

Appendices to the Report: “Motor Carrier Hazardous Materials Safety Permits Study”



U.S. Department of Transportation
Federal Motor Carrier Safety Administration

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FOREWORD

These are the appendices to the report titled “Motor Carrier Hazardous Materials Safety Permits Study,” available at: <https://doi.org/10.21949/1503445>. Minor changes have been made to this document since its initial writing and compilation. Note:

- “Compliance review” and its acronym “CR” have been changed to read “comprehensive investigation” and “CI,” respectively, except in APPENDIX A and APPENDIX P, as the next bullet describes.
- APPENDIX A’s “Petition for Rulemaking on Hazardous Materials Safety Permits,” found under the subheading titled “The Petition,” and the Federal Motor Carrier Safety Administration’s (FMCSA’s) response titled “FMCSA Response to Petition for Revision of HMSP Program” received no edits on their content, except for what is mentioned in the following two bullets. This was to maintain their historical integrity. Some minor adjustments were made in formatting, namely the removal of empty lines and corresponding compensatory adjustment of spacing between lines, such that the effects were negligible. The same standard was applied when editing APPENDIX P, as the detailed work plan also exists outside the context of these appendices.
- The captions for Figure 1 and Figure 2 were edited mildly to fit with FMCSA format since they are included in the list of tables. They also were edited to indicate that the figures were submitted as part of the aforementioned petition to FMCSA, rather than stemming from FMCSA. This is particularly important for Figure 1, as it was supplied as part of an analysis with results that the full report does not agree with.
- APPENDIX A’s “Petition for Rulemaking on Hazardous Materials Safety Permits” includes three appendices on pages 18-22. Their headings have been altered and a note has been added on page 17 to emphasize that these are not Appendices A-C of this document.

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LIST OF ABBREVIATIONS AND SYMBOLS

Acronym	Definition
APA	American Pyrotechnics Association
ARA	Agriculture Retailers Association
ATA	American Trucking Associations
BASIC	Behavior Analysis and Safety Improvement Category
CAP	Corrective Action Plan
CDL	Commercial Driver's License
CDLIS	Commercial Driver's License Information System
CI	Comprehensive Investigation
CR	Compliance Review
CSA	Compliance, Safety, Accountability
CVSA	Commercial Vehicle Safety Alliance
DGAC	Dangerous Goods Advisory Council
FMCSA	Federal Motor Carrier Safety Administration
FMCSR	Federal Motor Carrier Safety Regulation
HM	Hazardous Materials
HazMat	Hazardous Materials (also spelled as hazmat)
HMSP	Hazardous Materials Safety Permit
HMTUSA	Hazardous Materials Transportation Uniform Safety Act (of 1990)
IFTA	International Fuel Tax Association
IME	Institute of Makers of Explosives
IRP	International Registration Plan
ISS	Inspection Selection System
IT	Information Technology
L&I	Licensing and Insurance (system)
MAP-21	Moving Ahead for Progress in the 21 st Century Act
MCS-150	Motor Carrier Safety Form 150 (application for USDOT number)

Acronym	Definition
MCS-150B	Motor Carrier Safety Form 150B (Combined Motor Carrier Identification Report and HM Permit Application)
MCSA-1	Online Application for URS that combines all previous forms and rolled out for all carriers in late 2016.
MCMIS	Motor Carrier Management Information System
NACD	National Association of Chemical Distributors
NCSL	National Council of State Legislatures
NTTC	National Tank Truck Carriers
OOS	Out of Service
PHMSA	Pipeline and Hazardous Materials Safety Administration
SAFETEA-LU	Safe Accountable Flexible Efficient Transportation Equity Act: A Legacy for Users
SMS	Safety Measurement System, also called “Carrier Safety Measurement System” or “CSMS”
SSRS	Single State Registration System
THMSP	Temporary Hazardous Materials Safety Permit
TFI	The Fertilizer Institute
UCR	Unified Carrier Registration
URS	Unified Registration System

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APPENDIX A: RELEVANT REGULATIONS, LEGISLATION, AND DECISIONS

ORIGINAL PERMIT ISSUANCE AND RENEWALS

FMCSR 49 CFR § 385.407 addresses when FMCSA can issue a Hazardous Materials Safety Permit. These regulations apply to both new permits and renewals. The text of this regulation is presented below.

§ 385.407 What conditions must a motor carrier satisfy for FMCSA to issue a safety permit?

- (a) Motor carrier safety performance.
 - (1) The motor carrier must have a “Satisfactory” safety rating assigned by either FMCSA, pursuant to the Safety Fitness Procedures of this part, or the State in which the motor carrier has its principal place of business, if the State has adopted and implemented safety fitness procedures that are equivalent to the procedures in subpart A of this part; and
 - (2) FMCSA will not issue a safety permit to a motor carrier that:
 - (i) Does not certify that it has a satisfactory security program as required in §385.407(b);
 - (ii) Has a crash rate in the top 30 percent of the national average as indicated in the FMCSA Motor Carrier Management Information System (MCMIS); or
 - (iii) Has a driver, vehicle, hazardous materials, or total Out-of-Service rate in the top 30 percent of the national average as indicated in the MCMIS.
- (b) Satisfactory security program. The motor carrier must certify that it has a satisfactory security program, including:
 - (1) A security plan meeting the requirements of part 172, subpart I of this title, and addressing how the carrier will ensure the security of the written route plan required by this part;
 - (2) A communications plan that allows for contact between the commercial motor vehicle operator and the motor carrier to meet the periodic contact requirements in §385.415(c)(1); and
 - (3) Successful completion by all hazmat employees of the security training required in §172.704(a)(4) and (a)(5) of this title.
- (c) Registration with the Pipeline and Hazardous Materials Safety Administration (PHMSA). The motor carrier must be registered with PHMSA in accordance with part 107, subpart G of this title.

HMSP SUSPENSION OR REVOCATION

FMCSR 49 CFR § 385.421 addresses when FMCSA can suspend or revoke a Hazardous Materials Safety Permit. These regulations apply to both new permits and renewals. The text of this regulation is presented below.

§ 385.421 Under what circumstances will a safety permit be subject to revocation or suspension by FMCSA?

- (a) **Grounds.** A safety permit will be subject to revocation or suspension by FMCSA for the following reasons:
- (1) A motor carrier fails to submit a renewal application (Form MCS-150B) in accordance with the schedule set forth in §390.19(a)(2) and (a)(3) of this chapter;
 - (2) A motor carrier provides any false or misleading information on its application (Form MCS-150B) or as part of updated information it is providing on Form MCS-150B (see § 385.405(d)).
 - (3) A motor carrier is issued a final safety rating that is less than Satisfactory;
 - (4) A motor carrier fails to maintain a satisfactory security plan as set forth in §385.407(b);
 - (5) A motor carrier fails to comply with applicable requirements in the FMCSRs, the HMRs, or compatible State requirements governing the transportation of hazardous materials, in a manner showing that the motor carrier is not fit to transport the hazardous materials listed in §385.403;
 - (6) A motor carrier fails to comply with an Out-of-Service order;
 - (7) A motor carrier fails to comply with any other order issued under the FMCSRs, the HMRs, or compatible State requirements governing the transportation of hazardous materials, in a manner showing that the motor carrier is not fit to transport the hazardous materials listed in §385.403;
 - (8) A motor carrier fails to maintain the minimum financial responsibility required by §387.9 of this chapter or an applicable State requirement;
 - (9) A motor carrier fails to maintain current hazardous materials registration with the Research and Special Programs Administration; or
 - (10) A motor carrier loses its operating rights or has its registration suspended in accordance with §386.83 or §386.84 of this chapter for failure to pay a civil penalty or abide by a payment plan.
- (b) Determining whether a safety permit is revoked or suspended. A motor carrier's safety permit will be suspended the first time any of the conditions specified in paragraph (a) of this section are found to apply to the motor carrier. A motor carrier's safety permit will be revoked if any of the conditions specified in paragraph (a) of this section are found to apply to the motor carrier and the carrier's safety permit has been suspended in the past for any of the reasons specified in paragraph (a) of this section.
- (c) Effective date of suspension or revocation. A suspension or revocation of a safety permit is effective:
- (1) Immediately after FMCSA determines that an imminent hazard exists, after FMCSA issues a final safety rating that is less than Satisfactory, or after a motor carrier loses its operating rights or has its registration suspended for failure to pay a civil penalty or abide by a payment plan;
 - (2) Thirty (30) days after service of a written notification that FMCSA proposes to suspend or revoke a safety permit, if the motor carrier does not submit a written request for administrative review within that time period; or

- (3) As specified in §385.423(c), when the motor carrier submits a written request for administrative review of FMCSA's proposal to suspend or revoke a safety permit.
- (4) A motor carrier whose safety permit has been revoked will not be issued a replacement safety permit or temporary safety permit for 365 days from the time of revocation.

MAP-21, SEC. 33014. MOTOR CARRIER SAFETY PERMITS.

- (a) **REVIEW.**—Not later than 1 year after the date of enactment of this Act, the Secretary shall conduct a study of, and transmit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives a report on, the implementation of the hazardous material safety permit program under section 5109 of title 49, United States Code. In conducting the study, the Secretary shall review, at a minimum—
 - (1) the list of hazardous materials requiring a safety permit;
 - (2) the number of permits that have been issued, denied, revoked, or suspended since inception of the program and the number of commercial motor carriers that have never had a permit denied, revoked, or suspended since inception of the program;
 - (3) the reasons for such denials, revocations, or suspensions;
 - (4) the criteria used by the Federal Motor Carrier Safety Administration to determine whether a hazardous material safety permit issued by a State is equivalent to the Federal permit; and
 - (5) actions the Secretary could implement to improve the program, including whether to provide opportunities for an additional level of fitness review prior to the denial, revocation, or suspension of a safety permit.
- (b) **ACTIONS TAKEN.**—Not later than 2 years after the date of enactment of this Act, based on the study conducted under subsection (a), the Secretary shall either institute a rulemaking to make any necessary improvements to the hazardous materials safety permit program under section 5109 of title 49, United States Code or publish in the Federal Register the Secretary's justification for why rulemaking is not necessary.

HMTUSA OF 1990 SEC 5108

- (a) **PERSONS REQUIRED TO FILE.**—
 - (1) A person shall file a registration statement with the Secretary of Transportation under this subsection if the person is transporting or causing to be transported in commerce any of the following:
 - (A) a highway-route-controlled quantity of radioactive material.
 - (B) more than 25 kilograms of a class A or B explosive in a motor vehicle, rail car, or transport container.
 - (C) more than one liter in each package of a hazardous material the Secretary designates as extremely toxic by inhalation.
 - (D) hazardous material in a bulk packaging, container, or tank, as defined by the Secretary, if the bulk packaging, container, or tank has a capacity of at least 3,500 gallons or more than 468 cubic feet.

- (E) a shipment of at least 5,000 pounds (except in a bulk packaging) of a class of hazardous material for which placarding of a vehicle, rail car, or freight container is required under regulations prescribed under this chapter.
 - (2) The Secretary of Transportation may require any of the following persons to file a registration statement with the Secretary under this subsection:
 - (A) a person transporting or causing to be transported hazardous material in commerce and not required to file a registration statement under paragraph (1) of this subsection.
 - (B) a person manufacturing, fabricating, marking, maintaining, reconditioning, repairing, or testing a package or container the person represents, marks, certifies, or sells for use in transporting in commerce hazardous material the Secretary designates.
 - (3) A person required to file a registration statement under this subsection may transport or cause to be transported, or manufacture, fabricate, mark, maintain, recondition, repair, or test a package or container for use in transporting, hazardous material, only if the person has a statement on file as required by this subsection.
 - (4) The Secretary may waive the filing of a registration statement, or the payment of a fee, required under this subsection, or both, for any person not domiciled in the United States who solely offers hazardous materials for transportation to the United States from a place outside the United States if the country of which such person is a domiciliary does not require persons domiciled in the United States who solely offer hazardous materials for transportation to the foreign country from places in the United States to file registration statements, or to pay fees, for making such an offer.
- (b) FORM, CONTENTS, AND LIMITATION ON FILINGS.—
- (1) A registration statement under subsection (a) of this section shall be in the form and contain information the Secretary of Transportation requires by regulation. The Secretary may use existing forms of the Department of Transportation and the Environmental Protection Agency to carry out this subsection. The statement shall include—
 - (A) the name and principal place of business of the registrant;
 - (B) a description of each activity the registrant carries out for which filing a statement under subsection (a) of this section is required; and
 - (C) each State in which the person carries out the activity.
 - (2) A person carrying out more than one activity, or an activity at more than one location, for which filing is required only has to file one registration statement to comply with subsection (a) of this section.
- (c) FILING DEADLINES AND AMENDMENTS.—
- (1) Each person required to file a registration statement under subsection (a) of this section must file the first statement not later than March 31, 1992. The Secretary of Transportation may extend that date to September 30, 1992, for activities referred to in subsection (a)(1) of this section. A person shall renew the statement periodically consistent with regulations the Secretary prescribes, but not more than once each year and not less than once every 5 years.
 - (2) The Secretary of Transportation shall decide by regulation when and under what circumstances a registration statement must be amended and the procedures to follow in amending the statement

- (d) **SIMPLIFYING THE REGISTRATION PROCESS.**—The Secretary of Transportation may take necessary action to simplify the registration process under subsections (a)-(c) of this section and to minimize the number of applications, documents, and other information a person is required to file under this chapter and other laws of the United States.
- (e) **COOPERATION WITH ADMINISTRATOR.**—The Administrator of the Environmental Protection Agency shall assist the Secretary of Transportation in carrying out subsections (a)-(g)(1) and (h) of this section by providing the Secretary with information the Secretary requests to carry out the objectives of subsections (a)-(g)(1) and (h).
- (f) **AVAILABILITY OF STATEMENTS.**—The Secretary of Transportation shall make a registration statement filed under subsection (a) of this section available for inspection by any person for a fee the Secretary establishes. However, this subsection does not require the release of information described in section 552(b) of title 5 or otherwise protected by law from disclosure to the public.
- (g) **FEES.**—
 - (1) The Secretary of Transportation may establish, impose, and collect from a person required to file a registration statement under subsection (a) of this section a fee necessary to pay for the costs of the Secretary in processing the statement.
 - (2)
 - (A) In addition to a fee established under paragraph (1) of this subsection, the Secretary of Transportation shall establish and impose by regulation and collect an annual fee. Subject to subparagraph (B) of this paragraph, the fee shall be at least \$250 but not more than \$5,000 from each person required to file a registration statement under this section. The Secretary shall determine the amount of the fee under this paragraph on at least one of the following:
 - (i) gross revenue from transporting hazardous material.
 - (ii) the type of hazardous material transported or caused to be transported.
 - (iii) the amount of hazardous material transported or caused to be transported.
 - (iv) the number of shipments of hazardous material.
 - (v) the number of activities that the person carries out for which filing a registration statement is required under this section.
 - (vi) the threat to property, individuals, and the environment from an accident or incident involving the hazardous material transported or caused to be transported.
 - (vii) the percentage of gross revenue derived from transporting hazardous material.
 - (viii) the amount to be made available to carry out sections 5108(g)(2), 5115, and 5116 of this title.
 - (ix) other factors the Secretary considers appropriate.
 - (B) The Secretary of Transportation shall adjust the amount being collected under this paragraph to reflect any unexpended balance in the account established under section 5116(i) of this title. However, the Secretary is not required to refund any fee collected under this paragraph.

- (C) The Secretary of Transportation shall transfer to the Secretary of the Treasury amounts the Secretary of Transportation collects under this paragraph for deposit in the account the Secretary of the Treasury establishes under section 5116(i) of this title.
- (h) **MAINTAINING PROOF OF FILING AND PAYMENT OF FEES.**—The Secretary of Transportation may prescribe regulations requiring a person required to file a registration statement under subsection (a) of this section to maintain proof of the filing and payment of fees imposed under subsection (g) of this section.
- (i) **RELATIONSHIP TO OTHER LAWS.**—
- (1) Chapter 35 of title 44 does not apply to an activity of the Secretary of Transportation under subsections (a)-(g)(1) and (h) of this section.
- (2)–
- (A) This section does not apply to an employee of a hazmat employer.
- (B) Subsections (a)-(h) of this section do not apply to a department, agency, or instrumentality of the United States Government, an authority of a State or political subdivision of a State, or an employee of a department, agency, instrumentality, or authority carrying out official duties.

HMTUSA OF 1990 SEC. 5109. MOTOR CARRIER SAFETY PERMITS

- (a) **REQUIREMENT.**—A motor carrier may transport or cause to be transported by motor vehicle in commerce hazardous material only if the carrier holds a safety permit the Secretary of Transportation issues under this section authorizing the transportation and keeps a copy of the permit, or other proof of its existence, in the vehicle. The Secretary shall issue a permit if the Secretary finds the carrier is fit, willing, and able—
- (1) to provide the transportation to be authorized by the permit;
- (2) to comply with this chapter and regulations the Secretary prescribes to carry out this chapter; and
- (3) to comply with applicable United States motor carrier safety laws and regulations and applicable minimum financial responsibility laws and regulations.
- (b) **APPLICABLE TRANSPORTATION.**—The Secretary shall prescribe by regulation the hazardous material and amounts of hazardous material to which this section applies. However, this section shall apply at least to transportation by a motor carrier, in amounts the Secretary establishes, of—
- (1) a class A or B explosive;
- (2) liquefied natural gas;
- (3) hazardous material the Secretary designates as extremely toxic by inhalation; and
- (4) a highway-route-controlled quantity of radioactive material, as defined by the Secretary.
- (c) **APPLICATIONS.**—A motor carrier shall file an application with the Secretary for a safety permit to provide transportation under this section. The Secretary may approve any part of the application or deny the application. The application shall be under oath and contain information the Secretary requires by regulation.

(d) **AMENDMENTS, SUSPENSIONS, AND REVOCATIONS.**—

- (1) After notice and an opportunity for a hearing, the Secretary may amend, suspend, or revoke a safety permit, as provided by procedures prescribed under subsection (e) of this section, when the Secretary decides the motor carrier is not complying with a requirement of this chapter, a regulation prescribed under this chapter, or an applicable United States motor carrier safety law or regulation or minimum financial responsibility law or regulation.
- (2) If the Secretary decides an imminent hazard exists, the Secretary may amend, suspend, or revoke a permit before scheduling a hearing.

(e) **PROCEDURES.**—The Secretary shall prescribe by regulation—

- (1) application procedures, including form, content, and fees necessary to recover the complete cost of carrying out this section;
- (2) standards for deciding the duration, terms, and limitations of a safety permit;
- (3) procedures to amend, suspend, or revoke a permit; and
- (4) other procedures the Secretary considers appropriate to carry out this section.

(f) **SHIPPER RESPONSIBILITY.**—A person offering hazardous material for motor vehicle transportation in commerce may offer the material to a motor carrier only if the carrier has a safety permit issued under this section authorizing the transportation.

(g) **CONDITIONS.**—A motor carrier may provide transportation under a safety permit issued under this section only if the carrier complies with conditions the Secretary finds are required to protect public safety.

(h) **REGULATIONS.**—The Secretary shall prescribe regulations necessary to carry out this section not later than November 16, 1991.

HMTUSA OF 1990 SEC. 5119. UNIFORM FORMS AND PROCEDURES (AS IN)

(a) **WORKING GROUP.**—The Secretary of Transportation shall establish a working group of State and local government officials, including representatives of the National Governors' Association, the National Association of Counties, the National League of Cities, the United States Conference of Mayors, and the National Conference of State Legislatures. The purposes of the working group are—

(1) to establish uniform forms and procedures for a State—

- (A) to register persons that transport or cause to be transported hazardous material by motor vehicle in the State; and
- (B) to allow the transportation of hazardous material in the State; and

(2) to decide whether to limit the filing of any State registration and permit forms and collection of filing fees to the State in which the person resides or has its principal place of business.

(b) **CONSULTATION AND REPORTING.**—The working group—

- (1) shall consult with persons subject to registration and permit requirements described in subsection (a) of this section; and
- (2) not later than November 16, 1993, shall submit to the Secretary, the Committee on Commerce, Science, and Transportation of the Senate, and the Committee on

Transportation and Infrastructure of the House of Representatives a final report that contains—

(A) a detailed statement of its findings and conclusions; and

(B) its joint recommendations on the matters referred to in subsection (a) of this section.

(c) **REGULATIONS ON RECOMMENDATIONS.**—

(1) The Secretary shall prescribe regulations to carry out the recommendations contained in the report submitted under subsection (b) of this section with which the Secretary agrees. The regulations shall be prescribed by the later of the last day of the 3-year period beginning on the date the working group submitted its report or the last day of the 90-day period beginning on the date on which at least 26 States adopt all of the recommendations of the report. A regulation prescribed under this subsection may not define or limit the amount of a fee a State may impose or collect.

(2) A regulation prescribed under this subsection takes effect one year after it is prescribed. The Secretary may extend the one-year period for an additional year for good cause. After a regulation is effective, a State may establish, maintain, or enforce a requirement related to the same subject matter only if the requirement is the same as the regulation.

(3) In consultation with the working group, the Secretary shall develop a procedure to eliminate differences in how States carry out a regulation prescribed under this subsection.

(d) **RELATIONSHIP TO OTHER LAWS.**—The Federal Advisory Committee Act (5 App. USC) does not apply to the working group.

SAFE, ACCOUNTABLE, FLEXIBLE, EFFICIENT TRANSPORTATION EQUITY ACT: A LEGACY FOR USERS OF 2005 (SAFETEA-LU)

Pub. L. 109-59, title VII, §7116

Section 5119 (of 49 U.S.C.) is amended to read as follows:

- (a) **Establishment of Working Group.**--The Secretary shall establish a working group of State and local government officials, including representatives of the National Governors' Association, the National Association of Counties, the National League of Cities, the United States Conference of Mayors, the National Conference of State Legislatures, and the Alliance for Uniform Hazmat Transportation Procedures.
- (b) **Purpose of Working Group.**--The purpose of the working group shall be to develop uniform forms and procedures for a State to register, and to issue permits to, persons that transport, or cause to be transported, hazardous material by motor vehicle in the State.
- (c) **Limitation on Working Group.**--The working group may not propose to define or limit the amount of a fee a State may impose or collect.
- (d) **Procedure.**--The Secretary shall develop a procedure for the working group to employ in developing recommendations for the Secretary to harmonize existing State registration and permit laws and regulations relating to the transportation of hazardous materials, with special attention paid to each State's unique safety concerns and interest in maintaining strong hazmat safety standards.

- (e) Report of Working Group.--Not later than 18 months after the date of enactment of this subsection, the working group shall transmit to the Secretary a report containing recommendations for establishing uniform forms and procedures described in subsection (b).
- (f) Regulations.— Not later than 18 months after the date the working group’s report is delivered to the Secretary, the Secretary shall issue regulations to carry out such recommendations of the working group as the Secretary considers appropriate. In developing such regulations, the Secretary shall consider the State needs associated with the transition to and implementation of a uniform forms and procedures program.
- (g) Limitation on Statutory Construction.— Nothing in this section shall be construed as prohibiting a State from voluntarily participating in a program of uniform forms and procedures until such time as the Secretary issues regulations under subsection (f).

THE PETITION

The following pages contain the incoming Petition for Rulemaking on Hazardous Materials Safety Permits.



December 21, 2010

The Honorable Anne Ferro
Administrator
Federal Motor Carrier Safety Administration
1200 New Jersey Avenue, S.E.
Washington, DC 20590-0001

RE: Petition for Rulemaking – Hazardous Materials Safety Permit

Dear Administrator Ferro:

Pursuant to 49 C.F.R. § 389.31, the Agricultural Retailers Association, the American Pyrotechnics Association, the Institute of Makers of Explosives, the National Association of Chemical Distributors, and the National Tank Truck Carriers, Inc., (hereinafter collectively the Petitioners) submit this petition for rulemaking to modify the regulations governing the hazardous materials safety permit (HMSP). As discussed in more detail herein, the proposed modifications are necessary to ensure that qualified carriers are able to continue transporting permitted hazardous materials and to eliminate certain biases currently present in the program.

A. Identification of Petitioners

Pursuant to 49 CFR § 389.31(b)(3), the Petitioners describe their interest in the proposed amendments to the HMSP program set forth at 49 CFR Part 385.

The Agricultural Retailers Association (ARA) affirms that it is a national trade association representing the interests of crop input retailers and distributors.¹ ARA backs transportation regulations that improve the safety and efficiency of agribusiness operations. ARA members who carry fertilizer from distribution point to the farm are adversely impacted by the HMSP program and have an interest in improving its implementation in a manner that enhances the safe transportation of permitted materials.

The American Pyrotechnics Association (APA) is the principle trade association representing manufacturers, importers, and distributors of fireworks in the United States. The APA has over 240 member companies. Along with their subsidiaries, APA's member companies are responsible for 90 percent of the fireworks displayed in the U.S. Each fireworks display produced in the U.S. is transported at some point by motor vehicle. Fireworks are classified as explosives for transportation purposes and

¹ ARA is a not-for-profit trade association that advocates on behalf of America's agricultural retailers and distributors. ARA members provide goods and services to farmers and ranchers, which include fertilizer, crop protection chemicals, seed, crop scouting, soil testing, custom application of pesticides and fertilizers, and development of comprehensive nutrient management plans. Retail and distribution facilities are located throughout all 50 states and range in size from small family-held businesses and farmer cooperatives to large companies with multiple outlets.

as such, the industry is heavily regulated. Among these regulations, APA members are subject to the HMSP.

All members of the Institute of Makers of Explosives (IME) engaged in the transportation of explosives are subject to the HMSP.² Explosives are one of the most regulated industries in the United States and IME members' highest priority is the safety and security of their operations. Carriers of explosives are the largest subset of HMSP holders. All explosives are transported at some point by motor vehicle. The majority of these truck movements are short-haul and are performed by private motor carriers because specialized equipment is needed for the movement of bulk explosives. As a result, intermodal or interline transfers of HMSP-regulated explosives are rare. The ability to qualify for and to hold an HMSP is critical to these companies, who are not in a position to fall back on the movement of other types of cargo if disqualification issues arise. If they forfeit their HMSP, their transportation operations shut down, which could force these companies out of business.

The National Association of Chemical Distributors (NACD) and its over 380 member companies are vital to the chemical supply chain, providing products to over 750,000 end users. NACD members are leaders in health, safety, security, and environmental performance through implementation of Responsible Distribution, a third-party verified management practice established in 1991 as a condition of membership.³

The National Tank Truck Carriers, Inc. (NTTC) affirms that it is the national trade association representing the interests of the segment of the trucking industry that transports bulk commodities in tank trailers. NTTC has safety as its primary mission and has long worked cooperatively with the U. S. Department of Transportation. NTTC members transport hazardous materials that require a safety permit and are adversely impacted by the aspects of the HMSP program. NTTC is interested in continuous improvement in the HMSP program and the safe transportation of hazardous materials subject to the HMSP.

B. Text of the Rule and Proposed Amendments

Pursuant to 49 CFR § 389.31(b)(2), the Petitioners identify 49 CFR § 385.407 as the regulation that is the subject of this Petition. Petitioners are urging FMCSA to amend 49 CFR § 385.407 to: (1) eliminate the dramatic fluctuations in the eligibility standards that are caused by periodic adjustments in the motor carrier out-of-service rates; and (2) average the various eligibility criteria to ensure that the original goal of the program that 70 percent of hazardous materials motor carriers would be able to qualify for the HMSP and to eliminate the current bias against certain types of hazardous materials carriers. Suggestions to achieve these proposed changes are indicated in the regulatory text below:

§385.407 What conditions must a motor carrier satisfy for FMCSA to
issue a safety permit?

* * * *

² The IME is a nonprofit association founded in 1913 to provide accurate information and comprehensive recommendations concerning the safety and security of commercial explosive materials. IME represents U.S. manufacturers and distributors, including private and for-hire motor carriers, of commercial explosive materials and oxidizers, as well as other companies that provide related services. The majority of IME members are "small businesses" as determined by the U.S. Small Business Administration.

³ Additional information on NACD and its members is available at www.nacd.com.

(a)(2) FMCSA will not issue a safety permit to a motor carrier that:

* * * *

(a)(2)(ii) Has a preventable crash rate in the top 30 percent of the national average as indicated in the FMCSA Motor Carrier Management Information System (MCMIS); or

(a)(2)(iii) Has ~~a-an driver, vehicle, and hazardous materials, or total~~ out-of-service rate that is above 8.64 percent for driver, 33.33 percent for vehicle, and 5.04 percent for hazardous materials in the top 30 percent of the national average of the six prior years as indicated in the MCMIS.

Or alternatively:

(a)(2)(ii) Has a preventable crash rate in the top 30 percent of the national average as indicated in the FMCSA Motor Carrier Management Information System (MCMIS); ~~or~~

(a)(2)(iii) Has ~~a-an aggregated driver, vehicle, and hazardous materials, or total~~ out-of-service rate in the top 30 percent of the national average of the six prior years as indicated in the MCMIS.; or⁴

(a)(2)(iv) Has a driver, vehicle, or hazardous materials out-of-service rate in the top 10 percent of the national average.

Petitioners also have identified several other improvements to the HMSP program that do not require formal rulemaking. These improvements are discussed in Appendix A to this Petition.

C. Information in Support of the Proposed Amendments

Pursuant to 49 CFR § 389.31(b)(4), this section sets forth information and arguments in support of the proposed amendments set forth in Section B, *supra*.

a. Biennial Revision of Disqualification Criteria

Petitioners' members are harmed by the periodic adjustment of the disqualification criteria (*i.e.*, carriers that fall within the top 30% of out-of-service rates for driver, vehicle or hazardous materials). Under the current HMSP program, a carrier that is deemed qualified to possess the permit one year may continue to perform safely and have no change in its out-of-service rates, but due to changes in the performance of the carrier's peers or in enforcement patterns, the carrier could be disqualified in a subsequent permitting cycle if one or more of the out-of-service threshold rates is revised downward. This moving target of eligibility makes it difficult to ensure business continuity.

Some of the materials that trigger the obligation to obtain a permit require a large capital investment in specialized equipment (*e.g.*, stainless steel cargo tanks or multipurpose bulk trucks). Companies that are eligible to obtain the HMSP and then, due to improvement in the industry as a

⁴ Note we propose deleting the word "total" as it is used to modify the phrase "out-of-service," since FMCSA does not compute a "total out-of-service" rate for motor carriers.

whole and with no change in their own safety performance, are subsequently disqualified from obtaining the permit could suffer a significant loss as they are forced to withdraw from transporting these specialized materials.

Given the years of experience FMCSA has administering this program, the agency could eliminate the fluctuating eligibility criteria problem by promulgating a rule that fixes the out-of-service rates at a certain level without biennial adjustments. We suggest fixing the rates at the average of each out-of-service rate set since 2005. By fixing the out-of-service disqualification rates, carriers will be judged on their own performance. It will still demand vigilant attention to safety in order to maintain these scores. It will eliminate the cloud of uncertainty that is an anathema to business. Alternatively, FMCSA could ameliorate the impact of a sudden change in one or more of the out-of-service rates that serve as HMSP eligibility criteria by combining and averaging these rates over a rolling period of time, such as six years. While a six-year average of out-of-service rates would still result in a periodic change in the eligibility criteria, the impact of a significant change in any one cycle would be lessened. In no case should more than 30 percent of the hazardous materials motor carriers be deemed ineligible to hold an HMSP.

b. Averaging Eligibility Criteria

When originally promulgated, FMCSA indicated that 3,131 motor carriers would be impacted by the HMSP program (*i.e.*, were engaged in transporting one or more of the covered hazardous materials).⁵ Unfortunately, this estimate proved wrong, as many of these motor carriers were deemed ineligible under the promulgated standards. In fact, less than 1,400 motor carriers have obtained an HMSP.⁶ One of the reasons for this shortfall in permitted carriers is related to the manner in which the out-of-service eligibility criteria are applied.

i. The Eligibility Criteria Disqualifies More than Thirty Percent of Registered Hazardous Materials Motor Carriers.

The regulatory text set forth in the supplemental notice of proposed rulemaking as well as the preamble to the HMSP final rule describes the Agency's intent to disqualify motor carriers from obtaining an HMSP where they do not have a "Satisfactory" safety rating.⁷ The preamble goes on to say that for those carriers that have not undergone a complete compliance review, no safety permit will issue if they have a crash rate in the top 30 percent of the national average, or a driver, vehicle, hazardous materials, or total out-of-service rate in the top 30 percent of the national average.

Motor carriers must have a "Satisfactory" safety rating in order to obtain a safety permit. In addition, *until we complete a compliance review*, FMCSA will not issue a safety permit to a motor carrier that has, as indicated in the agency's Motor Carrier Management Information System (MCMIS), a crash rate in the top 30 percent of the national average, or a driver, vehicle, hazardous materials, or total out-of-service rate in the top 30 percent of the national average.⁸

⁵ See 69 *Federal Register* 39350, 39362 (June 30, 2004).

⁶ On October 4, 2010, FMCSA reported that the total number of HMSPs issued was 1,386. See electronic mail from Roxane Greene, FMCSA, to Richard Moskowitz, ATA (October 4, 2010, 11:34 a.m.).

⁷ See 68 *Federal Register* 49737, 49752 (August 19, 2003).

⁸ *Id.* (emphasis added).

The agency's stated intent was to apply the 30 percent out-of-service criteria to motor carriers that have not undergone a compliance review, yet the final regulatory text applied the 30 percent out-of-service criteria to all motor carriers – even those that have undergone a compliance review and have achieved a satisfactory safety rating. Petitioners believe that FMCSA should revise the regulation to apply out-of-service disqualification rates only to those motor carriers that do not have a satisfactory safety rating, as originally proposed.

Notwithstanding this change in the application of out-of-service criteria to all motor carriers – including those that have a satisfactory safety rating – FMCSA's intent to render 30 percent of the hazardous materials motor carriers ineligible to hold an HMSP has not occurred and instead a much greater percentage of hazardous materials motor carriers have been deemed ineligible. The application of separate out-of-service rates in the vehicle, driver and hazardous materials categories disqualifies more than 30 percent of the hazardous materials motor carriers.⁹

ii. LTL Bias from Hazardous Materials Out-of-Service

The hazardous materials out-of-service criterion operates as a bias against less-than-truckload (LTL) carriers given the nature of their operations. Many of the large LTLs perform at a level that is far below the disqualification thresholds for the driver and vehicle out-of-service criteria, but above the disqualification threshold for the hazardous materials out-of-service criterion. As a result, many companies in this segment of the trucking industry cannot qualify for the HMSP.

Most of hazardous materials out-of-service violations for LTL carriers are for load securement and placarding. Blocking and bracing is a particular challenge for LTL carriers that make multiple pickups and deliveries and are often dealing with small hazmat packages (2-3 lbs). In addition, blocking and bracing may be subjectively enforced as some inspectors will find a violation for any package movement, while most exercise discretion and issue out-of-service orders for movement that may adversely affect package integrity.

Recognizing that for most LTLs hazmat is a small percentage of the freight they haul, it is difficult to train drivers on the placarding rules when the types, quantities and classes of hazmat they transport day-to-day varies. The placarding rules are complex - not so much because the general rules are too complex to teach, but more as a result of the nuances and exceptions, which are overly complicated and difficult to remember especially in an environment where the freight varies so much from day-to-day.¹⁰ As a result, many large LTL carriers do not qualify for the HMSP.

⁹ Since the carriers at the top of each out-of-service category and the crash rate category are not the same, the disqualification rate among all carriers is higher than 30%. To illustrate, for every 100 hazardous materials carriers, 30 will be disqualified based on the hazardous materials out-of-service rate. The remaining 70 hazardous materials carriers are then subjected to evaluation under vehicle and driver out-of-service criteria and the crash rate criteria. Some of these remaining 70 carriers will fall within the top 30% of these additional disqualification categories and will be deemed ineligible for the HMSP. Additional information on the effect of the multiple disqualification criteria is set forth in Appendix B.

¹⁰ Another factor that potentially impacts this bias stems from the Inspection Selection System. Good carriers that have a low Inspection Selection System rate are being passed over for many inspections that they would ordinarily pass. These carriers are being pulled in for inspections when there is an observable problem as they pass through the scales (such as a missing placard). As such, the inspections are not truly random and they are not receiving credit for inspections that they would pass, since many of these inspections are not recorded.

iii. Vocational Bias

The hazardous materials out-of-service criterion also presents a bias against vocational carriers needing an HMSP. Hazardous materials out-of-service violations are issued when any hazardous material is found outside of a packaging. The explosives industry's specialized bulk delivery trucks are operated as mobile manufacturing units. The material manufactured for blasting is viscous. It will not pour out of transfer hoses or evaporate; instead, it dries and cakes on the exterior of the packaging and unloading conveyances. While efforts are made to close and cap transfer hoses, during transportation vibration incident to transportation sometimes will result in de minimis seepage of this viscous material. There is no inherent safety risk, but the presence of this residue outside of the hazmat packaging results in a disproportionate amount of hazardous materials out-of-service violations stemming from the transportation of these materials in this type of transport unit.

Although specialized bulk explosives delivery trucks spend a relatively small percentage of their time on major interstates where the majority of roadside inspections are conducted, they are predisposed to inspection when they encounter roadside stops because of the class of materials transported. Similarly, the agriculture industry relies on the delivery of fertilizer and crop protection chemicals to rural areas where few inspections occur. Additionally, the majority of the work performed by these types of specialized carriers is seasonable, further limiting opportunities for inspections. Applying FMCSA's statistically significant standard, if two of at least three inspections result in an out-of-service violation in a 12-month period, the carrier will have to obtain at least 56 "clean" inspections using current hazardous materials out-of-service rates to qualify for a HMSP, and for each additional

out-of-service violation the number of "clean" inspections that must be obtained goes up by 28. In the rural and local delivery areas where these seasonal carriers operate, it is virtually impossible to obtain enough clean inspections to offset the impact of an out-of-service order, especially when the statistically significant standard is reached well into the 12-month period.

iv. Averaging Out-of-Service Rates

One way to ameliorate the impact of applying each out-of-service criteria (*i.e.*, driver, vehicle and hazardous materials) separately and reducing the bias against LTL and rural or local delivery carriers would be to aggregate and average the out-of-service rates. By averaging the three criteria, a motor carrier with exceptionally low out-of-service rates in two categories and an out-of-service rate slightly above the disqualification threshold in the third category could still qualify for the HMSP. To ensure that a motor carrier with an exceptionally high out-of-service rate in one or more categories remains ineligible to obtain an HMSP, FMCSA could continue to disqualify carriers with driver, vehicle or hazardous materials out-of-service rates in the top 10 percent.¹¹

FMCSA also should consider eliminating the first year "free-pass" by harmonizing the calculation of disqualification rates with the policy to be used in CSA. Under CSA two years of inspection data will be used and newer data will be more heavily weighted.

