The Safety Measurement System (SMS)
Methodology Enhancements and SMS Preview
Fall 2016
Today’s Presenters

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Today’s Presentation

1. Review Compliance, Safety, Accountability (CSA) Safety Measurement System (SMS) and its improvement process

2. Outline primary objectives for the proposed SMS Methodology enhancements

3. Provide an overview of the proposed SMS Methodology enhancements

4. Outline the timeline for the SMS Preview

5. Frequently Asked Questions (FAQs)
CSA’s Safety Measurement System (SMS)

- Provides motor carriers and other safety stakeholders with more comprehensive, informative, and regularly updated safety performance data
  - Quantifies the on-road safety performance and considers prior investigation findings of motor carriers to prioritize enforcement resources
  - Helps determine the safety problems a motor carrier is exhibiting
  - Monitors motor carrier’s safety problems for improvement or interventions
SMS Improvement Process

• SMS is continually improved based on:
  – Availability of new data and additional analyses
  – Feedback from enforcement and other stakeholders, including industry
SMS Improvement Process, Cont.

• The Federal Motor Carrier Safety Administration (FMCSA) applies a systematic approach to implementing improvements
  – Includes announcing the proposed changes in a Federal Register Notice and providing a preview and comment period

• FMCSA prioritizes and packages changes as needed
  – Includes public preview period prior to implementation of major changes
Why an SMS Preview?

• Gives stakeholders an opportunity to view and comment on the proposed enhancements, verify data, and educate all stakeholders BEFORE the enhancements are implemented and become publicly available

• Enables FMCSA to make final refinements to the package of enhancements BEFORE public release
SMS Methodology Enhancement Objectives

1. Make the SMS more effective at prioritizing carriers that pose the greatest safety risk for interventions

2. Improve FMCSA’s focus on carriers with high crash rates and serious safety problems

3. Focus FMCSA’s investigative resources on carriers with more crash involvement
SMS Methodology Enhancement Objectives

Objective: Make the SMS more effective at prioritizing carriers that pose the greatest safety risk for interventions

Enhancements that meet this objective:

• Expanding the range over which the Utilization Factor (UF) is applied
• Simplifying the data sufficiency standards to only assign Behavior Analysis and Safety Improvement Categories (BASIC) percentiles to companies that have had an inspection with a violation in the last year
• Segmenting the Hazardous Materials (HM) Compliance BASIC by cargo tank and non-cargo tank operations
Objective: Improve FMCSA’s focus on carriers with high crash rates and serious safety problems

Enhancements that meet this objective:

• Adjusting the Intervention Thresholds for the Vehicle Maintenance, Controlled Substances/Alcohol, Driver Fitness and HM Compliance BASICs

• Moving operating while out-of-service (OOS) violations to the Unsafe Driving BASIC
**SMS Methodology Enhancement Objectives**

**Objective:** Improve FMCSA’s focus on carriers with high crash rates and serious safety problems

Current and Proposed Intervention Thresholds

<table>
<thead>
<tr>
<th>BASIC</th>
<th>Passenger Carrier</th>
<th>HM Carrier</th>
<th>General Carrier</th>
<th>Passenger Carrier</th>
<th>HM Carrier</th>
<th>General Carrier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicle Maintenance</td>
<td>65%</td>
<td>75%</td>
<td>80%</td>
<td>60%</td>
<td>70%</td>
<td>75%</td>
</tr>
<tr>
<td>Controlled Substances/Alcohol</td>
<td>65%</td>
<td>75%</td>
<td>80%</td>
<td>75%</td>
<td>85%</td>
<td>90%</td>
</tr>
<tr>
<td>Driver Fitness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HM Compliance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
SMS Methodology Enhancement Objectives

**Objective:** Focus FMCSA’s investigative resources on carriers with more crash involvement

Enhancements that meet this objective:

- Increasing the number of crashes required to assign a percentile in the Crash Indicator BASIC from two to three
SMS Preview Website
How to Access the SMS Preview Website

• Motor carriers and the public can access the SMS Preview Website by:
  – Clicking on the link on the CSA Homepage or
  – Visiting the SMS Preview Homepage
    https://csa.fmcsa.dot.gov/SMSPreview

• Carriers can also log in on the SMS Preview Homepage or via the CSA Outreach link in the Portal using their U.S. DOT Number and PIN

• Enforcement users can access the preview through the Portal or via the CSA Website Homepage
SMS Preview Website Features
Welcome to the SMS Enhancements Public Preview!

At FMCSA, we know that strong, reliable data means smarter safety decisions—and ultimately safer roads for everyone.

This is why we recently proposed enhancements to the SMS that put our latest analysis and your input to work to more effectively prioritize and intervene with carriers that pose the greatest safety risk.

