



MOTOR CARRIER SAFETY ADVISORY COMMITTEE

C/O: Federal Motor Carrier Safety Administration
1200 New Jersey Avenue, SE
Room W64-232
Washington, DC 20590

December 8, 2011

The Honorable Anne S. Ferro
Administrator
Federal Motor Carrier Safety Administration
1200 New Jersey Avenue, SE
Washington, DC 20590

Dear Administrator Ferro:

The Motor Carrier Safety Advisory Committee (MCSAC) commenced work on Task 11-02 at its June 2011 meeting. The Federal Motor Carrier Safety Administration (FMCSA) tasked the Committee with providing the Compliance, Safety, Accountability (CSA) team with its observations and recommendations regarding violation groups within each Behavioral Analysis Safety Improvement Category (BASIC) and their associated crash risk. Specifically, FMCSA asked the MCSAC to:

- (1) Determine whether the individual roadside violations are in the correct violation grouping;
- (2) Within each BASIC, rank each violation group in priority of crash risk (considering both the cause and severity of crashes); and
- (3) Using the priority ranking in step 2, evaluate the likely crash risk associated with each violation group using ratings of "high," "medium," or "low."

The MCSAC met in public meetings on June 20-22 and December 6, 2011, to discuss the task. At the June meeting, the MCSAC split into three different groups, which each brainstormed the issues necessary to complete the three tasks noted above. In those breakout sessions, each group produced three different sets of rankings and comments on various violations. At the December meeting, the full MCSAC reviewed the three groups' findings and reconciled differences in rankings. The MCSAC approved by consensus the comments and rankings in the enclosed Task 11-02 report and attached spreadsheets.

Accompanying the report reflecting the MCSAC edits of the violation weighting are MCSAC comments relating to Carrier Safety Measurement System (CSMS) design, review, modification, and application for FMCSA's consideration.

I submit this report to FMCSA for its consideration.

Sincerely,

//signed//

David R. Parker
Chairman, Motor Carrier Safety Advisory Committee

Enclosure

Introduction

During the course of its discussions on Task 11-02, MCSAC learned that the initial severity weightings were not all based on data, but rather, in part, on the opinion of experts and others with some knowledge of accident causation. This was suspected during the Committee's review and development of proposal amendments to existing weightings, which are reflected in this report. During that process, Committee members identified initial weightings which did not comport with their experience, and this resulted in the proposed amendments to the initial weightings in this MCSAC report.

This recognition of a continuing need for further data collection to accurately establish crash causation relationships to justify ultimate weighting scores demonstrates the importance of insuring that all those using Compliance, Safety, Accountability (CSA) scores and results understand the evolving nature of this grading methodology.

It is respectfully recommended that FMCSA initiate an affirmative initiative and outreach to those that refer to these initial CSA results, such as shippers, brokers, insurance companies, financial institutions, and others. FMCSA websites, etc. have incorporated disclaimers relating to the relevance of CSA results. However, it is suggested that FMCSA establish proactive lines of communications with such entities to address the continuously evolving nature of CSA and the fact that, until more data is collected to validate weightings, such entities should not overreact to CSA scores, alerts, and interventions, nor use those scores to "penalize" carriers without communicating with the carriers to ascertain the reason for scores which are of concern to the entity.

Given the circumstances that have contributed to scores which may not accurately reflect the safety record of a carrier until more data is collected, it is submitted that such an outreach program is called for, rather than just a web site disclaimer.

