

Background to New Entrant Safety Fitness Assurance Process

March 2000

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PREFACE

This report presents the results of background research leading to the development of a New Entrant Safety Fitness Assurance Process, a prequalification and monitoring program for motor carriers entering interstate service. The study was conducted by the Research and Special Programs Administration's (RSPA) John A. Volpe National Transportation Systems Center (the Volpe Center) in Cambridge, MA, under a project plan agreement with the Federal Motor Carrier Safety Administration (FMCSA). The concept of a new entrant program originated from a larger research project at the Volpe Center, the goal of which was to define an improved process for motor carrier safety fitness determination and assurance for the FMCSA. A new entrant program was identified as one of the potential components of the proposed improved process.¹ Since that proposal, the Volpe Center has performed several analyses of the safety performance and compliance of new entrants.²

The New Entrant Safety Fitness Assurance Process would apply to both carriers based in the United States and carriers based in Canada and Mexico that operate within the U.S. While the U.S. and Canada opened their borders to each other's motor carriers in 1982, Mexican carriers have been permitted conduct cross-border operations only to border city commercial zones in the four southern U.S. border states. Under provisions of the North American Free Trade Agreement (NAFTA), however, Mexican carriers will have unrestricted access to the U.S. and Canada.

This report contains a description of previous new entrant safety research, a study of the applicable provisions of NAFTA, a review of the motor carrier safety regulations and available data in each of the three NAFTA countries, and a discussion of the need for a new entrant safety fitness assurance process. A succeeding report will present proposals for the prequalification and monitoring components of a new entrant program.

At the FMCSA, the project was managed by Dale Sienicki of the Office of Data Analysis and Information Systems, Data Analysis Division. The Volpe Center technical project manager was Donald Wright of the Economic Analysis Division in the Office of System and Economic Assessment. The research was performed and the report was written by Donald Wright and Jon Ohman of the Economic Analysis Division and Nancy Kennedy, Leon Parkin, and Dennis Piccolo of EG&G Services.

¹ "Motor Carrier Safety Fitness Determination - Proposals for an Improved Process," Volpe Center, July 1997.

² "New Entrant Safety Research – Final Report," Volpe Center, April 1998.

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
1. INTRODUCTION.....	1-1
2. PREVIOUS NEW ENTRANT SAFETY RESEARCH.....	2-1
2.1. Corsi-Fanara Study (1988).....	2-1
2.2. Follow-Up Study (1995).....	2-2
2.3. New Entrant Safety Research (1998).....	2-5
2.4. Analysis of New Entrant Motor Carrier Safety Performance and Compliance Using SafeStat (2000).....	2-8
2.5. Conclusions.....	2-13
3. NAFTA PROVISIONS AND THE NEED FOR A NEW ENTRANT PROCESS.....	3-1
3.1. NAFTA Provisions.....	3-1
3.2. The Need for a New Entrant Safety Assurance Process.....	3-3
4. COMPARISON OF NAFTA PARTNERS' MOTOR CARRIER SAFETY REGULATIONS, SAFETY STANDARDS, AND ENFORCEMENT SYSTEMS....	4-1
4.1. Existing Motor Carrier Regulations.....	4-1
4.1.1. United States.....	4-1
4.1.2. Canada.....	4-2
4.1.3. Mexico.....	4-4
4.2. Existing Motor Carrier Safety Systems.....	4-5
4.2.1. United States.....	4-5
4.2.2. Canada.....	4-8
4.2.3. Mexico.....	4-11
4.3. Progress Towards Harmonization of NAFTA Partners' Motor Carrier Regulations and Safety Systems.....	4-12

5. ASSESSMENT OF THE AVAILABILITY OF NEW ENTRANT DATA.....	5-1
5.1. United States.....	5-1
5.1.1. Motor Carrier Management Information System (MCMIS).....	5-1
5.1.2. Data on U.S. Intrastate Carriers.....	5-5
5.1.3. Data on Canadian and Mexican Carriers.....	5-5
5.2. Canada.....	5-5
5.3. Mexico.....	5-6
5.4. Future Data Requirements.....	5-6

LIST OF ILLUSTRATIONS

FIGURES

<u>Figure</u>	<u>Page</u>
5-1 Overview of MCMIS.....	5-2

TABLES

<u>Table</u>	<u>Page</u>
2-1 Corsi-Fanara Study (1988).....	2-2
2-2 Weighted Crash Rate by Age of Carrier at Re view by Carrier Classification.....	2-4
2-3 Number of Violations of Acute Regulations per 1,000 Interstate Drivers by Age of Carrier at Review.....	2-7
2-4 Increase in Carrier Population by Domicile of Carrier - September 1997 to September 1999.....	2-9
2-5 Percent of Carriers with Deficient SEA Values by SEA/Indicator and Experience Level.....	2-10
2-6 Percent of Carriers with Deficient Driver Inspection Indicators by Experience Level and Domicile of Carrier.....	2-11
2-7 Percent of Carriers with Deficient Vehicle Inspection Indicators by Experience Level and Domicile of Carrier.....	2-12
2-8 Amount of FMCSA Oversight by Experience Level - September 1997 to September 1999.....	2-12
4-1 Compliance Review Factors.....	4-7
4-2 Differences in Safety Oversight Programs by Country.....	4-12

1. INTRODUCTION

This report presents the results of 1) previous analyses of the safety performance and compliance of new entrant motor carriers, and 2) preliminary research regarding international motor carrier transportation operations under the North American Free Trade Agreement (NAFTA). Under NAFTA, motor carriers from the United States, Canada, and Mexico would eventually be able to transport international cargo across borders to any point within the partner country's territory. While Canadian and U.S. carriers have been conducting cross-border international operations since 1982, Mexican trucks have been restricted to the U.S. border state commercial zones, delaying the full implementation of the NAFTA motor carrier provisions. On December 18, 1995, the U.S. Secretary of Transportation announced that Mexican trucks would continue to be able to operate only within the southern U.S. border states' commercial zones citing ongoing motor carrier safety and security concerns about Mexican motor carriers. This delay is still in effect.

In order to move forward to address these safety concerns and to enable the eventual implementation of the full NAFTA provisions, the U.S. Department of Transportation's (USDOT) Federal Motor Carrier Safety Administration (FMCSA) is examining an approach to assessing the safety fitness of new entrant carriers under the NAFTA provisions. This preliminary research focuses on three elements that are critical to guide and inform an approach to designing a New Entrant Safety Fitness Assurance Process:

- 1) an examination of prior research and thinking on the need for oversight of new entrant motor carriers based on U.S. motor carrier historical data,
- 2) an examination of the legislative rationale under NAFTA for establishing a new entrant safety fitness assessment process which applies to all new entrant motor carriers, both domestic U.S. carriers and foreign-based Mexican and Canadian carriers, and assess current efforts at cooperation between the NAFTA partners, and
- 3) an examination the current status of motor carrier safety regulations, motor carrier safety systems, and available motor carrier safety data in the U.S., Mexico, and Canada.

2. PREVIOUS NEW ENTRANT SAFETY RESEARCH

Deregulation of the motor carrier industry in the U.S. combined with a period of sustained economic growth has resulted in a sizable increase in the number of new motor carriers entering into interstate operation (i.e., new entrants). A number of studies have been conducted regarding the safety of these new entrants and have raised safety concerns about the impact of a rapid influx of new carriers. These studies include:

1. Corsi-Fanara Study (1988)
2. Follow-Up Study (1995)
3. New Entrant Safety Research (1998)
4. Analysis of New Entrant Motor Carrier Safety Performance and Compliance Using SafeStat (2000)

Within the context of this review, a new entrant is an operator of large commercial vehicles initiating interstate operations or intrastate hazardous material or passenger operations, becoming subject to the Federal Motor Carrier Safety Regulations (FMCSR), and registering with the USDOT.

A new entrant can be either:

- a recently formed carrier initiating interstate operations (or intrastate hazardous material or passenger operations), or
- a previously operating carrier initiating interstate operations (or intrastate hazardous material or passenger operations) for the first time.

2.1. CORSI-FANARA STUDY (1988)

The Corsi-Fanara Study³ used data from Office of Motor Carriers (OMC)⁴ compliance and safety reviews of carriers regulated by the Interstate Commerce Commission (ICC) (which, by definition, were authorized for-hire carriers) as a basis for examining the safety performance of new entrants. These reviews were conducted between September 1986 and April 1988. The carriers were divided into three groups, based on a carrier's date of initial ICC certification:

- Carriers certified on or after January 1, 1985 - carriers with approximately 3 or fewer years of experience,
- Carriers certified between July 1, 1980 and December 31, 1984 - carriers with approximately 3 to 6 years of experience,

³ Thomas M. Corsi and Philip Fanara, Jr., "Deregulation, New Entrants, and the Safety Learning Curve," *Journal of the Transportation Research Forum*, Vol. XXIX, No. 1, 1988, pp. 3-8.

⁴ At the time of this study, the Federal Motor Carrier Safety Administration (FMCSA) was known as the Office of Motor Carriers (OMC) and was part of the Federal Highway Administration (FHWA).

- Carriers certified before July 1, 1980 (the date of passage of the Motor Carrier Act of 1980) - carriers with approximately more than 6 years of experience.

The safety performance and regulatory compliance of each group were analyzed to determine whether significant differences existed among the three groups of carriers and if there was any evidence of a new entrant safety performance and/or compliance problem. As shown in Table 2-1, in each case, the newest entrants, (those certified on or after January 1, 1985), exhibited significantly poorer safety performance or regulatory compliance than did the carriers that had been certified earlier (those who had been operating longer). In other words, the newest entrants were more likely to be involved in crashes and less likely to comply with (or to have systems in place to comply with) the FMCSR than were the more experienced carriers.

**Table 2-1.
Corsi-Fanara Study (1988)**

	Date of Initial ICC Certification		
	Before July 1980	July 1980 -Dec. 1984	Jan. 1985 and After
Mean Crash Rate*	.55	.62	.81
Does carrier have a system to effectively control hours of service? (%)	37.0	35.0	16.8
Is carrier complying with vehicle inspection procedures? (%)	40.7	46.8	29.3
Does carrier have a driver safety training program? (%)	33.7	32.0	17.4

* - Reportable crashes per million vehicle miles traveled (VMT)

Based on these findings, Professors Corsi and Fanara identified the existence of what they described as a safety learning curve. New entrants exhibited higher compliance levels and improved safety performance (lower crash rates) as they accumulated experience with safety management policies and procedures. The authors recommended that special attention be given to new entrants so as to expedite the learning process and minimize the number of crashes in the learning period, (shorten the safety learning curve). They specifically recommended that the ICC, at that time responsible for new entrant certification, require as part of its certification process for new entrants that a carrier demonstrate the existence of a comprehensive risk management program prior to its certification.

2.2. FOLLOW-UP STUDY (1995)

Overview

The Corsi-Fanara Study was intended to assess the impact of economic deregulation on safety and was restricted to an analysis of a selected group of ICC-regulated motor carriers. The two subsequent studies were designed to update the Corsi-Fanara Study results using the latest and most complete data available, and expand the coverage to include all carriers, not just the ICC-regulated (authorized for-hire) carriers included in the original study.

The Volpe Center, with assistance from Dr. Corsi under contract to the Volpe Center, performed the first of these studies in 1995. There were several differences between this study and the Corsi-Fanara Study. First, the Corsi-Fanara Study examined the safety performance and compliance of ICC-regulated carriers, which, by definition, were authorized for-hire carriers. The Follow-Up Study examined data on all classifications of carriers including authorized for-hire, exempt for-hire, and private. Second, the Corsi-Fanara Study was based on data collected from September 1986 through April 1988. It was felt that a more recent time period should be examined to determine whether the patterns observed in the mid-1980s were still present in the 1990s. Third, the Corsi-Fanara Study used data from both compliance and safety reviews. The Follow-Up Study used only data from compliance reviews. Safety review data were not used in the Follow-Up Study because the data were considered less reliable than data from compliance reviews. In fact, by 1995, the OMC was no longer performing safety reviews.

