DRIVER SAFETY MEASUREMENT SYSTEM (DSMS) METHODOLOGY

Version 3.0

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Preface

This report is geared towards law enforcement and documents the Driver Safety Measurement System (DSMS) methodology developed to support the Compliance, Safety, Accountability (CSA) program for the Federal Motor Carrier Safety Administration (FMCSA). The SMS has two components. One component measures the safety of individual commercial motor vehicle drivers, DSMS, which is documented in this report. DSMS results are strictly used as an investigative tool and are only available to law enforcement (i.e., DSMS results are not available to the public, motor carriers, or drivers). The other component is the Carrier Safety Measurement System (CSMS), which measures the safety of individual commercial motor vehicle (CMV) drivers. CSMS results are fully available to the assessed carriers. A subset of the results is publicly available. The methodology for CSMS can be found in separate document at (http://csa.fmcsa.dot.gov/Documents/SMSMethodology.pdf).

Many of the concepts used to construct the SMS originated from the SafeStat measurement system. SafeStat was developed at the U.S. Department of Transportation's John A. Volpe National Transportation Systems Center (the Volpe Center) in Cambridge, MA, under a project plan agreement with the Federal Highway Administration's (FHWA) Office of Motor Carriers, FMCSA's predecessor. It was designed and tested under the Federal/State Performance and Registration Information Systems Management (PRISM) program in the mid-1990s. From the mid-1990s until December 2010, when FMCSA replaced SafeStat with the SMS, SafeStat was implemented nationally to prioritize motor carriers for onsite compliance reviews (CRs). SafeStat output has been made available to the public via the Internet on the Analysis & Information (A&I) Website at http://www.ai.fmcsa.dot.gov.

Under CSA, the SMS design builds on the lessons learned from developing and implementing SafeStat for CR prioritization. However, the SMS also incorporates new CSA requirements for identifying specific types of unsafe behaviors that the entities exhibit. A more specialized set of interventions will now address these unsafe behaviors and the system will also expand the use of on-road safety violation data. In January 2008, FMCSA started an Operational Model Test (Op-Model Test) of the CSA program, which includes using the SMS to identify and monitor unsafe carrier and CMV driver behavior in nine states. Version 3.0 of the Methodology incorporates feedback from industry, field staff, and other subject matter experts, and was implemented in December 2012. Future SMS development will be part of a continuous improvement process based on results and feedback.

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Glossary

BASIC	Behavior Analysis and Safety Improvement Category
CDL	Commercial Driver's License
CMV	Commercial Motor Vehicle
CR	Compliance Review
CRWG	Compliance Review Work Group
CSA	Compliance, Safety, Accountability
CSMS	Carrier Safety Measurement System
DIR	Driver Information Resource
DSMS	Driver Safety Measurement System
FMCSA	Federal Motor Carrier Safety Administration
FMCSR	Federal Motor Carrier Safety Regulations
HAZMAT	Hazardous Materials
HM	Hazardous Materials
HMR	Hazardous Materials Regulations
HOS	Hours-of-Service
MCMIS	Motor Carrier Management Information System
OOS	Out-of-Service
PRISM	Performance and Registration Information Systems Management
PSP	Pre-Employment Screening Program
SafeStat	Motor Carrier Safety Status Measurement System
SMS	Safety Measurement System
USDOT	U.S. Department of Transportation
VMT	Vehicle Miles Travelled

1. DSMS Methodology

The DSMS is the other major component of the SMS, along with the CSMS. Law enforcement officials use the DSMS results to examine the safety performance of individual CMV drivers when conducting CSA investigations. Currently, the DSMS results are being used strictly as an investigative tool for law enforcement and are not available to carriers, drivers, or the public. However, the raw safety information from roadside inspections and crashes that feeds the DSMS is compiled by the same system that provides CMV driver-based data to FMCSA's Driver Pre-Employment Screening Program (PSP). This program allows motor carriers to access driver inspection and crash records electronically as a part of the hiring process.[1]

This section describes the algorithms used in the DSMS methodology and the computational logic used to calculate the driver measures and percentiles for each BASIC and the Crash Indicator for individual CMV drivers. BASICs that are evaluated similarly are described together.

- Unsafe Driving BASIC and Controlled Substances/Alcohol BASIC
- Hours of ServiceBASIC and Driver Fitness BASIC
- Vehicle Maintenance BASIC and HM Compliance BASIC
- Crash Indicator

1.1 Data Sources

DSMS assesses an individual CMV driver's performance by BASIC and Crash Indicator calculated from information collected during on-road safety inspections and State-reported CMV crash records. These data are recorded in the Motor Carrier Management Information System (MCMIS). Below are more detailed descriptions of each data source:

- Roadside Inspections are examinations a Motor Carrier Safety Assistance Program inspector conducts on individual CMVs and drivers to determine if they are in compliance with the Federal Motor Carrier Safety Regulations (FMCSRs) and/or Hazardous Materials Regulations (HMRs).
- Violations are recorded during inspections and are entered into the MCMIS database. A subset of these violations results in driver or vehicle out-of-service (OOS) orders. These OOS violations must be corrected before the affected driver or vehicle is allowed to return to service. The DSMS assessments are based on the safety violations listed in Appendix A. These assessments, however, do not include those violations that are: (1) a result of a crash[2] or (2) assigned to another entity such as a shipper or Intermodal Equipment Provider (IEP).

[1] More information about the PSP program can be found on FMCSA's PSP website at http://www.psp.fmcsa.dot.gov/.

[2] Only pre-existing violations from post-crash inspections are used in the SMS. Violations recorded in the MCMIS as being attributed to the crash are not used.

Note: Some roadside inspections are performed following a traffic enforcement stop for a moving violation. Violations reported during such stops do not always result in the issuance of a citation to the driver, but are used in the DSMS whether or not a citation is issued.

- State-Reported Commercial Vehicle Crash Data are taken from the MCMIS and provide information on crashes as reported by State and local police officials. The reporting of these crashes follows National Governors Association standards.

1.2 Unsafe Driving BASIC and Controlled Substances/Alcohol BASIC Assessment

This section describes the measurement of the Unsafe Driving BASIC and the Controlled Substances/Alcohol BASIC. The definition of each BASIC is as follows:

- Unsafe Driving BASIC—Operation of CMVs in a dangerous or careless manner. Example violations: speeding, reckless driving, improper lane change, and inattention.
- Controlled Substances/Alcohol BASIC—Operation of CMVs by drivers who are impaired due to alcohol, illegal drugs, and misuse of prescription or over-the-counter medications. Example violations: use or possession of controlled substances or alcohol.

The DSMS assesses both the Unsafe Driving BASIC and Controlled Substances/Alcohol BASIC by using applicable violations recorded during roadside inspections to calculate a measure in each BASIC for individual drivers. These measures are used to generate percentile ranks that reflect drivers' safety postures relative to drivers with applicable violations.

1.2.1 Calculation of BASIC Measure

The BASIC measures for the Unsafe Driving and Controlled Substances/Alcohol BASICs are calculated as the sum of severity and time weighted applicable violations as follows:

$$\textit{BASIC Measure} = \textit{Total of time and severity weighted applicable violations}$$

Equation 4-1

In this equation, the terms are defined as follows:

An Applicable Violation is defined as any violation recorded in any level roadside inspection that matches the FMCSR and HMR cites listed for Unsafe Driving (Table 1, Appendix A) and Controlled Substances/Alcohol (Table 4, Appendix A) during the past 36 months, and for which the CMV driver can be held responsible (see 'Violation in the DSMS (Y/N)' column). In cases of multiple counts of the same violation, the DSMS only uses each violation cite once per inspection.

Note: Some roadside inspections are performed following a traffic enforcement stop for a moving violation. Violations reported during such stops do not always

result in the issuance of a citation/ticket to the driver, but are used in the DSMS whether or not a citation/ticket is issued.

A Severity Weight from 1 (less severe) to 10 (most severe) is assigned to each applicable violation. See the Unsafe Driving Table (Table 1, Appendix A) and the Controlled Substance and Alcohol Table (Table 4, Appendix A) for the corresponding severity weights of each violation cite. The severity weighting of each violation cite accounts for the level of crash risk relative to the other violation cites used in the BASIC measurement. The sum of all violation severity weights for any one inspection in any one BASIC is capped at a maximum of 30. This cap of 30 is applied *before* the severity weights are multiplied by the time weight.

Note: The severity weights of violations outside of the BASIC being calculated **do not** count towards the violation cap.

A Time Weight of 1, 2, or 3 is assigned to each applicable violation based on how long ago a violation on the inspection was recorded. Violations recorded in the past 12 months receive a time weight of 3. Violations recorded between 12 and 24 months ago receive a time weight of 2. All violations recorded earlier (older than 24 months but within the past 36 months) receive a time weight of 1. This time weighting places more emphasis on recent violations relative to older violations.

A Time and Severity Weighted Violation is a violation's severity weight multiplied by its time weight.

1.2.2 Calculation of BASIC Percentile Rank

Based on the BASIC measures, the DSMS applies data sufficiency standards to assign a percentile rank to drivers who can then potentially be subjected to a CSA intervention. The calculation is as follows:

A. Determine the total number of inspections with at least one BASIC violation. Remove drivers with no BASIC violations.

B. Rank all the drivers' BASIC measures in ascending order. Transform the ranked values into percentiles from 0 (representing the lowest BASIC measure) to 100 (representing the highest BASIC measure). Then, assign the percentile values for that BASIC to each driver.

1.3 HOS Compliance BASIC and Driver Fitness BASIC Assessment

This section describes the measurement of the HOS Compliance BASIC and the Driver Fitness BASIC. The definition of each BASIC is as follows:

- HOS Compliance BASIC—Operation of CMVs by drivers who are ill, fatigued, or in noncompliance with the Hours-of-Service (HOS) regulations. This BASIC includes violations of regulations surrounding the complete and accurate recording of logbooks as they relate to HOS requirements and the management of CMV driver fatigue. Instances related to the HOS Compliance BASIC are distinguished from incidents where unconsciousness or an inability to react is brought about by the use of alcohol, drugs, or other controlled substances. Example violations include: HOS, logbook, and operating a CMV while ill or fatigued.
- Driver Fitness BASIC—Operation of CMVs by drivers who are unfit to operate a CMV due to lack of training, experience, or medical qualifications. Example violations: failure to have a valid and appropriate CDL and being medically unqualified to operate a CMV.

The DSMS assesses both the HOS Compliance BASIC and Driver Fitness BASIC using applicable violations recorded during roadside inspections to calculate a measure in each BASIC for individual drivers. These measures are used to generate percentile ranks that reflect drivers' relative safety posture.

1.3.1 Calculation of BASIC Measure

The equation used for calculating the BASIC measure for Hours of Service and Driver Fitness is as follows:

$$BASIC\ Measure = \frac{Total\ of\ time\ and\ severity\ weighted\ applicable\ violations}{Total\ time\ weight\ of\ relevant\ inspections}$$

Equation 4-2

In this equation, the terms are defined as follows:

An Applicable Violation is defined as any violation recorded in any level roadside inspection that matches the FMCSR and HMR cites listed for Hours of Service (Table 2, Appendix A) and Driver Fitness (Table 3, Appendix A) during the past 36 months, and for which the CMV driver can be held responsible (see 'Violation in the DSMS (Y/N)' column). In cases of multiple counts of the same violation, the DSMS only uses each violation cite once per inspection.

A Relevant Inspection is any Driver Inspection (Level 1, 2, 3, or 6), including those that do **not** result in a violation in the BASIC.

A Severity Weight is assigned to each applicable violation, with a value dependent on two parts: (i) the level of crash risk relative to the other violation cites used in the BASIC measurement, and (ii) whether or not the violation resulted in an OOS condition.

(i) The level of crash risk is assigned to each applicable violation ranging from 1 (less severe) to 10 (most severe); see the Hours of Service Table

(Table 2, Appendix A) and the Driver Fitness Table (Table 3, Appendix A) for the corresponding severity weights of each violation cite.

(ii) An OOS weight of 2 is then added to the severity weight of OOS violations. In cases of multiple counts of the same violation, if any of the counts of the violation are OOS then the OOS weight of 2 applies.

The sum of all violation severity weights for any one inspection in any one BASIC is capped at a maximum of 30. This cap of 30 is applied *before* the severity weights are multiplied by the time weight.

Note: The severity weights of violations outside of the BASIC being calculated **do not** count towards the violation cap.

A Time Weight of 1, 2, or 3 is assigned to each applicable violation and each relevant inspection based on its age. Violations/inspections recorded in the past 12 months receive a time weight of 3. Violations/inspections recorded between 12 and 24 months ago receive a time weight of 2. All violations/inspections recorded earlier (older than 24 months but within the past 36 months) receive a time weight of 1. This time weighting places more emphasis on results of recent inspections relative to older inspections.

Note: The time weight is applied to all relevant inspections, including those that do **not** result in a violation in the BASIC.

A Time and Severity Weighted Violation is a violation's severity weight multiplied by its time weight.

1.3.2 Calculation of BASIC Percentile Rank

Based on the BASIC measures, the DSMS applies data sufficiency standards to assign a percentile rank to drivers that can then potentially be subjected to a CSA intervention. The calculation is as follows:

A. Determine the total number of relevant inspections and number of inspections with at least one BASIC violation. Remove drivers with (1) less than three relevant inspections or (2) no inspections resulting in at least one BASIC violation. For the remaining drivers, place each driver into one of three groups based on the number of relevant inspections:

Safety Event Group	Number of Relevant Inspections
1	3
2	4-6
3	7+

Table 1-1. Safety Event Groups Categories for Hours of Service and Driver Fitness BASICs

B. Within each group, rank all the drivers' BASIC measures in ascending order. Transform the ranked values into percentiles from 0 (representing the lowest BASIC measure) to 100 (representing the highest BASIC measure).

1.4 Vehicle Maintenance BASIC and HM Compliance BASIC Assessment

This section describes the measurement of the Vehicle Maintenance BASIC and the HM Compliance BASIC. The definition of each BASIC is as follows:

- Vehicle Maintenance BASIC—Failure to properly maintain a CMV. Example violations: brakes, lights, and other mechanical defects, and failure to make required repairs that would be found in a pre-trip inspection.
- HM Compliance BASIC— Unsafe handling of hazardous materials (HM) on a CMV. Example violations: leaking containers, improper placarding, improperly packaged HM.
- The DSMS assesses both the Vehicle Maintenance BASIC and the HM Compliance BASIC using relevant violations recorded during roadside inspections to calculate a measure in each BASIC for individual drivers. These measures are used to generate percentile ranks that reflect drivers' relative safety posture.

