CSA: Introduction to the Safety Measurement System Version 3.0

March 2013
What is Compliance, Safety, Accountability (CSA)?

CSA is the Federal Motor Carrier Safety Administration’s (FMCSA) enforcement and compliance program used to achieve the Agency’s mission to prevent commercial motor vehicle (CMV) crashes, injuries, and fatalities.
CSA’s Three Core Components

1. **A Safety Measurement System (SMS) that:**
   - Identifies unsafe carrier and driver behaviors that lead to crashes
   - Uses all safety-based roadside inspection violations to assess compliance with existing regulations
   - Includes investigation findings
   - Is used to prioritize carriers for interventions

2. **A safety interventions process that:**
   - Includes an array of interventions
   - Focuses on specific unsafe behaviors
   - Identifies causes of safety problems
   - Defines and requires corrective actions

3. **A Safety Fitness Determination (SFD) process that:**
   - Requires rulemaking, expected to be published in late 2013
   - Would incorporate on-the-road safety performance and replace current system
Purpose of Carrier Safety Measurement System (CSMS)

• Identify carriers for CSA interventions
  – Along with investigation findings, determines what problems need to be addressed by the intervention process
  – Monitors carriers on-road performance for improvements throughout the process
  – Identifies appropriate intervention tool to be used for carrier
  – Prioritizes FMCSA resources

• Provides stakeholders with safety information
SMS Methodology
SMS 2.1
Behavior Analysis and Safety Improvement Categories (BASICs)

SMS 3.0
BASICs as of December 2012

Unsafe Driving
Fatigued Driving (HOS)
Driver Fitness
Crash Indicator
Cargo-Related
Vehicle Maintenance
Controlled Substances/Alcohol

Unsafe Driving
HOS Compliance
Crash Indicator
HM Compliance
Driver Fitness
Vehicle Maintenance
Controlled Substances/Alcohol

CSMS

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

Intro to SMS | March 2013
FMC-CSA-10-028
Methodology Overview

- Gather 24 months of on-road safety event data (i.e., inspections, crashes) to create a safety event history
- Place each carrier violation and/or crash into a BASIC
- Convert BASIC data into a quantifiable measure/rate
- Develop a percentile rank for each BASIC based on each carrier BASIC measure

Safety Event Data → BASIC Data → BASIC Measures → Percentile
Safety Event Data

- 525,000 active carriers

- 24 months of carrier on-road safety performance:
  - 6.3 million inspections
  - 11.2 million violations related to the Federal Motor Carrier Safety Regulations discovered
  - 255,000 crashes
BASIC Data

Safety Event Data Sorted by BASIC

- Unsafe Driving (Parts 392 & 397)
- Hours-of-Service (HOS) Compliance (Parts 392 & 395)
- Driver Fitness (Parts 383 & 391)
- Controlled Substances/Alcohol (Parts 382 & 392)
- Vehicle Maintenance (Parts 392, 393 & 396)
- Hazardous Materials (HM) Compliance (Part 397 and HM Regulations (HMRs) Parts 171, 172, 173, 177, 178, 179, and 180)
- Crash Indicator
BASIC Measures

BASIC Data ➔ Quantifiable Measures

Considerations

• **Time Weighting/Timeframe** – More recent events are more relevant

• **Severity Weighting** – Increases weighting of violations shown to create a greater risk of crash involvement/consequence

• **Severity Weight Cap** – Limits the total severity weight a single inspection can have in a BASIC

• **Violation Cap** – Cited section number only counts once per inspection

• **Segmentation** – (Crash Indicator and Unsafe Driving) Segments carrier population into two groups based on types of vehicles operated

• **Normalization** – Based on exposure:
  - For Crash and Unsafe Driving: Power Units (PUs) and Vehicle Miles Travelled (VMT)
  - For all other BASICS: Number of relevant inspections
Considerations for Unsafe Driving BASIC and Crash Indicator Explained

• **Industry Segmentation**
  – Separate carriers into two groups based on the types of vehicles operated so that companies operating fundamentally different types of vehicles are no longer compared with each other:
    o Combination Segment: carriers with combination trucks/motorcoach buses comprising 70% or more of total PUs
    o Straight Truck Segment: carriers with straight trucks/other vehicles comprising more than 30% of total PUs