The Follow-Up Study consisted of two parts: a compliance study using compliance review factor and overall safety ratings, and a safety performance study using crash rate data from compliance reviews. The results of both parts of the study were broken out according to the age of the carrier at the time of the review. The age of the carrier was calculated from the date that the carrier's Form MCS-150 information was entered into the Motor Carrier Management Information System (MCMIS) Census File. (Carriers are required to file Form MCS-150 within 90 days of beginning interstate operations.) This date was used as the best available approximation of the date that the carrier began interstate operations. The only time that a discrepancy would exist would result from a carrier's delay in filing Form MCS-150.

Compliance Analysis

The first part of the Follow-Up Study consisted of an attempt to verify that the relationship between compliance with the FMCSR and carrier age found in the Corsi-Fanara Study still held. The Volpe Center analysts and Dr. Corsi examined data from compliance reviews performed from January 1991 to September 1994. To measure compliance with the FMCSR, the ratings assigned to compliance review factors 2-Driver, 3-Operational, and 4-Vehicle, as well as the overall compliance review safety rating, were analyzed. The percentages of individual factor ratings and overall ratings that were "satisfactory" were calculated. The percentages were calculated for each classification of carrier and for the total motor carrier population. The data were broken down by the age of carrier at the time of the review.

The results showed no relationship between the percentage of ratings that was satisfactory and the age of the carrier. This finding held true for all carrier classifications and all review factors. Therefore, the relationship between compliance with the FMCSR and carrier age found in the Corsi-Fanara Study could not be replicated.

Crash Rate Analysis

The second part of the Follow-Up Study consisted of an attempt to verify that the crash rate relationship found in the Corsi-Fanara Study still held. That is, did new entrants still have higher crash rates than more experienced carriers, and did crash rates still decrease as carriers became more experienced? This study relied on data from compliance reviews conducted by the OMC between January 1, 1991 and March 31, 1995.

The data were broken out into 11 groups, based on the age of the carrier at the time of the review:

X = Age of carrier at time of review

- 0 < X < 1 Less than or equal to 1 year
- 1 < X < 2 Greater than 1 year and less than or equal to 2 years
- ...
- 9 < X < 10 Greater than 9 years and less than or equal to 10 years
- 10 < X Greater than 10 years

Weighted crash rates (recordable/preventable crashes per 1 million VMT weighted by VMT) were calculated for each age group. This calculation is equivalent to calculating the aggregate crash rate in each group, i.e., dividing the total crashes in the group by the total VMT in the group and multiplying by 1 million.

After rates were calculated for each of the eleven groups, adjacent groups with comparable rates were combined. The results are shown in the first column of Table 2-2. The results substantiate the findings from the Corsi-Fanara Study that new entrants have higher crash rates on average than established carriers, and that crash rates decrease as carrier experience increases. In other words, the results indicate the presence of a safety learning curve.

Table 2-2.
Weighted Crash Rate by Age of Carrier at Review by Carrier Classification

Age of Carrier at Review	All Carriers	Authorized For-Hire	Exempt For-Hire	Private
0 < X ≤ 1 Year	.505	.556	.449	.396
1 < X ≤ 6 Years	.469	.467	.497	.468
6 < X ≤ 10 Years	.438	.439	.614	.404
10 Years < X	.411	.425	.412	.339

Crash rates were also calculated for each carrier classification, i.e., authorized for-hire, exempt for-hire, and private. These results are also shown in Table 1-2. The learning curve pattern is present in the authorized for-hire results, but not in the results for exempt for-hire and private carriers. While the most experienced exempt for-hire and private carriers (more than 10 years of experience) have the lowest crash rates, the least experienced carriers (1 year or less of experience) do not have the highest crash rates.

This discrepancy may be the result of the potential bias stemming from the use of the date that a carrier's Form MCS-150 information is entered into the MCMIS as the date that the carrier initiated interstate operations. If, as theorized, authorized for-hire carriers have a greater awareness of USDOT regulations than do exempt for-hire or private carriers, then they will be more likely than the other types of carriers to file Form MCS-150 on time. If, on average, exempt for-hire and private carriers are less prompt in filing Form MCS-150, then some experienced carriers will be classified as new entrants (less than one year of experience), when, in reality, they have been operating more than a year.

In planning the 1998 study, New Entrant Safety Research, two errors in the methodology of the Follow-Up Study crash rate analysis were discovered. First, the crash rates were calculated using preventable/recordable crashes instead of using recordable crashes, which would have been comparable to the Corsi-Fanara Study use of reportable crashes. Second, in March 1993, in the middle of the time period of crash data used in the study, the USDOT definition of a crash changed. Thus, the crash data used in the study are based on two different definitions of a crash. These errors call into question any comparison of the results of the Follow-Up Study crash rate analysis with the results of the Corsi-Fanara Study crash rate analysis.

2.3. NEW ENTRANT SAFETY RESEARCH (1998)

Overview

The Volpe Center with assistance from Dr. Corsi, under contract to the Volpe Center, performed a second study⁵ to update and expand the Corsi-Fanara Study results. This research used the latest and most complete data available, and expanded the coverage to include all motor carriers, not just the ICC-regulated (authorized for-hire) carriers included in the Corsi-Fanara Study. Two analyses were conducted to confirm the existence of a safety performance (i.e., crash rate) learning curve, while one study was performed to confirm the existence of a safety regulation compliance learning curve.

In all three analyses, the age of the carrier was calculated from the date that the carrier's registration Form MCS-150 information was entered into the MCMIS Census File. A supplementary study was performed that examined the validity of that date as the true start date of operations. Finally, there was also a survey of new entrant education programs being conducted by the states.

Crash Rate Analyses

Two studies were performed to confirm the existence of a safety performance (i.e., crash rate) learning curve: the Compliance Review Crash Rate Analysis and the State-Reported NGA Crash Rate Analysis. Each study used data on recorded crashes, as opposed to the recordable/preventable crash data used in the Follow-Up Study, so that the results could be compared to the results of the original Corsi-Fanara Study.

The Compliance Review Crash Rate Analysis used data from compliance reviews that were conducted between April 1993 (when the USDOT definition of a crash changed) and June 1997 (the latest data available at the time the study was conducted). The data were broken out according to the age of the carrier at the time of the review. Weighted mean, or overall, crash rates (recordable crashes per million vehicle miles traveled (VMT) weighted by VMT) were calculated for each age group.

The State-Reported NGA Crash Rate Analysis used calendar year 1996 NGA crash data from the MCMIS Crash File and power unit data from the MCMIS Census File to calculate crash rates by

⁵ "New Entrant Safety Research - Final Report," Volpe Center, April 1998.

age of carrier. The analysis included only carriers with non-zero power unit values that had received compliance or safety reviews since April 1, 1993, so that power unit information that was more current than the original Form MCS-150 information would be available. The data were broken out according to the age of the carrier at the time of the review. Weighted mean, or overall, crash rates (NGA crashes per power unit weighted by power units) were calculated for all age groups.

Each analysis was first performed using data for all carriers. The analyses were then repeated using data only for authorized for-hire carriers, as in the Corsi-Fanara Study, to determine if the learning curve effect holds only for that carrier classification. Although the most experienced carriers usually had the lowest overall crash rate, the results of the analyses do not indicate the presence of a safety learning curve. The declines in crash rates from the least experienced carriers to the most experienced carriers exhibited patterns of variability, rather than the steady progressions that are characteristic of learning curves.

Compliance Analysis Using Acute/Critical Regulation Violations

To examine the existence of a safety regulation compliance learning curve, a study was performed using data on violations of acute and critical regulations from compliance reviews. The study used data from compliance reviews that were conducted between October 1994 (when acute/critical regulations were first used to evaluate the five regulatory factors in a compliance review) and June 1997 (the latest data available at the time this study was conducted).

The data were broken out according to the age of the carrier at the time of the review. The data were also broken out by SafeStat⁶ Safety Evaluation Area (SEA), either Driver or Safety Management. SafeStat is an analytical process or tool developed at the Volpe Center for the FMCSA that evaluates the safety status of motor carriers in four SEAs: Accident, Driver, Vehicle, and Safety Management. In this analysis, the acute and critical regulations were classified by SEA.

For each SEA/age group combination, the average number of violations of acute regulations per thousand interstate drivers and the average number of patterns of violations of critical regulations per thousand interstate drivers were calculated. These averages were weighted by the number of interstate drivers. These calculations are equivalent to dividing the total number of violations or patterns by the total number of interstate drivers and multiplying by 1,000.

The results indicate a substantial age-related pattern of compliance, i.e., the numbers of violations of acute regulations and patterns of violations of critical regulations in both SEAs were substantially higher for new entrants than for more experienced carriers. Furthermore, the rates declined in steady progression across age groups, showing clear evidence of a safety regulation compliance learning curve. Table 2-3 shows the average number of violations of acute regulations in the Driver and Safety Management SEAs. The time frames for each SEA are different, because, in each case, adjacent age groups with comparable rates have been combined.

⁶ For a detailed description of SafeStat, see "SafeStat, Motor Carrier Safety Status Measurement System, Methodology: Version 7," Volpe Center, October 1999.

Table 2-3.
Number of Violations of Acute Regulations per 1,000 Interstate Drivers
by Age of Carrier at Review

Driver SEA		Safety Management SEA	
Age of Carrier at Review	Avg. No. of Violations	Age of Carrier at Review	Avg. No. of Violations
0 < X ≤ 2 Years	9.8	0 < X ≤ 1 Year	128.8
2 < X ≤ 5 Years	7.3	1 < X ≤ 3 Years	33.4
5 < X ≤ 7 Years	5.0	3 < X ≤ 6 Years	25.8
7 < X ≤ 10 Years	3.2	6 < X ≤ 8 Years	11.0
10 Years < X	2.1	8 Years < X	3.3

Start Date Study

A supplementary study was performed that addressed the issue of the accuracy of the determination of carrier age used in the above studies as well as in the Follow-Up Study. An underlying assumption of these studies, necessarily, was that the date a carrier's information is entered into the MCMIS Census File as a result of its filing Form MCS-150 is equivalent to its date of entry into interstate operations. This necessary assumption resulted from the absence of alternative data on which to base an age calculation. There was a concern, however, that there was a difference between the date a carrier entered interstate service and the date it was added to the MCMIS Census File. As a result, using the date of entering the MCMIS Census File as the date of entry into interstate operations may have classified some carriers as new entrants that, in fact, were not new entrants, but experienced carriers that had only recently been added to the MCMIS Census File. These carriers may have been operating intrastate or been unaware of the USDOT interstate registration requirement.

Furthermore, there was a concern that this alleged discrepancy varied by industry segment, it was thought that the discrepancy was greater for private and exempt for-hire operators than it was for authorized for-hire carriers. Therefore, it was theorized that experienced private and exempt for-hire carriers were more likely to have been misclassified as new entrants in the studies than were experienced authorized for-hire carriers.

To investigate these issues, the Volpe Center conducted a sample survey of new entrants (i.e., carriers whose submitted USDOT registration forms (Form MCS-150) were entered unto the MCMIS Census File between May and August 1996) in the Census File. Each respondent was asked to verify information from its submitted Form MCS-150 and indicate when it began 1) any motor carrier service and 2) interstate service.

