

**REPORT ON THE SCOPE AND
METHODOLOGY OF FMCSA'S REVIEW OF
CANADIAN/MEXICAN COMPLIANCE WITH
FEDERAL COMMERCIAL MOTOR VEHICLE
SAFETY STANDARDS**

Federal Motor Carrier Safety Administration

Report Number: MH-2008-081

Date Issued: September 24, 2008




Memorandum

U.S. Department of
Transportation

Office of the Secretary
of Transportation
Office of Inspector General

Subject: **ACTION:** Report on the Scope and Methodology
Used in FMCSA's Review of Canadian/Mexican
Compliance With Federal Commercial Motor
Vehicle Safety Standards
Report Number MH-2008-081

Date: September 24, 2008

From: Joseph W. Comé 
Assistant Inspector General
for Highway and Transit Audits

Reply to
Attn. of: JA-40

To: Federal Motor Carrier Safety Administrator

This report presents the results of our audit of the Federal Motor Carrier Safety Administration's (FMCSA) review of whether Canadian and Mexican commercial motor vehicles operating in the United States comply with National Highway Traffic Safety Administration (NHTSA) Federal Motor Vehicle Safety Standards (FMVSS).¹

Section 4139(b) of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)² requires the Office of Inspector General (OIG) to comment on the scope and methodology FMCSA used in its review of Canadian and Mexican commercial vehicles' compliance with FMVSS. The manufacturing standards are requirements, such as installation of antilock brake systems, for commercial vehicles made in the United States. The manufacturer demonstrates compliance with the standards by affixing a certification label to the vehicle.

On April 20, 2007, FMCSA provided its report to Congress entitled, "The Review of Canadian/Mexican Commercial Vehicle Compliance with FMVSS." FMCSA's report was based on the April 30, 2006, review performed under a grant issued to the Texas Transportation Institute (TTI), Texas A&M University System. In that report, TTI estimated that over 90 percent of Mexican-owned commercial trucks,

¹ FMVSS contain minimum U.S. manufacturing safety performance requirements for motor vehicles and equipment to protect the public against unreasonable risk of crashes due to design, construction, or performance, and protect against death or injury if a crash occurs.

² Pub. L. No. 109-59 (2005).

trailers, and passenger buses entering into the United States at U.S.-Mexico commercial border crossings complied with FMVSS. This estimate was based on the examination of 3,294 vehicles at selected border crossings between February 13, 2006, and March 24, 2006; where all but 160 trucks, 233 trailers, and 8 buses were determined to comply with FMVSS.³ According to TTI, its sample and the probability formulas used to make estimates based on sample results provide valid statistical estimates at the 95-percent confidence level.⁴

Our audit objective was to provide our observations of the scope and methodology FMCSA used in its review. We conducted this audit from December 2007 through June 2008 in accordance with Generally Accepted Government Auditing Standards as prescribed by the Comptroller General of the United States. We performed such tests as considered necessary to detect fraud, waste, and abuse. Exhibit A provides details of our audit scope and methodology.

RESULTS IN BRIEF

While FMCSA's report provided evidence that most vehicles TTI sampled on behalf of FMCSA complied with FMVSS, the estimates it subsequently formulated based on the TTI sample were not statistically valid because of how the sample was selected and projected. For example:

- Neither the border crossings nor the vehicles sampled were chosen at random; and therefore, the results are biased. In our opinion, random sampling was needed to ensure crossings and vehicles had a known chance of being selected, a prerequisite needed to use probability based formulas to make statistical projections. TTI agreed that the sample was potentially compromised, but opined that it did not impact the sample results.
- Even if the sample results were not compromised, TTI used the wrong probability formulas to make statistical estimates. In our opinion, based on the multi-stage sample design used, a more complex statistical formula is required—one that appropriately weighs sample results and sampling errors at each sample stage. TTI did not agree and opined that the formulas it used were appropriate for the sample designed.

