

Approved Change

Reorganized "BASICS"

Current SMS Methodology

BASICS

The current Safety Measurement System (SMS) assesses motor carrier on-road performance and compliance by organizing data into seven Behavior Analysis and Safety Improvement Categories (BASICS):

- Unsafe Driving
- Crash Indicator
- Hours of Service (HOS) Compliance
- Vehicle Maintenance
- Controlled Substances/Alcohol
- Hazardous Materials (HM) Compliance
- Driver Fitness



Updated SMS Methodology

Compliance Categories

Assesses motor carrier on-road performance and compliance by organizing data into seven "compliance categories."

Revised Unsafe Driving:

- Controlled Substances/Alcohol and Operating while Out-of-Service (OOS) violations are incorporated into the Unsafe Driving Compliance Category

New Vehicle Maintenance: Driver Observed

- Violations that could reasonably be observed by a driver or detected as part of a Walk-Around (Level 2) roadside inspection

Revised Vehicle Maintenance

- All other vehicle maintenance violations

No changes to the following compliance categories:

- Crash Indicator
- Hours of Service
- Hazardous Materials
- Driver Fitness

Why Is this Important?

Moving Controlled Substances/Alcohol violations to Unsafe Driving would help focus FMCSA's investigative resources on carriers with higher crash rates.

Reorganizing the Vehicle Maintenance categories would also provide more specific information to help motor carriers and enforcement pinpoint unsafe driver behavior and sources of vehicle maintenance issues.



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Why Is this Important?

Reorganized Roadside Violations

Assesses motor carriers based on more than 2,000 violations.

Organizes the more than 2,000 existing violation codes into approximately 100 violation groups of similar safety behaviors.

FMCSA's analysis indicated that, for prioritization purposes, determining whether a safety issue is identified is more important than determining how many ways it was documented.

Grouping a motor carrier's violations before analyzing their data would ensure that motor carriers are treated fairly by preventing the inconsistencies in compliance category measures that occur when multiple violations are cited for the same underlying safety issue during one inspection.

Simplified Severity Weights

Assigns each roadside violation a severity weight on a scale of 1 to 10 that reflects its relationship to crash occurrence and/or crash consequences.

Replaces the 1-10 weighting scale for violations in SMS with a two-value scale: a severity weight of either 1 or 2.

The following violations would receive a severity weight of 2:

- OOS violations (apply to all compliance categories except Unsafe Driving)
- Driver Disqualifying violations (apply to Unsafe Driving only, as defined in 49 CFR § [383.51](#))

If none of the violations in a violation group are OOS or Driver Disqualifying violations, then the violation group would receive a weight of 1.

After conducting analysis on multiple approaches, FMCSA determined that assigning customized weights to all violations was not as important as noting that the violation occurred.

This simplified approach identifies carriers with higher crash rates for prioritization and makes it clearer why a specific violation is weighted more heavily than others.



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Why Is this Important?

Improved Intervention Thresholds

Carriers may be prioritized for interventions if their percentiles are at or above certain thresholds called Intervention Thresholds.

Adjusts Intervention Thresholds in the following compliance categories to better reflect their relationships to crash rate.

The new Vehicle Maintenance: Driver Observed and Vehicle Maintenance Compliance Categories will both have the same thresholds as the SMS Vehicle Maintenance BASIC:

- 80% for general carriers.
- 65% for passenger carrier carriers.
- 75% for HM carriers.

The Hazardous Materials thresholds will adjust as follows:

- From 80% to 90% for all carrier types.

The Driver Fitness thresholds will adjust as follows:

- From 80% to 90% for general carriers.
- From 65% to 75% for passenger carriers.
- From 75% to 85% for HM carriers.

FMCSA's analysis showed that every compliance category has a different relationship to crash rate, with some having a higher correlation than others. Adjusting the thresholds ensures that FMCSA focuses its enforcement program on the carriers with the highest crash risk.

Proportionate Percentiles Instead of Safety Event Groups

Places carriers in safety event groups based on the number of safety events, or inspections and crashes in which they have been involved, to account for the inherently greater variability in inspection, violation, and crash rates based on very different levels of exposure.

Uses "proportionate percentiles" to eliminate large fluctuations in percentile results that occur for non-safety related reasons under SMS's safety event group approach.


Proportionate percentiles would use the exact number of safety events to assign a percentile for a motor carrier, no longer relying on the cut-offs established by safety event groups.

This approach would improve the Agency's ability to compare carriers with similar carriers, and more precisely and accurately indicate how a carrier's performance is trending from month to month.



Updated SMS Methodology

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<p>Greater Focus on Recent Violations</p>	<p>Motor carriers may be prioritized in HOS Compliance, Vehicle Maintenance, HM Compliance, and Driver Fitness even if they have not received a recent violation in these BASICS.</p> <p>The SMS applies a 12-month data sufficiency standard to the Unsafe Driving and Controlled Substances/Alcohol BASICS: carriers are only assigned percentiles if they have received at least one roadside violation in those BASICS within the past 12 months.</p>	<p>Retains SMS data sufficiency standard for Unsafe Driving and extends this same standard to the Hours of Service, Vehicle Maintenance, Vehicle Maintenance: Driver Observed, Hazardous Materials, and Driver Fitness Compliance Categories.</p> <p>This means that a carrier with violations in any of the above compliance categories that are all 12 months or older would not be assigned a percentile and not be prioritized in that category based on roadside inspection data alone.</p>	<p>This change will improve FMCSA's focus on carriers with recent violations and more complete and timely crash risk.</p>
<p>Updated Utilization Factor</p>	<p>The Utilization Factor helps ensure that measures in the Unsafe Driving and Crash Indicator BASICS account for carriers' different levels of exposure to inspections and crashes. Applied to carriers that drive up to 200,000 Vehicle Miles Traveled (VMT) per average Power Unit (PU).</p>	<p>Extends the Utilization Factor to carriers that drive up to 250,000 VMT per average PU to account more accurately for the increased levels of on-road exposure to crashes and on-road enforcement of motor carriers with the most VMT per vehicle.</p>	<p>After analyzing carrier-reported VMT data, FMCSA found that carriers are reporting more complete and timely VMT now than in 2009 when the Utilization Factor was developed and first applied. Extending the Utilization Factor to include motor carriers that drive up to 250,000 VMT per average PU reflects these recent data trends and leads to more accurate measures, helping the Agency focus on carriers in most need of intervention.</p>

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New Segmentation	Accounts for differences in carrier operations by segmenting carriers by whether their company operates primarily Straight vehicles or Combination vehicles in the Unsafe Driving and Crash Indicator BASICs only.	Accounts for differences in carrier operations by segmenting carriers by whether their company operates primarily Straight vehicles or Combination vehicles in the Unsafe Driving, Crash Indicator, and Driver Fitness Compliance Categories. Also segments Hazardous Materials by Cargo Tank and Non-Cargo Tank carriers.	Extending segmentation to Hazardous Materials and Driver Fitness will ensure motor carriers are treated fairly by comparing them to other carriers with similar operations and patterns of violations.