



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

Monitoring FMCSA Progress: Compliance, Safety, Accountability (CSA) and Intervention Effectiveness Models

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Office of Research and Information Technology

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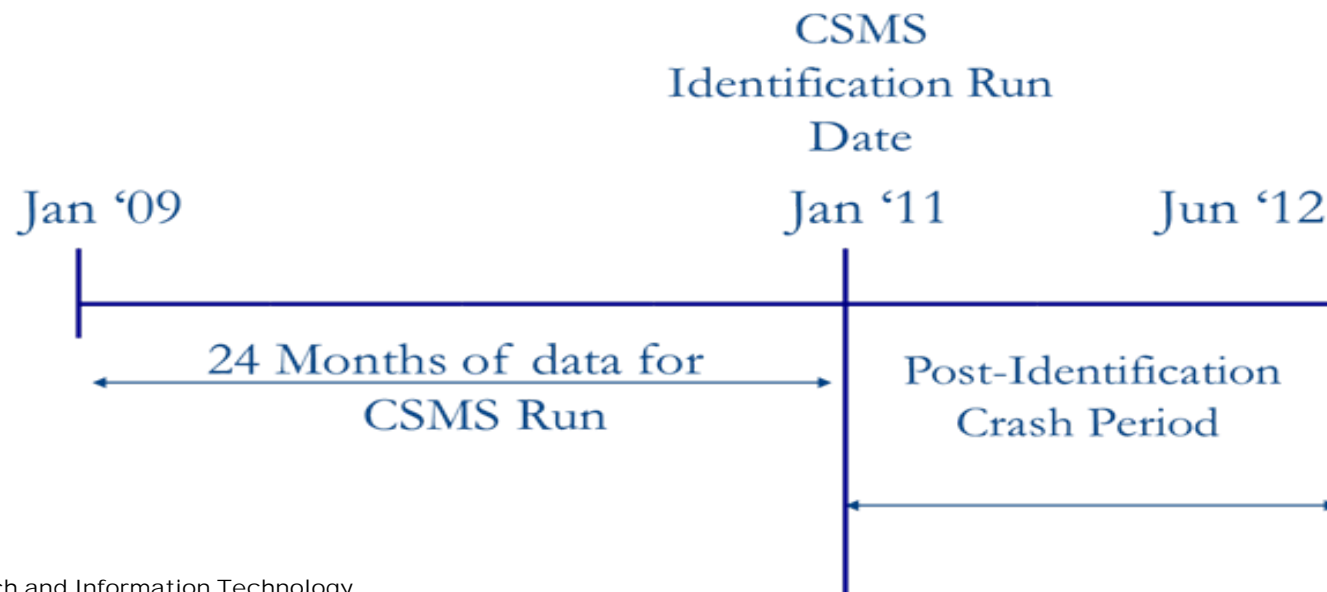
SAFETY MEASUREMENT SYSTEM EFFECTIVENESS

Safety Measurement System (SMS)

- FMCSA prioritizes companies when a pattern of non-compliance is present due to the increased crash risk.
- SMS is not designed nor intended to predict an *individual* company's crashes in the future.
- Patterns of non-compliance (Behavioral Analysis and Safety Improvement Categories, or BASICs) relate to a higher future crash rate for groups of carriers.

SMS Effectiveness Testing

- **Objective**—Quantify how effectively SMS identifies high-risk motor carriers.
- **Methodology**—Use historical data to examine the “future” crash rate of motor carriers.
- **Consistent** with findings of analysis by University of Michigan Transportation Research Institute and the American Transportation Research Institute.



Prioritized Companies: By Carrier Size

- Higher crash rates are observed, regardless of carrier size.
- FMCSA is more selective and more effective when prioritizing smaller carriers:
 - 12% of small carriers are prioritized.
 - Crash rates are 137% higher than those not prioritized.

Prioritized Companies

SMS is prioritizing carriers with higher crash rates than active carriers not prioritized:

- Carriers prioritized in one or more BASICs have crash rates 79% higher:
 - 4.82 crashes per 100 power units compared to 2.69 for carriers not identified.
- High-risk carriers have a crash rate twice the national average.
 - 7.33 crashes per 100 power units compared to 3.43.