Additionally, the quantitative impacts of TTI's key assumptions are not clearly presented for report users to effectively evaluate the estimates made. For example, TTI disclosed that it assumed trucks sampled without a FMVSS or Canadian Motor Vehicle Safety Standards (CMVSS) certification label affixed were

³ TTI examined 1,573 Mexican-owned trucks and tractors (herein referred to as trucks), 1,334 trailers, and 387 buses.

⁴ Confidence level is the probability that an interval estimate will include the population parameter. Higher probability means more confidence.

compliant if manufactured in Mexico on or after calendar year (CY) 1996. This assumption was based on FMCSA's analysis of Mexican manufacturing practices, which concluded that "*most*" model year 1996 and later Mexican-manufactured commercial motor vehicles "*may*" meet FMVSS. The report did not clearly show the degree to which this date influenced the estimates made.⁵

To provide report users with more meaningful results in any subsequent FMVSS compliance reviews, the Department should ensure that valid statistical methods are used and the quantitative impact of key assumptions are disclosed. To accomplish this, members of FMCSA's staff with expertise in statistics should review the methods and data used. According to FMCSA personnel, this was not done for this study; consequently, they relied on TTI to design and implement the study.

While expert reviews are not required, Department guidelines⁶ recommend this practice for studies or other factual information products presented to Congress. This practice is also recommended in the Office of Management and Budget (OMB) September 2006 Standards and Guidelines for Statistical Surveys issued shortly before FMCSA provided the TTI report to Congress. The guidelines states that one best practice is to have a reviewer with appropriate expertise in the methodology consider whether appropriate statistical methods are used. Additionally, the guidelines state that an agency should ensure that data limitations and results are presented in a manner that makes the data useful.

According to FMCSA, the concerns raised about sampling methods may be valid and the estimates derived by TTI may be biased by both sampling and non-sampling errors, but FMCSA does not expect that the reported TTI findings are significantly affected by them. We are making two recommendations that focus on actions FMCSA needs to take to ensure that any future FMVSS compliance reviews include appropriate FMCSA review and that results are clearly presented. Our full recommendations are listed on page 10.

BACKGROUND

In March 2002, FMCSA proposed rules that would require each commercial motor vehicle operating in interstate commerce in the United States to display a certification label asserting the vehicle complied with all applicable FMVSS when it was built. In August 2005, FMCSA withdrew the proposed rulemaking after

⁵ Based on other data provided in the report, we calculated that TTI counted approximately 15 percent of the trucks it sampled as either compliant or non-compliant with FMVSS using the vehicle manufacturing date.

⁶ According to the Department, its Information Dissemination Quality Guidelines meet the criteria contained in OMB Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by Federal Agencies.

determining that it could ensure Mexican motor carriers' compliance with these standards while operating in the United States by enforcing established Federal Motor Carrier Safety Regulations (FMCSRs) and policies since many of the FMCSRs are cross-referenced to FMVSS. Enforcement would occur during the carriers' pre-authority safety audit and during U.S.-Mexico border crossings and U.S. roadside vehicle inspections. Additionally, FMCSA issued an internal policy instructing its staff to deny, suspend, or revoke a carrier's operating authority or certificate of registration for making a false certification⁷ or issue appropriate penalties for the falsification. For Canadian-domiciled carriers, FMCSA stated that the compatibility of CMVSS to FMVSS was confirmed by NHTSA.

Section 4139(b) of SAFETEA-LU required FMCSA to review the degree to which Canadian and Mexican commercial motor vehicles, including motor carriers of passengers, operating or expected to operate in the United States, comply with FMVSS. In response to this requirement, FMCSA engaged TTI, through a grant, to estimate how many Mexican-owned vehicles currently entering the United States comply with FMVSS.⁸ Although required by SAFETEA-LU to examine Canadian commercial motor vehicles, the review did not examine Canadian-domiciled commercial vehicles at border crossings. The review asserted that Canada has a long history of FMVSS compliance and comparable U.S. safety standards.