1.4.1 Calculation of BASIC Measure

The equation used for calculating the Vehicle Maintenance and HM Compliance BASIC measures is as follows:

$$BASIC\ Measure = \frac{Total\ of\ time\ and\ severity\ weighted\ applicable\ violations}{Total\ time\ weight\ of\ relevant\ inspections}$$

Equation 4-3

In this equation, the terms are defined as follows:

An Applicable Violation is any violation recorded in any level roadside inspection that matches the FMCSR and HMR cites listed for Vehicle Maintenance (Table 5, Appendix A) and HM Compliance (Table 6, Appendix A) BASICs during the past 36 months, and for which the CMV driver can be held responsible ('see 'Violation in the DSMS (Y/N)' column). In cases of multiple counts of the same violation, the DSMS only uses each violation cite once per inspection.

A Relevant Inspection for Vehicle Maintence BASIC is any Vehicle Inspection (Level 1, 2, 5, or 6), including those that do **not** result in a violation in the BASIC.

A Relevant Inspection for HM Compliance BASIC is any Vehicle Inspection (Level 1, 2, 5, or 6), **where placardable quantities of HM are being transported**. This includes inspections that do **not** result in a violation in the BASIC.

A Severity Weight is assigned to each applicable violation with a value dependent on two parts: (i) the level of crash risk relative to the other violation cites used in the BASIC measurement, and (ii) whether or not the violation resulted in an OOS condition.

(i) The level of crash risk is assigned to each applicable violation ranging from 1 (less severe) to 10 (most severe); see the Vehicle Maintenance Table (Table 5, Appendix A) and the HM Compliance (Table 6, Appendix A) BASICs for the corresponding severity weights of each violation cite.

(ii) An OOS weight of 2 is then added to the severity weight of OOS violations. In cases of multiple counts of the same violation, if any of the counts of the violation are OOS then the OOS weight of 2 applies.

The sum of all violation severity weights for any one inspection in any one BASIC is capped at a maximum of 30. This cap of 30 is applied *before* the severity weights are multiplied by the time weight.

Note: The severity weights of violations outside of the BASIC being calculated **do not** count towards the violation cap.

A Time Weight of 1, 2, or 3 is assigned to each applicable violation and each relevant inspection based on its age. Violations/inspections recorded in the past 12 months receive a time weight of 3. Violations/inspections recorded between 12 and 24 months ago receive a time weight of 2. All violations/inspections recorded earlier (older than 24 months but within the past 36 months) receive a time weight of 1. This time weighting places more emphasis on results of recent inspections relative to older inspections.

Note: The time weight is applied to all relevant inspections, including those that do **not** result in a violation in the BASIC.

A Time and Severity Weighted Violation is a violation's severity weight multiplied by its time weight.

1.4.2 Calculation of BASIC Percentile Rank

Based on the BASIC measures, the DSMS applies data sufficiency standards to assign a percentile rank to drivers that can then potentially be subjected to a CSA intervention. The calculation is as follows:

A. Determine the total number of relevant vehicle inspections and the number of inspections with at least one BASIC violation. Remove drivers with (1) less than three relevant inspections or (2) no inspections resulting in at least one BASIC violation. For the remaining drivers, place each driver into one of three groups based on the number of relevant inspections:

Safety Event Group	Number of Relevant Inspections
1	3
2	4-6
3	7+

Table 1-2. Safety Event Groups for Vehicle Maintenance and HM Compliance BASICs

B. Within each group, rank all the drivers' BASIC measures in ascending order. Transform the ranked values into percentiles from 0 (representing the lowest BASIC measure) to 100 (representing the highest BASIC measure).

1.5 Crash Indicator Assessment

This section describes the measurement of the Crash Indicator. The definition of the Crash Indicator is as follows:

- Crash Indicator—Histories or patterns of high crash involvement, including frequency and severity, based on information from state-reported crash reports.

The crash history used by the Crash Indicator is not specifically a behavior; rather, it is the consequence of behavior and may indicate a problem that warrants attention.

The DSMS assesses the Crash Indicator using relevant state-reported crash data to calculate a measure of the indicator for individual drivers. This measure is used to generate percentile ranks that reflect drivers' relative crash posture.

1.5.1 Calculation of Crash Indicator Measure

The equation used for calculating the Crash Indicator measure is as follows:

Crash Indicator Measure = Total of time and severity weighted applicable crashes

Equation 4-4

In this equation, the terms are defined as follows:

An Applicable Crash is based on crash reports provided by the states for each crash that meets the reportable crash standard during the past 36 months. A reportable crash is one that results in at least one fatality; one injury where the injured person is taken to a medical facility for immediate medical attention; or, one vehicle having been towed from the scene as a result of disabling damage caused by the crash (i.e., tow-away).

Crash Severity Weight places more weight on crashes with more severe consequences. For example, a crash involving an injury or fatality is weighted more heavily than a crash where only a tow-away occurred. A hazmat release also increases the weighting of a crash, as shown in Table 4-3.

Crash Type	Crash Severity Weight
Involves tow-away but no injury or fatality	1
Involves injury or fatality	2
Involves a hazmat release	Crash Severity Weight (from above) + 1

Table 1-3. Crash Severity Weights for Crash Indicator

A Time Weight of 1, 2, or 3 is assigned to each applicable crash based on the time elapsed since it occurred. Crashes that occurred in the past 12 months receive a time weight of 3. Crashes that occurred between 12 and 24 months ago receive a time weight of 2. All crashes that happened later (older than 24 months but within the past 36 months) receive a time weight of 1. This time weighting places more emphasis on recent crashes relative to older crashes.

A Time and Severity Weighted Crash is a crash's severity weight multiplied by its time weight.

1.5.2 Calculation of Crash Indicator Percentile Rank

Based on the Crash Indicator measures, the DSMS applies data sufficiency standards and assigns a percentile rank to drivers who then can potentially receive a CSA intervention. The calculation is as follows:

A. Identify drivers with at least one applicable crash.

B. Rank all the drivers' Crash Indicator measures in ascending order. Transform the ranked values into percentiles from 0 (representing the lowest indicator measure) to 100 (representing the highest indicator measure). Then, assign the percentile values to each driver.

2. SMS Report – Summary/Next Steps

The SMS methodology is part of a continuous improvement process in support of CSA and the implementation of the new FMCSA Operational Model. Several major enhancements were made to the SMS as part of lessons learned from the CSA Op-Model Test and public listening session feedback. Future improvements to the SMS will be also based on feedback from stakeholders such as enforcement personnel, industry, and the public, as well as on additional findings as FMCSA implements the CSA Operational Model nationally. In addition, as new data sources become available, these may be incorporated into the SMS methodology. Finally, the SMS will be enhanced periodically as future research reveals new and useful knowledge about crash causation and about the relationship between crash risk and regulatory compliance.

Appendix A

Violation Severity by BASIC

Overview

The tables in this Appendix contain all violations used in the Carrier Safety Measurement System (CSMS) and the subset of these volations (denoted with "Y" in the last column) used in the Driver Safety Measurement System (DSMS). The tables provide the corresponding Federal Motor Carrier Safety Regulation (FMCSR) or Hazardous Material Regulation (HMR) section for each violation. The tables in this document are the same in Appendix A of the CSMS methodology document.

Each table represents a unique Behavior Analysis and Safety Improvement Category (BASIC). Each violation is assigned a severity weight that reflects its relevance to crash risk. Crash risk is defined as the risk of crashes occurring and the consequences of the crash after it occurs. Within each BASIC, the violations are grouped based on their attributes, so that similar violations can be assigned the same severity weights. Severity weights, discussed in more detail below, only reflect relative crash risk *within* a BASIC, and are <u>not</u> comparable across the BASICs.

Interpretation of the Severity Weights

The violation severity weights in the tables that follow have been converted into a scale from 1 to 10, where 1 represents the lowest crash risk and 10 represents the highest crash risk relative to the other violations in the BASIC. Because the weights reflect the relative importance of each violation only within each particular BASIC, they cannot be compared meaningfully across the various BASICs. Therefore, a '5' in one BASIC is not equivalent to a '5' in another BASIC, but the '5' does represent the approximate midpoint between a crash risk of 1 and 10 within the same BASIC. The "Violation Group" column in each table identifies the group to which each violation has been assigned. Each violation within a violation group is assigned the same severity weight.

Derivation of the Severity Weights

In order to determine the severity weights crash involvement and crash consequence the following five-step process was invoked:

1. **BASIC Mapping**—All roadside safety-related violations were mapped to an appropriate BASIC so that the severity weight analysis could be conducted on each individual BASIC.
2. **Violation Grouping**—All violations in each BASIC were placed into groups of similar violations based on the judgment of enforcement subject matter experts. These groups, listed in the "Violation Group" column in each table, make it

possible to incorporate otherwise rarely cited violations into the robust statistical analysis used to derive the severity weights. The violation grouping also ensured that similar types of violations received the same severity weight.

3. **Crash Occurrence Analysis**—Statistical analysis was performed to quantify the extent of the relationship between crash involvement on the one hand and violation rates in each violation group, within each BASIC, on the other hand. A driver approach was used in this analysis. This approach was taken due to strong demonstrable relationships between driver crashes and violations documented in prior Volpe Center research. The earlier research was conducted in support of FMCSA's Compliance Review Work Group (CRWG), the CSA Initiative's predecessor.

   Based on the conclusions from the earlier research, the Volpe Center developed a Driver Information Resource (DIR) for FMCSA. The DIR uses individual crash and inspection reports from all states to construct multi-year driver safety histories for individual commercial drivers. Multivariate negative binomial regression models were used to quantify the strength of relationships between driver violation rates in individual violation groups and crash involvement.
4. **Crash Consequences Analysis**—While the statistical modeling described in step 3 provides an empirical basis for associating violations and crash occurrence it does not address the violations relationship to crash consequence. To factor in the risk associated with crash consequence enforcement subject matter experts representing State and Federal Field Staff provided input for modifying preliminary severity weight defined in step 3. This approach helped balance the violation risk associated with crash involvement (occurrence) and crash consequence.
5. **CSMS Effectiveness Test**—Various severity weighting schemes developed in Steps 1 through 4 were applied to the Carrier Safety Measurement System (CSMS) to provide an empirical evaluation of the weighting schemes. This empirical evaluation, or "CSMS Effectiveness Test," was modeled after the SafeStat Effectiveness Test.[3] The CSMS Effectiveness Test was accomplished through the following steps: (1) performing a simulated CSMS run that calculates carrier percentile ranks for each BASIC using historical data; (2) examining each carrier's crash involvement over the immediate 18 months after the simulated CSMS timeframe, and (3) observing the relationship between the percentile ranks in each BASIC and the subsequent post-CSMS carrier crash rates. The CSMS Effectiveness Test provides an environment to evaluate various severity weighting schemes in terms of their impact in identifying high-risk carriers. It also provides a means of testing other weight schemes, such as the Out-of-Service (OOS) weight, to help optimize CSMS's effectiveness.

[3] SafeStat Motor Carrier Safety Status Measurement System Methodology: Version 8.6 (January 2004). Prepared for FMCSA by John A. Volpe National Transportation Systems Center. Chapter 7: SafeStat Evaluation.

Severity Weight Tables 1 through 6 list all of the violations in the DSMS, with the first two columns of each table identifying each violation by regulatory part and its associated definition. The third column in each table identifies the violation group to which each violation is assigned, followed by the violation groups' severity weights in the fourth column. The fifth column "Violation in the DSMS (Y/N)" indicates whether or not the violation uses in the DSMS.

Table 1. CSMS Unsafe Driving BASIC Violations[4]				
Section	**Violation Description Shown on Driver/Vehicle Examination Report Given to CMV Driver after Roadside Inspection**	**Violation Group Description**	**Violation Severity Weight**	**Violation in the DSMS (Y/N)**
177.800(d)	Unnecessary delay in HM transportation to destination	HM Related	1	Y
177.804B	Failure to comply with 49 CFR 392.80 - Texting while Oper a CMV - Placardable HM	Texting	10	Y
177.804C	Fail to comply with 392.82 - Using Mobile Phone while Oper a CMV - HM	Phone Call	10	Y
390.17DT	Operating a CMV while texting	Texting	10	Y
390.20	Failing to properly secure parked vehicle	Other Driver Violations	1	Y
392.2C	Failure to obey traffic control device	Dangerous Driving	5	Y
392.2DH	Headlamps - Failing to dim when required	Misc Violations	3	Y
392.2FC	Following too close	Dangerous Driving	5	Y
392.2LC	Improper lane change	Dangerous Driving	5	Y
392.2LV	Lane Restriction violation	Misc Violations	3	Y
392.2P	Improper passing	Dangerous Driving	5	Y
392.2PK	Unlawfully parking and/or leaving vehicle in the roadway	Other Driver Violations	1	Y
392.2R	Reckless driving	Reckless Driving	10	Y
392.2RR	Railroad Grade Crossing violation	Dangerous Driving	5	Y
392.2S	Speeding	Speeding Related	1*	Y
392.2-SLLS2	State/Local Laws - Speeding 6-10 miles per hour over the speed limit	Speeding 2	4	Y
392.2-SLLS3	State/Local Laws - Speeding 11-14 miles per hour over the speed limit	Speeding 3	7	Y
392.2-SLLS4	State/Local Laws - Speeding 15 or more miles per hour over the speed limit	Speeding 4	10	Y
392.2-SLLSWZ	State/Local Laws - Speeding work/construction zone	Speeding 4	10	Y
392.2-SLLT	State/Local Laws - Operating a CMV while texting	Texting	10	Y
392.2T	Improper turns	Dangerous Driving	5	Y
392.2Y	Failure to yield right of way	Dangerous Driving	5	Y
392.6	Scheduling run to necessitate speeding	Speeding Related	5	N

[4] Violation severity weights reflect the relative importance of each violation within each BASIC. These weights *cannot* be compared or added meaningfully across the BASICs.

* 392.2S violations from January 1, 2011 or later will be weighted at 1. The rest are weighted 5.

