies in the state. This clearinghouse would be able to analyze the data and establish trends. For example, shippers with violations of 49 CFR may also be having problems with other regulatory programs in the state (e.g., state EPA) that might increase the need for a deeper review of the shipper's business. STP officers indicated a need to track substantial shipper violations across state lines.

The STP takes an educational approach to shipper reviews, particularly for new shippers. While they identify and issue citations for violations, they routinely offer concrete suggestions for improving operations and obtaining assistance. This is likely to have a strong impact on the incidence of repeat violations from shippers that do not knowingly choose to follow the regulations but simply do not fully understand them.

While they believe they have the foundation for a good shipper program, they would like to grow it even larger. Currently, they estimate the shipper review program accounts for only 5 to 10 percent of their compliance review budget allocation.

4.6 Training, Education, and Outreach

This section presents exemplary programs in training, education, and outreach from among the eight states visited. For this report, training programs are those that are directed at compliance and enforcement personnel while education and outreach are provided by the agencies with compliance and enforcement responsibilities that are directed to industry and other groups.

4.6.1 Training Programs

As a prelude to identifying effective state hazmat training programs, it is important to recognize the primary source of hazmat training for FMCSA: the National Training Center in Virginia.

National Training Center Hazmat Training Program

The FMCSA operates the National Training Center (NTC) in Virginia and serves as a primary source of training for hazmat enforcement inspectors nationwide. Courses are offered at the NTC headquarters and at field locations throughout the country at no cost except a nominal

examination fee of \$25 per student. The FMCSA provides certification for persons performing compliance reviews, safety audits, and driver/vehicle inspections.

Compliance review certification requires successfully completing the FMCSA North American Standard (NAS) - Level I, General Hazardous Materials, and Compliance Review courses; or successfully completing the FMCSA Safety Investigator Academy. Certification requires at least four compliance reviews during the two months following classroom training in conjunction with a senior investigator. Six compliance reviews per year are required to maintain certification in addition to other required FMCSA training (including cargo tank and bulk packaging inspection and hours of service rules).

Safety audit certification requires successfully completing a three-week FMCSA Safety Audit Course that includes general hazmat training. A minimum of 24 safety audits per year is required to maintain certification in addition to other required FMCSA training.

Driver/vehicle inspector certification requires successfully completing the FMCSA NAS - Level I course or an equivalent. Certification requires at least 30 Level I or Level V (terminal) inspections during the first year following classroom training in conjunction with a senior inspector. Thirty-two Level I or Level V inspections per year are required to maintain certification in addition to other required FMCSA training (including cargo tank and bulk packaging inspection and hours of service rules).

Specialized inspection certifications are also provided for hazardous materials and cargo tank/bulk packaging inspections. These require the successful completion of the relevant specialized FMCSA course and the completion of 16 inspections during the first year in conjunction with a senior inspector. Eight inspections per year, in addition other required FMCSA training, is required to maintain certification in each of these areas.

The number of hours of classroom instruction for representative courses offered by the NTC is presented in the following table:

Course	Hours
NAS Level I (Part A-Driver and Part B-Vehicle)	80
Basic Compliance Review	80
Cargo/Tank Bulk Packaging	40
General Hazardous Materials	40
Specialized Hazardous Materials (Explosives)	36
Specialized Hazardous Materials (Radioactive Materials)	32
Specialized Hazardous Materials (Waste Substances)	32
Specialized Hazardous Materials (Cylinders)	24
Performance Oriented Packaging	24

The NAS certification courses include a test and a minimum score of 80 is required to pass.

While most states follow the standard FMCSA course requirements for inspectors, some states go farther. California, Missouri, Illinois, and Ohio are states with exemplary training programs and some of the unique or effective program elements are discussed here.

California Hazmat Training Program

California has an extensive training and education program for motor carrier compliance including hazardous material compliance. Unlike many states, California conducts its own training for its commercial motor vehicle inspectors. Many states rely on the National Training Center and some states acquire private contractor training services. The California Highway Patrol's (CHP) self-training program is designed to standardize training across the eight CHP districts. CHP believes it has significantly enhanced its training program. It has extended its NAS Level I (Part A and B) training from two weeks to three weeks. CHP also provides standardized refresher training on-line. This is a new program to keep inspectors current after receiving initial training and has been given high priority.

CHP requirements for training are drawn from CVSA agreement (covering the five core courses), the FMCSA certification requirements for auditors, and by its own department policy. The California department policy establishes detailed, course-by-course requirements that are much more exhaustive than most other states.

The California Highway Patrol (CHP) Training Program is led out of the Sacramento Headquarters Training Section. This section includes five full time staff. Training is coordinated with each of the eight district offices. Each district office has a pool of instructors

that conducts the training in each respective district. However, CHP headquarters has direct oversight of the district inspectors.

The CHP supplements their program with coordination tools, which include the following: (a) information bulletins, (b) a quarterly newsletter, (c) a supervisor annual conference, and (d) standards for annual reviews.

Overall, the CHP training program can be a model program for those states that can harbor the resources required. CHP has established its own training program and has direct control over the quality and uniformity of its training. Its training is provided by inspectors at the district level who already know their carriers in addition to geography and local issues.

Missouri Hazmat Training Program

Following academy training, Missouri Commercial Vehicle Enforcement officers receive 12 weeks of field training with a field training officer (FTO). Each week of the program, they are evaluated against a checklist. Monthly evaluations determine whether they should remain on probation. The CVE program was patterned after the FTO program for state troopers and follows the San Jose model, which was initiated in the early 1970s. This program helps the FTOs as well because they prepare for their responsibility prior to serving and must stay current themselves.