I. Carrier Safety Measurement System (CSMS) Design, Review, and Applications

1. To the degree possible, violation severity weights should be based on data reflecting the relationships between individual violations and crashes.
2. It is important to consider crash data relative to each BASIC, and in particular with respect to the vehicle maintenance BASIC.
3. Because MCSAC did not have such data, its recommendations with respect to appropriate violation severity weights largely reflects guesswork on the relationship between particular violations and crashes.
4. The CSA program should evolve as more data is obtained. As more data is collected, FMCSA should systematically examine the severity weightings as part of the ongoing evolution of the CSA program.
5. An approach to the assignment of severity weights based on observations and opinions may ultimately result in BASIC scores that do not closely correspond to crash risk.
6. FMCSA should periodically and continuously revalidate the current severity weightings based on new/expanded data since the original weightings.
7. In order to ensure the reliability/significance of the SMS scores, FMCSA should continue to test the system after methodology and weight changes. Specifically, the agency should continually measure the relationship between carriers' scores and crash risk.
8. It is of paramount importance that the system accurately prioritizes the least safe carriers for intervention.
9. FMCSA should be aware and should communicate that factors or behaviors that contribute to a CSA record are not necessarily indicators or causes of crashes.

II. CSMS Modification

1. Hazardous material, in general, should be a separate BASIC.
2. FMCSA should conduct a periodic review of ASPEN and the violations that are categorized therein.
3. The low/medium/high rankings within a particular BASIC are not comparable to the relative rankings in other BASICs.
4. The following are not actual roadside violations and cannot be cited at roadside:
 - 396.11 – DVIR
 - 396.13(c) – Review of DVIR
 - 180.407(c) – Failure to test cargo tank
5. The following roadside violations have questionably high statistics:
 - 396.5(a) – Proper lubrication
 - 396.5(b) – Excessive oil leaks
 - 396.5(b) – Oil and/or grease leaks
 - 393.95(c) – Spare fuses
 - 393.207(a)(6) – Axle leaf spring
 - 396.3(a)(1) – General maintenance
6. The violation 180.3 (failure to maintain cargo tank) appears to be missing from the violation groups.
7. The MCSAC questions the differing violations within the “Speeding related” violation group. How did they get grouped this way? How can FMCSA ensure that roadside officers are consistently selecting among “Speeding related” violations versus the more specific speeding violation group for a particular speeding citation?
8. Inspectors should adhere to a consistent and uniform inspection selection process and understand how such processes impact end users of data.

Unsafe Driving Violation Groups							
Roadside Unsafe Driving Violation Group	Number of inspections with violations in this Group last 24 months	Current Grouping Severity Weight	Top 3 Most frequently cited violations in the group for Example Purposes		MCSAC Recommended Rank (1-12) for the 12 Groups in this BASIC	MCSAC Recommended Relative Crash Risk within BASIC "High/Medium/Low"	Notes
Dangerous Driving	122,862	5	392.2C	Failure to obey traffic control device	4	H	Violation 392.2C: Because this encompasses both moving and non-moving violations (e.g., parking violations), it arguably does not belong in dangerous driving. Possibly move some of these specific non-moving violations down to "Other driver violations" group.
			392.2FC	Following too close			The MCSAC needs data regarding what citations this violation encompasses.
			392.2LC	Improper lane change			Officers need to quote the precise violation, as opposed to just choosing the drop down box in ASPEN. Training needed to help officers understand the importance of this request.
HM Related	2,485	1	397.3	State/local laws ordinances regulations	12	L	Violation 397.3: Recommend moving hazmat-related violations within "unsafe driving" category to "HM Cargo" category.
			397.13	Smoking within 25 feet of HM vehicle			Violation 397.13: recommend moving to "HM Cargo" category. Consider adding under "Fire Hazard-HM."
			177.800(d)	Unnecessary delay in HM transportation to destination			Violation 177.800(d): Further explanation requested as to why violation is listed in this group. Recommend moving to "HM Cargo" category. Consider adding under "HM Route."
Misc Violations	8,323	3	392.2LV	Lane Restriction	9	M	
			392.2DH	Headlamps - Failing to dim when required			
Other Driver Violations	12,595	1	392.60(a)	Unauthorized passenger on board CMV	11	L	
			392.2PK	and/or leaving vehicle in the roadway			
			392.22(a)	Failing to use hazard			
Seat Belt	117,714	7	392.16	Failing to use seat belt while operating CMV	7	M	