• **Normalize by a combination of PU and VMT**
  – Increases exposure for carriers with above average utilization (VMT per average PU), where Census VMT data (within 24 months) are available
Unsafe Driving BASIC

• Operation of CMVs in a dangerous or careless manner

• Examples:
  – Speeding
  – Reckless driving
  – Improper lane change
Unsafe Driving Measure

BASIC Measure = \[
\frac{\text{Sum of Time \& Severity Weighted Violations}}{\text{Average Power Units} \times \text{Utilization Factor}}
\]

- Violation Severity Weight – Based on crash risk; range from 1 to 10, where 10 is most severe
- Time Weight – 0–6 Months (x3), 6–12 Months (x2), 12–24 Months (x1)
- Utilization Factor: A multiplier between 1 and 3, based on carrier segment and truck utilization (VMT per PU)
Unsafe Driving Measure: Utilization Factor

<table>
<thead>
<tr>
<th>Unsafe Driving BASIC: Straight Truck Segment</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Utilization Rate</strong>&lt;br&gt;(VMT / Avg. PU)</td>
<td><strong>Utilization Factor</strong></td>
</tr>
<tr>
<td>&lt;20,000</td>
<td>1</td>
</tr>
<tr>
<td>20,000 – 60,000</td>
<td>VMT per Avg. PU / 20,000</td>
</tr>
<tr>
<td>60,000 – 200,000</td>
<td>3</td>
</tr>
<tr>
<td>&gt;200,000</td>
<td>1</td>
</tr>
<tr>
<td>No recent VMT data</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Unsafe Driving BASIC: Combination Segment</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Utilization Rate</strong>&lt;br&gt;(VMT / Avg. PU)</td>
<td><strong>Utilization Factor</strong></td>
</tr>
<tr>
<td>&lt;80,000</td>
<td>1</td>
</tr>
<tr>
<td>80,000 – 160,000</td>
<td>1 + 0.6[(VMT per Avg. PU – 80,000)/ 80,000]</td>
</tr>
<tr>
<td>160,000 – 200,000</td>
<td>1.6</td>
</tr>
<tr>
<td>&gt;200,000</td>
<td>1</td>
</tr>
<tr>
<td>No recent VMT data</td>
<td>1</td>
</tr>
</tbody>
</table>

- Carriers with above average utilization (up to 200,000 VMT per average PU) receive a positive adjustment to their level of exposure
  - Straight Truck Segment: over 20,000 VMT per average PU
  - Combination Segment: over 80,000 VMT per average PU
• Operation of CMVs by drivers who are ill, fatigued, or in noncompliance with the HOS regulations

• Examples:
  − HOS
  − Form and manner
  − Operating a CMV while ill or fatigued (all Part 395)
HOS Compliance Measure

BASIC Measure = \[\frac{\text{Sum of Time} \& \text{Severity Weighted Violations}}{\text{Total Time Weight of Relevant Inspections}}\]

- Violation Severity Weight – Based on crash risk; range from 1 to 10, where 10 is most severe; Out-of-Service (OOS) violation +2

- Time Weight – 0–6 Months (x3), 6–12 Months (x2), 12–24 Months (x1)

- Normalized by Relevant Inspections – All Levels 1,2,3,6 (including clean) and any other inspections resulting in HOS Compliance violations
Driver Fitness BASIC

- Operation of CMVs by drivers who are unfit to operate a CMV due to lack of experience, or medical qualifications

- Examples:
  - Failure to have a valid and appropriate Commercial Driver’s License
  - Medically unqualified to operate a CMV
  - Expired or missing medical examiner’s certificate
Driver Fitness Measure

\[
\text{BASIC Measure} = \frac{\text{Sum of Time & Severity Weighted Violations}}{\text{Total Time Weight of Relevant Inspections}}
\]

- Violation Severity Weight – Based on crash risk; range from 1 to 10, where 10 is most severe; OOS violation +2
- Time Weight – 0–6 Months (x3), 6–12 Months (x2), 12–24 Months (x1)
- Normalized by Relevant Inspections – All Levels 1,2,3,6 (including clean) and any other inspections resulting in Driver Fitness violations
Controlled Substances/Alcohol BASIC