The results of the study indicate that private carriers⁷ were significantly more likely to delay registering with the USDOT after initiating any or interstate service than were authorized for-hire or exempt for-hire carriers. In addition, the mean time differences between the initiation of any and

⁷ In this study, "private" carriers included the classifications private, private passenger (business), and private passenger (non-business).

interstate service and the addition to the MCMIS Census File for private carriers were much greater than the comparable time differences for authorized for-hire carriers or exempt for-hire carriers.

Another finding of the Start Date Study is that some respondents did not understand the meanings of terms used by the OMC⁸ such as, motor carrier, power unit, interstate/intrastate, and hazmat (i.e., hazardous materials). Many carriers were confused by the operation classifications, i.e., authorized for-hire, exempt, for-hire, private, etc. Many carriers answered the classification questions on their survey questionnaires differently than on their registration forms.

Many of the carriers that did not understand these terms were private carriers. In fact, many of the private carriers contacted for the study said that, while they recognized that they operated large commercial vehicles, they did not consider themselves to be motor carriers, but rather they identified themselves by their primary businesses (e.g., contractors, manufacturers, retailers, etc.) instead.

Assessment of State Education Programs

As part of this investigation, the OMC regional offices⁹ were asked to provide information about any state new entrant education programs in their regions. The objectives were to both learn from those experiences and develop a federal program that is complementary and not duplicative. Although the information resulting from this effort was limited, some summary findings were:

- 1) Only a few states have specific safety education programs for new entrants, ranging from mandatory seminars to educational material being mailed to new entrants.
- 2) Many other states conduct educational seminars which are open to, but not limited to, new entrants. These seminars may include non-safety-related information such as licensing regulations and requirements of state and federal agencies.
- 3) Many states will provide assistance regarding safety regulations and requirements to individual carriers (including, but not exclusively for, new entrants) upon request.

2.4. ANALYSIS OF NEW ENTRANT MOTOR CARRIER SAFETY PERFORMANCE AND COMPLIANCE USING SAFESTAT (2000)

Overview

The Volpe Center performed a special study¹⁰ to 1) update, confirm, and expand upon the previous studies of new entrant safety compliance and performance, and 2) help provide a basis for formulating the details of a new entrant process.

⁸ At the time of this study, the FMCSA was still known as the OMC and was part of the FHWA.

⁹ At the time of this study, the OMC still had regional offices.

¹⁰ "Analysis of New Entrant Motor Carrier Safety Performance and Compliance Using SafeStat," Volpe Center, February 2000.

Because of increased trade with Mexico and Canada, occasioned in part by the North American Free Trade Agreement (NAFTA), increasing numbers of motor carriers domiciled in those countries are newly registering with the FMCSA. Since these motor carriers are usually experienced carriers, but subject to different safety regulations and different levels of safety education, enforcement, and oversight in their own countries, they are broken out for study separately from U.S. new entrants. Thus, the analysis included the comparative study of four groups: 1) U.S. experienced carriers, 2) U.S. new entrants, 3) Mexican carriers, and 4) Canadian carriers. In addition to confirming the need for a new entrant program, this study helped to identify the possible need for special emphasis among the component groups of new entrants.

In performing this study, the Volpe Center took advantage of a relatively new analytical process or tool developed at the Center for the FMCSA that evaluates the safety status of both individual and groups of motor carriers. Called SafeStat, it uses data from a variety of state and federal sources to measure the relative safety performance and compliance of individual motor carriers in four Safety Evaluation Areas (SEAs): Accident, Driver, Vehicle, and Safety Management. SafeStat is currently used by the FMCSA to identify and prioritize motor carriers for on-site compliance reviews (CRs) and roadside inspections. In addition to measuring the safety compliance and performance of individual carriers, SafeStat can also be used to assess the relative safety status of defined groups of carriers (such as new entrants) and provide for comparisons with other defined groups (such as experienced carriers). Furthermore, using SafeStat and FMCSA Census File data, group analysis and comparisons by domicile (state or country) of the carrier are also possible.

In this study, a new entrant was defined as any carrier registered for less than two years, while an experienced carrier was defined as any carrier registered for two or more years.

Sizes and Changes in Carrier Populations

Table 2-4 shows the number of active carriers in the MCMIS Census File by domicile of carrier in September 1997 and September 1999. During this two-year period, while 93 percent of new entrants were U.S.- based carriers, the number of foreign carriers (and, in particular, the number of Mexican carriers) increased at a much faster rate than the number of U.S.-based carriers.

**Table 2-4.
Increase in Carrier Population by Domicile of Carrier
– September 1997 to September 1999**

Domicile of Carrier	Number of Active Carriers - September 1997	Number of Active Carriers - September 1999	Increase from 1997 to 1999	% Increase from 1997 to 1999
United States	401,147	485,927	84,780	21.1
Canada	11,786	14,969	3,183	27.2
Mexico	4,999	7,742	2,743	54.9
Total	417,932	508,638	90,706	21.7

Analysis of SafeStat Results

An analysis of the September 1999 SafeStat results was made to compare new entrants and experienced carriers, and, where possible, Canadian and Mexican carriers. Since complete crash data and exposure measures are not available for Canadian and Mexican carriers, their Accident SEA values are not reliable and, therefore, were not broken out separately in this study. Similarly, the lack of reliable data precluded the separate analysis of Canadian and Mexican carriers in the Safety Management SEA. The data on which the Safety Management SEA is based come from compliance reviews and resulting enforcement actions. Few Canadian and no Mexican carriers receive these on-site safety investigations. Comparisons were generally possible for the Driver and Vehicle SEAs, which are based on roadside inspection and traffic enforcement data and indicators.

SEA values are expressed in percentile terms, where 100 is the highest or worst value and 0 is the lowest or best. SafeStat specifically identifies as deficient any value at or above 75 (i.e., performance is in the worst 25th percentile). Table 2-5 shows the proportions of new entrant and experienced carriers scoring at or above the 75th percentile (i.e., deficient) in the Accident, Driver, and Vehicle SEAs, and in the Safety Management Review Indicator (SMRI).

**Table 2-5.
Percent of Carriers with Deficient SEA Values
by SEA/Indicator and Experience Level**

SEA/Indicator	New Entrants	Experienced Carriers
Accident SEA	47.7	23.7
Driver SEA	55.2	26.1
Vehicle SEA	34.1	27.1
Safety Management Review Indicator	41.4	23.8

The results indicate that new entrant carriers had significantly higher crash involvement than experienced carriers, according to SafeStat. These results are particularly significant, since earlier studies failed to show poorer crash performance by new entrants, due to data limitations and the lack of an appropriate tool, such as SafeStat.

The results indicate that new entrant carriers had significantly worse driver safety compliance and performance compared to experienced carriers, according to SafeStat. The results also indicate that new entrant carriers had somewhat worse vehicle safety compliance and performance compared to experienced carriers, according to SafeStat. These results are consistent with findings from previous studies, which showed new entrants to have lower levels of compliance than experienced carriers.

The Safety Management SEA consists of three indicators: the Safety Management Review Indicator (SMRI), the Hazardous Material Review Indicator (HMRI), and the Enforcement History Indicator (EHI). Since the EHI requires a history of enforcement cases that only experienced carriers would have, and the HMRI is not applicable to most carriers, the only meaningful way to compare new entrants and experienced carriers in the Safety Management

SEA is to use the remaining indicator, the SMRI. The SMRI is based on violations of acute and critical regulations found in the most recent compliance review that are related to safety management programs and practices.

The results of the SMRI comparison indicate that new entrant carriers had significantly worse safety management compliance compared to experienced carriers, according to SafeStat. These results are consistent with findings from previous studies, which showed new entrants to have lower levels of compliance with the FMCSR and HMR than experienced carriers.

In addition to the overall comparison of new entrants to experienced carriers, it is possible to break out data for U.S., Canadian, and Mexican carriers for the Driver Inspection Indicator (DII) (in the Driver SEA) and the Vehicle Inspection Indicator (VII) (in the Vehicle SEA). This is because, for each of these indicators, both the out-of-service violation data and the normalizing data (number of inspections) from roadside inspections are complete and comparable. Data from the other indicators that contribute to the Driver and Vehicle SEAs, which come from compliance reviews and moving violations, are only valid for U.S. carriers whose operations are mainly in the U.S. and that receive compliance reviews.

Table 2-6 shows the results of the DII comparisons for new entrants and experienced carriers by domicile of carrier. As in the overall Driver SEA, new entrants had significantly worse performance in the DII. While comparisons of the DII among U.S., Canadian, and Mexican new entrants confirm their poor performance as compared to experienced carriers, they do not reveal great differences among them.

Table 2-6.
Percent of Carriers with Deficient Driver Inspection Indicators
by Experience Level and Domicile of Carrier

Domicile of Carrier	New Entrants	Experienced Carriers
United States	52.6	24.3
Canada	50.3	35.0
Mexico	40.8	29.7
Total	51.8	24.7

Table 2-7 shows the results of the VII comparisons for new entrants and experienced carriers by domicile of carrier. As in the overall Vehicle SEA, new entrants had somewhat worse performance in the VII. Interestingly, comparisons of the VII for U.S., Canadian, and Mexican new entrants show their relative performance to be comparable to experienced carriers of the same domicile. There are significant differences among the three domiciles, however, with the Canadian carriers having exceptionally low VIIs, the U.S. carriers having VIIs closer to expected levels, and the Mexican carriers having VIIs much higher than expected.

Table 2-7.
Percent of Carriers with Deficient Vehicle Inspection Indicators
by Experience Level and Domicile of Carrier

Domicile of Carrier	New Entrants	Experienced Carriers
United States	32.8	27.0
Canada	8.6	7.0
Mexico	58.7	58.9
Total	34.0	27.1

Analysis of Exposure to FMCSA Oversight

Comparisons were made of the level of safety oversight of experienced carriers and new entrant carriers by the FMCSA. Where meaningful, breakouts of the component groups (U.S., Canadian, and Mexican carriers) were also made. Specifically, comparisons were made for compliance reviews, driver roadside inspections, and vehicle roadside inspections. Table 2-8 shows the total amount of FMCSA oversight for new entrants and experienced carriers during the study period, September 1997 to September 1999.

Table 2-8.
Amount of FMCSA Oversight by Experience Level
- September 1997 to September 1999

Type of Oversight	Performed on :		Total
	New Entrants	Experienced Carriers	
Compliance Reviews	1,072	13,538	14,610
Driver Roadside Inspections	364,191	2,811,318	3,175,509
Vehicle Roadside Inspections	287,352	2,166,100	2,453,632

Of the 14,610 compliance reviews performed in the two-year period prior to the last SafeStat run (September 1997 to September 1999), 13,538, or 92.6%, were on experienced carriers, while 1,072 reviews were performed on new entrant carriers. Since very few Canadian carriers and no Mexican carriers receive FMCSA reviews, almost all of the compliance reviews were on U.S. carriers. Of the 84,780 U.S. carriers that newly registered in the two-year study time period, 1,072, or 1.3%, received compliance reviews. The number of experienced U.S. carriers at the end of the two-year study period was about 401,000, of which 13,538, or 3.4%, received compliance reviews. Thus, the percentage of experienced carriers receiving reviews was over two and one-half times the percentage of new entrants receiving reviews during that period. The lower percentage of new entrants receiving reviews is not surprising, since SafeStat is now being used to identify and prioritize carriers for reviews based on safety performance and compliance data over a time frame of up to 30 months. Recent registrants are less likely to have accumulated sufficient data to be scored by SafeStat.

Carriers are prioritized by SafeStat for compliance reviews based on their SafeStat scores/categories. Although some foreign carriers are being scored by SafeStat, most do not receive compliance reviews. This is particularly the case with Mexican carriers. Although 307

Mexican carriers were scored by SafeStat (i.e., deficient in two or more SEAs), none received reviews. Another 933 Mexican carriers were deficient in one SEA. Also, the percentage of Mexican carriers receiving SafeStat scores (4.0%) was more than three times the percentage of U.S. carriers receiving SafeStat scores (1.2%).