Speeding 1	7,897	1	392.2-SLLS1	State/Local Laws - Speeding 1-5 miles per hour over the speed limit	10	L	
Speeding 2	10,309	4	392.2-SLLS2	State/Local Laws - Speeding 6-10 miles per hour over the speed limit	8	M	
Speeding 3	3,940	7	392.2-SLLS3	State/Local Laws - Speeding 11-14 miles per hour over the speed limit	5	H	
Speeding 4	3,025	10	392.2-SLLS4	State/Local Laws - Speeding 15 or more miles per hour over the speed limit	3	H	
			392.2-SLLSWZ	State/Local Laws - Speeding			
Speeding Related	305,555	5	392.2S	Speeding	6	M	
			392.71(a)	Using or equipping a CMV with radar detector			
			392.6	Scheduling run to necessitate speeding			
Reckless Driving	1,848	10	392.2R	Reckless driving	1	H	
Texting	28	10	392.2-SLLT	State/Local Laws - Operating a CMV while	2	H	
			390.17DT	Operating a CMV while			

Fatigued Driving Violation Groups							
Roadside Fatigued Driving Violation Group	Number of inspections with violations in this Group last 24 months	Current Grouping Severity Weight	Top 3 Most frequently cited violations in the group for Example Purposes		MCSAC Recommended Rank (1-6) for the 6 Groups in this BASIC	MCSAC Recommended Relative Crash Risk within BASIC "High/Medium/Low"	Notes
EOBR Related	2,587	1	395.15(g)	Onboard recording device information not available	5	L	
			395.15(b)	Onboard recording device information requirements not met			
			395.15(f)	Onboard recording device failure and driver failure to reconstruct duty status			
False Log	72,026	7	395.8(e)	False report of driver's record of duty status	2	H	Violation 395.8(e): Recommend considering intent when weighting violation.
Hours	167,799	7	395.3(a)(2)	Requiring or permitting driver to driver after 14 hours on duty	3	H	
			395.3(a)(1)	Requiring or permitting driver to driver more than 11 hours			
			395.3(b)	60/70- hour rule violation			
Incomplete/ Wrong Log	408,191	5	395.8(f)(1)	Driver's record of duty status not current	4	M	
			395.8(k)(2)	Driver failing to retain previous 7 days' logs			
			395.8(a)	No driver's record of duty status			
Jumping OOS/Driving Fatigued	3,016	10			1	H	Note from Todd Spencer: in most instances, roadside officer will not be able to determine fatigue/illness. Several members disagree with this comment. FMCSA should define "fatigue"
			392.3	Operating a CMV while ill/fatigued			
			395.13(d)	Driving after being declared out-of-service			
Other Log/Form and Manner	301,504	2	395.8	Log violation (general/form and manner)	6	L	

Driver Fitness Violation Groups							
Roadside Driver Fitness Violation Group	Number of inspections with violations in this Group last 24 months	Current Grouping Severity Weight	Top 3 Most frequently cited violations in the group for Example Purposes		MCSAC Recommended Rank (1-5) for the 5 Groups in this BASIC	MCSAC Recommended Relative Crash Risk within BASIC "High/Medium/Low"	Notes
Fitness/ Jumping OOS	15	10	386.72(b)	Failing to comply with Imminent Hazard Out-Of-Service (OOS) Order	1	H	
General Driver Qualification	179,091	4	391.11(b)(2)	Non-English speaking driver	4	M	
			391.11B2S	Driver must be able to understand highway traffic signs and signals in the English language			
			391.11(b)(1)	Interstate driver under 21 years of age			
License-related	67,816	8	383.23(a)(2)	Operating a CMV without a CDL	2	H	Violations 383.21 (Operating a CMV with more than one driver's license): More research is needed.
			391.11(b)(5)	Driver lacking valid license for type vehicle being operated			
			391.15(a)	Driving a CMV while disqualified			Violation 383.15(a): In general, should be high rank. When it is concerning a failure to pay child support, should be a low rank.
Medical Certificate	244,101	1	391.41(a)	Driver not in possession of medical certificate	5	M	
			391.45(b)	Expired medical examiner's certificate			
			391.43(h)	Improper medical examiner's certificate form			
Physical	10,459	2	391.11(b)(4)	Driver lacking physical qualification(s)	3	H	
			398.3(b)	Driver not physically qualified			