• Operation of a CMV while impaired due to alcohol, illegal drugs, and misuse of prescription medications or over-the-counter medications

• Examples:
  - Use or possession of controlled substances or alcohol
Controlled Substances/Alcohol Measure

BASIC Measure = \frac{\text{Sum of Time & Severity Weighted Violations}}{\text{Total Time Weight of Relevant Inspections}}

- Violation Severity Weight – Based on crash risk; range from 1 to 10, where 10 is most severe

- Time Weight – 0–6 Months (x3), 6–12 Months (x2), 12–24 Months (x1)

- Normalized by Relevant Inspections – All Levels 1,2,3,6 (including clean) and any other inspections resulting in Controlled Substances/Alcohol violations
• Failure to properly maintain a CMV or prevent shifting loads

• Examples:
  – Brakes
  – Lights
  – Other mechanical defects
  – Failure to make required repairs
  – Improper load securement
Vehicle Maintenance Measure

BASIC Measure = \frac{\text{Sum of Time & Severity Weighted Violations}}{\text{Total Time Weight of Relevant Inspections}}

- Violation Severity Weight – Based on crash risk; range from 1 to 10, where 10 is most severe; OOS violation +2

- Time Weight – 0–6 Months (x3), 6–12 Months (x2), 12–24 Months (x1)

- Normalized by Relevant Inspections – All Levels 1,2,5,6 (including clean) and any other inspections resulting in Vehicle Maintenance violations
• Unsafe handling of HM on a CMV

• Examples:
  - HM package is not properly loaded and secured on vehicle
  - Shipping papers are not provided or do not include proper shipping name or class/division of the HM offered or transported
  - Placards/markings are not provided or properly affixed to packages and vehicles that require them
HM Compliance Measure

BASIC Measure = \( \frac{\text{Sum of Time \& Severity Weighted Violations}}{\text{Total Time Weight of Relevant Inspections}} \)

- Violation Severity Weight – Based on crash risk; range from 1 to 10, where 10 is most severe; OOS violation +2

- Time Weight – 0–6 Months (3), 6–12 Months (2), 12–24 Months (1)

- Normalized by Relevant Inspections – All Levels 1,2,5,6 (including clean) and any other inspections resulting in HM Compliance violations

*HM Compliance measures and percentiles are only available to motor carriers and enforcement personnel who are logged in to the SMS*
Crash Indicator

- Histories or patterns of high crash involvement, including frequency and severity
- Based on State-reported crash records
Crash Indicator Measure

\[
\text{Crash Indicator Measure} = \frac{\text{Total of Time & Severity Weighted Applicable Crashes}}{\text{Average PUs} \times \text{Utilization Factor}}
\]

- **Time Weight** – 0–6 Months (x3), 6–12 Months (x2), 12–24 Months (x1)
- **Crash Severity Weight** – Range from 1 to 3, crashes involving injury/fatality or HM release have more weight
- **Utilization Factor** – A multiplier between 1 and 3, based on carrier segment and truck utilization (VMT per PU)
- **All crashes are used regardless of preventability**

*Crash Indicator measures and percentiles are only available to motor carriers and enforcement personnel who are logged in to the SMS*
Carriers with above average utilization (up to 200,000 VMT per average PU) receive a positive adjustment to their level of exposure:

- Straight Truck Segment: over 20,000 VMT per average PU
- Combination Segment: over 80,000 VMT per average PU
Insurance/Other Category

Carriers logged in to the SMS will see the Insurance/Other category in addition to the seven BASICs

- This category includes violations cited during investigations that do not coincide with the seven BASICs
  - Insurance or authority violations

- If one of the Serious Violations in this category is discovered during an investigation within the last 12 months, the category will show an exceeded the threshold symbol
Based on each BASIC measure, develop a percentile rank indicating the carrier’s BASIC performance
- Provides a relative assessment of performance
- Allows for prioritizing intervention resources by behavior
- Higher percentage = worse performance (i.e., 87% means carrier is worse than 87% of carriers that have similar numbers of safety events in the given BASIC)