Table 1. CSMS Unsafe Driving BASIC Violations[4]				
Section	**Violation Description Shown on Driver/Vehicle Examination Report Given to CMV Driver after Roadside Inspection**	**Violation Group Description**	**Violation Severity Weight**	**Violation in the DSMS (Y/N)**
392.10(a)(1)	Failing to stop at railroad crossing—bus	Dangerous Driving	5	Y
392.10(a)(2)	Failing to stop at railroad crossing—chlorine	Dangerous Driving	5	Y
392.10(a)(3)	Failing to stop at railroad crossing—placard	Dangerous Driving	5	Y
392.10(a)(4)	Failing to stop at railroad crossing—HM cargo	Dangerous Driving	5	Y
392.14	Failed to use caution for hazardous condition	Dangerous Driving	5	Y
392.16	Failing to use seat belt while operating CMV	Seat Belt	7	Y
392.22(a)	Failing to use hazard warning flashers	Other Driver Violations	1	Y
392.60(a)	Unauthorized passenger on board CMV	Other Driver Violations	1	Y
392.62	Unsafe bus operations	Other Driver Violations	1	Y
392.62(a)	Bus—Standees forward of the standee line	Other Driver Violations	1	Y
392.71(a)	Using or equipping a CMV with radar detector	Speeding Related	5	Y
392.80(a)	Driving a commercial motor vehicle while Texting	Texting	10	Y
392.82(a)(1)	Using a hand-held mobile telephone while operating a CMV	Phone Call	10	Y
392.82(a)(2)	Allowing or requiring driver to use a hand-held mobile tel while operating a CMV	Phone Call	10	Y
397.3	State/local laws ordinances regulations	HM Related	1	Y
397.13	Smoking within 25 feet of HM vehicle	HM Related	1	Y
398.4	Driving of vehicle—migrant workers	Other Driver Violations	1	Y

Table 2. HOS Compliance BASIC Violations[5]				
Section	**Violation Description Shown on Driver/Vehicle Examination Report Given to CMV Driver after Roadside Inspection**	**Violation Group Description**	**Violation Severity Weight**	**Violation in the DSMS (Y/N)**
392.2H	State/Local Hours-of-Service	Hours	7	Y
392.3	Operating a CMV while ill/fatigued	Jumping OOS/Driving Fatigued	10	Y
392.3-FPASS	Fatigue - Operate a passenger-carrying CMV while impaired by fatigue.	Jumping OOS/Driving Fatigued	10	Y
392.3-FPROP	Fatigue - Operate a property-carrying CMV while impaired by fatigue.	Jumping OOS/Driving Fatigued	10	Y
392.3-I	Illness - Operate a CMV while impaired by illness or other cause.	Jumping OOS/Driving Fatigued	10	Y
395.1(h)(1)	15, 20, 70/80 HOS violations (Alaska-Property)	Hours	7	Y
395.1(h)(2)	15, 20, 70/80 HOS violations (Alaska-Passenger)	Hours	7	Y
395.1(h)(3)	Adverse driving conditions violations (Alaska)	Hours	7	Y
395.1(o)	16 hour rule violation (Property)	Hours	7	Y
395.3(a)(1)	Requiring or permitting driver to drive more than 11 hours	Hours	7	Y
395.3A1R	11 hour rule violation (Property)	Hours	7	Y
395.3(a)(2)	Requiring or permitting driver to drive after 14 hours on duty	Hours	7	Y
395.3A2R	14 hour rule violation (Property)	Hours	7	Y
395.3A2-PROP	Driving beyond 14 hour duty period (Property carrying vehicle)	Hours	7	Y
395.3A3-PROP	Driving beyond 11 hour driving limit in a 14 hour period. (Property Carrying Vehicle)	Hours	7	Y
395.3(b)	60/70 - hour rule violation	Hours	7	Y
395.3B1-PROP	Driving after 60 hours on duty in a 7 day period. (Property carrying vehicle)	Hours	7	Y
395.3B2	Driving after 70 hours on duty in a 8 day period. (Property carrying vehicle)	Hours	7	Y
395.3BR	60/70 - hour rule violation (Property)	Hours	7	Y

[5] Violation severity weights reflect the relative importance of each violation within each BASIC. These weights *cannot* be compared or added meaningfully across the BASICs.

Table 2. HOS Compliance BASIC Violations[5]				
Section	**Violation Description Shown on Driver/Vehicle Examination Report Given to CMV Driver after Roadside Inspection**	**Violation Group Description**	**Violation Severity Weight**	**Violation in the DSMS (Y/N)**
395.3(c)	34 -hour restart violation (Property)	Hours	7	Y
395.5(a)(1)	10 - hour rule violation (Passenger)	Hours	7	Y
395.5A1-PASS	Driving after 10 hour driving limit (Passenger carrying vehicle)	Hours	7	Y
395.5(a)(2)	15 - hour rule violation (Passenger)	Hours	7	Y
395.5A2-PASS	Driving after 15 hours on duty (Passenger carrying vehicle)	Hours	7	Y
395.5(b)	60/70 - hour rule violation (Passenger)	Hours	7	Y
395.5B1-PASS	Driving after 60 hours on duty in a 7 day period. (Passenger carrying vehicle)	Hours	7	Y
395.5B2-PASS	Driving after 70 hours on duty in a 8 day period. (Passenger carrying vehicle)	Hours	7	Y
395.8	Log violation (general/form and manner)	Other Log/Form & Manner	1	Y
395.8(a)	No driver's record of duty status	Incomplete/Wrong Log	5	Y
395.8(e)	False report of driver's record of duty status	False Log	7	Y
395.8(f)(1)	Driver's record of duty status not current	Incomplete/Wrong Log	5	Y
395.8(k)(2)	Driver failing to retain previous 7 days' logs	Incomplete/Wrong Log	5	Y
395.13(d)	Driving after being declared out-of-service	Jumping OOS/Driving Fatigued	10	Y
395.15(b)	Onboard recording device information requirements not met	Incomplete/Wrong Log	5	Y
395.15(c)	Onboard recording device improper form and manner	Other Log/Form & Manner	1	Y
395.15(f)	Onboard recording device failure and driver failure to reconstruct duty status	Incomplete/Wrong Log	5	Y
395.15(g)	On-board recording device information not available	EOBR Related	1	Y
395.15(i)(5)	Onboard recording device does not display required information	Other Log/Form & Manner	1	N
398.6	Violation of hours of service regulations—migrant workers	Hours	7	Y

Table 3. CSMS Driver Fitness BASIC Violations [6]				
Section	**Violation Description Shown on Driver/Vehicle Examination Report Given to CMV Driver after Roadside Inspection**	**Violation Group Description**	**Violation Severity Weight**	**Violation in the DSMS (Y/N)**
177.816	Driver training requirements	General Driver Qualification	4	N
383.21	Operating a CMV with more than one driver's license	License-related: High	8	Y
383.21(a)	Operating a CMV with more than one driver's license	License-related: High	8	Y
383.23(a)(2)	Operating a CMV without a CDL	License-related: High	8	Y
383.23(c)	Operating on learner's permit without CDL holder	License-related: High	8	Y
383.23(c)(1)	Operating on learner's permit without CDL holder	License-related: High	8	Y
383.23(c)(2)	Operating on learner's permit without valid driver's license	License-related: High	8	Y
383.51(a)	Driving a CMV (CDL) while disqualified	License-related: High	8	Y
383.51A-NSIN	Driving a CMV while CDL is suspended for a non-safety-related reason and in the state of driver's license issuance.	License-related: Medium	5	Y
383.51A-NSOUT	Driving a CMV while CDL is suspended for a non-safety-related reason and outside the state of driver's license issuance.	License-related: Low	1	Y
383.51A-SIN	Driving a CMV while CDL is suspended for a safety-related or unknown reason and in the state of driver's license issuance.	License-related: High	8	Y
383.51A-SOUT	Driving a CMV while CDL is suspended for safety-related or unknown reason and outside the driver's license state of issuance.	License-related: Medium	5	Y

[6] Violation severity weights reflect the relative importance of each violation within each BASIC. These weights *cannot* be compared or added meaningfully across the BASICs.

Table 3. CSMS Driver Fitness BASIC Violations [6]				
Section	**Violation Description Shown on Driver/Vehicle Examination Report Given to CMV Driver after Roadside Inspection**	**Violation Group Description**	**Violation Severity Weight**	**Violation in the DSMS (Y/N)**
383.91(a)	Operating a CMV with improper CDL group	License-related: High	8	Y
383.93(b)(1)	No double/triple trailer endorsement on CDL	License-related: High	8	Y
383.93(b)(2)	No passenger vehicle endorsement on CDL	License-related: High	8	Y
383.93(b)(3)	No tank vehicle endorsement on CDL	License-related: High	8	Y
383.93(b)(4)	No hazardous materials endorsement on CDL	License-related: High	8	Y
383.93(b)(5)	No school bus endorsement on CDL	License-related: High	8	Y
383.93B5LCDL	License (CDL) - Operating a school bus without a school bus endorsement as described in 383.93(b)(5)	License-related: High	8	Y
383.95(a)	Violating airbrake restriction	License-related: High	8	Y
386.72(b)	Failing to comply with Imminent Hazard OOS Order	Fitness/ Jumping OOS	10	Y
391.11	Unqualified driver	License-related: High	8	Y
391.11(b)(1)	Interstate driver under 21 years of age	General Driver Qualification	4	Y
391.11(b)(2)	Non-English speaking driver	General Driver Qualification	4	Y
391.11B2S	Driver must be able to understand highway traffic signs and signals in the English language	General Driver Qualification	4	Y
391.11(b)(4)	Driver lacking physical qualification(s)	Physical	2	Y
391.11(b)(5)	Driver lacking valid license for type vehicle being operated	License-related: High	8	Y
391.11B5-DEN	Driver operating a CMV without proper endorsements or in violation of restrictions.	License-related: High	8	Y

Table 3. CSMS Driver Fitness BASIC Violations [6]				
Section	**Violation Description Shown on Driver/Vehicle Examination Report Given to CMV Driver after Roadside Inspection**	**Violation Group Description**	**Violation Severity Weight**	**Violation in the DSMS (Y/N)**
391.11B5-DNL	Driver does not have a valid operator's license for the CMV being operated.	License-related: High	8	Y
391.11(b)(7)	Driver disqualified from operating CMV	License-related: High	8	Y
391.15(a)	Driving a CMV while disqualified	License-related: High	8	Y
391.15A-NSIN	Driving a CMV while disqualified. Suspended for non-safety-related reason and in the state of driver's license issuance.	License-related: Medium	5	Y
391.15A-NSOUT	Driving a CMV while disqualified. Suspended for a non-safety-related reason and outside the state of driver's license issuance.	License-related: Low	1	Y
391.15A-SIN	Driving a CMV while disqualified. Suspended for safety-related or unknown reason and in the state of driver’s license issuance.	License-related: High	8	Y
391.15A-SOUT	Driving a CMV while disqualified. Suspended for a safety-related or unknown reason and outside the driver's license state of issuance.	License-related: Medium	5	Y
391.41(a)	Driver not in possession of medical certificate	Medical Certificate	1	Y
391.41A-F	Operating a property-carrying vehicle without possessing a valid medical certificate.	Medical Certificate	1	Y
391.41A-FPC	Operating a property-carrying vehicle without possessing a valid medical certificate. Previously Cited	Medical Certificate	1	Y
391.41A-P	Operating a passenger-carrying vehicle without possessing a valid medical certificate.	Medical Certificate	1	Y
391.43(h)	Improper medical examiner’s certificate form	Medical Certificate	1	Y

Table 3. CSMS Driver Fitness BASIC Violations [6]				
Section	**Violation Description Shown on Driver/Vehicle Examination Report Given to CMV Driver after Roadside Inspection**	**Violation Group Description**	**Violation Severity Weight**	**Violation in the DSMS (Y/N)**
391.45(b)	Expired medical examiner's certificate	Medical Certificate	1	Y
391.49(j)	No valid medical waiver in driver's possession	Medical Certificate	1	Y
398.3(b)	Driver not physically qualified	Physical	2	Y
398.3(b)(8)	No doctor's certificate in possession	Medical Certificate	1	Y

Table 4. CSMS Controlled Substances/Alcohol BASIC Violations[7]				
Section	**Violation Description Shown on Driver/Vehicle Examination Report Given to CMV Driver after Roadside Inspection**	**Violation Group Description**	**Violation Severity Weight**	**Violation in the DSMS (Y/N)**
392.4(a)	Driver uses or is in possession of drugs	Drugs	10	Y
392.5(a)	Possession/use/under influence alcohol-4hrs prior to duty	Alcohol	5	Y
392.5(c)(2)	Violating OOS order pursuant to 392.5(a)/(b)	Alcohol Jumping OOS	10	Y

Table 5. CSMS Vehicle Maintenance BASIC Violations [8]				
Section	**Violation Description Shown on Driver/Vehicle Examination Report Given to CMV Driver after Roadside Inspection**	**Violation Group Description**	**Violation Severity Weight[9]**	**Violation in the DSMS (Y/N)**
385.103(c)	Fail to display current CVSA decal - Provisional Authority	Inspection Reports	4	N
392.2WC	Wheel (Mud) Flaps missing or defective	Windshield/ Glass/ Markings	1	Y

[7] Violation severity weights reflect the relative importance of each violation within each BASIC. These weights *cannot* be compared or added meaningfully across the BASICs.

[8] Violation severity weights reflect the relative importance of each violation within each BASIC. These weights *cannot* be compared or added meaningfully across the BASICs.

[9] In cases where a violation results in an Out-of-Service Order as defined in 49 CFR 390.5, an additional weight of 2 is added to arrive at a total severity weight for the violation.