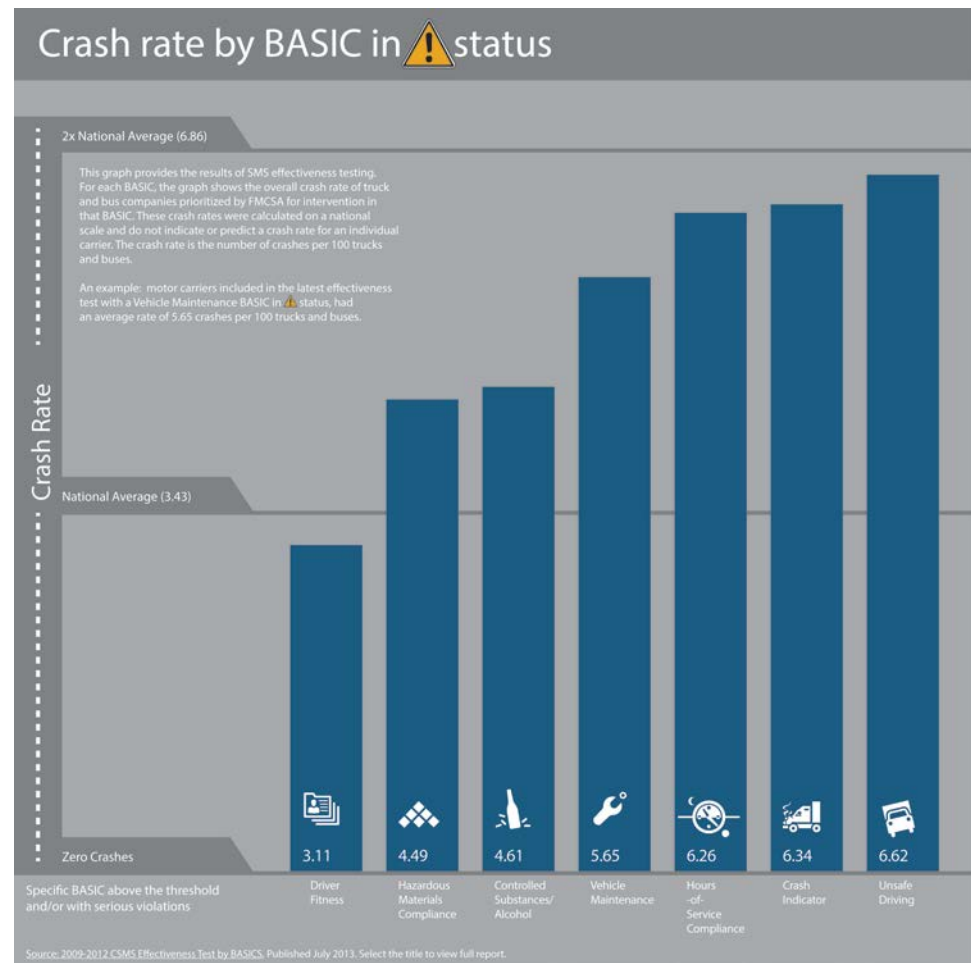
Crash Rates by BASIC

BASIC Identified for Interventions	Number of Carriers Identified	Total Power Units	Total Crashes	Crash Rate (per 100 Power Units)	% Increase in Crash Rate Compared to National Average (3.43)
Unsafe Driving	9,594	194,756	12,888	6.62	93%
Crash	4,662	246,463	15,638	6.34	85%
HOS Compliance	22,558	343,114	21,462	6.26	83%
Vehicle Maintenance	15,734	234,895	13,261	5.65	65%
Controlled Substances/ Alcohol	2,914	44,945	2,070	4.61	34%
HM Compliance	746	250,892	11,266	4.49	31%
Driver Fitness	5,067	323,038	10,047	3.11	-9%

Crash Rates by BASIC

Six of the seven BASICs show that prioritized carriers have a crash rate higher than the national average.

For-hire operators of combination units:
All seven BASICs have a crash rate higher than the national average and are about half of the carriers assessed .



Contact Information

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