

Using Data for Safety Program Policy and Effectiveness

Data Palooza 2015
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FMCSA Mission

Reduce crashes, injuries and fatalities involving large trucks and buses

- ▶ Develops and enforces data-driven regulations
- ▶ Harnesses safety information systems to focus on higher risk carriers in enforcing the safety regulations;
- ▶ Targets educational messages to carriers, commercial drivers, and the public; and
- ▶ Partners with stakeholders on efforts to reduce bus and truck-related crashes



Data and Policy Decisions

▶ Policy Development

- What is the safety problem we are trying to address?
- How will data help inform the policy development process?
- What is the outcome?
 - Short term measures
 - Long term outcomes



Safety Measurement System

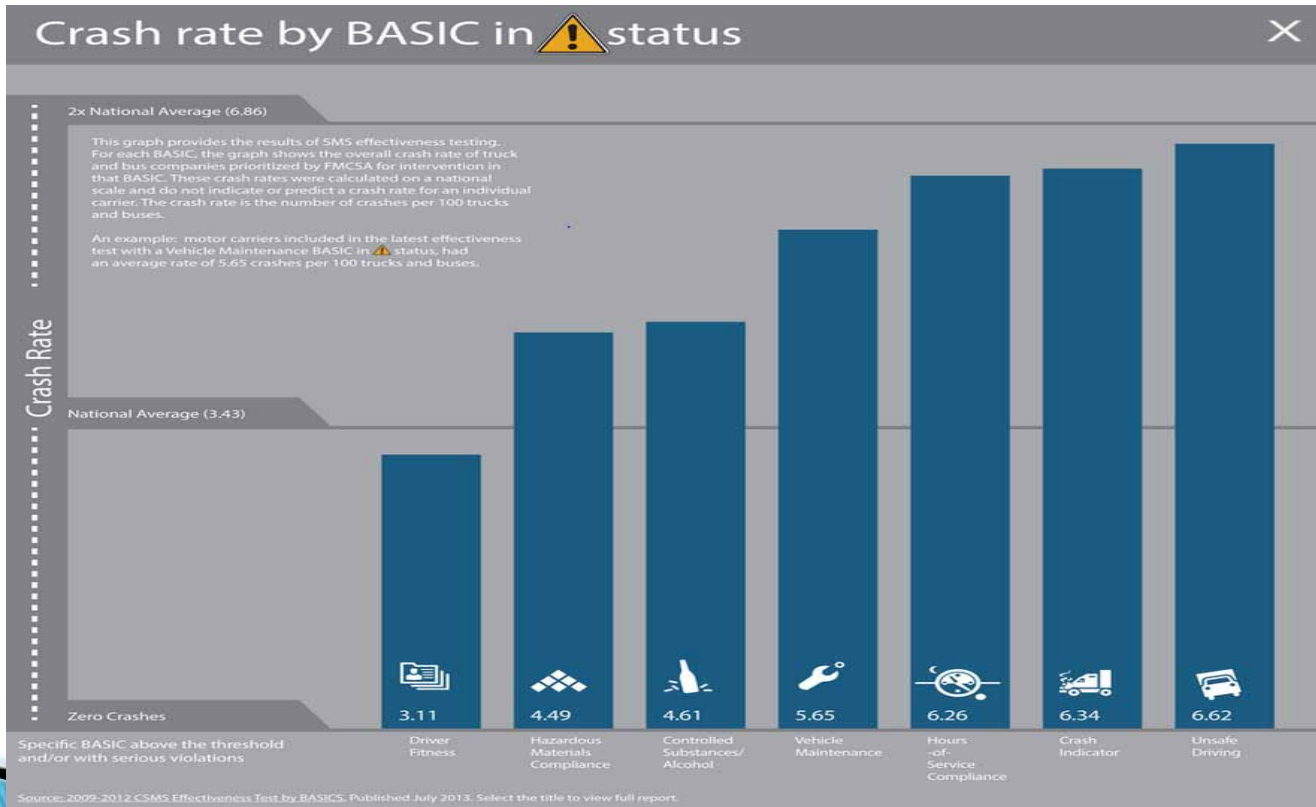
- ▶ FMCSA's workload prioritization tool that identifies carriers for interventions (e.g., warning letters, investigations)
- ▶ Uses the following data organized into 7 BASICS
 - 100,000 + State-reported crash records
 - 3.5 million roadside inspections, 7 million inspection safety-based violations
 - Violation results from 15,000 investigations