Another reform worthy of FMCSA's consideration involves the integration of a carriers Inspection Selection System (ISS) methodology into the disqualification criteria. Because carriers with

¹¹ The "10 percent" threshold is a placeholder. Obviously, the threshold would need to be below 30%. While industry has experience with the impacts of the 30% OOS threshold, until FMCSA runs real performance numbers against the 10% standard, the implications will not be fully understood. In determining this threshold consideration should be given to the differences between long-haul and short-haul operations. Reliance on OOS criteria as the sole determinate for fitness has limitations.

low ISS scores are experiencing a reduced number of hazardous materials inspections and are being inspected only when an observable defect is present at a weigh station (e.g., missing placard), the number of failed inspections may over represent the carrier's true performance. To address this situation, FMCSA should consider using the ISS score as part of the formula to evaluate carrier hazardous materials out-of-service rate.

v. Crash Rates

To be eligible for an HMSP, a motor carrier may not have a crash rate in the top 30 percent of the national average.¹²

1. Using VMT as a Normalizing Factor

In calculating crash rates, FMCSA divides the total number of crashes over the prior twelve month time period by the total number of power units for each motor carrier. The use of power units alone as a normalizing factor is an inappropriate measure of exposure, as many trucks can be idled due to downturns in the economy, slowdown in individual motor carrier operations, or other reasons. Moreover, the use of power units does not recognize exposure differences for those motor carriers that utilize team drivers and have greater asset utilization and therefore greater exposure for each power unit in operation.

Exposure on the nation's highways is more accurately reflected by trucks being on the road (*i.e.*, miles that are traveled by trucks that can result in crash potential). Vehicle miles traveled (VMT) should be combined with power units as a normalizing factor used to calculate crash rates under the HMSP program. Indeed, FMCSA has made this same correction in the context of the CSA2010 program.

2. Preventability

In September 2008, FMCSA adopted a policy to consider "preventability" when a motor carrier contests the denial of a safety permit based upon its crash rate and presents compelling evidence that one or more of the crashes listed in the Motor Carrier Management Information system ("MCMIS") was not preventable.¹³ This modification should be reflected in the regulatory text. We further believe that FMCSA should exclude non-preventable accidents in its initial calculation of a carrier's crash rate, rather than forcing the carrier to come forward to challenge the inclusion of each accident on a case-by-case basis.

3. Geographic Bias

We also have concerns over the data used to support FMCSA's crash rate calculation, as many states underreport crashes to the MCMIS database, which can result in a geographical bias against certain carriers. Attached as Appendix C is a map depicting state crash rate underreporting. While we are reticent to point out a problem for which we do not have a solution, we believe that FMCSA should begin researching the practices utilized by those states with the highest reporting rates and compile a list of best practices. FMCSA should then use its leverage over the states to encourage them to embrace these crash reporting practices.

¹² See 49 CFR § 385.407(a)(2)(ii).

¹³ See 73 Federal Register 53383 (September 16, 2008).

CONCLUSION

For the reasons set forth above, Petitioners ask FMCSA to modify the regulations governing the HMSP program to provide for the use of a six-year average when establishing the disqualification thresholds to reduce the impact of having carriers comply with a moving eligibility target, to smooth the differences that may occur from cycle-to-cycle, and to eliminate the impact of a single period with either abnormally high or abnormally low out-of-service rates. Petitioners also request that FMCSA begin averaging the vehicle, driver and hazardous materials out-of-service rates to create a blended disqualification threshold to avoid applying the disqualification criteria in a manner that renders more than 30 percent of the hazardous materials carriers ineligible to receive the HMSP and to reduce the bias against certain industry segments, such as the LTL, rural and local delivery carriers.

Respectfully submitted,

AGRICULTURAL RETAILERS ASSOCIATION
AMERICAN PYROTECHNICS ASSOCIATION
INSTITUTE OF MAKERS OF EXPLOSIVES
NATIONAL ASSOCIATION OF CHEMICAL DISTRIBUTORS
NATIONAL TANK TRUCK CARRIERS, INC.

Attachments

Appendix A
Appendix B
Appendix C

(Note: the appendices mentioned here refer to the following pages, 18-22, which are the appendices to this petition. These are NOT appendices A, B, and C of the report “Motor Carrier Hazardous Materials Safety Permits Study,” which begin on pages 1, 29, and 31, respectively.)

Administrative Improvements to the HMSP are Warranted

On January 1, 2011, the HMSP program will enter its fourth permitting cycle. In the intervening years, both the agency and the regulated community have gained valuable experience in what has worked and what has not worked in this program. Petitioners have identified several improvements to the HMSP program that do not require formal rulemaking. Petitioners have met with FMCSA on multiple occasions to discuss each of the following concerns:

- a. Improve FMCSA's ability to verify a motor carrier's compliance with the financial responsibility regulations;
- b. Eliminate the double-counting of hazardous materials out-of-service violations with vehicle out-of-service violations;
- c. Identify and remove non-preventable accidents from a motor carrier's crash rate calculation;
- d. Add vehicle miles traveled as a normalizing factor for the calculation of motor carrier crash rates;
- e. Extend the period of time carriers have to renew applications from 30 to 60 days;
- f. Ensure that existing HMSPs are not shown as invalid upon submission of a renewal application;¹⁴
- g. Establish a simplified on-line option for shippers and carriers to ascertain the HMSP status of carriers; and
- h. Provide the HMSP community advance notice of disqualification rates.

FMCSA has taken steps to address the last two issues. FMCSA has added an on-line feature to a carrier's SAFSTAT profile which indicates whether a carrier holds a valid HMSP. This feature facilitates compliance with 49 CFR 173.22(b).¹⁵

On September 22, 2010, FMCSA, publish a notice in the *Federal Register* announcing its policy to publish HMSP disqualification rates three months in advance of the January 1st effective date of the next permitting cycle. Still, implementation of the two initiatives mentioned above has been marred as a result of inadequate agency information technologies resources.¹⁶ Moreover, the other listed administrative changes will also require information technologies resources to implement.

2. The on-line HMSP status feature defaults to "no" when a carrier's application is being processed. The correct status would report "pending." IT resources are needed to fix this problem.

3. See http://mcmis.volpe.dot.gov/mcs150t/pkg_shipper.prc_shipper_request. The functionality of this on-line database should be bolstered to allow motor carriers to identify other carriers with HMSPs to facilitate interlining between regional carriers.

4. As stated above, the on-line HMSP status feature defaults to "no" when a carrier's application is being processed. The dissemination of this erroneous data could negatively impact the commercial operations of any affected HMSP qualified carriers. FMCSA also missed the promised October 1st release date of new HMSP disqualification rates. The rates were subsequently released November 2, 2010.

We have been told that these information technology programming requests are in a queue with over a dozen other administrative requests that have been made by HMSP program staff. Furthermore, we had been told not to expect any change to the pending status of these requests until FMCSA has implemented the Comprehensive Safety Analysis program (CSA).

As central as CSA is to FMCSA's mission, it is not appropriate that other FMCSA programs be left to languish. CSA is still a work in process. Meanwhile, FMCSA's safety mission is being carried out today by existing programs that should not be allowed to falter from inattention. This is especially true if those programs are expected to continue to be a part of the agency's safety infrastructure after CSA implementation. The HMSP is one such program. The failure to address the IT needs of the HMSP puts more burden on staff to manually process and correct system errors and omissions, and it creates uncertainty for motor carriers whose applications are denied because of administrative glitches.

Illustration of the Impact of Multiple Disqualification Criteria

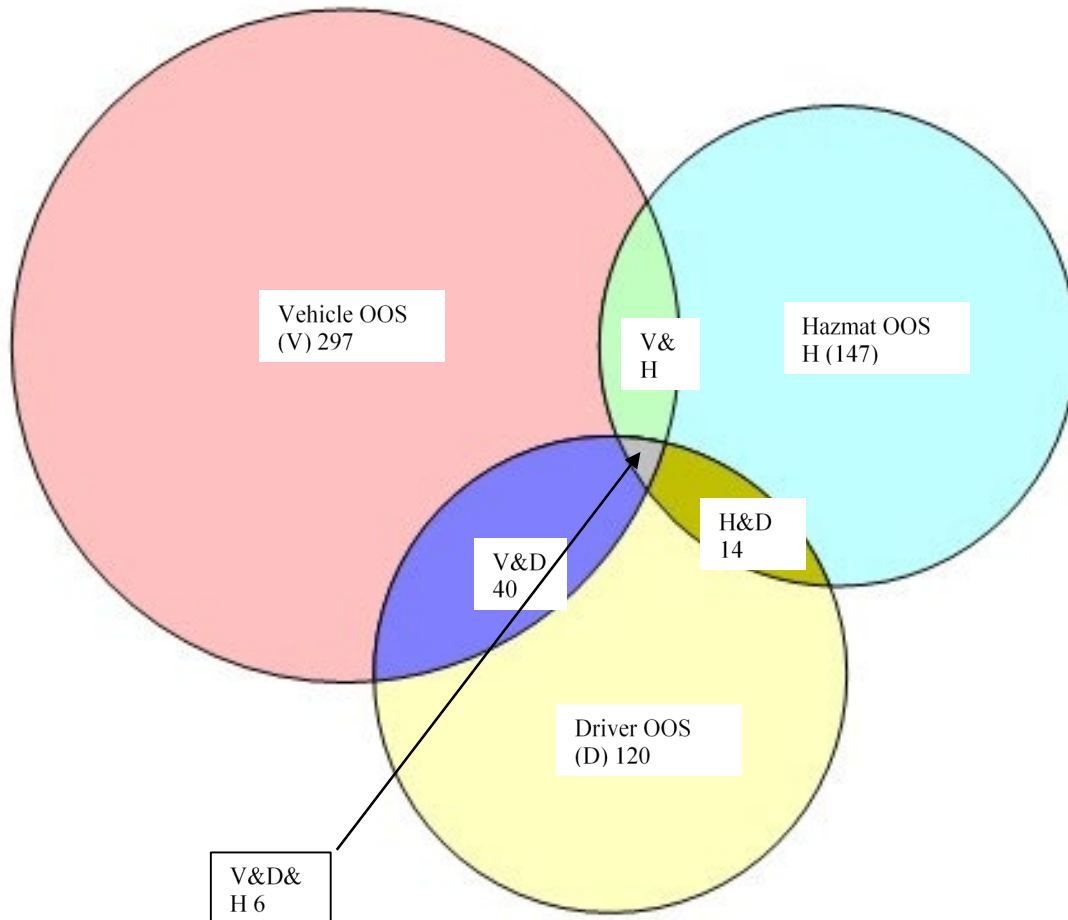


Figure 1. Venn diagram of denials of an HMSP application for exceeding the out-of-service criteria from 2005 2008. (Provided as part of the “Petition for Rulemaking on Hazardous Materials Safety Permits.”)

The diagram does not include Crash Rate, another criteria for HMSP denial set at the 30th percentile of all motor carriers. Adding this data set would further emphasize the effect of multiple disqualifying criteria all set at the 30th percentile. The 55 denials issued for exceeding the Crash rate (some also were over the OUT-OF-SERVICE criteria) are not included in this analysis.

1. FMCSA issued a total of 640 denials of an HMSP for out-of-service and 1,869 first-time HMSPs. But since renewals and reissues of HMSPs are combined in the data provided by FMCSA, it is impossible to ascertain any reliable information about out-of-service denial rates.
2. The analysis strongly indicates that over 30 percent of motor carriers are disqualified for the HMSP for out-of-service alone. Only the same analysis of all motor carriers would tell the full

story. Surely however, the result would show that well over 30 percent of motor carriers cannot satisfy the HMSP eligibility criteria.

3. The hazardous materials out-of-service criteria is applied to less than 6% of motor carriers since only about 40,000 of the over 700,000 motor carriers in the U.S. hold a PHMSA registration and thus carry hazmat. About 13,000 of PHMSA registrants (~30%) would be disqualified for an HMSP under the hazardous materials out-of-service criteria leaving about 27,000 motor carriers. FMCSA has not published data quantifying the number of additional motor carriers that would be disqualified by the driver out-of-service, vehicle out-of-service, and Crash Rates, but as the diagram above shows, some of the remaining 27,000 would be. If only 10% of these 27,000 were disqualified for each criterion, then less than 20,000 motor carriers remain.

Conclusion: More than 50 percent of the PHMSA-registered hazardous materials motor carriers are ineligible for an HMSP.

Crash Reporting Data by State



Percent of DOT Crashes Being Reported to MCMIS

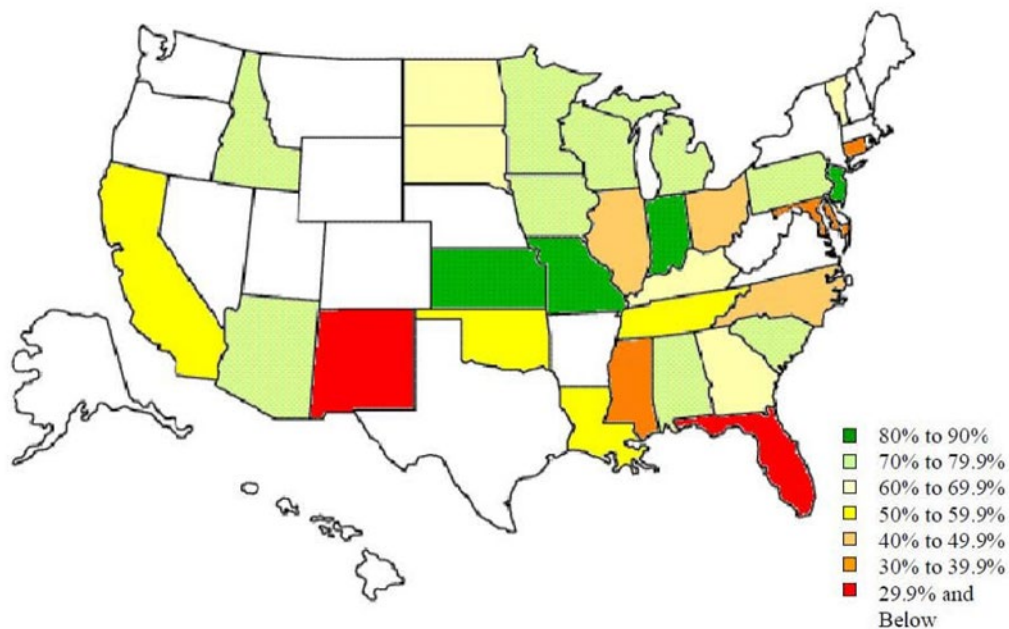


Figure 2. Map of US showing crash reporting by State. (Provided as part of the “Petition for Rulemaking on Hazardous Materials Safety Permits”)

FMCSA RESPONSE TO PETITION FOR REVISION OF HMSP PROGRAM



U.S. Department
of Transportation

Federal Motor Carrier
Safety Administration

Administrator
Avenue, SE Washington, DC 20590

November 14, 2011

1200 New Jersey

Refer to: MC-ECC

Ms. Cynthia Hilton

The Institute of Makers of Explosives 1120 19th Street, NW, Suite 310

Washington, DC 20036 Dear Ms. Hilton:

This letter is in response to the petition for rulemaking filed by the Institute of Makers of Explosives, the Agricultural Retailers Association, the American Pyrotechnics Association, the National Association of Chemical Distributors, and the National Tank Truck Carriers, Inc., dated December 21, 2010. The petition requested that the Federal Motor Carrier Safety Administration (FMCSA) modify the Hazardous Materials Safety Permit regulations to ensure that safe, qualified carriers are able to continue transporting permitted hazardous materials and to eliminate perceived biases in the program.

The FMCSA has completed its review and grants the petition for rulemaking. However, the Agency has determined that this rulemaking should not be initiated until the Safety Fitness Determination (SFD) final rule is published, as it will be used as the basis for initiating this rule. The SFD notice of proposed rulemaking is scheduled to be published in April of 2012, and the publication date of the final rule will be determined based on the nature and scope of comments to the proposed rule. The enclosed decision and order explains in detail the reasons for our conclusions.

Sincerely,

A handwritten signature in black ink, appearing to read "Anne S. Ferro", with a long horizontal flourish extending to the right.

Anne S. Ferro Enclosure

cc: Agricultural Retailers Association American Pyrotechnics Association

National Association of Chemical Distributors National Tank Truck Association

BEFORE THE

FEDERAL MOTOR CARRIER SAFETY ADMINISTRATION DECISION ON PETITION
FOR RULEMAKING

DECIDED: November 14, 2011

On December 21, 2010, the Institute of Makers of Explosives, the Agricultural Retailers Association, the American Pyrotechnics Association, the National Association of Chemical Distributors, and the National Tank Truck Carriers, Inc., (hereinafter collectively the Petitioners) submitted a petition for rulemaking to modify the regulations governing the hazardous materials safety permit (HMSP). •

The Petitioners stated that the proposed modifications are necessary to ensure that qualified carriers are able to continue transporting permitted hazardous materials and to eliminate certain biases currently present in the program. To address this problem, the Petitioners seek amendments to eliminate the fluctuations in the eligibility standards that are caused by periodic adjustments in the motor carrier out-of-service (OOS) rates; average the present eligibility criteria to ensure that 70 percent of hazardous materials motor carriers would be able to qualify for the HMSP; and eliminate impacts on different types of hazardous materials carriers such as less-than-truckload carriers.

In accordance with 49 CFR 389.33, the Agency makes the following decision concerning the petition:

ANALYSIS

The HMSP program became effective on a rolling basis starting January 1, 2005. Pursuant to § 385.407, the Federal Motor Carrier Safety Administration (FMCSA) may not issue an HMSP to a carrier when its crash rate, or driver, vehicle or hazardous materials OOS rates are in the top, or worst-performing, 30 percent of the national average. Since the inception of the HMSP program, FMCSA has calculated the threshold crash rate, and driver, vehicle and hazardous materials OOS rates every two years based on the national average crash and OOS rates from the preceding two years. The two-year recalculations have resulted in varying thresholds for HMSP eligibility. As some of the OOS thresholds decreased, industry representatives expressed concern that the fluctuating program requirements created uncertainty and were increasingly difficult for motor carriers to meet and sustain.

While the crash rate and vehicle OOS rate remained constant from 2005 through 2010, the driver and hazardous materials OOS rates steadily declined. In 2011, the crash rate per million miles fell for the first time from 0.125 to 0.114. In 2011, both the driver and hazardous materials OOS rates also fell to all-time lows of 7.14 percent and 3.45 percent, respectively. While these falling rates reflect the improving safety performance of the motor carrier industry as a whole, hazardous materials carriers assert that the fluctuating standard makes it difficult to both predict and address their safety performance for the ensuing two-year safety permit cycle. As a result of this concern, FMCSA, announced in a Federal Register notice on September 22, 2010 (75 Fed. Reg. 57696), that it was revising the date from which the crash and OOS rates would be recalculated. Effective October 1, 2010, the two-year

period for recalculating the rates would be measured by the fiscal year (October 1 to September 30) instead of the calendar year (January 1 to December 31) in order to provide carriers several months of notice before the new rates became effective. Nevertheless, as safety performance improves and the threshold rates continue to decrease, a motor carrier eligible for its safety permit in the present two-year cycle could be ineligible for a permit in the next cycle without any change in its safety profile.

Petitioners further contends that the Agency's individual consideration of each of the crash and OOS rates has the cumulative effect of barring more than the worst 30 percent of carriers from obtaining an HMSP. While Petitioners may be correct in this assertion, the present rule requires that a carrier meet the threshold rate in each of the categories and does not rely on or require a cumulative safety performance profile.

In order to address these concerns, the Petitioners suggested a multi-faceted approach for regulatory changes. These are presented below with FMCSA's respective position on each recommendation.

1. Eliminate the fluctuating eligibility criteria problem by promulgating a rule that fixes the rates at the average of each OOS rate set since 2005 without biennial adjustments. The Petitioners suggest that FMCSA could minimize the impact of a change in one or more of the OOS rates that serve as HMSP eligibility criteria by combining and averaging these rates over a rolling period of time, such as every six years.

FMCSA Response: The Agency recognizes that the decreasing crash and OOS rates, especially in the hazardous materials category could result in unanticipated impacts to carriers and agrees that further analysis would be useful in order to develop appropriate options. The Agency will consider this in the notice of proposed rulemaking (NPRM).

2. Aggregate and average the OOS rates of the three criteria for an individual motor carrier. A motor carrier with exceptionally low OOS rates in two categories and an OOS rate slightly above the disqualification threshold in the third category could still qualify for the HMSP.

FMCSA Response: The Agency will consider this in the NPRM.

3. Ensure that a motor carrier with an exceptionally high OOS rate in one or more categories remains ineligible to obtain an HMSP. The Petitioner contends that FMCSA could continue to disqualify carriers with driver, vehicle or hazardous materials OOS rates in the top 10 percent.

FMCSA Response: The Agency will conduct analysis on this recommendation and include the results in the NPRM.

4. Consider eliminating the first year "free-pass" by harmonizing the calculation of disqualification rates with the policy to be used in the Safety Measurement System (SMS) where two years of inspection data will be used and newer data will be more heavily weighted.

FMCSA Response: Consistent with SMS, the Agency will consider changing the calculation time period to match the pending Safety Fitness Determination (SFD) rule, when finalized.

5. Consider using the Inspection Selection System (ISS) as part of the formula to evaluate the carrier's hazardous materials OOS rate.

FMCSA Response: The Agency will consider proposing this in the NPRM.

6. Vehicle miles traveled (VMT) should be combined with power units as a normalizing factor used to calculate crash rates under the HMSP program. The Petitioners draw a parallel to the SMS.

FMCSA Response: The Agency agrees to conduct analysis using VMT, similar to the SMS, and consider this in the NPRM.

7. Exclude non-preventable crashes in its initial calculation of a carrier's crash rate, rather than forcing the carrier to come forward to challenge the inclusion of each crash on a case-by-case basis.

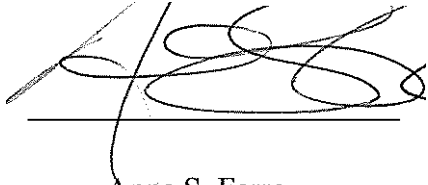
FMCSA Response: It is anticipated that the SFD rulemaking will be establishing a process for determining crash accountability. The Agency will use the process adopted in that rulemaking.

The Agency recognizes the need to re-visit the HMSP rules and examine the issues raised by Petitioners, especially in light of SMS implementation and the impending SFD rulemaking. It would, however, be premature for FMCSA to move forward with an HMSP rulemaking without first finalizing the SFD process and, therefore, ensuring that changes to the HMSP rule are consistent with the standards established in the SFD rulemaking.

CONCLUSION

The FMCSA acknowledges the need to re-examine the HMSP program. Therefore, the request for consideration of the issues raised in the petitioner's letter of December 21, 2010, is granted.

It is hereby ordered that the petition for rulemaking filed by the Institute of Makers of Explosives, the Agricultural Retailers Association, the American Pyrotechnics Association, the National Association of Chemical Distributors, and the National Tank Truck Carriers, Inc., is granted. A rulemaking will be initiated after the Agency's SFD final rule is published.

A handwritten signature in black ink, appearing to read 'A. S. Ferro', is written over a solid horizontal line.

Anne S. Ferro

Administrator

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APPENDIX B: DELAY IN POSTING CRASHES

There is some delay between when a crash occurs and when the crash is uploaded to MCMIS. An analysis was performed of the number of weeks between when a crash occurred and when the crash was posted to MCMIS, using all crashes from the year 2010, as of January 25, 2013. There were 136,744 crashes from 2010, as of January 25. Data from 4,041 of these crashes was uploaded in the week of the crash. On the other hand, data from 4 crashes took 158 weeks. These crashes occurred in the first week of January 2010, and only made it to MCMIS the last week before the extract occurred.

For crashes from the year 2010, Figure 3 shows the percent that had uploaded by weeks after the crash, for the first year after the crash. Of the crashes that occurred in 2010 (and made it to MCMIS by January 25, 2013), data for 95% of the crashes made it to MCMIS within a year of the crash date.

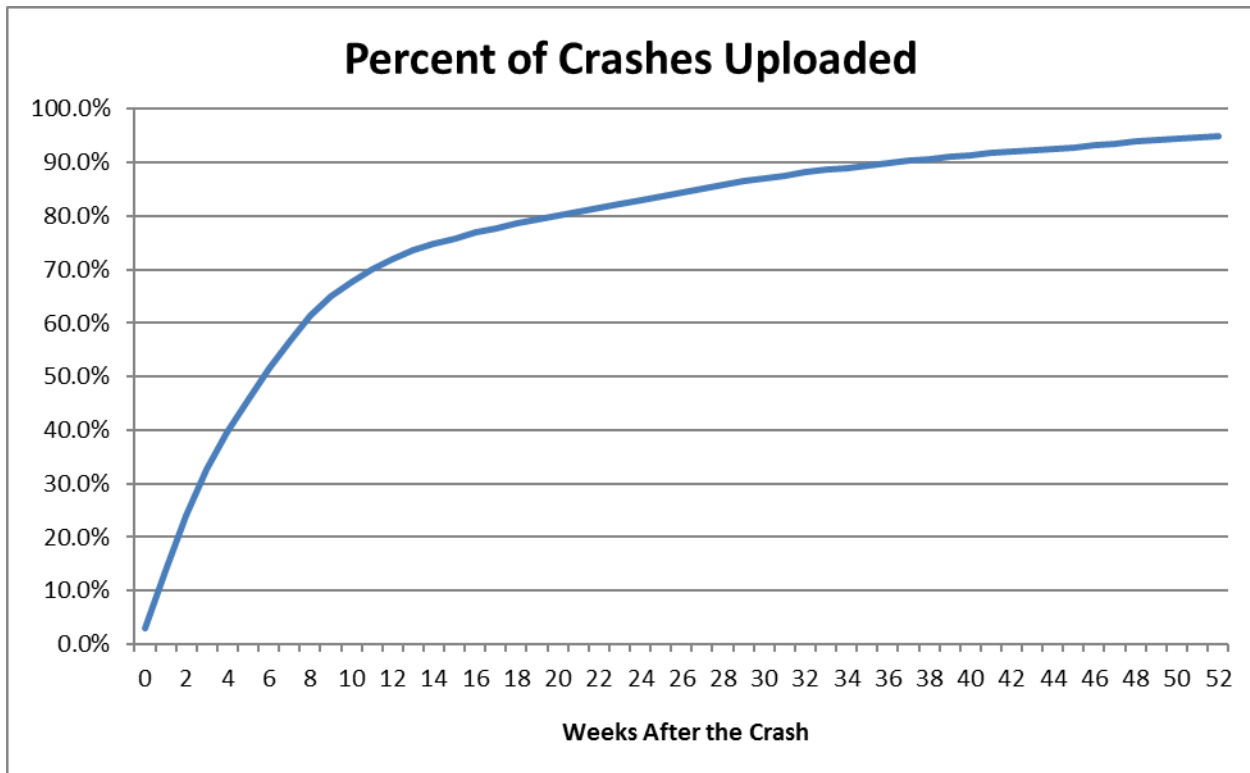


Figure 3. Percent of crashes uploaded to MCMIS by weeks after the crash.

Clearly, the data from all 2012 crashes had not made it to MCMIS by January 25, 2013. Based on the actual data from 2010, we would expect that for about 33% of the crashes on December 31, 2012 (3 weeks earlier) would be on MCMIS. On the other hand, data for 96% of the crashes from January 1, 2012 (55 weeks before the extract) would be on MCMIS.

Looking at the data cumulatively, Figure 4 shows the percent of a year's crashes that would be expected to be posted (have data in MCMIS), by the number of weeks after the end of the year.

January 25, 2013 is 3½ weeks after the end of 2012, so it is expected that the number of 2012 crashes on MCMIS represents about 82% of what the final total will be.

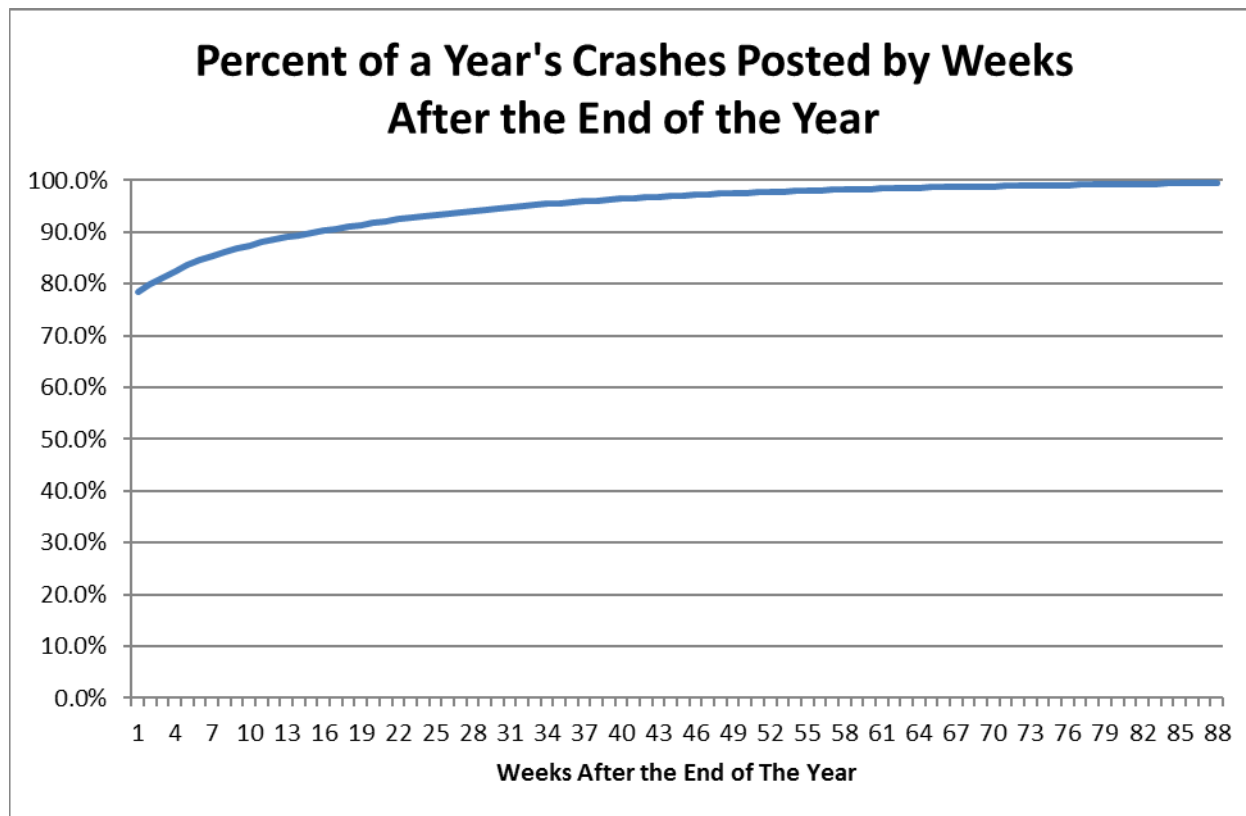


Figure 4. Percent of a year's crashes expected to be posted, by week, after the end of the year.

For example, all recently active carriers had a crash rate of 1.685 crashes per hundred power units in the January 25, 2013 data. Based on this analysis, it is expected that, when all crashes have been entered into MCMIS, these carriers will have a crash rate of about 2.055 crashes per hundred power units.

The prior extract was pulled on June 25, 2012. This was 25 weeks after the end of 2011. This analysis suggests that 93.4% of the 2011 crashes would have been posted to MCMIS by the 25th week.

APPENDIX C: REASONS FOR HMSP DENIAL, SUSPENSION, AND REVOCATION

MAP-21 requires an analysis of the reasons for HMSP denials, revocations, and suspensions of HMSPs. A review of MCMIS shows that there is no data directly connecting any action with any supporting reason. This appendix explains the MCMIS data, and presents the best possible information that can be extracted from MCMIS

HMP LETTER ERROR TABLES

The only hints for reasons that can be found are in the letter error tables. The HMP letter error tables contain error reasons (encoded) and a link to the letter table. These messages appear to be the reason that a permit was denied, suspended, or revoked. HMP Letter error records contain neither a date nor identification of the carrier or permit.

The HMP Letter table (to which the HMP Letter Error table contains a link) contains a link to the Hazardous Materials Permit table, which identifies the carrier. It also contains a date. However, there is no direct link between any letter and any specific event, other than a possible date match. Further, as noted below, there are quite a few Letter Error records with no associated letter record.

HMP LETTER ERROR DELETE TABLE

MCMIS contains a number of tables called 'DELETE' tables. There are some general rules as to how MCMIS creates these DELETE tables.

In general, if a record is deleted from a regular table, a copy of that record is added to the associated Delete table. It is not entirely clear exactly what the business situations are that create these tables, but they are generally viewed as 'audit trail' tables, and not considered as part of normal analysis. These tables also tend to be small relative to the base table. For example, we have 41,979,032 inspection records. There are 144,201 records in the Inspection Delete table, which is approximately 1/3 of 1% as many records.

There is a HMSP Letter Error. It contains 10,276 records. There is also a HMSP Letter Error Delete Table. It contains 10,928 records. Further, the HMSP Letter table contains 2,448 records, and the HMSP Letter Delete table contains 1,687 records. There are clearly 9,976 Letter Error records that do not have an associated Letter record. There are 7,546 Letter Error Delete records that do not have associated Letter Delete Record.

The way that Delete tables are used in the HMSP domain is clearly quite different from the way Delete tables are used in other areas of MCMIS.

Based on the lack of HMP letter data (and HMP Letter Delete data), it is impossible to connect the associated Error data to any carrier. Further, even when there is Letter data that can be used to identify a carrier, the lack of a direct connection between error reasons and events makes any

connection (that might be based on dates of letters compared to dates of audit trail records) tenuous at best.

Finally, FMCSA reports that many of these letters were not actually sent, i.e., many are part of the manually intercepted letters every day.

Nonetheless, the errors identified in these letters can give us some hint of the use of the various reasons for denial, suspension, and revocation of HMSPs.

RESULTS

Table 1 shows the message frequencies in the HMP Letter Error and HMP Letter Error Delete tables, and the total number of letters that have been generated with each error. This provides a rough understanding of the frequency of each reason for denial, suspension, or revocation of a HMSP.

Table 1. Message frequency in the HMP Message Error and HMP Message Error Delete tables.

MESSAGE MASTER ID	Number of records on HMP Letter Error	Number of records on HMP Letter Error Delete	Total number of times that the message was used	MESSAGE TEXT
276	40	71	111	Your company's Crash Rate is in the top 30% of the national average.
277	295	390	685	Your company's Vehicle Out-of-Service Rate is in the top 30% of the national average.
278	146	221	367	Your company's Driver Out-of-Service Rate is in the top 30% of the national average.
279	167	179	346	Your company's Hazardous Materials Out-of-Service Rate is in the top 30% of the national average.
280	172	1,050	1,222	Your company is not registered for highway transportation with the Pipeline and Hazardous Materials Safety Administration (PHMSA).
281	6,174	2,568	8,742	Your company is not currently registered with the Pipeline and Hazardous Materials Safety Administration (PHMSA) in accordance with part 107, subpart G of 49 CFR.
282	178	242	420	Your company does not have a Satisfactory Safety Rating.
283	213	129	342	Your company does not have a satisfactory security plan as set forth in § 385.407(b).
284	674	322	996	Your company failed to submit a renewal application form (MCS-150B) in accordance with the schedule set for in §390.19(a)(2) and (a)(3).
285	1,817	2,758	4,575	Your company has not maintained the minimum financial responsibility required by § 387.9.

MESSAGE MASTER ID	Number of records on HMP Letter Error	Number of records on HMP Letter Error Delete	Total number of times that the message was used	MESSAGE TEXT
287	5	4	9	Your company has lost its operating rights or had its registration suspended in accordance with § 386.83 or § 386.84 for failure to pay a civil penalty or abide by a payment plan.
288	12	29	41	The Compliance Review has not been completed.
290	315	359	674	Your company did not certify that it has a satisfactory security program as required in § 385.407(b).
295	23	8	31	Your company has provided false or misleading information (49 CFR 390.35).
296	45	9	54	Your company has failed to comply with OOS order (49 CFR 396.9(c), 49 CFR 385.13(a)(1). (49 CFR 385.325(c)).

A number of rarely used, obsolete codes that did not appear to be associated with actual denial, suspension, or revocation actions are excluded from this table.

OBSERVATIONS

The audit trail record shows 5,607 denial actions. This table includes over 18,000 reason code instances. This suggests that, for issues that can be solved such as PHMSA registration and insufficient insurance, letters are sent to carriers prior to denial. If the carrier resolves the problem, there will be no denial. For some reasons, such as a safety rating other than Satisfactory, or the safety fitness thresholds, under current regulation there is no fixing the problem.

Further, there are issues with connectivity with PHMSA, and that incorrect letters are frequently generated and which must be manually prevented from being released.

Because there is no date on the HMP Letter Error records, and so few links to the letter records, it is impossible to determine if there is any change in pattern of these errors, associated with a change in FMCSA procedures. For example, FMCSA staff has developed a procedure to 'back out' data from a MCS-150, rather than issuing the carrier a denial. There is no evidence of this change in the data.

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APPENDIX D: DEFINITION OF A HAZMAT INSPECTION

There is no one specific indicator on MCMIS to unquestionably identify an inspection as a hazmat (HM) inspection. However, there are a number of very strong indicators.

HAZMAT INSPECTION TYPE

The first indicator is the hazmat inspection type. Table 2 shows the number of inspections that had non-null values for hazmat inspection type in the years 2010 through 2012.