Table 5. CSMS Vehicle Maintenance BASIC Violations [8]				
Section	**Violation Description Shown on Driver/Vehicle Examination Report Given to CMV Driver after Roadside Inspection**	**Violation Group Description**	**Violation Severity Weight[9]**	**Violation in the DSMS (Y/N)**
392.7	No pre-trip inspection	Inspection Reports	4	Y
392.7(a)	Driver failing to conduct pre-trip inspection	Inspection Reports	4	Y
392.7(b)	Driver failing to conduct a pre-trip inspection of intermodal equipment	Inspection Reports	4	Y
392.8	Failing to inspect/use emergency equipment	Emergency Equipment	2	Y
392.9	Failing to secure load	General Securement	1	Y
392.9(a)	Failing to secure load	General Securement	1	Y
392.9(a)(1)	Failing to secure cargo	General Securement	1	Y
392.9(a)(2)	Failing to secure vehicle equipment	General Securement	1	Y
392.9(a)(3)	Driver's view/movement is obstructed	General Securement	1	Y
392.22(b)	Failing/improper placement of warning devices	Cab, Body, Frame	2	Y
392.33	Operating CMV with lamps/reflectors obscured	Lighting	6	Y
392.62(c)(1)	Bus - baggage/freight restricts driver operation	General Securement	1	Y
392.62(c)(2)	Bus - Exit(s) obstructed by baggage/freight	General Securement	1	Y
392.62(c)(3)	Passengers not protected from falling baggage	General Securement	1	Y
392.63	Pushing/towing a loaded bus	Towing Loaded Bus	10	Y
393.9	Inoperative required lamps	Clearance Identification Lamps/Other	2	Y
393.9H	Inoperative head lamps	Lighting	6	Y
393.9T	Inoperative tail lamp	Lighting	6	Y
393.9TS	Inoperative turn signal	Lighting	6	Y

Table 5. CSMS Vehicle Maintenance BASIC Violations [8]				
Section	**Violation Description Shown on Driver/Vehicle Examination Report Given to CMV Driver after Roadside Inspection**	**Violation Group Description**	**Violation Severity Weight[9]**	**Violation in the DSMS (Y/N)**
393.9(a)	Inoperative required lamps	Clearance Identification Lamps/Other	2	Y
393.11	No/defective lighting devices/reflective devices/projected	Reflective Sheeting	3	Y
393.11LR	Lower retroreflective sheeting/reflex reflectors - Trailer manufactured on or after 12/1/1993	Reflective Sheeting	3	Y
393.11N	No retroreflective sheeting/reflex reflectors - Trailer manufactured on or after 12/1/1993	Reflective Sheeting	3	Y
393.11RT	Retroreflective sheeting not affixed as required - Trailer manufactured on or after 12/1/1993	Reflective Sheeting	3	Y
393.11S	No side retroreflective sheeting/reflex reflectors - Trailer manufactured on or after 12/1/1993	Reflective Sheeting	3	Y
393.11TL	No retro reflective sheeting or reflex reflectors on mud flaps - Truck Tractor manufactured on or after 7/1/1997	Reflective Sheeting	3	Y
393.11TT	No retroreflective sheeting/reflex reflectors - Truck Tractor manufactured on or after 7/1/1997	Reflective Sheeting	3	Y
393.11TU	No upper body corners retroreflective sheeting/reflex reflectors - Truck Tractor manufactured on or after 7/1/1997	Reflective Sheeting	3	Y
393.11UR	No upper reflex reflectors retroreflective sheeting/reflex reflectors - Trailer manufactured on or after 12/1/1993	Reflective Sheeting	3	Y

Table 5. CSMS Vehicle Maintenance BASIC Violations [8]				
Section	**Violation Description Shown on Driver/Vehicle Examination Report Given to CMV Driver after Roadside Inspection**	**Violation Group Description**	**Violation Severity Weight[9]**	**Violation in the DSMS (Y/N)**
393.13(a)	Retroreflective tape not affixed as required for Trailers manufactured after 12/1/1993	Reflective Sheeting	3	Y
393.13(b)	No retroreflective sheeting or reflex reflective material as required for vehicles manufactured on or after 12/1/1993	Reflective Sheeting	3	Y
393.13(c)(1)	No side retroreflective sheeting or reflex reflective material as required for vehicles manufactored manufactured before 12/1/1993	Reflective Sheeting	3	Y
393.13(c)(2)	No lower rear retroreflective sheeting or reflex reflective material as required for vehicles manufactured before 12/1/1993	Reflective Sheeting	3	Y
393.13(c)(3)	No upper rear retroreflective sheeting or reflex reflective material as required for vehicles manufactured before 12/1/1993	Reflective Sheeting	3	Y
393.13(d)(1)	Improper side placement of retroreflective sheeting or reflex reflective material as required for vehicles manufactured on or after 12/1/1993	Reflective Sheeting	3	Y
393.13(d)(2)	Improper lower rear placement of retroreflective sheeting or reflex reflective material requirements for vehicles manufactured before 12/1/1993	Reflective Sheeting	3	Y
393.13(d)(3)	Upper rear retroreflective sheeting or reflex reflective material as required for vehicles manufactured on or after 12/1/1993	Reflective Sheeting	3	Y
393.17	No/defective lamp/reflector-tow-away operation	Lighting	6	Y
393.17(a)	No/defective lamps-towing unit-tow-away operation	Lighting	6	Y

Table 5. CSMS Vehicle Maintenance BASIC Violations [8]				
Section	**Violation Description Shown on Driver/Vehicle Examination Report Given to CMV Driver after Roadside Inspection**	**Violation Group Description**	**Violation Severity Weight[9]**	**Violation in the DSMS (Y/N)**
393.17(b)	No/defective tow-away lamps on rear unit	Lighting	6	Y
393.19	Inoperative/defective hazard warning lamp	Lighting	6	Y
393.23	Required lamp not powered by vehicle electricity	Clearance Identification Lamps/Other	2	Y
393.24(a)	Noncompliance with headlamp requirements	Lighting	6	Y
393.24(b)	Noncompliant fog/driving lamps	Lighting	6	Y
393.24BR	Noncompliant fog or driving lamps	Lighting	6	Y
393.24(c)	Improper headlamp mounting	Lighting	6	N
393.24(d)	Improper head / auxiliary / fog lamp aiming	Lighting	6	N
393.25(a)	Improper lamp mounting	Lighting	6	N
393.25(b)	Lamps are not visible as required	Lighting	6	Y
393.25(e)	Lamp not steady burning	Lighting	6	Y
393.25(f)	Stop lamp violations	Lighting	6	Y
393.26	Requirements for reflectors	Reflective Sheeting	3	Y
393.28	Improper or no wiring protection as required	Other Vehicle Defect	3	Y
393.30	Improper battery installation	Other Vehicle Defect	3	Y
393.40	Inadequate brake system on a CMV	Brakes, All Others	4	Y
393.41	No or defective parking brake system on CMV	Brakes, All Others	4	Y
393.42	No brakes as required	Brakes, All Others	4	Y
393.42A-BM	Brake - Missing required brake.	Brakes, All Others	4	Y
393.42A-BMAW	Brake - All wheels not equipped with brakes as required.	Brakes, All Others	4	Y
393.42A-BM-TSA	Brake - Missing on a trailer steering axle.	Brakes, All Others	4	Y

Table 5. CSMS Vehicle Maintenance BASIC Violations [8]				
Section	**Violation Description Shown on Driver/Vehicle Examination Report Given to CMV Driver after Roadside Inspection**	**Violation Group Description**	**Violation Severity Weight[9]**	**Violation in the DSMS (Y/N)**
393.43	No/improper breakaway or emergency braking	Brakes, All Others	4	Y
393.43(a)	No/improper tractor protection valve	Brakes, All Others	4	Y
393.43(d)	No or defective automatic trailer brake	Brakes, All Others	4	Y
393.44	No/defective bus front brake line protection	Brakes, All Others	4	Y
393.45	Brake tubing and hose adequacy	Brakes, All Others	4	N
393.45PC	Brake Tubing and Hose Adequacy - Connections to Power Unit	Brakes, All Others	4	N
393.45UV	Brake Tubing and Hose Adequacy Under Vehicle	Brakes, All Others	4	N
393.45(a)(4)	Failing to secure brake hose/tubing against mechanical damage	Brakes, All Others	4	N
393.45(b)(2)	Failing to secure brake hose/tubing against mechanical damage	Brakes, All Others	4	Y
393.45B2PC	Brake Hose or Tubing Chafing and/or Kinking - Connection to Power Unit	Brakes, All Others	4	Y
393.45B2UV	Brake Hose or Tubing Chafing and/or Kinking Under Vehicle	Brakes, All Others	4	N
393.45(b)(3)	Failing to secure brake hose/tubing against high temperatures	Brakes, All Others	4	N
393.45(d)	Brake connections with leaks/constrictions	Brakes, All Others	4	N
393.45DCPC	Brake Connections with Constrictions - Connection to Power Unit	Brakes, All Others	4	Y
393.45DCUV	Brake Connections with Constrictions Under Vehicle	Brakes, All Others	4	N
393.45DLPC	Brake Connections with Leaks - Connection to Power Unit	Brakes, All Others	4	Y

Table 5. CSMS Vehicle Maintenance BASIC Violations [8]				
Section	**Violation Description Shown on Driver/Vehicle Examination Report Given to CMV Driver after Roadside Inspection**	**Violation Group Description**	**Violation Severity Weight[9]**	**Violation in the DSMS (Y/N)**
393.45DLUV	Brake Connections with Leaks Under Vehicle	Brakes, All Others	4	Y
393.47	Inadequate/contaminated brake linings	Brakes, All Others	4	Y
393.47(a)	Inadequate brakes for safe stopping	Brakes, All Others	4	Y
393.47(b)	Mismatched brake chambers on same axle	Brakes, All Others	4	Y
393.47(c)	Mismatched slack adjuster effective length	Brakes, All Others	4	Y
393.47(d)	Insufficient brake linings	Brakes, All Others	4	Y
393.47(e)	Clamp/Roto-Chamber type brake(s) out of adjustment	Brakes Out of Adjustment	4	Y
393.47(f)	Wedge type brake(s) out of adjustment	Brakes Out of Adjustment	4	Y
393.47(g)	Insufficient drum/rotor thickness	Brakes, All Others	4	Y
393.48(a)	Inoperative/defective brakes	Brakes, All Others	4	Y
393.48A-BCM	Brakes - Hydraulic Brake Caliper movement exceeds 1/8" (0.125") (3.175 mm)	Brakes, All Others	4	N
393.48A-BMBC	Brakes - Missing or Broken Components	Brakes, All Others	4	N
393.48A-BRMMC	Brakes - Rotor (disc) metal-to-metal contact	Brakes, All Others	4	N
393.48A-BSRFS	Brakes - Severe rusting of brake rotor (disc)	Brakes, All Others	4	N
393.48(b)(1)	Defective brake limiting device	Brakes, All Others	4	Y
393.50	Inadequate reservoir for air/vacuum brakes	Brakes, All Others	4	N
393.50(a)	Failing to have sufficient air/vacuum reserve	Brakes, All Others	4	N
393.50(b)	Failing to equip vehicle - prevent reservoir air/vacuum leak	Brakes, All Others	4	N

Table 5. CSMS Vehicle Maintenance BASIC Violations [8]				
Section	**Violation Description Shown on Driver/Vehicle Examination Report Given to CMV Driver after Roadside Inspection**	**Violation Group Description**	**Violation Severity Weight[9]**	**Violation in the DSMS (Y/N)**
393.50(c)	No means to ensure operable check valve	Brakes, All Others	4	N
393.50(d)	No or defective air reservoir drain valve	Brakes, All Others	4	Y
393.51	No or defective brake warning device	Brakes, All Others	4	Y
393.52(a)(1)	Insufficient braking force as percent of GVW or GCW	Brakes, All Others	4	Y
393.53(a)	Automatic brake adjuster CMV manufactured on or after 10/20/1993 - hydraulic brake	Brakes, All Others	4	Y
393.53(b)	Automatic brake adjuster CMV manufactured on or after 10/20/1994 - air brake	Brakes, All Others	4	Y
393.53(c)	Brake adjustment indicator CMV manufactured on or after 10/20/1994 - external automatic adjustment	Brakes, All Others	4	Y
393.55(a)	ABS - all CMVs manufactured on or after 3/1/1999 with hydraulic brakes	Brakes, All Others	4	N
393.55(b)	ABS - malfunction indicators for hydraulic brake system	Brakes, All Others	4	N
393.55(c)(1)	ABS - all tractors manufactured on or after 3/1/1997 air brake system	Brakes, All Others	4	N
393.55(c)(2)	ABS - all other CMVs manufactured on or after 3/1/1998 air brake system	Brakes, All Others	4	N
393.55(d)(1)	ABS - malfunctioning circuit/signal - truck tractor manufactured on or after 3/1/1997, single-unit CMV manufactured on or after 3/1/1998	Brakes, All Others	4	N
393.55(d)(2)	ABS - malfunctioning indicator to cab of towing CMV manufactured on or after 3/1/2001	Brakes, All Others	4	N

Table 5. CSMS Vehicle Maintenance BASIC Violations [8]				
Section	**Violation Description Shown on Driver/Vehicle Examination Report Given to CMV Driver after Roadside Inspection**	**Violation Group Description**	**Violation Severity Weight[9]**	**Violation in the DSMS (Y/N)**
393.55(d)(3)	No or Defective ABS Malfunction Indicator for towed vehicles on vehicles manufactured after February 2001	Brakes, All Others	4	N
393.55(e)	ABS - malfunctioning lamps towed CMV manufactured on or after 3/1/1998, manufactured before 3/1/2009	Brakes, All Others	4	Y
393.60EWS	Windshield - Obstructed	Windshield/ Glass/ Markings	1	Y
393.60(b)	Windshields required	Windshield/ Glass/ Markings	1	Y
393.60(c)	Damaged or discolored windshield	Windshield/ Glass/ Markings	1	Y
393.60(d)	Glazing permits less than 70 percent of light	Windshield/ Glass/ Markings	1	Y
393.61	Inadequate or missing truck side windows	Windshield/ Glass/ Markings	1	Y
393.61(a)	Inadequate or missing truck side windows	Windshield/ Glass/ Markings	1	Y
393.61(b)(2)	Emergency exit window handle broken	Windshield/ Glass/ Markings	1	Y
393.62(a)	No or defective bus emergency exits - Bus manufactured on or after 9/1/1994	Windshield/ Glass/ Markings	1	Y
393.62(b)	No or defective bus emergency exits - Bus manufactured on or after 9/1/1973 but before 9/1/1994	Windshield/ Glass/ Markings	1	Y
393.62(c)	No or defective bus emergency exit windows - Bus manufactured before 9/1/1973	Windshield/ Glass/ Markings	1	Y
393.62(d)	No / defective Safety glass/push-out window - Bus manufactured before 9/1/1973	Windshield/ Glass/ Markings	1	Y

Table 5. CSMS Vehicle Maintenance BASIC Violations [8]				
Section	**Violation Description Shown on Driver/Vehicle Examination Report Given to CMV Driver after Roadside Inspection**	**Violation Group Description**	**Violation Severity Weight[9]**	**Violation in the DSMS (Y/N)**
393.62(e)	No or inadequate bus emergency exit marking - Bus manufactured on or after 9/1/1973	Windshield/ Glass/ Markings	1	Y
393.65	Fuel system requirements	Fuel Systems	1	N
393.65(b)	Improper location of fuel system	Fuel Systems	1	Y
393.65(c)	Improper securement of fuel tank	Fuel Systems	1	Y
393.65(f)	Improper fuel line protection	Fuel Systems	1	Y
393.67	Fuel tank requirement violations	Fuel Systems	1	N
393.67(c)(7)	Fuel tank fill pipe cap missing	Fuel Systems	1	Y
393.67(c)(8)	Improper fuel tank safety vent	Fuel Systems	1	N
393.68	Compressed natural gas (CNG) fuel container does not conform to regulations	Other Vehicle Defect	3	Y
393.70	Fifth wheel	Coupling Devices	3	N
393.70(a)	Defective coupling device — improper tracking	Coupling Devices	3	N
393.70(b)	Defective/improper fifth wheel assemblies	Coupling Devices	3	Y
393.70B1II	Defective / Improper fifth wheel assembly upper half	Coupling Devices	3	Y
393.70(b)(2)	Defective fifth wheel locking mechanism	Coupling Devices	3	Y
393.70(c)	Defective coupling devices for full trailer	Coupling Devices	3	Y
393.70(d)	No/improper safety chains/cables for full trailer	Coupling Devices	3	Y
393.70(d)(8)	Improper safety chain attachment	Coupling Devices	3	Y
393.71	Improper coupling driveaway/tow-away operation	Coupling Devices	3	Y
393.71(g)	Prohibited towing connection / device	Coupling Devices	3	Y
393.71(h)	Towbar requirement violations	Coupling Devices	3	Y