For Missouri Motor Carrier Services inspectors, on-the-job training includes working with a senior inspector until he or she feels the new hire is ready to work independently. There is no specific timeframe for on-the-job training. It typically takes six months until inspectors are ready for educational contacts and compliance reviews of small intrastate carriers. Large and interstate carriers can typically be handled after six to twelve months of training.

The Missouri Highway Patrol Commercial Vehicle Enforcement (CVE) Division now has all their in-service training provided by a single individual to ensure consistency across the state. In prior years, each troop would send a trainer for the train-the-trainer course and then return to instruct the officers in their troops. In-service training is typically provided in the winter months when operations are slower and vacations and special assignments are minimized. This is typical of many state programs. CVE officers spend their first 12 weeks at the academy, where they receive all their standard training. This includes basic law, constitutional law, basic authority (of the CVE to enforce laws), firearms, defensive tactics, NAS Level I – Part A and B, basic hazardous materials, cargo tank, and bulk packaging. They feel that additional time at the academy would be helpful, however.

The Missouri Motor Carrier Services (MCS) Division also consolidates its training at the headquarters level. Primary instruction is provided by the two headquarters supervisory staff. Arrangements are made for external training where necessary. In addition, MCS holds two to three all-staff meetings each year to provide regulatory updates and other information to their inspectors. E-mail notifications are also provided throughout the year to relay important information.

In Missouri, the Commercial Vehicle Enforcement training lead identifies the areas that need additional attention during in-service training from suggestions from officers, areas of significant

rule changes, problems that they have identified, reviewing test results from those attempting to be promoted to supervisor, or questions they get from field officers or carriers. In-service training is at least 12 hours, but can vary depending on the need. Last year, hazardous materials were a specific focus, particularly on the areas in which the most violations are found. This year, cargo tanks will be a focus along with the new tie-down rulemaking and CDL issues. Hazardous materials will always be included.

Missouri's Motor Carrier Services staff also strive to identify individuals during training that could benefit from a little extra instruction and ensure that they are provided the extra support they need to succeed.

Illinois On-the-Job Training

Illinois state officials at both the Illinois Department of Transportation (IDOT) and the Illinois State Patrol (ISP) believe that although structured training courses are essential, on-the-job training offers some unique advantages of its own. Foremost is the opportunity for junior staff to work with and learn from the most experienced hazmat experts in the state. The semi-annual focus of state resources in high-risk areas provides an ideal opportunity for on-the-job training. During the intensive exercise, less experienced inspectors are able to conduct inspections with the assistance and advice of the most experienced inspectors and instructors from both agencies.

Ohio Grant Program for Training

Ohio has established a unique Grant Program to fund hazmat training that is directly linked to fines assessed for non-compliance. A portion of the fines assessed by the Public Utilities Commission of Ohio (PUCO) Civil Forfeitures Division provide for an \$800,000 annual program to provide training to first responders in emergency response to hazmat accidents and incidents. This sum is fixed by state legislation. The first \$400,000 is used for grants and distributed for hazmat training. The second \$400,000 goes to Cleveland State University for an emergency response training program. A PUCO specialist evaluates requests from emergency response organizations for funding for training. These requests are reviewed by a PUCO staff member who makes funding recommendations that are then reviewed by a PUCO committee. Since the program started in 1998, approximately 16,000 people representing 72 institutions have been trained using the funds. About \$4 million dollars has been awarded for this training. In addition, Cleveland State University has received \$2 million in training funds during that same period.

The grant program funds are totally for training public safety and emergency services personnel in the proper techniques for the management of hazardous materials spills and releases that occur during transportation. Knowledgeable state officials at the PUCO are confident that the program has helped to improve the quality of response in the state. One senior PUCO staff that serves on the State Emergency Response Committee has received positive input on the program from emergency responders from throughout the state.

4.6.2 Education and Outreach

Education and outreach programs are provided to industry groups, specific shippers and carriers, and other organizations and agencies involved with hazardous materials transportation. Programs in California, Missouri, New York, and Illinois are particularly noteworthy.

California Commercial Industry Education Program

California has an outstanding industry education program. California has established the Commercial Industry Education Program (CIEP) that can be considered a model for the country. This program was started in 1997 at the CHP district level and instituted at the state level in 1999. This program, which is provided free of charge, represented a new initiative and belief that education and outreach could have as significant an impact on improving compliance as roadside enforcement. Currently, there are eight district coordinators for the program and CHP has trained 45 instructors. Trucking companies are encouraged to apply to be involved with the CIEP. The California Trucking Association promotes and supports the CHP training program to its members.

The CIEP includes a Basic Criteria Course of 2-1/2 hours. Other training modules include Hazmat Compliance, Hazmat Security, Hazmat Routing, Size and Weight, and Rules of the Road. About 1,000 education seminars and training events are conducted each year, an average of almost 20 per week. CHP estimates that through these classes they speak to as many as 35,000 employees/drivers per year.

The benefits seen by CHP for this program include three major items: (1) the training creates goodwill between CHP and industry, (2) it establishes personal contacts with each trucking company, and (3) it educates industry and fosters better compliance just from the increase in knowledge level (over and above the normal concern about getting caught).

CHP established performance measures when this program was started at the state level. These performance measures include: (a) the number of citations, (b) trucks involved in collisions, (c) trucks involved in at-fault collisions, and (d) carrier ratings for the Biennial Inspection of Terminals (BIT) program (see Section 4.4). A 20-carrier sample was selected and before/after data were collected. Based upon this data, CHP is convinced that the CIEP program has improved the overall compliance rate for carriers in California.

The success of the CIEP has spurred CHP to create a similar program for Mexican carriers at the border. The Mexican Commercial Industry Education Program (MCIEP) has just started and is showing promising results.