Table 2. Hazmat inspections by hazmat inspection type.

Year/ Type	B - Bulk	C - Unknown	N - Non-Bulk	Total
2010	115,576	3,010	86,275	204,861
2011	115,534	2,849	84,515	202,898
2012	115,502	3,157	83,066	201,725

Clearly, these inspections are HM inspections.

HAZMAT VIOLATIONS SENT

Further, there are a number of inspections in MCMIS where the hazmat inspection type value is null, but there are one or more HM violations. Table 3 presents the number of such inspections, by year, starting in 2010. It also includes the number of such inspections that resulted in HM out-of-service (OOS) orders.

Table 3. Count of inspections where the hazmat inspection type value is null and there are one or more HM violations, by year.

Inspection year	Inspection count	HM OOS inspection count
2010	5,958	776
2011	4,771	639
2012	3,991	626

These inspections, inspections where the hazmat inspection type value is null and the inspection indicates that there were HM violations, are also included in the inventory of HM inspections.

There were no inspections where there were HM OOS orders and no HM violations.

HAZMAT PLACARD REQUIRED

Further, there are a number of inspections in MCMIS where the hazmat inspection type value is null, there are no HM violations, and the hazmat placard required indicator is Y (Yes). The counts are presented in Table 4.

Table 4. Number of inspections where the hazmat inspection type value is null, there are no HM violations, and the hazmat placard required indicator is Y, by year.

Inspection year	Number of inspections
2010	7,613
2011	5,265
2012	2,590

These are violationless inspections where the inspector clearly indicated the presence of a HM Placard. These inspections, inspections where the hazmat inspection type value is null, there are no HM violations, and the hazmat placard required indicator is Y, are included in the inventory of HM inspections.

APPENDIX E: 70-30 CONCEPT – GENERAL AND SPECIFIC IMPACTS

This appendix provides the detail associated with the implementation of the 70-30 crash rate threshold and for the OOS rate thresholds. It includes:

- Details as to how the thresholds are were calculated,
- A sample analysis, or assessment of the general impact of how many carriers would be caught by the denial thresholds if these thresholds had been applied to all carriers, as of January 1, 2013, and
- Specifics of the HMSP carriers that would have been denied

This appendix provides additional detail supporting Section 5.4. In order to provide continuity in both the report and this appendix, some material from the body of the report is duplicated in this appendix.

HOW THRESHOLDS ARE CALCULATED

This analysis describes how the crash and OOS thresholds were calculated.

Crash Rate Threshold

The plain English reading of the crash threshold would be that any carrier that had a crash rate in the top 30% of all carriers should be denied an HMSP or renewal. As is shown in Section 5.4.1 of the report, and demonstrated in Figure 2 of the full report, this might mean that any carrier that had at least one crash in the prior year, regardless of the number of power units that the carrier had, would have had a crash rate in the top 12%, since only 12% of the carriers had even one crash.

Initially instead of calculating the crash rate for all carriers, FMCSA chose to calculate for the prior 2 year period the crash rate, but only including carriers that had at least 2 crashes.

When FMCSA chose to go to the 8 year fixed rate calculation, in June, 2012, a more complex approach was taken. The following describes the published methodology for this calculation. To calculate the crash threshold, a MCMIS snapshot was used.

- The 8-year period was divided into four 2-year periods reflecting FY 2003-2004, FY 2005-2006, FY 2007-2008, and FY 2009-2010.
- Qualifying motor carriers were identified. In order to be a qualifying motor carrier, the carrier had to have had at least 2 crashes in at least one 2-year period.
- Then the number of power units for each qualifying 2-year period was captured based on the MCMIS snapshots taken immediately after the end of each even numbered FY.

- The crash rate for each 2-year period motor carrier was then determined in each time period by taking the number of crashes indicated and dividing by the number of power units times two.
- Finally, all carrier / time period combinations were ranked based on crash rate, with a resulting crash rate threshold at the 70th percentile of 0.13636.

In order to demonstrate how this calculation was made, the project mimicked the calculation, using the June 25, 2012 snapshot.

Table 5. Calculations leading to the crash threshold determination.

Measure	Value
Carriers with 2 or more crashes in 2003 – 2004	23,920
Carriers with 2 or more crashes in 2005 – 2006	26,211
Carriers with 2 or more crashes in 2007 – 2008	26,086
Carriers with 2 or more crashes in 2009 – 2010	22,569
Actual number of carriers	57,835
Carriers of interest with records in the 2004 census snapshot	49,062
Carriers of interest with records in the 2006 census snapshot	52,057
Carriers of interest with records in the 2008 census snapshot	52,066
Carriers of interest with records in the 2010 census snapshot	49,662
Total combinations of carrier and year group	202,847
Total combinations of carrier and year group with at least one crash	129,598
Total combinations of carrier and year group with no crashes	73,249
30% of 202,847	60,854
Counting down 60,854 from the top, ordered by crash rate, the crash rate is	0.1428
Finding .13636 at 64537 - percentile looks like	68%
Overall 2-year crash rate for all identified carriers	0.0631
Overall 1-year crash rate for all identified carriers	0.0316

This is not a perfect imitation of the actual calculation. FMCSA undoubtedly used some filter for valid ratios, this calculation did not. Also, FMCSA used a different snapshot. Nonetheless, applying the published methodology to the actual data yields a result quite close to the published result.

The decision to eliminate from the calculation carriers with less than 2 crashes biased the result to be a much higher crash rate than might have resulted if other approaches had been considered.

- No consideration was given to the many carriers that have good safety performance, and did not have 2 or more crashes in any 2 year period. For example,

- 119,682 recently active carriers had inspections in the year 2002 or before, and had no 2 year period where they had 2 crashes. These carriers had 601,212 power units in the most recent extract.
- Over 3,500 carriers had more than 50 power units in the most recent data, and had no crashes in 2011 or 2012. Only 1,531 of these carriers were in the list of carriers that had at least 2 crashes in any 2 year period.

Inclusion of the records of all carriers would have substantially reduced the crash rate threshold.

- Further, it appears that the actual calculation resulted in 2 year crash rates, i.e. crashes per power unit in 2 years. However, it is being used as if it were an annual crash rate. If the annual crash rate of .06818 crashes per power unit (.13636/2) were used, far more carriers would be identified as exceeding this threshold.

OOS Rate Thresholds

The calculation used for the 8 year OOS rate thresholds was somewhat more straightforward than was the calculation for the crash rates. Again, a MCMIS snapshot taken after the end of 2010 was used.

- The 8-year period was divided into four 2-year periods reflecting FY 2003-2004, FY 2005-2006, FY 2007-2008, and FY 2009-2010.
- The motor carriers used for the calculation had at least three roadside inspections indicated in MCMIS for each of the 2-year rate calculation timeframes. (That makes this analysis comparable to the 3-inspections-per-cycle method used in previous calculations.)
- The percent of inspections resulting in vehicle and driver OOS orders was calculated for each of these carriers over the 8 year period.
- The cutoff for the top 30% was determined.

Again, the use of only carriers that had at least 3 inspections in each of the 2 year periods assured that new entrants (which tend to have safety performance that is not as strong as established carriers) were dominantly excluded in the calculation of the thresholds. However, the percent of inspections resulting in out OOS orders has been dropping over time, as is shown Figure 5. Consequently, this approach locks in a comparison to prior years where OOS rates were higher.

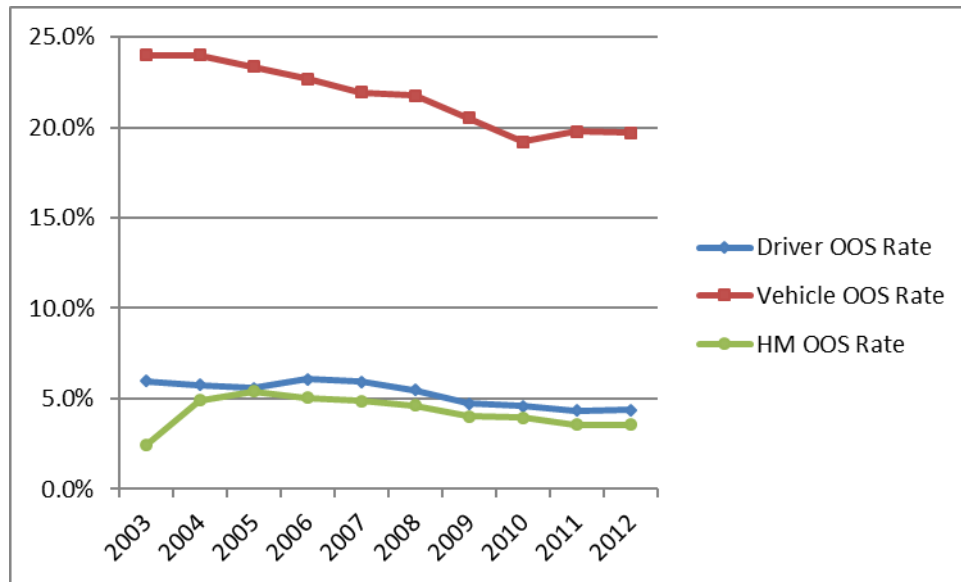


Figure 5. Trends in OOS rates over time.

70-30 CONCEPT – GENERAL IMPACT

Because of the relatively low number of HMSP carriers, an analysis was performed looking at how the thresholds might have affected the entire population of carriers (had they needed to apply for permits.)

Because the general safety performance of HMSP carriers is far better than the performance of the average carrier (See Sections 5.2 and 5.4 of the report) the percent of HMSP carriers that might be caught by these thresholds ought to be much smaller than the percent of overall carriers.

This analysis was performed using all carriers in 2012. All analysis of inspections includes only roadside inspections.

Crash Rate Threshold

In the extract, there were 520,268 recently active carriers. Of these, 241,478 carriers¹⁴ (46%) had inspections. There were also 8 carriers that had no inspections and had a crash, and 1,514 carriers that had only post-crash inspections. (These carriers had a total of 1,541 inspections.) Overall:

- 31,390 carriers had crashes,
- 21,890 carriers had one crash,

¹⁴ All of this data is as of January 25, 2013. Final tallies will be slightly higher, as lagging inspections and crashes are posted to MCMIS. This will have little or no effect on this analysis. Further, as the actual analysis of carriers for new permits and renewals occurs at the time of the application, so there is a similar delay in real operations.

- 9,500 carriers had 2 or more crashes, and
- 2,831 carriers would have been over the crash threshold.

This data is presented graphically in Figure 6.

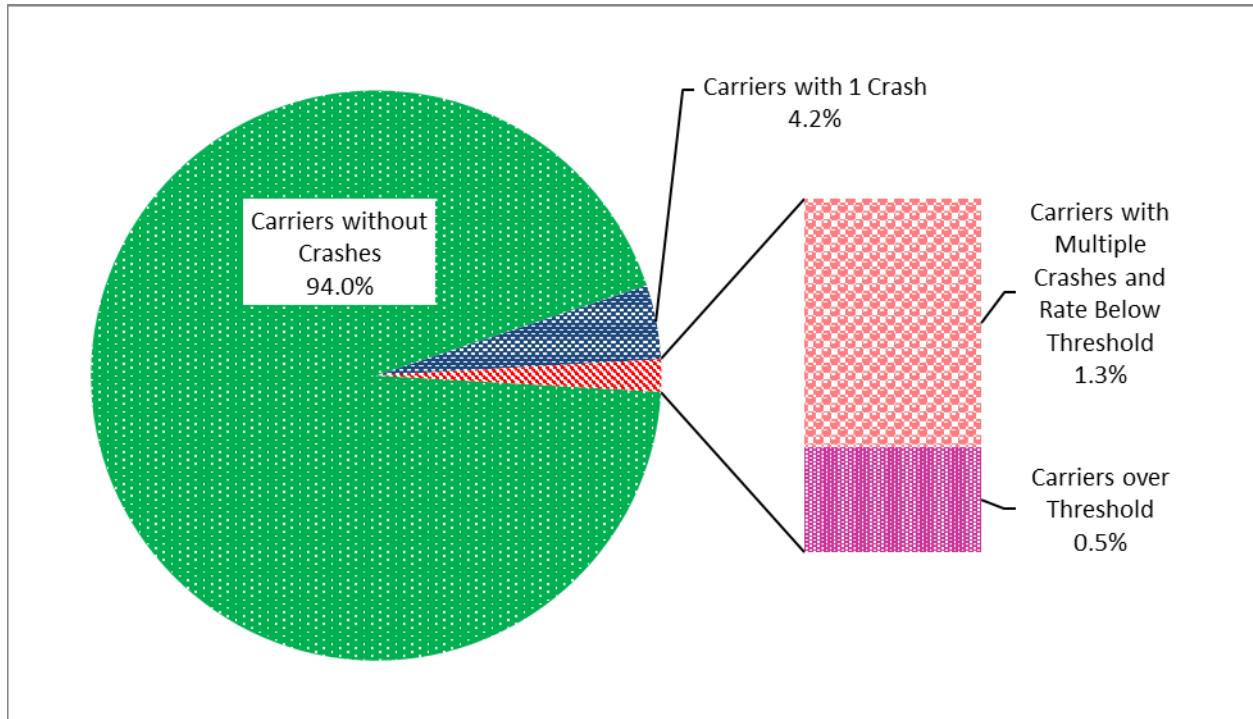


Figure 6. How many carriers would have been denied by the crash threshold – 2012.

In summary, of the 520,268 recently active carriers, 2,831, or ½ of 1% of the carriers would have failed the HMSP crash threshold. These are really poorly performing carriers.

Driver OOS Rate Threshold

Of the 520,268 recently active carriers, 238,845 had driver inspections in 2012.

- 186,312 carriers had driver inspections and no driver OOS orders. These carriers had a total of 874,762 driver inspections. (This includes 47 carriers that had more than 300 driver inspections and no driver OOS orders.) 52,533 carriers had at least one inspection with a driver OOS order.
- 35,469 carriers had exactly one inspection with a driver OOS order. (These carriers had a total of 388,770 inspections. 62 carriers had more than 300 driver inspections and one driver OOS order. Four carriers had over 1,000 driver inspections and one driver OOS order.)
- 17,064 carriers had 2 or more driver OOS orders. Of these, 10,786 would have been over the threshold rate of 9.68% or more of their inspections resulting in driver OOS orders. (587 carriers had exactly 2 inspections, both of which resulted in driver OOS orders.)

This data is presented graphically in Figure 7.

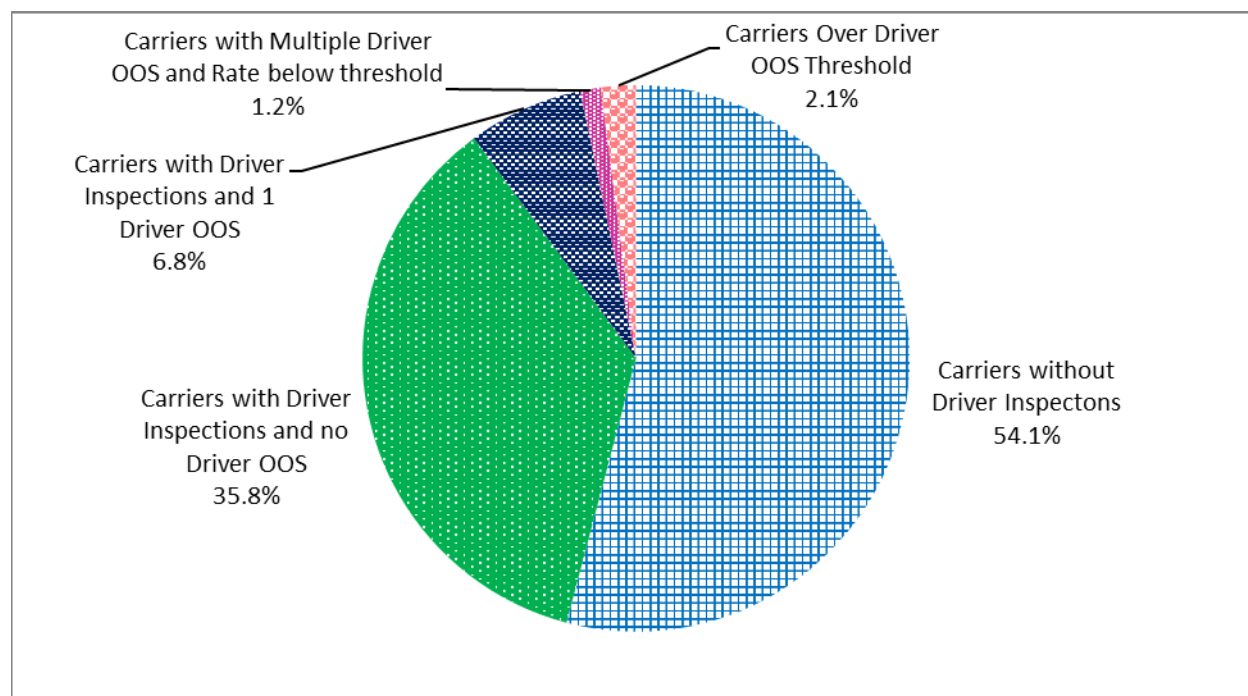


Figure 7. How many carriers would have been denied by the driver OOS threshold – 2012.

In summary, of the 520,268 recently active carriers, 10,786, or 2.1% of the recently active carriers would have failed the driver OOS threshold.

Further, 518, or 4.8% of the 10,786 carriers that would have been denied for the driver OOS threshold would also have been denied for the crash threshold.

Vehicle OOS Rate Threshold

Of the 520,268 recently active carriers, 214,763 of those carriers had (roadside) vehicle inspections in 2012.

- 113,813 carriers had vehicle inspections and no vehicle OOS orders. These carriers had a total of 268,226 vehicle inspections. 100,959 carriers had at least one inspection with a vehicle OOS order.
- 57,629 carriers had one inspection with a vehicle OOS order.
- 43,321 carriers had 2 or more inspections with vehicle OOS orders. Of these, 23,951 would have been over the threshold of 33.33% of vehicle inspections resulting in vehicle OOS orders. (3,100 carriers had exactly 2 vehicle inspections, both of which resulted in vehicle OOS orders.)

This data is presented graphically in Figure 8.

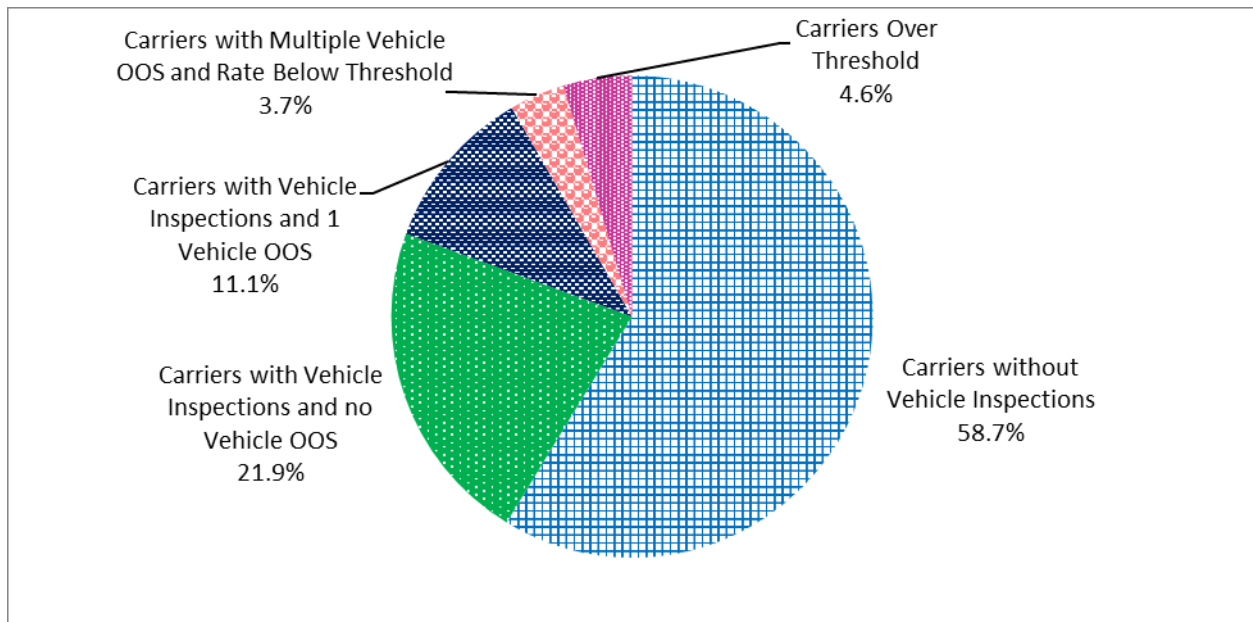


Figure 8. How many carriers would have been denied by the vehicle OOS threshold – 2012.

In summary, of the 520,268 recently active carriers, 23,951, or 4.6% of the recently active carriers would have failed the vehicle OOS threshold.

Further,

- 676, or 2.8% of the 23,951 carriers that would have been denied for the vehicle OOS threshold would also have been denied for the crash threshold.
- 3,606 or 15.1% of the 23,951 carriers that would have been denied for the vehicle OOS threshold would also have been denied for the driver OOS threshold.

HM OOS Rate Threshold

Of the 520,268 recently active carriers, only 17,617 had HM inspections in 2012. Most carriers are not subject to HM inspections, since most carriers do not carry hazardous materials.

- 14,689 carriers had HM inspections with no HM OOS orders. 2,928 carriers had at least one inspection with a HM OOS order.
- 2,257 carriers had one inspection with a HM OOS order.
- 671 carriers had two or more inspections with HM OOS orders. Of these, 353 would have been over the threshold.

This data is presented graphically in Figure 9.

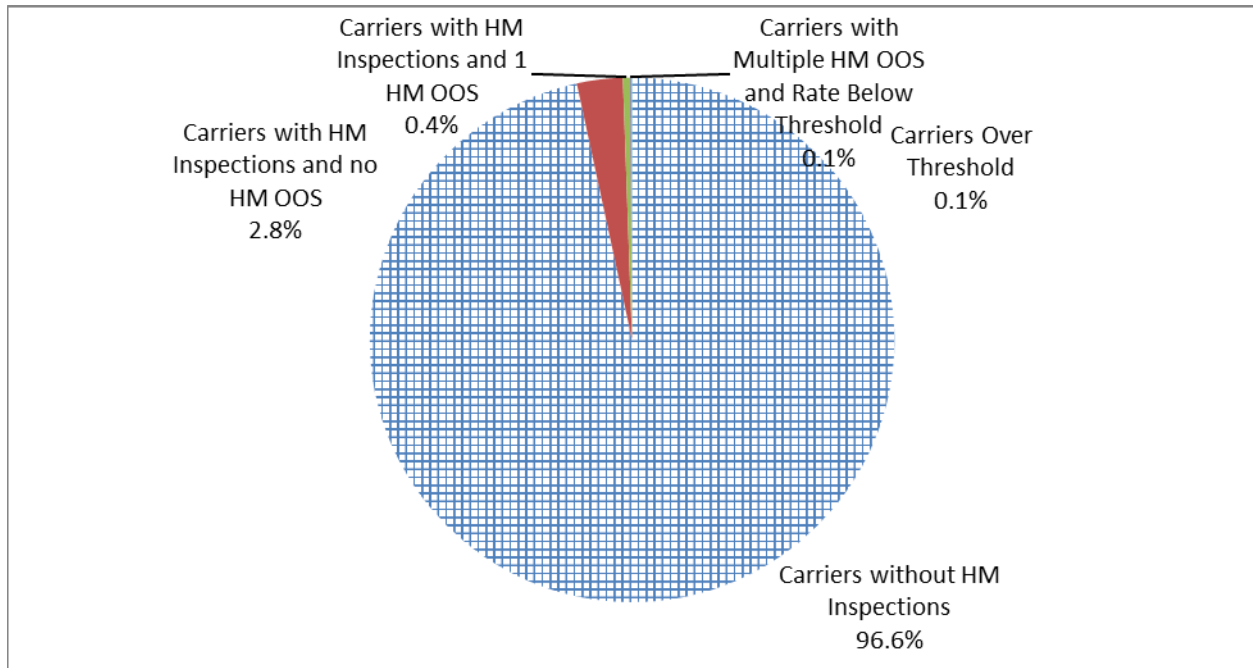


Figure 9. How many carriers would have been denied by the HM OOS threshold – 2012.

In summary, of the 520,268 recently active carriers, 353, or 7/100 of 1% of the recently active carriers would have failed the HM OOS threshold. Perhaps more relevantly, 17,617 carriers had at least one HM inspection. The 353 that would have failed the HM threshold represent only 3.0% of the carriers that had HM inspections.

In other words, only 3% of the HM carriers that had HM inspections would have failed the HM threshold. (And, as shown in Table 5 in the full report, HMSP carriers, as a group, have a far lower percentage of their inspections result in HM OOS orders than do other HM carriers.)

Summary

Figure 10 provides a graphic representation, showing a Venn Diagram for the overlap between carriers that would have been denied for the crash threshold, the driver OOS threshold, and the vehicle OOS threshold. The summary data, indicating that 6.4% of carriers would have failed for any threshold, includes the HM OOS threshold, as well.

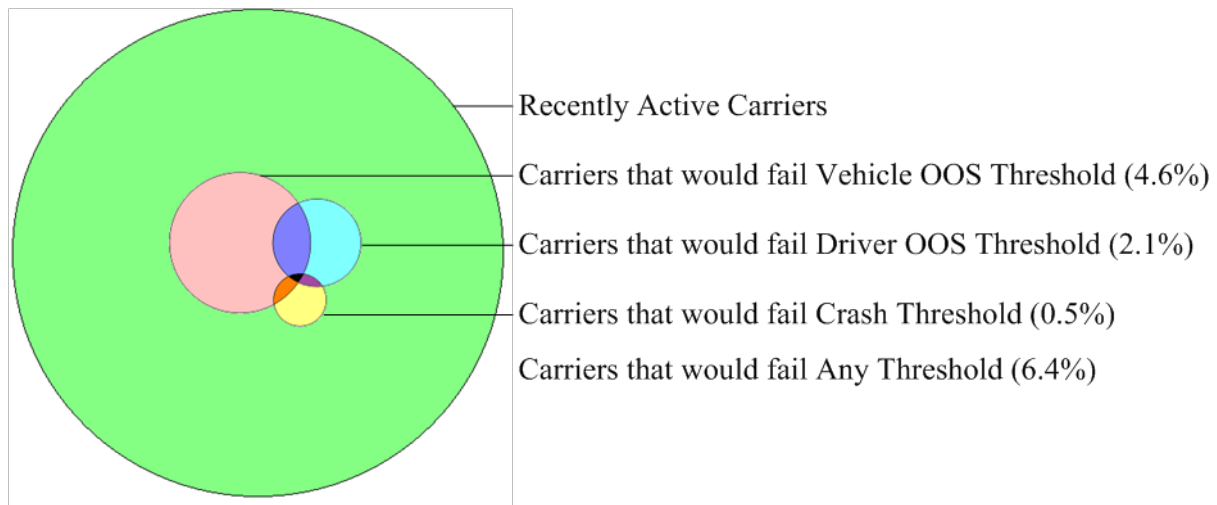


Figure 10. How many carriers that would have been denied for any threshold – 2012.

70-30 CONCEPT – SPECIFIC IMPACTS ON HMSP CARRIERS

One of the goals for the analysis of the HMSP program was to review the performance of carriers that had been denied HMSPs in the year 2012, based on the various threshold criteria. However, MCMIS does not store information about the reason for a denial. Therefore, we had to apply an alternative approach. The data in MCMIS was analyzed using an ‘as-of’ date of January 1, 2013. This identified carriers that would have been denied a renewal on their HMSP, had they applied on January 1, 2013. This is not the list of carriers that were actually denied renewal. Many carriers would have been denied renewal had they applied on another date, but received their renewal based on the actual applied date. What this does provide is a clear picture of the nature of denials of renewals for the carrier’s failure to meet the threshold.

The data in this section includes the percent of the carrier’s inspections that were HM inspections. This provides a rough understanding as to proportion of the carrier’s business activity that was related to HM operations. However, there can be cases where a truck hauling hazardous materials receives an inspection that does not address HM concerns, when the inspector is not qualified to perform a HM inspection.

Crash Threshold

There were six HMSP carriers that would have failed the crash threshold, as of January 1, 2013, based on 2012 performance. Reference data for these carriers is presented in Table 6.

Table 6. Carrier data for HMSP carriers that would have failed the crash threshold.

Carrier	Power units	Number of crashes	Number of inspections	Number of driver inspections	Number of driver OOS inspections	Number of vehicle inspections	Number of vehicle OOS inspections	Number of HM inspections	Number of HM OOS inspections	Pct. of inspections that are HM	Crash rate – crashes per hundred power units
Carrier 11	15	5	36	36	2	26	2	18	0	50%	33.3
Carrier 71	8	2	6	6	0	5	0	4	0	67%	25.0
Carrier 23	36	7	22	22	0	9	1	3	0	14%	19.4
Carrier 34	12	2	0	0	0	0	0	0	0	0%	16.7
Carrier 40	48	7	17	17	0	17	0	0	0	0%	14.6
Carrier 74	14	2	20	20	0	16	4	6	0	30%	14.3

Of these six carriers;

- There are 3 carriers that have very poor crash performance. With 5 or more crashes, and 48 or fewer power units, these carriers have exceptionally high crash rates.
- There are 3 carriers that had 2 crashes, and did not have enough power units to avoid being caught by the threshold.

If the crash threshold were applied as of January 1, 2013; six carriers, 4/10 of 1% of the HMSP carriers, would have been denied renewal based on the crash threshold.

Driver OOS Threshold

There were twelve HMSP carriers that would have failed the driver OOS rate threshold, as of January 1, 2013, based on 2012 performance. Reference data for these carriers is presented in Table 7.

Table 7. Carrier data for HMSP carriers that would have failed the driver OOS threshold.

Carrier	Power units	Number of crashes	Number of inspections	Number of driver inspections	Number of driver OOS inspections	Number of vehicle inspections	Number of vehicle OOS inspections	Number of HM inspections	Number of HM OOS inspections	Percent of inspections that are HM	Percent of driver inspections resulting in driver OOS orders
Carrier 18	14	0	4	4	2	2	0	2	0	0%	50%
Carrier 4	3	0	4	4	2	4	3	0	0	0%	50%
Carrier 30	71	0	7	7	2	6	2	2	0	0%	29%

Carrier	Power units	Number of crashes	Number of inspections	Number of driver inspections	Number of driver OOS inspections	Number of vehicle inspections	Number of vehicle OOS inspections	Number of HM inspections	Number of HM OOS inspections	Percent of inspections that are HM	Percent of driver inspections resulting in driver OOS orders
Carrier 76	41	0	8	8	2	7	0	6	0	0 %	25%
Carrier 41	33	0	10	10	2	5	1	1	1	10%	20%
Carrier 5	9	1	30	30	6	20	4	0	0	0%	20%
Carrier 8	4	1	16	16	2	11	5	4	1	25%	12.5%
Carrier 56	23	0	17	17	2	13	1	13	0	76%	11.8%
Carrier 15	5	1	19	17	2	10	3	0	0	0%	11.8%
Carrier 26	16	1	52	52	6	33	6	17	0	33%	11.5%
Carrier 33	49	0	36	36	4	14	5	0	0	0%	11.1%
Carrier 60	14	0	28	19	2	23	0	13	0	46%	10.5%

Only 3 of the 12 carriers that would have been caught by the driver OOS threshold had more than 2 driver OOS orders. The other 9 had exactly 2 driver OOS orders.

If the driver OOS threshold were applied as of January 1, 2013; 12 carriers, 8/10 of 1% of the HMSP carriers, would have been denied renewal based on the driver OOS threshold.

Vehicle OOS Threshold

There were 44 HMSP carriers that would have failed the vehicle OOS rate threshold, as of January 1, 2013, based on 2012 performance. Reference data for these carriers is presented in Table 8.

Table 8. Carrier data for HMSP carriers that would have failed the vehicle OOS threshold.

Carrier	Power units	Number of crashes	Number of inspections	Number of driver inspections	Number of driver OOS inspections	Number of vehicle inspections	Number of vehicle OOS inspections	Number of HM inspections	Number of HM OOS inspections	Percent of inspections that are HM	Percent of vehicle inspections resulting in vehicle OOS orders
Carrier 88	25	0	3	3	1	2	2	1	0	33%	100 %
Carrier 89	5	0	3	3	0	3	3	2	0	67%	100%
Carrier 51	66	0	7	7	0	4	3	1	0	14%	75%
Carrier 4	3	0	4	4	2	4	3	0	0	0%	75%
Carrier 82	91	1	6	6	0	3	2	3	1	50%	66%

Carrier	Power units	Number of crashes	Number of inspections	Number of driver inspections	Number of driver OOS inspections	Number of vehicle inspections	Number of vehicle OOS inspections	Number of HM inspections	Number of HM OOS inspections	Percent of inspections that are HM	Percent of vehicle inspections resulting in vehicle OOS orders
Carrier 70	8	0	6	6	1	3	2	0	0	0%	66%
Carrier 79	16	0	3	3	0	3	2	0	0	0%	66%
Carrier 48	15	0	3	2	0	3	2	0	0	0%	66%
Carrier 68	6	0	3	3	0	3	2	0	0	0%	66%
Carrier 65	26	0	5	5	0	5	3	1	0	20%	60%
Carrier 73	5	0	8	8	0	5	3	0	0	0%	60%
Carrier 67	24	1	5	5	0	5	3	1	0	20%	60%
Carrier 63	10	0	10	4	0	7	4	0	0	0%	57%
Carrier 64	23	1	6	6	0	4	2	2	0	33%	50%
Carrier 9	8	0	10	10	1	8	4	4	2	40%	50%
Carrier 80	80	0	5	5	0	4	2	1	1	20%	50%
Carrier 1	6	0	15	15	1	14	7	13	7	87%	50%
Carrier 81	3	0	5	5	0	4	2	2	1	40%	50%
Carrier 27	3	1	7	7	0	6	3	2	0	29%	50%
Carrier 87	42	0	26	26	1	20	10	2	0	8%	50%
Carrier 8	4	1	16	16	2	11	5	4	1	25%	45%
Carrier 49	29	0	13	13	1	11	5	9	0	69%	45%
Carrier 52	130	1	20	20	0	9	4	3	0	15%	44%
Carrier 78	13	1	10	10	0	9	4	7	0	70%	44%
Carrier 86	5	0	8	8	1	7	3	2	0	25%	42%
Carrier 3	37	2	42	42	0	29	12	21	8	50%	41%
Carrier 69	26	0	5	5	0	5	2	4	1	80%	40%
Carrier 84	6	0	5	2	0	5	2	0	0	0%	40%
Carrier 75	4	0	7	7	0	5	2	0	0	0%	40%
Carrier 19	149	6	85	85	3	49	19	0	0	0%	38%
Carrier 54	63	1	10	10	1	8	3	1	0	10%	37%
Carrier 55	8	1	8	8	0	8	3	7	1	88%	37%
Carrier 72	6	0	10	10	1	8	3	6	1	60%	37%
Carrier 83	10	1	32	32	0	25	9	20	1	63%	36%
Carrier 33	49	0	36	36	4	14	5	0	0	0%	35%
Carrier 7	92	4	49	49	1	34	12	6	2	12%	35%
Carrier 57	664	2	91	91	5	54	19	5	1	5%	35%
Carrier 6	9	1	35	34	0	26	9	3	2	9%	34%
Carrier 50	81	0	6	6	0	6	2	3	0	50%	33%

Carrier	Power units	Number of crashes	Number of inspections	Number of driver inspections	Number of driver OOS inspections	Number of vehicle inspections	Number of vehicle OOS inspections	Number of HM inspections	Number of HM OOS inspections	Percent of inspections that are HM	Percent of vehicle inspections resulting in vehicle OOS orders
Carrier 66	13	1	10	10	0	6	2	2	1	20%	33%
Carrier 30	71	0	7	7	2	6	2	2	0	29%	33%
Carrier 62	20	0	22	22	1	9	3	4	0	18%	33%

A comparison of the vehicle OOS to crash rate gives an insight into the effectiveness of the vehicle OOS as a discriminator. Overall, for the 44 carriers who would have failed the vehicle OOS threshold, they had almost 2,000 power units, and crash rate of 1.31 crashes per hundred power units, well below average. However, this crash rate is strongly lowered by one carrier, Carrier 57, which had 664 power units and only 2 crashes. Removing Carrier 57 reveals that these carriers still had over 1,300 power units, but a crash rate of 1.82 crashes per hundred power units, just a little less than the 1.92 crash rate for all HMSP carriers.

The implication is that the vehicle OOS threshold does not seem to be highly effective in identifying unsafe carriers. Rather, it seems to be an arbitrary method to sanction unlucky carriers that have very few inspections, with 2 or 3 resulting in vehicle OOS orders.

Overall, 44 carriers, or 2.9% of the HMSP carriers, would have been denied renewal for the vehicle OOS threshold.

HM OOS Threshold

There were sixteen HMSP carriers that would have failed the hazardous materials threshold, as of January 1, 2013, based on 2012 performance. Reference data for these carriers is presented in Table 9.

Table 9. Carrier data for HMSP carriers that would have failed the HM OOS threshold.