Considerations
- Data Sufficiency Standards – define events/exposure necessary to generate a robust measure
- Current Inspection and Crash Data – assignment of percentile dependent on age and result of most recent inspection (12 months)
- Safety Event Grouping – compare measures of carriers with similar numbers of safety events
Percentile (Data Sufficiency Standards)

Data Sufficiency Standards

• Minimum number of inspections with applicable violations required for percentile to be assigned

• Assists in identification of patterns of carrier behavior based on noted safety problems across multiple inspections

<table>
<thead>
<tr>
<th>BASIC</th>
<th>Number of Inspections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unsafe Driving</td>
<td>3</td>
</tr>
<tr>
<td>HOS Compliance</td>
<td>3</td>
</tr>
<tr>
<td>Driver Fitness</td>
<td>5</td>
</tr>
<tr>
<td>Controlled Substances/Alcohol</td>
<td>1</td>
</tr>
<tr>
<td>Vehicle Maintenance</td>
<td>5</td>
</tr>
<tr>
<td>HM Compliance</td>
<td>5</td>
</tr>
<tr>
<td>Crash Indicator</td>
<td>2 Crashes</td>
</tr>
</tbody>
</table>
Percentile (Safety Event Grouping: Unsafe Driving)

Safety Event Grouping
- Percentiles are assigned to carriers with similar number of safety events
- Below are the tables used to determine safety event grouping for each BASIC (note: the Unsafe Driving BASIC and Crash Indicator split between segments)

<table>
<thead>
<tr>
<th>Unsafe Driving BASIC: Straight Truck Segment</th>
<th>Number of Inspections with Unsafe Driving Violations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety Event Group</td>
<td></td>
</tr>
<tr>
<td>Straight Truck 1</td>
<td>3–4</td>
</tr>
<tr>
<td>Straight Truck 2</td>
<td>5–8</td>
</tr>
<tr>
<td>Straight Truck 3</td>
<td>9–18</td>
</tr>
<tr>
<td>Straight Truck 4</td>
<td>19–49</td>
</tr>
<tr>
<td>Straight Truck 5</td>
<td>50+</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Unsafe Driving BASIC: Combination Segment</th>
<th>Number of Inspections with Unsafe Driving Violations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety Event Group</td>
<td></td>
</tr>
<tr>
<td>Combination 1</td>
<td>3–8</td>
</tr>
<tr>
<td>Combination 2</td>
<td>9–21</td>
</tr>
<tr>
<td>Combination 3</td>
<td>22–57</td>
</tr>
<tr>
<td>Combination 4</td>
<td>58–149</td>
</tr>
<tr>
<td>Combination 5</td>
<td>150+</td>
</tr>
</tbody>
</table>
### Crash Indicator: Straight Truck Segment

<table>
<thead>
<tr>
<th>Safety Event Group</th>
<th>Number of Crashes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Straight Truck 1</td>
<td>2</td>
</tr>
<tr>
<td>Straight Truck 2</td>
<td>3–4</td>
</tr>
<tr>
<td>Straight Truck 3</td>
<td>5–8</td>
</tr>
<tr>
<td>Straight Truck 4</td>
<td>9–26</td>
</tr>
<tr>
<td>Straight Truck 5</td>
<td>26+</td>
</tr>
</tbody>
</table>

### Crash Indicator: Combination Segment

<table>
<thead>
<tr>
<th>Safety Event Group</th>
<th>Number of Crashes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combination 1</td>
<td>2–3</td>
</tr>
<tr>
<td>Combination 2</td>
<td>4–6</td>
</tr>
<tr>
<td>Combination 3</td>
<td>7–16</td>
</tr>
<tr>
<td>Combination 4</td>
<td>1–45</td>
</tr>
<tr>
<td>Combination 5</td>
<td>46+</td>
</tr>
<tr>
<td>Safety Event Group</td>
<td>Number of Inspections with Applicable Violations</td>
</tr>
<tr>
<td>-------------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>1</td>
<td>3–10 (HOS Compliance) 5–10 (all others)</td>
</tr>
<tr>
<td>2</td>
<td>11–20</td>
</tr>
<tr>
<td>3</td>
<td>21–100</td>
</tr>
<tr>
<td>4</td>
<td>101–500</td>
</tr>
<tr>
<td>5</td>
<td>501+</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Safety Event Group</th>
<th>Number of Inspections with Controlled Substances/Alcohol Violations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>4+</td>
</tr>
</tbody>
</table>
Goal is to identify carriers with both
- Crash rates higher than the population average AND
- Known on-road compliance issues