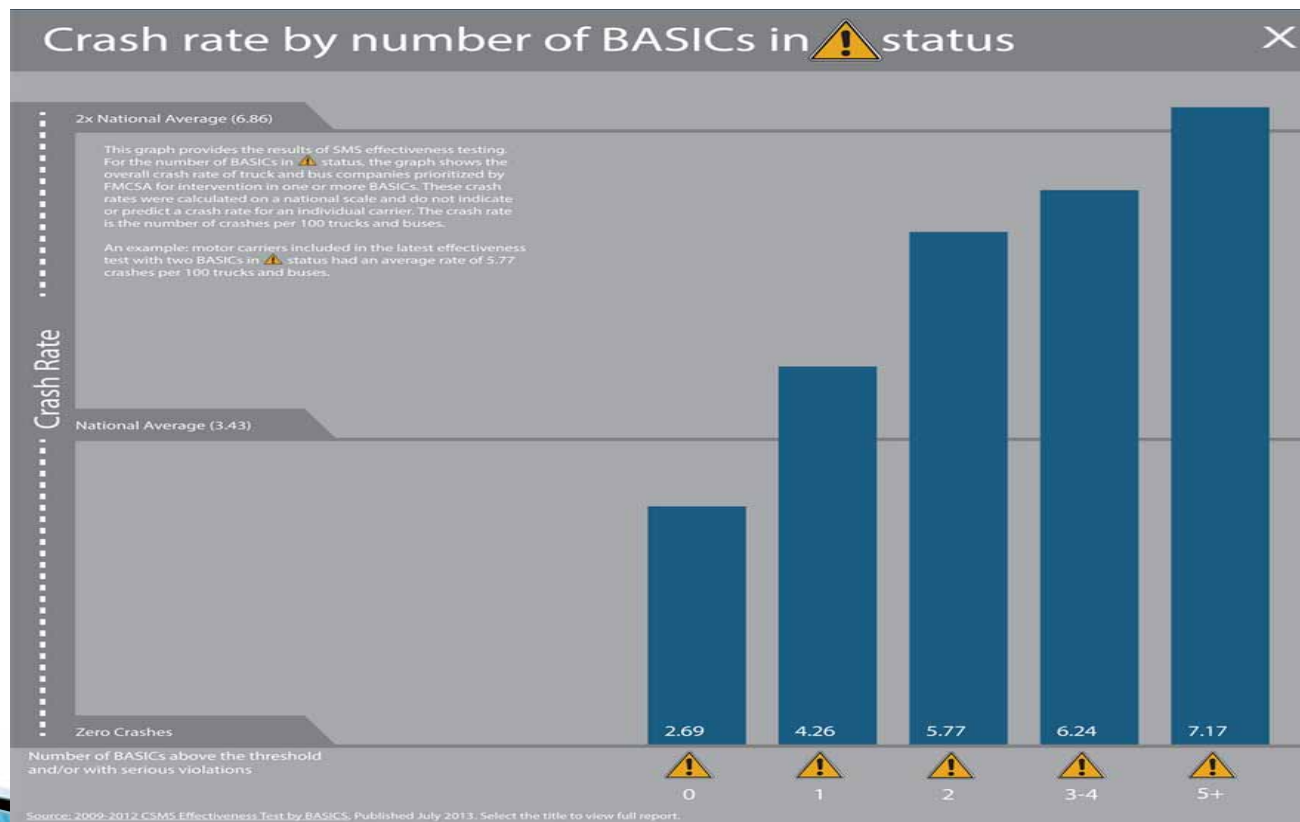
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Crash rate by BASIC



Crash Rate by Number of BASICS



How is it Used?

- ▶ Prioritizes Carriers by Risk, allows us to investigate by Risk
 - Identify High Risk Carriers based upon data driven scoring methodology (ie. At or Above 90)
- ▶ Data drives the investigation – BASICs correlate to potential regulatory non-compliance
- ▶ Since we know the problem areas, allows us to “focus” our investigation
 - Investigate deeper into these areas
 - Identify Risk Quicker
 - Efficiently manage our resources



Intervention Effectiveness

What changes in behavior occur once a carrier is prioritized and the Agency intervenes?