As part of the grant agreement, TTI was to estimate (1) how many vehicles have an FMVSS or CMVSS certification label affixed and of those without an affixed label, how many comply based on date and location of manufacture and (2) the number of vehicles that will operate beyond commercial zones⁹ and will comply with FMVSS if restrictions are lifted. Furthermore, TTI would provide the results of a study regarding U.S., Canada, and Mexico commercial motor vehicle standards and their enforcement. Exhibit B provides a summary of TTI's results.

FINDINGS

Although Most Sampled Vehicles Complied with FMVSS, the Statistical Estimates Made Were Not Valid

According to TTI, its sample design and probability formulas used to make estimates based on sample results provided valid statistical estimates at the

⁷ Mexico-domiciled carriers applying to operate in the United States must certify that they are in compliance with the FMCSR, the Hazardous Material Regulations, and FMVSS.

⁸ When the TTI study was conducted in calendar year 2006, there were over 4 million truck and nearly 300,000 bus crossings at U.S.-Mexico commercial border crossings.

⁹ Commercial zones generally extend from 3 miles to 25 miles north of U.S.-Mexico border municipalities and 75 miles beyond the border in the state of Arizona.

95-percent confidence level. In our view, while the evidence TTI collected shows that most vehicles sampled complied with FMVSS, the estimates it subsequently formulated based on the sample are not statistically valid because of how the sample was selected and projected.

TTI stated in its report that it used a statistical approach to estimate how many Mexican-owned vehicles currently entering the United States comply with FMVSS; have an FMVSS or CMVSS certification label affixed; and if no label is affixed, comply with FMVSS based on date and location of manufacture. Further, it used this approach to estimate the number of vehicles that will operate beyond commercial zones and comply with FMVSS if restrictions are lifted.

TTI examined a sample of 1,573¹⁰ Mexican-owned trucks (tractors), 1,334 trailers, and 387 buses at the U.S.-Mexico border heading to commercial zones to determine whether each vehicle had a FMVSS or CMVSS certification label affixed to it.¹¹ If a label was not present, TTI used the vehicle identification number (VIN) to provide evidence of a vehicle's date and location of manufacture,¹² and counted the vehicle as FMVSS compliant if it met the pre-determined country manufacturing dates presented in the table that follows.

Table: FMVSS Compliant Country Manufacture Dates

Country of Manufacture	Mexican-Owned Commercial Trucks and Trailers*	Mexican-Owned Commercial Buses*
United States	1981	1981
Canada	1991	1971
Mexico**	1996	None assumed to comply
Source: TTI		
* Assumed to be FMVSS compliant if manufactured on or after the calendar year cited.		
** The dates were applied to Mexico manufactured and non-U.S. and non-Canada manufactured vehicles, which included trucks manufactured in Japan; trailers manufactured in the United Kingdom and Taiwan; and buses manufactured in Germany, Sweden, and Finland.		

If TTI could not determine FMVSS compliance for any vehicle through the vehicle's VIN or by other means, it categorized it as "missing data" and counted it as non-compliant with FMVSS. Of the 160 Mexican-owned trucks and

¹⁰ TTI actually examined 1,574 trucks at the southern border, but only used the results of 1,573 trucks. According to FMCSA, TTI excluded one truck to prevent bias in the sample results.

¹¹ According to TTI, Mexico does not have a certification label requirement similar to that of the United States. Therefore, no label would be present even if the vehicle was built in the same plant with the same design specifications as an FMVSS compliant vehicle for sale in the United States.

¹² Standard VINs comprised of 17 alphanumeric characters with the first character representing the country of manufacture.

233 trailers TTI counted as non-compliant with FMVSS, 149 trucks and 231 trailers were attributed to missing data. According to TTI, most “missing data” vehicles were attributed to non-standard VINs. For example, TTI officials reported that at small border crossings some VINs consisted of from seven to nine characters or had characters with no readily apparent relation to standard U.S. VIN coding.