Missouri Industry Outreach Program

The Missouri Motor Carrier Services Division obtains outreach topic suggestions from field inspectors and critique sheets returned from industry contacts. The critique sheets are left with all carriers receiving compliance reviews and educational contacts and allow them to indicate, among other things, whether they feel that they have the information they need to be successfully in compliance.

In Missouri, Commercial Vehicle Enforcement staff accept invitations to speak at conferences at the request of industry six to eight times per year. Other seminars are offered on commercial motor vehicle inspections and are often attended by 30 to 40 companies (in two to four locations at least once a year each). Two to three officers also attend the monthly Missouri Safety Managers Council meetings each month. Officers also serve as judges for truck driving championships, which promotes goodwill.

The Missouri Motor Carrier Services (MCS) Division also addresses carrier associations that request help as long as there is no fee charged specifically for their presentation. These include the Missouri Motor Carriers Association, the Petroleum Marketers Associations, and the Missouri Propane Gas Association. For the latter, they serve as instructors at HM126F training once a year. They helped develop the course and update it yearly. Other outreach activities include speaking at university transportation courses, Law Enforcement Traffic Safety Advisory Council meetings, and company in-house meetings involving traffic managers (for individuals that generate shipping papers).

The MCS Unit has both safety and hazmat outreach programs. These courses range from five to seven hours long. The safety course is offered in each of the seven offices twice a year. Invitations are sent to carriers on the list of state-registered carriers, the SafeStat list, and through newsletter announcements. The hazmat course is offered once annually in each regional office and addresses issues covered in compliance reviews, common hazmat roadside issues, and state and federal regulations. Both courses are PowerPoint presentations and involve all the inspectors in each office. The hazmat course includes a work project in which the participants verify compliance for a specific situation with which they are presented. There is no fee for these courses as they use MCSAP funds and typical attendance is limited to 60 participants on a first-come basis. They provide a certificate of attendance.

The Missouri Commercial Vehicle Enforcement Division is updating a book that paraphrases the regulations to provide to motor carriers as well as developing a video on Level I inspections. Pamphlets cover (a) general regulations, miscellaneous information, and safety laws; (b) definitions, permits, and fees for for-hire carriers; and (c) size and weight limitations.

Some states provide newsletters to help keep industry informed of regulatory changes and help them to improve their compliance. The Missouri Motor Carrier Services (MCS) Division produces and distributes a quarterly newsletter, *News on Wheels*, to all their registered carriers. This publication is also made available through the Internet.

Materials distributed by MCS at their outreach events include the North American Emergency Response Guide (NAERG), a driver's guidebook on the hazmat regulations, a placarding chart/labeling chart, a segregation chart, and the state's compliance manual, which includes a portion on hazardous materials. The compliance manual, which is also available on the Internet, is an excellent tool to help carriers ensure compliance.

Some states make a special effort to integrate their hazmat outreach with other agencies for a more comprehensive educational opportunity. For example, several Missouri agencies, including the Commercial Vehicle Enforcement Division and the Motor Carrier Services Division, present hazmat training that is spearheaded by the state FMCSA office. Other

participants include the Missouri Department of Agriculture, RSPA, and the state emergency management agency. Some offerings have also included OSHA and the FAA. Each agency presents a section on the regulations that are relevant to them. Specific invitations are provided to all carriers with hazmat violations from either roadside inspections or compliance reviews.

New York State Judicial Outreach Program

The Commercial Vehicle Enforcement Unit of the NYSP conducted a Judicial Outreach project with FMCSA funds that was completed around 2000. The project was funded for two years and was intended to educate the court on motor carrier and hazardous materials regulations to make them better informed on the importance of enforcement and the nature of violations. The Hazardous Materials Regulations are quite complex and confusing to those not trained or having frequent contact with carriers such as enforcement personnel. Those states that participated in similar projects view this type of outreach as very useful since the courts have discretion on the fines levied for violations and increased familiarity with the regulations.

Illinois Outreach Program

A major activity of Illinois DOT's hazardous materials unit is to provide training to outside entities. The hazmat unit monitors hazmat regulations and provides periodic training to industry through presentations and workshops.

During calendar year 2001 and despite the disruptions caused by the events of September 11, the hazmat unit provided training for 34 organizations. In addition to a number of sessions for the ISP and IDOT, organizations that received training included: individual carriers, the Illinois Propane Gas Association, the Midwest Truckers Convention, the Chemical Industry Council of Illinois, and Argonne National Labs.

4.7 Hazmat Transportation Security

Security has become an important issue with respect to hazardous materials transportation in recent years, particularly after the attacks of September 11, 2001. Many states are developing offices of homeland security to model the efforts at the federal level, but few have implemented any new policies or programs specific related to hazmat transportation. The hazmat enforcement agencies are typically very involved in these ongoing program developments, however. For example, in West Virginia, the presence of many chemical manufacturers in the state has heightened their need for increased hazmat security in the state and the Public Service Commission is working closely with the Department of Public Safety and other agencies in this area.

Illinois has established a Terrorism Task Force that has a Transportation Terrorism Committee under its jurisdiction. Both governmental and private entities serve on the committee. While the task force is considering detection devices, they have not yet made any recommendations for implementation.

Following September 11, all states assisted FMCSA in their Security Sensitivity Visits. These visits were intended to inform hazmat carriers about the security risks they faced and provide them useable information that would allow effective identification of potential security risks.

Some states, such as Missouri, now include a security component in every one of their compliance reviews or educational contacts, even for non-hazmat carriers.