Controlled Substances/Alcohol Violation Groups							
Roadside Controlled Substances/Alcohol Violation Group	Number of inspections with violations in this Group last 24 months	Current Grouping Severity Weight	Top 3 Most frequently cited violations in the group for Example Purposes		MCSAC Recommended Rank (1-3) for the 3 Groups in this BASIC	MCSAC Recommended Relative Crash Risk within BASIC "High/Medium/Low"	Notes
Alcohol	4,312	5	392.5(a)	Possession/use/under influence alcohol-4hrs prior to duty	3	H	Possession carries a lower risk ratio than use/under influence. Should be a separate section/violation.
Alcohol Jumping OOS	232	10	392.5(c)(2)	Violating OOS order pursuant to 392.5(a)/(b)	1	H	
Drugs	1,730	10	392.4(a)	Driver uses or is in possession of drugs	2	H	

Vehicle Maintenance Violation Groups							
Roadside Vehicle Maintenance Violation Group	Number of inspections with violations in this Group last 24 months	Current Grouping Severity Weight	Top 3 Most frequently cited violations in the group for Example Purposes		MCSAC Recommended Rank (1-19) for the 19 Groups in this BASIC	MCSAC Recommended Relative Crash Risk within BASIC "High/Medium/Low"	Notes
Brakes, All Others	881,018	4	393.45(b)(2)	Failing to secure brake hose/tubing against mechanical damage	2	H	Should separate "failure to secure brake hose..." and "inoperative/defective breaks."
			393.53(b)	Automatic brake adjuster CMV manufactured on or after 10/20/1994 - air brake			
			393.48(a)	Inoperative/defective brakes			Violation 393.48(a): Recommend grouping with "Brakes out of adjustment." Should separate "failure to secure brake hose..." and "inoperative/defective breaks."
Brakes Out of Adjustment	261,344	4	393.47(e)	Clamp/Roto-Chamber type brake(s) out of adjustment	3	H	
			396.3A1BA	Brake out of adjustment			
			393.47(f)	Wedge type brake(s) out of adjustment			
Cab, Body, Frame	98,997	2	393.201(a)	Frame cracked / loose / sagging / broken	10	H	
			393.203(c)	Hood not securely fastened			
			393.201(d)	Frame accessories improperly attached			
Clearance Identification Lamps/Other	557,274	2	393.9(a)	Inoperative required lamps	16	L	
			393.23	Required lamp not powered by vehicle electricity			
Coupling Devices	21,577	3	393.70	Fifth wheel	9	H	
			393.70(d)	No/improper safety chains/cables for full trailer			
			393.70(b)	Defective/improper fifth wheel assemblies			
Emergency Equipment	345,604	2	393.95(a)	No/discharged/unsecured fire extinguisher	18	L	
			393.95(f)	No / insufficient warning devices			
			392.8	Failing to inspect/use emergency equipment			
Exhaust Discharge	117,365	1	393.83(g)	Exhaust leak under truck cab and/or sleeper	19	L	
			393.83(a)	Exhaust system location			
			393.83(e)	Improper exhaust discharge (not rear of cab)			
Fuel Systems	33,275	1	393.67	Fuel tank requirement violations	17	L	
			393.65(f)	Improper fuel line protection			
			393.67(c)(7)	Fuel tank fill pipe cap missing			
Inspection Reports	268,005	4	396.17(c)	Operating a CMV without periodic inspection	13	M	396.11 is not a roadside violation.
			396.11	No or inadequate driver vehicle inspection report			
			396.9(d)(2)	Failure to correct defects noted on inspection report			
Lighting	496,183	6	393.25(f)	Stop lamp violations	7	H	
			393.9TS	Inoperative turn signal			
			393.9T	Inoperative tail lamp			