Over 88 percent of the nearly 3.2 million driver roadside inspections and the over 2.4 million vehicle roadside inspections performed during the study period were performed on experienced carriers. Since 90,706 carriers registered in the two-year study time period out of a total census population of 508,638 at the end of the period, then almost 18% of the population could be considered “new entrants.” Therefore, over 88% of both the driver and vehicle inspections were performed on experienced carriers, which represented about 82% of the carrier population. Conversely, the 18% of the carrier population that was new entrants received less than 12% of both the total driver inspections and total vehicle inspections.

The lower percentages of driver and vehicle inspections performed on new entrants are not surprising for two reasons. The first is the smaller fleet sizes that are typical of new entrants. The second is the increasing use of the SafeStat-based Inspection Selection System (ISS), which is being used by the states to identify and prioritize carriers for roadside inspections. Since SafeStat is based on safety performance and compliance data over a time frame of up to 30 months, recent registrants are unlikely to have accumulated sufficient data to be scored by SafeStat and targeted by the ISS.

2.5. CONCLUSIONS

The findings from the new entrant safety research indicate the existence of safety performance and compliance learning curves. These findings support increased safety education and oversight for new entrant motor carriers. Through experience, carriers appear to “learn” about regulatory compliance as well as lower their crash rates. Therefore, there is reason to believe that effective education and training programs at the time of interstate service initiation can shorten the compliance and performance learning curves, and, thus, increase the speed at which new carriers come into compliance with the FMCSR and lower their crash rates. The program could also collect necessary information on new carriers and monitor their safety performance and compliance more intensely than under current FMCSA procedures. This additional surveillance would provide additional insight into the safety status of new entrants, because of the increased amount of safety data obtained.

Modifications to FMCSA registration forms might also be considered to enhance the FMCSA’s ability to identify when carriers began operations and when they initiated interstate operations. A process for updating information on such items as drivers or power units gathered on registration forms might also be considered. Currently, the information is only updated if and when the carrier undergoes a compliance review. Due to the volatile nature of the industry and the infrequent updating of basic carrier information, much of the information in the Census File for many carriers may not be accurate.

3. NAFTA PROVISIONS AND THE NEED FOR A NEW ENTRANT PROCESS

For many years prior to NAFTA, Mexican motor carriers have been permitted to operate limited cross-border motor carrier service to the border city commercial zones in the four southern U.S. border states. Commercial zones are areas usually from 3 to 20 miles from the U.S. border town's northern limits depending on the town's populations. In contrast, the U.S. and Canada opened their borders to cross-border trucking by each other's motor carriers in 1982, ten years prior to NAFTA's approval. Over the years, the two countries have been working together to develop uniform inspection procedures and safety standards for trucks and drivers. As a result of these efforts, Canadian trucks had unrestricted access throughout the U.S. prior to NAFTA.

3.1. NAFTA PROVISIONS

NAFTA is a rules-based international trading agreement signed in December of 1992 between the U.S., Canada, and Mexico that came into effect in January of 1994. NAFTA set forth a timetable allowing for cross-border motor carrier operations, investment in trucking, and passenger bus service. The schedule, referred to as the access liberalization schedule in NAFTA, set forth a number of different dates relevant to motor carrier operations as follows:

December 18, 1995:

- Mexican trucking companies engaged in the transportation of property were to be permitted to file applications with the USDOT for cross-border operations into the four U.S. border states (California, Arizona, New Mexico, and Texas). U.S. and Canadian carriers would be permitted to provide cross-border services to or from six Mexican border states (Baja California, Sonora, Chihuahua, Coahuila, Nuevo Leon, and Tamaulipas). These provisions would apply to private carriers as well as for-hire carriers.
- Permit Mexican investors/carriers to establish 100% Mexican owned or controlled subsidiaries in the U.S. to transport international cargo between points in the U.S. The entity can not provide domestic U.S. service unless Mexican ownership is less than 50% of both legal and actual control.
- U.S. and Canadian investors/carriers were to be allowed to own up to 49% of Mexican entities that transport only international cargo between points in Mexico.

January 1, 2000:

- Full access scheduled for motor carriers from the U.S., Mexico, or Canada to conduct cross-border operations from any point in their own country to any point in another of the partner countries.

January 1, 2001:

- U.S. and Canadian investors/carriers will be allowed to own up to 51% of Mexican entities that transport only international cargo between points in Mexico.

January 1, 2004:

- U.S. and Canadian investors/carriers will be allowed to own up to 100% of Mexican entities that transport only international cargo between points in Mexico.

Provisions of Chapter 12 of NAFTA regarding Cross-Border Trade in Services and related appendixes provide the basis for opening the borders to truck operations of all three NAFTA countries. One of the most relevant stipulations of Chapter 12 is contained in Article 1202, which requires each NAFTA partner to “accord to service providers of another Party treatment no less favorable than that it accords, in like circumstances, to its own service providers.” For the U.S., this requires them to provide equitable treatment of all motor carriers operating on an interstate basis and subject to FMCSR, regardless of country of domicile (including U.S.). In other words, under NAFTA, the USDOT would be required to eventually treat Mexican, Canadian, and U.S. carriers the same. NAFTA gives each country the right to enforce its own standards on foreign motor carriers. Therefore, each country’s carriers would be subject to U.S. motor carrier laws and regulations.

In order to move toward that goal, Articles 913 and 914 of the NAFTA established the Land Transportation Standards Subcommittee (LTSS) and the Transportation Consultative Group (TCG) to work toward compatible truck safety and operating standards among the NAFTA countries. Representatives from each of the three NAFTA countries, the USDOT, the Secretariat of Communications and Transportation (SCT) in Mexico, and Transport Canada, sit on the five working groups created under both the LTSS and the TCG, which include:

LTSS Working Groups

- X Compliance and Driver and Vehicle Standards
- X Vehicle Weights and Dimensions
- X Traffic Control Devices on Highways
- X Rail Standards
- X Hazardous Materials Standards

TCG Working Groups

- X Border Operations
- X Border Facilitation
- X Automated Data Exchange
- X Science and Technology
- X Maritime and Ports Policy

These groups have been meeting on a biannual basis to discuss progress in all areas under discussion since 1994 and have made some significant progress in reaching agreements on standards regarding vehicle and driver standards, which are discussed in Section 4.3.

Despite early progress toward standardization of safety and regulatory regimes through the LTSS, on December 18, 1995, the first major date on the access liberalization schedule for trucking, the U.S. Secretary of Transportation announced that Mexican trucks would continue to have access only to commercial zones until U.S. safety and security concerns were addressed. When the Secretary of the USDOT unilaterally suspended that provisions for border state operations that were to have taken effect, Mexico reciprocated and restricted Canadian and U.S. trucks to the commercial zones in Mexico. To date, the delays in implementing the trucking operations and investment provisions of NAFTA are still in place.

3.2. THE NEED FOR A NEW ENTRANT SAFETY ASSURANCE PROCESS

On February 23, 1999, the USDOT's Assistant Secretary for Aviation and International Affairs appeared before the House Transportation subcommittee regarding ongoing negotiations between the U.S. and Mexico to open the border states to cross-border trucking. In his comments, the Assistant Secretary indicated that if work proceeds as planned, the USDOT might be able to move toward processing applications for operating authority from Mexican carriers (in the four southern U.S. border states) by the end of 1999. Testimony provided by officials from the General Accounting Office (GAO) and the AFL-CIO provided an opposite viewpoint, namely that the U.S. was not prepared, nor did it have a plan, for opening the border states to Mexican carriers.

However, pressure continues on the USDOT to work towards eventual implementation of the cross-border trucking provisions of NAFTA on the border with Mexico. While the American Trucking Associations (ATA) are lobbying to have the moratorium on full implementation lifted, the Mexican government has recently sought resolution under Chapter 20 of NAFTA, which provides for a dispute resolution process. Furthermore, Section 4028 of the Transportation Equity Act for the 21st Century (TEA 21), Determination of Safety Fitness of Foreign Carriers, requires the USDOT to review the qualifications of foreign motor carriers who applied to operate as a motor carrier in the United States, but whose application has not been processed due to the moratorium on granting authority to foreign carriers. TEA 21 also requires USDOT to review a carrier's likely ability to comply with the applicable laws and regulations of the U.S. However, that review shall not constitute a finding that the carrier is willing and able to comply with requirements.

Clearly, the cross-border trucking provisions of NAFTA will eventually need to be put in place. In addition, while the current moratorium has not been focused on the safety of Canadian carriers entering the U.S., any system which tracks the safety of Mexican carriers will have to apply equally to Canadian and domestic U.S. carriers, as called for in Article 1212 of NAFTA. Canadian trucks are already routinely inspected by the states, as are U.S. commercial trucks as the trucks travel U.S. roads. In calendar year 1997, 5.8 million commercial trucks entered the U.S. from Canada.¹¹ Even with the moratorium in place, in calendar year 1997, despite the delay in implementing the U.S. and Mexican cross-border trucking provisions of NAFTA, 3.5 million commercial trucks entered the U.S. from Mexico.¹²

Canada and the U.S. continue to move forward, despite the delay with Mexico, to streamline trucking operations between the two countries. After several years of discussion, Canadian and U.S. government and industry representatives liberalized customs rules governing equipment cabotage, or point-to-point movements in a foreign country, giving trucking companies freedom to use equipment more efficiently and to reduce the number of "empty miles" driven. Under the new rules, as long as the cargo is international, the equipment will also be considered international and free from cabotage restrictions. Cabotage restrictions on equipment moving without payload will also be ended. In addition, the US is considering liberalizing its rules on

¹¹ "Motor Carrier Safety Program for Commercial Trucks at U.S. Borders," OIG/USDOT, December 28, 1998.

¹² Ibid.

"incidental" movements, the pickup and delivery of domestic cargo during an international movement, to bring them into line with Canada's rules. Canada currently permits domestic pickup and drop-off, provided that the domestic shipment is secondary to the international shipment, and that the route taken for the domestic load does not deviate substantially from the route for the international cargo. The required legislative changes are being introduced in both U.S. and Canada.

4. COMPARISON OF NAFTA PARTNERS' MOTOR CARRIER SAFETY REGULATIONS, SAFETY STANDARDS, AND ENFORCEMENT SYSTEMS

The first step in designing any safety fitness assurance process is to understand the existing laws, regulations, safety standards, and enforcement programs currently in place in the three NAFTA countries. This understanding will make it possible to assess the feasibility and timetable that will be required to implement a new process based on an understanding of the current regulatory and operating environment for motor carriers and the availability of safety information in each country.

As cited previously, NAFTA established the LTSS to work toward compatible truck safety and operating standards among the NAFTA countries. The USDOT said the United States' overriding objective for the LTSS was to have a technical evaluation of the different regulations and to encourage the adoption of regulations that yield the highest safety standards. The LTSS has made progress in working towards compatibility on standards relating to driver's age, standard inspection criteria, traffic control devices and road signs, and certain procedures for transporting hazardous materials. However, work by the LTSS on many critical trucking regulations is not yet complete and some regulations may never be made compatible. In the areas in which the LTSS cannot achieve compatibility, foreign truckers will have to comply with the host country's requirements.

The following sections examine existing motor carrier oversight and regulation, safety systems, and progress towards eliminating outstanding differences among the three NAFTA partners.

4.1. EXISTING MOTOR CARRIER REGULATIONS

This section provides a brief overview of the regulatory agencies and existing laws and regulations that apply to motor carriers in each NAFTA country.