TTI then computed statistical projections (estimates) by applying probability formulas to the data obtained in its sample and Mexican-owned vehicle data obtained from United States and Mexico transportation agencies and from the Internet. For example, TTI estimated that 89.8 percent of all Mexican-owned commercial trucks, 82.5 percent of trailers, and 97.9 percent of buses crossing into the United States comply with FMVSS. TTI believes its methods provided valid statistical estimates at the 95-percent confidence level.

Sample Selection Was Not Appropriate for Statistical Projections

In our view, neither the border crossings nor the vehicles examined in the sample were chosen at random to produce a valid statistical estimate. Random sampling was needed to ensure crossings and vehicles had a known chance of being selected, a prerequisite needed to use probability based formulas to make a statistical projection.

Specifically:

- At the first stage of sampling, TTI stratified the 24 border crossings into large, mid-size, and small groups depending on the vehicle traffic volume. Instead of randomly selecting crossings from each of those groups, it subjectively selected 5 of 7 from the large group, 3 of 7 from the mid-size group, and 2 of 10 from the small group based on higher truck volume.
- At the next stage of sampling, TTI attempted to select every “nth” vehicle, but the effort was interrupted when U.S. Customs and Border Patrol Service (CBP) personnel selected the vehicles available to data collectors since the collectors were not allowed into the CBP primary selection area at the highest volume commercial crossing, the World Trade Bridge in Laredo, Texas. Further, at the Bridge of the Americas crossing in El Paso, Texas, TTI collectors lost control of the sample by allowing FMCSA personnel to select vehicles and collect data. Selecting every “nth” vehicle without knowing the universe size and without a random start does not render an appropriate random sample because it makes it impossible to calculate the selection interval. Not

having a selection interval that covers the universe means not all vehicles have a known chance of being selected.

TTI agreed that the sample was potentially compromised at two border crossings examined, but believed that it did not impact the results because (1) similar results were obtained at similar size crossings and (2) FMCSA and CBP personnel would most likely pick the worst vehicles to examine resulting in an under-reporting of FMVSS compliance. Our view remains the same. TTI's subjective sampling eliminated the opportunity to include many vehicles and negated the use of probability formulas to make statistical projections.

Use of Probability Formula Was Not Appropriate for the Sample Design

Even if the sample results were not compromised, the estimates made were not statistically valid because of the way the sample was projected. TTI employed a stratified multi-stage sample design by first, grouping border crossings by volume; second, selecting crossings within each group; and third, selecting vehicles at crossings to examine. It then applied a probability formula designed for a simple random sample to make statistical projections for each group and for the overall sample.

While this sample design can produce valid statistical estimates and is in line with Department Information Dissemination Quality Guidelines that recommend using multi-stage, stratifications, and clustering designs to enhance efficiency and accuracy, the probability formula TTI used was not appropriate. TTI's formula presented results as if a simple random sample of vehicles was taken and did not weigh the results each group contributed to the overall results

TTI has disagreed with our assessment and believes that the formula used is appropriate for the sample design. Department guidelines recommend that estimates be calculated using weights based on design. In our view, the multi-stage stratified design TTI used calls for a more complex probability formula to produce statistically valid estimates. Applying a simple random formula to a multi-stage stratified design results in a wrong point estimate (best estimate) and confidence limits since it does not appropriately weigh sample results and errors at each sample stage.

FMCSA Statistical Experts Did Not Review the Work Before Issuance of Its Report

According to FMCSA, the concerns we raised about sampling methods used may be valid and the estimates derived by TTI may be biased by both sampling and non-sampling errors. However, even though the estimates may be biased, FMCSA

stated it did not expect that TTI reported findings are significantly affected. In our view, TTI's report could provide report users with more meaningful results if members of FMCSA staff with an expertise in statistics had reviewed TTI's methods and data used. According to FMCSA officials, there is no requirement to do so. FMCSA stated, however, that its personnel familiar with the subject matter reviewed the work, and they relied on TTI based on prior work TTI performed for them. While expert reviews are not required, Department guidelines recommend actions of this nature for studies or other factual information products presented to Congress.