Carrier	Power units	Number of crashes	Number of inspections	Number of driver inspections	Number of driver OOS inspections	Number of vehicle inspections	Number of vehicle OOS inspections	Number of HM inspections	Number of HM OOS inspections	Percent of inspections that are HM	Percent of HM inspections resulting in HM OOS
Carrier 17	66	1	24	24	0	13	3	3	2	13%	67%
Carrier 6	9	1	35	34	0	26	9	3	2	9%	67%
Carrier 1	6	0	15	15	1	14	7	13	7	87%	54%
Carrier 9	8	0	10	10	1	8	4	4	2	40%	50%
Carrier 3	37	2	42	42	0	29	12	21	8	50%	38%

Carrier	Power units	Number of crashes	Number of inspections	Number of driver inspections	Number of driver OOS inspections	Number of vehicle inspections	Number of vehicle OOS inspections	Number of HM inspections	Number of HM OOS inspections	Percent of inspections that are HM	Percent of HM inspections resulting in HM OOS
Carrier 2	184	3	271	271	15	210	54	8	3	3%	37%
Carrier 7	92	4	49	49	1	34	12	6	2	12%	33%
Carrier 32	3	0	10	10	1	10	2	7	2	70%	29 %
Carrier 53	175	5	166	163	0	139	17	11	2	7%	18%
Carrier 37	15	0	47	41	2	32	7	20	3	43%	15%
Carrier 77	53	1	42	42	1	34	5	14	2	33%	14%
Carrier 85	174	1	39	38	0	26	2	16	2	41%	13%
Carrier 61	20	1	44	44	1	30	2	22	2	50%	9.1%
Carrier 59	59	0	40	40	1	30	7	34	3	85%	8.8%
Carrier 12	2,419	43	1,818	1,816	60	1,525	298	140	12	8%	8.6%
Carrier 58	1,946	2	80	80	5	67	10	42	3	53%	7.1%

Overall, 16 carriers, or 1.1% of the HMSP carriers, would have been denied renewal for the HM OOS threshold.

Summary

Overall, the thresholds as applied for this analysis example identified 76 cases where carriers would have been denied new/renewal HMSP permits. There are 67 carriers in this list, or 4.5% of the HMSP carriers. Nine different carriers would have been identified by two of the 4 thresholds.

There were 34 cases of carrier identification on the crash, driver, and HM thresholds, or 2.3% of the HMSP carriers. None of these duplicated. Nine of these 34 carriers would also have been caught on the vehicle OOS threshold.

Although the counts are low, and therefore subject to more random ‘ups and downs’, Table 10 (Table 6 in the full report) illustrates that, in each case, a smaller percent of the HMSP carriers would have been denied than the comparable measure of all carriers. Table 10 shows:

- The percentage of each group that would have been subject to the threshold, i.e. the percent of the group that had 2 or more crashes, or the percent of the group that had 2 or more of the specific type of OOS order, and
- The percent of the group that actually would have failed on the threshold.

So, for example, Figure 6 shows that 1.8% of all recently active carriers had 2 or more crashes. Of these, 0.5% would have been denied, based on the threshold. In comparison, 14.9% of the

HMSP carriers had 2 or more crashes. However, only 0.4% would have been denied based on the thresholds. While a far larger percentage of the HMSP carriers would have been subject to the thresholds, still, a smaller percent would have failed to meet the thresholds.

This is a clear result of the fact that, as a group, the safety performance of HMSP carriers is far better than the safety performance of the general population.

Table 10. Percent of all recently active and HMSP carriers that would have been denied, as of January 1, 2013.

Threshold	Percent of recently active carriers that would have been subject to the threshold	Percent of recently active carriers that 'would have been denied' for the threshold	Percent of HMSP carriers that would have been subject to the threshold	Percent of HMSP carriers that 'would have been denied' for the threshold
Crash	1.8%	0.5%	14.9%	0.4%
Driver OOS	3.3%	2.1%	11.8%	0.8%
Vehicle OOS	8.3%	4.6%	29.3%	2.9%
HM OOS	3.8%	2.0%*	7.2%	1.1%
All thresholds	6.4%	9.8%	31.2%	4.5%

* Percent of carriers with HM inspections that would have been denied for the threshold.

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APPENDIX F: ACCURACY IN IDENTIFYING CARRIERS FOR ACTION

Section 6.2 in the full report presents an overview of the results of the analysis regarding accuracy of the existing program in identifying carriers for denial. This appendix provides details of the analysis supporting Section 6.2.

CRASH THRESHOLD

Table 11 shows the 6 carriers that would have been denied their HMSPs, based on exceeding the crash rate threshold. The one carrier that was identified by the SMS criteria is marked with an asterisk (*) next to its identifier.

Table 11. Carriers that would have been denied for crash rate threshold, with rankings.

Carrier	Power units	Number of crashes	Number of inspections	Crash rate - crashes per hundred power units	Overall rank
Carrier 11*	15	5	36	33.3	11
Carrier 71	8	2	6	25.0	N/A
Carrier 23	36	7	22	19.4	23
Carrier 34	12	2	0	16.7	34
Carrier 40	48	7	17	14.6	40
Carrier 74	14	2	20	14.3	N/A

Four of the six carriers, 66.7% of the identified carriers are carriers ranked by analysis of deviation. One of the six, 17%, was identified by the SMS methods.

The three carriers previously identified as having very poor crash performance are all ranked by analysis of deviation. Only one of the 3 carriers with 5 or more crashes and fewer than 50 power units would have been identified by SMS.

Of the three carriers that had 2 crashes (and not enough power units), Carrier 71 and Carrier 74 had good performance on inspections, and this good performance pulled them out of the rankings by analysis of deviation. Carrier 34 had no inspections, so their inspection performance could not help them avoid being ranked by analysis of deviations.

DRIVER OOS THRESHOLD

Table 12 shows the 12 carriers that would have been denied their HMSPs, based on the driver OOS rate threshold. The one carrier that was identified by the SMS criteria is marked with an asterisk (*) next to its identifier.

Table 12. Carriers that would have been denied for the driver OOS rate threshold, with rankings.

Carrier	Number of driver inspections	Number of driver OOS inspections	Percent of driver inspections resulting in driver OOS orders	Overall rank
Carrier 18	4	2	50.0%	18
Carrier 4	4	2	50.0%	4
Carrier 30	7	2	28.6%	30
Carrier 76	8	2	25.0%	N/A
Carrier 41	10	2	20.0%	41
Carrier 5	30	6	20.0%	5
Carrier 8	16	2	12.5%	8
Carrier 56	17	2	11.8%	N/A
Carrier 15*	17	2	11.8%	15
Carrier 26	52	6	11.5%	26
Carrier 33	36	4	11.1%	33
Carrier 60	19	2	10.5%	N/A

Nine of the 12 identified carriers, 75% of the carriers that would not have passed the driver OOS threshold, were on the list of carriers ranked by analysis of deviations.

VEHICLE OOS THRESHOLD

Table 13 shows the 44 carriers that would have been denied their HMSPs, based on the vehicle OOS rate threshold. None of these carriers were identified by the SMS criteria.

Table 13. Carriers that would have been denied for vehicle OOS rate threshold, with rankings.

Carrier	Number of vehicle inspections	Number of vehicle OOS inspections	Percent of vehicle inspections resulting in vehicle OOS orders	Overall rank
Carrier 88	2	2	100 %	N/A
Carrier 89	3	3	100%	N/A
Carrier 51	4	3	75%	N/A
Carrier 4	4	3	75%	4
Carrier 82	3	2	66%	N/A
Carrier 70	3	2	66%	N/A
Carrier 79	3	2	66%	N/A
Carrier 48	3	2	66%	N/A
Carrier 68	3	2	66%	N/A
Carrier 65	5	3	60%	N/A

Carrier	Number of vehicle inspections	Number of vehicle OOS inspections	Percent of vehicle inspections resulting in vehicle OOS orders	Overall rank
Carrier 73	5	3	60%	N/A
Carrier 67	5	3	60%	N/A
Carrier 63	7	4	57%	N/A
Carrier 64	4	2	50%	N/A
Carrier 9	8	4	50%	9
Carrier 80	4	2	50%	N/A
Carrier 1	14	7	50%	1
Carrier 81	4	2	50%	N/A
Carrier 27	6	3	50%	27
Carrier 87	20	10	50%	N/A
Carrier 8	11	5	45%	8
Carrier 49	11	5	45%	N/A
Carrier 52	9	4	44%	N/A
Carrier 78	9	4	44%	N/A
Carrier 86	7	3	42%	N/A
Carrier 3	29	12	41%	3
Carrier 69	5	2	40%	N/A
Carrier 84	5	2	40%	N/A
Carrier 75	5	2	40%	N/A
Carrier 19	49	19	38%	19
Carrier 54	8	3	37%	N/A
Carrier 55	8	3	37%	N/A
Carrier 72	8	3	37%	N/A
Carrier 83	25	9	36%	N/A
Carrier 33	14	5	35%	33
Carrier 7	34	12	35%	7
Carrier 57	54	19	35%	N/A
Carrier 6	26	9	34%	6
Carrier 50	6	2	33%	N/A
Carrier 66	6	2	33%	N/A
Carrier 30	6	2	33%	30
Carrier 62	9	3	33%	N/A
Carrier 88	15	5	33%	N/A

Carrier	Number of vehicle inspections	Number of vehicle OOS inspections	Percent of vehicle inspections resulting in vehicle OOS orders	Overall rank
Carrier 89	6	2	33%	N/A

A total of 11 of the 44 carriers, or 25%, that would not have passed the vehicle OOS threshold were on the list of carriers ranked by analysis of deviations. Far more such unranked carriers would have been caught by this threshold than by the other three thresholds combined.

Of the 11 carriers ranked by analysis of deviations that would have been caught by this threshold, 9 would also have been caught by other thresholds.

Further, this is the only threshold that would catch carriers that had a safety performance on this measure that is not significantly different from the performance of all HMSP carriers. In other words, in the other measures, there are carriers whose performance is not statistically different from the average of all motor carriers, but whose performances is significantly worse than the performance of all HMSP carriers. In the measure of percentage of vehicle inspections resulting in vehicle OOS orders, there are carriers (with 6 inspections and 2 OOS orders) that had a performance on this measure that was NOT significantly different from the performance of all HMSP carriers, but that nonetheless would have been denied based on their vehicle OOS order.

HAZARDOUS MATERIALS OOS THRESHOLD

Table 14 shows the 16 carriers that would have been denied their HMSPs, based on the HM OOS rate threshold. The two carriers that were identified by the SMS criteria are marked with an asterisk (*) next to their identifiers.

Table 14. Carriers that would have been denied for the HM OOS rate threshold, with rankings.

Carrier	Number of HM inspections	Number of HM OOS inspections	Pct. of inspections that are HM	Percent of HM inspections resulting in HM OOS	Overall rank
Carrier 17	3	2	13%	66.7%	17
Carrier 6	3	2	9%	66.7%	6
Carrier 1	13	7	87%	53.8%	1
Carrier 9	4	2	40%	50.0%	9
Carrier 3	21	8	50%	38.1%	3
Carrier 2*	8	3	3%	37.5%	2
Carrier 7	6	2	12%	33.3%	7
Carrier 32	7	2	70%	28.6%	32
Carrier 53	11	2	7%	18.2%	N/A
Carrier 37	20	3	43%	15.0%	37
Carrier 77	14	2	33%	14.3%	N/A

Carrier	Number of HM inspections	Number of HM OOS inspections	Pct. of inspections that are HM	Percent of HM inspections resulting in HM OOS	Overall rank
Carrier 85	16	2	41%	12.5%	N/A
Carrier 61	22	2	50%	9.1%	N/A
Carrier 59	34	3	85%	8.8%	N/A
Carrier 12*	140	12	8%	8.6%	12
Carrier 58	42	3	53%	7.1%	N/A

Overall, 10 of the 16 carriers, or 62.5%, are on the list of carriers ranked by analysis of deviations. Further,

- The top 8 carriers, and 9 of the top 10 carriers on this list were among the carriers ranked by analysis of deviations.
- Only one of the bottom 6 carriers on this list was ranked by analysis of deviations.

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APPENDIX G: APPLICATION OF THE EXISTING THRESHOLDS TO ONLY CARRIERS WITH A SIGNIFICANT PATTERN OF BEHAVIOR

Section 8.2 in the full report contains summary data as to the impact of filtering HMSP denial to only deny renewal to carriers that had a pattern of behavior that is significantly different from the pattern of behavior of average carriers, and from average HMSP carriers. This Appendix provides the detail supporting Section 8.2.

CRASH RATE

Based on these standards, Table 15 shows the carriers that would have been denied HMSPs, on January 1, 2013, based on their crash rates statistically significantly exceeding the crash threshold.

Table 15. Carriers that would have been denied HMSPs for crash rate, based on modified criteria.

Carrier	Power units	Number of crashes	Number of inspections	Pct. of inspections that are HM	Crash rate – crashes per hundred power units	Overall rank
Carrier 11	15	5	36	50.0%	33.3	11
Carrier 71	8	2	6	66.7%	25.0	N/A
Carrier 23	36	7	22	13.6%	19.4	23
Carrier 34	12	2	0	0.0%	16.7	34
Carrier 40	48	7	17	0.0%	14.6	40
Carrier 74	14	2	20	30.0%	14.3	N/A

The crash threshold, as currently defined, is far higher than the average crash rates that are occurring, both for all carriers and especially for the group of HMSP carriers (as shown in Table 5 in the full report) Consequently, any time that a carrier has 2 (or more) crashes, and has a crash rate higher than the threshold, it represents a statistically significant pattern of behavior. Thus, by applying the filter of requiring statistical significance to crash rate, there is no change from the initial list Four of these 6 carriers are also ranked by analysis of deviation.

DRIVER OOS RATE

The original threshold analysis without consideration of statistical significance showed 12 carriers that would have been denied HMSPs based on driver OOS rate. However, 4 of these are not determined to be statistically significant patterns of behavior. Table 16 shows the data for the

8 carriers that after applying statistical significance would have been denied HMSPs, based on driver OOS rate, on January 1, 2013.

Table 16. Carriers that would have been denied HMSPs for driver OOS rate threshold and a significant pattern of behavior.

Carrier	Number of inspections	Number of driver inspections	Number of driver OOS inspections	Percent of inspections that are HM	Percent of driver inspections resulting in driver OOS orders	Overall rank
Carrier 18	4	4	2	0.0%	50.0%	18
Carrier 4	4	4	2	0.0%	50.0%	4
Carrier 30	7	7	2	0.0%	28.6%	30
Carrier 76	8	8	2	0.0%	25.0%	N/A
Carrier 41	10	10	2	10%	20.0%	41
Carrier 5	30	30	6	0.0%	20.0%	5
Carrier 26	52	52	6	33%	11.5%	26
Carrier 33	36	36	4	0.0%	11.1%	33

In the original list for the driver OOS rate without consideration of statistical significance, 9 of 12 carriers, or 75%, were carriers ranked by analysis of deviation. In this Table 16 list, 7 of the 8, or 87.5% of the carriers are ranked carriers.

- Three of the four unranked carriers originally identified as failing to meet the driver OOS threshold are dropped from the Table 16 list.
- One carrier ranked by analysis of deviation, Carrier 15, is dropped from the Table 16 list. Driver OOS rate was the only threshold that Carrier 15 failed. However, Carrier 15 has a generally poor safety performance, and would have been identified for SMS Alerts based on two of the methods that use BASIC scores.

VEHICLE OOS RATE

The original analysis showed that 44 carriers would have been denied HMSPs based on vehicle OOS rates. Of these, only 18 remain after eliminating the carriers that did not have a pattern of behavior that was significantly different from the average carrier. These are shown in Table 17.

Table 17. Carriers that would have been denied HMSPs for vehicle OOS rate threshold and a significant pattern of behavior.

Carrier	Number of inspections	Number of vehicle inspections	Number of vehicle OOS inspections	Pct. of inspections that are HM	Percent of vehicle inspections resulting in vehicle OOS orders	Overall rank
Carrier 89	3	3	3	67%	100%	N/A
Carrier 51	7	4	3	14%	75%	N/A
Carrier 4	4	4	3	0%	75%	4
Carrier 65	5	5	3	20%	60%	N/A
Carrier 73	8	5	3	0%	60%	N/A
Carrier 67	5	5	3	20%	60%	N/A
Carrier 63	10	7	4	0%	57%	N/A
Carrier 9	10	8	4	40%	50%	9
Carrier 1	15	14	7	87%	50%	1
Carrier 87	26	20	10	8%	50%	N/A
Carrier 8	16	11	5	25%	45%	8
Carrier 49	13	11	5	69%	45%	N/A
Carrier 3	42	29	12	50%	41%	3
Carrier 19	85	49	19	0%	38%	19
Carrier 83	32	25	9	63%	36%	N/A
Carrier 7	49	34	12	12%	35%	7
Carrier 57	91	54	19	5%	35%	N/A
Carrier 6	35	26	9	9%	34%	6

Eleven of the 44 carriers on the original list for vehicle OOS rate (see Table 13), only 25% of those identified carriers, were ranked base on the analysis of deviation. Based on the enhanced criteria, 8 of the 18, or 44% of the carriers were ranked. Three ranked carriers were dropped based on the enhanced criteria.

- Carrier 27 was dropped from the list. With two OOS orders in 3 inspections, and 1 crash with only 3 power units, this carrier's behavior was highly deviant from the norm. However, the carrier was too small to be caught by any other method.
- Carrier 33 would have been denied based on driver OOS rate,
- Carrier 30 would also have been denied based on driver OOS rates.

Consequently, the application of the standard for a statistically significant pattern of behavior would have only eliminated one quite small carrier.

This list still contains 10 carriers unranked by analysis of deviation, but that is a much better result than the 33 on the original list based on the current method for applying the vehicle OOS threshold.

HM OOS RATE

The threshold analysis for HM OOS rate, based on the current methodology, showed that 16 carriers would have been denied HMSP renewal based on HM OOS rates. Of these, as shown in Table 18, 13 remain after eliminating the carriers that did not have a pattern of behavior that was significantly different from the average carrier.

Table 18. Carriers that would have been denied HMSPs for HM OOS rate threshold and a significant pattern of behavior.

Carrier	Number of inspections	Number of HM inspections	Number of HM OOS inspections	Percent of inspections that are HM	Percent of HM inspections resulting in HM OOS	Overall rank
Carrier 17	24	3	2	13%	66.7%	17
Carrier 6	35	3	2	9%	66.7%	6
Carrier 1	15	13	7	87%	53.8%	1
Carrier 9	10	4	2	40%	50.0%	9
Carrier 3	42	21	8	50%	38.1%	3
Carrier 2	271	8	3	3%	37.5%	2
Carrier 7	49	6	2	12%	33.3%	7
Carrier 32	10	7	2	70%	28.6%	32
Carrier 53	166	11	2	7%	18.2%	N/A
Carrier 37	47	20	3	43%	15.0%	37
Carrier 77	42	14	2	33%	14.3%	N/A
Carrier 85	39	16	2	41%	12.5%	N/A
Carrier 12	1,818	140	12	8%	8.6%	12

Ten of the 16 carriers on the original list, 62%, were among the carriers ranked by analysis of deviation. Based on the enhanced criteria, 10 of the 13, or 77% of the carriers were ranked.

- None of the 12 ranked carriers were dropped from this list.
- Three of the 6 unranked carriers were dropped from the list.

SUMMARY

Without the application of the Significant Pattern of Behavior standard, in the January 1, 2013 baseline analysis, 67 carriers would have been denied HMSPs, based on rates above one of the

thresholds. Of these, 25 were ranked by analysis of deviance carriers, and 42 were not such ranked carriers.

With the application of the Significant Pattern of Behavior standard, only 39 carriers would have been denied HMSPs. Of these, 23 were ranked by analysis of deviation carriers, and 16 were not.

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APPENDIX H: RESULTS OF SMS/CSA BASED CARRIER IDENTIFICATION FOR CONTINUOUS MONITORING

Section 8.2 provides summary results for the carriers that would have been identified through the four identified methods using SMS/ CSA data. This appendix provides the supporting data for the summary data presented in Section 8.2.

FOUR OR MORE BASICS ABOVE THE CSA THRESHOLDS

The recommendation is to begin using the heightened SMS BASICs thresholds already established for Passenger Carriers for HMSP carriers. These thresholds are more stringent (i.e. lower) than the thresholds currently used for non-HMSP HM carriers. The following BASIC scores are identified as SMS BASIC thresholds (percentiles) for Passenger Carriers (and are recommended for HMSP carriers.)

- 50 for the Unsafe Driving BASIC, HOS Compliance BASIC, and the Crash BASIC.
- 65 for the Driver Fitness BASIC, the Controlled Substances/ Alcohol BASIC, and the Vehicle Maintenance BASIC.
- 80 for the HM Compliance BASIC.

Based on the data from the January 25, 2013 extract, there were 6 HMSP carriers that had 4 or more BASIC scores above the threshold values. These carriers are identified in Table 19.

Table 19. HMSP carriers with 4 or more BASIC scores above the thresholds.

Carrier	High risk flag	Rank	Total count of BASICs above threshold
Carrier 96	N	N/A	4
Carrier 93	N	N/A	4
Carrier 21	Y	21	5
Carrier 12	Y	12	4
Carrier 39	N	39	4
Carrier 2	Y	2	4

Four of these 6 carriers are ranked by the deviation analysis.

ONE VERY HIGH BASIC AND ANOTHER ABOVE ANY THRESHOLD

A second possible criteria is that the carrier has a BASIC score of 85 or above for the Crash, HOS Compliance, the Unsafe Driving BASIC, and a second BASIC above the threshold identified in Section 8.4.1.1 in the full report.

Eleven HMSP Carriers would have been identified using this criteria. These carriers are identified in Table 20.

- Eight of the 11 carriers are ranked by the deviation analysis.
- Two of the 11 would also have been identified by the criteria for having four or more BASICS above the thresholds.

Table 20. Carriers with a crash, HOS compliance, or unsafe driving BASIC of 85 or greater and one other above-threshold BASIC.

Carrier	High risk flag	Rank
Carrier 91	N	N/A
Carrier 95	N	N/A
Carrier 38	N	38
Carrier 90	N	N/A
Carrier 10	Y	10
Carrier 21	Y	21
Carrier 28	Y	28
Carrier 25	Y	25
Carrier 2	Y	2
Carrier 11	N	11
Carrier 15	N	15

HIGH RISK FOR TWO CONSECUTIVE MONTHS

The identified criteria is that a carrier has a high risk flag two months in a row. As the extract was taken on a single day, it does not identify the carriers that had high risk flags in prior months.

Six carriers had a high risk flag in the extract. These carriers are shown in Table 21.

Table 21. HMSP carriers with a high risk flag.

Carrier	High risk flag	Rank
Carrier 10	Y	10
Carrier 21	Y	21
Carrier 12	Y	12
Carrier 28	Y	28
Carrier 25	Y	25
Carrier 2	Y	2

Each of these six carriers was among the group of 47 ranked by analysis of deviation. Further, each carrier was identified by one of the other sets of criteria.

THREE BASICS ABOVE THE THRESHOLD

The CSA documentation currently states that a Full CI is recommended, but not required, for three BASICS above the threshold. There are 12 HMSP Carriers that had Three BASIC Scores above the threshold. These carriers are shown in Table 22.

Table 22. HMSP carriers with three BASIC scores above their threshold.

Carrier	High risk flag	Rank
Carrier 16	N	16
Carrier 92	N	N/A
Carrier 95	N	N/A
Carrier 29	N	29
Carrier 20	N	20
Carrier 97	N	N/A
Carrier 28	Y	28
Carrier 94	N	N/A
Carrier 11	N	11
Carrier 46	N	46
Carrier 15	N	15
Carrier 36	N	36

Eight of the 12 carriers were among those ranked by the deviation analysis. Four of the 12, including one unranked carrier, were also in the list of carriers that had one of the key BASICS of 85 or above and another BASIC above the threshold.

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APPENDIX I: COMPARISONS

Section 8.4.4 provides summary comparisons of the carriers that would have been identified for scrutiny (Comprehensive Investigations), by thresholds, and by the rankings of carriers by the Analysis of Deviance, which produced a list of 47 worst carriers. This appendix provides detailed support for the summary data presented in Section 8.4.4. Again, some text is repeated from Section 8.4.4 to provide clarity and continuity in this appendix.

COMPARING CARRIERS IDENTIFIED BY SMS TO RANKED CARRIERS BY ANALYSIS OF DEVIANCE

Overall, the use of one of the criteria based on SMS BASIC scores, along with carriers identified as high risk, would have identified 23 carriers for a comprehensive investigation (assuming that the carrier had not had a recent comprehensive investigation). Table 23 presents this list, including an indication of whether the carrier had a high risk flag, and the carrier's rank by analysis of deviance.

Table 23. Carriers that would be identified by the BASIC approach.

Carrier	High risk flag	Rank
Carrier 2	Y	2
Carrier 10	Y	10
Carrier 11	N	11
Carrier 12	Y	12
Carrier 15	N	15
Carrier 16	N	16
Carrier 20	N	20
Carrier 21	Y	21
Carrier 25	Y	25
Carrier 28	Y	28
Carrier 29	N	29
Carrier 36	N	36
Carrier 38	N	38
Carrier 39	N	39
Carrier 46	N	46
Carrier 90	N	N/A
Carrier 91	N	N/A
Carrier 92	N	N/A
Carrier 93	N	N/A
Carrier 94	N	N/A

Carrier	High risk flag	Rank
Carrier 95	N	N/A
Carrier 96	N	N/A
Carrier 97	N	N/A

Fifteen of the 23 carriers identified by the SMS BASIC analysis were included in the carriers ranked by analysis of deviation. This includes 2 of the top 10 ranked carriers, and 8 of the top 21 ranked carriers.

COMPARING ANALYSIS OF DEVIATION RANKED CARRIERS TO CARRIERS SMS BASIC ANALYSIS

Table 24 lists all of the 47 carriers ranked by analysis of deviation, in ranked order, and provides background on the BASIC scores of these carriers. It identifies the carrier by name and DOT number. For each of these carriers, Table 24 shows:

- The overall rank by analysis of deviation of the 47 worst carriers,
- The number of BASIC scores that the carrier had that were above the SMS BASIC thresholds (percentiles). These thresholds are identified in Section 8.4.1.1 in the full report.
- The number of BASIC scores that the carrier actually had. This is a ‘shorthand’ for the number of BASIC areas where the carrier had sufficient data to receive a percentile ranking. (Technically, while carriers with insufficient data will have BASIC scores, it is irrelevant because of not having enough data, they will not be assigned percentile rankings.)
- Whether the carrier would have been identified by one of the algorithms using BASIC scores.

Table 24. Ranked carriers with statistics on BASIC scores.

Carrier	BASICs over threshold	Number of actual BASICs	Identified in BASIC analysis?
Carrier 1	1	1	N
Carrier 2	4	7	Y
Carrier 3	1	5	N
Carrier 4	1	1	N
Carrier 5	1	2	N
Carrier 6	0	1	N
Carrier 7	1	4	N
Carrier 8	2	3	N
Carrier 9	0	1	N

Carrier	BASICs over threshold	Number of actual BASICs	Identified in BASIC analysis?
Carrier 10	2	6	Y
Carrier 11	3	4	Y
Carrier 12	4	6	Y
Carrier 13	1	6	N
Carrier 14	2	6	N
Carrier 15	3	3	Y
Carrier 16	3	5	Y
Carrier 17	0	3	N
Carrier 18	0	0	N
Carrier 19	0	4	N
Carrier 20	3	5	Y
Carrier 21	5	6	Y
Carrier 22	1	4	N
Carrier 23	1	3	N
Carrier 24	1	7	N
Carrier 25	2	6	Y
Carrier 26	2	5	N
Carrier 27	1	1	N
Carrier 28	3	6	Y
Carrier 29	3	6	Y
Carrier 30	0	1	N
Carrier 31	0	0	N
Carrier 32	0	0	N
Carrier 33	0	3	N
Carrier 34	0	0	N
Carrier 35	0	0	N
Carrier 36	3	5	Y
Carrier 37	0	3	N
Carrier 38	2	4	Y
Carrier 39	4	4	Y
Carrier 40	1	1	N
Carrier 41	1	1	N
Carrier 42	1	5	N
Carrier 43	1	5	N

Carrier	BASICs over threshold	Number of actual BASICs	Identified in BASIC analysis?
Carrier 44	1	1	N
Carrier 45	2	3	N
Carrier 46	3	5	Y
Carrier 47	2	3	N

Many of these carriers cannot be identified by the BASICS analysis;

- Five of the 47 carriers had no BASIC Scores (percentile rankings),
- Another nine of these carriers had 1 BASIC score. Consequently, 30% of these carriers ranked by analysis of deviance did not have enough BASIC scores to even be considered by the algorithm based on BASIC scores.
- The data was thin for many of the other carriers ranked by analysis of deviance as well. Only 24 of the 47 ranked carriers, 51% of the carriers had four or more BASIC scores. Another 8 carriers (17%) had 3 BASIC scores. With so few scores, it is unlikely that a carrier will have 3 or 4 BASIC above the identified thresholds.

Overall, 15 of these 47 carriers, including 4 of the top 12, would have been identified using the BASIC based algorithms.

- Five of the top 12 carriers ranked by analysis of deviance had fewer than 3 BASIC scores. These are small carriers with very poor safety records.
- The carrier that was missed by the threshold analysis, Carrier 10, would have been caught by 2 of the 4 SMS identification methods (Carrier 10 had one critical BASIC ≥ 85 and another above threshold. It was also identified as a high risk carrier.)

Reasons Why Carriers Ranked by Analysis of Deviance were Not Identified By SMS BASIC Analysis

In general, there are three groups of carriers in the analysis of deviance ranked list of carriers that were not identified by the analysis of BASIC scores.

First are the carriers that are simply too small:

- As noted, 30% of the carriers on this list had too few BASIC scores to even be considered.
- Further, many more carriers had only 3 or 4 BASIC scores. All (or almost all) of their BASIC scores would have had to be above threshold to be identified.

Second are carriers that had one major problem. For example;

- Carrier 1 had only one BASIC, a Hazardous Materials Compliance BASIC of 100. The primary reason that this carrier is number 1 on the analysis of deviance ranked list is that

they had 13 Hazardous Materials inspections, of which 7 resulted in Hazardous Materials OOS orders.

- Carrier 3 had a HM Compliance BASIC score of 99. None of their other BASIC scores are above 34. However, their performance on other measures was not enough to offset their terrible performance in HM OOS, which got them on the analysis of deviance ranked list.
- Carrier 14 had a Vehicle Maintenance BASIC of 90, and an HOS Compliance BASIC of 63, only two scores over the thresholds. But, the behavior that generated an HM Compliance BASIC of 78, our algorithm identified their behavior as substantially deviant from the norm.

Third are large carriers that:

- Have performance that is relatively average, as compared to the entire population of carriers, but
- This performance is substantially worse than the performance of HMSP carriers, as a group.

Large Carriers – Identified by Deviance From HMSP Carriers Only

There were several large carriers that were identified by the analysis of deviance based on having safety performance that was deviant from the overall behavior of only HMSP carriers, but not all that deviant from the safety performance of all carriers. Thus, carriers like Carrier 13, Carrier 14, Carrier 22, and Carrier 24 were not identified by the SMS BASIC analysis, but were by analysis of deviance from other HMSP carriers' performance.

Interestingly, however, several of the other carriers that were identified based on their deviance from HMSP carriers, but not from all carriers, were nonetheless identified by their SMS performance. These included Carrier 12, Carrier 16, Carrier 21, and Carrier 25. We can only assume that the SMS size stratification process effectively identified these carriers' performance as deviant from the performance of other similarly sized carriers.

There were several carriers that were identified by the BASIC Analysis that were not among the carriers ranked by analysis of deviation.

- One of these carriers, Carrier 90, had safety performance that was rather poor compared to both HMSP carriers and to the overall population of carriers.
- One, Carrier 91, did not have high OOS or crash rates, but must have scored high in other SMS criteria.
- The other four, however, were large carriers that had behavior that was quite deviant from the behavior of HMSP carriers, but slightly better than average as compared to all carriers.

COMPARING CARRIERS IDENTIFIED BY THRESHOLDS TO CARRIERS IDENTIFIED BY SMS BASIC ANALYSIS

Comparing carriers identified by the thresholds (as modified to only target carriers with a significant pattern of behavior) to the carriers identified by the SMS algorithms;

- The threshold analysis list is much longer.
 - It contains 22 of the 47 carriers ranked by analysis of deviance. The BASIC approach only identified 15 of those ranked carriers.
 - However, the threshold violation list contains far more unranked carriers, including a number of carriers that had overall safety fitness performance that was indistinguishable from that of average carriers.
- The threshold list contained more of the high ranking carriers, including 11 of the top 12. The SMS list contained only 4 of the top 12.
- The threshold list only identified 2 of the 6 high risk carriers. The SMS approach identified all 6 high risk carriers. All 6 high risk carriers were ranked by analysis of deviation.
- The threshold list did a better job identifying smaller carriers with serious problems, or with one major problem area.
- The SMS list did better in identifying larger carriers with overall poor performance, but no single glaring issue.

Summary

In summary, it appears that the ‘net’ cast by using these SMS based analyses is quite effective in identifying larger problem carriers, and not inappropriately identifying carriers that do not deserve further attention. It would cause few or no Type 1 errors – where action is taken against a relatively good carrier.

However, the SMS based approach is not very effective in identifying the group of problem carriers that slip just below the size parameters for receiving BASIC scores. Just using the SMS approach appears to create a number of Type 2 errors, where no action is taken against potentially dangerous carriers.

In contrast, the threshold based approach resulted in what appear to be many Type 1 errors, situations where action would be taken against relatively good carriers. This was mostly, but not completely limited to the actions that would have been targeted based on the vehicle OOS threshold.

On the other hand, the threshold based approach generates fewer Type 2 errors, where the process would fail to identify a possible problem carrier for attention. However, unlike the SMS based approach, the threshold approach is not effective in identifying carriers with overall poor performance, but no one glaring problem area.

Implications

Clearly, use of the SMS BASIC approach for identifying carriers for further scrutiny, i.e. Comprehensive Investigations are an appropriate tool for identifying some of the larger carriers with poor safety performance.

However, because of the high potential cost and risk of crashes of trucks with loads that require a HMSP, FMCSA should choose to also look for carriers that are too small to be caught by the SMS methodology, but that have safety performance that is far worse than average. It is observed that:

- The threshold approach is effective in carriers with a single, glaring problem.
- The deviation analysis approach would be effective in identifying carriers with overall poor safety performance.

These are only observations. If the “Apply Thresholds at Initial Application Only - Continuous Monitoring” recommendation is accepted, details of the methods used to identify carriers for CIs can be worked out at a later date.

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APPENDIX J: ADMINISTRATION OF REGULATORY, OR COMPLIANCE BASED REQUIREMENTS

The current HMSP program includes a number of relatively straightforward regulatory requirements for Permit Issuance and Renewal, and for Suspension or Revocation of Current Permits. There are no issues related to these regulatory, compliance based requirements. These requirements are presented as background for the portions of the program that are expected to continue unchanged.

REQUIREMENTS FOR PERMIT ISSUANCE OR RENEWAL

FMCSR § 385.407 identifies the following compliance requirements for the issuance of a new HMSP, or for the renewal of an HMSP:

- The carrier must have a “Satisfactory” Safety Rating. (Carriers that do not have Safety Ratings receive a Temporary HMSP, and a comprehensive investigation is scheduled to be completed within six months.
- The carrier must certify that it has a satisfactory security program in place. This program must include:
 - A security plan meeting the requirements of part 172, subpart I of this title, and addressing how the carrier will ensure the security of the written route plan required by this part;
 - A communications plan that allows for contact between the commercial motor vehicle operator and the motor carrier to meet the periodic contact requirements in §385.415(c)(1); and
 - Successful completion by all HazMat employees of the security training required in §172.704(a)(4) and (a)(5) of this title.
- The motor carrier must be registered with PHMSA.

There does not appear to be any issue with these requirements, and no impetus for change.

CIRCUMSTANCES WHERE THE PERMIT MAY BE REVOKED OR SUSPENDED

FMCSR § 385.421 states that a safety permit will be subject to revocation or suspension by FMCSA for the following reasons:

- A motor carrier provides any false or misleading information on its application (Form MCS-150B) or as part of updated information it is providing on Form MCS-150B (see [§ 385.405\(d\)](#)).
- A motor carrier is issued a final safety rating that is less than Satisfactory;
- A motor carrier fails to maintain a satisfactory security plan as set forth in §385.407(b);

- A motor carrier fails to comply with applicable requirements in the FMCSRs, the HMRs, or compatible State requirements governing the transportation of hazardous materials, in a manner showing that the motor carrier is not fit to transport the hazardous materials listed in §385.403;
- A motor carrier fails to comply with an OOS order;
- A motor carrier fails to comply with any other order issued under the FMCSRs, the HMRs, or compatible State requirements governing the transportation of hazardous materials, in a manner showing that the motor carrier is not fit to transport the hazardous materials listed in §385.403; Code of Federal Regulations 251
- A motor carrier fails to maintain the minimum financial responsibility required by §387.9 of this chapter or an applicable State requirement;
- A motor carrier fails to maintain current hazardous materials registration with the Research and Special Programs Administration (now PHMSA); or
- A motor carrier loses its operating rights or has its registration suspended in accordance with §386.83 or §386.84 of this chapter for failure to pay a civil penalty or abide by a payment plan.

There does not appear to be any issue with these requirements, and no impetus for change from either within FMCSA or from stakeholders.

Further, FMCSR § 385.421 states that a safety permit will be subject to revocation or suspension by FMCSA when:

- A motor carrier fails to submit a renewal application.

However, the actual implementation of this regulation is that the permit expires. If the motor carrier fails to submit a renewal application, the old permit expires, and the carrier no longer has an active HMSP. No additional action is required to implement this regulation.

There does not appear to be any issue with these requirements, and no impetus for change from either within FMCSA or from stakeholders.

APPENDIX K: GEOGRAPHIC DIFFERENCES IN HM OOS RATES

There is a wide disparity in the percent of hazardous materials inspections that result in HM OOS orders among the States. Table 25 shows the State by State data, from the year 2012.

- At the low end, 0.7% of the HM inspections in Kentucky result in HM OOS orders, 1.0% of the HM inspections in Mississippi result in HM OOS orders, 1.0% of the HM inspections on the US borders with Canada and Mexico result in HM OOS orders, and 1.1% of the HM inspections in New Mexico result in HM OOS orders.
- At the high end, 14.9% of the HM inspections in Minnesota result in HM OOS orders, 13.9% of the HM inspections in Rhode Island result in HM OOS orders, 12.7% of the HM inspections in Massachusetts result in HM OOS orders, and 12.5% of the HM inspections in New York result in HM OOS orders.

Carriers that are frequently inspected in States where a high percentage of the inspections result in HM OOS orders are far more likely to be caught by the HM OOS rate threshold.

Table 25. Percent of HM inspections that result in HM OOS orders, by State.