Table 5. CSMS Vehicle Maintenance BASIC Violations [8]				
Section	**Violation Description Shown on Driver/Vehicle Examination Report Given to CMV Driver after Roadside Inspection**	**Violation Group Description**	**Violation Severity Weight[9]**	**Violation in the DSMS (Y/N)**
393.71(h)(10)	No/improper safety chains/cables for towbar	Coupling Devices	3	Y
393.75	Tires/tubes (general)	Tires	8	Y
393.75(a)	Flat tire or fabric exposed	Tires	8	Y
393.75(a)(1)	Tire — ply or belt material exposed	Tires	8	Y
393.75(a)(2)	Tire — tread and/or sidewall separation	Tires	8	Y
393.75(a)(3)	Tire — flat and/or audible air leak	Tires	8	Y
393.75(a)(4)	Tire — cut exposing ply and/or belt material	Tires	8	Y
393.75(b)	Tire — front tread depth less than 4/32 of inch	Tires	8	Y
393.75(c)	Tire — other tread depth less than 2/32 of inch	Tires	8	Y
393.75(d)	Tire — bus regrooved/recap on front wheel	Tires	8	Y
393.75(e)	Tire — regrooved on front wheel of truck/truck-tractor	Tire vs. Load	3	Y
393.75(f)	Tire — load weight rating/under inflated	Tire vs. Load	3	Y
393.75(f)(1)	Weight carried exceeds tire load limit	Tire vs. Load	3	Y
393.75(f)(2)	Tire underinflated	Tire vs. Load	3	Y
393.75(h)	Tire underinflated	Tire vs. Load	3	Y
393.76	Sleeper berth requirement violations	Other Vehicle Defect	3	Y
393.77	Defective and/or prohibited heaters	Other Vehicle Defect	3	Y
393.77(b)(11)	Bus heater fuel tank location	Other Vehicle Defect	3	Y
393.77(b)(5)	Protection of operating controls from tampering	Other Vehicle Defect	3	Y
393.78	Windshield wipers inoperative/defective	Windshield/ Glass/ Markings	1	Y

Table 5. CSMS Vehicle Maintenance BASIC Violations [8]				
Section	Violation Description Shown on Driver/Vehicle Examination Report Given to CMV Driver after Roadside Inspection	Violation Group Description	Violation Severity Weight[9]	Violation in the DSMS (Y/N)
393.79	Defroster / Defogger inoperative	Windshield/ Glass/ Markings	1	Y
393.80	Failing to equip vehicle with two rear vision mirrors	Other Vehicle Defect	3	Y
393.81	Horn inoperative	Other Vehicle Defect	3	Y
393.82	Speedometer inoperative / inadequate	Other Vehicle Defect	3	Y
393.83(a)	Exhaust system location	Exhaust Discharge	1	Y
393.83(b)	Exhaust discharge fuel tank/filler tube	Exhaust Discharge	1	Y
393.83(c)	Improper exhaust - bus (gasoline)	Exhaust Discharge	1	Y
393.83(d)	Improper exhaust - bus (diesel)	Exhaust Discharge	1	Y
393.83(e)	Improper exhaust discharge (not rear of cab)	Exhaust Discharge	1	Y
393.83(f)	Improper exhaust system repair (patch/wrap)	Exhaust Discharge	1	Y
393.83(g)	Exhaust leak under truck cab and/or sleeper	Exhaust Discharge	1	Y
393.83(h)	Exhaust system not securely fastened	Exhaust Discharge	1	Y
393.84	Inadequate floor condition	Cab, Body, Frame	2	Y
393.86	No or improper rearend protection	Cab, Body, Frame	2	Y
393.86(a)(1)	Rear impact guards - all trailers/semitrailers manufactured on or after 1/26/98	Cab, Body, Frame	2	N
393.86(a)(2)	Impact guard width - all trailers/semitrailers manufactured on or after 1/26/98	Cab, Body, Frame	2	N
393.86(a)(3)	Impact guard height - all trailers/semitrailers manufactured on or after 1/26/98	Cab, Body, Frame	2	N
393.86(a)(4)	Impact guard rear - all trailers/semitrailers manufactured on or after 1/26/98	Cab, Body, Frame	2	N

Table 5. CSMS Vehicle Maintenance BASIC Violations [8]				
Section	**Violation Description Shown on Driver/Vehicle Examination Report Given to CMV Driver after Roadside Inspection**	**Violation Group Description**	**Violation Severity Weight[9]**	**Violation in the DSMS (Y/N)**
393.86(a)(5)	Cross-sectional vertical height - all trailers/semitrailers manufactured on or after 1/26/98	Cab, Body, Frame	2	N
393.86(b)(1)	Rear Impact Guards - motor vehicles manufactured after 12/31/52, see exceptions	Cab, Body, Frame	2	Y
393.87	Warning flag required on projecting load	Warning Flags	1	Y
393.87(a)	Warning flag required on projecting load	Warning Flags	1	Y
393.87(b)	Improper warning flag placement	Warning Flags	1	Y
393.88	Improperly located television receiver	Cab, Body, Frame	2	Y
393.89	Bus driveshaft not properly protected	Cab, Body, Frame	2	Y
393.90	Bus - no or obscure standee line	Cab, Body, Frame	2	Y
393.91	Bus - improper aisle seats	Cab, Body, Frame	2	Y
393.93(a)	Bus - not equipped with seatbelt	Cab, Body, Frame	2	Y
393.93(a)(3)	Seats not secured in conformance with FMVSS	Cab, Body, Frame	2	N
393.93(b)	Truck not equipped with seatbelt	Cab, Body, Frame	2	Y
393.95(a)	No/discharged/unsecured fire extinguisher	Emergency Equipment	2	Y
393.95(a)(1)(i)	No/discharged/unsecured fire extinguisher	Emergency Equipment	2	Y
393.95(b)	No spare fuses as required	Emergency Equipment	2	Y
393.95(c)	No spare fuses as required	Emergency Equipment	2	Y
393.95(f)	No / insufficient warning devices	Emergency Equipment	2	Y
393.95(g)	HM - restricted emergency warning device	Emergency Equipment	2	Y
393.100	Failure to prevent cargo shifting	General Securement	1	Y
393.100(a)	Failure to prevent cargo shifting	General Securement	1	Y

Table 5. CSMS Vehicle Maintenance BASIC Violations [8]				
Section	**Violation Description Shown on Driver/Vehicle Examination Report Given to CMV Driver after Roadside Inspection**	**Violation Group Description**	**Violation Severity Weight[9]**	**Violation in the DSMS (Y/N)**
393.100(b)	Leaking/spilling/blowing/falling cargo	Improper Load Securement	7	Y
393.100(c)	Failure to prevent cargo shifting	General Securement	1	Y
393.102(a)	Improper securement system (tiedown assemblies)	Tiedown	3	Y
393.102(a)(1)	Insufficient means to prevent forward movement	Failure to Prevent Movement	3	Y
393.102(a)(1)(i)	Insufficient means to prevent forward movement	Failure to Prevent Movement	3	Y
393.102(a)(1)(ii)	Insufficient means to prevent rearward movement	Failure to Prevent Movement	3	Y
393.102(a)(1)(iii)	Insufficient means to prevent lateral movement	Failure to Prevent Movement	3	Y
393.102(a)(2)	Tiedown assembly with inadequate working load limit	Tiedown	3	Y
393.102(a)(3)	Insufficient means to prevent lateral movement	Failure to Prevent Movement	3	Y
393.102(b)	Insufficient means to prevent vertical movement	Failure to Prevent Movement	3	Y
393.102(c)	No equivalent means of securement	Improper Load Securement	7	Y
393.104(a)	Inadequate/damaged securement device/system	Securement Device	1	Y
393.104(b)	Damaged securement system/tiedowns	Securement Device	1	Y
393.104(c)	Damaged vehicle structures/anchor points	Securement Device	1	Y
393.104(d)	Damaged dunnage/bars/blocking-bracing	Securement Device	1	Y
393.104(f)(1)	Knotted tiedown	Tiedown	3	Y
393.104(f)(2)	Use of tiedown with improper repair.	Tiedown	3	Y
393.104(f)(3)	Loose/unfastened tiedown.	Tiedown	3	Y

Table 5. CSMS Vehicle Maintenance BASIC Violations [8]				
Section	**Violation Description Shown on Driver/Vehicle Examination Report Given to CMV Driver after Roadside Inspection**	**Violation Group Description**	**Violation Severity Weight[9]**	**Violation in the DSMS (Y/N)**
393.104(f)(4)	No edge protection for tiedowns	Tiedown	3	Y
393.104F4R	No edge protection for tiedowns	Tiedown	3	Y
393.104(f)(5)	No edge protection for tiedowns	Tiedown	3	Y
393.106(a)	No/improper front end structure/headerboard	Securement Device	1	Y
393.106(b)	Cargo not immobilized or secured	Failure to Prevent Movement	3	Y
393.106(c)(1)	No means to prevent cargo from rolling	Failure to Prevent Movement	3	Y
393.106(c)(2)	Cargo without direct contact/prevention from shifting	Failure to Prevent Movement	3	Y
393.106(d)	Insufficient aggregate working load limit	Tiedown	3	Y
393.110	Failing to meet minimum tiedown requirements	General Securement	1	Y
393.110(b)	Insufficient tiedowns; without headerboard/blocking	Tiedown	3	Y
393.110(c)	Insufficient tiedowns; with headerboard/blocking	Tiedown	3	Y
393.110(d)	Large/odd-shaped cargo not adequately secured	Failure to Prevent Movement	3	Y
393.112	Tiedown not adjustable by driver	Securement Device	1	Y
393.114	No/improper front end structure	General Securement	1	Y
393.114(b)(1)	Insufficient height for front-end structure	Securement Device	1	Y
393.114(b)(2)	Insufficient width for front-end structure	Securement Device	1	Y
393.114(d)	Front-end structure with large opening(s)	Securement Device	1	Y
393.116	No/improper securement of logs	General Securement	1	Y
393.116(d)(1)	Short, over 1/3 length past structure	Improper Load Securement	7	Y

Table 5. CSMS Vehicle Maintenance BASIC Violations [8]				
Section	**Violation Description Shown on Driver/Vehicle Examination Report Given to CMV Driver after Roadside Inspection**	**Violation Group Description**	**Violation Severity Weight[9]**	**Violation in the DSMS (Y/N)**
393.116(d)(2)	Short, insufficient/no tiedowns	Improper Load Securement	7	Y
393.116(d)(3)	Short, tiedowns improperly positioned	Improper Load Securement	7	Y
393.116(d)(4)	Short, no center stakes/high log not secured	Improper Load Securement	7	Y
393.116(e)	Short, length; improper securement	Improper Load Securement	7	Y
393.118	No/improper lumber/building materials. securement	General Securement	1	Y
393.118(b)	Improper placement of bundles	Improper Load Securement	7	Y
393.118(d)	Insufficient protection against lateral movement	Failure to Prevent Movement	3	Y
393.118(d)(3)	Insufficient/improper arrangement of tiedowns	Tiedown	3	Y
393.120	No/improper securement of metal coils	General Securement	1	Y
393.120(b)(1)	Coil/vertical improper securement	Improper Load Securement	7	Y
393.120(b)(2)	Coils, rows, eyes vertical - improper securement	Improper Load Securement	7	Y
393.120(c)(1)	Coil/eye crosswise improper securement	Improper Load Securement	7	Y
393.120(c)(2)	X-pattern on coil(s) with eyes crosswise	Improper Load Securement	7	Y
393.120(d)(1)	Coil with eye lengthwise-improper securement	Improper Load Securement	7	Y
393.120(d)(4)	Coils, rows, eyes length - improper securement.	Improper Load Securement	7	Y
393.120(e)	No protection against shifting/tipping	Failure to Prevent Movement	3	Y
393.122	No/improper securement of paper rolls	General Securement	1	Y

Table 5. CSMS Vehicle Maintenance BASIC Violations [8]				
Section	**Violation Description Shown on Driver/Vehicle Examination Report Given to CMV Driver after Roadside Inspection**	**Violation Group Description**	**Violation Severity Weight[9]**	**Violation in the DSMS (Y/N)**
393.122(b)	Rolls vertical - improper securement	Improper Load Securement	7	Y
393.122(c)	Rolls vertical /split - improper securement	Improper Load Securement	7	Y
393.122(d)	Rolls vertical /stacked - improper securement	Improper Load Securement	7	Y
393.122(e)	Rolls crosswise - improper securement	Improper Load Securement	7	Y
393.122(f)	Rolls crosswise/stacked load - improperly secured	Improper Load Securement	7	Y
393.122(g)	Rolls length - improper securement	Improper Load Securement	7	Y
393.122(h)	Rolls lengthwise/stacked - improper securement	Improper Load Securement	7	Y
393.122(i)	Improper securement - rolls on flatbed/curtain-sided vehicle	Improper Load Securement	7	Y
393.124	No/improper securement of concrete pipe	General Securement	1	Y
393.124(b)	Insufficient working load limit - concrete pipes	Tiedown	3	Y
393.124(c)	Improper blocking of concrete pipe	Improper Load Securement	7	Y
393.124(d)	Improper arrangement of concrete pipe	Improper Load Securement	7	Y
393.124(e)	Improper securement, up to 45 in. diameter	Improper Load Securement	7	Y
393.124(f)	Improper securement, greater than 45 inch diameter	Improper Load Securement	7	Y
393.126	Fail to ensure intermodal container secured	General Securement	1	Y
393.126(b)	Damaged/missing tiedown/securement device	Securement Device	1	Y
393.126(c)(1)	Lower corners of container not on vehicle/structure	Securement Device	1	Y