In the future, FMCSA should ensure that an expert review is incorporated into any review of Canadian and Mexican compliance with FMVSS. Revised OMB guidelines¹³ issued shortly after TTI issued its report and before the Department provided it to Congress, also express the need for an expert review. OMB's September 2006 Standards and Guidelines for Statistical Surveys state that a good agency practice is to review for appropriate content, subject matter, statistics, and methodology by selecting "...reviewers with appropriate expertise in the subject matter, operation, or statistical program discussed in the document." The reviewer should consider the:

- accuracy and appropriateness of assumptions and limitations,
- appropriateness of statistical methods used and reported, and
- accuracy of calculations and formulas.

The Quantitative Impact of Key Assumptions Was Not Clearly Presented

TTI did not clearly present the quantitative impact key assumptions had on the estimates being reported. We had to determine the impact of the assumptions by analyzing the data presented throughout the report. Such assumptions can have a significant impact on a study of this nature. Consequently, the quantitative impact on the estimates should be clearly presented in the summary of the report for the report user.

For example, to determine whether a sample vehicle without an appropriate FMVSS or CMVSS certification label complied with FMVSS, TTI made assumptions about FMVSS compliance that if found to be incorrect, may impact its estimates.¹⁴ Specifically, TTI did not clearly disclose that a straight average of

¹³ 70 FR 55522 (September 22, 2006).

¹⁴ Of the 1,573 trucks TTI analyzed, 1,196 had a valid manufacturing certification label; 217 were assumed compliant based on date of manufacture determined by researching the truck's VIN or other data—151 United States, 3 Canadian, and 63 Mexican; 11 did not comply with FMVSS; and 149 were non-compliant because of missing data.

approximately 15 percent of the trucks it sampled were counted as either compliant or not compliant with FMVSS based on the location and date manufactured (Mexico on or after CY 1996). However, the CY 1996 date TTI used to justify Mexican truck compliance with FMVSS was based on an FMCSA analysis of Mexican manufacturing practices that concluded "...most model year 1996 and later CMVs [commercial motor vehicles] manufactured in Mexico may meet the FMVSSs."¹⁵ The source FMCSA used in support of this conclusion included examples where Mexican manufactured vehicles could not have complied with FMVSS until after CY 1996. For instance, Mexico did not adopt FMVSS antilock brake system requirements until March 1, 1997.

Consequently, the percentage estimates of trucks compliant with FMVSS could change if better information were available regarding compliance dates used. Knowledge of the impact TTI's assumptions had on the estimates made could be important to report users. The following are other examples that have the potential to influence the estimates TTI made, but were not clearly presented in the report.

- TTI assumed that 149 (a straight average of over 9 percent) of the 1,573 trucks sampled that did not have FMVSS or CMVSS certification labels were non-compliant if a non-standard or incomplete VIN was recorded on the data collection sheet or other information was not available that would identify date and location of manufacture. Neither the number nor percent of non-standard VIN or any other conditions were clearly presented in the report.
- According to TTI, 8 (a straight average of 2 percent) of the 387 buses observed were categorized as Mexican-manufactured and assumed non-compliant. TTI assumed that any bus it examined that did not have a manufacture FMVSS or CMVSS certification label affixed were Mexican-manufactured buses and therefore, were non-compliant because little information was available to determine compliance. The percent of buses assumed not to be compliant was not clearly presented.

In response to our observations regarding its assumptions, TTI stated that its assumptions were disclosed in the report and were based on the best information available. It also stated that the assumptions had a minor affect on the estimates and additional work would be required outside the scope established for its review to provide additional verification. As for missing data, TTI stated that the missing data assumption was attributed to the fact that a large number of sampled vehicles did not have a standard VIN.

¹⁵ 70 FR 50273 (August 26, 2005).

We agree with TTI that it did disclose these assumptions in its report and that additional testing may have been warranted to verify key assumptions in the report, such as manufacturing dates or the implication of non-standard VINs. However, in the examples above, such assumptions have an impact on the compliance results as well as their usefulness of drawing meaningful conclusions.