4.1.1. United States

In 1995, the responsibility for licensing and registering motor carriers was transferred to the USDOT under the Interstate Commerce Commission Termination Act. Within the USDOT, responsibility for this program is under the direction of the Federal Motor Carrier Safety Administration (FMCSA), which is responsible for promoting safe commercial motor vehicle operations to reduce crashes. The FMCSA develops, communicates, and enforces performance-based regulations for motor carriers, drivers, and vehicles to protect the traveling public on U.S. highways.

The FMCSA is responsible for the issuance, administration, and enforcement of the Federal Motor Carrier Safety Regulations (FMCSR), which are contained in Title 49 of the Code of

Federal Regulations (CFR) Parts 301, 325, 350-399, and the Hazardous Materials Regulations (HMR), which are contained in Title 49 of the CFR Parts 100-180 and Part 40 as it pertains to the drug and alcohol testing requirements. The FMCSA administers its programs through the headquarters office in Washington, D.C. and through its field offices in each of the 50 states. FMCSA field office personnel work closely with local state regulatory and law enforcement agencies to administer and fund motor carrier safety programs in the states and to gather data on the motor carriers operating in and/or located in those states.

Motor carriers are responsible for compliance with these regulations. The FMCSA has put in place safety programs to oversee these carriers as described in Section 4.2.1. The FMCSR defines a commercial motor vehicle to be a vehicle that meets any of the conditions listed below and is applied to carriers conducting *interstate commerce*:

- a vehicle with a gross vehicle weight rating or gross combination weight rating greater than 10,000 pounds
- a vehicle designed to transport more than 15 passengers, including the driver
- a vehicle transporting hazardous materials in a quantity requiring placarding

Interstate commerce means across state lines, including international boundaries, or wholly within one state as part of a through movement that originates or terminates in another state or country. Hazardous materials transporters are subject to the FMCSR and HMR, regardless of whether they operate on an interstate or intrastate basis.

4.1.2. Canada

In Canada, oversight and regulation of motor carriers is the responsibility of Transport Canada, a ministry within the Canadian federal government. Transport Canada's role, similar to that of the USDOT, is to develop and administer policies, regulations, and services to ensure the best and safest transportation system possible for Canada. Transport Canada consists of groups working at headquarters in Ottawa and in five regions. With regard to motor carrier safety, the responsibility of each group is as follows:

- The *Policy Group* is responsible for setting policies relating to trade, motor carrier transportation, departmental strategic policy, and assessing the performance of the overall transportation system and developing supporting information.
- The *Safety and Security Group* is responsible for developing and enforcing the regulatory aspects of rail safety, transport of dangerous goods, and motor vehicle and motor carrier safety, and motor vehicle emissions.
- The *Programs and Divestiture Group* is responsible for the transfer of ports, harbors, and airports to communities and other interests; the oversight and lease management of divested facilities; the operation of facilities not yet divested; and environmental, technical, and real property management.

Transport Canada has five regional offices located in Vancouver, Winnipeg, Toronto, Montreal, and Moncton. Each office applies Transport Canada's programs, policies, and standards in its geographical area, and is the central point of contact in its region for the department's stakeholders. Regional responsibilities include regulatory surveillance, inspection, licensing and certification, regulatory compliance and enforcement, and transportation safety promotion.

Statistics Canada is the country's national statistical agency and plays an important role in providing transportation data for planning and regulatory purposes to Transport Canada. Under the Statistics Act, Statistics Canada is required to collect, compile, analyze, abstract, and publish statistical information on virtually every aspect of the nation's society and economy. Statistics are collected from different sources and in different ways. Statistics Canada data are generally produced from surveys, but can also be generated as a by-product of administrative activities (import and export data, for example, can be obtained from customs forms). Information on motor carrier operations is produced on an annual basis to assess the level of motor carrier activity and the impact on Canada's economy.

In Canada, motor carrier safety regulations and highway safety is the shared responsibility of federal, provincial, and local governments as well as private industry. Federal responsibilities are effected primarily through two statutes. The Motor Vehicle Safety Act (MVSA) controls the safety and emissions of motor vehicle manufacture and importation. More than 60 standards relate to components such as lighting, braking, door and roof strength, and occupant protection. The Motor Vehicle Transport Act (MVTA) obliges commercial bus and truck carriers to meet basic safety fitness standards. The 1987 MVTA regulates trucking companies under federal jurisdiction. However, like its predecessor, the MVTA (1953-54), the MVTA allows the provinces to regulate these companies under its authority.

The revised MVTA made fundamental changes in the manner in which the commercial trucking industry is regulated. Before January 1, 1988, the entry of trucking firms into the Canadian market was governed by an economic entry test. The revised MVTA dismantled the existing system of economic regulation and replaced it with a safety-based regulatory system based on a safety fitness test that assesses the carrier's safety performance. However, its safety provisions are limited in scope, and its carrier fitness provisions apply exclusively to for-hire truck carriers, focusing on entry into the industry rather than on continuing fitness. The MVTA also retains some of the main components of economic control, including the requirement to obtain both a for-hire license and a license for each province in which a carrier operates.

In Canada, provincial governments are responsible for road safety activities within their own jurisdictions, including the licensing of motor vehicles and drivers, and the establishment and enforcement of vehicle and traffic operation laws. The actual operation of urban roadways, for most provinces and territories, has been delegated to the municipal jurisdictions where local police forces have taken on the responsibility of developing and implementing their own traffic safety programs within the context of provincial legislation.

The actual division of responsibility for motor carriers has evolved through legal interpretations of the Constitution Act as follows:

- The federal government has jurisdiction over the operations of extra-provincial carriers (that is, carriers regularly operating between provinces or across international borders); and
- The provincial governments have jurisdiction over carriers that operate strictly within a province (local trucking). They are also responsible for highway safety in general, on-road enforcement, and the licensing of commercial vehicles and drivers. (Source: Annual Report 1996)

In a sense, this is quite similar to the division of responsibility in the U.S. However, while the USDOT's FMCSA has a national database of carriers, each Canadian province maintains its own database of Canadian carriers and grants operating authority.

Canadian regulatory policy since 1988 has been driven, in part, by national and international trade initiatives which sought to remove obstacles to trade in transportation services, including differences between provincial regulations. Government and industry agree that an effective regulatory environment applied consistently across jurisdictions is essential, if Canadian carriers are to compete effectively in the North American market. They also recognize the need for motor carrier regulation to have a safety orientation in response to public concerns, and to demonstrate a commitment to a regulatory system that identifies and sanctions carriers with poor safety performance. This recognition has led to support for recognized national standards.

Toward that end, the 1987 MVTA gave the federal government the power to regulate the safe operation of all federal motor carriers. Since 1988, the federal and provincial governments and industry have supported the development and implementation of Canadian standards through the National Safety Code (NSC) for Motor Carriers. The Canadian Council of Motor Transport Administrators (CCMTA) has emerged as the forum for managing these discussions. The NSC would form the basis of a national safety regime. Recently, work has started on an initiative to implement the new NSC Compliance Review - Safety Rating Standard (Standard 14), which will be the key component of proposed new federal motor carrier legislation in an amended MVTA.

4.1.3. Mexico

In Mexico, oversight and regulation of motor carriers is the responsibility of the Secretaria de Comunicaciones y Transportes (SCT), a ministry within the Mexican federal government, which is equivalent to the USDOT. The SCT's role, similar to that of the USDOT, is to develop and administer policies, regulations, and services to ensure the best and safest transportation system possible for Mexico. The Instituto Mexicano del Transporte (IMT), a part of the SCT, is a center for transportation research and technological development. The IMT is responsible for much of the applied and basic transportation research and compilation of data and statistics in Mexico.

In Mexico, the federal government has the authority to set truck size, weight, and dimension limits that apply to the federal highways. Similar to the U.S. and Canada, the 31 Mexican state governments can establish limits on roads under their jurisdiction. No state, however, has yet put such individual limits in place.

In 1995, Mexico was just beginning to establish a commercial vehicle enforcement and inspection program.

4.2. EXISTING MOTOR CARRIER SAFETY SYSTEMS

This section provides a brief overview of the motor carrier safety systems that apply to motor carriers in each NAFTA country. These systems include registration/application, roadside inspections, compliance and safety reviews, and enforcement processes.

4.2.1. United States

Registration/Application Process

A U.S. motor carrier that meets the description provided in Section 4.1.1 is required to register as a motor carrier with the FMCSA by submitting Form MCS-150, Motor Carrier Identification Report. This form must be filed by all motor carriers that operate commercial motor vehicles in interstate commerce. Form MCS-150 provides the FMCSA with carrier identification information, as well as data on size of carrier, type of operation, type of cargo transported, and hazardous material that is transported or shipped.

Once the carrier's data have been entered into the MCMIS, a unique USDOT number is assigned to the carrier. If the carrier is an interstate carrier a notification letter is sent to acknowledge that the registration has been completed. The acknowledgment also serves as a means to inform the carrier of their new USDOT number, and provides instructions on displaying the USDOT number on the carrier's vehicles. The FMCSR require that each commercial motor vehicle be marked on both sides with the USDOT number along with the name of the motor carrier, city or community, and state in which the carrier maintains its principal place of business or where the vehicle is based. Carriers are required to register with the FMCSA within 90 days of commencing operations.

Roadside Inspections

The FMCSA sponsors the Motor Carrier Safety Assistance Program (MCSAP), which provides funds to states to provide inspectors to perform roadside and terminal inspections on individual interstate and intrastate commercial motor vehicles. The inspector examines the driver and/or vehicle for violations. The majority of the inspections are conducted by state inspectors with a small number being conducted by federal safety investigators from FMCSA field offices. All three of the NAFTA partners currently subscribe to the North American Standard Inspection Regime promoted by the Commercial Vehicle Safety Alliance (CVSA).

The CVSA is an international organization of federal, state, and provincial government agencies, as well as representatives from the private sector in the United States, Canada, and Mexico. All government representatives are from agencies responsible for enforcing commercial vehicle laws, rules, and regulations. The private sector is represented by national motor carrier, bus, and

driver associations, state motor carrier associations, individual motor carriers, insurance carriers, manufacturers, research firms, and others that support the CVSA in its safety efforts. All members of the CVSA are dedicated to improving commercial vehicle safety throughout North America. The CVSA has been involved with developing a uniform inspection process for Canada, Mexico, and the United States.

The North American Standard Inspection Regime includes five different levels of roadside inspections as follows:

LEVEL I - North American Standard Inspection - An inspection that includes examination of driver's license, medical examiner's certificate and waiver, if applicable, alcohol and drugs, driver's record of duty status as required, hours of service, seat belt, vehicle inspection report, brake system, coupling devices, exhaust system, frame, fuel system, turn signals, brake lamps, tail lamps, head lamps, lamps on projecting loads, safe loading, steering mechanism, suspension, tires, van and open-top trailer bodies, wheels and rims, windshield wipers, emergency exits on buses and hazardous materials (HM) requirements, as applicable.

LEVEL II ■ Walk-Around Driver/Vehicle Inspection - An examination that includes each of the items specified under the North American Standard Inspection. As a minimum, Level II inspections must include examination of: driver's license, medical examinees certificate and waiver, if applicable, alcohol and drugs, driver's record of duty status as required, hours of service, seat belt, vehicle inspection report, brake system, coupling devices, exhaust system, frame, fuel system, turn signals, brake lamps, tail lamps, head lamps, lamps on projecting loads, safe loading, steering mechanism, suspension, tires, van and open-top trailer bodies, wheels and rims, windshield wipers, emergency exits on buses, and HM requirements, as applicable. The walk-around driver/vehicle inspection includes only those items that can be inspected without physically getting under the vehicle.

LEVEL III ■ Driver-Only Inspection - A roadside examination of the driver's license, medical certification and waiver, if applicable, driver's record of duty status as required, hours of service, seat belt, vehicle inspection report, and HM requirements, as applicable.

