Compliance, Safety, Accountability (CSA)

April 2014

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

CSA Three Major Elements

1. **New Safety Measurement System (SMS)**

   - Uses roadside inspection and investigation data to proactively identify high risk motor carriers for prioritization of interventions

2. **Broader Array of Intervention Tools**
   - Matches the most appropriate intervention to the specific safety problem at hand – warning letters, focused onsite/offsite investigations, compliance reviews

3. **Revision to Safety Fitness Determination (SFD) Process**
   - Will incorporate on-road performance and changes the standards for being found unfit through investigations (not based on SMS percentiles)

Safety Measurement System (SMS)

Uses Behavioral Analysis and Safety Improvement Categories (BASICs) to prioritize "high-risk" carriers per Congressional mandate:

Unsafe Driving

Hours-of-Service (HOS) Compliance Driving

Driver Fitness

Controlled Substance/Alcohol

Vehicle Maintenance

Hazmat **(not publicly available)**

Crash Indicator **(not publicly available)**

Status: Fully implemented December 2010 and subsequently enhanced December 2012, Ongoing Continuous Improvement

Intervention Tools

CSA utilizes a progressive set of interventions to promote safety and compliance:

- Reaches more carriers
- Improves efficiency of resources
- Identifies root causes and corrective actions

Status:

- Deployed Nationally: December 2010 through July 2011 – Automated Warning Letters, Comprehensive and Focused On-site investigations, Safety Management Cycle
- Deployed only in Original Test States: Offsite Investigations, Cooperative Safety Plans, Serious Violation Follow-up

Safety Fitness Determination (SFD) Process

Current SFD Ratings:
- Tied to onsite investigation

Revised SFD Process would:
- Incorporate on-road safety performance as well as results of investigations
- Produce an SFD to determine if a carrier is unfit to operate

Status: NPRM expected to be published in 2014

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CSA Impacts

- **Dramatic decreases in violation rates in a decade:**
  - violations per roadside inspection **down nearly 14 percent**
  - driver violations per inspection **down 17 percent**
- **As of December 2013, FMCSA sent more than 90,000 warning letters**
- **"SMS Online" hosted 68 million user sessions last year**
  - Seventeen fold increase over SafeStat
- **Safety Culture has moved to the Boardroom**

SMS Effectiveness Studies

- **2011 UMTRI Evaluation:**
  - SMS is a significant improvement over its predecessor, SafeStat
  - Five of the seven BASICs employed during the test, demonstrated a strong relationship to crash risk

- **Nov 2011 Wells Fargo Analysis:**
  - No meaningful statistical relationship between the results in the Unsafe Driving and Fatigued Driving (HOS) BASICs and crash frequency
  - Based on a sample of 200 of the largest motor carriers in the FMCSA census database of motor carriers

SMS Effectiveness Studies (Cont.)

- **2012 ATRI Report:**
  - Positive relationship between BASIC "scores" and crashes in three of the five publicly available BASICs
  - Motor carriers prioritized demonstrated higher crash rates than those that not prioritized in four of the five publicly available BASICs
  - Crash risk increases as the number of BASICs prioritized for an intervention increases
- **Prior ATRI study**
  - Examined crash involvement as a predictor of future crash involvement

SMS Effectiveness Studies (Cont.)

2014 GAO Report

- Precision and confidence of many SMS scores is limited
- Strengthening data sufficiency standards would improve precision and confidence (20+ inspections) and proposed illustrative alternative approach to high risk

FMCSA Position

- Reliable for its stated purpose
- Has data sufficiency requirements: Waiting for 20 observations is poor risk management and would decrease industry oversight to 10% and would be reactive
- Be proactive - lack of crash does not mean lack of crash risk
- Acknowledges more variability with fewer inspections
- Prioritizes companies when a pattern of non-compliance is present
- Agrees that SFD requires different considerations

SMS Effectiveness Studies (Cont.)

2014 GAO Report: GAO's Illustrative Alternative

- Decreases industry oversight to only 10%

- Offers no data driven alternative

- Results in lower crash rates in 5 of 8 categories compared to SMS

Category	Crash Rate of FMCSA identified Carriers as determined by GAO	Crash Rate of GAO identified carriers
Unsafe Driving BASIC	7.13	6.13
Hours of Service Compliance BASIC	6.63	6.72
Driver Fitness BASIC	2.87	2.63
Drug and Alcohol BASIC	3.24	4.71
Vehicle Maintenance BASIC	5.56	6.35
Hazardous Materials BASIC	5.47	5.07
Crash Indicator	7.19	6.83
High Risk Group	8.38	8.25