Developing a Statewide Hazmat Transportation Security Plan

With the support of the State Transport Police, the South Carolina FMCSA staff prepared a statewide hazardous materials transportation security plan. This plan outlines the programs in place within the state for hazmat transportation safety, the FMCSA efforts on security awareness, the hazmat transportation environment in South Carolina, and general national and international transportation security issues. The plan does not identify specific actions that South Carolina is taking or should take to address hazmat transportation security, however.

In Missouri, specific modifications were made to the state's Emergency Disaster Manual, which the State Highway Patrol (SHP) has used for a long time, to address security issues. A SHP Division Special Order was created to address specific actions relevant to the color-coded Homeland Security Advisory System (HSAS). It is important to create distinctions in policies and procedures to respond to increasing threat levels. These specific activities are summarized below:

Green: Normal staff scheduling. Routine inspections and driver contacts. Stay alert for warnings from drivers or the public.

Blue: Expanded scheduling in the threat area. Information on specific threats passed to division.

Yellow: Division personnel informed of specifics of threat. Expanded scheduling in the threat area. Portable units used to supplement the expanded hours of operation. Enforcement directed at inspection Levels II and III of hazmat carriers.

Orange: Enforcement personnel informed of specifics of threat. Portable units used to supplement the expanded hours of operation. If not needed for expanded fixed site coverage, portable units should be used in the threat area. Enforcement directed at inspection Level III of hazmat carriers. Uniformed officers may be stationed at fixed scales.

Red: Division personnel informed of specifics of threat. All scale houses operate 24/7 (subject to staff availability), supplemented by portable units. Inbound scales staffed to 24/7 levels before outbound scales. Vacation may be suspended at the troop commander's discretion. Inspection activity may be suspended, unless absolutely necessary. Face-to-face contact with drivers should be accomplished. Driver credentials and shipping papers should be closely examined. Database checks should be performed when questions on driver credentials or shipping papers arise. Suspension of electronic bypass systems may be implemented, requiring all vehicles to cross the static scales. Use of bypass lanes at fixed sites may also be suspended. Uniformed officers may be stationed at fixed scales.

Missouri also provides additional information to officers on detecting and responding to chemical or biological attacks. This includes identifying relevant symptoms, specific information that needs to be collected, and appropriate actions.

Developing Hazard Mitigation Strategies

Missouri now concentrates on hazmat carriers and tries to maximize the number of face-to-face contacts with drivers. Roadside inspectors will choose hazmat loads over non-hazmat loads when selecting vehicles for inspection. The state goal is for 24-hour operations at roadside locations, but they are 30 inspectors short. Portable inspection locations also target hazmat.

Following the events of September 11, 2001 all safety inspectors in West Virginia were pulled from roadside inspections and assigned security duties that included protecting bridges, performing Level III inspections on hazmat vehicles and rental trucks, and providing round-the-clock security for the chemical industry for several months.

A major initiative of the New York State Department of Transportation (NYSDOT) is the construction of truck hazmat inspection/emergency staging areas to protect the bridges and tunnels near New York City (NYC). This hazard mitigation project was developed in the planning division of the NYC regional office prior to September 11, 2001 but was moved up in importance in response to the terrorist attack. Also, following September 11, all hazmat inspections conducted were Level I (highest inspection) until the FMCSA notified them to drop to Level III (driver) inspections for all hazmat. The New York State Police (NYSP) made a decision to do Level II (vehicle) inspections because they felt the emphasis on the product was more critical than on the driver. The focus on Level II inspections reduced the number of out-of-service vehicles and drivers, but increased the number of trucks checked.

Following September 11, the NYSP adapted its training to include security interview questioning of drivers. For instance, asking the driver to do such things as showing where the emergency shut-off is located. If the driver does not know, or acts suspicious, the officer would take a closer look at the vehicle and driver and consider the possibility of a hijacked hazmat vehicle.

4.8 Permitting, Registration, and Routing

Permitting, registration, and routing are important elements of an effective state hazardous materials truck transportation compliance program. This section will be divided into discussions of (a) permitting and registration and (b) routing.

4.8.1 Permitting and Registration

Permitting and registration programs enable states to register and in some cases screen hazardous materials carriers in their states. These programs are another tool in the states' ongoing efforts to ensure that hazmat truck transportation is as safe and risk free as possible. Two basic types of programs will be discussed here in detail. The first is a uniform permitting and registration program, the Alliance for Uniform HazMat Transportation (the Alliance) and the second is a licensing (permitting) program that was developed internally by California. Other states, such as Missouri, require all carriers to register with them and obtain operating authority prior to commencing operations. This ensures that all carriers operating within the state are familiar with the hazardous materials regulations.

Alliance for Uniform Hazmat Transportation

The Alliance for Uniform Hazmat Transportation, or simply, the Alliance, is a base-state registration and permitting program for hazmat and hazardous waste transportation. A member state determines if both motor carriers and shippers can participate or participation is limited to carriers alone. For a carrier to qualify and receive a *credential*, which covers all member jurisdictions, the applicant is required to certify it complies with federal hazmat requirements for periodic inspections, financial responsibility, commercial driver licensing, bulk packaging, emergency response plan, state designated routing, hazmat training, shipping paper retention, and hours of service.

The Alliance evolved from the 1990 Hazardous Materials Transportation and Uniform Safety Act and developed through a project of the National Governors' Association (NGA) and National Conference of State Legislatures (NCSL) involving 22 state participants. After six years, an agreement was reached between seven states: Illinois, Michigan, Minnesota, Nevada, Ohio, Oklahoma, and West Virginia. The NCSL serves as the third party administrator for the program. Of the states receiving in-depth interviews for this project, Ohio and West Virginia have fully adopted the program and Illinois has limited permitting to hazardous and infectious waste. A State Program Administrator's Manual provides the guidelines for member states that join and participate in the Alliance. The Alliance fees obtained for motor carrier registration and permitting are the source of funding for the program. Fees are apportioned to member states based on activity in each state.