LEVEL IV ■ Special Inspections - Inspections under this heading typically include a one-time examination of a particular item. These examinations are normally made in support of a study or to verify or refute a suspected trend.

LEVEL V - Vehicle-Only Inspection - - An inspection that includes each of the vehicle inspection items specified under the North American Standard Inspection (Level I), without a driver present, conducted at any location.

The data from a roadside inspection are submitted to the FMCSA in one of three ways: 1) via paper copy which is directly entered into the MCMIS, the central database; 2) via ASPEN, a pen-based system which is then uploaded to the MCMIS, or; 3) a state mainframe is used to upload the data to the MCMIS. The inspection record contains the following information:

- Carrier information, i.e., USDOT number, name, address, ICC number
- Driver information, i.e., driver name, license number and state
- Inspection date and time
- Inspection state and city, inspector code
- Shipper information, i.e., shipper name and shipper document numbers
- Inspection level, i.e., full, walk around, driver, special study, terminal
- Hazardous material information, i.e., code, reportable quantity, HM waste
- Violation Information, i.e., unit number, federal violation code, OOS
- Violation summary, i.e., number of driver, vehicle, hazmat, and OOS violations
- Unit information, i.e., vehicle type and make, license number and state

Compliance Reviews

The purpose of the compliance review is to determine the motor carrier’s compliance with the FMCSR and, if applicable, the HMR. The current compliance review (CR) process involves an on-site review of a motor carrier’s operations by an FMCSA safety investigator or a state enforcement officer. The items reviewed are as follows:

- | | |
|-----------------------------|--|
| X Financial responsibility | X Safety and business records |
| X Drivers’ hours of service | X Commercial driver license requirements |
| X Driver qualifications | X Vehicle maintenance and inspection |
| X Accidents | |

The FMCSA uses a safety rating methodology as part of reviews that consist of the six factors listed in Table 4-1.

**Table 4-1.
Compliance Review Factors**

Factor	Name	Addresses
1	General	Parts 387 and 390 of FMCSR
2	Driver	Parts 383 and 391 of FMCSR
3	Operational	Parts 392 and 395 of FMCSR
4	Vehicle	Parts 393 and 396 of FMCSR
5	Hazardous Materials	Part 177 of the HMR and Part 397 of the FMCSR
6	Accident	Recordable accident rate

A motor carrier is selected for an on-site compliance review due to a complaint, an enforcement follow-up, carrier request, or by prioritization by SafeStat. Prior to the review, the safety investigator reviews the motor carrier profile, which is downloaded from the central database and includes census, inspection, and accident data on the carrier.

During the on-site review the safety investigator inquires about the carrier’s type of business, nature of operation, and may request a facility tour. The safety investigator inquires about the carrier’s procedures for recording accidents, driver selection, driver qualification, and driver

training. The safety investigator may also examine external data sources to supplement the examination of the carrier's internal documents.

The safety investigator enters the collected data into the CAPRI laptop system and performs an analysis of the carrier's safety compliance data. The CAPRI system uses the safety compliance data to compute the carrier's safety rating. The results of the review are then uploaded into the central database, the MCMIS. The review record contains the following information:

- | | |
|----------------------------|--|
| X Carrier information | X Crash data |
| X Audit data | X Acute and critical regulation violation data |
| X Driver data | X Factor and rating data |
| X Review date and type | X Mileage data |
| X Safety investigator code | |

Enforcement Cases

An enforcement case is the result of one or more major violations discovered by a safety investigator during a compliance review. The FMCSA brings the enforcement case against the carrier and tracks it from initiation through settlement. When the enforcement case is closed, the enforcement case data are entered into the MCMIS. The closed enforcement record contains the following information:

- Carrier information, i.e., USDOT number, name, address
- Investigation number and enforcement description
- Enforcement tracking dates, i.e., close date, settlement date, action date
- Financial settlement amount
- Individual enforcement violation counts and amounts

4.2.2. Canada

When Canadian trucks are processed through Customs, they are not typically inspected as they enter the U.S., but instead are subject to the safety oversight system that Canada has had in place since the early 1980s. The Canadian safety systems are similar to those in place in the U.S., including registration, inspection, and periodic compliance reviews. Furthermore, Canadian trucks are subject to routine oversight inspections performed by states, as the trucks travel throughout the U.S.

Transport Canada, in coordination with the CCMTA, is currently exploring the development of a new safety assessment process, as discussed in Section 4.1.2. There is now an opportunity to use an amended MVTA to create a renewed national legislative framework to support a safe, competitive and efficient motor carrier industry. In considering changes to the Act at this time, Transport Canada proposes to:

- Create a Canadian regulatory regime for all extra-provincial motor carriers, focused on motor carrier safety performance assessment, administered by the provinces, and based on the National Safety Code;

- Ensure all motor carriers operating within federal jurisdiction are subject to consistent regulatory treatment;
- Establish the principle of, and the mechanisms for, reciprocal recognition of motor carrier safety performance assessments with foreign governments; and
- Complete the deregulation of extra-provincial motor carrier undertakings concurrently with the coming into force of the MVTA motor carrier safety performance assessment regime.

Transport Canada proposed January 1, 2000 as a target date for implementation for a national motor carrier safety performance regime. This date was consistent with provincial plans to implement National Safety Code Standard 14 by the end of 1999. The basic principle underlying these objectives is that any fleet of vehicles operated by an extra-provincial motor carrier undertaking, and safety-assessed in a jurisdiction recognized under the provisions of the Act, would be permitted to operate throughout Canada, and indeed throughout North America, provided it maintains an acceptable safety performance assessment.

The elements essential for this national framework, particularly the NSC standards, have already been agreed upon and largely implemented by the provinces. The changes to the Act are intended to support a consistent application of the regulatory regime that has evolved across jurisdictions. There is broad agreement on the criteria for rating motor carrier safety performance, and on the value of a rating for safety regulation purposes.

The amendments would establish the principle that carriers must meet safety fitness performance criteria under the Act to operate extra-provincially, and must maintain a safety performance record compatible with the National Safety Code and the requirements of the Act to continue to operate. The proposed amendments would stipulate that a motor carrier fleet have a MVTA safety fitness certificate in order to operate extra-provincially. Provinces with safety performance assessment systems compatible with the Act, and which recognize safety performance assessments conducted in accordance with the Act by other jurisdictions, will be authorized to issue safety fitness certificates under the authority of the Act. The amendments will allow jurisdictions to apply sanctions, including withdrawal of these certificates when carriers no longer meet the criteria for holding them.

Registration/Application Process

In Canada, provincial/territorial highway and road safety authorities handle registration, driver testing, vehicle inspection, and enforcement of regulations for commercial carriers. While the MVSA empowers federal government to regulate the safe operation of extra-provincial carriers, that responsibility is largely delegated to the provinces. The CCMTA coordinates all matters dealing with the administration, regulation and control of motor vehicle transportation. The CCMTA has members from the federal government and all Canadian provincial and territorial governments, and associate members from more than 250 organizations.

The federal and provincial governments cooperate in implementing the National Safety Code (NSC), which addresses truck and bus carrier safety. NSC standards now cover facility audits,

driver and carrier profile systems, trip inspection reports, hours of service regulations, commercial vehicle maintenance and inspections, and load security. The code's administrative standards cover self-certification for drivers, single-driver licensing, a driver license classification system, medical standards, knowledge and performance testing, and a driver examiner training program.

Roadside Inspections

Canadian provinces manage an inspection program for commercial vehicles that is based on the NSC with inspections performed in accordance with CVSA standards. Unsafe vehicles are placed out of service in accordance with the standards. The program has been operational since the 1980s. Canada does not have a centralized, national system that provides national statistics for such things as out-of-service (OOS) rates. However, results from a three-day, nationwide "Roadcheck 97" survey revealed that OOS rate for Canadian trucks was about 17%. Data from roadside inspections are currently maintained at the province level, and not consolidated on a national basis.

Audit Programs

All jurisdictions currently have audit programs. One of the more important elements of a national motor carrier safety performance regime currently being considered is the facility audit of motor carriers. Transport Canada considers that mandatory periodic audits of all carriers should be an essential and effective component of a comprehensive carrier safety performance assessment system. This component would both encourage safe practices and ensure the equitable monitoring of the safety performance of all carriers. The federal government, the provinces, and the industry have focused on the NSC as a suitable basis for the MVTA motor carrier safety performance assessment regime. Transport Canada recognizes the particular importance of NSC Standard 14, which includes the following factors relevant to rating carriers:

- Reportable crashes
- Convictions and detentions relating to NSC Standards:
 1. Single Driver License
 4. Classified Driver License
 9. Hours of Service
 10. Load Security
 11. Commercial Vehicle Maintenance
 12. Commercial Vehicle Safety Alliance On-Road Inspections
 13. Trip Inspections
- Convictions and detentions relating to Transportation of Dangerous Goods Regulations
- Convictions and detentions relating to commercial vehicle size and weight limits

In addition to using other National Safety Code Standards for rating purposes, Standard 14 requires implementation of Standards 7 (Carrier Profile) and 15 (Facility Audits), and the timely exchange of safety performance data among jurisdictions.

4.2.3. Mexico

As cited earlier, in 1995, Mexico was just beginning to establish a commercial vehicle enforcement and inspection program. While some progress apparently has been made through working with the USDOT through the LTSS, it is difficult to assess what the precise status of any of these systems is at this time.

Registration/Application Process

The Secretaria de Comunicaciones y Transportes (SCT) issues commercial driver's licenses for motor carrier drivers in the form of a Licencia Federal. The database of registered drivers is apparently shared with the U.S. Customs officials at the border crossing. The accuracy and accessibility of data from this system for the purposes of a new entrant safety fitness assurance process are currently unknown, but attempts are continuing to gather further information about this data source. The same is true for the vehicle licensing registration system operated by the SCT. According to a USDOT Inspector General's report,¹³ these databases were being developed in close consultation with the FMCSA.

Roadside Inspections

Mexico does not currently have a safety management oversight program in place, but intends to begin inspecting commercial vehicles and issuing inspection decals. As discussed earlier, Mexico is a member of the CVSA and has agreed to use the five-level uniform inspection standards used in Canada and the U.S. Mexican officials have been trained to perform vehicle roadside inspections using the North American Uniform Driver Vehicle Inspection Program. According to one report,¹⁴ since 1993, 285 Mexican personnel have been trained by U.S. officials to inspect trucks. However, many of the Mexican officials who were to train their colleagues have left the program. According to Mexican officials, there has been little truck enforcement activity to date in Mexico. In April 1998, however, Mexico reported that 3,600 members of the Federal police force had received a 45-day course on inspection procedures although they did not announce a plan to implement an inspection program. According to LTSS members, a joint U.S.-Mexico inspection exercise was planned for late 1998 to highlight border activities being undertaken to demonstrate the safety of motor carrier vehicles engaged in cross-border operations.

At the U.S.-Mexican border, Mexican trucks are generally targeted for inspections on a selective basis. If a cursory auditory and visual examination of the truck reveals potential violations, it is inspected. Trucks are also randomly selected for inspection. In addition, trucks crossing at California's two major border ports of entry are generally selected for inspection if they do not have an inspection decal or if they have an expired inspection decal (indicating that the truck has not been inspected in 3 months).

¹³ "Motor Carrier Safety Program for Commercial Trucks at U.S. Borders," OIG/USDOT, December 28, 1998.

¹⁴ "Commercial Trucking - "Safety and Infrastructure Issues Under the North American Free Trade Agreement," February 1996, GAO (GAO/RCED-96-61).

Review/Audit Program

Mexico does not currently have a compliance review or safety audit process in place. However, FMCSA consultants are reportedly working in close consultation with Mexican officials to develop a third database, which would be a safety module intended to record crashes, violations, and results of inspections.