In our opinion, in the future, FMCSA should clearly present the quantitative impact of key assumptions in the report to ensure maximum usefulness of the statistics produced for the report user. This is consistent with revised OMB guidelines, which state that an agency needs to ensure that results are presented in a manner that makes the data as accessible and useful as possible and that information is presented clearly and logically.

RECOMMENDATIONS

We recommend that the FMCSA Administrator:

1. Ensure that any future reviews of Canadian and Mexican compliance with FMVSS use valid statistical methods by having staff with statistics expertise review the work throughout the process and before reports are issued.
2. Ensure that any future reviews of Canadian and Mexican compliance with FMVSS clearly present in the report the quantitative impact of key assumptions made.

AGENCY COMMENTS AND OFFICE OF INSPECTOR GENERAL RESPONSE

We provided FMCSA a draft copy of this report on June 23, 2008. On July 28, 2008, FMCSA provided us with suggested changes to and comments on the report. We incorporated FMCSA's suggested changes and comments, as appropriate. On September 9, 2008, FMCSA provided its written comments on the report. In its comments, included as an appendix to the report, FMCSA concurred with our recommendations and agreed to take the following actions when it conducts any future reviews of Canadian and Mexican compliance with FMVSS.

- **Recommendation 1.** FMCSA stated that it will ensure that staff with statistics expertise reviews any future study methodologies and reports.
- **Recommendation 2.** FMCSA stated that it will require key assumptions to reflect quantitative impacts in any future reports.

ACTIONS REQUIRED

We consider FMCSA's actions to be reasonable. We consider the recommendations closed as FMCSA has stated that OIG's findings will be used to guide FMCSA when it conducts future border activities where the level of compliance with vehicle safety standards is being monitored or evaluated.

We appreciate the courtesies and cooperation of FMCSA representatives during this audit. If you have any questions concerning this report, please call me at (202) 366-5630 or Kerry R. Barras, the Program Director, at (817) 978-3318.

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EXHIBIT A. SCOPE AND METHODOLOGY

On April 20, 2007, the Federal Motor Carrier Safety Administration (FMCSA) provided its report to Congress on “The Review of Canadian/Mexican Commercial Vehicle Compliance with [Federal Motor Vehicle Safety Standards] FMVSS.” FMCSA based its report to Congress on the April 30, 2006, review by the Texas Transportation Institute (TTI), Texas A&M University System. Our audit objective was to provide our observations on the scope and methodology contained in FMCSA’s review.

We conducted this audit from December 2007 through June 2008 in accordance with Generally Accepted Government Auditing Standards as prescribed by the Comptroller General of the United States. We performed such tests as we considered necessary to detect fraud, waste, and abuse.

To assess the scope and methodology of the TTI review, we determined whether TTI met the requirements in Section 4139 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users. We also assessed whether the report met the scope and methodologies as defined in the grant agreement by comparing the descriptive reported results to the grant agreement.

Additionally, we compared the sampling design and probability formulas used to answer the five study questions to those designs and formulas widely accepted in the statistical and research profession. We followed up with FMCSA and TTI on areas we noted with potential impact on the validity of the statistical estimates, such as the subjective selection of crossings noted in our report. We assessed their response based on widely accepted methods and Department and Office of Management and Budget guidelines. Furthermore, we reviewed the impact that disclosed or identified limitations had on the estimates made. For example, we researched and reviewed the support of the key assumption made in the report that Mexican trucks complied with FMVSS on or after CY 1996, as contained in FMCSA’s August 2005 Federal Register Notice.

Finally, we reviewed FMCSA’s oversight of the grant and whether FMCSA had staff members with an expertise in statistics review TTI’s work during the process and before the final report was issued.

EXHIBIT B. SUMMARY OF TEXAS TRANSPORTATION INSTITUTE REPORTED RESULTS

On April 20, 2007, FMCSA provided to Congress its report on “The Review of Canadian/Mexican Commercial Vehicle Compliance with [Federal Motor Vehicle Safety Standards] FMVSS.” FMCSA based its report to Congress on the April 30, 2006, review by TTI, Texas A&M University System. TTI’s responses to the specific FMCSA questions follow.