Registration of hazmat carriers is required annually and includes information on the number of vehicles and type of hazmat transported, as well as mileage breakouts used for calculating fees. The permit is valid for three years unless withdrawn, denied, suspended, or revoked. The Hazmat Permit application is examined and a safety review of the carrier made for a USDOT safety rating, hazmat violations and incidents, certifications, out of service occurrences, and accidents with hazmat. The HazWaste Permit application and review is also done triennially and involves a corporate review of key management personnel, related business concerns, legal proceedings, incorporation, other permits held, and facilities owned and operated.

The fees assessed under the Alliance are for (a) annual processing and registration (registration fee calculated with a "safe harbor" formula), (b) Hazmat Permit review fees based on the cost of the safety review (one-third collected each year), and (c) HazWaste Permit review fees (a set amount directly related to the cost of the review).

The benefits that the Alliance provides to its member states include an annual safety review conducted on the applicant, disqualification of carriers not satisfying the Federal safety requirements, and intrastate carrier safety fitness reviews.

Enforcement of the Uniform Program, by Illinois, Ohio, West Virginia, or other Alliance states, may be conducted through, but not limited to, the following activities:

- Inspections. The physical examination and certification of specific vehicles, tanks, containers, cargo, and/or drivers.

- On-Site Reviews. On-site examination of a carrier or shipper's operations including physical inspections and review of the company's operating systems.
- On-Site Audits. Examination of a company's records to verify information on which a permit is based and to determine compliance with the state Uniform Program requirements
- Desk Audits. An in-house review of a company's records sent by the company to the regulatory agency, generally triggered by a suspected compliance violation.
- Reports. Existing reports for the motor carrier that describe the carrier's activities.
- Roadside Inspections. Inspection of vehicles and drivers while en route, primarily at weigh stations and ports of entry.
- Spot Checks. Inspection of vehicles and drivers by law enforcement officers based on probable cause or statutory authority.
- Consumer Complaints. Investigations of alleged violations triggered by a public inquiry.
- Cross-matching of Data. Comparison of available data from two or more independent sources (e.g., MCSAP inspections and hazardous material motor carrier registrations).
- Investigative Authority. Use of subpoenas, depositions and other interrogatory powers.

The Alliance allows the base state to suspend the Alliance permit of a carrier and determine the conditions under which the suspension is lifted. If an Alliance permit is revoked, the motor carrier must reapply for a new Alliance permit under the full Uniform Program application process before it can transport hazardous materials.

The permit process provides the state with greater control over carriers and enables officials to review a carrier during the application and renewal process. A carrier may be denied renewal of its permit application for registration under the Alliance system if it owes money from any fines that have been previously assessed. A carrier could also be put on notice that its permit is in jeopardy for other violations. For example if the carrier is found to have an unacceptable number of bulk package violations, the carrier will be notified that its hazmat permit is being reviewed for possible revocation based on their failure to comply with the bulk package certification on their Uniform Permit. Similarly, if a carrier that transports hazardous waste is found to have repeated violations of the hazardous materials and hazardous waste regulations, they could be put on notice that their permit is being reviewed for failure to comply with requirements. The base state is required to notify the national repository for the Alliance of any pending actions against a shipper or carrier that may result in suspension or revocation of a permit.

California Hazmat Licensing Program

The California Highway Patrol (CHP) has their own Hazardous Materials Licensing Program, which is essentially a hazmat permitting program. The state also has a general separate,

unrelated Motor Carrier Permitting Program. This hazmat licensing program has a long history in California, beginning with the licensing of explosives carriers in the 1950s. In 1982, the state passed a law that requires a license for all carriers of placarded quantities of hazardous materials and all carriers transporting 500 pounds or more of any hazardous material, whether placarded or not. The latter part of this law is at odds with the Federal hazmat regulations.

Hazmat carriers pay a \$100 annual license fee. There are 5,400 hazmat carrier licenses issued in California. There is approximately an even split between interstate and intrastate hazmat carriers. The fees are used to offset the license processing costs (about 35%) and the rest is applied to general motor carrier enforcement.

Licenses are issued based upon the submission of a properly completed application along with the fee. No other requirements apply. The license application and approval process are kept simple intentionally so as not to discourage anyone from applying. This is in contrast to the Alliance Permitting Program, which involves a seven to eight page application and greater fees. The major reason for the permitting program is identification of hazmat carriers. CHP mainly desires a current database of all hazmat carriers operating in the state of California.

The hazmat license has to be carried on the hazmat vehicles, subject to a \$2,000 fine. The license can be revoked for violations, but this has been rarely done in California. One important connection that is made during the licensing process is that the licensees are specifically directed to the routing requirements for applicable hazmat. Carriers can be issued and faxed a license to carry hazmat while the application is in process.

The CHP believes that the state hazmat licensing is a critical component of the overall hazmat compliance program in California. The licensing program provides a database of all hazmat carriers and lets the CHP know who is operating in the state of California. This database is then used for targeted training and industry education programs. The licensing process itself is used to educate hazmat carriers about specific, additional requirements that apply to them, especially routing requirements.

4.8.2 Routing Programs

Routing programs allow a state to prohibit hazardous materials transportation on selected routes or put some routes off-limits for hazardous materials transportation depending on the risk of the hazardous materials being shipped. Routing is designed to reduce hazmat accidents by keeping hazmat off bad roads or to reduce their consequences by minimizing the population or sensitive areas through which the shipments must travel. Most states do not have formal routing programs, but some have identified specific route restrictions or bypasses. Of the states visited for in-depth interviews, California and Colorado have noteworthy routing programs.