4.3. PROGRESS TOWARDS HARMONIZATION OF NAFTA PARTNERS' MOTOR CARRIER REGULATIONS AND SAFETY SYSTEMS

In general, it is clear that there is still quite a lot of information that will need to be developed from a safety perspective before the U.S. allows Mexican carriers to operate within the border states and, eventually, throughout the U.S. While Canadian and U.S. safety systems and regulations appear reciprocal, including the potential availability of safety data on Canadian carriers which might be provided by provinces or, eventually, the Canadian federal government, it appears that a similar arrangement with Mexico is not in the immediate future. As shown in Table 4-2, there are still a number of important differences remaining between Mexico and its two northern NAFTA partners with regard to motor carrier safety programs.

**Table 4-2.
Differences in Safety Oversight Programs by Country**

Safety Oversight Program	Country		
	Canada	Mexico	United States
Drivers' Hours of Service Restricted?	Yes – 13 hours a day	No	Yes - 10 hours a day
Logbooks Required?	Yes	No	Yes
Vehicle Maintenance Standards?	Yes	No	Yes
Roadside Inspections?	Yes	No	Yes
Safety Rating System?	Yes	No	Yes

Mexico and the U.S. also have outstanding differences over requirements for mandatory front brakes for trucks manufactured after 1980, and over maximum allowable gross vehicle weights:

<u>Regulations</u>	<u>United States</u>	<u>Mexico</u>
Maximum gross vehicle weight (5-axle)	80,000 lbs.	97,000 lbs. ^a
Maximum single axle weight	20,000 lbs.	22,000 lbs. ^a
Maximum tandem axle weight	34,000 lbs.	39,600 lbs. ^a

^aAs of December 1995, was pending final approval in Mexico.

Mexico and the United States have made some progress in developing compatible trucking regulations. The achievement of compatibility is essential, because there are major differences in the two countries' trucking regulations, operating practices, and enforcement activities that

could adversely affect highway safety and infrastructure. Compatibility efforts in areas such as vehicle-related standards and traffic control devices are currently being addressed by the LTSS. The LTSS has reported accomplishments made in a number of areas to address outstanding differences between the NAFTA partners. These include some of the following items as reported in their June 1998 Joint Statement of Accomplishments:¹⁵

- **Exchange of Motor Carrier Safety Data** - The three countries resolved to begin a program to exchange carrier safety data necessary for the effective and timely implementation of the compatibility of motor carrier supervision for international operations throughout North America. The three countries committed to implementing such an exchange on a priority basis with the objective of achieving reciprocity of safety fitness regimes. A trilateral motor carrier safety data conference was to be hosted by Canada in the fall of 1998.
- **Inspection Standards Training** - Mexico reported that it has completed training of its federal law enforcement officials in Commercial Vehicle Safety Alliance (CVSA) inspection standards and intended to begin inspecting vehicles and issuing decals in the fall of 1998. A joint U.S.-Mexico inspection exercise was planned for late 1998 to highlight border activities being undertaken to demonstrate the safety of motor carrier vehicles engaged in cross-border operations.
- **Vehicle Weights and Dimensions** - A report issued in the fall of 1997 outlined issues related to the compatibility of vehicle and dimensions and possible approaches to pursue more compatible vehicle size and weight limits. The study included a side-by-side comparison of the three countries' national, state, and provincial requirements with respect to truck sizes and weights, identification of vehicle configurations most commonly used in cross-border service. At the June 1998 LTSS meeting, consensus was reached on a direction to be pursued to address regulatory barriers and discrepancies that currently affect international trucking operations. A resolution was endorsed that establishes a context and framework for ongoing discussions on regulatory compatibility. It was also agreed to examine the feasibility of establishing vehicle stability and control performance criteria as a basis for pursuing compatibility in vehicle weights and dimensions. A technical task force was established for this purpose.
- **Hazardous Materials Transportation Regulations** - The three countries agreed to develop a North American model rule and standards document relating to the transport of hazardous materials.
- **Emergency Response Guidebook** - It was also agreed to amend the North American emergency response guidebook as a result of changes to national and international regulations and publish the revised document (entitled ERG 2000) in late 1999. The North American Emergency Response Guidebook will continue to be issued in English, Spanish, and French to ensure that authorities engaged in responding to accidents involving hazardous materials will have consistent information.

¹⁵ "Plenary and Working Group Reports," LTSS and TCG Fifth Annual Plenary, June 1998.

- **Tank Truck Inspection Course Planned** - Canada is to provide a course in Mexico on the inspection of tank trucks and portable tanks in the transport of hazardous materials (December 1998).
- **Commercial Driver's Licenses** - agreement on a common age for operating a vehicle in international commerce (21 years)
- **Drivers' Logbooks and Hours-of-Service** - agreement to develop a common format and contents for a North American logbook for recording drivers' hours of service, and agreement on safety performance information each country will require from motor carriers. Canada and the U.S. have hours of service requirements and Mexico has agreed to adopt similar standards. Mexico, however, must develop governing regulations first.
- **Driver Medical Standards** - recognition of several binational agreements as the basis for achieving reciprocity of driver medical standards. Medical standards for drivers in U.S. and Mexico are already compatible. The U.S. and Canada agreed on two final requirements regarding hearing impaired individuals and insulin dependent diabetics. Procedures for administering drug and alcohol tests were harmonized with the signing of a memorandum of understanding (MOU) between Mexico and the U.S. Canada has no substance use testing legislation/regulations. The industry is developing a compliance program acceptable to the US. Industry associations are working to help companies put programs in place and to encourage the accreditation of Canadian testing facilities.
- **Language Requirements** - agreement on a common language requirement such that the driver is responsible for being able to communicate in the language of the jurisdiction in which the operation is being conducted
- **Traffic Control Devices** - A three-country comparison of traffic control devices was completed. Canada published this information in March 1996. Publication of the United States and Mexican documents was expected in the fall of 1998.
- **Insurance Coverage for Motor Carriers** - brought together insurance regulators from the three countries to discuss issues related to insurance coverage for motor carriers engaged in cross-border operations. Insurance regulators indicated their intention to explore the possibility of entering into confidentiality agreements for sharing information on individual insurance companies, establishing a system of mutual cooperation, and exchanging information on licensing and registration requirements. Regulators also agreed to inform their insurance trade associations of their discussions.

Other trilateral groups have worked in conjunction with the LTSS to make progress toward standardizing motor carrier provisions to enable NAFTA implementation. In 1992, Mexico and the U.S., and later Canada, agreed to create the National Law Center for Inter-American Free Trade (NLCIFT) to research and develop uniform and harmonized legal actions designed to facilitate free trade between the three NAFTA countries. NLCIFT created the North American Committee on Surface Transportation Law and Practice (NACST) to address disparities in each country's laws and to propose solutions to the problems. The NACST is composed of over 70

experts from all facets of the transportation industry representing the three countries. To date, the NACST has made significant progress in four main work areas:

- Development of a Uniform Bill of Lading for international motor freight transportation
- Development of a Uniform Liability Regime to set and define liability requirements for carrier's operating in international services
- Development of Uniform Rules of Practice for Surface Transportation Documentation which would address how carriers comply with lading form and liability requirements, registration, identification numbers, etc.
- Development of Standard Insurance Policy and Practices to ensure that carriers are adequately insured

5. ASSESSMENT OF THE AVAILABILITY OF NEW ENTRANT DATA

When “new entrant carriers” are discussed in this report three populations are considered: U.S. intrastate carriers or new carriers entering the interstate carrier business; Canadian carriers, and; Mexican carriers. Data for each population can be considered in terms of its availability. In this section, we discuss the availability of existing data maintained by each country, if applicable, and information available on the FMCSA’s Motor Carrier Management Information System (MCMIS). Since 1997, Canadian and Mexican vehicles that cross the border into the U.S. have been required to complete a Form MCS-150 and consequently were given a USDOT number. Some Canadian and Mexican carriers had done this earlier than 1997 using Form MCS-150 (or former ICC) registration forms. A limited amount of data is currently available on both Mexican and Canadian carriers from MCMIS and its safety ratings components.

5.1. UNITED STATES

5.1.1. Motor Carrier Management Information System (MCMIS)

Collection of motor carrier safety performance data in the U.S. is for the most part automated. The MCMIS is a central repository of safety data for approximately 450,000 active motor carriers and shippers. To identify each motor carrier, the MCMIS assigns a unique number to each motor carrier record. This number is referred to as the record census number. This is also the number supplied to a motor carrier as its USDOT number. The MCMIS has electronic data exchange capability with federal field offices and state offices via the network communications system SAFETYNET.

The MCMIS is an automated computerized system used by the FMCSA to maintain motor carrier records and safety performance data, such as crashes, inspections, enforcement cases, and reviews for carriers that are subject to the FMCSR or HMR. The MCMIS provides the FMCSA with the following data, as illustrated in Figure 5-1.

- data from the carrier’s Form MCS-150
- results from roadside and terminal inspections
- closed enforcement cases
- compliance reviews
- state-reported National Governors’ Association (NGA) crash data

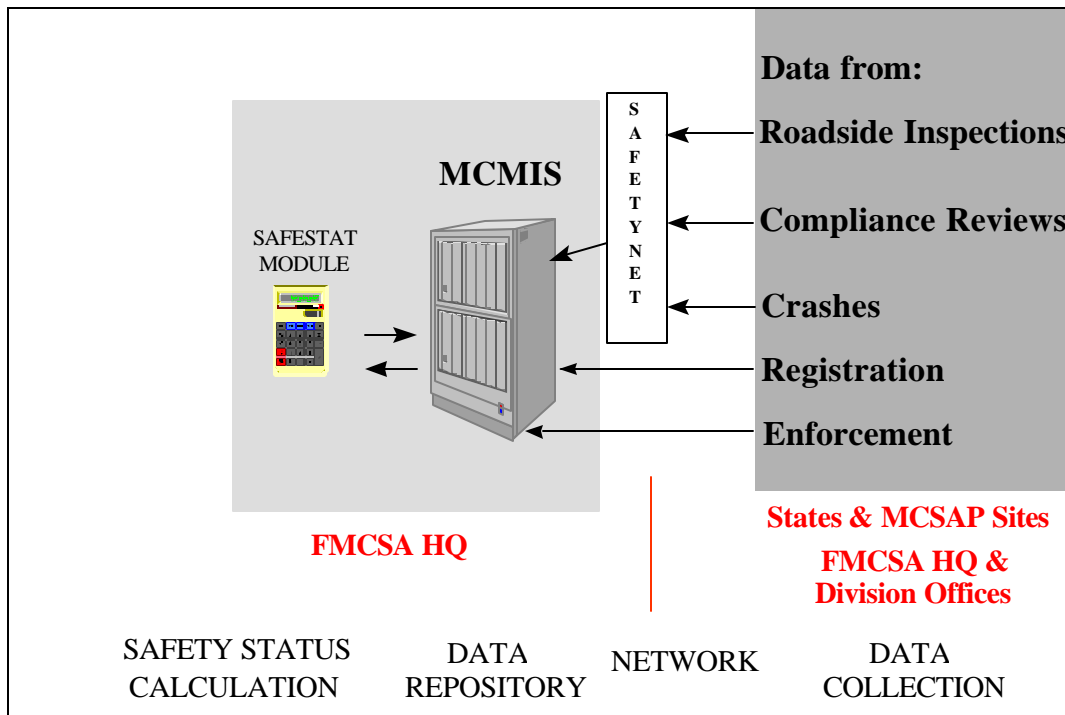


Figure 5-1. Overview of MCMIS

The MCMIS also provides file maintenance of all carrier data, query and reporting capabilities, and selection capabilities used to prioritize and monitor carrier safety performance. The MCMIS database not only includes all carriers that are required to register with DOT as discussed above, but also includes other carriers that are not required to register. The FMCSA has given the states the ability to register their intrastate non-hazmat carriers with the USDOT. This is being done to enable states to use one unique identification number for motor carriers from their states to avoid confusion of the overlap of federal and state issued operating identification numbers.