Inspection State	Number of HM inspections	Number of HM inspections resulting in HM OOS orders	Percent of HM inspections resulting in HM OOS orders
AK	611	22	3.6%
AL	935	26	2.8%
AR	1,453	47	3.2%
AZ	3,703	234	6.3%
CA	16,377	250	1.5%
CO	2,588	63	2.4%
CT	1,321	67	5.1%
DC	59	3	5.1%
DE	441	12	2.7%
FL	8,023	310	3.9%
GA	9,054	298	3.3%
GU	134	15	11.2%
HI	489	9	1.8%
IA	3,557	285	8.0%
ID	1,311	104	7.9%
IL	4,059	227	5.6%
IN	2,794	39	1.4%
KS	3,899	123	3.2%
KY	8,807	64	0.7%
LA	3,311	173	5.2%
MA	2,418	306	12.7%

Inspection State	Number of HM inspections	Number of HM inspections resulting in HM OOS orders	Percent of HM inspections resulting in HM OOS orders
MD	4,635	177	3.8%
ME	1,047	32	3.1%
MI	4,439	86	1.9%
MN	3,477	519	14.9%
MO	7,085	138	1.9%
MS	3,360	34	1.0%
MT	2,142	29	1.4%
NC	4,448	115	2.6%
ND	787	12	1.5%
NE	1,294	139	10.7%
NH	663	58	8.7%
NJ	6,236	152	2.4%
NM	5,185	58	1.1%
NV	1,841	82	4.5%
NY	8,082	1,010	12.5%
OH	8,092	350	4.3%
OK	2,032	59	2.9%
OR	1,345	120	8.9%
PA	6,320	116	1.8%
PR	717	76	10.6%
RI	101	14	13.9%
SC	5,708	126	2.2%
SD	830	23	2.8%
TN	3,065	40	1.3%
TX	32,342	1,421	4.4%
US	4,405	45	1.0%
UT	1,756	117	6.7%
VA	3,400	98	2.9%
VT	448	36	8.0%
WA	2,808	68	2.4%
WI	2,433	176	7.2%
WV	1,807	29	1.6%
WY	550	43	7.8%

APPENDIX L: RANKINGS BASED ON DEVIANCE FROM AVERAGE PERFORMANCE

This approach is presented as an alternative for understanding the problem, and a possible internal tool for identifying carriers for comprehensive investigations. There is no suggestion that the methods described below should be used for taking any action against a carrier

This tool is based on Z-Scoring, a score that is functionally the same as a ‘standard deviation’. The goal is to identify carriers whose performance on the four key measures – crash rate, driver OOS rate, vehicle OOS rate, and HM OOS rate – deviates the most from average carrier behavior.

BACKGROUND

The following material is background in the statistical approach used to support this method. Readers who are already familiar with the material, as well as readers who are not interested in the details of how the carrier rankings using standard deviation analysis are created, may skip this section.

Expected Value and Standard Deviation

The following is presented to support the reader in dredging up the meaning of the terms expected value and standard deviation, which you probably ran into in math class and may have hoped to never see again.

Expected value is a relatively straightforward concept. For any statistical test (of a null hypothesis), it is the expected answer. So, if Joe were a 50% free throw shooter:

- When he shoots 10 free throws, the expected value is that he will hit 5 of the free throws.
- When he shoots 100 free throws, the expected value is that he will hit 50 of the free throws.
- When he shoots 1,000 free throws, the expected value is that he will hit 500 free throws.

Standard deviation is a statistical measure of the spread of the data around the expected value (or, in many cases, the mean.) A large standard deviation represents a large spread, while a smaller standard deviation shows less spread in the data. For example, we could look at the average age of the participants in the senior class picture, and find out that the average age for this population is 18 years old. We could also look at the average age of the attendees at the senior class graduation (which includes a lot of parents, a few grandparents, and a whole lot of younger siblings), and find out that the average age of this population is also 18 years old. However, even though the mean age in this example for these two populations is the same, the standard deviation of the ages of the population in the senior class picture is much smaller than the standard deviation of the ages of the population at graduation.

If we randomly selected 5 people, and found that their average age was 27 years old;

- We could pretty reasonably reject the hypothesis that they had been randomly selected from the participants in the senior class picture.
- We could not reasonably reject the hypothesis that they had been randomly selected from the population of those present at the graduation.

Bell Curve

This approach starts with a basic understanding of a bell curve. Figure 11 presents a simple bell curve.

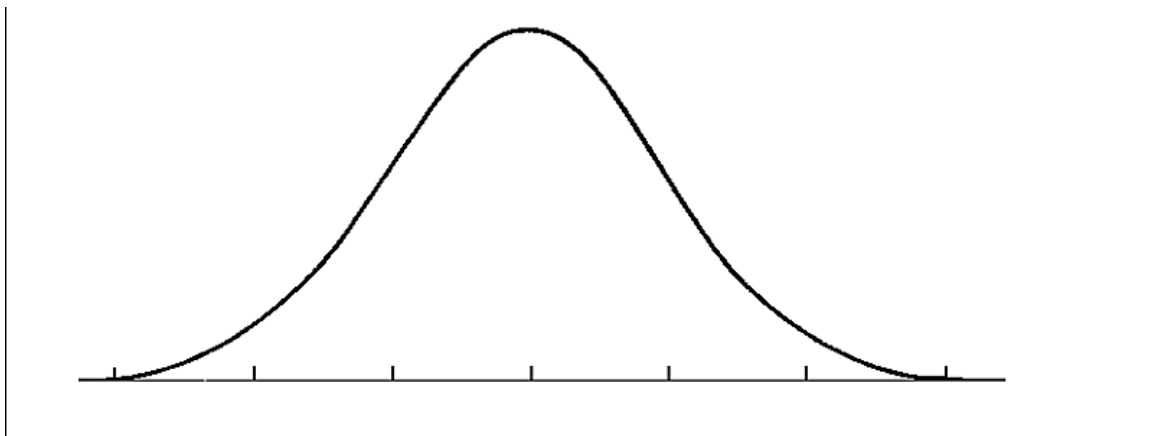


Figure 11. Simple bell curve.

The bell curve represents the actual results from a random distribution. The lines at the bottom of Figure 11 show standard deviations, a measure of distance from the center of the bell curve (or expected value). Figure 12 is similar to Figure 11. However, it is filled in, to show the areas under the curve. In this sense, the carriers with the greatest bad safety deviation from the expected that we are interested in are the carriers in the far right in blue. While the carriers on the far left in blue are also significant deviations from the expected, their safety performance is far better, and thus not something this analysis is focused on identifying.

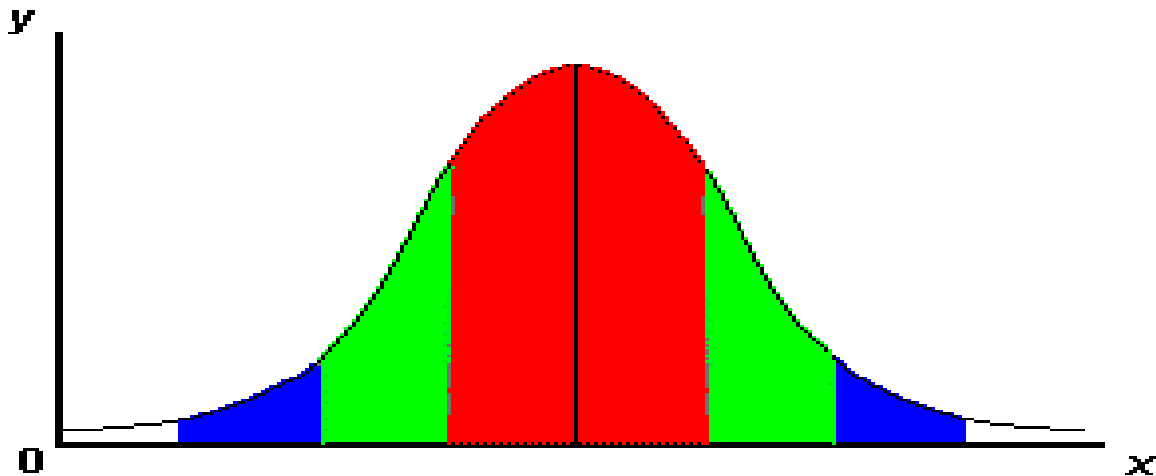


Figure 12. Bell curve with color demonstrations of standard deviations.

Figure 13 presents additional statistical background. It shows that, in a normal distribution, that 68% of actual results will be within one standard deviation of the expected value, and a little over 95% of the results will be within 2 standard deviations of the expected value. These values remain close to true, even when the actual distribution does not closely resemble a bell curve.

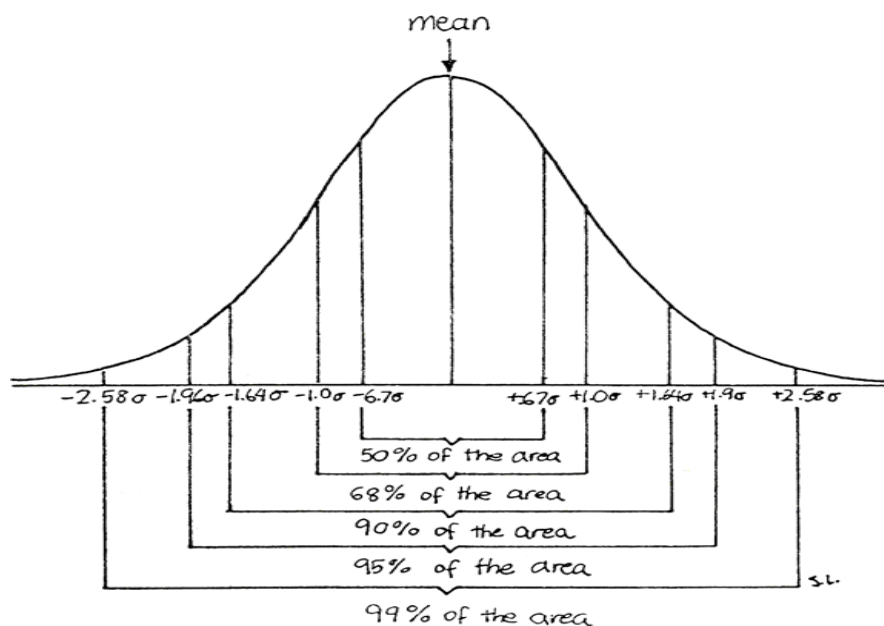


Figure 13. Bell curve with more precise definition.

In this figure, the Greek letter σ means standard deviations. The number in front of the σ is the number of standard deviations from the expected value. When converted to actual numbers, this is called the **Z Score**. If the actual value of the measure is far from the expected value, there is a high Z score, and we reject the (null) hypothesis that the item being measured was drawn from the population represented by the bell curve.

Of course, it remains a problem that we need to actually calculate these values.

Binomial Distribution

There is a very specific set of statistical methods that can be performed on parameters that have only two values. This is called a binomial distribution. So, in our examples, we could use these statistical methods for Bob, our free throw shooter, but we could not use these methods on the group of 5 people. For Bob, there were only two outcomes; he hit the free throw or he missed the free throw.

For most of the tests in this analysis, there are also only two outcomes. Either the driver got an OOS order or the driver did not get an OOS order. These methods do not require that the probability of one outcome be the same as the probability of the other outcome; only that there be two different outcomes. (For crashes, while it is technically true that a truck could get more than one crash in a year, we are making the simplifying assumption that a truck has either zero or one crash during a year. The mathematics of doing anything else would be horribly complex, and would provide virtually the same results.)

This makes it quite easy to find the standard deviation, and thus calculate the Z score. The Z score is the difference between the actual value and the expected value divided by actual the standard deviation.

Consider the example of Joe, the free throw shooter, with the following results;

- We send Joe out to shoot 10 free throws, and he makes 4.
- We send Joe out to shoot 100 free throws, and he makes 40.
- We send Joe out to shoot 1,000 free throws, and he makes 400.

Do we really believe that Joe could be a 50% free throw shooter, i.e. his performance is not so far out the bell curve that we do not believe that his performance could have been drawn from average for 50% free throw shooters?

- In the first case, Joe hit 40% of his free throws, and had a Z score of -.63. Clearly, his performance was within the range of expectations. We cannot reject the (null) hypothesis that Joe is a 50% shooter.
- In the second case, Joe hit 40% of his free throws, and had a Z score of -2. We can see from Figure 13 that it is not very likely that a Z score of 2 can come up randomly. However, it remains possible.
- In the third case, Joe hit 40% of his free throws, and had a Z score of -6.32. Joe clearly is not a 50% free throw shooter.

So, even though Joe hit 40% in each of these three trials, we can use the Z score to define how far Joe's performance was from expectations. In the first case, Joe's 40% performance was not far from expectations, at all. In the third case, Joe's 40% performance was a very long way from expected.

Summary

The Z score is measure of how far an actual result is from the expected result. It can, and frequently should be used to determine statistical significance, as is demonstrated elsewhere. However, for this analysis, it provides a relatively straightforward way to accurately measure the distance between an expected value and an actual outcome.

APPROACH

The approach taken in this analysis will be to:

- Calculate the Carrier's Z scores in each of the four measures associated with the thresholds,
- Sum the carriers' Z scores, and
- Rank carriers based on sum of their Z scores.

Goal

It is not expected that the result of these analyses will be a definitive answer. Rather, the goal is to look at the results, and

- Determine which of the various approaches shown seems to do the best job of identifying less safe carriers, and
- Determine if there are other possible measures that could also be used to identify these carriers.

Expected Value

Returning to the expected values for these measures, we have an interesting dilemma. When we measure the performance of a HMSP carrier, should it be measured as compared to the performance of all carriers, or only to the performance of HMSP carriers? As will be demonstrated in the data in this document, the main distinction will be for large carriers that have safety performance rates in between the rates of HMSP carriers and the rates of other carriers.

Because large carriers have large numbers of inspections (and power units), their Z scores will be relatively large in comparison to the percentage difference from the expected value. If the result for a measure falls between the two rates (and there are some large gaps), the carrier could have a large negative Z score (much better than the expected value) as compared to all carriers, while the carrier could still have a large positive Z score (much worse than the expected value) when compared to HMSP carriers.

Both approaches are presented in this report.

Assumption - Single Events

The FMCSA web site specifically states that individual events are not considered statistically significant. In order to make the analysis conform with this approach, Z scores are not calculated for cases where the carrier has one inspection with an OOS order.

For carriers with no inspections with OOS orders, the Z scores are calculated. These negative Z scores improve the carrier's ranking.

While we recognize that there can be randomness to OOS orders, especially from State to State, we do not consider crashes to be random events. Thus, the Z score is calculated for crashes, regardless of the number of crashes that a carrier has.

The underlying spreadsheets are set up so that it is relatively easy to change these assumptions.

Assumption – Predictive Value

There is a great deal of evidence that driver OOS orders are exceptionally valuable in predicting poor crash performance. Consequently, a separate ranking is presented with a measure of the sum of the Z scores for vehicle OOS rate, HM OOS rate, crash rate, and twice the Z score for driver OOS rate.

Years

The analysis is provided for the calendar year 2012. Obviously, for each individual carrier, the calculation is made for the year prior to the application, not a calendar year. However, this seems to be a reasonable approach.

RESULTS

For each set of measures, the top 30 carriers are listed.

For each carrier, the data includes:

- The carrier's identifier.
- The number of power units associated with the carrier (technically, the average power units for the year, calculated to support SMS),
- The following totals for the year:
 - Number of crashes,
 - Number of inspections,
 - Number of driver inspections,
 - Number of inspections that resulted in a (at least one) driver OOS order.
 - Number of vehicle inspections
 - Number of vehicle inspections that resulted in a vehicle OOS order.

- Number of Hazardous Materials Inspections,
- Number of Hazardous Materials Inspections that resulted in HM OOS orders,
- Percent of Inspections that were Hazardous Materials Inspections. (This provides a rough measure of how much of the carrier's business is in Hazardous Materials. However, there are certainly times that an inspection can be performed on a vehicle with Hazardous Materials, but it is not a HM inspection.
- Driver OOS Z score,
- Vehicle OOS Z score,
- HM OOS Z score,
- Crash Rate Z score, and
- The sum of the Z scores.

Analysis Using Overall Averages

Table 26 shows the top 30 carriers, based on the sum of their Z scores. For this analysis, the carrier rates were compared to the rates for all carriers, i.e. the rates for all carriers were used as expected values. These are not the rates explicitly for HMSP carriers, these rates include HMSP carriers. The rates just for HMSP carriers are shown in Table 29.

Table 26. Carriers ranked by sum of Z scores in 2012, using comparisons to all carriers as a baseline.

Carrier	Power units	Number of crashes	Number of inspections	Number of driver inspections	Number of driver OOS inspections	Number of vehicle inspections	Number of vehicle OOS inspections	Number of HM inspections	Number of HM OOS inspections	Percent of inspections that are HM	Driver OOS Z score	Vehicle OOS Z score	HM OOS Z score	Crash rate Z score	Sum of Z scores
Carrier 1	6	0	15	15	1	14	7	13	7	87%	N/A	2.98	10.7	-0.35	13.33
Carrier 3	37	2	42	42	0	29	12	21	8	50%	-1.42	3.10	9.38	1.49	12.56
Carrier 6	9	1	35	34	0	26	9	3	2	9%	-1.28	2.05	6.44	1.96	9.18
Carrier 2	184	3	271	271	15	210	54	8	3	3%	0.76	2.54	5.69	-0.34	8.65
Carrier 7	92	4	49	49	1	34	12	6	2	12%	N/A	2.45	4.34	1.63	8.41
Carrier 9	8	0	10	10	1	8	4	4	2	40%	N/A	2.25	5.49	-0.40	7.33
Carrier 8	4	1	16	16	2	11	5	4	1	25%	1.52	2.25	N/A	3.30	7.07
Carrier 4	3	0	4	4	2	4	3	0	0	0%	4.35	2.87	N/A	-0.25	6.97
Carrier 11	15	5	36	36	2	26	2	18	0	50%	0.28	-1.46	-0.75	8.71	6.79
Carrier 23	36	7	22	22	0	9	1	3	0	14%	-1.03	N/A	-0.31	7.52	6.18

Carrier	Power units	Number of crashes	Number of inspections	Number of driver inspections	Number of driver OOS inspections	Number of vehicle inspections	Number of vehicle OOS inspections	Number of HM inspections	Number of HM OOS inspections	Percent of inspections that are HM	Driver OOS Z score	Vehicle OOS Z score	HM OOS Z score	Crash rate Z score	Sum of Z scores
Carrier 5	9	1	30	30	6	20	4	0	0	0%	4.05	0.13	N/A	1.96	6.14
Carrier 17	66	1	24	24	0	13	3	3	2	13%	-1.07	0.39	6.44	-0.27	5.48
Carrier 15	5	1	19	17	2	10	3	0	0	0%	1.42	0.90	N/A	2.89	5.21
Carrier 27	3	1	7	7	0	6	3	2	0	29%	-0.58	1.95	-0.25	3.90	5.02
Carrier 10	52	7	117	117	7	71	11	29	0	25%	0.73	-0.73	-0.95	5.94	4.99
Carrier 19	149	6	85	85	3	49	19	0	0	0%	-0.46	3.56	N/A	1.79	4.89
Carrier 22	78	5	51	51	3	37	10	10	1	20%	0.45	1.27	N/A	2.81	4.52
Carrier 31	3	1	12	12	1	5	1	0	0	0%	N/A	N/A	N/A	3.90	3.90
Carrier 36	40	5	66	66	0	59	12	44	2	67%	-1.78	0.29	0.59	4.77	3.87
Carrier 32	3	0	10	10	1	10	2	7	2	70%	N/A	0.09	3.95	-0.25	3.79
Carrier 35	3	1	1	1	0	1	1	0	0	0%	-0.22	N/A	N/A	3.90	3.68
Carrier 34	12	2	0	0	0	0	0	0	0	NULL	N/A	N/A	N/A	3.65	3.65
Carrier 20	89	5	136	136	7	71	18	10	0	7%	0.32	1.40	-0.56	2.46	3.62
Carrier 40	48	7	17	17	0	17	0	0	0	0%	-0.90	-1.99	N/A	6.26	3.37
Carrier 37	15	0	47	41	2	32	7	20	3	43%	0.09	0.43	3.13	-0.55	3.11
Carrier 42	84	5	119	115	1	103	23	93	2	78%	N/A	0.90	-0.49	2.61	3.02
Carrier 44	3	1	2	2	0	2	0	0	0	0%	-0.31	-0.68	N/A	3.90	2.90
Carrier 45	5	1	10	10	1	7	1	5	1	50%	N/A	N/A	N/A	2.89	2.89
Carrier 18	14	0	4	4	2	2	0	2	0	50%	4.35	-0.68	-0.25	-0.53	2.89

Table 27 provides the actual rates that were used for these calculations.

Table 27. Actual rates for all carriers in 2012.

Measure	Rate
Crash rate in 2012	0.0198%
Driver OOS rate 2012	4.57%
HM OOS rate 2012	3.02%
Vehicle OOS rate 2012	18.87%

Analysis Using Overall Averages with Adjusted Sum of Z Scores

Table 28 shows the top 30 carriers, based on the sum of their adjusted Z scores. For this analysis, the carrier rates were compared to the rates for all carriers, as shown in Table 27. The adjustment is that the sum of the Driver Z score is doubled.

Table 28. Carriers ranked by adjusted sum of Z scores in 2012, using comparisons to all carriers as a baseline.

Carrier	Power units	Number of crashes	Number of inspections	Number of driver inspections	Number of driver OOS inspections	Number of vehicle inspections	Number of vehicle OOS inspections	Number of HM inspections	Number of HM OOS inspections	Percent of inspections that are HM	Driver OOS Z score	Vehicle OOS Z score	HM OOS Z score	Crash rate Z score	Adjusted sum of Z scores
Carrier 1	6	0	15	15	1	14	7	13	7	87%	N/A	2.98	10.7	-0.35	13.33
Carrier 4	3	0	4	4	2	4	3	0	0	0%	4.35	2.87	N/A	-0.25	11.32
Carrier 3	37	2	42	42	0	29	12	21	8	50%	-1.42	3.10	9.38	1.49	11.14
Carrier 5	9	1	30	30	6	20	4	0	0	0%	4.05	0.13	N/A	1.96	10.19
Carrier 2	184	3	271	271	15	210	54	8	3	3%	0.76	2.54	5.69	-0.34	9.41
Carrier 8	4	1	16	16	2	11	5	4	1	25%	1.52	2.25	N/A	3.30	8.59
Carrier 7	92	4	49	49	1	34	12	6	2	12%	N/A	2.45	4.34	1.63	8.41
Carrier 6	9	1	35	34	0	26	9	3	2	9%	-1.28	2.05	6.44	1.96	7.90
Carrier 9	8	0	10	10	1	8	4	4	2	40%	N/A	2.25	5.49	-0.40	7.33
Carrier 18	14	0	4	4	2	2	0	2	0	50%	4.35	-0.68	-0.25	-0.53	7.24
Carrier 11	15	5	36	36	2	26	2	18	0	50%	0.28	-1.46	-0.75	8.71	7.07
Carrier 15	5	1	19	17	2	10	3	0	0	0%	1.42	0.90	N/A	2.89	6.63
Carrier 10	52	7	117	117	7	71	11	29	0	25%	0.73	-0.73	-0.95	5.94	5.72
Carrier 30	71	0	7	7	2	6	2	2	0	29%	3.04	0.91	-0.25	-1.20	5.54
Carrier 26	16	1	52	52	6	33	6	17	0	33%	2.41	-0.10	-0.73	1.22	5.21
Carrier 23	36	7	22	22	0	9	1	3	0	14%	-1.03	N/A	-0.31	7.52	5.16
Carrier 22	78	5	51	51	3	37	10	10	1	20%	0.45	1.27	N/A	2.81	4.97
Carrier 27	3	1	7	7	0	6	3	2	0	29%	-0.58	1.95	-0.25	3.90	4.44
Carrier 19	149	6	85	85	3	49	19	0	0	0%	-0.46	3.56	N/A	1.79	4.43
Carrier 17	66	1	24	24	0	13	3	3	2	13%	-1.07	0.39	6.44	-0.27	4.41
Carrier 33	49	0	36	36	4	14	5	0	0	0%	1.88	1.61	N/A	-1.00	4.37
Carrier 20	89	5	136	136	7	71	18	10	0	7%	0.32	1.40	-0.56	2.46	3.94
Carrier 31	3	1	12	12	1	5	1	0	0	0%	N/A	N/A	N/A	3.90	3.90
Carrier 41	33	0	10	10	2	5	1	1	1	10%	2.34	N/A	N/A	-0.82	3.85

Carrier	Power units	Number of crashes	Number of inspections	Number of driver inspections	Number of driver OOS inspections	Number of vehicle inspections	Number of vehicle OOS inspections	Number of HM inspections	Number of HM OOS inspections	Percent of inspections that are HM	Driver OOS Z score	Vehicle OOS Z score	HM OOS Z score	Crash rate Z score	Adjusted sum of Z scores
Carrier 32	3	0	10	10	1	10	2	7	2	70%	N/A	0.09	3.95	-0.25	3.79
Carrier 38	45	1	59	59	5	39	9	0	0	0%	1.44	0.67	N/A	0.12	3.66
Carrier 34	12	2	0	0	0	0	0	0	0	N/A	N/A	N/A	N/A	3.65	3.65
Carrier 35	3	1	1	1	0	1	1	0	0	0%	-0.22	N/A	N/A	3.90	3.46
Carrier 37	15	0	47	41	2	32	7	20	3	43%	0.09	0.43	3.13	-0.55	3.20
Carrier 42	84	5	119	115	1	103	23	93	2	78%	N/A	0.90	-0.49	2.61	3.02

Analysis Using HMSP Carrier's Averages

Table 29 the top 30 carriers, based on the sum of their Z scores. For this analysis, the carrier rates were compared to the rates for only carriers that had a HMSP, i.e. the rates carriers that had HMSPs were used as expected values.

Table 29. Carriers ranked by sum of Z scores in 2012, using comparisons to HMSP carriers.

Carrier	Power units	Number of crashes	Number of inspections	Number of driver inspections	Number of driver OOS inspections	Number of vehicle inspections	Number of vehicle OOS inspections	Number of HM inspections	Number of HM OOS inspections	Percent of inspections that are HM	Driver OOS Z score	Vehicle OOS Z score	HM OOS Z score	Crash rate Z score	Sum of Z scores
Carrier 12	2,419	43	1,818	1,816	298	1,525	60	140	12	8%	5.98	10.49	7.13	-0.53	23.08
Carrier 2	184	3	271	271	54	210	15	8	3	3%	5.27	6.74	8.61	-0.29	20.33
Carrier 1	6	0	15	15	7	14	1	13	7	87%	N/A	4.63	15.95	-0.34	20.24
Carrier 3	37	2	42	42	12	29	0	21	8	50%	-0.82	5.19	14.18	1.54	20.09
Carrier 14	1,209	37	1,308	1,303	207	889	24	135	2	10%	0.81	11.56	0.06	2.88	15.30
Carrier 13	2,913	91	3,907	3,894	328	2,345	89	652	16	17%	3.64	4.44	2.22	4.71	15.01
Carrier 6	9	1	35	34	9	26	0	3	2	9%	-0.73	3.82	9.53	2.01	14.62

Carrier	Power units	Number of crashes	Number of inspections	Number of driver inspections	Number of driver OOS inspections	Number of vehicle inspections	Number of vehicle OOS inspections	Number of HM inspections	Number of HM OOS inspections	Percent of inspections that are HM	Driver OOS Z score	Vehicle OOS Z score	HM OOS Z score	Crash rate Z score	Sum of Z scores
Carrier 7	92	4	49	49	12	34	1	6	2	12%	N/A	4.49	6.59	1.69	12.78
Carrier 16	941	30	1,113	1,112	98	522	37	19	0	2%	4.75	5.58	-0.52	2.82	12.62
Carrier 21	350	18	465	464	60	351	14	259	6	56%	2.53	3.57	1.21	4.38	11.69
Carrier 4	3	0	4	4	3	4	2	0	0	0%	7.81	4.07	N/A	-0.24	11.64
Carrier 5	9	1	30	30	4	20	6	0	0	0%	8.14	1.27	N/A	2.01	11.42
Carrier 9	8	0	10	10	4	8	1	4	2	40%	N/A	3.50	8.20	-0.40	11.30
Carrier 29	320	10	691	683	97	403	15	40	1	6%	1.34	8.28	N/A	1.56	11.18
Carrier 8	4	1	16	16	5	11	2	4	1	25%	3.53	3.63	N/A	3.36	10.51
Carrier 10	52	7	117	117	11	71	7	29	0	25%	3.86	1.18	-0.65	6.06	10.44
Carrier 24	5,350	127	5,742	5,725	436	3,550	133	1,037	19	18%	4.64	2.23	1.11	2.39	10.37
Carrier 17	66	1	24	24	3	13	0	3	2	13%	-0.62	1.37	9.53	-0.24	10.05
Carrier 25	73	7	256	256	16	151	13	86	2	34%	4.54	-0.20	0.70	4.77	9.81
Carrier 11	15	5	36	36	2	26	2	18	0	50%	1.93	-0.55	-0.51	8.85	9.72
Carrier 19	149	6	85	85	19	49	3	0	0	0%	1.46	6.16	N/A	1.87	9.50
Carrier 20	89	5	136	136	18	71	7	10	0	7%	3.37	3.82	-0.38	2.54	9.35
Carrier 28	499	15	515	514	30	258	27	53	1	10%	6.75	0.27	N/A	1.76	8.77
Carrier 39	29	0	181	179	35	107	4	53	2	29%	0.73	7.11	1.44	-0.75	8.53
Carrier 22	78	5	51	51	10	37	3	10	1	20%	2.49	3.08	N/A	2.88	8.45
Carrier 43	523	7	619	540	119	462	7	3	0	0%	-0.50	10.02	-0.21	-0.98	8.34
Carrier 15	5	1	19	17	3	10	2	0	0	0%	3.39	1.90	N/A	2.94	8.24
Carrier 37	15	0	47	41	7	32	2	20	3	43%	1.71	1.94	5.12	-0.54	8.23
Carrier 46	55	4	72	72	10	67	3	64	3	89%	1.78	1.00	2.20	2.89	7.87
Carrier 26	16	1	52	52	6	33	6	17	0	33%	5.80	1.29	-0.50	1.26	7.86

Analysis Using HMSP Carrier's Averages with Adjusted Sum of Z Scores

Table 29 the top 30 carriers, based on the sum of their Z scores. For this analysis, the carrier rates were compared to the rates for only carriers that had a HMSP, i.e. the rates carriers that had HMSPs were used as expected values.

Table 30. Carriers ranked by sum of Z scores in 2012, using comparisons to HMSP carriers using adjusted sum of Z scores.

Carrier	Power units	Number of crashes	Number of inspections	Number of driver inspections	Number of driver OOS inspections	Number of vehicle inspections	Number of vehicle OOS inspections	Number of HM inspections	Number of HM OOS inspections	Percent of inspections that are HM	Driver OOS Z score	Vehicle OOS Z score	HM OOS Z score	Crash rate Z score	Adjusted sum of Z scores
Carrier 12	2,419	43	1,818	1,816	60	1,525	298	140	12	8%	5.98	10.49	7.13	-0.53	29.06
Carrier 2	184	3	271	271	15	210	54	8	3	3%	5.27	6.74	8.61	-0.29	25.60
Carrier 1	6	0	15	15	1	14	7	13	7	87%	0.00	4.63	15.95	-0.34	20.24
Carrier 5	9	1	30	30	6	20	4	0	0	0%	8.14	1.27	0.00	2.01	19.56
Carrier 4	3	0	4	4	2	4	3	0	0	0%	7.81	4.07	0.00	-0.24	19.45
Carrier 3	37	2	42	42	0	29	12	21	8	50%	-0.82	5.19	14.18	1.54	19.28
Carrier 13	2,913	91	3,907	3,894	89	2,345	328	652	16	17%	3.64	4.44	2.22	4.71	18.65
Carrier 16	941	30	1,113	1,112	37	522	98	19	0	2%	4.75	5.58	-0.52	2.82	17.37
Carrier 14	1,209	37	1,308	1,303	24	889	207	135	2	10%	0.81	11.56	0.06	2.88	16.12
Carrier 28	499	15	515	514	27	258	30	53	1	10%	6.75	0.27	0.00	1.76	15.52
Carrier 24	5,350	127	5,742	5,725	133	3,550	436	1,037	19	18%	4.64	2.23	1.11	2.39	15.01
Carrier 18	14	0	4	4	2	2	0	2	0	50%	7.81	-0.50	-0.17	-0.52	14.43
Carrier 25	73	7	256	256	13	151	16	86	2	34%	4.54	-0.20	0.70	4.77	14.34
Carrier 10	52	7	117	117	7	71	11	29	0	25%	3.86	1.18	-0.65	6.06	14.30
Carrier 21	350	18	465	464	14	351	60	259	6	56%	2.53	3.57	1.21	4.38	14.22
Carrier 8	4	1	16	16	2	11	5	4	1	25%	3.53	3.63	0.00	3.36	14.04
Carrier 6	9	1	35	34	0	26	9	3	2	9%	-0.73	3.82	9.53	2.01	13.89
Carrier 26	16	1	52	52	6	33	6	17	0	33%	5.80	1.29	-0.50	1.26	13.66
Carrier 7	92	4	49	49	1	34	12	6	2	12%	0.00	4.49	6.59	1.69	12.78
Carrier 20	89	5	136	136	7	71	18	10	0	7%	3.37	3.82	-0.38	2.54	12.72
Carrier 29	320	10	691	683	15	403	97	40	1	6%	1.34	8.28	0.00	1.56	12.52
Carrier 30	71	0	7	7	2	6	2	2	0	29%	5.76	1.73	-0.17	-1.18	11.91
Carrier 11	15	5	36	36	2	26	2	18	0	50%	1.93	-0.55	-0.51	8.85	11.65
Carrier 15	5	1	19	17	2	10	3	0	0	0%	3.39	1.90	0.00	2.94	11.63
Carrier 9	8	0	10	10	1	8	4	4	2	40%	0.00	3.50	8.20	-0.40	11.30
Carrier 33	49	0	36	36	4	14	5	0	0	0%	4.62	2.93	0.00	-0.98	11.19
Carrier 38	45	1	59	59	5	39	9	0	0	0%	4.28	2.38	0.00	0.15	11.09
Carrier 19	149	6	85	85	3	49	19	0	0	0%	1.46	6.16	0.00	1.87	10.96
Carrier 22	78	5	51	51	3	37	10	10	1	20%	2.49	3.08	0.00	2.88	10.94

Carrier	Power units	Number of crashes	Number of inspections	Number of driver inspections	Number of driver OOS inspections	Number of vehicle inspections	Number of vehicle OOS inspections	Number of HM inspections	Number of HM OOS inspections	Percent of inspections that are HM	Driver OOS Z score	Vehicle OOS Z score	HM OOS Z score	Crash rate Z score	Adjusted sum of Z scores
Carrier 47	88	1	111	111	9	60	7	1	0	1%	5.56	0.14	-0.12	-0.54	10.60

Summary Analysis

Overall, a total of 47 different carriers were included in the worst 30 on each of these measures, using different weightings, and using comparisons to both all carriers and to HMSP carriers. These results are shown in 0. It shows the core data for each of these carriers, and the ranking of the carrier on each of the measures. This table is ordered with the carriers with the lowest overall rankings (i.e. the carriers ranked as the worst) towards the top.

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APPENDIX M: CARRIER RANKING BY DEVIANCE

Overall, by using the carrier deviance score to identify the worst 30 carriers on each of the four sum of deviation measures, as described in APPENDIX A above, a total of 47 different carriers were identified, i.e., there is considerable overlap between having a high deviance on more than one metric. The metrics used are:

- Driver OOS,
- Vehicle OOS,
- HM OOS, and
- Crash Rate.

Table 31 shows the core data for each of these carriers, and the ranking of the carrier on each of the measures. This table is ordered with the carriers with the lowest overall rankings by this deviation metric (i.e. the carriers ranked as the worst) towards the top.

Table 31. All carriers ranked by the sum of the four rankings, showing rankings on each measure.