California Hazmat Routing Program

The CHP Routing Program applies to placarded quantities of three types of hazmat: (1) explosives, (2) poison-by-inhalation materials, and (3) radioactive materials. Routing is required for these materials by state statute and incorporated into Title 13 of the California Code. Carriers are notified of the routing requirements through the hazmat licensing application process (discussed on page 49).

Separate Routing Guides are issued to carriers for each type of hazardous material subject to routing. A critical component of the Routing Guides is the listing of Safe Stopping Places and Safe Parking Places applicable to each route. Safe Stopping Places are locations where a driver can stop the vehicle to rest; however, they must remain with the vehicle. Safe Parking Places are locations that a driver can park and leave the vehicle unattended temporarily for meals or sleeping accommodations. These locations include truck stops, designated parking places along the road, and other commercial businesses. The locations are designated by CHP personnel within each district who are familiar with the roads and they are continuously reviewed and updated.

Carriers can petition CHP to establish a new route. The CHP utilizes a computer program to determine the preferred route based on predetermined criteria. These criteria are risk-based and include such factors as distance, accident rates, travel time, and allowances for pickup and delivery off the main route. A CHP representative physically drives each route before it is designated as a hazmat route to identify any issues that cannot be represented or addressed through the computer analysis. CHP also goes through a public hearing process before designating a route.

California will be both an origin state and a through state for shipments of transuranic wastes to the Waste Isolation Pilot Plant (WIPP) and spent nuclear fuel to Yucca Mountain. The California Energy Commission is the state representative to the Western Governors Association, which works with the Department of Energy in coordinating shipments to WIPP and Yucca Mountain. CHP coordinates with the Energy Commission on designation of routes and enforcement of transportation requirements for these shipments.

Colorado Hazmat Routing Program

The Colorado State Patrol is authorized by section 42-20-108(2), Colorado Revised Statutes (C.R.S.), to adopt rules and regulations for the routing of hazardous materials transportation by motor vehicle within the State of Colorado. They also have the authority to enforce the use of designated routes.

The process of designating a hazardous materials route originates with local governments that apply to the State Patrol either for a new hazardous materials route designation or for a change in an existing route. The petitioners must submit a package to the State Patrol that includes a route analysis of the proposed and alternative routes. The applicant may also include any other information that they consider necessary for supporting their request. The State Patrol evaluates the petition according to provisions in the state statute.

After a route has been approved, the State Patrol will periodically review the route in order to confirm that the designation still meets the provisions of Colorado state regulations. If the State Patrol determines that the risk level on the route has increased, a revised petition may be requested from the local government. This could lead to change in the hazmat status of the route.

In Colorado, there are currently 30 north-to-south routes and 38 east-to-west routes that are designated to be used for the shipment of hazmat. One route that currently is being petitioned for

designation as a hazardous materials route would eliminate 160 miles from the route that must currently be used.

The State Patrol also has promulgated rules for the shipment of radioactive materials. With the exception of portions of several state routes designated to give access to the Rocky Flats facility northwest of Denver, all of the routes follow Interstate highways. However, no radioactive materials are allowed on I-70 west of Denver.

4.9 Cargo Tank Inspection and Testing

The U.S. DOT has promulgated a number of regulations that specifically address cargo tanks, including their certification as well as testing and cleaning procedures. Cargo tank testing and cleaning facilities are often in-house facilities of large motor carriers. However, many private facilities nationwide serve the smaller carriers. The activities at cargo tank facilities are certified by registered inspectors, who are typically employed by the operator of the facility.

Most states do not have a formal program for inspecting cargo tank testing and cleaning facilities. This responsibility is often left to RSPA or FMCSA inspectors and results in very infrequent inspections. Nonetheless, two of the states included in the in-depth study have cargo tank facility inspection programs: Illinois and South Carolina.

Other states, such as California, that do not have separate cargo tank programs include the inspection of cargo tanks themselves as part of roadside inspections, compliance reviews, and shipper reviews. In California, the Biennial Inspection of Terminals (BIT) Program includes motor carriers conducting cargo tank operations. Cargo tanks are inspected in addition to the terminal facilities, which include testing and cleaning facilities, during each BIT inspection.

Illinois Cargo Tank Facility Inspection Program

The Hazardous Material Compliance Unit in the Illinois DOT reviews cargo tank facilities' compliance with hazmat regulations. IDOT has been conducting reviews since 1997. IDOT has conducted an average of from eight to ten reviews annually. Detailed FMCSA procedures are followed for the review. The cargo tank facility review is entered into their CAPRI software, which is designed to provide FMCSA with statistical information. The most common problem uncovered in Illinois inspections is the failure of companies to renew their applications.

Since specialized training is required for the cargo tank inspector, IDOT staff worked with FMCSA staff to create a class on inspecting tank facilities. This targeted class may be of interest to other states considering implementing or augmenting their cargo tank facility inspection program.

South Carolina Cargo Tank Facility Inspection Program

The South Carolina State Transport Police (STP) is furthering the development of their skills to inspect cargo tank testing and inspection facilities. Currently, these inspections are done in conjunction with the state FMCSA office and are not very frequent. One of the problems facing South Carolina that particularly affects their cargo tank program is the attrition in trained hazmat staff at the STP as well as in the state FMCSA office.

On occasion, the STP has had to challenge the registered inspector of a cargo tank testing facility on their testing procedures. This was due to a belief that the inspector had insufficient qualifications or that the inspector passed a package based on their relationship to the company offering the packaging for inspection.