Table 5. CSMS Vehicle Maintenance BASIC Violations [8]				
Section	**Violation Description Shown on Driver/Vehicle Examination Report Given to CMV Driver after Roadside Inspection**	**Violation Group Description**	**Violation Severity Weight[9]**	**Violation in the DSMS (Y/N)**
393.126(c)(2)	All corners of chassis not secured	Improper Load Securement	7	Y
393.126(c)(3)	Front and rear of container not secured independently	Improper Load Securement	7	Y
393.126(d)(1)	Empty container not properly positioned	Improper Load Securement	7	Y
393.126(d)(2)	Empty container, more than 5 foot overhang	Improper Load Securement	7	Y
393.126(d)(4)	Empty container - not properly secured	Improper Load Securement	7	Y
393.128	No/improper securement of vehicles	General Securement	1	Y
393.128(b)(1)	Vehicle not secured - front and rear	Improper Load Securement	7	Y
393.128(b)(2)	Tiedown(s) not affixed to mounting points.	Improper Load Securement	7	Y
393.128(b)(3)	Tiedown(s) not over/around wheels.	Improper Load Securement	7	Y
393.130	No/improper heavy vehicle/machinery securement	General Securement	1	Y
393.130(b)	Item not properly prepared for transport	Improper Load Securement	7	Y
393.130(c)	Improper restraint/securement of item	Improper Load Securement	7	Y
393.132	No/improper securement of crushed vehicles	General Securement	1	Y
393.132(b)	Prohibited use of synthetic webbing.	Securement Device	1	Y
393.132(c)	Insufficient tiedowns per stack cars	Tiedown	3	Y
393.132(c)(5)	Insufficient means to retain loose parts	Improper Load Securement	7	Y
393.134	No/improper securement of roll/hook container	General Securement	1	Y

Table 5. CSMS Vehicle Maintenance BASIC Violations [8]				
Section	**Violation Description Shown on Driver/Vehicle Examination Report Given to CMV Driver after Roadside Inspection**	**Violation Group Description**	**Violation Severity Weight[9]**	**Violation in the DSMS (Y/N)**
393.134(b)(1)	No blocking against forward movement	Failure to Prevent Movement	3	Y
393.134(b)(2)	Container not secured to front of vehicle	Improper Load Securement	7	Y
393.134(b)(3)	Rear of container not properly secured	Improper Load Securement	7	Y
393.136	No/improper securement of large boulders	General Securement	1	Y
393.136(b)	Improper placement/positioning of boulder	Improper Load Securement	7	Y
393.136(c)(1)	Boulder not secured with chain	Improper Load Securement	7	Y
393.136(d)	Improper securement - cubic boulder	Improper Load Securement	7	Y
393.136(e)	Improper securement - non-cubic boulder with stable base	Improper Load Securement	7	Y
393.136(f)	Improper securement - non-cubic boulder with unstable base	Improper Load Securement	7	Y
393.201(a)	Frame cracked / loose / sagging / broken	Cab, Body, Frame	2	Y
393.201(b)	Bolts securing cab broken/loose/missing	Cab, Body, Frame	2	N
393.201(c)	Frame rail flange improperly bent/cut/notched	Cab, Body, Frame	2	N
393.201(d)	Frame accessories improperly attached	Cab, Body, Frame	2	N
393.201(e)	Prohibited holes drilled in frame rail flange	Cab, Body, Frame	2	N
393.203	Cab/body parts requirements violations	Cab, Body, Frame	2	Y
393.203(a)	Cab door missing/broken	Cab, Body, Frame	2	Y
393.203(b)	Cab/body improperly secured to frame	Cab, Body, Frame	2	Y
393.203(c)	Hood not securely fastened	Cab, Body, Frame	2	Y

Table 5. CSMS Vehicle Maintenance BASIC Violations [8]				
Section	**Violation Description Shown on Driver/Vehicle Examination Report Given to CMV Driver after Roadside Inspection**	**Violation Group Description**	**Violation Severity Weight[9]**	**Violation in the DSMS (Y/N)**
393.203(d)	Cab seats not securely mounted	Cab, Body, Frame	2	Y
393.203(e)	Cab front bumper missing/ unsecured/protruding	Cab, Body, Frame	2	Y
393.205(a)	Wheel/rim cracked or broken	Wheels, Studs, Clamps, Etc.	2	Y
393.205(b)	Stud/bolt holes elongated on wheels	Wheels, Studs, Clamps, Etc.	2	Y
393.205(c)	Wheel fasteners loose and/or missing	Wheels, Studs, Clamps, Etc.	2	Y
393.207(a)	Axle positioning parts defective/missing	Suspension	7	Y
393.207(b)	Adjustable axle locking pin missing/disengaged	Suspension	7	Y
393.207(c)	Leaf spring assembly defective/missing	Suspension	7	Y
393.207(d)	Coil spring cracked and/or broken	Suspension	7	Y
393.207(e)	Torsion bar cracked and/or broken	Suspension	7	Y
393.207(f)	Air suspension pressure loss	Suspension	7	Y
393.207(g)	No/defective air suspension exhaust control	Suspension	7	N
393.209(a)	Steering wheel not secured/broken	Steering Mechanism	6	Y
393.209(b)	Excessive steering wheel lash	Steering Mechanism	6	Y
393.209(c)	Loose steering column	Steering Mechanism	6	Y
393.209(d)	Steering system components worn/welded/missing	Steering Mechanism	6	Y
393.209(e)	Power steering violations	Steering Mechanism	6	Y
396.1	Must have knowledge of and comply with regulations	Inspection Reports	4	Y
396.3(a)(1)	Inspection/repair and maintenance parts and accessories	Wheels, Studs, Clamps, Etc.	2	Y
396.3A1B	Brakes (general)	Brakes, All Others	4	Y

Table 5. CSMS Vehicle Maintenance BASIC Violations [8]				
Section	**Violation Description Shown on Driver/Vehicle Examination Report Given to CMV Driver after Roadside Inspection**	**Violation Group Description**	**Violation Severity Weight[9]**	**Violation in the DSMS (Y/N)**
396.3A1BA	Brake out of adjustment	Brakes Out of Adjustment	4	N
396.3A1BC	Brake-air compressor violation	Brakes, All Others	4	N
396.3A1BD	Brake-defective brake drum	Brakes, All Others	4	N
396.3A1BL	Brake-reserve system pressure loss	Brakes, All Others	4	N
396.3A1T	Tires (general)	Tires	8	Y
396.5	Excessive oil leaks	Other Vehicle Defect	3	N
396.5(a)	Failing to ensure that vehicle is properly lubricated	Other Vehicle Defect	3	N
396.5A-HNLIW	Hubs - No visible or measurable lubricant showing in the hub - inner wheel	Wheels, Studs, Clamps, Etc.	2	N
396.5A-HNLOW	Hubs - No visible or measurable lubricant showing in the hub - outer wheel	Wheels, Studs, Clamps, Etc.	2	Y
396.5(b)	Oil and/or grease leak	Other Vehicle Defect	3	N
396.5B-HLIW	Hubs - Oil and/or Grease Leaking from hub - inner wheel	Wheels, Studs, Clamps, Etc.	2	N
396.5B-HLOW	Hubs - oil and/or Grease Leaking from hub - outer wheel	Wheels, Studs, Clamps, Etc.	2	Y
396.5B-HWSLIW	Hubs - Wheel seal leaking - inner wheel	Wheels, Studs, Clamps, Etc.	2	N
396.5B-HWSLOW	Hubs - Wheel seal leaking - outer wheel	Wheels, Studs, Clamps, Etc.	2	Y
396.7	Unsafe operations forbidden	Other Vehicle Defect	3	Y
396.9(c)(2)	Operating an OOS vehicle	Vehicle Jumping OOS	10	Y
396.9(d)(2)	Failure to correct defects noted on inspection report	Inspection Reports	4	N
396.11	No or inadequate driver vehicle inspection report	Inspection Reports	4	Y
396.13(c)	No reviewing driver's signature on Driver Vehicle Inspection Report (DVIR)	Inspection Reports	4	Y

Table 5. CSMS Vehicle Maintenance BASIC Violations [8]				
Section	**Violation Description Shown on Driver/Vehicle Examination Report Given to CMV Driver after Roadside Inspection**	**Violation Group Description**	**Violation Severity Weight[9]**	**Violation in the DSMS (Y/N)**
396.17(c)	Operating a CMV without periodic inspection	Inspection Reports	4	N
398.5	Parts/access - migrant workers	Other Vehicle Defect	3	Y
398.7	Inspect/maintain motor vehicle - migrant workers	Inspection Reports	4	N
399.207	Vehicle access requirements violations	Cab, Body, Frame	2	N
399.211	Inadequate maintenance of driver access	Cab, Body, Frame	2	N

Table 6. CSMS HM Compliance BASIC Violations [10]				
Section	**Violation Description Shown on Driver/Vehicle Examination Report Given to CMV Driver after Roadside Inspection**	**Violation Group Description**	**Violation Severity Weight[11]**	**Violation in the DSMS (Y/N)**
171.2(a)	Failure to comply with HM regulations	HM Other	2	Y
171.2(b)	Failure to comply with the requirements for HM transportation (including labeling and handling)	HM Other	2	Y
171.2(c)	Representing a package./container for HM not meeting specs	Markings - HM	5	N
171.2(f)	Transporting HM not in accordance with this part	Package Integrity - HM	8	Y
171.2(g)	Cargo tank does not comply with HM Regulations	Package Integrity - HM	8	N
171.2(k)	Representing vehicle with HM, none present	Markings - HM	5	Y
172.200(a)	No shipping paper provided by offeror	Documentation - HM	3	N
172.201(a)(1)	Hazrdous Materials not distinguished from non-Hazardous Materials	Documentation - HM	3	N
172.201(a)(2)	Hazardous Materials description not printed legibly in English	Documentation - HM	3	N
172.201(a)(3)	Hazardous Materials description contains abbreviation or code	Documentation - HM	3	N
172.201(a)(4)	Additional information not after Hazardous Materials basic description	Documentation - HM	3	N
172.201(c)	Failure to list page number of pages	Documentation - HM	3	N
172.201(d)	ER phone number not listed	Documentation - HM	3	N

[10] Violation severity weights reflect the relative importance of each violation within each BASIC. These weights *cannot* be compared or added meaningfully across the BASICs.

[11] In cases where a violation results in an out-of-service order as defined in 49 CFR 390.5, an additional weight of 2 is added to arrive at a total severity weight for the violation.

Table 6. CSMS HM Compliance BASIC Violations [10]				
Section	**Violation Description Shown on Driver/Vehicle Examination Report Given to CMV Driver after Roadside Inspection**	**Violation Group Description**	**Violation Severity Weight[11]**	**Violation in the DSMS (Y/N)**
172.202(a)(1)	Improper shipping name	Documentation - HM	3	N
172.202(a)(2)	Improper hazard class	Documentation - HM	3	N
172.202(a)(3)	Wrong or no ID number	Documentation - HM	3	N
172.202(a)(4)	No packing group listed	Documentation - HM	3	N
172.202(a)(5)	Total quantity not listed	Documentation - HM	3	N
172.202(b)	Basic description not in proper sequence	Documentation - HM	3	N
172.202(c)	Total quantity improper location	Documentation - HM	3	N
172.202(e)	Non Hazardous Material entered with class or ID#	Documentation - HM	3	N
172.203(a)	Exemption number not listed	Documentation - HM	3	N
172.203(b)	Limited quantity not shown	Documentation - HM	3	N
172.203(c)(1)	Hazardous substance entry missing	Documentation - HM	3	N
172.203(c)(2)	RQ not on shipping paper	Documentation - HM	3	N
172.203(d)(1)	Radionuclide name not on shipping paper	Documentation - HM	3	N
172.203(d)(10)	No indication for Highway Route Controlled Quantity of Class 7 "HRCQ" on shipping paper	Documentation - HM	3	N
172.203(d)(2)	No RAM physical or chemical form	Documentation - HM	3	N
172.203(d)(3)	No RAM activity	Documentation - HM	3	N
172.203(d)(4)	No RAM label category	Documentation - HM	3	N
172.203(d)(5)	No RAM transport index	Documentation - HM	3	N
172.203(d)(6)	No fissile radioactive entry	Documentation - HM	3	N
172.203(d)(7)	No DOE/NRC package approval notation	Documentation - HM	3	N
172.203(d)(8)	Export package or foreign made package not marked with IAEA Certificate	Documentation - HM	3	N
172.203(d)(9)	No Exclusive Use notation	Documentation - HM	3	N

Table 6. CSMS HM Compliance BASIC Violations [10]				
Section	**Violation Description Shown on Driver/Vehicle Examination Report Given to CMV Driver after Roadside Inspection**	**Violation Group Description**	**Violation Severity Weight[11]**	**Violation in the DSMS (Y/N)**
172.203(e)	No empty packaging noted	Documentation - HM	3	N
172.203(h)(1)	No qt/nqt for anhydrous ammonia	Documentation - HM	3	N
172.203(h)(2)	No notation for QT / NQT for Liquified Petroleum Gas	Documentation - HM	3	N
172.203(k)	No technical name for nos entry	Documentation - HM	3	N
172.203(m)	No Poison Inhalation Hazard and / or Hazard Zone	Documentation - HM	3	N
172.203(n)	No "hot" on shipping paper	Documentation - HM	3	N
172.203(o)	No temperature controls noted for Class 4.1 or Class 5.2	Documentation - HM	3	N
172.205	Hazardous waste manifest not as required	Documentation - HM	3	N
172.300	Failing to comply with marking requirements	Markings - HM	5	N
172.301	Non-bulk package marking - general	Markings - HM	5	N
172.301(a)	No ID number on side/ends of non-bulk package - large quantity of single HM	Markings - HM	5	N
172.301(a)(1)	No proper shipping name and/or ID# marking on non-bulk	Markings - HM	5	N
172.301(b)	No technical name on non-bulk	Documentation - HM	3	N
172.301(c)	No special permit number on non-bulk package	Documentation - HM	3	N
172.301(d)	No consignee/consignor on non-bulk	Documentation - HM	3	N
172.302	Marking requirements bulk packagings	Markings - HM	5	N
172.302(a)	No ID number (portable and cargo tank)	Markings - HM	5	Y
172.302(b)	Bulk package marking incorrect size	Markings - HM	5	N