Carrier	Power units	Number of crashes	Number of inspections	Number of driver inspections	Number of driver OOS inspections	Number of vehicle inspections	Number of vehicle OOS inspections	Number of HM inspections	Number of HM OOS inspections	Pct. of inspections that are HM	Ranking, compared to all carriers	Ranking compared to all carriers adjusted sum of Z scores	Ranking, compared to HMSP carriers	Ranking, compared to HMSP carriers adjusted sum of Z scores
Carrier 1	6	0	15	15	1	14	7	13	7	87%	1	1	3	3
Carrier 2	184	3	271	271	15	210	54	8	3	3%	4	5	2	2
Carrier 3	37	2	42	42	0	29	12	21	8	50%	2	3	4	6
Carrier 4	3	0	4	4	2	4	3	0	0	0%	8	2	11	5
Carrier 5	9	1	30	30	6	20	4	0	0	0%	11	4	12	4
Carrier 6	9	1	35	34	0	26	9	3	2	9%	3	8	7	17
Carrier 7	92	4	49	49	1	34	12	6	2	12%	5	7	8	19
Carrier 8	4	1	16	16	2	11	5	4	1	25%	7	6	15	16
Carrier 9	8	0	10	10	1	8	4	4	2	40%	6	9	13	25
Carrier 10	52	7	117	117	7	71	11	29	0	25%	15	13	16	14
Carrier 11	15	5	36	36	2	26	2	18	0	50%	9	11	20	23
Carrier 12	2,419	43	1,818	1,816	298	1,525	60	140	12	8%	N/A	N/A	1	1
Carrier 13	2,913	91	3,907	3,894	328	2,345	89	652	16	17%	N/A	N/A	6	7
Carrier 14	1,209	37	1,308	1,303	207	889	24	135	2	10%	N/A	N/A	5	9

Carrier	Power units	Number of crashes	Number of inspections	Number of driver inspections	Number of driver OOS inspections	Number of vehicle inspections	Number of vehicle OOS inspections	Number of HM inspections	Number of HM OOS inspections	Pct. of inspections that are HM	Ranking, compared to all carriers	Ranking compared to all carriers adjusted sum of Z scores	Ranking, compared to HMSP carriers	Ranking, compared to HMSP carriers adjusted sum of Z scores
Carrier 15	5	1	19	17	2	10	3	0	0	0%	13	12	27	24
Carrier 16	941	30	1,113	1,112	98	522	37	19	0	2%	N/A	N/A	9	8
Carrier 17	66	1	24	24	0	13	3	3	2	13%	12	20	18	N/A
Carrier 18	14	0	4	4	2	2	0	2	0	50%	29	10	N/A	12
Carrier 19	149	6	85	85	3	49	19	0	0	0%	16	19	21	28
Carrier 20	89	5	136	136	7	71	18	10	0	7%	23	22	22	20
Carrier 21	350	18	465	464	60	351	14	259	6	56%	N/A	N/A	10	15
Carrier 22	78	5	51	51	3	37	10	10	1	20%	17	17	25	29
Carrier 23	36	7	22	22	0	9	1	3	0	14%	10	16	N/A	N/A
Carrier 24	5,350	127	5,742	5,725	436	3,550	133	1,037	19	18%	N/A	N/A	17	11
Carrier 25	73	7	256	256	16	151	13	86	2	34%	N/A	N/A	19	13
Carrier 26	16	1	52	52	6	33	6	17	0	33%	N/A	15	30	18
Carrier 27	3	1	7	7	0	6	3	2	0	29%	14	18	N/A	N/A
Carrier 28	499	15	515	514	30	258	27	53	1	10%	N/A	N/A	23	10
Carrier 29	320	10	691	683	97	403	15	40	1	6%	N/A	N/A	14	21
Carrier 30	71	0	7	7	2	6	2	2	0	29%	N/A	14	N/A	22
Carrier 31	3	1	12	12	1	5	1	0	0	0%	18	23	N/A	N/A
Carrier 32	3	0	10	10	1	10	2	7	2	70%	20	25	N/A	N/A
Carrier 33	49	0	36	36	4	14	5	0	0	0%	N/A	21	N/A	26
Carrier 34	12	2	0	0	0	0	0	0	0	N/A	22	27	N/A	N/A
Carrier 35	3	1	1	1	0	1	1	0	0	0%	21	28	N/A	N/A
Carrier 36	40	5	66	66	0	59	12	44	2	67%	19	N/A	N/A	N/A
Carrier 37	15	0	47	41	2	32	7	20	3	43%	25	29	28	N/A
Carrier 38	45	1	59	59	5	39	9	0	0	0%	N/A	26	N/A	27
Carrier 39	29	0	181	179	35	107	4	53	2	29%	N/A	N/A	24	N/A
Carrier 40	48	7	17	17	0	17	0	0	0	0%	24	N/A	N/A	N/A
Carrier 41	33	0	10	10	2	5	1	1	1	10%	N/A	24	N/A	N/A
Carrier 42	84	5	119	115	1	103	23	93	2	78%	26	30	N/A	N/A
Carrier 43	523	7	619	540	119	462	7	3	0	0%	N/A	N/A	26	N/A
Carrier 44	3	1	2	2	0	2	0	0	0	0%	27	N/A	N/A	N/A

Carrier	Power units	Number of crashes	Number of inspections	Number of driver inspections	Number of driver OOS inspections	Number of vehicle inspections	Number of vehicle OOS inspections	Number of HM inspections	Number of HM OOS inspections	Pct. of inspections that are HM	Ranking, compared to all carriers	Ranking compared to all carriers adjusted sum of Z scores	Ranking, compared to HMSP carriers	Ranking, compared to HMSP carriers adjusted sum of Z scores
Carrier 45	5	1	10	10	1	7	1	5	1	50%	28	N/A	N/A	N/A
Carrier 46	55	4	72	72	10	67	3	64	3	89%	N/A	N/A	29	N/A
Carrier 47	88	1	111	111	9	60	7	1	0	1%	N/A	N/A	N/A	30

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APPENDIX N: CLASSIFICATION OF CARRIERS WITH HMSPS

The question arose as to the nature of carriers that have HMSPs, specifically what differences might exist regarding if they are predominantly for-hire or private.

BACKGROUND

The MCMIS data that provides this information is called Carrier Classification. A carrier must have at least one classification, and may have many classifications. Table 32 provides some background information about these carriers.

- Most of the information in this table relates to the 1,497 carriers that had HMSPs as of January 25, 2013 and were active carriers on January 25, 2013. For additional background, the sixth column contains data for carriers that had HMSPs as of January 25, 2013 but were no longer active.
- The first column provides the classification (description) of the various classifications that are used by HMSP holders.
- The second column shows the number of active HMSP holders that claimed the specific classification.
- The third column shows the total number (Average Power Units) of power units that these carriers claimed on their MCS-150s.
- The fourth column shows the number of active HMSP holders that claimed this classification, and no other classification.
- The fifth column shows the number of power units for the active HMSP holders that claimed this classification, and no other classification.
- For a point of reference, the sixth column shows the number of carriers that had HMSPs as of January 25, 2013, but were no longer active.

The first 10 rows of this table are for the 10 classifications used by HMSP holders. In addition, the table includes;

- A subtotal row, which shows that the 1,479 active HMSP holders had 1,834 declared classifications, and that the 37 inactive HMSP holders had a total of 46 different declared classifications.
- A separate row is provided for active HMSP holders that claimed to be both Private and Authorized for Hire carriers. Inclusion in this row does not mean that the carriers did not have other classifications as well, only that the carrier had classifications both as Private and as Authorized for Hire.
- A summary row, which shows that there were 1,497 active HMSP holders, and that they had 127,889 power units. It also shows that there were 37 carriers that had HMSPs but were no longer active as of January 25, 2013.

Table 32. Selected information about HMSP holders by classification.

Classification	Active HMSP permit holders	Total power units	Carriers with this classification only	Power units for carriers with this classification only	Carriers that have HMSPs but are no longer active
AUTHORIZED FOR HIRE	788	98,763	531	73,783	16
EXEMPT FOR HIRE	75	4,512	9	77	2
FEDERAL GOVERNMENT	7	297	1	40	0
LOCAL GOVERNMENT	2	26	0	0	0
OTHER	38	1,057	10	47	1
PRIVATE PASSENGER, BUSINESS	9	342	0	0	1
PRIVATE PASSENGER, NON-BUSINESS	4	622	0	0	0
PRIVATE PROPERTY	898	52,039	656	27,882	26
STATE GOVERNMENT	2	26	0	0	0
U. S. MAIL	11	676	0	0	0
Subtotal of classifications	1,834	N/A	N/A	N/A	46
Carriers classified as both PRIVATE and AUTHORIZED FOR HIRE	N/A	N/A	209	23,077	N/A
ALL HMSP carriers	1,497	127,889	N/A	N/A	37

OBSERVATIONS

There is a great deal of interesting information in this table. However, the author would like to make a few observations.

- The 788 active HMSP holders with a classification of authorized for hire represent just over half or all of the HMSP carriers. Yet they have over $\frac{3}{4}$ of the power units.
 - Active HMSP holders that claimed to be only Authorized for Hire averaged 139 power units per carrier.
 - Active HMSP holders that claimed to be both Authorized for Hire and Private averaged 110 power units per carrier.
 - Active HMSP holders that claimed to be only Private averaged 43 power units per carrier.
- 1,396 of the 1,497 active HMSP holders were uniquely Authorized for Hire, uniquely Private, or both. Of the remaining 101 active HMSP holders:
 - There were 20 active HMSP holders that had only a single classification, other than for-hire or private.

- Most of the remaining active HMSP holders had one of these designations (either Authorized for Hire or Private) and another designation as well, such as Exempt for Hire, or Other.
- While a number of the active HMSP holders claimed the less common classifications of Federal Government, Local Government, Private Passenger – Business, Private Passenger – Non Business, State Government, and US Mail, all but one of these carriers also claimed another classification (typically Private, Authorized for Hire, or both).

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APPENDIX O: DETAILED INTERVIEW RESULTS

As discussed above, the MaineWay Team gathered information and insight into the current State of the HMSP program by conducting structured interviews with a broad base of stakeholders that are involved with, and directly affected by the operation and compliance with the FMCSA HMSP program.

The stakeholder participants were divided into two (2) interview groups.

Internal:

The internal stakeholder group consisted of federal employees that include FMCSA's Headquarters Hazardous Materials Division, Field Hazardous Materials Program Managers (HMPMs), other Field personnel with involvement with the Hazardous Materials program, and PHMSA's Office of Hazardous Materials Enforcement. The number of Federal interviewees is not restricted by the Paperwork Reduction Act.

External:

The external stakeholder group consisted of the five signatory entities that had filed the December 21, 2010 - Petition for Rulemaking, and also encompassed organizations representing a broad base of hazardous material motor carriers, manufacturers and shippers, and the general public through bipartisan assembly of legislators and staffs of the nation's 50 States, its commonwealths and territories.

In compliance with the paperwork reduction act, as administered by the Office of Management and Budget (OMB) the external interviewed participants were restricted to nine, including:

- Institute of Makers of Explosives (IME)
- The Fertilizer Institute (TFI)
- American Pyrotechnics Association (APA)
- Agricultural Retailers Association (ARA)
- National Association of Chemical Distributors (NACD)
- National Tank Truck Carriers (NTTC)
- American Trucking Associations (ATA)
- Dangerous Goods Advisory Council (DGAC)
- National Conference of State Legislatures/Alliance for Uniform HazMat Transportation Procedures (NCSL/Uniform Program)

Both stakeholder groups were queried on their viewpoint relating to State-operated Hazardous Materials permitting and registration utilizing Uniform Forms and Procedures. Results from these interviews, along with findings from other research are described subsequently in this report under the topic State-Equivalency Options for Safety Permits.

INTERNAL INTERVIEWS

The questions asked of the internal participants, except for the top executives, are listed below, followed by summaries of their responses.¹⁵

General Questions.

What activities are you currently involved in that relate to the HMSP Program?

The internal stakeholder group consisted of federal employees that include FMCSA's Hazardous Materials Division, Field Hazardous Materials Program Managers (HMPMs), other Field personnel with involvement with the Hazardous Materials program, and a small but comparably representative set of personnel from PHMSA.

What problems have you incurred in your dealings with the HMSP Program?

The response from the majority of internal stakeholders was that the online MCS-150 guidance is not clear whether or not a carrier actually needs the HMSP permit. Some estimate that as many as 80% of the carriers where the system applies for a HMSP do not actually need the permit at the time, some may anticipate hauling these materials eventually and want to get the permit in advance, or don't know what the thresholds are even if they haul smaller amounts. 10-20% of temporary permits initiated by the system are actually not necessary and are deleted.

Other common issues raised were that the renewal process seems difficult, especially for inexperienced carriers. There is confusion during the application process for new carriers for deciding whether to fill out the MCS-150 or MCS-150B, and they often fill them out incorrectly. Sometimes an application will change to pending status in the system and stays there indefinitely; this could be a data issue or a discrepancy with the database. Some carriers, upon being revoked or denied, will go out and restart the application process or obtain a new DOT number, i.e., reincarnate.

Other major issues raised by most internal stakeholders were related to data and MCMIS not being up to date. Additionally it was pointed out that States are not required to adopt 49 CFR part 385. Therefore, in roadside inspections many States don't ask for documents or identify HMSP carriers.

It was also pointed out that there is a hole when it comes to implements of husbandry that are regulated by the States. The current agency position is that they will honor States' position on intrastate transportation of implements of husbandry. In some States there are no requirements for lights, brakes, driver qualifications, etc. in this context. There is no regulatory basis for the FMCSA position on this.

¹⁵ The internal interviewees deliberately represent a range of responsibilities. Thus, not all could fully answer all questions predicated on their specific role in government.

What changes do you see as needed in the HMSP program?

A change mentioned is that the application process needs to be clearer on the MCS-150B (they did not mention the replacement MCSA-1 form at that time since it had not been announced) when carriers are filling out their information. There needs to be a more helpful user interface with a checklist as carriers go through the process so that they can fill out the form correctly. Another point that was mentioned is that there needs to be a better way of sending out an alert to those carriers when their permit renewal date is approaching and to clarify that the permit renewal period was the 30-day period before the expiration. (An internal goal was to expand the renewal period to 60 days when resources become available to do so. This was accomplished in early 2013.)

Another point that was brought up is that there needs to be a change on the MCS-150 to clarify the threshold requirement for anhydrous ammonia and nurse tanks. Nurse tanks do carry material in bulk. However, nurse tanks do not need a permit unless the size exceeds the 3,500-gallon threshold for requiring an HMSP permit. Questions come up about this every year that could be easily resolved if the online MCS-150 application included an explanation under anhydrous ammonia that “bulk” means over 3,500 gallons as far as HMSP permits.

Additionally, stakeholders noted a need to have direct access to data for making any changes, rather than having to make special requests that may have to go through a review committee. It was also mentioned that FMCSA needs more authority over every aspect of HM transportation, not just the motor carriers.

Has the program reduced crashes and incidents in the HMSP holder population?

The vast majority of participants interviewed indicated either:

- They do not believe so;
- Unable to answer the question; need to review data; or
- Have no idea how to quantify this or what the baseline would be.

What do you see as the benefits of the HMSP Program?

The main benefit cited is that the HMSP program raises the bar for HMSP carriers who are transporting higher risk commodities, and holds them accountable to a higher standard. The program is a good tool to get legitimate HMSP carriers to understand the importance of the regulations. This is a good thing because although HM may not be directly involved in causing crashes, it can be a significant risk multiplier for crashes that occur.

What do you see as the detriments of the HMSP Program?

Internal participants with limited involvement in the HMSP program opined that there were no significant or substantial detriments to the program. Contrariwise, those with a lot of involvement in the HMSP program expressed that the current implementation of the program is cumbersome to both the carriers and FMCSA. The process of paperwork and the bureaucracy required to deal with the current information system capabilities is tedious for carriers, and it

requires extra work on the agency's end and is burdensome. Comments included the existence of a lack of accurate data, and needs some process implemented to ensure it is current. A few participants with limited knowledge of the HMSP or PHMSA programs continued to question the necessity of the HMSP program. Certain remarks indicate that some may be unfamiliar with basic and fundamental objectives of the HMSP program, and thus presume the HMSP program is confusing for themselves and motor carriers. One internal participant commented that as part of the MCSAP part 350 grant conditions, States are not required to adopt the regulations of part 385 subpart E. They seemed to have a clear picture that the processes are cumbersome, but did not have a clear perspective that considerable of the issues are related to poor information system support for the program.

Should the list of HMSP commodities be revisited?

Most participants indicated that they were fine with the list as is, and were comfortable with the materials that are listed. One issue that was mentioned, is that there should be clarification in the regulations about the 55-pound limit for explosives – how much of that weight is the actual explosive and how much is the packaging?

Another issue brought up again was struggling with quantities based on the MCS-150B. Anhydrous ammonia was a concern as far as being hauled in quantities less than 3,500 gallons since nurse tanks do not need a permit unless the size exceeds the 3,500-gallon threshold for requiring an HMSP permit. It was suggested that hazardous zone D, which includes anhydrous ammonia, be removed from the list altogether.

Others had suggestions for changes in the list. For example, an area of manifested higher risk in crashes is flammable fluids and gases, largely from rollovers carrying large bulk amounts that rupture. Many of these commodities, even in large bulk amounts, are not on the HMSP list.

How should the degree of risk that warrants a safety permit be determined?

Risk should be determined by what is the potential impact of an incident that results from a crash with this particular commodity. Some participants pointed out there are security requirements for companies hauling HM most attractive to terrorists. One question that was brought up is whether the quantities should change, e.g., a bulk shipment of 11,000 gallons of gasoline.

How would you define severity of an HMSP crash?

Looking at crash statistics, hazardous materials are not the cause of the crash, but could aggravate it. The consequences could be more severe and there's an increase to the potential loss of life. There's greater exposure and risk and the impact is magnified. You need to define severity of an HMSP crash not by past crash experience, but what the consequence, exposure and risk would be in the event of a crash – that needs to be the threshold for what commodities might be added to the list and/or their quantity threshold modified. The question is, what risk level are we willing to tolerate, and then what commodities do we want to be more careful with?

Permit Denial (Initial and Upon Request for Renewal), Suspension, and Revocation.

Should the processes of Denial, Suspension, or Revocations of a Safety Permit be revised? If so, in what way? (consideration given the 30% threshold for crashes)

The biggest issue mentioned was just relaying this information to the carrier; right now they are not receiving timely notification. It could be several months where companies do not learn of this information. In some cases permits may wait in pending status for 60 days; there needs to be a faster response.

Right now with the 30% threshold for crashes, it does not include a mileage exposure consideration. That needs to be looked into to preserve symmetry with SMS. We need to be prepared to modify the process going forward for the forthcoming Safety Fitness Determination (SFD) rulemaking for determining safety rating.

One point is that when someone is revoked or denied, there needs to be a better monitoring system, and the Division office where that carrier is domiciled needs to be made aware of that carrier has been revoked or denied, so they and the State can monitor the carrier. Right now most of these get overlooked. (Indirectly this is another identification of an information system capability upgrade.)

Do you have an opinion on the effectiveness of current criteria used for denying reissuance, suspending or revoking an HMSP based on the current safety performance criteria?

Most participants said that the program is effective and working, and provides some level of acceptable performance. However, they haven't seen analysis on this, so they haven't had issues with the current process at this point. (This report provides that kind of analysis for consideration.)

What is your view of the 30% threshold process?

Most of the internal interviewees like this level and haven't had any problems with it. The complaints are from limited carriers who express a drawback when a specialized carrier gets above this 30%, which may put the carrier out of business. Some comment that this may be especially true for carriers hauling explosives and pyrotechnics – if they are a small operation, they could be disqualified with very few inspections. It was suggested that perhaps carriers could be reviewed based on crash rates or vehicle miles travelled. As pointed out in Section 2.2 of the full report, such carriers may be a small part of the company's principle business.

Should different thresholds be used for the different categories of violations, e.g., driver, vehicle, hazardous materials?

Overall, most said there shouldn't necessarily be a change. We already have different rates, and that the 30% threshold is a good number across the board when applied against those different rates.

Should a second level of administrative review be incorporated, particularly for renewals?

Consensus from participants was that this is a good idea, since the program is legally required, but it's an issue of resources. From an enforcement point of view there's not a problem; but the agency gets constant calls. If we are contemplating creating a new additional level of administrative review, how will it be staffed.

Can you suggest a process if you feel a second level of administrative review should be incorporated?

A suggestion was to do something similar to CSA, where the less than satisfactory companies under 385.17 can submit a corrective action plan (CAP), or something similar. Then the HMSP carriers could be closely monitored over the next six months.

Are you aware that denied, suspended, or revoked HMSP carriers may be attempting or succeeding in reincarnating themselves in order to restart with a new HMSP? Are there incentives in the current process that encourage this?

Yes. But, most participants said they did not see anything different for HMSP carriers than regular carriers. The issue likely is not number, but whether it is a higher risk to society than regular carriers. While individuals might not see this in their area, this definitely happens every day and there is encouragement for carriers to reincarnate. The issue of reincarnation comes up every time the permit is up for renewal. Some carriers will reincarnate in order to get a new DOT number.

Are you aware of the potential or practice for HMSP carriers who are denied reissuance, suspended or revoked to go lease on with another HMSP carrier to be able to continue operating in the industry?

Answers to this question are a good illustration of responses based on theory, versus knowing the policy position of the agency. Some participants show acceptance of denied, suspended, or revoked motor carriers leasing on to qualified HMSP carriers by theorizing there should not be a problem as long as the lease is valid and the carrier leases on to a safe carrier who then ensures the leased-on carrier's continued safe operation; and further comments relating to the fact that there is currently nothing illegal about doing this sort of thing, since it is different than reincarnation. Some also expressed that leasing on to a legitimate qualified motor carrier is an acceptable way to avert disqualified motor carriers from going bankrupt. Those accepting the leasing concept propagate that the real safety issue is whether the responsible lessor carrier is monitoring the leased carrier. There is also the possibility of simply using the HMSP qualified motor carrier's U.S. DOT number to haul loads without taking the appropriate steps to earn the HMSP on one's own merit.

It is important to note that most internal persons interviewed had no comment, or mixed attitudes on the leasing concept, one way or the other; and there were an equal number of internal participants who view the leasing concept as permissiveness to a continuance of HMSP operation for a motor carrier who has demonstrated they are unqualified for such undertaking. Concerns were expressed on the possibility of the carrier they lease onto assuming that they (the leased carrier) are safe. It is still important to know what the denied carrier is doing to ensure

safety, and that carrier needs to be transparent and forthcoming with the leasing carrier about their history; namely, their suspension, denial, or revoked status. However, others raised the question that if a carrier is denied a safety permit, shouldn't it be kept from operating, even if with another carrier?

What is overlooked in this theoretical answer is that the agency has made a determination to deny, suspend or revoke the HMSP. Thus, the agency has made a determination that carrier is not currently qualified to transport HMSP. Thus, leasing on to continue in operation is by FMCSA policy considered as a form of reincarnation in order to circumvent compliance, and FMCSA will take action against the carrier for doing this. This illustrates a need for better informing others of this policy.

How should flexibility be incorporated within the regulations for addressing minor, specific issues? (For example, how should credentials be addressed for a tow truck that needs to provide service to a disabled HMSP load that might be overturned on a highway that needs to be reopened for traffic as soon as possible?)

The general consensus is that it is already permitted for a tow truck to do a first move of a disabled HMSP load to the nearest safe haven. The safety of the roadway and getting the vehicle off the road is more important than making sure the towing company has a permit. "Flexibility" covers that first move. For any additional moves, maybe additional credentials or endorsements might be required, or perhaps special training for wrecker drivers.

There was some disagreement, as the risk for the towing vehicle is probably higher considering the vehicle in tow still may have HAZMT while being moved, and is mechanically inferior after an accident. Often tow trucks will transfer loads between trucks, and should have an HMSP to move trucks with explosives.

Should an intervention process during the 2-year HMSP be implemented along the lines of the CSA processes for all HMSP carriers as part of 49 CFR 385.421; or for a possible suspension or revocation for an OOS threshold-rate prior to denial of a safety permit reissuance? (If so, describe the process).

Generally participants thought the HM BASIC is already there. The current system in place is the performance of comprehensive investigations, and they didn't know what other intervention could be put into place. Currently the HM carriers are subject to a stricter threshold, which is appropriate. There is already a fitness review and enough tools to monitor corrective action. Borderline carriers could be monitored better.

Should an intervention process during the 2-year HMSP be implemented along the lines of the CSA processes for all HMSP carriers as part of 49 CFR 385.421; or for a possible suspension or revocation for an OOS threshold-rate prior to denial of a safety permit reissuance? (If so, describe the process.)

In a situation where a carrier gets a permit but then goes above a 30% threshold a few days later after getting an OOS order, it doesn't make sense to let them run for two years when their numbers are bad. In that case, if there is data on their OOS rates, some intervention is a good

idea. Perhaps give carriers notice that they have a certain amount of time to fix their problems. Currently there is leeway and letters are sent out to carriers.

Participants said they would see this as being like the CSA process, similar to the new entrant process. This is basically already being done, similar to CSA and CAP.

Qualification for HMSP Carriers and/or Drivers

Should the standard for safety performance of HMSP motor carriers be higher than the standard by which non-HMSP HM carriers are judged?

Mostly the response was either yes, or that it already is because HMSP carriers have to meet certain thresholds that other HM carriers do not. This is already set up and there is already a different standard. Many are confident this is being handled properly because of the higher level of oversight; it is a heavy resource burden for the agency, especially because of the poor information system support, but for a good cause.

Should the criteria for issuing a THMSP be made more stringent?

The general indication was no, the way it is set up now is fine and there is no need for another hierarchy or more regulations. There was some uncertainty about all the criteria, or how this would work for temporary permits. For a carrier where they have undergone a safety audit because they didn't apply for the HMSP initially, and then they apply for temporary HMSP permit, another level of review should be done. The issue is whether someone has appropriate safety management in place.

Should there be special criteria (e.g. training) for a new entrant to obtain a temporary HMSP?

A thought mentioned was to have a system set up with a responsible corporate office where carriers have to come to a class, attendance is tracked, and they are shown everything about motor carrier compliance, and given sample forms and related information. Carriers would have to provide file set ups, etc. before they could get their DOT numbers—almost like an off-site safety review. Data and risk and evaluation should drive this decision—it should be driven by safety demands and justification. Special training for new entrants for HMSP would come through a full comprehensive investigation. This comes back to reincarnation and the temporary permit; there should be training as far as meeting specific requirements. It was pointed out again that it is a question of resources.) (At other places in this report it is recommended that an HMSP module be included in the blended curriculum being developed as a possible way to meet the MAP-21 requirement for new entrant motor carriers to ensure new entrants are proficient in and understand the regulations.)

A study of fostering adoption of a safety culture in new entrants in general is very promising on improving safety performance. What effect would an HMSP specific safety culture training program have on the overall safety performance of carriers in the HMSP Program?

Generally participants agreed having a safety culture training tool would be beneficial to the program overall, especially for smaller operations. There is a lot of continuing education and training that carriers could do remotely online. Annual certifications are probably the way to go

to make carriers safer. Another idea is to add up to a two-hour session on HMSP for these carriers to the multi-modal seminars that PHMSA already does throughout the country.

Should FMCSA continue to rely on a motor carrier having a current Satisfactory Safety Rating as a prime indicator of motor carrier performance for new HMSP applicants?

Responses to this question ranged from absolutely yes, to no, this has to go away. The general consensus is that the current rating system is the best we have for now; however, many internal participants commented that they would like this to move to the CSA system and have SMS incorporated somehow. The answer to this question depends on how CSA changes. A problem is that the meaning of a satisfactory rating has changed over the years. One received many years ago does not mean the same as one received now. What a “sat” rating really means is under review as a rulemaking. Some don’t put a lot of stock in safety ratings in general; however it seems to be better than nothing.

Should the safety rating expire for purposes of issuing or reissuing an HMSP, i.e., should a new safety rating be required from time to time, e.g. after four or more years?

Participants generally agreed that this is reasonable. Recommended timeframes ranged from every 2-3 years to every 6-7 years. One influential person could leave a company and it goes downhill. The consensus was that there should be something every so often, because without implementing such a requirement some HMSP carriers could go a long time without a review. A logical timeframe is as part of a renewal, say every 6 years. Another concept that got mentioned is more of the traditional use of a CI as an intervention for a targeted HMSP carrier. One issue that arose again was that it is a question of workload and resources.

Should the qualification of an HMSP be based upon or integrated in the Safety Measurement Systems being used in CSA? That is, should relative BASIC scores be used to evaluate applicants for continuing to hold an HMSP permit?

Most participants agreed that it makes sense to do it this way; it could be done similar to motorcoach, since it’s a heightened industry, a higher standard should be the norm. A couple issues that arose were that BASIC scores can fluctuate quickly, so that shouldn’t be the only thing to rely on. Also this depends on roadside inspections, which is a problem for some carriers; for example there may be certain explosive haulers who perform mining or quarry work, or ammonium nitrate/fuel oil (ANFO) transporters that are operating in remote areas where they are exposed to few, if any inspections. Moreover, there are short haul carriers who operate in areas where roadside inspections are limited or non-existent. Although this does not confirm the majority of any specific type of HMSP carrier, this is a factor to be considered along with all the other thresholds, and CSA as an indicator.

Should there be strengthening of the driver requirements for HMSP operators, e.g., could consider Unsafe Driving BASIC scores or other driver performance criteria?

Participants generally agreed that this should probably be done, but who sets the standard? This is something that isn’t currently applied that could be applied on CSA motor carriers. The question is where do you set the standards and what is the basis for making these determinations? It makes sense to have a higher standard for all HMSP drivers, there should be more training and

all BASIC scores should be elevated. A potential issue that was mentioned is that this may not be enforced consistently across the nation.

Should there be an HMSP driver credential requirement similar to the TWIC that is issued by TSA, which is above the CDL H endorsement, e.g., in your opinion, should there be special training requirements for HMSP operators that exceed the current certificate for training required for drivers with an H endorsement?

The general consensus is that a considerable percentage of the interviewed FMCSA participants weren't familiar with the TWIC program or the process, but they weren't sure this was necessary or how to determine the levels of restrictions. It would add another weight to the carriers. Maybe this could be integrated with the HM endorsement on a driver's license, but is this the appropriate place? (There is a requirement in MAP-21 to examine the entry level training for an H endorsement.)

Should drivers with an H endorsement be required to carry a copy of their current certificate of HM training, especially if engaged in an HMSP movement?

Mostly the agreement was no – this would just be one more piece of paper that could be falsified. A certificate wouldn't provide enough information, and nothing on it would be verifiable. Instead, everything should be put in the automated CDLIS driver record, just like is being done for the medical certification status.

If HMSP drivers are required to have additional training, should they have to carry a current certificate of that HMSP training?

For the most part, consensus was no; don't make driver have to carry too many things on the road. However, as mentioned above this could be tied to the CDL or be a higher level of HM endorsement.

Data Support/Applications Process

Are you aware of any IT changes that should be made to MCMIS supporting the HMSP program, such as the renewal process? If so, what priorities would you suggest?

A variety of changes were suggested, including:

- Adding "incomplete" as an option in the application process
- Having more guidance on checking the boxes – also highlight the anhydrous ammonia for nurse tank v. bulk as far as quantity. Need to prevent people from checking every box if they don't know they'll be hauling every material.
- More verification of accurate data – should be more drop-down lists instead of hand-typed.
- MCS-150 online application is confusing; there are a lot of false applications for carriers that don't need the HMSP permit. People get confused on the MCS-150 and check off HMSP.

- The user interface needs to be more useable and easy.
- Filing insurance – carriers keep losing their permit because contact information has changed or they send paperwork to the wrong place. Also access to L&I is needed.
- Some carriers show up as pending in the system, get the permit, and then go back to pending in the system.

How can MCMIS better assist you with the HMSP process?

The main concern was the need to obtain more accurate and cleaner data. Maybe there could be a flag or pop-up for certain materials on the list that would require an HMSP. Motor carriers should be updated and removed in a timelier fashion, instead of sitting in limbo. In general it was observed that a lot of fixes over the years coming out of HMSP have essentially been “Band-Aids” so that at this point it is now a patchwork.

Can you identify serious problems with processing HMSPs?

It was pointed out that the automated system is incomplete and requires manual intervention, which is a big issue. Also, if we could run the processes for HMSP processing on demand, rather than having to make a change, the wait for overnight multi-step processing, it would speed things up. Sometimes the information system process gets hung up for a while.

Enforcement

What enforcement activities do you believe are most effective for accomplishing the overall safety goal of the HMSP program?

It was generally agreed that the fines in place for violations are working, as well as violation notices that are sent. The best concept was the monetary fine with abatement if things are done to correct the problem. Roadside inspections help with this. It helps when shippers get actively involved with checking permits for carriers picking up the product, subject to the current limitation that shows them as not permitted while in the process of renewing. The program works and what there is, is fine. There is somewhat of a deficiency as far as lack of tools in the information system toolbox – currently carriers are either sent sternly-worded letters or, at the other end, hit with a sledgehammer.

Are there enforcement activities that you believe should be modified, repealed, or implemented?

While most agreed the system is working, some ideas to implement included re-instituting the fine with abatement concept that used to be in place, and as an interim measure post online enforcement actions taken against HMSP carriers as a public notice. Also it was pointed out that set inspection places like scales shouldn’t be relied on for permitted carriers; need to work with the State police on different roads to catch the little guys. Having a CAP was mentioned as a good idea, however it is important for it not to become time-intensive to monitor and there was concern as to whether there were the IT tools in place to monitor these with the carriers.

Carrier Concerns

What kind of feedback have you received from carriers regarding HMSP —Processing of applications or renewals?

The biggest problem is dealing with carriers who don't need the permits who stumble into the wrong path of answering questions on a form rather than with carriers who actually need it. There is confusion on MCS-150 and 150B. The whole process takes too long. There's confusion when carriers get notification that their application is approved for processing – carriers take that as saying they were approved. Also, when carriers go into the system for renewal, that is not presented as an option initially – they have to select “update” and then they are shown the renew option. Carriers are accustomed to being walked through the process.

Concern over the borderline status of denial, suspension, and revocation of HMSPs?

There are carriers who worry about this and go out to try and force clean inspections. There is an automated system that generates inspections letters, and this can cause problems as far as what section someone is cited under during an inspection. Sometimes headquarters catches this, but it is an automated system and can cause problems. This is a bigger issue with carriers who don't haul these materials much.

Concerns relating to reinstatement of carrier HMSPs?

This is mostly handled in headquarters. The biggest complaint raised has to do with the 30% threshold; carriers will call in asking why they were denied or how to get below the 30%.

Concerns relating to requirements for obtaining HMSPs?

Generally there is no feedback on this. Sometimes they will hear about the 30% threshold, or there might be confusion about who needs the permit, but that's it.

Concerns you are aware of that the industry has with the current process?

Most participants thought the major industry concern was how to get violation rates down, i.e., being able to get good inspections reported, or why they need the permit. The only issue raised was with smaller shippers being unaware of the HMSP requirements. Some carriers ask why the agency doesn't walk them through what they need to do, send out flyers, etc.

Concerns verifying validity of HMSP by shippers?

The general consensus is that carriers do not provide much feedback on this. However, a point was brought up that this is a big issue because there is no standard as to what shippers have to do to verify the validity of the HMSP. That could be clarified in the required revision to the HMSP regulations. In response to this interview input, it was pointed out by the regulatory experts on this project that there is an explicit regulatory requirement found at 49 CFR 173.22. The confusion on the part of those making this observation may flow from the fact that this requirement is not in FMCSA's rules in 49 CFR 385, but is in PHMSA's rules.

Concerns about a bias of the inspection process against LTL carriers for hazardous materials violations largely relating to load securement?

General consensus is that this has always been a question, although they don't hear much about it. Typically LTL carriers don't transport HMSP materials in sufficient quantity to need an HMSP.

Concerns about the difficulty of getting a clean inspection and getting it reported to MCMIS?

Participants indicated that this comes up a lot and they hear about it daily. A problem they hear about is that at inspections, paperwork is only generated if there is a problem; there's no paperwork into the system for a clean inspection. There may be confusion on the driver's part where they think they got an inspection but in fact it was a screening or credential check. This has to do with States that have a law requiring probable cause to conduct an inspection.

Some carriers also expressed concern to internal stakeholders with regard to administrative type mistakes that do not appear to be crash causal; examples include paperwork mistakes, general form and manner errors, placarding issues (i.e., dirty placards). Notwithstanding, this view is contrary to the view of internal participants, including upper management who feel administrative errors are indicative of a culture of not paying attention to detail, and that kind of culture does lead to crashes by such carriers.)

Concerns that many inspections are targeted, i.e., the vehicle is only stopped and inspected if a violation is observed? This can over represent failed inspections to the actual safety performance of the carrier?

Generally the participants hear about this being an issue with particular States, especially those that are probable cause – there has to be probable cause to conduct an inspection on someone. Some States are random, but in the probable cause States, they can't stop anyone unless there's probable cause for a violation.

Summary

If you were "King", how would you improve the efficiency and effectiveness of the HMSP Program?

Most internal participants did not have anything more to add beyond what their interview responses were to the preceding questions they answered.

A question raised among the internal participants was whether this program is needed. Most opined that the HMSP program is effective and legally necessary. Some expressed the feeling that there should be an evaluation or clarification as to what the program's goals are, and whether the goals and objectives are achieving a positive impact on highway safety, with consideration to whether the program should continue to exist. (Note. This report contains a small section addressing program evaluation.)

Some suggestions included, the following somewhat heavy on information system improvements:

- Changing the timeframe for permit renewal from two years to something longer, e.g., four or six, years and make the process easier to understand by implementing better and more informative user interfaces.
- Act expediently on pending applications..
- Increase transparency, consistency, and communication; automate more.
- Start with the data – reliability and accuracy needs improvement. Access to MCMIS should be easier and it should be updated in a more timely fashion during the renewal process. Systems should be updated through a sustainable process using a working group.
- There should be more tools available to monitor carriers who have temporary permits, so that the permits can be pulled quickly if the terms are violated.

EXTERNAL INTERVIEWS

Interviews of eight (8) of the nine (9) external stakeholder groups used the same question sets referred to above. However, the interviews were structured to conform to their individual roles and relationship associated with HMSPs. For example, most of the external stakeholders represented a broad base of hazardous material transporters, manufacturers and shippers; and some were signatories of the Petition for Rulemaking filed on December 21, 2010 that propositioned regulatory changes to the HMSP program for consideration by FMCSA.

The interview with the National Conference of State Legislatures/Alliance for Uniform HazMat Transportation Procedures (NCSL/Uniform Program) focused primarily on State equivalent HMSP programs with NCSL's representation of the general public through bipartisan assembly of legislators and staffs of the nation's 50 States, its commonwealths and territories. Results from that are presented as a separate section below.

General Questions

What activities are you currently involved in that relate to the HMSP Program?

Interviews for eight of the nine external stakeholder groups used the same structured question sets referred to above for the internal stakeholders. The interviews were structured to conform to their individual roles and relationship associated with HMSPs.

Six of the eight stakeholder associations represent members whose primary business is not transportation. Their members are engaged as a combination of private motor carriers, shippers and industry entities associated with HMSP transport, including manufacturing, labeling, packaging, loading and so forth. Most were signatories of the Petition for Rulemaking filed on December 21, 2010 that propositioned regulatory changes to the HMSP program for consideration by FMCSA. These are:

- Institute of Makers of Explosives (IME), Washington, D.C.
- The Fertilizer Institute (TFI), Washington, D.C.

- American Pyrotechnics Association (APA), Bethesda, MD
- Agricultural Retailers Association (ARA), Washington, D.C.
- National Association of Chemical Distributors (NACD), Arlington, VA
- Dangerous Goods Advisory Council (DGAC)

In this case a number of the group of six stakeholders elected to meet together in a group session.