- Watch this presentation for a primer on the proposed changes and the preview
- Visit the Help Center to get your questions answered
- Submit your comments on the Federal Register Notice

Sharpening Our Focus on Carriers with Recent Violations

A More Accurate Picture of Carrier Exposure on Our Roads

A More Effective HM Compliance BASIC

More Effectively Identifying Driver Safety Problems Related to OOS
FMCSA proposes an enhancement to the Hazardous Materials (HM) Compliance Behavior Analysis and Safety Improvement Category (BASIC) to make it more effective at identifying carriers with HM compliance problems for interventions. This enhancement includes:

- Segmenting the HM Compliance BASIC by cargo tank and non-cargo tank operations
- Adjusting this BASIC’s Intervention Threshold

Tour this Change

See the proposed enhancement to the HM Compliance BASIC in action. This tour uses an example carrier to walk you through the proposed change to the HM Compliance BASIC and show you how that change may impact SMS results. You can Tour this Change, return to the SMS Preview Homepage to tour another change, or explore each change on your own by hovering over the blue and red flags.

- Start Tour of this Change  > Return to the Preview Homepage

Need Help?

Get your questions about the proposed SMS enhancements and the preview answered in the Help Center. Once there, you can learn more about the proposed changes by reading the Foundational Document or the Federal Register Notice. You can also check out FAQs and other preview resources.

If you have additional questions, call our CSA InfoLine team at 1-877-254-5365, or fill out this form.

Submit Comments

Comment on this proposed change through the Federal Register Notice.
FMCSA proposes an enhancement to the Hazardous Materials (HM) Compliance Behavior Analysis and Safety Improvement Category (BASIC) to make it more effective at identifying carriers with HM compliance problems for interventions. This enhancement includes:

**Segmenting this BASIC by Cargo Tank and Non-Cargo Tank Operations**

Cargo tank and non-cargo tank operations often result in different violations. Segmenting these carriers will enable the SMS to account for these differences when assigning percentiles in this BASIC.

**Adjusting this BASIC’s Intervention Threshold**

We will adjust the Intervention Threshold for this BASIC from 80% to 90% to reflect its lower correlation to crash risk.

To learn more about how this proposed change will make this BASIC more effective, review the [Foundational Document](#). You can also [Tour this Change](#) to see this proposed enhancement in action.
Get your questions about the proposed SMS enhancements and the preview answered here. You can find preview resources or check out FAQs. Don’t know where to start on the preview site? Click on Get Started to find out how to tour each proposed change and learn how to submit comments after your tour.

Learn what you need to know about the proposed SMS enhancements. Select a resource below that you can download, print, and share.

- Proposed SMS Enhancements Key Terms Glossary
- Proposed SMS Enhancements Presentation Materials
- Proposed SMS Enhancements Factsheet
- Proposed SMS Enhancements Foundational Document
Proposed Enhancements
Improving FMCSA’s Focus on Carriers with High Crash Rates by Adjusting Intervention Thresholds

Proposed Enhancement
Overview of Proposed Changes to Vehicle Maintenance BASIC (Current and proposed SMS results are based on March 25, 2016 snapshot)

**INTERVENTION THRESHOLD**

**PROPOSED** 75%

**CURRENT** 80%

Carrier violations are weighted by time and severity to produce a measure for each carrier in each BASIC. The measure is then used to assign that carrier to a percentile rank containing carriers’ information in similar safety event groups. See (2016) for more information.
Overview of Proposed Changes to Driver Fitness BASIC
(Current and proposed SMS results are based on March 25, 2016 snapshot)
Focusing FMCSA’s Investigative Resources on Carriers with More Crash Involvement

Proposed Enhancement
Basic Status

BASIC: Crash Indicator

On-Road Performance

Measure: 2.23
Percentile: Less than 3 crashes

0 65% 100
Intervention Threshold
Scale 0 to 100; 0 indicates the best safety performance.

This carrier has (2) crashes. A carrier must have at least three crashes to be assessed in this BASIC.

Note: The Crash Indicator BASIC is not currently available to the public. It is only available to enforcement users or carriers that are logged into their own safety profile. The SMS Preview uses an example carrier to show you how this proposed enhancement may impact these stakeholders.

Overview of Proposed Changes to Crash Indicator BASIC
(Current and proposed SMS results are based on March 25, 2016 snapshot)

PERCENTILE

PROPOSED

CURRENT

89%

SAFETY EVENT GROUP

COMBINATION SEGMENT NONE

COMBINATION SEGMENT 2-3 CRASHES

2016

+ CRASH ACTIVITY DETAIL (VEHICLES INVOLVED IN CRASHES)

Number of Crashers: 3
Sharpening Our Focus on Carriers with Recent Violations

Proposed Enhancement
BASIC Status
Behavior Analysis & Safety Improvement Categories (BASICs)

BASIC: Vehicle Maintenance

On-Road Performance
Measure: 8.60
Percentile: No violations in the past year

Scale 0 to 100; 0 indicates the best safety performance.
This carrier did not have any Vehicle Maintenance BASIC violations in the last year.