4.10 Other Program Initiatives

South Carolina Statewide Risk Management Plan

South Carolina's hazardous materials related goals were added to the list of state-specific goals in 2000, following a risk survey in 1999 that raised hazmat as a serious issue. A hazardous materials risk management problem statement was added to the state's FY 2001 CVSP. This led to a risk management grant for the state that encompasses three phases: identification, survey/fact gathering, and development of a clearinghouse. The first phase, to define the details of the hazmat transportation risk problem, was contracted to South Carolina State University and is nearing completion. The second phase will develop a draft hazmat risk framework and will rely on relevant literature to support its development. The clearinghouse task will identify the key risk factors in hazmat transportation risk in South Carolina, identify the structure and content of the data for the clearinghouse and current sources for that data, and the algorithms needed to prepare and process the data for analysis and monitoring of transportation risk.

South Carolina also wishes to establish a committee of approximately 24 individuals representing stakeholder agencies and industry groups to focus on (a) the problem areas of hazmat transportation within the state, (b) overlapping laws and responsibilities, and (c) developing a vision of how hazmat should be handled. Ultimately, these efforts will culminate in a hazmat management plan for the state.

Hazmat Package Inspection Program

The purpose of this national package inspection program (PIP) is to ensure compliance with hazmat packaging regulations for carriers that are transporting non-bulk packagings. The Ohio PUCO has been especially effective in uncovering packaging violations through the implementation of the PIP. Hazmat specialists at the PUCO typically conduct packaging inspections at LTL break-of-bulk carrier terminals where packages are being separated for further shipment. This operation typically occurs during the hours of 7 pm to 2 am. Each PIP effort examines a particular type of hazmat found in a certain type of package. An HMPIP form is completed for each type of hazmat being inspected. Occasionally, HMPIP inspections can be completed at the roadside and submitted along with ASPEN inspection data. Ohio completes approximately a dozen PIPs each month.

Hazmat Incident Compliance Enforcement

Hazmat Specialists in a number of states respond to hazmat incidents. One of their most important functions at these incidents is the investigation of compliance violations. For example, the Ohio PUCO is responsible for enforcing the hazmat regulations. They will inspect the hazmat vehicle involved in the incident, interview key witnesses such as the driver and carrier officials and determine if violations occurred. Although the Ohio EPA has responsibility for oversight for any required cleanup, the PUCO will ensure that hazmat at the incident scene is

packaged and shipped properly. The PUCO also has the authority to enter private property to investigate hazmat incidents at transportation facilities. Consequently, they are often called by local fire departments to respond to hazmat transportation incidents at a carrier's facility. PUCO hazmat specialists respond to about 60 hazmat incidents a year where there is a hazmat release.

The Colorado State Patrol officers are formed into two-man hazmat response teams strategically placed in regions located around the state. Unless there is a local hazmat response team, these teams respond to hazmat incidents in their region. Perhaps the teams' most important responsibility is enforcing the hazmat rules and determining if violations of law occurred. The State Patrol personnel can and do assess penalties for violations of the law while at an incident scene.

5.0 Summary

This project helps document the state-of-the-practice for state hazmat transportation compliance programs. The project team first reviewed existing information on the state programs, primarily by analyzing the state CVSPs and extracting pertinent information relating to hazmat. A comprehensive survey of all state programs was then conducted through the use of a questionnaire. An extensive database was developed based on the survey responses and a state survey report was prepared for FMCSA.

Based on the survey responses, the project team developed an approach for subjectively ranking the states to make selections for further in-depth review. Site visits were then conducted for eight states and exemplary programs or “best practices” were identified in seven different program areas. These program areas were: (1) roadside inspections; (2) compliance reviews; (3) shipper reviews; (4) education, training, and outreach; (5) hazmat security; (6) permitting, registration, and routing; and (7) cargo tank inspection and testing. These exemplary programs could serve as models for other states to consider as improvements to their overall hazmat compliance programs.

Appendix A. Survey Questionnaire

The complete survey questionnaire for this project is included in this Appendix. The development and deployment of the survey is presented in Section 2.2. A summary of the survey results are also presented in that section.

State Hazardous Materials Enforcement Program Survey

Please return by: January 15, 2002

Attach additional pages if needed. Please answer all questions even if the answer may be "none".

Section I. Regulatory Authority for State Program

1. Has your State adopted the Federal Regulations for Hazardous Materials (hazmat) Transportation? How and When (indicate year)?
 - a. By reference? _____ Legislation? _____ Legal Citation _____
 - b. What Year? _____

2. How are changes in the Federal Regulations adopted?
 - a. Automatically _____
 - b. Legislative action required _____

3. What agencies in your State have any enforcement authority over hazmat carriers?

State Police _____	Transportation _____	Motor Vehicles _____
Environmental _____	Public Utilities _____	Other (specify) _____

Briefly explain these authorities and provide an organizational framework.

4. What agencies in your State have any enforcement authority over hazmat shippers?

State Police _____	Transportation _____	Motor Vehicles _____
Environmental _____	Public Utilities _____	Other (specify) _____

Briefly explain these authorities and provide an organizational framework.

5. Does your agency and/or others in your State have the authority to:

a. Stop vehicles:

Transporting hazmat? _____ Suspected of transporting hazmat? _____

b. Open vehicles:

Transporting hazmat? _____ Suspected of transporting hazmat? _____

Section II. HazMat Compliance Program

1. What do you consider to be the top 3 to 5 major regulatory compliance issues for hazmat transportation by truck in your State?

2. What special compliance programs are in effect in your State for hazmat transportation by truck?

3. What is the organizational structure of the hazmat truck transportation compliance program in your State?

a. Which agency has the lead role for management of the compliance program?

b. List the agencies involved and their major responsibilities and emphasis areas.