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FMCSA 2014 SMS Effectiveness Test Study

- SMS is a significant improvement over previous prioritization system

- The carrier population identified by FMCSA as "High Risk" has **more than twice the national average** crash rate

- SMS is prioritizing carriers with higher crash rates (**79% higher)** than active carriers not prioritized

- Optimizes resources and oversight with more stringent intervention thresholds for BASICs with strongest associations to crash risk
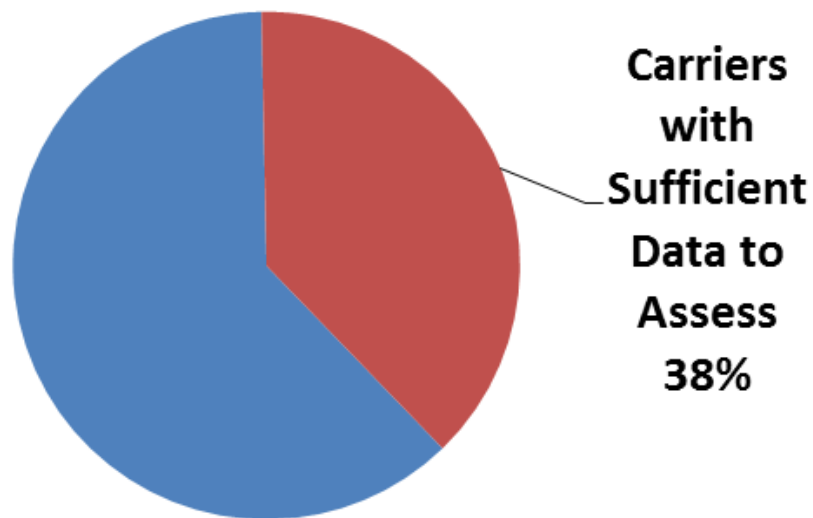
FMCSA 2014 SMS Effectiveness Test Study – Assertions of Small Carrier Bias

- SMS identifies the same number of carriers in the 5 or fewer truck category as did the SafeStat system

- FMCSA is more selective and effective when prioritizing smaller carriers
  - Only 12% of small carriers are prioritized
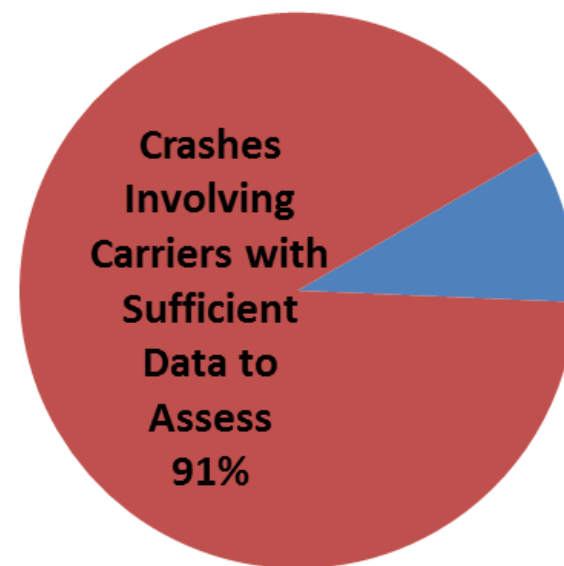 - Crash rates are 137% higher than those not prioritized

Carriers and Power Units	# of Carriers Prioritized	% Carriers with at least 1 BASIC Prioritized	Total Power Units	Total Crashes	Crash Rate (per 100 Power Units)	% Increase in Crash Rate
5 or Fewer PUs	24,647	12%	56,731	4,336	7.64	137%
5 < PUs <= 15	10,253	24%	92,965	6,173	6.64	149%
15 < PUs <= 50	5,514	30%	145,894	8,693	5.96	117%
50 < PUs <= 500	2,359	35%	308,120	15,110	4.90	84%
More than 500 PUs	269	49%	469,384	17,451	3.72	60%
All Carriers	43,042	15%	1,073,093	51,763	4.82	79%