Intervention Thresholds for carriers are organized by BASIC and are set based on the BASIC’s relationship to crash risk/consequence

Carriers that exceed the BASIC threshold are identified for interventions

<table>
<thead>
<tr>
<th>BASIC</th>
<th>General</th>
<th>HM</th>
<th>Passenger</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unsafe Driving, HOS Compliance, Crash Indicator</td>
<td>65%</td>
<td>60%</td>
<td>50%</td>
</tr>
<tr>
<td>Driver Fitness, Controlled Substances/Alcohol, Vehicle Maintenance</td>
<td>80%</td>
<td>75%</td>
<td>65%</td>
</tr>
<tr>
<td>HM Compliance</td>
<td>80%</td>
<td>80%</td>
<td>80%</td>
</tr>
</tbody>
</table>
BASICs Exceeding the Threshold

Carrier BASIC Assessments (exceeded the threshold symbols) are determined by two inputs:

- SMS results
  - Percentiles calculated based on on-road performance
  - BASIC is considered exceeding the threshold if percentile is above the Intervention Threshold for that BASIC

- Serious Violations discovered during investigations
  - Egregious noncompliance requiring immediate corrective action is necessary, OR
  - Directly related to carrier’s management and/or operational controls
  - If a Serious Violation is found, BASIC is considered to be in an exceeded the threshold status and will be displayed accordingly on a carrier’s record for 12 months
SMS Screenshots
Carrier Measurement: SMS Results

Welcome to the Motor Carrier Safety Measurement System

The SMS provides an assessment of a motor carrier's on-road performance and investigation results within the Behavior Analysis and Safety Improvement Categories (BASICs). Assessments cover 24 months of activity and results are updated monthly. For current Motor Carrier Safety Ratings visit SAFER and for current operating authority and insurance information visit Licensing and Insurance (L&I) system.

Select a BASIC below to view details

- **Unsafe Driving**: 80.1%
- **Hours-of-Service (HOS) Compliance**: 0%
- **Driver Fitness**: 0%
- **Controlled Substances and Alcohol**: 0%
- **Vehicle Maintenance**:
- **Hazardous Materials (HM) Compliance**
- **Crash Indicator**

**SUMMARY OF ACTIVITIES**

- Total Inspections: 26
- Driver Inspections: 26
- Vehicle Inspections: 1
- % Placardable HM Inspections: 0%
- % HOS Violations:
- Total Crashes:
  - Injury/Fatal Crashes: 2
  - Fatal Crashes: 0
  - Injury Crashes: 2
  - Towaway Crashes: 2

**RECENT INVESTIGATIONS**

- Intervention Type: Non-Traffic
- Date: 10/17/2012

**DATA CENTER**

Scope: Logged in users only
File Type: Excel

FOR MORE INFORMATION ON THE BASICs OVERVIEW PLEASE VISIT OUR INFORMATION CENTER

ICON LEGEND

- Serious violation cited within last 12 months from an investigation.
Carrier Measurement: SMS Results

Welcome to the Motor Carrier Safety Measurement System
The SMS provides an assessment of a motor carrier's on-road performance and investigation results within the Behavior Analysis and Safety Improvement Categories.

ABC Trucking
DOT#: 000000

Select a BASIC below to view details

**What Does This Mean?**

<table>
<thead>
<tr>
<th>BASIC</th>
<th>Performance</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unsafe Driving</td>
<td>80.1%</td>
<td>!</td>
</tr>
<tr>
<td>Hours-of-Service (HOS) Compliance</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Driver Fitness</td>
<td>&lt; 5 insp. w/ viol.</td>
<td></td>
</tr>
<tr>
<td>Controlled Substances and Alcohol</td>
<td>0%</td>
<td>!</td>
</tr>
<tr>
<td>Vehicle Maintenance</td>
<td>&lt; 5 vehicle insp.</td>
<td></td>
</tr>
<tr>
<td>Hazardous Materials (HM) Compliance</td>
<td>Not Public</td>
<td>Not Public</td>
</tr>
<tr>
<td>Crash Indicator</td>
<td>Not Applicable</td>
<td>Not Public</td>
</tr>
</tbody>
</table>

**USE OF SMS DATA/INFORMATION**

For more information on the BASICs Overview please visit our Information Center.