- 1) How many Mexican-owned vehicles currently entering the United States from Mexico comply with FMVSS?
 - At the southern border, the report estimated that 89.8 percent of trucks, 82.5 percent of trailers, and 97.9 percent of buses comply with FMVSS at a 95-percent confidence level.
 - Excluding vehicles in the sample that were counted more than once as a result of multiple border crossings,¹⁶ the report estimated that 88.9 percent of trucks, 82.7 percent of trailers, and 97.1 percent of buses comply with FMVSS at a 95-percent confidence level.
 - Large and mid-size border crossings combined had more truck and tractor compliance with FMVSS than smaller border crossings—that is, 95.8 percent to 74.3 percent, respectively. Similar findings were found for trailers, but no significant differences were found for buses at a 95-percent confidence level.

- 2) How many of these vehicles bear a FMVSS or CMVSS certification label?
 - The report stated that 76 percent of trucks bear the label (75.7 percent for unique crossings), 60.8 percent of trailers (64.5 percent for unique crossings), and 97 percent of buses (96.4 percent for unique crossings) at a 95-percent confidence level.

- 3) How many vehicles do not bear a FMVSS certification label, but are assumed to comply with FMVSS because of the vehicle’s date [of manufacture] and location of manufacture?

¹⁶ The sample included some vehicles more than once due to vehicles making multiple border crossings. The report also provided estimates that excluded these multiple crossings, referred to in the report as unique crossings.

- Of the vehicles not bearing FMVSS or CMVSS certification labels, the report stated that 57.6 percent of trucks and tractors (54.4 percent for unique crossings) and 55.4 percent of trailers (51.3 percent for unique crossings) were assumed to be compliant at a 95-percent confidence level.¹⁷ The report made no estimates for Mexican-manufactured buses, assuming none were compliant due to a lack of information regarding Mexican standards.
- 4) How many vehicles may enter the United States from Mexico and operate beyond the commercial zones (when access restrictions are lifted); and of those vehicles, how many will comply with FMVSS?
- TTI estimated that 2,340 of 2,442 trucks, 1,820 of 1,905 trailers, and 76 of 78 buses would operate beyond the commercial zone.
 - Of the total annual crossings of trucks, trailers, and buses, the report stated that approximately 95.6 percent of trucks and tractors, 94.2 percent of trailers, and 97.9 percent of buses are estimated to comply with FMVSS at a 95-percent confidence level.
 - Based on the number of carriers that applied for operating authority beyond the U.S. commercial zones, the report estimated that 95.8 percent of trucks, 95.5 percent of trailers, and 97.4 percent of buses are expected to comply with FMVSS at a 95-percent confidence level.¹⁸
- 5) How does the United States differ from Canada and Mexico in its regulation and enforcement of commercial motor vehicle standards?
- In general, CMVSS largely are similar to and patterned after FMVSS.
 - A direct comparison of vehicle manufacturing standards in the United States and Mexico is not readily made, because Mexico has no certification label requirement.

¹⁷ FMCSA's April 20, 2007, letter to Congress inaccurately reported that 48.6 percent of truck crossings, 53.3 percent of trailer crossings, and 49.1 percent of unique trailer crossings were assumed compliant.

¹⁸ The percentages represent a straight average calculated by FMCSA.