On the other hand, the members represented by the following two associations are dominantly for-hire motor companies. Many of these have at least some portion of their business engaged in hauling ordinance or other materials for the Department of Defense, which has a very strenuous set of requirements to be a transporter for the Department. Not surprisingly there were noticeable differences in their opinions about the HMSP program, and on what changes they would prefer should be made in the HMSP program. In most cases it was in the opposite direction from what was preferred by the private transporters.

- American Trucking Associations (ATA)
- National Tank Truck Carriers (NTTC)

In contrast, the interview with the National Conference of State Legislatures/Alliance for Uniform HazMat Transportation Procedures (NCSL/Uniform Program) focused primarily on State equivalent HMSP programs with NCSL's representation of the general public through a bipartisan assembly of legislators and staffs of the nation's 50 States, its commonwealths and territories. Results from that are presented as a separate section below.

What problems have you incurred in your dealings with the HMSP Program?

There was very strong consensus among the group of six external industry stakeholders who function as private haulers, and whose primary business is not transportation. In general they do not believe the criteria the HMSP program uses for determining issuance or renewal of the HMSP is appropriate for measuring safety. Further, they do not believe that the problem the HMSP program was supposed to fix actually exists. Among the six industry groups, the major issue that needs to be resolved is raised the uncertainty that many of their member motor carriers face when it comes to renewal of their two-year HMSP. To a great extent this uncertainty is driven by the uncertainty of how they are selected for a roadside inspection that will be reported to MCMIS. They assert that it is extremely difficult in a number of States' geographical locations to be selected for an inspection that will be reported as a good or clean inspection. Thus, it is impracticable, and perhaps impossible for some carriers to lower their OOS rates by getting clean inspections. Instead their focus has to be avoiding getting negative inspections. Until the ability to get good inspections reported to MCMIS can be rectified, they strongly recommended the HMSP program should be suspended or discontinued.

A group of ATA carriers were interviewed at their ATA Hazardous Materials Policy Committee Meeting, held during the 2013 ATA Leadership Conference, where they expressed comments on the HMSP program. NTTC also had a representative at that Policy Committee. The committee

members conveyed the perspective that the thresholds are good because they are forcing all HMSP carriers to get better, and there is not a problem with complying with the 30% thresholds. Some carrier members went further. Namely, they suggested that even more strict thresholds should not be problematic, and would not be opposed by them. Commentary included that acceptance of the HMSP rules “Shouldn’t be about size of carrier,” and they hoped that FMCSA will not lower the standards, just to make it easier for smaller or private carriers who complain. The discussion also included that they believe the HMSP requirements on carriers are probably helpful in presenting a more defensible safety position in the advent of litigation such as associated with a crash, i.e., a better ability to defend against unwarranted attempts to impose liability, because of the increased safety posture of carriers engaged in the HMSP program.

NTTC asked why the threshold for vehicle OOS is so high, versus so low for HM, when one has nothing to do with the ability of a truck to safely haul these materials.

What changes do you see as needed in the HMSP program?

From the perspective of the six private external groups (excluding ATA, NTTC, and NCSL), the issue is carriers’ uncertainty of not knowing when their next roadside inspection will be. One matter that came up is that some pyrotechnic haulers, like those who transport fireworks, are seasonal. They would like the renewal time be flexible and occur during their off-season. Some responded that the denial process needs an opportunity for a direct appeal or a waiver. Others expressed the opinion that until standards accurately measure safety, the program needs to go away.

On the other hand, the for-hire carriers represented by ATA, recommended additional and more stringent criteria should be imposed for qualification, comprehensive investigations, levels of financial responsibility, and more. NTTC raised the question of where the industry has input into OOS criteria.

Has the program reduced crashes and incidents in the HMSP holder population?

The consensus among the group of six external stakeholders was that nothing in the program is geared toward reducing crashes; and that data shows that in their interpretation of the data it has not done so – proclaiming the problem is that HM is not crash causal. (This ignores the point that if HM is involved in a crash, it can make a greater public hazard.)

ATA and NTTC commented they would be interested in seeing a good analysis of data need to address this question.

What do you see as the benefits of the HMSP program?

ATA opined that HMSP carriers are likely to be safer than the non-HMSP population of motor carriers, because of the increased regulatory responsibility placed on them. NTTC had no specific response beyond their comments to other questions. The remaining group of 6 of private carriers gave no response, or rendered their opinions within other responses to questions asked of them.

What do you see as the detriments of the HMSP program?

They are unable to put out options that may be more resource-intensive.

Should the list of HMSP commodities be revisited?

Most external participants responded that it doesn't make sense to classify explosives along with nuclear waste, inhalants, etc. Some responded that the commodities that cause accidents are flammable liquids and gasses, and those don't require the permit.

However, the ATA's perspective is that it does make sense to take precautions for low probability, high consequence events where there is a much greater chance of catastrophic accidents with these materials.

How should the degree of risk that warrants a safety permit be determined?

Currently, placarded material requires a threat assessment by the TSA along with the HM endorsement. These are separate things – the HM endorsement is about training. This industry is not the risk.

How would you define the severity of an HMSP crash?

(No response, or rendered with other responses)

Permit Denial (Initial and Upon Request for Renewal), Suspension, and Revocation

Should the processes of Denial, Suspension, or Revocations of a Safety Permit be revised? If so, in what way? (Consideration given to the 30% threshold).

(No response, or rendered with other responses.)

Should different thresholds be used for the different categories of violations, e.g., driver, vehicle, hazardous materials?

ATA and NTTC did not have a problem with the 30%. The remaining group of 6 gave no response, or rendered their opinions within other responses to questions asked of them.

Should a second level of administrative review be incorporated, particularly for renewals?

The consensus was that as part of the denial process there needs to be a second level of review to look into circumstances, and an appeal process. That could improve the current situation.

Are you aware of the potential that denied, suspended, or revoked HMSP carriers may be attempting or succeeding in reincarnating themselves in order to restart with a new HMSP? Are there incentives in the current process that encourage this?

(No response, or rendered with other responses)

Are you aware of the potential or practice for HMSP carriers who are denied reissuance, suspended, or revoked to go lease on with another HMSP carrier to be able to continue operating in the industry?

(No response, or rendered with other responses)

How should flexibility be incorporated within the regulations for addressing minor, specific issues? (For example, how should credentials be addressed for a tow truck that needs to provide service to a disabled HMSP load that might be overturned on a highway that needs to be reopened for traffic as soon as possible?)

They agreed this should be allowed in emergencies just to get the vehicle off the road, for safety purposes.

Should an intervention process during the 2-year HMSP be implemented along the lines of the CSA processes for all HMSP carriers as part of 49 CFR 385.421; or for a possible suspension or revocation for an OOS threshold-rate prior to denial of a safety permit reissuance? (If so, describe the process).

There needs to be more of a regular comprehensive investigation program in place, according to ATA.

Qualification for HMSP Carriers and/or Drivers

Should the standard for safety performance of HMSP motor carriers be higher than the standard by which non-HMSP HM carriers are judged?

ATA and NTTC expressed that it should. The remaining group of 6 advised that currently the HMSP renewal relies on OOS criteria, which was more of a compliance issue, not crash causal. If these standards don't address true crash causal issues, then there's a problem in the big picture. Without changing verbiage in the rules it's the OOS standards (thresholds) that are the problem. (Note, contrary to the assertion of the group of 6 private carriers, FMCSA analysis finds a strong relationship of OOS findings and crash rates.)

Should the criteria for issuing a THMSP be made more stringent?

(No response, or rendered with other responses)

Should there be special criteria (e.g. training) for a new entrant to obtain a temporary HMSP?

ATA responded that this is consistent with what has been said. Really this only applies to new permit applicants.

A study of fostering adoption of a safety culture in new entrants in general is very promising on improving safety performance. What effect would an HMSP-specific safety culture training program have on the overall safety performance of carriers in the HMSP program?

According to ATA, small carriers don't take on too many people at once and provide experienced drivers with the right training – both HM and the Smith System, which drivers really like.

Should FMCSA continue to rely on a motor carrier having a current Satisfactory Safety Rating as a prime indicator of motor carrier performance for new HMSP applicants?

Consensus was this is beyond this program; cannot answer this question until it's known what CSA will look like after the proposed safety fitness rulemaking is final and the CSA program becomes the safety fitness program.

Should the safety rating expire for purposes of issuing or reissuing an HMSP, i.e., should a new safety rating be required from time to time, e.g., after four or more years?

(No response, or rendered with other responses)

Should the qualification of an HMSP be based upon or integrated in the Safety Measurement Systems being used in CSA? That is, should relative BASIC scores be used to evaluate applicants for continuing to hold an HMSP permit?

(No response, or rendered with other responses)

Should there be strengthening of the driver requirements for HMSP operators, e.g., could consider unsafe driving BASIC scores or other driver performance criteria?

While it was agreed by the group of six private carriers that it makes sense to be stricter on drivers than equipment. However, the point was brought up that sometimes you need to take another look during background checks to keep years' old mistakes from ruining someone's life.

Feedback from the ATA was that there already are a number of stricter background checks in place for other specialized work, in particular for work they do with the Department of Defense

Should there be an HMSP driver credential that is above the CDL H endorsement, e.g., in your opinion, should there be special training requirements for HMSP operators that exceed the current certificate for training required for drivers with an H endorsement?

ATA noted that this is a fair point, but how do you signify the additional criteria; don't add anything to the HMSP program until its current problems are fixed.

Should drivers with an H endorsement be required to carry a copy of their current certificate of HM training, especially if engaged in an HMSP movement?

(No response, or rendered with other responses)

If HMSP drivers are required to have additional training, should they have to carry a current certificate of that HMSP training?

(No response, or rendered with other responses)

Data Support/Applications Process

Are you aware of any IT changes that should be made to MCMIS supporting the HMSP program, such as the renewal process? If so, what priorities would you suggest?

(No response, or rendered with other responses)

How can MCMIS better assist you with the HMSP process?

(No response, or rendered with other responses)

Can you identify serious problems with processing HMSPs?

The issue raised was that the data being used to calculate OOS rates is flawed because information is not real time, which can affect a carrier's rate during the narrow window when they have to renew.

Enforcement

What enforcement activities do you believe are most effective for accomplishing the overall safety goal of the HMSP program?

(No response, or rendered with other responses)

Are there enforcement activities that you believe should be modified, repealed, or implemented?

There is a consensus among the group of six that there needs to be clarification both in the system and with State enforcers; not all roadside inspectors are qualified to do HM inspections.

According to NTTCC, this can lead to violations that in their opinion may not be crash-causal; for example a placarding or paperwork violation.

(This view is contrary to the view of internal participants, including FMCSA upper management, who feel that patterns of administrative type mistakes are very useful in indicating a carrier's culture of not paying attention to detail. MCMIS data shows that a carrier's culture that does not pay attention to details is associated with higher crash rates by such carriers.)

Carrier Concerns

What kind of feedback have you received from carriers regarding HMSP:

Processing of applicants or renewals?

Consensus is that it is difficult to work with the agency; there have been issues when submitting MCS-150Bs where incorrect contact information, or no contact information, was provided and information ends up going to the wrong place. The 30-day timeframe for renewal is very short. (Note, above they were unable to connect these program performance problems with inadequate IT support of the program's needs.)

Concern over borderline status of denial, suspension, and revocation of HMSPs?

There is agreement among the group of six that there needs to be some process for dealing with denials, etc. in cases of borderline threshold values. In the rules, if a carrier is revoked or suspended because of having less than a satisfactory safety rating, then the carrier has the right to appeal. However, if an HMSP carrier is denied, under the current program they can't appeal until after they lose their permit. Where did the right to have a hearing go? What ATA hears mainly is when carriers have issues with their own CSA scores.

Concerns relating to reinstatement of carrier HMPSs?

(No response, or rendered with other responses)

Concerns relating to requirements for obtaining HMPSs?

(No response, or rendered with other responses)

Concerns you are aware of that the industry has with the current process?

(No response, or rendered with other responses)

Concerns verifying validity of HMSP by shippers?

(No response, or rendered with other responses)

Concerns about a bias of the inspection process against LTL carriers for hazardous materials violations, largely relating to load securement?

General concern that's heard from LTL carriers by ATA is about load securement. Even if carriers have a very good safety culture they might fall flat in this more specialized area.

Concerns about the difficulty of getting a clean inspection and getting it reported to MCMIS.

(No response, or rendered with other responses)

Concerns that many inspections are targeted, i.e., the vehicle is only stopped and inspected if a violation is observed. This can over represent failed inspections to the actual safety performance of the carrier?

Targeted inspections might work for over the road long haul carriers. However, it doesn't work for industries that are in rural areas in a brief timeframe, where inspection stations aren't open. There needs to be some sort of process.

Concerns about needing to weigh the most recent inspections more heavily.

(No response, or rendered with other responses)

In Summary

If you were “King”, how would you improve the efficiency and effectiveness of the HMSP program?

From the ATA and NTTC for-hire perspective, they are supportive of the HMSP program and in fact favor more stringent requirements. This program is viewed from their members' perspective as both an asset from a marketing perspective, and a powerful defense mechanism for when they are involved in crash litigation. NTTC did mention that the way the program was going, if a carrier was put out of business, that could have economic consequences if the carrier was big enough regionally or nationally.

The common consensus of the remaining group of 6 trade groups of private carriers was to do away with the HMSP program. Other options are to suspend it until there are more resources; provide an additional level of review and due process then sunset the program; or fix HMSP so these industries aren't subject to CSA. In the meantime the program needs to be suspended.

The group of 6 also opined that there needs to be a process for small carriers to have an opportunity to make a case to come back into good graces – right now there's a problem with the 30% threshold and number of good inspections. The small carriers might be just as safe as larger carriers.

APPENDIX P: DETAILED WORK PLAN

Motor Carrier Hazardous Materials Safety Permit Study

BACKGROUND AND RESEARCH OBJECTIVE

1. Petition for Rulemaking

The petition titled “*Petition for Rulemaking – Hazardous Materials Safety Permit*,” and dated December 21, 2010, was filed jointly by five groups representing various segments of the industry. It provides proposals for regulation changes for consideration by FMCSA. The petitioners proposed possible ways to address the issue of FMCSA essentially putting an HMSP carrier out of business by declining to reissue or revoking the safety permit. The petition was accepted by FMCSA on November 14, 2011 in the Decision-On-Petition-for-Rulemaking. The Agency’s response to the petition agrees FMCSA will perform further analysis to develop recommended options. It essentially says FMCSA will study each of the points suggested by the petitioners. However, it says that will take place after a new final rule is finalized on how FMCSA will make Safety Fitness Determinations.

2. MAP-21 Requirement

Effective October 1, 2012, section 33014 of the Moving Ahead for Progress in the 21st Century (MAP-21) Act requires the Federal Motor Carrier Safety Administration (FMCSA) within one year to conduct a study of its Hazardous Materials Safety Permit (HMSP) program and report to Congress on the review’s findings, i.e., by October 1, 2013. The report requirement is to recommend ways in which the FMCSA could modify the existing regulations that specify the HMSP program to improve the efficiency and safety effectiveness of the program.

The Act further requires that within 2 years FMCSA either “...institute a rulemaking to make any necessary improvements to the HMSP program ... or publish in the Federal Register the Secretary’s justification for why rulemaking is not necessary.” A copy of the MAP-21 provisions is included as Appendix C.

One of the provisions in MAP-21 is for FMCSA to consider revising the existing regulations to create a second level of administrative review for renewals of HMSPs, in addition to that already specified in § 385.423(c). This addition of a second level of review would only apply to cases where renewal of the HMSP is denied based on one or more OOS rates, i.e., it would not apply to denials based on crashes.

A suggestion consistent with a second level of review could be for those violations that cause the carrier’s OOS rate to be too high, but which are not for imminent hazards, to be subject to a process similar to the provisions under § 385.17. Under such an approach the carrier could be afforded the opportunity to submit a Corrective Action Plan (CAP) to FMCSA explaining how they are going to lower their OOS rates. They could then be issued a Temporary Hazardous Materials Safety Permit (THMSP) while satisfying the agreed terms of their CAP.

3. HMSP Program

Creation of the Federal HMSP program was required by the Hazardous Materials Transportation Uniform Safety Act (HMTUSA) of 1990 (see Appendix D for text). This requirement for the HMSP program is codified at 49 U.S.C. 5109 and incorporated into the regulations in Title 49 CFR Part 385, Subpart E. Details of the program were specified in FMCSA's final rule for the HMSP program, which became effective for motor carriers on January 1, 2005. As required, it specifies numerous details necessary to create a program that are not included in the general requirements of the Act for implementing the HMSP program requirements.

Other than the general requirement that FMCSA must implement the HMSP program, including a minimum list of hazardous materials that must be included (see: 49 U.S.C 5109(b) in Appendix D), by design of the HMTUSA, the details of the existing HMSP program are almost entirely the creation of FMCSA by the final rule that became effective January 1, 2005. Thus, FMCSA has considerable flexibility in considering changes in the HMSP program via regulatory modification, consistent with the underlying Act, to make the program more effective in promoting safety, while minimizing unintended corollary damage to motor carriers who require a safety permit to operate.

Several concerns about the current program details raised by the petitioners and/or MAP-21 include:

A significant concern of the petitioners relates to the provision of 49 CFR § 385.407(a)(2), in which FMCSA denies issuance, or renewal of the HMSP for a motor carrier having a crash rate in the top 30 percent of the national average, i.e., at or above the 70th percentile. The provision also provides for denial of issuance or renewal of the HMSP for a motor carrier having a driver, vehicle, HM, or total OOS violation rate in the top 30 percent of the national average. The HMSP community was displeased that FMCSA was changing the values of the 70th percentile every two years based on collected safety performance data for the previous two years. Thus, a carrier could have been issued an HMSP, but when they reapplied for renewal of their HMSP two years later, the 70th percentile could have moved lower because of improved national average safety performance and that carrier no longer qualified for an HMSP.

For the short run, FMCSA addressed this petitioners' concern by creating a static rate that prevents a carrier from moving from a status of safe (below the 70th percentile) to unsafe (above the 70th percentile), based on the national average safety performance data in MCMIS of all carriers having improved.

However, this static approach has weaknesses. It sets the threshold rates for HMSP carriers higher than the average safety performance levels for all carriers. This can be thought of as a way to deal with the inspection process that dominantly selects/targets vehicles and drivers for inspection based on likely having problems. Thus, it is rare that inspections with no violations are recorded. Once a carrier gets a high OOS rate, the only way it will improve is with the passage of time, i.e., the inspections become old enough that they are excluded from calculation of the carrier's OOS rate for purposes of determining if they are eligible to renew an HMSP.

Another area of concern is State equivalent Hazardous Materials (HM) permits.

The Hazardous Materials Transportation Uniform Safety Act of 1990 (HMTUSA) created both section 5109 for a Federal Hazardous Materials Safety Permit, and section 5119 that authorized establishment of a working group to develop the requirements for Uniform Forms and Procedures for State HM registration and permit programs. Section 5119 of HMTUSA (see Appendix D for text) established that it would be required to issue regulations implementing the Uniform Forms and Procedures for State HM registration and permit programs either after 3 years from the date that the working group submitted its recommendations to Congress, or after 26 States had adopted all of the recommendations of the report produced by the working group.

This number of 26 States, i.e., the majority of States, contributes to an understanding that the Uniform Forms and Procedures is intended as a functional analogue to what was accomplished via other cooperative State programs. Examples include the International Fuel Tax Agreement (IFTA), the International Registration Plan (IRP), the Unified Carrier Registration (UCR) plan which replaced the Single State Registration System (SSRS), the Hazardous Materials routing, and the Commercial Driver License (CDL)/CDLIS programs. The goal is to standardize administration and collecting State fees/taxes for intrastate HM permits, while achieving a minimum level of improved safety performance.

However, SAFTEA-LU specifies a different timeline. Namely:

(f) <<NOTE: Deadline.>> Regulations.— Not later than 18 months after the date the working group's report is delivered to the Secretary, the Secretary shall issue regulations to carry out such recommendations of the working group as the Secretary considers appropriate. In developing such regulations, the Secretary shall consider the State needs associated with the transition to and implementation of a uniform forms and procedures program.

This seems to say the Secretary is required to issue a regulation implementing the Uniform Forms and Procedures, and that consideration should be given to a Federal support program to assist bringing it to fruition. This would be a consistent extension of the fact that Federal grant funds were provided to assist the creation and functioning of the HM working groups. Federal grant funding of the working group was terminated at the end of 2009 for the Uniform program.

Additionally, attention was to be given to marrying the Federal HMSP required by section 5107 of the HMTUSA of 1990 with the section 5119 specified State program. The following statements in the HMTUSA make it clear that the Federal and State programs were intended to be harmonized. "After a regulation is effective (Federal), a State may establish, maintain, or enforce a requirement related to the same subject matter only if the requirement is the same as the regulation." "In consultation with the working group, the Secretary shall develop a procedure to eliminate differences in how States carry out a regulation prescribed under this subsection." See Appendix D for a copy of the HMTUSA section 5119.

That harmonization is reflected in how the existing HMSP regulation specifies the application process for a carrier to obtain a Federal HMSP, as follows.

49 CFR § 385.407(a)(ii) says the motor carrier –

Must have a “Satisfactory” safety rating assigned by either FMCSA, under the Safety Fitness Procedures of this part, or the State in which the motor carrier has its principal place of business, if the State has adopted and implemented safety fitness procedures that are equivalent to the procedures in subpart A of this part. (Emphasis added)

49 CFR 385.411 states:

Must a motor carrier obtain a safety permit if it has a State permit?

Yes. However, if FMCSA is able to verify that a motor carrier has a safety permit issued by a State under a program that FMCSA has determined to be equivalent to the provisions of this subpart, FMCSA will immediately issue a safety permit to the motor carrier upon receipt of an application in accordance with § 385.405, without further inspection or investigation.

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy For Users of 2005 (SAFETEA-LU) in section 7116 again directed the Secretary of Transportation to convene a working group of State and local government officials to look into creating a Uniform HM permit program across all States for them to permit hazardous materials carriers and collect State fees. See Appendix D for a copy of the SAFETEA-LU revised version of the section 5119 Uniform Forms and Procedures.

The statement “...for the Secretary to harmonize existing State registration and permit laws and regulations relating to the transportation of hazardous materials” reiterates that the Federal HMSP program should be harmonized with the State HM permit program that would be developed by the State working group.

A relatively clear purpose for developing uniform forms and procedures for a State to register, and to issue permits is to create a more national standardization of State permitting requirements. In response to the HMTUSA of 1990, a report was developed and forwarded to Congress. The threshold of 26 States, set forth in the HMTUSA, adopting the proposed program was never achieved, and thus no regulation was issued. That leaves unanswered the requirement of SAFTEA-LU section §7116(f), as part of the amendment of HMTUSA section 5119, stating that the regulation MUST be issued in 18 months after the date the working group’s report is delivered to the Secretary.

In response to the SAFETEA-LU requirement, reportedly in 2008-9 a draft agreement was reached to foster moving forward to achieve more standardization.

The criteria by which FMCSA presumably would determine State program equivalency are the provisions of Subpart E of 49 CFR Part 385, i.e. the requirements for obtaining and maintaining a hazardous materials safety permit.

Since no rule has been issued establishing procedures for determining if a State HM registration or permit program is equivalent to the Federal regulations, there are no procedures for making such a determination. We note that some States under the MCSAP program, are conducting CRs on behalf of FMCSA, and they result in assignment of a safety fitness rating to those carriers.

However, at this time for purposes the HMSP program, FMCSA is not able to verify if a State program has implemented an equivalent safety fitness rating program, and FMCSA does not issue HMSPs based on a motor carrier having satisfactorily met the criteria of the State in which the motor carrier has its principal place of business who issued a safety permit to that motor carrier.

MAP-21 requires this research project to review the criteria used by the Federal Motor Carrier Safety Administration to determine whether a hazardous material safety permit issued by a State is equivalent to the Federal permit. Since there is no criteria in the regulations, we interpret this to mean this project should evaluate and recommend whether FMCSA should proceed with developing such an equivalency with the States that are in the Uniform Program.

Additional information is contained on the website for the National Conference of State Legislatures which can be found at <http://www.ncsl.org/issues-research/transport/alliance-for-uniform-hazmat-transportation.aspx>.

The industry segments who must obtain an HMSP include specialized private haulers as well as more general for-hire haulers. Since some portion of HMSP private carriers use highly specialized equipment, denial to renew the HMSP essentially means that their ability to continue to conduct their primary business is severely impacted for up to 12 months, because this is the time that FMCSA currently looks back to determine OOS rates for HMSP applicants. The denial to operate under an HMSP also means it is improbable that carrier can receive any inspections that might contribute to lowering their OOS rate during that time. This can result in such denied carriers being forced out of business.

This creates a considerable incentive for such denied specialized carriers to take actions like reincarnating themselves, or leasing on to another carrier with an HMSP, in order to stay in business. Recently it is reported some such denied HMSP carriers are thus continuing to operate under a new USDOT number or the USDOT number of the carrier they leased onto.

Note, while there is a provision for denying to reissue an HMSP based on the carrier's safety performance exceeding the 70th national average percentile, there is no provision in the current regulations for an HMSP motor carrier to have their HMSP suspended or revoked based on exceeding the 70th percentile during the term of their HMSP. The dominant safety related provision for suspension or revocation is if the carrier receives a CR that results in a determination of less than satisfactory safety rating. This might be something worth visiting when considering how to strengthen the HMSP program. It is suggested elsewhere that maybe something like the CSA intervention process might be appropriate.

Project Tasks.

The MaineWay Services Team understands that the results of this research are intended to provide inputs to a rulemaking to modify the HMSP program, or provide the justification for why FMCSA is not going to issue a rulemaking.

The Team also understands that FMCSA follows a practice of requiring all such research to be peer reviewed by independent experts as a double check on the veracity of the research and its findings. It is prepared to work with a peer review group in its review of the statement of work and other appropriate elements of the project. The Team also understands that the data analysis for this project should be based on recent MCMIS data.

This document should be considered a supplement to the statement of work submitted by MaineWay Services in response to the Call Order, which sets out in more detail the Team's commitment to the period of performance and details about the formatting of the final report, other contract requirements, and reference materials.

Phase I – Report to Congress

The MaineWay team will address two distinct components of the HMSP program: 1) program administration efficiency, and 2) safety performance effectiveness. Much of the information for identifying how the program could be made more efficient is likely to come from those involved in running the program within FMCSA, PHMSA and from interested members of the industry. Most of the information about safety performance effectiveness is expected to come from analysis of safety performance data from the Motor Carrier Management Information System (MCMIS).

Task 1. Detailed Work Plan and Kick-Off Meeting

MaineWay prepared this detailed draft work plan for presentation and discussion at the Project Kick-Off meeting for this research at FMCSA headquarters on March 21, 2013. Based on information gained from that discussion the Team updated this Detailed Work Plan. Based on a detailed working session on April 18-19, 2013 the team further updated this detailed work plan.

Task 2. Interview stakeholders.

FMCSA's Policy office had Booz, Allen, Hamilton perform a study of the HMSP program. That study was based almost entirely on interviews. No analysis of MCMIS safety performance data was performed. The final report from that study, dated February 3, 2010, provides their findings from the interviews. The report was made available to the members performing this research as background information.

In order for the MaineWay Team to gain detailed knowledge of how the present HMSP program operates, its operational inefficiencies, and what impacts the program has on aspects of the industry, the Team will review the information available from the February 3, 2010 Booz, Allen Hamilton report on the HMSP program, and use it in part to inform the approach used to gather information from internal and external stakeholders, some of whom may have been part of the Booz, Allen Hamilton data gathering. The Team will focus on the issues involved in responding to the Congressional requirement for review of the HMSP Program, and on issues raised in the petition for rulemaking that FMCSA said it would consider.

Information gathering from internal Federal employees will include personnel in FMCSA's Hazardous Materials Division, Field Hazardous Materials Program Managers (HMPMs), other Field personnel with involvement with the Hazardous Materials program, and PHMSA.

Appendix A to this Plan is a list of interviewees suggested by FMCSA, along with question sets for the interviews.

The Team will also conduct interviews of the following external stakeholders, using the question sets referred to above. In compliance with the paperwork reduction act, as administered by the Office of Management and Budget (OMB) the external interviewees are restricted to nine.

Institute of Makers of Explosives (IME)

The Fertilizer Institute (TFI)

American Pyrotechnics Association (APA)

Agricultural Retailers Association (ARA)

National Association of Chemical Distributors (NACD)

National Tank Truck Carriers (NTTC)

American Trucking Associations (ATA)

Dangerous Goods Advisory Council (DGAC)

National Conference of State Legislatures/Alliance for Uniform Hazmat Transportation Procedures (NCSL/Uniform Program)

Task 3. Review list of hazardous materials requiring a safety permit.

The MaineWay Team will review the list and quantity thresholds of Hazardous Materials specified in §385.403 that require the motor carrier to obtain an HMSP from FMCSA in addition to registering with PHMSA as a hazardous materials transporter. The goal of this task is to provide guidance on whether the minimum list contained in the HMTUSA of 1990, and especially the quantity thresholds established by FMCSA in §385.403, should be revised in any way for reasons of safety. In addition to considering the risk of different classes of hazardous materials, this review of the materials covered by the HMSP program will consider what impact any such changes would be expected to have on improving the safety of hazardous materials safety permit transportation.

The Team will seek out views of staff from FMCSA and PHMSA, experts, and scientific literature that can shed light on how risks associated with various hazardous materials, and especially the quantity thresholds, should be evaluated. The team will also consider the original criteria for determining which materials require a safety permit, and the processes that led to these criteria and related determinations.

Task 4. Permits issued, denied, suspended or revoked

Within the limits of the data in MCMIS, the Team will identify and count the permits that were denied, suspended and revoked for the reasons specified in §385.407 and §385.421. MCMIS will

be the primary data source for this task. If there are limitations on what can be accomplished with existing MCMIS data, the Team will identify these limitations and make recommendations on how they could be remedied, thus enabling better program evaluation in the future.

Further, within the limits of available data, the counts of how many in each category were later issued an HMSP will be determined. In analyzing the reasons for the action, the analysis will include not only substantive reasons for action, but also administrative reasons, such as denial for failing to file a proper application. These reasons will be related to the respective numbers of carriers for each reason.

These data will also be analyzed in context of the overall number of carriers, and carriers transporting HM.

Data for measures such as percent of inspections resulting in driver, vehicle, and hazmat OOS orders, and crash rates will be calculated for all hazmat carriers, and for all carriers, in addition to just for carriers with permits.

Similar comparisons may be made on violations for items identified in comprehensive investigations.

This will also include exploration of how the thresholds that can cause denial are currently calculated. Further, in addition to exploring the way that these thresholds are currently calculated, the team will provide documentation of how the thresholds are calculated that can be used in presentations to stakeholders, to assist stakeholder understanding of how the program currently operates.

With respect to the current threshold calculation, the Team will also seek to summarize the impact on carriers based on existing MCMIS data.

Also included in this analysis will be a review of denied, suspended and revoked carriers for indications of possible reincarnation. The Team is aware of and will take into account an FMCSA ad hoc study of denied, suspended or revoked HMSP carriers located in the northeast to see if it appears those carriers may have tried to reincarnate themselves in order to get a new HMSP. This analysis, among other possibilities, will expand on the ad hoc study by utilizing methods developed in the “Spreading Violations to Evade Enforcement Actions” study.

A Process Flow Chart relating to this task and the following task is included as Appendix B.

A workload analysis will also be conducted as part of this task to determine the amount of work involved in the processing of these applications, particularly in the context of a denied, suspended or revoked permits and the nature of that action. We have been advised the current software supporting the HMSP program functions requires staff to spend considerable time making manual corrections and adjustments to accurately manage operations. We will attempt to provide insight into how much the current manual workload could be improved with revisions in the HMSP software supporting administration of the program. This is expected to be primarily obtained as part of the interviews of FMCSA HM personnel under Task Two.

Task 5. Number never denied, revoked or suspended.

The number of commercial motor carriers that have never had a permit denied, revoked, or suspended since inception of the program will be analyzed. While it seems that this should be a simple task, preliminary analysis has already identified that it is not. This is due to issues with the design of the supporting information system processes and tables of data maintained by MCMIS. Appropriate methods for estimating this measure will be explored. This will be one of the areas where recommendations will be made for improving the data system to enable better future program evaluation.

Appendix B is a Process Flow Chart which includes this task. (Omitted from this copy.)

Task 6. State Equivalent HM Programs

As mentioned in the background above, the minimum number of States specified in the HMTUSA, 26, have not adopted the Uniform Forms and Procedures. However, section 7116(f) of SAFETEA-LU requires the Secretary to issue a regulation. "In developing such regulations, the Secretary shall consider the State needs associated with the transition to and implementation of a uniform forms and procedures program."

Thus, depending on which Act FMCSA decides is the current guiding law, FMCSA either does or does not have guidance on whether it should have a role regarding implementation of equivalent State programs. The Team will work closely with both the NCSL/Uniform Program and FMCSA in describing what the Uniform program would be, advantages of it being widely implemented, and general types of costs that would be associated with doing so.

The majority of States have their own individual intrastate HazMat permitting or registering programs (44?). With no standardization, those programs vary considerably among themselves and from the Uniform Forms and Procedures developed with Federal assistance, and FMCSA's HMSP program. The Team will coordinate with the NCSL/Uniform Program about the considerable work previously facilitated by Federal support. Under previous efforts under both HMTUSA and SAFETEA-LU a detailed Administrator's Manual was developed on procedures for making the permitting/registration process uniform across adopting States.

The Uniform program is very like what was done in the Single State Registration System (SSRS), now revised to be the Unified Carrier Registration (UCR) plan. Namely, under the UCR the States collect fees from motor carriers, motor private carriers, freight forwarders, brokers and leasing companies, based on the number of qualifying commercial motor vehicle power units. The revenues generated must be used for enforcement of motor carrier safety programs.

The Uniform Forms and Procedures program under NCSL has five States currently participating. These are compatible with each other and with FMCSA's HMSP program.

As mentioned above, FMCSA is required by the HMTUSA to write a Federal rule for recognizing a permit issued under the Uniform Forms and Procedures as equivalent to the Federal HMSP, if 26 States adopt the program. As noted in the background discussion above, it appears SAFETEA-LU sec. 7116(f) requires the Secretary to write a rule within 18 months after receiving the recommendations of the working group. It is now later than 18 months after

receiving that report. This requires consideration of what role FMCSA should play in facilitating adoption of the Uniform Program by States?

For example, should FMCSA implement this equivalency now for the benefit of carriers based in the five compatible States? This could also create a greater incentive for other States to join the Uniform program.

If FMCSA would not issue such a rule for the five States currently participating in the Uniform program, would FMCSA consider writing the required rule for a lower number than 26 States? Does FMCSA even have this option of not writing the rule now? Note, since this project will be making recommendations for changes in the HMSP program, the Team needs to be aware these changes will also impact the NCSL's Uniform Program, which will need to be revised to conform.

There are numerous examples of variations of federal roles that have and are assisting implementation of other programs by the States. Examples include, International Registration Program (IRP), International Fuel Tax Association (IFTA), the Commercial Driver License (CDL) and its associated information system (CDLIS). In these cases assistance was provided, including funding to help build a central processing capability to be shared by all the member States. In the case of CDLIS it also included assistance to establish a telecommunications network for the States, and individual State assistance for implementation.

For the Commercial Vehicle Information Systems and Networks (CVISN) and for the Performance and Registration Information Systems Management (PRISM), FMCSA provides grant funds to assist the States in implementing those capabilities. For the Motor Carrier Safety Assistance Program (MCSAP) FMCSA provides grant funds to assist in the processes of enforcing the Federal Motor Carrier Safety Regulations (FMCSRs).

There is ongoing Federal oversight of the CDL and CDLIS efforts through minimum regulations, and compliance criteria. There is ongoing involvement with the UCR through a board of directors appointed by FMCSA to administer the UCR plan under FMCSA oversight. Like in the CDL program, the HMTUSA of 1990 establishes continuing oversight responsibility for the Secretary regarding compliance of the Uniform program with the Federal HMSP. If the Uniform program were recognized by FMCSA, there would be a need for Federal resources to carry out that oversight responsibility.

The goal that will be pursued in the Report to Congress will be to present a description of the Uniform program as specified in the Administrator's Manual, i.e., how the States have agreed it is intended to work. This will be followed by a discussion of advantages of implementation and new resource requirements that would be associated with FMCSA proactively fostering and pursuing establishment of the Uniform program.

Some examples of advantages and new resource requirements to be considered for the report include:

A discussion of the possibility that FMCSA could turn much of the daily program activities over to the States, the way it has for Hazmat Routing, UCR, and CDL/CDLIS. However, there are

also the resource requirements for enabling Federal oversight and compliance roles that are required and must be supported.

A clear advantage of implementation of the Uniform Program is it could establish one-stop-shopping for State HMSP permits nationwide. It could also make the State programs to have a safety orientation, like with the UCR plan. The Administrator's Manual developed for the Uniform program limits the fees that can be charged and specifies they must be used for safety purposes. However, this may be problematic. HMTUSA forbids the Secretary from specifying any limit on fees. SAFETEA-LU forbids the working group from specifying any limitation on State fees.

One group of resource needs include: support the States in ramping up; and creating a central site capability. Based on the answer that FMCSA must establish an oversight role, there would be a need for resources to set up a method for determining and enforcing compliance of the States in the Uniform program with FMCSA's standards for the HMSP program. Perhaps as part of the compliance effort, or as a separate occasional assistance provided to States by FMCSA, a way to deal with a very large carrier in a State that may have too much instate leverage that might dissuade a State from taking deserved punitive action against that carrier's permit.

These are just examples of issues that will need to be developed and explained.

Task 7. Recommendations on How to Improve HMSP Program

After conduct of interviews and data analysis, the Team will synthesize results and present a policy options framework for initial FMCSA review at a progress meeting, and based on feedback at that meeting, develop recommendations for improvements to the HMSP Program. This meeting was held on April 18-19, 2013. This revision of the detailed work plan flows from that working meeting.

As enumerated in MAP-21, this will include consideration of establishing a new second level of administrative fitness review as part of the renewal process for an HMSP permit. The Team will also recommend whether or not there should be an opportunity for an additional level of fitness review based on safety performance data during the two-year period of a permit, i.e., prior to the denial of a renewal of a safety permit?