WHO IS IN THE SAFETY EVENT GROUP?
This carrier did not have any Vehicle Maintenance BASIC violations in the last year.

Investigation Results
No Acute/Critical Violations Discovered

MEASURE VS. PERCENTILE
Crashes are weighted by time and severity to produce a measure for that carrier in each BASIC.
This carrier did not have any Vehicle Maintenance BASIC violations in the last year.
A More Accurate Picture of Carrier Exposure

Proposed Enhancement
BASIC Status
Behavior Analysis & Safety Improvement Categories (BASICs)

BASIC: Unsafe Driving

On-Road Performance
Measure: 2.07
Percentile: 33%

Scale 0 to 100; 0 indicates the best safety performance.
33% of motor carriers in the same safety event group have better on-road performance than this motor carrier.

WHO IS IN THE SAFETY EVENT GROUP?

Investigation Results:
No Assured Critical Violations Discovered.

Measure vs. Percentile
MEASURE VS. PERCENTILE
are weighted by time and severity to produce a measure for each carrier in each BASIC, assign that carrier to a percentile rank containing carriers information in similar safety performance.
A More Effective HM Compliance BASIC

Proposed Enhancement
Overview of Proposed Changes to Hazardous Materials Compliance BASIC

(Current and proposed SMS results are based on March 25, 2016 snapshot)
More Effectively Identifying Driver Safety Problems Related to OOS

Proposed Enhancement
### VIOLATION SUMMARY

**CHANGED: 1 violation has been moved to the Unsafe Driving BASIC**

<table>
<thead>
<tr>
<th>Violations</th>
<th>Description</th>
<th># Violations</th>
<th># OOS Violations</th>
<th>Violation Severity 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>392.2-SLLS3</td>
<td>State/Local Laws - Speeding 11-14 miles per hour over the speed limit</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>395.13(d)</td>
<td>Driving after being declared out-of-service</td>
<td>1</td>
<td>1</td>
<td>10</td>
</tr>
</tbody>
</table>

**Unsafe Driving Violations:** 4

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#### Overview of Proposed Changes to Unsafe Driving BASIC

Current and proposed SMS results are based on March 25, 2016 snapshot.

**VIOLATIONS MOVED**

<table>
<thead>
<tr>
<th>Measure</th>
<th>Proposed</th>
<th>Proposed Percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 OPERATING WHILE OOS VIOLATIONS MOVED TO THE Unsafe Driving BASIC</td>
<td>10.25</td>
<td>77%</td>
</tr>
</tbody>
</table>

**MEASURE VS. PERCENTILE**

Carrier violations or crashes are weighted by time and severity to produce a measure for each carrier in each BASIC. The measure is then used to assign that carrier to a percentile rank containing carriers' information in similar safety event groups. For more information, visit [here](#).

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**INVESTIGATION RESULTS**

No Acute/Critical Violations Discovered

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**CARRIER MEASURE OVER TIME**

**MEASURE VS. PERCENTILE**

**INSPECTION RESULTS**

+ VIOLATION SUMMARY

+ INSPECTION HISTORY

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**CHANGED: 1 violation has been moved to the Unsafe Driving BASIC**  
Unsafe Driving Violations: 4

Driver Inspections with Unsafe Driving Violations: 4
<table>
<thead>
<tr>
<th>Inspection Date</th>
<th>Number</th>
<th>State</th>
<th>Plate Number</th>
<th>Plate State</th>
<th>Type</th>
<th>Severity Weight (SW)</th>
<th>Time Weight (TiW)</th>
<th>Total Weight (TotW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/25/2015</td>
<td>XX5555555555</td>
<td>XX</td>
<td>8888888</td>
<td>XX</td>
<td>Truck Tractor</td>
<td>5</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>Violation:</td>
<td>392.2C Failure to obey traffic control device</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5/2/2015</td>
<td>XX88888888</td>
<td>XX</td>
<td>888888</td>
<td>XX</td>
<td>Truck Tractor</td>
<td>7</td>
<td>2</td>
<td>14</td>
</tr>
<tr>
<td>Violation:</td>
<td>392.2-SLLS3 State/Local Laws - Speeding 11-14 miles per hour over the speed limit</td>
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<td></td>
<td></td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/24/2015</td>
<td>XX444444444</td>
<td>XX</td>
<td>000000</td>
<td>XX</td>
<td>Truck Tractor</td>
<td>7</td>
<td>1</td>
<td>10</td>
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<td>395.13(d) Driving after being declared out-of-service (OOS)</td>
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<td></td>
<td></td>
<td></td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4/3/2014</td>
<td>XX2222222222</td>
<td>XX</td>
<td>222222</td>
<td>XX</td>
<td>Truck Tractor</td>
<td>7</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>Violation:</td>
<td>392.16 Failing to use seat belt while operating CMV</td>
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<td></td>
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<td>7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sum of measure weights = 29 + 6 = 41