Table 6. CSMS HM Compliance BASIC Violations [10]				
Section	**Violation Description Shown on Driver/Vehicle Examination Report Given to CMV Driver after Roadside Inspection**	**Violation Group Description**	**Violation Severity Weight[11]**	**Violation in the DSMS (Y/N)**
172.302(c)	No special permit number on bulk package	Documentation - HM	3	N
172.303(a)	Prohibited HM marking on package	Markings - HM	5	N
172.304(a)(1)	Package marking not durable, English, or print	Markings - HM	5	N
172.304(a)(2)	Marking not on sharply contrasting color	Markings - HM	5	N
172.304(a)(3)	Marking obscured by label or attachments	Markings - HM	5	N
172.304(a)(4)	Marking not away from other marking	Markings - HM	5	N
172.308(a)	Package marked with unauthorized abbreviation	Markings - HM	5	N
172.310(a)	No gross weight on radioactive materials package greater than 50 KG	Markings - HM	5	N
172.310(b)	Radioactive materials package not marked "Type A or B"	Markings - HM	5	N
172.312(a)	No package orientation arrows	Cargo Protection - HM	4	N
172.312(a)(2)	No package orientation arrows	Cargo Protection - HM	4	N
172.312(b)	Prohibited use of orientation arrows	Cargo Protection - HM	4	N
172.313(a)	No "inhalation hazard" on package	Markings - HM	5	N
172.313(b)	No "poison" on non-bulk plastic package	Markings - HM	5	N
172.316(a)	Other regulated material non-bulk package not marked	Markings - HM	5	N
172.320(a)	Class 1 package not marked with ex-number	Markings - HM	5	N
172.322(b)	No marine pollutant marking on bulk packaging	Markings - HM	5	N

Table 6. CSMS HM Compliance BASIC Violations [10]				
Section	**Violation Description Shown on Driver/Vehicle Examination Report Given to CMV Driver after Roadside Inspection**	**Violation Group Description**	**Violation Severity Weight[11]**	**Violation in the DSMS (Y/N)**
172.324	Non-bulk hazardous substance not marked	Markings - HM	5	N
172.325	No "hot" marking for bulk elevated temperature	Markings - HM	5	N
172.325(a)	Elevated temperature not marked "Hot"	Markings - HM	5	N
172.325(b)	Improperly marked molten aluminum/sulphur	Markings - HM	5	N
172.326(a)	Portable tank not marked with proper shipping name or ID#	Markings - HM	5	N
172.326(b)	No portable tank owner or lessee marking	Markings - HM	5	N
172.326(c)(1)	No ID number marking on vehicle carrying portable tank	Markings - HM	5	N
172.326(c)(2)	Shipper failed to provide ID number to carrier	Markings - HM	5	N
172.328	No ID number displayed on a cargo tank	Markings - HM	5	N
172.328(a)	Shipper failed to provide or affix ID number for cargo tank	Markings - HM	5	N
172.328(b)	Cargo tank not marked for class 2	Markings - HM	5	N
172.328(c)	No quenched and tempered steel (QT)/other than quenched and tempered steel (NQT) marked on cargo tank (MC 330/331)	Markings - HM	5	N
172.328(d)	Fail to mark manual remote shutoff device	Markings - HM	5	N
172.330(a)(2)	Tank car tank (non cylinder) not marked as required	Markings - HM	5	N
172.330(b)	Motor vehicle with tank not marked	Markings - HM	5	N
172.331	Markings for other bulk packages	Markings - HM	5	N
172.332	Required ID markings displayed	Markings - HM	5	N
172.334	Prohibited ID number marking	Markings - HM	5	N

Table 6. CSMS HM Compliance BASIC Violations [10]				
Section	**Violation Description Shown on Driver/Vehicle Examination Report Given to CMV Driver after Roadside Inspection**	**Violation Group Description**	**Violation Severity Weight[11]**	**Violation in the DSMS (Y/N)**
172.334(a)	ID # displayed on Class 7/Class 1/Dangerous or Subsidiary placard	Markings - HM	5	N
172.336(b)	ID numbers not properly displayed	Markings - HM	5	N
172.336(c)(1)	Failing to display ID numbers on compartment cargo tank in sequence	Markings - HM	5	N
172.338	Carrier failed to replace missing ID number	Markings - HM	5	N
172.400	Labeling requirements	Markings - HM	5	N
172.400(a)	Package/containment not labeled as required	Markings - HM	5	Y
172.401	Prohibited labeling	Markings - HM	5	N
172.402	Failing to affix additional labels when required	Markings - HM	5	N
172.402(a)	No label for subsidiary hazard	Markings - HM	5	N
172.402(b)	Display of class number on label	Markings - HM	5	N
172.402(d)	Subsidiary labeling for radioactive materials	Markings - HM	5	N
172.402(e)	Subsidiary labeling for class 1 (explosive) materials	Markings - HM	5	N
172.403(a)	Radioactive material label requirement	Markings - HM	5	N
172.403(f)	Radioactive material package-2 labels on opposite sides	Markings - HM	5	N
172.403(g)	Failed to label radioactive material properly	Markings - HM	5	N
172.403(g)(2)	Class 7 label - no activity/activity not in SI units	Markings - HM	5	N
172.404(a)	Mixed package not properly labeled	Markings - HM	5	N
172.404(b)	Failed to properly label consolidated package	Markings - HM	5	N
172.406(a)(1)	Label placement not as required	Markings - HM	5	N

Table 6. CSMS HM Compliance BASIC Violations [10]				
Section	**Violation Description Shown on Driver/Vehicle Examination Report Given to CMV Driver after Roadside Inspection**	**Violation Group Description**	**Violation Severity Weight[11]**	**Violation in the DSMS (Y/N)**
172.406(c)	Multiple label placement not as required	Markings - HM	5	N
172.406(d)	Label not on contrasting background or no border	Markings - HM	5	N
172.406(e)	Failed to display duplicate label as required	Markings - HM	5	N
172.406(f)	Label obscured by marking or attachment	Markings - HM	5	N
172.502(a)(1)	Prohibited placarding	Markings - HM	5	N
172.502(a)(2)	Sign or device could be confused with HM placard	Markings - HM	5	N
172.504	Placards not in table 1 or 2	Markings - HM	5	N
172.504(a)	Vehicle not placarded as required	Markings - HM	5	Y
172.504(b)	Dangerous placard violation	Markings - HM	5	N
172.505(a)	No placard for poison inhalation hazard	Markings - HM	5	N
172.505(b)	Not placarded for RAM and Corrosive when required	Markings - HM	5	N
172.505(c)	Placard for subsidiary dangerous when wet	Markings - HM	5	N
172.506(a)	Failed to provide placards shipper	Markings - HM	5	N
172.506(a)(1)	Placards not affixed to vehicle	Markings - HM	5	Y
172.507	Not placardarded for RAM highway route controlled quantity	Markings - HM	5	N
172.512(a)	Freight container not placarded	Markings - HM	5	N
172.514	Cargo tank placards	Markings - HM	5	N
172.514(a)	Bulk package offered without placard	Markings - HM	5	N
172.514(b)	Bulk package with residue of HM not properly placarded	Markings - HM	5	N
172.516(a)	Placard not visible from direction it faces	Markings - HM	5	Y

Table 6. CSMS HM Compliance BASIC Violations [10]				
Section	**Violation Description Shown on Driver/Vehicle Examination Report Given to CMV Driver after Roadside Inspection**	**Violation Group Description**	**Violation Severity Weight[11]**	**Violation in the DSMS (Y/N)**
172.516(c)(1)	Placard not securely affixed or attached	Markings - HM	5	Y
172.516(c)(2)	Placard not clear of appurtenance	Markings - HM	5	Y
172.516(c)(4)	Placard improper location	Markings - HM	5	Y
172.516(c)(5)	Placard not reading horizontally	Markings - HM	5	Y
172.516(c)(6)	Placard damaged, deteriorated, or obscured	Markings - HM	5	Y
172.516(c)(7)	Placard not on contrasting background or border	Markings - HM	5	Y
172.519	Placard does not meet specifications	Markings - HM	5	N
172.600(c)	Emergency Response (ER) information not available	Documentation - HM	3	Y
172.602(a)	Emergency response information missing	Documentation - HM	3	Y
172.602(b)	Form and manner of emergency response information	Documentation - HM	3	Y
172.602(c)(1)	Maintenance/accessibility of emergency response information	Documentation - HM	3	Y
172.604(a)	Failing to provide an emergency response phone number	Documentation - HM	3	N
173.24(a)(c)	Non-bulk package mixed contents requirements	Cargo Protection - HM	4	N
173.24(b)	Failed to meet general package requirements	Load Securement - HM	10	N
173.24((b))(1)	Release of HM from package	Load Securement - HM	10	N
173.24(b)(a)	Bulk package outage or filling limit requirements	Load Securement - HM	10	N
173.24(b)(d)(2)	Exceed max weight of rating on spec plate	Load Securement - HM	10	N
173.24(c)	Unauthorized packaging	Load Securement - HM	10	N

Table 6. CSMS HM Compliance BASIC Violations [10]				
Section	**Violation Description Shown on Driver/Vehicle Examination Report Given to CMV Driver after Roadside Inspection**	**Violation Group Description**	**Violation Severity Weight[11]**	**Violation in the DSMS (Y/N)**
173.24(f)(1)	Closures for packagings must not be open or leaking	Load Securement - HM	10	N
173.25(a)	Failed to meet overpack conditions	Markings - HM	5	N
173.25(c)	Failure to label and package poison properly, when transported with edible material	Markings - HM	5	Y
173.29(a)	Empty package improper transportation	Cargo Protection - HM	4	N
173.30	Loading/unloading transport vehicles	Cargo Protection - HM	4	Y
173.32(h)(3)	IM101/102 bottom outlets prohibited	Fire Hazard - HM	6	N
173.32(h)(3)(i)	IM101/102 bottom outlets authorized	Fire Hazard - HM	6	N
173.33	Cargo tanks (general)	Load Securement - HM	10	N
173.33(a)	Cargo tank general requirements	Cargo Protection - HM	4	Y
173.33(b)	HM in cargo tank which had dangerous reaction with cargo tank	Cargo Protection - HM	4	Y
173.33(c)(2)	Cargo tank not marked with design or maximum allowable working pressure (MAWP)	Cargo Protection - HM	4	N
173.35(a)	Intermediate bulk container requirements	Package Integrity - HM	8	Y
173.35(d)	Liquid filled IBC with Ullage over 98%	Load Securement - HM	10	N
173.35(f)(2)	Intermediate bulk container (IBC) not secured to or within vehicle	Load Securement - HM	10	Y
173.40	Small quantities for highway and rail	HM Other	2	N
173.54	Forbidden explosives, offering or transporting	Fire Hazard - HM	6	N

Table 6. CSMS HM Compliance BASIC Violations [10]				
Section	**Violation Description Shown on Driver/Vehicle Examination Report Given to CMV Driver after Roadside Inspection**	**Violation Group Description**	**Violation Severity Weight[11]**	**Violation in the DSMS (Y/N)**
173.60	Materials of trade exemption	HM Other	2	N
173.315(a)	Cargo or portable tank class 2 exceeds maximum filling density	Load Securement - HM	10	N
173.315(j)(3)	Residential gas tank not secure in transport	Fire Hazard - HM	6	Y
173.315(j)(4)	Liquefied Petroleum Gas (LPG) storage tank overfilled for transport	Fire Hazard - HM	6	N
173.318(b)(10)	Fail to mark inlet, outlet, pressure relief device, or pressure control valve of cryogenic tanks	Package Integrity - HM	8	N
173.318(g)	No or Improper One Way Travel Time (OWTT) marking on cryogenic cargo tank	Markings - HM	5	N
173.412	General Type A package failing to meet additional design requirements	Package Integrity - HM	8	N
173.421(a)	Transporting limited quantity-radioactive material exceeds 0.5 millirem/hour	Cargo Protection - HM	4	N
173.427(a)(6)(iv)	No instructions for exclusive use packaging-low specific activity	Cargo Protection - HM	4	Y
173.427(a)(6)(vi)	Exclusive use low specific activity (LSA) radioactive material not marked "Radioactive-LSA"	Markings - HM	5	Y
173.427(a)(iv)	No instructions for exclusive use packaging-low specific activity	Cargo Protection - HM	4	Y
173.427(a)(vi)	Exclusive use low specific activity (LSA) radioactive material not marked "Radioactive-LSA"	Markings - HM	5	Y
173.431	Exceeded activity limits Type A or Type B package	Load Securement - HM	10	N
173.441(a)	Exceeding radiation level limitations allowed for transport	Cargo Protection - HM	4	N

Table 6. CSMS HM Compliance BASIC Violations [10]				
Section	**Violation Description Shown on Driver/Vehicle Examination Report Given to CMV Driver after Roadside Inspection**	**Violation Group Description**	**Violation Severity Weight[11]**	**Violation in the DSMS (Y/N)**
173.441(b)	Exceeding radiation level allowed for transport of RAM under exclusive use provisions	Load Securement - HM	10	N
173.442(b)(1)	External temperature of package exceeds 50 degrees Celcius (122 degrees F)	Cargo Protection - HM	4	N
173.442(b)(2)	External temperature of package exceeds 85 degrees Celcius (185 degress F)	Cargo Protection - HM	4	N
173.443(a)	Radioactive contamination exceeds limits	Load Securement - HM	10	N
173.447	RAM transport storage violation	Cargo Protection - HM	4	N
173.448	General RAM transport requirements	Cargo Protection - HM	4	N
177.801	Accepting/transporting HM not prepared properly	HM Other	2	N
177.804	Failure to comply with FMCSR 49 CFR part 383 and 49 CFR parts 390 through 397	HM Other	2	Y
177.817	Shipping papers required	Documentation - HM	3	N
177.817(a)	No shipping papers (carrier)	Documentation - HM	3	Y
177.817(b)	Shipper certification missing (when required)	Documentation - HM	3	N
177.817(e)	Shipping paper accessibility	Documentation - HM	3	Y
177.823(a)	No placards/markings when required	Markings - HM	5	N
177.834	Load securement of different HM packages	Fire Hazard - HM	6	N
177.834(a)	Package not secure in vehicle	Load Securement - HM	10	Y
177.834(b)	Package not loaded according to orientation marks	Cargo Protection - HM	4	N
177.834(c)	Smoking while loading or unloading	Fire Hazard - HM	6	Y

Table 6. CSMS HM Compliance BASIC Violations [10]				
Section	**Violation Description Shown on Driver/Vehicle Examination Report Given to CMV Driver after Roadside Inspection**	**Violation Group Description**	**Violation Severity Weight[11]**	**Violation in the DSMS (Y/N)**
177.834(f)	Using a tool likely to cause damage to the closure of any package or container	Load Securement - HM	10	Y
177.834(i)	Attendance of cargo tank- (load or unload)	Cargo Protection - HM	4	Y
177.834(j)	Manholes and valves not closed or leak free	Cargo Protection - HM	4	Y
177.834(m)(1)	Securing specification 106a or 110a tanks	Cargo Protection - HM	4	N
177.834(n)	Improper loading-specification 56, 57, IM101 and IM102	Fire Hazard - HM	6	N
177.835	Improper transportation of explosives (Class 1)	Fire Hazard - HM	6	Y
177.835(a)	Loading/Unloading Class 1 with engine running	Fire Hazard - HM	6	Y
177.835(c)	Transporting Class 1 in combination vehicles	Fire Hazard - HM	6	N
177.835(j)	Transfer of Class 1 materials en route	Fire Hazard - HM	6	Y
177.837	Improper transporting of Class 3 hazardous materials	Fire Hazard - HM	6	Y
177.837(c)	Cargo tanks not properly bonded/grounded	Cargo Protection - HM	4	N
177.837(d)	Improper unloading of combustible liquids	Cargo Protection - HM	4	N
177.838	Improper transport of class 4, 5 or division 4.2	Fire Hazard - HM	6	N
177.839	Improper transportation of Class 8 hazardous materials	Cargo Protection - HM	4	Y
177.840	Improper transportation of Class 2 hazardous materials	Fire Hazard - HM	6	N
177.840(g)	Discharge valve not closed in transit class 2	Cargo Protection - HM	4	Y