The major data elements contained in the MCMIS are briefly described below. The MCMIS contains other ancillary files, such as, unmatched accidents, user security, and audit files that are not discussed. The main data elements are related through the Census File master index key, which is the USDOT number.

Census Data

The registration form for motor carriers, Form MCS-150, contains descriptive information about a motor carrier's identification, size, and operations. The FMCSA initially enters this type of information into the MCMIS and then updates the data during on-site reviews using Form MCS-151. The data is also updated by field offices and by headquarters. The Census File contains a single record for each motor carrier or shipper. Each record is identified with a unique number, referred to as the USDOT number. This number is used in all the carrier's related records. Each carrier's records contains the following information:

- USDOT number - unique identifier for each carrier
- Carrier's name (legal and DBA) and address (physical and mailing)
- ICC number(s), tax number(s)
- Classification information, i.e., for hire, exempt, private
- Operation type, i.e., shipper, carrier, intrastate, interstate, hazmat,
- Type of cargo carried information, i.e., general freight, passenger
- Hazmat cargo carried/shipped information
- Number of equipment owned, leased, or trip
- Type of equipment, i.e., trucks, tractors, trailers, bus, hazmat tank truck
- Number of drivers, i.e., interstate within/beyond 100 miles, intrastate
- Compliance review information, i.e., last review date, rating, mileage
- SafeStat information - score and date

Compliance Review Data

The on-site compliance reviews of carriers and hazardous materials shippers are conducted by FMCSA field staff and state staff using laptop microcomputers and are electronically transmitted via SAFETYNET to the MCMIS. Reviews update the "census" information and result in a safety rating for the carrier. The rating is posted in the MCMIS and is made available electronically to Federal and state offices and via a toll-free number and the Internet to the industry and public.

Roadside Inspection Data

The MCMIS contains data collected during a roadside inspection of a vehicle and driver. Violations of safety regulations governing the driver, the vehicle and those specifically related to hazardous materials are included. The source of most inspection data is the states that conduct roadside inspections. The ASPEN pen-based system is used to input the data. The states maintain inspection data locally and transmit records electronically for interstate carriers to the central MCMIS system via SAFETYNET.

National Governors' Association (NGA) Crash Data

The majority of states (and eventually all states) provide the FMCSA with crash data. The source of this data is the accident reports filled out by state and local police officials. The states are responsible for uploading the NGA's recommended data elements from these crash reports through the SAFETYNET system to the MCMIS. The crash record contains the following information:

- Carrier information, i.e., USDOT number, carrier name, address,
- Driver information, i.e., driver name, license number and state, date of birth
- Vehicle information, i.e., license number and state, configuration, VIN
- Crash date, time, and location
- Crash description
- Crash injuries, fatalities, towaways, and hazmat spills
- Crash factors, i.e., road surface, weather condition, light condition

Enforcement Data

Electronic records of enforcement cases that are being pursued against carriers are kept by FMCSA field offices and transmitted to the MCMIS as each case is concluded. The MCMIS permanent record contains critical information about each case, including the type of violations assessed.

Census Activity Data

The Census Activity file contains statistical safety performance activity by carrier. Each record contains the carrier's activity for a specific year. The Census Activity record contains the following information:

<input checked="" type="checkbox"/> Carrier information - USDOT number	<input checked="" type="checkbox"/> activity year
<input checked="" type="checkbox"/> inspection statistics	<input checked="" type="checkbox"/> accident statistics
<input checked="" type="checkbox"/> review statistics	<input checked="" type="checkbox"/> inspection address
<input checked="" type="checkbox"/> crash address	

Census History Data

The Census History data is used to track the changes in critical data elements of the carrier's Census File. The Census history record contains the following information:

<input checked="" type="checkbox"/> Carrier information - USDOT number	<input checked="" type="checkbox"/> date of the change
<input checked="" type="checkbox"/> who made the change	<input checked="" type="checkbox"/> data element(s) that changed

Network Connection

SAFETYNET represents a cooperative effort to share motor carrier information among states and the FMCSA. The SAFETYNET system consists of software located in state and federal offices. It is a communications component that provides for the electronic transmission of data from these offices to FMCSA Headquarters and to the software that resides on the FMCSA mainframe computer to process the data and load it into the MCMIS.

Safety Status Calculation

The FMCSA uses a performance-based approach to rank carriers for on-site review. SafeStat provides an assessment of a motor carrier's operations in four broad Safety Evaluation Areas (SEAs), Accident, Driver, Vehicle, and Safety Management, to produce an overall safety score. SafeStat uses data from five sources to calculate the individual SEA values and overall SafeStat score. Four sources provide a motor carrier's actual performance and compliance data: state-reported commercial vehicle crashes, compliance reviews, closed enforcement cases, and roadside inspections. The other data source is the registration process, which provides census data, which are updated during compliance reviews. Census data are used only for identification and normalization of safety-event data.

5.1.2. Data on U.S. Intrastate Carriers

Most of the data on existing intrastate carriers are stored in the various state databases. It would be very difficult to access intrastate data from specific state systems. However, many of the states now register intrastate carriers with the FMCSA. As a result, the carriers are assigned USDOT numbers. Thus, census data and data on safety performance events for these carriers are sent via SAFETYNET to the MCMIS. Therefore, the only data on intrastate carriers available in the MCMIS are the data for these carriers.

5.1.3. Data on Canadian and Mexican Carriers

At this point, there is only limited exchange of motor carrier safety data between the NAFTA partners, and none of the exchange is automated. The MCMIS contains safety data on Canadian and Mexican carriers that have registered with the FMCSA and have USDOT numbers. The data include events (e.g., crashes, inspections, compliance reviews) that occurred while those carriers were operating in the United States.

5.2. CANADA

In Canada, there are two primary agencies involved in providing and maintaining data and statistical services for policy purposes, Transport Canada and Statistics Canada. Transport Canada's Economic Analysis Directorate (ACA) coordinates data requirements for the department, conducts additional analysis of a number of the databases to provide statistics and forecasts for operational and policy analysis, and administers a relationship with the second agency involved in data, Statistics Canada. Statistics Canada's Transportation Division collects data, processes and analyses them, publishes tabulated results in official publications, and makes available the databases. Statistics Canada intends to serve a broad community of users of transport data through its publications: carriers, researchers, the general public, as well as policy analysts. Its main concern, however, is the provision of industry output, prices, costs and revenues for the National Accounts.

Canadian commercial motor vehicle data are collected and managed by the provinces and maintained in the provinces' own unique databases. While some provinces already exchange data, there is a plan to share data among all the provinces within the next two years. Currently, however, there is no central database containing motor carrier safety performance and compliance data. All data from registration, roadside inspection, and carrier on-site audits are maintained at the province level. For example, the data maintained at the province level for Ontario contain a number of data elements that are similar to data contained in the MCMIS and may be able to be used in tracking the fitness of new entrant carriers from that province.

Transport Canada maintains a national accident database, the Traffic Accident Information Database (TRAID). TRAID has many of the important variables required for analysis, such as

number of persons involved, crash configuration, road category, etc. Crashes are reported by fewer than 75% of the provinces and territories, and the percent of usable data for the limited number of common roadway descriptors varies from 37% to 66%. There are 44 data elements contained in the TRAIID database. The majority of these elements are very basic in nature, such as urban/rural, asphalt/gravel, straight/curved etc., yielding only general safety indicators as to where accidents may be occurring. Detailed information, which is required to develop more precise safety relationships with geometric design elements, must be obtained from other sources.

5.3. MEXICO

There have been numerous studies sponsored by the U.S. Government that address the safety of Mexican carriers at the border crossings. According to one study,¹⁶ out-of-service (OOS) rates for Mexican carriers at the borders are as high as 50% compared to a 28% out-of-service rate for U.S. interstate truckers in the U.S. Arizona data for 1994 presented in the study show 63% of Mexican trucks to be OOS compared to 24% of U.S. interstate trucks inspected in Arizona. Overall, there is a lack of overall inspection data on trucks from Mexico.

In Mexico, the Secretaria de Comunicaciones y Transportes (SCT) currently maintains a Commercial Drivers License (CDL) database of all Mexican drivers who hold a Licencia Federal and a registration database of all commercial carriers. At present, Mexico does not have a commercial vehicle safety oversight program in place. The only available information on the safety of Mexican commercial vehicles is that data captured in MCMIS. Mexico is now beginning to develop commercial vehicle databases that will enable them to track and record carrier safety data.

As a result of the collaborative work being pursued through the LTSS and the TCGs, the U.S. and Mexico plan to exchange commercial vehicle safety data in the future, although the process is still at an early stage. It will probably be several years before a Mexican-U.S. exchange can be attained. As cited earlier, a database is being developed in close consultation with FMCSA consultants. The database will include three modules: 1) an authorization module (mostly economic data and vehicle licensing information), 2) a drivers licensing module and, 3) a safety module (to record accidents, infractions, and inspections). Mexican officials reported the first two modules are complete with data to be captured over the next two years. The safety module is in the conceptual stage.

5.4. FUTURE DATA REQUIREMENTS

At an LTSS meeting in June 1998, the NAFTA partners made progress on the issue of Exchange of Motor Carrier Safety Data. The three countries resolved to begin a program to exchange

¹⁶ "Commercial Trucking - Safety and Infrastructure Issues Under the North American Free Trade Agreement," GAO, February 1996, GAO/RCED-96-61.

carrier safety data necessary for the effective and timely implementation of the compatibility of motor carrier supervision for international operations throughout North America.

The potential use of such data is critical for the USDOT's ability to monitor the safety of foreign carriers operating in the U.S. under NAFTA. At present, U.S. inspectors assigned to borders do not have real time or on-line access to the MCMIS. Instead they receive a computer disk with safety inspection data on a quarterly basis. The information could be more than 6 months old when received. Inspectors are not able to 1) readily identify carriers with recurring safety violations in a timely manner, and 2) target those carriers' trucks for inspection before the trucks enter the U.S.

An assessment of information available in the MCMIS reveals several outstanding data issues relating to potential new entrants. One of the most important data requirements for this project is to determine if a carrier is a new entrant. Therefore, an approach will need to be developed to determine the date at which a carrier started intrastate operations, interstate operations, hazmat operations, and international operations, and for how long they have been operating. This might be done by requiring new entrants to fill out a new form with the needed information before commencing or continuing (Canadian carriers) cross-border operations. Currently, the only information regarding the extent of a carrier's experience is the date at which a carrier is entered into the MCMIS. There is no easy way to assess how long a carrier has been in operation as an intrastate carrier, or as a hazmat carrier, or as an interstate carrier. As cited earlier, previous research found that some carriers have operated on an interstate basis far earlier than can be found in the MCMIS database.

For the purposes of rating new entrants, operational safety, inspection, accident, and moving violation data will need to be enhanced and, where possible, obtained from compatible safety data systems residing in Canada or Mexico. At present, it is difficult to compare Mexican, Canadian, and U.S. interstate carriers with respect to their crash rates and moving violation rates, not only because of the lack of complete crash and violation data, but also because of incomplete census data contained in the MCMIS. When evaluating an U.S. interstate carrier, a crash rate is computed by dividing the total number of crashes by the total number of power units in order to account for exposure. Similarly, a moving violation rate of an U.S. interstate carrier is computed by dividing the total number of moving violations by the total number of drivers. These calculations are impossible to make when the data on power units and drivers are incomplete, which is frequently the case with carriers based in Mexico. The Mexican power unit and driver counts must be collected more completely, since these counts are not available for 75% of the Mexican carriers.