**PERFORMANCE MEASURE LAST MONTH As of 2/26/2016**

\[
\text{TotW} = \frac{\text{Avg. PU} \times \text{UF}}{4} = 12.75
\]

**PERFORMANCE MEASURE THIS MONTH As of 3/25/2016**

\[
\text{TotW} = \frac{\text{Avg. PU} \times \text{UF}}{4} = 10.25
\]

*** The sum of all violation severity weights (violation weight + out-of-service) for this inspection has been capped at 30.
On-Road Performance

Measure: 2.07
Percentile: 33%

Scale 0 to 100; 0 indicates the best safety performance.
33% of motor carriers in the same safety event group have better on-road performance than this motor carrier.

WHO IS IN THE SAFETY EVENT GROUP?
On-Road Performance

Measure: 0.62  CHANGED
Percentile: 33%  CHANGED

Scale 0 to 100; 0 indicates the best safety performance.
33% of motor carriers in the same safety event group have better on-road performance than this motor carrier.

Who is in the safety event group?

Investigation Results:
No Active Critical Violations Discovered.
What’s Next: SMS Preview Timeline

• October 2016 (Public Preview)
  – 60-day comment period with the publication of the Federal Register Notice

• Following Preview
  – Participate in online question and answer (Q&A) sessions for industry
    • Submit questions at: https://csa.fmcsa.dot.gov/CSA_feedback.aspx?defaulttag=SMSPREVIEWQA

• Implementation
  – Enhancements to the SMS Methodology will be implemented following the completion of the Correlation Study required by Section 5221 of the FAST Act
Frequently Asked Questions (FAQs)
Where can I review presentation materials?

To review the information presented in today’s video presentation, download the following resources from the Help Center on the SMS Preview Website at https://csa.fmcsa.dot.gov/SMSPreview/HelpCenter/Index.aspx:

- Video
- Presentation
- Transcript
Why did FMCSA propose these changes to the SMS Methodology?

FMCSA is committed to continually improving the SMS methodology in response to new data, analyses, and stakeholder feedback to make our roads safer for everyone.

These enhancements allow FMCSA to:

- More effectively prioritize those motor carriers that pose the greatest safety risk for interventions
- Focus our investigative resources on carriers with more crash involvement
- Sharpen our focus on carriers with high crash rates
- More accurately account for the carriers that are driving on our roads the most
- More effectively identify driver safety problems and HM compliance problems
Where can I get more detailed information about the proposed enhancements?

• For more detailed information about the proposed enhancements, you may review the SMS Enhancements Foundational Document in the Help Center on the SMS Preview Website: https://csa.fmcsa.dot.gov/SMSPreview/HelpCenter/Index.aspx

• You may also review the Federal Register Notice and submit your comments: https://www.federalregister.gov/
What should motor carriers and the public do during the preview of the proposed SMS methodology enhancements?

During the SMS Preview, motor carriers and the public should:

1. Submit comments on the proposed SMS enhancements via the Federal Docket Website at: [https://www.federalregister.gov](https://www.federalregister.gov)

2. Try out the “Tour This Change” feature, which provides detailed information on each of the proposed enhancements

3. Visit the Help Center to download preview resources, browse FAQs, and learn how to get started on the preview site
Can a motor carrier still see all of its SMS data?

• Yes. To view their current SMS data, motor carriers may still log in through the SMS Website: 
  http://ai.fmcsa.dot.gov/sms

• To view how their data would be affected by these proposed enhancements, motor carriers may log in on the SMS Preview Homepage: 
  https://csa.fmcsa.dot.gov/SMSPreview
SMS Preview Website: Additional Resources

- Visit the SMS Preview Help Center at https://csa.fmcsa.dot.gov/SMSPreview/HelpCenter/Index.aspx
  - Searchable FAQs
  - Key Terms Glossary for user-friendly definitions
  - Foundational Document

- Review the Federal Register Notice for more information on the proposed enhancements

- Contact our CSA InfoLine Team at 1-877-254-5365 or online at http://csa.fmcsa.dot.gov/CSA_Feedback.aspx
Help Us Build A Nationwide Commitment to Safety

• Educate carriers and drivers
  – Understand the SMS and the BASICs
  – Sign up for important updates via the CSA Website at: http://csa.fmcsa.dot.gov/subscription.aspx
Help Us Build A Nationwide Commitment to Safety, Cont.

- Ensure compliance and check and update records
  - Question potentially incorrect data (DataQs: [https://dataqs.fmcsa.dot.gov](https://dataqs.fmcsa.dot.gov))
  - Update your MCS-150 form and VMT data
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