EXHIBIT C. MAJOR CONTRIBUTORS TO THIS REPORT

<u>Name</u>	<u>Title</u>
Kerry R. Barras	Program Director
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APPENDIX. MANAGEMENT COMMENTS



U.S. Department
Of Transportation

Federal Motor Carrier
Safety Administration

Memorandum

Subject: **INFORMATION:** Response to Office of
Inspector General Audit Report

Date: SEP 09 2008

From: John H. Hill
Administrator

Reply to
Attn: of Jeffrey K. Miller
MC-PRS

To: Joseph W. Come
Assistant Inspector General for
Highway and Transit Audits

The Federal Motor Carrier Safety Administration (FMCSA) appreciates the opportunity to review the Office of Inspector General (OIG) draft report titled, "Comments on the Scope and Methodology of FMCSA's Review of Canadian/Mexican Compliance with Federal Commercial Motor Vehicle Safety Standards." The report reviewed by your office is intended to satisfy Section 4139(b) of the Safe, Accountable, Flexible, Efficient, Transportation Equity Act: A Legacy for Users (SAFETEA-LU), which required FMCSA to review the degree to which Canadian and Mexican commercial motor vehicles comply with the Federal Motor Vehicle Safety Standards (FMVSS). Section 4139 also required the OIG to comment on the scope and methodology of FMCSA's review. The findings and recommendations in the report are constructive and beneficial to the Agency.

As referenced in your draft report, on April 20, 2007, FMCSA submitted its report to Congress entitled, "The Review of Canadian/Mexican Commercial Vehicle Compliance with FMVSS." The FMCSA report was based on the April 30, 2006, review performed under a grant issued to the Texas Transportation Institute (TTI). In the report, TTI estimated that over 90 percent of Mexican-owned commercial trucks, trailers and passenger buses entering into the United States (U.S.) at U.S.-Mexico commercial border crossings complied with the applicable manufacturing standards.

The OIG questioned the assumptions under which the review and its corresponding analyses were conducted, indicating that the use of random inspections rather than TTI's sampling methodology would have changed the outcome. While FMCSA appreciates the OIG's perspective on the methodology used, we do not believe that the impact was statistically significant. However, the findings in your report will guide FMCSA when it conducts future border activities where the level of compliance with vehicle safety standards is being monitored or evaluated.

Responses to Specific Recommendations

Recommendation 1: Ensure that SAFETEA-LU required reviews of Canadian and Mexican compliance with FMVSS use valid statistical methods by having staff with statistics expertise review the work through out the process and before the reports are issued.

Response: The FMCSA concurs with the OIG's recommendation and will ensure that staff with statistics expertise reviews any future study methodologies and reports.

Recommendation 2: Ensure that any future reviews of Canadian and Mexican compliance with the FMVSS clearly present in the report the quantitative impact of key assumptions made.

Response: The FMCSA concurs with the OIG's recommendation and will require key assumptions to reflect quantitative impacts in any future reports.

We appreciate the work conducted by the OIG and the professionalism demonstrated by the audit team. If you have any questions or need additional information, please contact Mr. William Quade, Associate Administrator for Enforcement and Program Delivery, at 202-366-4553.

The following page contains the textual version of the table found in this document. The page was not in the original document but has been added to assist screen readers.

**Report on the Scope and Methodology Used in
FMCSA's Review of Canadian/Mexican Compliance
With Federal Commercial Motor Vehicle Safety Standards
Section 508 Compliant Presentation**

Table. FMVSS Compliant Country Manufacture Dates

Mexican-Owned Commercial Trucks and Trailers assumed to be FMVSS compliant if manufactured in the United States on or after calendar year 1981.

Mexican-Owned Commercial Buses assumed to be FMVSS compliant if manufactured in the United States on or after calendar year 1981.

Mexican-Owned Commercial Trucks and Trailers assumed to be FMVSS compliant if manufactured in Canada on or after calendar year 1991.

Mexican-Owned Commercial Buses assumed to be FMVSS compliant if manufactured in Canada on or after calendar year 1971.

Mexican-Owned Commercial Trucks and Trailers assumed to be FMVSS compliant if manufactured in Mexico on or after calendar year 1996.*

No Mexican-owned commercial buses were assumed to be FMVSS compliant if manufactured in Mexico.*

Source: TTI

* The dates were applied to Mexico manufactured and non-U.S. and non-Canada manufactured vehicles, which included trucks manufactured in Japan; trailers manufactured in the United Kingdom and Taiwan; and buses manufactured in Germany, Sweden, and Finland.