**ICON LEGEND**

- Serious violation cited within last 12 months from an investigation.
- Denotes this carrier exceeds the FMCSA intervention threshold relative to its safety event grouping based upon roadside data and/or has been cited with one or more serious violations within the past 12 months during an investigation. Therefore, this carrier may be prioritized for an intervention action and roadside inspection.
Violation Details Provided in the SMS
**Further Drilldown in the SMS**

### UNSAFE DRIVING

<table>
<thead>
<tr>
<th>Violation</th>
<th>Description</th>
<th># Total Violations</th>
<th># OOS Violations</th>
<th>Violation Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>392.16</td>
<td>Failing to use seat belt while operating CMV</td>
<td>1</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>392.2C</td>
<td>Failure to obey traffic control device</td>
<td>1</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>392.2S</td>
<td>Speeding</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>392.2-SLLS2</td>
<td>State/Local Laws - Speeding 6-10 miles per hour over the speed limit</td>
<td>14</td>
<td>0</td>
<td>4</td>
</tr>
</tbody>
</table>

Go to Page: 1  Previous  Next  Violations per page: 10  Displaying 1 - 4 of 4 Violations
### INSPECTION HISTORY

<table>
<thead>
<tr>
<th>Report</th>
<th>Vehicle</th>
<th>Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inspection Date</td>
<td>#</td>
<td>ST</td>
</tr>
<tr>
<td>-----------</td>
<td>--------------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>11/12/2012</td>
<td>NE00CX000100</td>
<td>NE</td>
</tr>
<tr>
<td>Violation: 392.2C Failure to obey traffic control device</td>
<td>(Non-OOS)</td>
<td>5</td>
</tr>
<tr>
<td>5/21/2012</td>
<td>NE00EC000081</td>
<td>NE</td>
</tr>
<tr>
<td>Violation: 392.2-SLLS2 State/Local Laws - Speeding 6-10 miles per hour over the speed limit</td>
<td>(Non-OOS)</td>
<td>4</td>
</tr>
<tr>
<td>4/2/2012</td>
<td>NE00CX000078</td>
<td>NE</td>
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<tr>
<td>Violation: 392.2-SLLS2 State/Local Laws - Speeding 6-10 miles per hour over the speed limit</td>
<td>(Non-OOS)</td>
<td>4</td>
</tr>
<tr>
<td>2/24/2012</td>
<td>NE00CK000072</td>
<td>NE</td>
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<tr>
<td>Violation: 392.2-SLLS2 State/Local Laws - Speeding 6-10 miles per hour over the speed limit</td>
<td>(Non-OOS)</td>
<td>4</td>
</tr>
<tr>
<td>2/2/2012</td>
<td>NE00CZ000076</td>
<td>NE</td>
</tr>
<tr>
<td>Violation: 392.2-SLLS2 State/Local Laws - Speeding 6-10 miles per hour over the speed limit</td>
<td>(Non-OOS)</td>
<td>4</td>
</tr>
<tr>
<td>1/2/2012</td>
<td>NE00CA000108</td>
<td>NE</td>
</tr>
<tr>
<td>Violation: 392.2-SLLS2 State/Local Laws - Speeding 6-10 miles per hour over the speed limit</td>
<td>(Non-OOS)</td>
<td>4</td>
</tr>
<tr>
<td>11/25/2011</td>
<td>NE00CZ000059</td>
<td>NE</td>
</tr>
<tr>
<td>Violation: 392.2-SLLS2 State/Local Laws - Speeding 6-10 miles per hour over the speed limit</td>
<td>(Non-OOS)</td>
<td>4</td>
</tr>
<tr>
<td>9/11/2011</td>
<td>NE00EC000057</td>
<td>NE</td>
</tr>
<tr>
<td>Violation: 392.2-SLLS2 State/Local Laws - Speeding 6-10 miles per hour over the speed limit</td>
<td>(Non-OOS)</td>
<td>4</td>
</tr>
<tr>
<td>8/14/2011</td>
<td>NE00EC000052</td>
<td>NE</td>
</tr>
<tr>
<td>Violation: 392.2-SLLS2 State/Local Laws - Speeding 6-10 miles per hour over the speed limit</td>
<td>(Non-OOS)</td>
<td>4</td>
</tr>
<tr>
<td>9/9/2011</td>
<td>NE00EC000051</td>
<td>NE</td>
</tr>
<tr>
<td>Violation: 392.2-SLLS2 State/Local Laws - Speeding 6-10 miles per hour over the speed limit</td>
<td>(Non-OOS)</td>
<td>4</td>
</tr>
</tbody>
</table>
Further Drilldown in the SMS
Further Drilldown in the SMS