Carrier Size (Power Units)	Percent Change in Crash Rate Post Intervention		
	FY 2009	FY 2010	FY 2011
1-5	-34.5%	-29.3%	-28.8%
6-20	-20.3%	-13.9%	-30.0%
21-100	-7.2%	+2.1%	-15.9%
100+	+0.2%	+4.9%	-3.2%

	FY 2009
Crashes Avoided	2,430
Lives Saved	81
Injuries Avoided	1,544

How does intervention effectiveness inform policy

- ▶ Results for warning letters indicate high level of effectiveness (and low cost)

	Treatment Group Carriers				Extrapolated to all Carriers Receiving Interventions			
FY 2011	31,654	5,295	3,253	173	40,673	6,462	3,970	211

- ▶ Policy change to maintain number of warning letters sent, or increase.



Targeted Enforcement: Motorcoach Quick Strike

- ▶ Challenge: Increase investigation standard
 - Identify and track metrics of success
- ▶ Preparation
 - Identify high risk passenger carriers using data:
 - Developed Enhanced Investigative Techniques




Targeted Enforcement: Quick Strike–Immediate Results

April 1 – October 31 of 2013*

- ▶ Completed investigations: 214
 - Carrier Enforcement Actions: 160
 - Enforcement Rate: 75%
 - Imminent Hazard Orders issued: 15
 - Proposed Unsatisfactory ratings issued: 60
 - Driver Enforcement Cases: 65
- ▶ Vehicles Inspected: 1302
 - Vehicles placed out of service: 339
 - Vehicle Out of Service Rate: 26%

*Data reported as of November 4, 2013



Targeted Enforcement: Quick Strike–Short Term Results

Phase I Analysis – June 2014

Compare Quick Strike 2013 investigations with
Passenger Strike Force 2012 investigations

Quick Strike Findings:


- ▶ 5 times the number of serious violations
- ▶ 3 times the enforcements
- ▶ 6 times the OOS orders



Targeted Enforcement: Quick Strike–Long Term Results

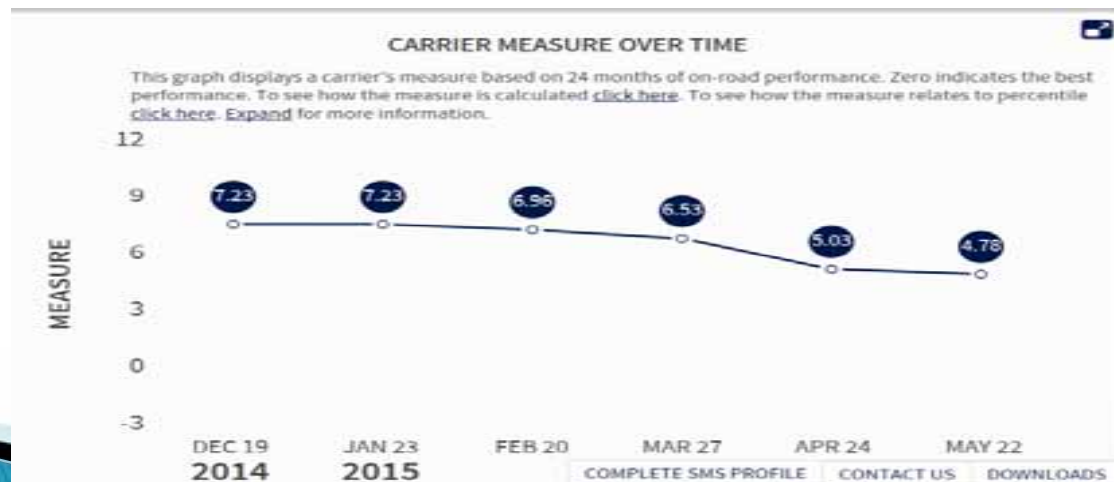
Quick Strike Phase II Analysis – May 2015

Compare Quick Strike 2013 investigations with
Passenger Strike Force 2012 investigations

- ▶ Improved carrier safety performance:
 - 25% reduction in crash rate (increase in 2012)
 - 23% reduction in inspection violation rate (~10% reduction in 2012)
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Addressing Certain Motor Carriers With High Crash Risk

- ▶ Normal prioritization rules exclude carriers with recent investigation.
- ▶ Analysis revealed a certain category of carriers that has a significant crash rate 7 times greater than national average
- ▶ Goal is to identify these carriers, quickly assess their trends and determine if investigation is needed.



Questions??