The following additional considerations and concepts will be included in the Team's considerations of potential recommendations.

For example, the Team will address the question of whether FMCSA should consider implementing interventions with HMSP carriers during the 2-years of the HMSP using an approach modeled after a CSA like approach or a new entrant Expedited Action like approach. Any such approach could have initial interventions, i.e., not necessarily start with suspension or revocation of the HMSP. Interventions could start being applied at a lower threshold than the 70th percentile and be initiated at any time. They could also be based on more specifics about which violations the MCMIS data indicate are closely related with crashes. However, any such progressive process would end with a suspension or revocation of the HMSP if earlier tiered interventions did not produce the desired safety improvements.

The Team will also address the question of how FMCSA could provide policy flexibility within the HMSP regulations for addressing minor or specific issues. For example, how should credentials be addressed for a tow truck that needs to provide service to a disabled HMSP load that might be overturned on a highway that needs to be reopened for traffic as soon as possible? Or are there already procedures for handling this?

The MaineWay Team will identify a range of possible ideas that could be implemented to improve the efficiency and safety effectiveness of the HMSP program. The Team will obtain a number of ideas from review of the Booz Allen report and follow-up with the stakeholders under task 2 above.

The ideas approved for more detailed development will be augmented with an examination of MCMIS safety performance data to identify how the performance of HMSP motor carriers relates to the safety performance of non-HMSP carriers.

The Team will specifically address the question of whether FMCSA should continue to rely on a motor carrier having a Satisfactory Safety Rating as a prime indicator of motor carrier safety performance for new HMSP applicants. At the outset, the Team understands that there are at least two distinct paths by which a motor carrier can currently get a safety rating.

For a new entrant motor carrier that applies to transport hazardous materials that requires an HMSP, a carrier is subject to meeting the minimum application requirements, including meeting the OOS threshold requirements, and automatically receive a temporary HMSP (THMSP). For a new entrant, it is almost impossible not to meet the OOS threshold requirements. Thus all new entrants are virtually automatically qualified to receive a THMSP, subject to meeting the other application requirements. Related questions on this approach are should the bar be raised for obtaining a THMSP, i.e., should the criteria for issuing a THMSP be made more stringent? The Team will consider what impact such a change would have on the ability of motor carriers to enter the business of transporting commodities requiring an HMSP. The key question here is whether this is something FMCSA should consider, or whether the safety considerations trump concerns about making it harder for a new motor carrier to enter the business.

Within 6 months after receiving a THMSP, such new entrant carriers must receive a hazmat compliance review (CR). Presumably within six months most are still unlikely to receive enough adverse safety performance data to fail the OOS thresholds. Assuming the carrier has any reasonable level of due diligence for meeting the CR requirements and the additional requirements, most new entrants would be expected to receive a permanent two-year HMSP following the CR. Note. This could be another reason fostering reincarnation.

However, there is another possibility. There are existing carriers that have a previously issued USDOT number, i.e., they are not new entrants, but do not have an HMSP. They can update their MCS-150 to indicate they are becoming a hazmat hauler, if not already done, register with the Pipeline and Hazardous Materials Safety Administration (PHMSA), and apply to FMCSA for an HMSP under their existing USDOT number. Some such older motor carriers may have a previously issued safety rating issued many years ago when a more lenient procedure was used for assigning a safety rating, and they have never been revisited. Should such a safety rating issued years ago qualify that motor carrier for receiving an HMSP based on a possibly very old,

satisfactory safety rating? Or, should the requirement be changed to instead require all applicants for an HMSP to receive a THMSP, and require a CR within 6 months, thus forcing all HMSP applicants to obtain a current safety rating?

In addition, should a safety rating of satisfactory for an HMSP carrier be allowed to continue indefinitely qualifying them for renewal of their HMSP without some form of review? Should HMSP carriers be held to a more rigorous process for identifying them to receive a new CR?

The Team will consider the situation in which roadside inspections were made of carriers transporting HMSP commodities, in quantities that require a safety permit, but the carrier did not have an HMSP. As an indicator the Team could use the HM violations cited on inspections that might indicate a HMSP commodity for a non-permitted carrier. The issue will be identifying quantity carried. Another possibility might be to seek out incident reports from PHMSA on permittable materials and check to see if the carrier has a HMSP. It is reported that the PHMSA database does not contain data that easily allows linking of MCMIS data with PHMSA's incident data. If this is a significant enough issue, is it important to proper administration of the HMSP program for the PHMSA database to be modified. If so, how?

This analysis will also include a quantitative analysis of the 'what if' safety performance effectiveness. Namely, what would have been the impact if the recommendations in this study had been applied in the past? If the petitioners' recommendations are not recommended by this study, the rationale for not recommending the petitioners recommendation will be outlined.

It appears the basis of the petitioners assertion of biased crash reporting is reports published by ATA. The data represented in that report likely was for prior years, i.e., does not represent the current status of crash reporting by States. FMCSA has had an ongoing crash reporting data quality program in recent years. This analysis will include consulting with the FMCSA team responsible for oversight of crash reporting by States to MCMIS to see what further insights are available about the concern of regional bias of crash reporting by State, and its current status. Other factors that will be considered:

Previous analysis performed for FMCSA documented there are substantial geographic variations by State in the numbers of violations and OOS orders issued. Consideration will be given to how such differences might be weighted to be more nationally equitable. This will include consideration of whether a VMT adjustment, such as recently implemented in SMS, should be included, as suggested by the petitioners.

While not explicitly labeled by the petitioners, there is a clear implication in the discussion that the current method of determining whether an HMSP carrier should be denied, suspended or revoked is strongly influenced both by the selection processes of whether a carrier is selected for an inspection from which it receives an OOS order, and the size of the carrier. This analysis will include ideas for how the selection processes, carrier size, type and number of OOS orders might be better handled.

A key question in this review relates to the effectiveness of the program in influencing safety results. Thus the Team will review the program's safety effectiveness from the perspective of existing measures, including:

Crash rates during specific years,
Crash rates before and after events.
Percent of inspections resulting in:
Driver OOS orders,
Vehicle OOS orders,
Haz-Mat OOS orders, and
Any OOS order.

In addition, an analysis will be made of carriers with HMSPs that have the very highest OOS rates, e.g., the 10 percent test suggested by the petitioners, to see if the 10 percent or some other level is a good indicator. In order to support what-if analysis, other thresholds may be tested, as well.

Task 8. Analysis of CAP Proposal

Note. Based on the concept developed at the April 18-19, 2013 working session, the preferred alternative is not to add a new second level review in the form of a CAP as part of the permit renewal procedures. Instead, the preference is to take advantage of the existing processes that use a CR to determine safety fitness. If a CR results in less than a safety rating of satisfactory, there already is an existing second level of review provided by 49 CFR 385.17 for those carriers.

This task was presented separately because it was unknown whether a new second level of review might be created within the existing regulation. One of the options analyzed for this study does preserve this option, and thus analysis of this alternative will be performed under this task.

MAP-21's HMSP requirements are inconsistent. It requires recommendations for improving the HMSP program, but then recommends consideration of a second level of administrative review, particularly for renewals. This recommendation seems based on an assumption the regulations specifying the HMSP program will remain largely intact, in spite of recommending FMCSA revise them. Therefore the MAP-21 recommendation for a second level of review represents a suggestion for a specific variation in the existing specifications as a way to address the denial of renewing an HMSP. As part of performing the analysis of this alternatives, the Team will look at the following additional data:

Likely staffing implications of the proposed CAP program, Federal and State.

Follow-up requirements necessary to ensure the CAP conditions would be met. This includes consideration of whether the monitoring would be based solely on safety performance data routinely collected by FMCSA.

Possible need for third party assistance, and a fee structure to support it.

Options for funding third party assistance, if needed

Whether FMCSA should proceed with a rulemaking to implement a CAP based administrative review alternative rather than modify the existing program to remove the need for such a “fix”.

Task 9. Rule Language

Based on recommendations made in the draft report to Congress, the Team will prepare specific recommendations, in annotated outline form, for draft rulemaking language. These will be available to the rulemaking committee that FMCSA will assemble.

Phase II – HMSP Program Details for Rulemaking

Task 10. Advisory Expertise

Based on availability of funding, the Team understands that FMCSA reserves the right to exercise an option to obtain ongoing expertise support representing the HMSP program requirements to support the rulemaking team drafting the congressionally requested rulemaking to change the HMSP program.

APPENDIX A (of Detailed Work Plan)

HMSP PROJECT INTERVIEW TOPICS AND TARGETS FOR INTERVIEWS

INTERVIEW TOPICS

General Questions

1. What activities are you currently involved in that relate to the HMSP Program?
2. What problems have you incurred in your dealings with the HMSP Program?
3. What changes do you see as needed in the HMSP program?
4. Has the program reduced crashes and incidents in the HMSP holder population?
5. What do you see as the benefits of the HMSP Program?
6. What do you see as the detriments of the HMSP Program?
7. Should the list of HMSP Commodities be revised?
 - a. If so, How, and Why?
 - b. How should the degree of risk that warrants a safety permit be determined?
 - c. How would you define severity of an HMSP crash?

Permit Denial (Initial and Upon Request for Renewal), Suspension, Revocation

1. Should the processes of Denial, Suspension, or Revocation of a Safety Permit be revised?
2. If so, in what way?
 - a. Do you have an opinion on the effectiveness of current criteria used for denying reissuance, suspending or revoking an HMSP based on the current safety performance criteria?
 - i. Your view of the 30% threshold process?
 - ii. Should different thresholds be used for the different categories of violations, e.g., driver, vehicle, hazardous materials?
 - iii. Should a second level of administrative review be incorporated, particularly for renewals?
 - iv. If so, describe the process.
 - b. Are you aware of the potential that denied, suspended or revoked HMSP carriers may be attempting or succeeding in reincarnating themselves in order to restart

with a new HMSP? Are there incentives in the current process that encourage this?

- c. Are you aware of the potential or practice for HMSP carriers who are denied reissuance, suspended or revoked to go lease on with another HMSP carrier to be able to continue operating in the industry?
- d. How should flexibility be incorporated within the regulations for addressing minor, specific issues? (For example, how should credentials be addressed for a tow truck that needs to provide service to a disabled HMSP load that might be overturned on a highway that needs to be reopened for traffic as soon as possible?)
- e. Should an intervention process during the 2-year HMSP be implemented along the lines of the CSA processes, for:
 - i. All HMSP carriers as part of 49 CFR 385.421; or
 - ii. For a possible suspension or revocation for an OOS threshold-rate prior to denial of a safety permit reissuance?
 - iii. If so, describe the process.

Qualification for HMSP Carriers and/or Drivers

- 1. Should the standard for safety performance of HMSP motor carriers be higher than the standard by which non-HMSP hazmat carriers are judged?
 - a. Should the criteria for issuing a THMSP be made more stringent?
 - b. Should there be special criteria (e.g., training) for a new entrant to obtain a Temporary HMSP?
 - c. A study of fostering adoption of a safety culture in new entrants in general is very promising on improving safety performance. What effect would a HMSP-specific safety culture training program have on the overall safety performance of carriers in the HMSP Program?
- 2. Should FMCSA continue to rely on a motor carrier having a current Satisfactory Safety Rating as a prime indicator of motor carrier performance for new HMSP applicants?
- 3. Should the safety rating expire for purposes of issuing or reissuing an HMSP, i.e., should a new safety rating be required from time to time, e.g., after 4 or more years?

4. Should the qualification of an HSMP be based upon or integrated in the Safety Measurement Systems being used in CSA? That is, should relative BASIC scores be used to evaluate applicants for continuing to hold an HMSP permit?
5. Should there be strengthening of the Driver requirements for HMSP operators, e.g., could consider Unsafe Driving BASIC scores or other driver performance criteria?
6. Should there be a HMSP driver credential requirement similar to the TWIC, that is issued by TSA, that is above the CDL H endorsement, e.g., in your opinion, should there be special training requirements for HMSP operators that exceeds the current certificate for training required for drivers with a H endorsement?
7. Should drivers with an H endorsement be required to carry a copy of their current certificate of hazmat training, especially if engaged in an HMSP movement?
8. If HMSP drivers are required to have additional training, should they have to carry a current certificate of that HMSP training?

Data Support/Applications Process

1. Are you aware of any IT changes that should be made to MCMIS supporting the HMSP program, such as the renewal process? If so, what priorities would you suggest?
2. How can MCMIS better assist you with the HMSP process?
3. Can you identify serious problems with processing HMSPs -- (e.g., Length of time to process?)

Enforcement

1. What enforcement activities do you believe are most effective for accomplishing the overall safety goal of the HMSP program?
2. Are there enforcement activities that you believe should be modified, repealed, or implemented?

Carrier Concerns

What kind of feedback have you received from carriers regarding HMSP --

1. Processing of applications, or renewals?
2. Concern over borderline status of denial, suspension, and revocation of HMSPs?

3. Concerns relating to reinstatement of carrier HMSPs?
4. Concerns relating to requirements for obtaining HMSPs?
5. Concerns you are aware of that the industry has with the current process?
6. Concerns verifying validity of HMSP by shippers?
7. Concerns about a bias of the inspection process against LTL carriers for hazardous materials violations largely relating to load securement.
8. Concerns about the difficulty of getting a clean inspection and getting it reported to MCMIS.
9. Concerns that many inspections are targeted, i.e., the vehicle is only stopped and inspected if a violation is observed. This can over represent failed inspections to the actual safety performance of the carrier.
10. Concerns about needing to weight the most recent inspections more heavily.

Uniform Forms and Procedures

Considerable work on crafting an agreement for Uniform Forms and Procedures for a program of State HM registration and permitting has been accomplished by the repeated working groups.

1. What are the impediments that have prevented moving forward with a program of Uniform Forms and Procedures among a larger number of States?
2. What might it take to achieve a State Program that is embraced by a larger number of States?
3. Is more Federal participation needed to such foster progress, e.g., targeted incentives?
4. Would it require congressional authorization for FMCSA to engage in providing targeted incentives?
5. Could the Federal rule for the HMSP be revised in a way that would create more incentives for States to join the Uniform Forms and Procedures agreement, e.g., create equivalency between the Federal HMSP and the programs of the five States that are members of the State program?

In Sum

1. If you were “King”, how would you improve the efficiency and effectiveness of the HMSP Program?

LIST OF INTERNAL STAKEHOLDERS

Federal Motor Carrier Safety Administration Headquarters

1. William Quade, Associate Administrator for Enforcement
2. John Van Steenburg, Chief Safety Officer and Assistant Administrator
3. Joseph DeLorenzo, Director, Office of Enforcement and Compliance
4. Paul Bomgardner, Chief, HM Division
5. John Hardridge, Team Leader, HM Division
6. Roxane Greene, Transportation Specialist, HM Division
7. Suzanne Ellis, Transportation Specialist, HM Division
8. Tyrone Gibbs, Transportation Specialist, HM Division
9. Lorenzo Allen, HM Liaison, IT Development
10. Scott Valentine Team Leader, Data Analysis and Reports (DART)
11. Debra Straus, Attorney, Office of the Chief Counsel
12. Courtney Stevenson, , Transportation Specialist, CSA, Office of Enforcement and Compliance
13. Barbara Baker, Team Leader, IT Requirements Development (Volpe COR)
14. Jamie Vasser, Team Leader, IT Testing and Evaluation (Volpe COR)

Federal Motor Carrier Safety Administration Field Staff

1. Darin Jones, Field Administrator, Midwestern Service Center
2. DaVina Farmer, Service Center Director, Midwestern Service Center
3. Kris Phillips, HM Program Manager, Midwestern Service Center
4. Daniel Drexler, Division Administrator, Minnesota
5. Elyse Mueller, Division Administrator, Nebraska
6. Mike Mannikko, HM Specialist, Wisconsin/Minnesota
7. Melissa Townsend, HM Specialist, New York
8. Tony Kryfka, HM Specialist, Virginia
9. Arthur Ramsey, HM Specialist, South Carolina
10. Joe Hardridge, HM Specialist, Oklahoma
11. Chris Rotondo, Division Administrator, New Jersey
12. Jerry Kirk, Division Administrator, Oklahoma

13. Terry Wolf, Field Administrator Western Service Center
14. Joanne Cisneros, Division Administrator, Texas
15. Dave Ford, HM Program Manager, Southern Service Center
16. Richard Swedberg, HM Specialist, Western Service Center
17. Don Tomlinson, HM Specialist, California
18. Ray Straw, OSHA Program Manager.
19. Diane Podany, State Program Manager, Nebraska
20. Kevin Ertz, Safety Investigator, Nebraska
21. Art Fleener, State Program Manager, Iowa

Pipeline and Hazardous Materials Safety Administration (PHMSA)

1. Ryan Posten, Deputy Associate Administrator for Programs and Policy, 366-0656
2. Jack Albright, Chief Information Officer, 366-1670
3. Adrian Carter, IT Specialist/Project Manager, 366-0230
4. James Simmons, Acting Chief Research and Development, 366-5535
5. Margret (Peg) Carson, Investigator, 781-396-2221

External Stakeholders

1. Institute of Makers of Explosives (IME), Washington, D.C.
2. The Fertilizer Institute (TFI), Washington, D.C.
3. American Pyrotechnics Association (APA), Bethesda, MD
4. Agricultural Retailers Association (ARA), Washington, D.C.
5. National Association of Chemical Distributors (NACD), Arlington, VA
6. National Tank Truck Carriers (NTTC)
7. American Trucking Associations (ATA)
8. Dangerous Goods Advisory Council (DGAC)
9. National Conference of State Legislatures/Alliance for Uniform Hazmat Transportation Procedures (NCSL/Uniform Program), Jim Reed, Denver, CO | Washington, D.C.

APPENDIX B (of Detailed Work Plan)

[omitted]

Appendix C (of Detailed Work Plan) [omitted]

MAP-21, SEC. 33014. MOTOR CARRIER SAFETY PERMITS.

See APPENDIX A

Appendix D (of Detailed Work Plan) [omitted]

HMTUSA of 1990 Sec. 5109. Motor Carrier Safety Permits

See APPENDIX A

HMTUSA of 1990 Sec. 5119. Uniform Forms and Procedures (as in)

See APPENDIX A

**Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy For Users of
2005 (SAFETEA-LU)**

Pub. L. 109-59, title VII, §7116

See APPENDIX A

APPENDIX Q: CRASH PREDICTIVE VALUE OF INSPECTION VIOLATIONS AND OOS ORDERS

The assertion was made in the HMSP petition to FMCSA that issues of compliance with FMCSRs and CVSA OOS criteria are not crash causal, and thus should not be used to determine if a HMSP can be renewed.

FMCSA makes no assertion that there is a causal relationship between receiving an FMCSR violation or an OOS order. Analysis has found a very strong correlation between FMCSR violations, OOS orders and carrier crash performance.

In order to illustrate this for this report, data was used from the year 2010. The data analyzed is for all carriers, not just for HMSP carriers. This is because crashes are such infrequent events that a large data set is required to avoid the excessive impact of randomness.

CRASHES FOR INSPECTED CARRIERS IN 2010

In the calendar year 2010, 223,800 carriers received roadside inspections and had a valid ratio of power units and drivers (i.e. had no more than 5 drivers per power unit, or 5 power units per driver.) Of these,

- 30,552 carriers had at least one crash in 2010.
- These carriers had a total of 73,609 crashes in 2010.
- These carriers had a total of 2,717,312 power units in the census snap shot at the end of the year 2010.

Based on this data, these carriers had an average of 2.71 crashes per hundred power units.

As with all averages, there are carriers with less and carriers with more crashes. The goal here is to demonstrate that the occurrence of FMCSR violations or OOS orders from a roadside inspection is correlated with those carriers that have higher crash rates.

CRASHES AFTER INSPECTIONS

In order to determine the effectiveness of violations and OOS orders in predicting crashes, the crash performance of each inspected carrier was examined for the year after each inspection. This means that carriers who are targeted for inspections, will have more entries of inspection years. Since the targeting processes are aimed at identifying higher risk carriers, if the process is working, and these carriers are higher risk, we would expect these carriers selected for inspections to have a higher crash rate.

For each roadside inspection in 2010:

- The count of crashes that the carrier had in the 365 days after the inspection was calculated. The first day in this count is the day after the inspection. This eliminates counting any crashes that might be associated with a post-crash inspection.
- The number of power units was taken from the number of power units in the census snapshot at the end of 2010.
- Based on the number of crashes and power units, the crash rate for the carrier in the year after the inspection is calculated.

Figure 14 gives a graphic representation of how this calculation was made.

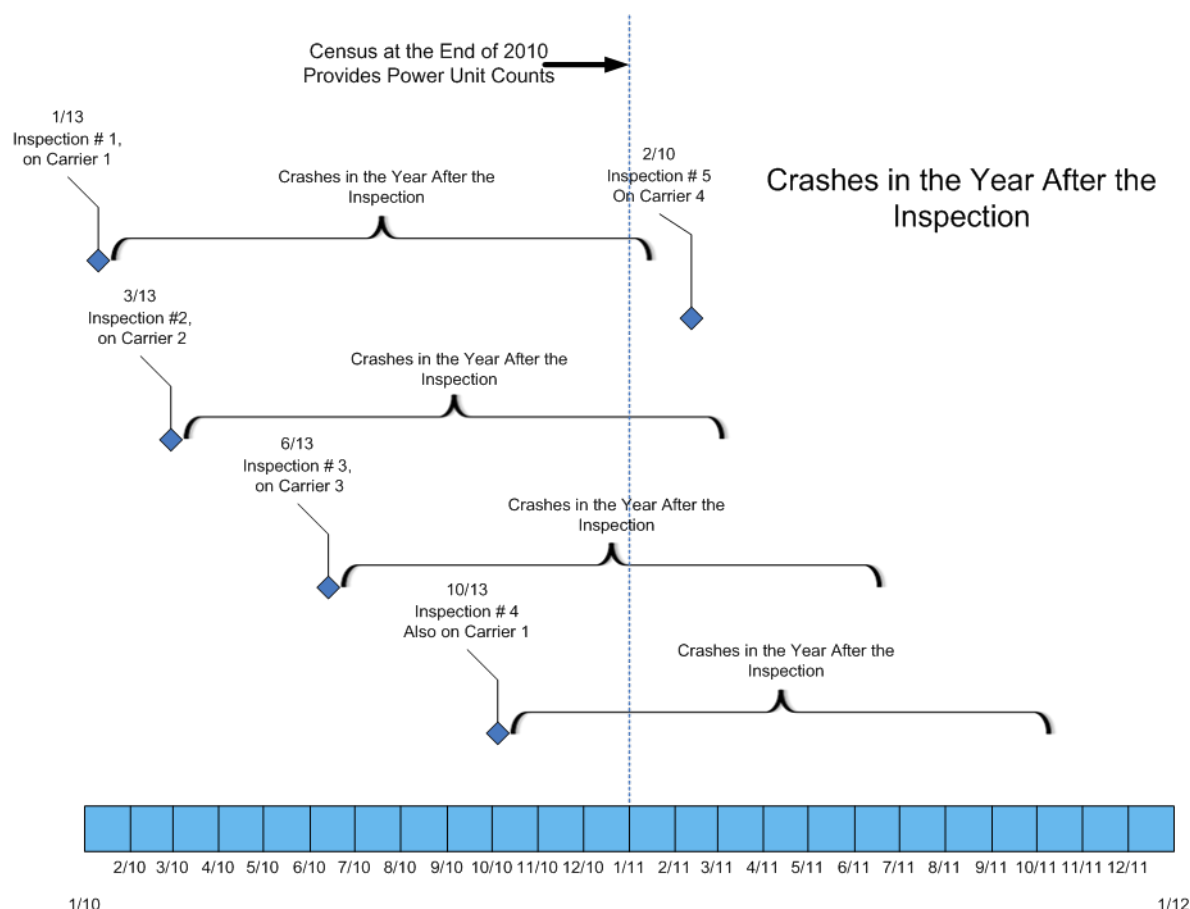


Figure 14. Counting crashes and power units in the year after an inspection.

Then, a list was made of the violations assigned in each inspection. In cases where the same violation was assigned more than once in an inspection, it was only counted once. This avoids pyramiding.

This gives both the number of violations and the number of crashes. Consequently, it is possible to calculate the average crash rate for all carriers that received any particular inspection violation in the year after the inspection.

The total crash predictive value of any particular inspection violation is based on two factors:

- If the carriers that receive a violation happen to crash at a high rate after receiving the violation, the violation is highly predictive of crashes in the next year.
- If the violation is assigned in a large number of inspections, even if the violation is not associated with a crash rate much higher than average, the violation will still be predictive of a large number of crashes.

VIOLATIONS THAT ARE CORRELATED WITH HIGH CRASH RATES

Overall, these carriers received a total of 2,297,235 roadside inspections. There were 829 different violations assigned in these inspections.

Further, reviewing the violations found that 141 violations were assigned in at least 2,279 different inspections, 1/10 of 1% of the total number of roadside inspections.

Of these, the occurrence of 45 violations (and driver OOS orders) were found to be correlated with a crash rate more than double the overall crash rate of all inspected carriers (i.e. for those carriers who received one of the 45 violations or received a driver OOS order, their crash rate in the year after the inspection was 5.42 crashes per hundred power units.)

Table 33 shows the 45 violations reduced to the 20 inspection violations that occurred in at least 1/10 of 1% of all inspections that are most predictive of a high future crash rate for the carrier. The same calculation is made for driver OOS orders. Although these were the most correlated with future crashes, only 9 of these violations had higher correlation with a future crash rate than did a driver OOS order.

Table 33. Inspection violations (including driver OOS) exceptionally predictive of high crash rates.

PART NO.	PART NO. SECTION	Description	Total inspections with the violation (or OOS order)	Crashes per hundred power units	Rate above baseline
395	3(b)	60/70 hour rule violation (Property)	5,621	8.39	209.7%
395	8(e)	False reports of records of duty status	28,868	8.17	201.6%
392	60(a)	Unauthorized passenger on board CMV	2,512	8.01	195.8%
396	7	UNSAFE OPERATIONS FORBIDDEN	2,502	7.62	181.2%
391	15(a)	Using a disqualified driver	4,504	7.50	176.7%
395	3(a)(1)	Requiring or permitting property CMV driver to drive more than 11 hrs	31,601	7.39	172.7%

PART NO.	PART NO. SECTION	Description	Total inspections with the violation (or OOS order)	Crashes per hundred power units	Rate above baseline
395	3(a)(2)	REQUIRING OR PERMITTING DRIVER TO DRIVE AFTER 15 HOURS ON DUTY	55,073	7.34	170.9%
395	8	LOG VIOLATION (GENERAL/FORM AND MANNER)	121,637	7.30	169.6%
392	2WC	Wheel (Mud) Flaps missing or defective	10,970	7.05	160.2%
N/A	N/A	Driver OOS Orders	105,603	6.80	151.1%
393	11TU	TT upr body corners retro sht/reflex mfg>7/97	3,284	6.79	150.7%
393	11TL	TT lwr rr mud flaps retro sht/reflex mfg>7/97	15,008	6.76	149.7%
395	8(k)(2)	Failing to have previous 7 days RODS	20,628	6.76	149.4%
393	11UR	Up rr retroreflect sht/reflx reflct mfg>12/93	3,726	6.74	148.9%
396	11	DRIVER VEHICLE INSPECTION REPORT	5,660	6.57	142.6%
395	8(f)(1)	DRIVERS RECORD OF DUTY STATUS NOT CURRENT	107,000	6.54	141.6%
393	75(a)	Operating with tires having fabric or cords exposed	25,627	6.35	134.2%
393	75(a)(1)	Tire-ply or belt material exposed	17,886	6.30	132.7%
392	2FT	State or International Fuel Tax (IFTA) Violation	5,069	6.21	129.2%
393	9T	Inoperable tail lamp	40,835	6.18	128.2%
392	2MI	Miscellaneous Traffic Law Violation	6,295	6.09	124.8%

VIOLATIONS THAT ARE PREDICTIVE OF A LARGE NUMBER OF CRASHES

It may be considered that the value of a violation (or OOS order) in indicating likely future crashes is a function not only of how accurate it is in predicting crashes, but also how often the violation (or OOS order) is assigned.

Table 34 looks at the overall strength of violations in predicting crashes, with the most highly predictive at the top. This is calculated as the percent above the baseline times (x) the number of inspections at which the violation was assigned. Both vehicle and driver OOS orders are included in this list.

The vehicle OOS orders are the most highly predictive of future crashes in this list. This is because:

- Vehicle OOS orders are relatively common. Vehicle OOS orders were assigned in 13.1% of the reviewed inspections.
- Vehicle OOS orders are relatively highly predictive of future crashes. The crash rate for carriers in the year after an inspection with a vehicle OOS order was 88% higher than the baseline crash rate for all inspected carriers. (Note that receipt of a driver OOS order is an even better predictor of a much higher crash rate. However, vehicle OOS orders were assigned almost 3 times as often as driver OOS orders.)

Table 34. Inspection violations (and OOS orders) that predict the most crashes.

PART NO.	PART NO. SECTION	Description	Total inspections with the violation (or OOS order)	Rate above baseline
N/A	N/A	Vehicle OOS orders	301,550	88.0%
395	8	LOG VIOLATION (GENERAL/FORM AND MANNER)	121,637	169.6%
393	9(a)	INOPERABLE REQUIRED LAMP	216,701	85.9%
N/A	N/A	Driver OOS orders	105,603	151.1%
395	8(f)(1)	DRIVERS RECORD OF DUTY STATUS NOT CURRENT	107,000	141.6%
392	2W	SIZE AND WEIGHT	137,538	93.5%
393	75(c)	Tire-other tread depth less than 2/32 of inch	122,531	104.2%
395	3(a)(2)	REQUIRING OR PERMITTING DRIVER TO DRIVE AFTER 15 HOURS ON DUTY	55,073	170.9%
393	11	Vehicle- inoperative lamp or reflector, wrong location or color	139,423	63.5%
393	95(a)	NO/DISCHARGED/UNSECURED FIRE EXTINGUISHER	93,595	94.0%
396	3(a)(1)	VEHICLE WHEEL OR RIM BENT, SPRUNG, OR MISMATCHED.	133,832	57.3%
393	47(e)	CLAMP/ROTO TYPE BRAKE(S) OUT-OF-ADJUSTMENT	93,154	82.2%
396	17(c)	Using a vehicle not periodically inspected	68,572	105.8%
393	25(f)	STOP LAMP VIOLATIONS	66,714	100.6%
393	9TS	INOPERATIVE TURN SIGNAL RIGHT	54,518	117.4%
393	53(b)	CMV MANUFACTURED AFTER 10/19/94 HAS AN AUTOMATIC AIRBRAKE ADJUSTMENT SYSTEM THAT	65,834	94.2%
395	8(e)	False reports of records of duty status	28,868	201.6%
395	3(a)(1)	Requiring or permitting property CMV driver to drive more than 11 hrs	31,601	172.7%
393	9T	Inoperable tail lamp	40,835	128.2%
393	48(a)	Inoperative/defective brakes	48,178	108.6%
396	3A1BOS	BRAKES OUT OF SERVICE: THE NUMBER OF DEFECTIVE BRAKES IS EQUAL TO OR GREATER THA	44,884	116.0%
393	45(b)(2)	BRAKE HOSE/TUBING CHAFFING AND/OR KINKING	137,313	36.6%

It is interesting to note that 395.8 – Log Book (General Form/ Manner) is the violation most frequently identified as being unrelated to roadside performance, and unrelated to crash causality. No assertion is made that a violation of 395.8 is in any way causally related to crashes. Nonetheless,

- 395.8 is predictive of the greatest total crash differential between carriers that receive the violation and other inspected carriers.
- Among the violations assigned in at least 1/10 of 1% of all inspections, it has the 8th highest percentage differential.

CONCLUSION

This analysis does address the question as to whether non-compliance with the FMCSRs and with CVSA's OOS criteria is crash causal. However, this analysis clearly demonstrates non-compliance with the FMCSRs and with CVSA's OOS criteria is predictive of poor future crash performance. And an important criterion for FMCSA is to remove high risk carriers from operating.

APPENDIX R: INSPECTIONS ON LOADS REQUIRING A HMSP WHERE THE CARRIER NEVER HAD A HMSP

The goal of this analysis is to determine if there are cases where there is an inspection on a load where, based on the load, the carrier should have an HMSP, and the carrier does not have an HMSP.

POPULATIONS

The populations of carriers, candidate Hazardous Materials, and Inspections are defined below.

Carriers

For technical reasons, it appears to be impossible to determine from MCMIS whether a carrier had a valid HMSP on any given date (short of manual lookup). However, it is possible to identify carriers that either have a HMSP or, at one time, had an HMSP. For purposes of this analysis, only carriers that do not have a HMSP, and have never had an HMSP, are considered.

This puts parameters around the possible size of the problem. There may be cases of inspections on carriers that did not have a HMSP at the time of the inspection, but had a HMSP before or after the inspection (or both). For purposes of this analysis, such cases are considered as cases where the carrier receiving the inspections did have a HMSP.

Hazardous Materials

The document titled “How to Identify an Inspection that Required a HMSP” provides a list of potentially identifiable criteria Hazardous Materials IDs that may identify an inspection where the carrier is required to have a HMSP. Table 35 provides a complete list of the identified Hazardous Materials, by ID, with the description from MCMIS.

Table 35. HMs requiring an HMSP.

HAZMAT ID	HM description
1	DIV 1.1
2	DIV 1.2
3	DIV 1.3
5	DIV 1.5
9	DIV 2.1 METHANE
12	DIV 2.3A
13	DIV 2.3B
14	DIV 2.3C
15	DIV 2.3D
30	CLASS 7

What remains to be determined is whether it is possible to have an inspection on a small amount of these materials, where the carrier was not required to have a HMSP because of the small quantity. It is also possible that some of the inspections on material number 7 (Div 2.1) and material number 8 (Div 2.1 LPG) might require a HMSP.

Looking at the inspections since 2010 where the inspection record identified one of these materials, and the carrier never had a HMSP, it was clear that there were carriers with thousands of inspections on Material Number 9, Methane. It seems highly unlikely that there are carriers with thousands of inspections on a hazardous material, where the carrier was required to have a HMSP, and the carrier did not have an HMSP. Therefore, Material Number 9, Methane Gas was excluded from this analysis. Further, it may be noted,

- The definitions for materials numbered 1, 2, 3, and 5 indicate the nature of the explosives involved. However, the definitions do not make it clear whether or not the hazardous material should be identified in an inspection if the amount does not meet the threshold.
- The definitions for materials numbered 12, 13, 14, and 15 seem to clearly match the definitions of the materials requiring a HMSP, including identification of Hazard Zones.

Inspections

This analysis did not address ‘old news’. For this analysis, only inspections with an inspection date in 2010 or later were used. Each instance of the identification of the identified hazardous material on an inspection was used.

RESULTS - INSPECTIONS ON LOADS REQUIRING AN HMSP WHERE THE CARRIER DID NOT HAVE A HMSP

Based on the above definitions, a total of 1,806 inspections were identified where the Hazardous Material ID suggested that the carrier should have had an HMSP, and the carrier did not.

Inspections by Hazardous Materials Type

For each of the Hazardous Materials possibly requiring a HMSP, Table 36 shows:

- The total number of inspections, in the period 2010 to the data cutoff, where the hazardous material was identified on an inspections, and
- The number of those inspections where the identified carrier never had a HMSP.
- The percent of all inspections on the material where the carrier never had a HMSP.

Table 36. Inspection counts for materials requiring an HMSP, with total inspections and inspections on carriers that never had an HMSP.

HAZMAT ID	HM description	Inspections on the material requiring an HMSP where the carrier never had an HMSP	Total inspections on the material requiring an HMSP	Percent of inspections on the material where the carrier never had an HMSP
1	DIV 1.1	666	4,669	14%
2	DIV 1.2	16	506	3%
3	DIV 1.3	70	1,434	5%
5	DIV 1.5	59	1,367	4%
12	DIV 2.3A	195	489	40%
13	DIV 2.3B	422	3,581	12%
14	DIV 2.3C	50	247	20%
15	DIV 2.3D	328	1,706	19%

There were no inspections at all where the Hazardous Materials Code of 30 [Class 7 (radioactive) material] was used.

GEOGRAPHIC DISTRIBUTION

Table 37 shows the geographic distribution, by State, of the inspections on HMSP loads where the carrier never had a HMSP.

Table 37. Geographic distribution, by State, of inspections on HMSP materials on non-HMSP carriers.

Inspection State	Number of inspections with HMSP loads on non-HMSP carriers	Percent of all inspections on HMSP loads where the carrier never had an HMSP
AK	1	0.1%
AL	9	0.5%
AR	9	0.5%
AZ	58	3.2%
CA	238	13.2%
CO	26	1.4%
CT	9	0.5%
DE	1	0.1%
FL	82	4.5%
GA	36	2.0%
HI	4	0.2%
IA	13	0.7%
ID	11	0.6%
IL	49	2.7%
IN	30	1.7%
KS	37	2.0%

Inspection State	Number of inspections with HMSP loads on non-HMSP carriers	Percent of all inspections on HMSP loads where the carrier never had an HMSP
KY	26	1.4%
LA	23	1.3%
MA	8	0.4%
MD	33	1.8%
ME	9	0.5%
MI	33	1.8%
MN	123	6.8%
MO	34	1.9%
MS	42	2.3%
MT	26	1.4%
NC	30	1.7%
ND	19	1.1%
NE	34	1.9%
NH	6	0.3%
NJ	13	0.7%
NM	49	2.7%
NV	31	1.7%
NY	16	0.9%
OH	37	2.0%
OK	24	1.3%
OR	21	1.2%
PA	41	2.3%
PR	4	0.2%
SC	30	1.7%
SD	20	1.1%
TN	40	2.2%
TX	241	13.3%
US	57	3.2%
UT	22	1.2%
VA	28	1.6%
VT	1	0.1%
WA	33	1.8%
WI	17	0.9%
WV	12	0.7%
WY	10	0.6%

Two States, Texas and California, together had over $\frac{1}{4}$ of the inspections on HMSP materials where the carrier never had a HMSP. Minnesota had 6.8% of these inspections, and Florida had 4.2%. No other State had more than 3.2%.