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177.840(o)	Fail to test off-truck remote shutoff device	Cargo Protection - HM	4	Y
177.840(s)	Fail to possess remote shutoff when unloading	Cargo Protection - HM	4	Y
177.841	Improper transportation of Division 6.1 or Division 2.3 hazardous materials	Fire Hazard - HM	6	Y
177.841(e)	Poison label loaded with foodstuffs	HM Other	2	Y
177.842(a)	Total transport index exceeds 50-non-exclusive use	HM Other	2	N
177.842(b)	Distance from package to person-radioactive material	HM Other	2	N
177.842(d)	Blocking and bracing of radioactive material packages	HM Other	2	Y
177.848(d)	Prohibited load/transport/storage combination	Fire Hazard - HM	6	N
177.848(f)	Class 1 load separation or segregation	HM Other	2	N
177.870(b)	Transporting unauthorized HM in a passenger-carrying vehicle	Load Securement - HM	10	Y
177.870(c)	Prohibited Hazardous Materials on passenger carrying vehicle	Load Securement - HM	10	Y
178.245-4	DOT51 integrity and securement	Package Integrity - HM	8	N
178.245-5	DOT51 valve protection	Package Integrity - HM	8	N
178.245-6(a)	DOT51 name plate Markings - HM	Package Integrity - HM	8	N
178.245-6(b)	Tank outlets not marked	Package Integrity - HM	8	N
178.251-4	DOT 56/57 integrity and securement	Package Integrity - HM	8	N
178.251-7(b)	DOT 56/57 spec Markings - HM	Package Integrity - HM	8	N
178.255-14	DOT 60 ID plate	Package Integrity - HM	8	N
178.255-4	DOT 60 manhole	Package Integrity - HM	8	N
178.255-7	DOT 60 valve protection	Package Integrity - HM	8	N

Table 6. CSMS HM Compliance BASIC Violations [10]				
Section	**Violation Description Shown on Driver/Vehicle Examination Report Given to CMV Driver after Roadside Inspection**	**Violation Group Description**	**Violation Severity Weight[11]**	**Violation in the DSMS (Y/N)**
178.270-1	IM101/102 general design	Package Integrity - HM	8	N
178.270-11(d)(1)	IM101/102 pressure relief	Package Integrity - HM	8	N
178.270-14	IM101/102 spec plate	Package Integrity - HM	8	N
178.270-4	Structural integrity	Package Integrity - HM	8	N
178.270-6	IM 101/102 frames	Package Integrity - HM	8	N
178.270-8	IM101/102 valve protection	Package Integrity - HM	8	N
178.270-9	IM101/102 manholes	Package Integrity - HM	8	N
178.336-1	Protecting of fittings MC330	Package Integrity - HM	8	N
178.336-13	Anchoring of tank MC330	Package Integrity - HM	8	N
178.336-17	Metal ID plate marking MC330	Package Integrity - HM	8	N
178.336-17(a)	Certification plate MC330	Package Integrity - HM	8	N
178.336-9(a)	Safety relief devices MC330	Package Integrity - HM	8	N
178.336-9(c)	Marking of inlets/outlets MC330	Package Integrity - HM	8	N
178.337-10(a)	Protection of fittings MC331	Package Integrity - HM	8	N
178.337-11(a)(2)	Internal valve MC331	Package Integrity - HM	8	N
178.337-13	MC331 supports and anchoring	Package Integrity - HM	8	N
178.337-17(a)	Metal ID plate missing MC331	Package Integrity - HM	8	N
178.337-8(a)	Outlets general requirements MC331	Package Integrity - HM	8	N
178.337-8(a)(2)	Outlets MC331	Package Integrity - HM	8	N
178.337-8(a)(3)	Internal or back flow valve MC331	Package Integrity - HM	8	N
178.337-8(a)(4)(i)	Remote closure device greater than 3500 gallons MC331	Package Integrity - HM	8	Y
178.337-8(a)(4)(ii)	Remote closure device less than 3500 gallons MC331	Package Integrity - HM	8	Y
178.337-9	Pressure relief devices MC331	Package Integrity - HM	8	N
178.337-9(c)	Marking inlets/outlets MC331	Package Integrity - HM	8	N
178.338-10(a)	Protection of fittings MC338	Package Integrity - HM	8	N

Table 6. CSMS HM Compliance BASIC Violations [10]				
Section	**Violation Description Shown on Driver/Vehicle Examination Report Given to CMV Driver after Roadside Inspection**	**Violation Group Description**	**Violation Severity Weight[11]**	**Violation in the DSMS (Y/N)**
178.338-10(c)	Rear end protection MC338	Package Integrity - HM	8	N
178.338-11(b)	Manual shutoff valve MC338	Package Integrity - HM	8	Y
178.338-12	Shear section MC338	Package Integrity - HM	8	N
178.338-13	Supports and anchoring MC338	Package Integrity - HM	8	N
178.338-18(a)	Name plate/Specification plate missing MC338	Package Integrity - HM	8	N
178.338-18(b)	Specification plate missing MC338	Package Integrity - HM	8	N
178.338-6	Manhole MC338	Package Integrity - HM	8	N
178.338-8	Pressure relief devices MC338	Package Integrity - HM	8	N
178.340-10(b)	MC306/307/312 metal certification plate missing	Package Integrity - HM	8	N
178.340-6	MC306/307/312 supports and anchoring	Package Integrity - HM	8	N
178.340-7(a)	MC306/307/312 ring stiffeners	Package Integrity - HM	8	N
178.340-7(c)	MC306/307/312 double bulkhead drain	Package Integrity - HM	8	N
178.340-7(d)(2)	MC306/307/312 ring stiffener drain hole	Package Integrity - HM	8	N
178.340-8(a)	MC306/307/312 appurtenances attachment	Package Integrity - HM	8	N
178.340-8(b)	MC306/307/312 rearend protection	Package Integrity - HM	8	N
178.340-8(c)	MC306/307/312 overturn protection	Package Integrity - HM	8	N
178.340-8(d)	MC306/307/312 piping protection	Package Integrity - HM	8	N
178.340-8(d)(1)	MC306/307/312 piping protection	Package Integrity - HM	8	N
178.340-8(d)(2)	MC306/307/312 minimum road clearance	Package Integrity - HM	8	N
178.341-3(a)	MC306 no manhole closure	Package Integrity - HM	8	N
178.341-4	MC306 venting	Package Integrity - HM	8	N
178.341-4(d)(1)	MC306 inadequate emergency venting	Package Integrity - HM	8	N

Table 6. CSMS HM Compliance BASIC Violations [10]				
Section	**Violation Description Shown on Driver/Vehicle Examination Report Given to CMV Driver after Roadside Inspection**	**Violation Group Description**	**Violation Severity Weight[11]**	**Violation in the DSMS (Y/N)**
178.341-4(d)(2)	MC306 pressure activated vents	Package Integrity - HM	8	N
178.341-4(d)(3)	MC306 no fusible venting	Package Integrity - HM	8	N
178.341-5(a)	MC306 internal valves	Package Integrity - HM	8	N
178.341-5(a)(1)	MC306 heat actuated safety	Package Integrity - HM	8	N
178.341-5(a)(2)	MC306 remote control shutoff	Package Integrity - HM	8	Y
178.342-3	MC307 manhole closure	Package Integrity - HM	8	Y
178.342-4	MC307 venting	Package Integrity - HM	8	N
178.342-4(b)	Inadequate venting capacity	Package Integrity - HM	8	N
178.342-5(a)	MC307 internal valve	Package Integrity - HM	8	N
178.342-5(a)(1)	MC307 heat actuated safety	Package Integrity - HM	8	N
178.342-5(a)(2)	MC307 remote control shutoff	Package Integrity - HM	8	Y
178.343-3	Manhole closure MC312	Package Integrity - HM	8	N
178.343-4	Venting MC312 (show calculations)	Package Integrity - HM	8	N
178.343-5(a)	MC312 top outlet and valve	Package Integrity - HM	8	N
178.343-5(b)(1)	MC312 bottom valve/piping protection	Package Integrity - HM	8	N
178.345-1	DOT406/407/412 pressure relief	Package Integrity - HM	8	N
178.345-11(b)	DOT406/407/412 tank valves	Package Integrity - HM	8	N
178.345-11(b)(1)	DOT406/407/412 remote control	Package Integrity - HM	8	Y
178.345-11(b)(1)(i)	DOT406/407/412 remote control	Package Integrity - HM	8	Y
178.345-14(b)	DOT406/407/412 name plate	Package Integrity - HM	8	N
178.345-14(c)	DOT406/407/412 specification plate	Package Integrity - HM	8	N
178.345-1(h)(i)(2)	DOT 406, 407, 412 Obstructed double bulkhead drain/vent	Package Integrity - HM	8	N
178.345-1(i)(2)	DOT 406, 407, 412 Obstructed double bulkhead drain/vent	Package Integrity - HM	8	N

Table 6. CSMS HM Compliance BASIC Violations [10]				
Section	**Violation Description Shown on Driver/Vehicle Examination Report Given to CMV Driver after Roadside Inspection**	**Violation Group Description**	**Violation Severity Weight[11]**	**Violation in the DSMS (Y/N)**
178.345-5(d)	DOT406/407/412 manhole securement	Package Integrity - HM	8	N
178.345-5(e)	DOT406/407/412 manhole marking	Package Integrity - HM	8	N
178.345-6	DOT406/407/412 supports and anchoring	Package Integrity - HM	8	N
178.345-7(d)(4)	DOT406/407/412 ring stiffener drain	Package Integrity - HM	8	N
178.345-8(a)	DOT406/407/412 accident protection	Package Integrity - HM	8	N
178.345-8(a)(5)	DOT406/407/412 minimum road clearance	Package Integrity - HM	8	N
178.345-8(b)	DOT406/407/412 bottom damage protection	Package Integrity - HM	8	N
178.345-8(c)	DOT406/407/412 rollover damage protection	Package Integrity - HM	8	N
178.345-8(d)	DOT406/407/412 rear end protection	Package Integrity - HM	8	N
178.703(a)	Intermediate bulk container (IBC) manufacturer Markings - HM	Package Integrity - HM	8	N
178.703(b)	Intermediate bulk container additional Markings - HM	Package Integrity - HM	8	N
178.704(e)	Intermediate bulk container bottom discharge valve protection	Package Integrity - HM	8	N
179.300-12	DOT106/110aw protection of fittings	Package Integrity - HM	8	N
179.300-13	DOT106/110aw venting and valves	Package Integrity - HM	8	N
179.300-15	DOT106/110aw safety relief devices	Package Integrity - HM	8	N
179.300-18	DOT106/110aw stamping of tanks	Package Integrity - HM	8	N
180.205(c)	Periodic re-qualification of cylinders	Package Testing - HM	7	N
180.213(d)	Re-qualification Markings - HM	Package Testing - HM	7	N

Table 6. CSMS HM Compliance BASIC Violations [10]				
Section	**Violation Description Shown on Driver/Vehicle Examination Report Given to CMV Driver after Roadside Inspection**	**Violation Group Description**	**Violation Severity Weight[11]**	**Violation in the DSMS (Y/N)**
180.352(b)	Intermediate bulk container retest or inspection	Package Testing - HM	7	N
180.352(d)	IBC retest date marking	Package Testing - HM	7	N
180.352(e)	IBC retest date marking	Package Testing - HM	7	N
180.405(b)	Cargo tank specifications	Package Testing - HM	7	N
180.405(j)	Certification withdrawal (failed to remove/cover/obliterate spec plate)	Package Testing - HM	7	N
180.407(a)(1)	Cargo tank periodic test and inspection	Package Testing - HM	7	N
180.407(c)	Failing to periodically test and inspect cargo tank	Package Testing - HM	7	N
180.415(b)	Cargo tank test or inspection Markings - HM	Package Testing - HM	7	N
180.605	Periodic testing of portable tanks	Package Testing - HM	7	N
180.605(k)	Test date marking	Package Testing - HM	7	N
385.403	No HM Safety Permit	Documentation - HM	3	N
397.1(a)	Driver/carrier must obey part 397	HM Other	2	Y
397.1(b)	Failing to require employees to know/obey part 397	HM Other	2	Y
397.2	Must comply with rules in parts 390-397-transporting HM	HM Other	2	Y
397.5(a)	Unattended explosives 1.1/1.2/1.3	Fire Hazard - HM	6	Y
397.5(c)	Unattended hazmat vehicle	Cargo Protection - HM	4	Y
397.7(a)	Improperly parked explosives vehicle	Fire Hazard - HM	6	Y
397.7(b)	Improperly parked HM vehicle	Fire Hazard - HM	6	Y
397.11(a)	HM vehicle operated near open fire	Fire Hazard - HM	6	Y
397.11(b)	HM vehicle parked within 300 feet of fire	Fire Hazard - HM	6	Y
397.15	HM vehicle fueling violation	Fire Hazard - HM	6	Y

Table 6. CSMS HM Compliance BASIC Violations [10]				
Section	**Violation Description Shown on Driver/Vehicle Examination Report Given to CMV Driver after Roadside Inspection**	**Violation Group Description**	**Violation Severity Weight[11]**	**Violation in the DSMS (Y/N)**
397.17	No tire examination on HM vehicle	HM Other	2	Y
397.19	No instructions/documents when transporting Division 1.1/1.2/1.3 (explosive) materials	Documentation - HM	3	Y
397.19(c)	Required documents not in possession-explosive materials	Documentation - HM	3	Y
397.67	HM vehicle routing violation (non-radioactive materials)	HM Route	1	N
397.101(b)	Radioactive materials vehicle not on preferred route	HM Route	1	Y
397.101(d)	No or incomplete route plan-radioactive materials	HM Route	1	Y
397.101(e)(2)	Driver not in possession of training certificate	HM Route	1	Y
397.101(e)(3)	Driver not in possession of written route plan	HM Route	1	Y