Data Sufficiency in SMS

525k Active Carriers

Carriers with Sufficient Data to Assess 38%

Crash Involvement

Crashes Involving Carriers with Sufficient Data to Assess 91%
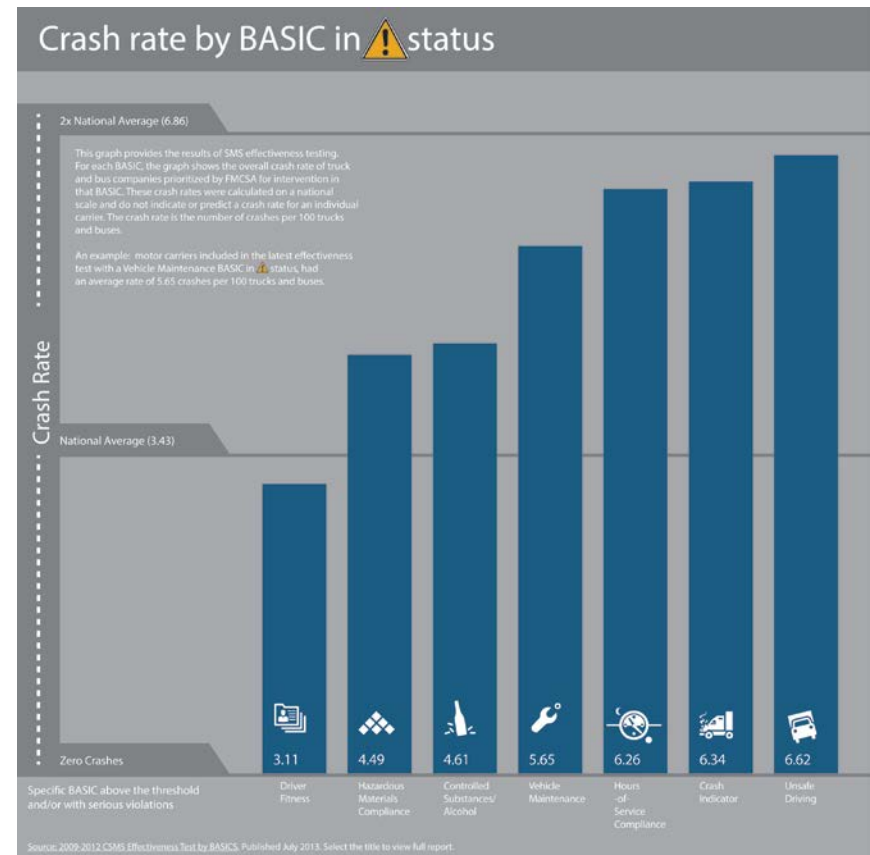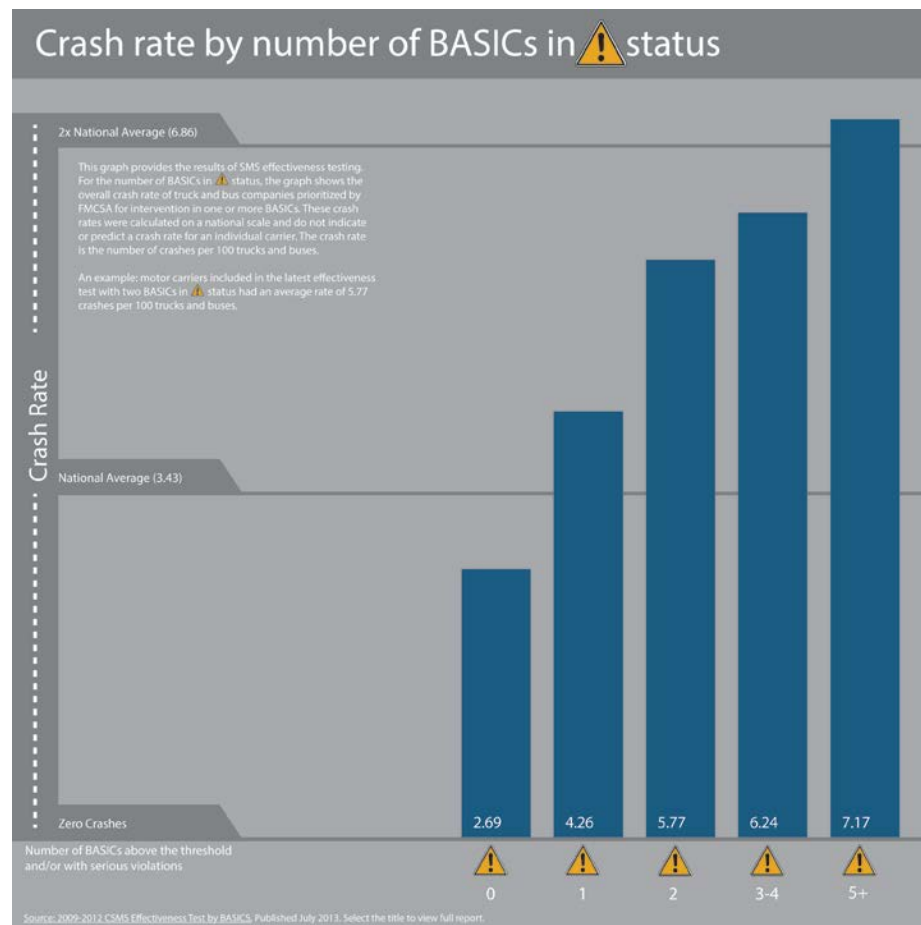
Crash Rates by BASIC