Agency	Major Responsibility	Emphasis Area
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8. What elements of a hazmat carrier's operation are routinely checked during a roadside safety inspection? (Check all that apply)
 - a. The truck's mechanical components? ____
 - b. Cargo tanks and containers? ____
 - c. Driver qualifications and documents? ____
 - d. Hazmat packaging inside trailers for labeling, marking, leakage, etc.? ____
 - e. Carrier safety records? ____
 - f. Shipping papers and placards? ____
 - g. Other (specify) _____

9. What methods are used in your State to ensure that carriers are brought into compliance after hazmat violations are discovered?

10. Does your agency and or other agencies in your State perform hazmat Compliance Reviews? If yes:
 - a. How many agencies?
 - b. How many personnel?
 - c. What percent of all Compliance Reviews in your State are conducted on hazmat carriers?

11. What percent of the inspections at hazmat carriers' facilities are based on periodic inspections, carrier performance, random selection, or other (specify)?

	Percent
Periodic Inspections	
Carrier Performance	
Random Selection	
Other	

12. What databases or algorithms (e.g., SafeStat) are used by your State to identify carriers requiring compliance action?

Rate the effectiveness of each database in identifying high-risk carriers for increased hazmat compliance scrutiny on a scale of 1 to 10 where 1 = least effective and 10 = most effective.

<i>Database/Algorithm</i>	<i>Effectiveness rating</i>
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13. Which agencies in your State perform hazmat Shipper Reviews?

Agency	Number of Personnel

14. How do you judge the overall success of your State’s hazmat compliance program on a scale of 1 to 10 where 1 = low and 10 = high?

1 2 3 4 5 6 7 8 9 10

15. What performance measures are used to evaluate the success of your State’s compliance program? (Check all that apply and indicate trends you have observed)

- a. Trends in the total number of hazmat incidents? _____
- b. Trends in severe incidents involving injuries, fatalities, or high cost? _____
- c. Trends in number of hazmat violations and enforcement actions? _____
- d. Trends in hazmat inspections (carrier and/or shipper)? _____
- e. Trends in program resources (budget, staffing, etc.)? _____

Section III. Resource Allocation

For each agency involved in hazmat compliance in your State, please answer the following questions.

1. What is the FY01 monetary allocation for each major component in your hazmat program?

<u>Program Component</u>	<u>FY01 Budget</u>
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a. What is the funding breakdown by source (Federal, State)? Please provide an estimate of the amount allocated (Federal and State) for hazardous materials education, compliance and enforcement in your State (as a percentage of the overall program budget).

Federal	\$ _____	_____ %
State	\$ _____	_____ %
Total	\$ _____	_____ %

b. Please estimate the total amount of State and federal dollars spent on hazardous materials compliance and enforcement activities in your State for the last 5 years (average per year).

	<u>FY97</u>	<u>FY98</u>	<u>FY99</u>	<u>FY00</u>	<u>FY01</u>
Federal	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____
State	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____

2. How many employees (or full-time equivalents) in your State are involved in hazmat transportation compliance and enforcement?

3. What percent of the total employees involved in hazmat transportation compliance and enforcement are inspectors (or full-time equivalents)?

Section IV. Other Hazmat Safety Programs

1. Does your State include routing restrictions or permitting for HM in its compliance programs? If yes, please describe.

2. Do you have estimates of hazmat transportation flows in your State? If so, please provide the most recent estimates of:

- a. Traffic volumes?
- b. Traffic mix by hazard classes?

3. Please describe sources of data (Federal, State or other) used to estimate hazmat transportation incidents in your State?

4. Does the State use, and/or encourage the use of, new ITS technology to improve hazmat compliance and enforcement? If yes, please provide details.

5. Are your agency or other agencies in your State conducting any special strike force activities (inspections or others) or other unique enforcement strategies on hazmat carriers and/or shippers? If yes, please explain and indicate what the outcome(s) have been to date.

Section V. Education, Training, and Outreach

1. Please describe the hazmat training conducted by your agency and/or others in your State.

- a. For Enforcement?

- b. For Industry?

2. Does your State have any specific programs or initiatives regarding education, training, and outreach of hazmat carriers and/or shippers? If yes, please describe and explain the type, nature and frequency of each.

3. Are there any new hazmat compliance education, training, and outreach programs that are in the planning, development or implementation stages?
 - a. Describe each program.

4. Is your State using any decision support tool (e.g., SafeStat) to target education, compliance and enforcement programs? For example, to help identify carriers for educational visits. If yes, please explain.

5. Does your State have a long-range performance plan for improving the safety and security of the handling, shipment, and transportation of hazmat? If yes, please explain.

6. Are there infrastructure improvement plans (e.g., dedicated truck lanes) in your State that should enhance hazmat transportation safety?

7. What hazmat compliance tool or initiative would you like to institute in the State that is currently not present?

8. Does your State participate in any regional (multi-state) initiative to promote uniformity in hazmat enforcement, permitting or other areas of your program? If yes, explain.

Section VI. Hazmat Transportation Security

1. Has your State implemented, or does it plan to implement, a plan for addressing hazmat security?

2. Estimate how many hazmat carriers based in your State transport high-hazard materials (listed in 49 CFR 172.504 Table 1) by hazard class. What is the average number of vehicles in the fleet of each carrier transporting high-hazard materials?

3. Do you consider the current commercial driver licensing (CDL) program and carrier training requirements to be adequate for drivers of trucks transporting high-hazard materials? If not, please explain.

Appendix B. Composite Measurement Index

The following table contains the calculations and background summary data used to compute the composite measurement index (CMI). The development and use of the CMI are described in Section 3.2.