Unsafe Driving
Operation of CMVs by drivers in a dangerous or careless manner. (FMCSR Parts 392 and 393)

BASIC Overall Status
Exceeds the Intervention Threshold to be prioritized for intervention
(Based on a 24-month record ending February 22, 2012)

On-road Performance Detail
Investigation Results Detail

Performance Tools

Use this page to view graphs of various aspects of your safety performance.

Inspections with Violations

Inspections with Violations in the BASIC by Month

Number of Inspections

MONTH

2011
2012
2013
SMS Effectiveness
SMS Effectiveness – Results

- Carriers meeting the above definition of “high risk” have substantially higher crash rates: more than twice the crash rate of the general carrier population.

<table>
<thead>
<tr>
<th>Group</th>
<th># Carriers</th>
<th>Post Crashes per 100 Post PU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carriers under FMCSA's Jurisdiction</td>
<td>276,855</td>
<td>3.58</td>
</tr>
<tr>
<td>Carriers with Sufficient Data for 1+ BASICs (SMS 3.0)</td>
<td>161,555</td>
<td>3.82</td>
</tr>
<tr>
<td>Carriers with Above Threshold in 1+ BASICs (SMS 3.0)</td>
<td>41,789</td>
<td>5.05</td>
</tr>
<tr>
<td>High-Risk Carriers</td>
<td>6,731</td>
<td>8.15</td>
</tr>
</tbody>
</table>
SMS Effectiveness – Results

- Strongest relationships with future crash risk exist for the Unsafe Driving, HOS Compliance, Vehicle Maintenance BASICs, and the Crash Indicator
- Other BASICs show a weaker relationship to crash risk
- FMCSA optimizes resources and oversight responsibilities through more stringent Intervention Thresholds for BASICs with strongest associations to crash risk

<table>
<thead>
<tr>
<th>BASIC</th>
<th>Above Threshold: Crashes per 100 PU</th>
<th>Below Threshold: Crashes per 100 PU</th>
<th>Increase in Crash Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unsafe Driving</td>
<td>7.10</td>
<td>3.90</td>
<td>82%</td>
</tr>
<tr>
<td>HOS Compliance</td>
<td>6.97</td>
<td>4.00</td>
<td>74%</td>
</tr>
<tr>
<td>Driver Fitness</td>
<td>2.85</td>
<td>4.43</td>
<td>-36%</td>
</tr>
<tr>
<td>Controlled Substances / Alcohol</td>
<td>2.81</td>
<td>5.25</td>
<td>-47%</td>
</tr>
<tr>
<td>Vehicle Maintenance</td>
<td>5.79</td>
<td>3.87</td>
<td>50%</td>
</tr>
<tr>
<td>HM Compliance</td>
<td>5.27</td>
<td>4.04</td>
<td>31%</td>
</tr>
<tr>
<td>Crash</td>
<td>6.59</td>
<td>3.58</td>
<td>84%</td>
</tr>
<tr>
<td>1+ BASIC (any BASIC)</td>
<td>5.05</td>
<td>3.05</td>
<td>66%</td>
</tr>
</tbody>
</table>
• Strong relationship between HOS Compliance BASIC and future crash risk
• Recent American Transportation Research Institute (ATRI) paper shows similar findings
SMS Effectiveness – Driver Fitness BASIC

- Negative relationship between Driver Fitness BASIC and future crash risk
- Recent ATRI paper shows similar findings
- Three quarters of carriers above Driver Fitness, exceed threshold in another BASIC
- Recent Aspen improvements provide for higher severity weights for safety-based “operating while suspended” violations
Carrier and Driver Information
How Can a Carrier Improve?