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

Crash Rates by number of BASICs Prioritized

- As the number of BASICs prioritized increases, so do crash rates for that population – up to **twice the national average**

Crash rate by number of BASICs in ⚠ status

2x National Average (6.86)

This graph provides the results of SMS effectiveness testing. For the number of BASICs in ⚠ status, the graph shows the overall crash rate of truck and bus companies prioritized by FMCSA for intervention in one or more BASICs. These crash rates were calculated on a national scale and do not indicate or predict a crash rate for an individual carrier. The crash rate is the number of crashes per 100 trucks and buses.

An example: motor carriers included in the latest effectiveness test with two BASICs in ⚠ status had an average rate of 5.77 crashes per 100 trucks and buses.

Crash Rate

National Average (3.43)

Zero Crashes

| | 2.69 | 4.26 | 5.77 | 6.24 | 7.17 |

Number of BASICs above the threshold and/or with serious violations

| ⚠ | ⚠ | ⚠ | ⚠ | ⚠ |
| 0 | 1 | 2 | 3-4 | 5+ |

Source: 2009-2012 CSMS Effectiveness Test by BASICS, Published July 2013. Select the title to view full report.

Continuous Improvement (CI) Efforts: Stakeholder Input

FMCSA takes a systematic and transparent approach to rolling out improvements

- Prioritize and package changes periodically

- Provide enforcement personnel and motor carriers a preview period prior to implementation

- Provide public with opportunity to comment and shape decisions

CI Efforts: SMS Enhancement Package #1

Stakeholder Input: Opportunities exist to improve SMS methodology

- Early 2012, 10 month preview of proposed SMS changes began

  - 19,000 carriers/2,900 enforcement personnel participated

- December 2012, eleven (11) SMS improvements implemented resulting in improved effectiveness

  - Higher future crash rate (3.9%) and higher HM violation rate (3.6%)

CI Efforts: Crash Weighting Study

Stakeholder Input: Concerns with SMS use of crash data regardless of carrier role

- Received over 100k crash reports

- Analysis indicates crash involvement is a strong predictor of future crashes

- Crash data has been used for over 10 years for workload prioritization– indicator continues to be hidden from public view

- FMCSA study completed and peer reviewed
  - Examines the collection and use of information for possible incorporation into SMS
  - Preparing associated Congressional Report and follow-on FRN

CI Efforts: Adjudicated Citations

Stakeholder Input: Concerns with SMS and PSP use of violation data with an associated "dismissed" state citation

- Partnered with stakeholders in development of approach
    - CVSA Executive Committee unanimous support
- FR Notice released in November and received 111 comments
- Response to be released in Spring with implementation plan
- Violations with citations that were Dismissed / Not guilty would not be used in SMS and PSP

CI Efforts: Public Display-SMS Results

Stakeholder Input: Concerns of shipper liability. Clarity on the purpose of SMS to users.

- Disclaimer highlights that scores are used to prioritize and are not safety ratings

- FMCSA resource documents geared toward shippers that provide an overview of publicly available safety data sources

- Shippers seek "green light" that protects from liability

- FMCSA mission is to identify and remove unsafe operators, not to certify safety of motor carriers

CI Efforts: Public Display-SMS Results (Cont.)

In November 2013, FMCSA began preview of proposed SMS Display Enhancements - **41,854** unique visitors, **43** FR Notice comments

Objectives:

- Provide easier, more intuitive navigation and user-friendly features to clarify SMS as a prioritization tool for CSA Interventions

- Provide a "one-stop-shop" for FMCSA safety information: incorporates Safety Rating, Licensing and Insurance, Penalties History

- Retain and provide easy access to detailed information and improved performance monitoring tools

Other CI Efforts: Prioritization and Intervention Processes

Assess CSA prioritization and intervention processes and recommend improvements to ensure the program's continued effectiveness and efficiency:

- **What have we learned since CSA was rolled out in 2010?**

- **What opportunities exist to improve CSA to:**

    - Improve the program's safety effectiveness

    - Meet Congressional mandates, as well as Agency goals and commitments

    - Provide a structure that can be easily and consistently implemented

    - Identify lessons learned and opportunities for improvement

GAO, OIG, and NTSB FAA Peer Review recommendations will be considered.