• “Good” Inspections
  – 38.5% of inspections have no safety-based violations cited
  – 46.5% of inspections have no violations cited that impact SMS

• “Get Well” Rules
  – Unsafe Driving and Controlled Substances/Alcohol BASICs
    o No percentile assigned if no inspections with a violation in these BASICs in the last year
  – Crash Indicator
    o No percentile assigned if no crashes in last year
  – HOS Compliance, Driver Fitness, Vehicle Maintenance, and HM Compliance BASICs
    o No percentile assigned if:
      ▪ No inspections with a violation in that BASIC within the past year; and
      ▪ Most recent relevant inspection does not have a violation of that BASIC
Carrier Access to Measures and Percentiles

• Carriers have access to full SMS results and BASIC measurements.

• The public has access to SMS results and BASIC measurements except for percentiles for the HM Compliance BASIC and Crash Indicator:
  – HM Compliance violations will not be available to the public for one year.
  – List of crashes are available to the public:
    o Similar to the Accident Safety Evaluation Area in SafeStat
    o List of crashes represents a motor carrier’s involvement in 24 months of reportable crashes, without any determination as to responsibility.
Driver Information

• The measurement system provides an internal tool to address CMV drivers called the Driver Safety Measurement System (DSMS):
  – Provides enhanced information on individual drivers to investigators to identify drivers with safety problems
  – Allows for prioritizing driver sampling during carrier investigation
  – Supports investigator follow-up on significant violations (e.g., Red Flag Violations)
  – DSMS data are not available to the public or to employing motor carriers; they are used as an investigative tool

• Under CSA, individual drivers are *not* assigned safety ratings or safety fitness determinations
• **Pre-employment Screening Program (PSP)**
  – PSP was mandated by Congress and is *not* a part of CSA
  – “Driver Profiles” from FMCSA’s Driver Information Resource are available to carriers through PSP
  – Driver Profiles are only released to potential employer with driver authorization
  – To sign up for an account, visit: [www.psp.fmcsa.dot.gov](http://www.psp.fmcsa.dot.gov)
Roadside Data Uniformity

- Data collected at the roadside is the foundation of all data-driven traffic safety initiatives

- CSA relies on roadside data in its SMS Methodology

- The CSA SFD methodology would use roadside data as a component of safety fitness determinations
Roadside Uniformity – Background

Effort organized into four core initiatives:

1. Consistent documentation of roadside inspection and violation data
2. Standardized processes for DataQs (request for data review)
3. Increased awareness of high-level goals of the inspection program
4. Inspection selection processes
Existing Safety Rating Process:
- Based on the results of an onsite investigation

Proposed Safety Fitness Determination (SFD):
- Would continue to include major safety violations found as part of investigations
- Would also incorporate on-road safety performance

Draft rulemaking is currently under development
What Can Carriers Do?

• **Educate yourselves and your employees**
  – Understand the SMS Methodology and the BASICs
  – Check the website for information and updates ([http://csa.fmcsa.dot.gov](http://csa.fmcsa.dot.gov))
  – Raise awareness that every inspection and every violation counts

• **Ensure compliance**
  – Review inspections and violation history over the past two years
  – Log in to SMS Online via the Portal: [https://portal.fmcsa.dot.gov](https://portal.fmcsa.dot.gov), or A&I [https://ai.fmcsa.dot.gov](https://ai.fmcsa.dot.gov), review BASIC assessments, and address safety problems now
  – Educate drivers about how their performance impacts their own driving record and the safety assessment of the carrier

• **Check and update records**
  – Motor Carrier Identification Report (MCS-150)
  – Routinely monitor and review inspection and crash data
  – Question potentially incorrect data (DataQs: [https://dataqs.fmcsa.dot.gov](https://dataqs.fmcsa.dot.gov))
For more information regarding SMS and to view your data, visit

http://ai.fmcsa.dot.gov/SMS

For more information regarding CSA, visit

http://csa.fmcsa.dot.gov

or call

1-877-254-5365