Vehicle Maintenance Violation Groups							
Roadside Vehicle Maintenance Violation Group	Number of inspections with violations in this Group last 24 months	Current Grouping Severity Weight	Top 3 Most frequently cited violations in the group for Example Purposes		MCSAC Recommended Rank (1-19) for the 19 Groups in this BASIC	MCSAC Recommended Relative Crash Risk within BASIC "High/Medium/Low"	Notes
Other Vehicle Defect	350,081	3	396.5(b)	Excessive oil leaks	15	L	
			396.5(b)	Oil and/or grease leak			
			393.28	Improper or no wiring protection as required			
Reflective Sheeting	446,099	3	393.11	No/defective lighting devices/reflective devices/projected	12	L	
			393.11TL	No retro reflective sheeting or reflex reflectors on mud flaps - Truck Tractor manufactured on or after 7/1/1997			
			393.13(c)(2)	No lower rear retroreflective sheeting or reflex reflective material as required for vehicles manufactured before 12/1/1993			
Steering Mechanism	106,948	6	393.209(e)	Power steering violations	6	H	
			393.209(d)	Steering system components worn/welded/missing			
			393.209(b)	Excessive steering wheel lash			
Suspension	123,290	7	393.207(a)	Axle positioning parts defective/missing	4	H	
			393.207(c)	Leaf spring assembly defective/missing			
			393.207(f)	Air suspension pressure loss			
Tires	537,296	8	393.75(c)	Tire - other tread depth less than 2/32 of inch	5	H	
			393.75(a)(2)	Tire - tread and/or sidewall separation			
			393.75(a)	Flat tire or fabric exposed			
Tire vs. Load	40,489	3	393.75(h)	Tire underinflated	11	H	
			393.75(f)	Tire - load weight rating			
			393.75(f)(1)	Weight carried exceeds tire load limit			
Vehicle Jumping OOS	990	10	396.9(c)(2)	Operating an Out-Of-Service (OOS) vehicle	1	H	
Wheels, Studs, Clamps, Etc.	363,713	2	396.3(a)(1)	Inspection/repair and maintenance parts and accessories	8	M	
			393.205(c)	Wheel fasteners loose and/or missing			
			393.205(a)	Wheel/rim cracked or broken			
Windshield/Glass /Markings	307,257	1	392.2WC	Wheel (Mud) Flaps missing or defective	14	M	
			393.60EWS	Windshield Obstructed			
			393.61(b)(2)	Emergency exit window handle broken			

HM Cargo Violation Groups							
Roadside HM Violation Group	Number of inspections with violations in this Group last 24 months	Current Grouping Severity Weight	Top 3 Most frequently cited violations in the group for Example Purposes		MCSAC Recommended Rank (1-9) for the 9 Groups in this BASIC	MCSAC Recommended Relative Crash Risk within BASIC "High/Medium/Low"	Notes
Cargo Protection - HM	1,132	4	177.834(j)	Manholes and valves not closed or leak free	4	H	
			173.33(a)	Cargo tank general requirements			
			177.840(g)	Discharge valve not closed in transit Class 2			
Documentation - HM	15,702	3	177.817(e)	Shipping paper accessibility	9	L	
			177.817(a)	No shipping papers (carrier)			
			172.602(a)	Emergency response information missing			
Fire Hazard - HM	402	6	177.840	Improper transport of Class 2 materials	3	H	
			397.7(b)	Improperly parked HM vehicle			
			177.848(d)	Prohibited load/transport/storage combination			
HM Other	2,822	2	171.2(a)	Failure to comply with HM regulations	8	M	
			171.2(b)	Failure to comply with the requirements for HM transportation (including labeling and handling)			
			177.801	Accepting/transporting HM not prepared properly			
HM Route	207	1	397.67	HM vehicle routing violation (non-radioactive materials)	5	M	
			397.101(b)	Radioactive materials vehicle not on preferred route			
			397.101(d)	No or incomplete route plan - radioactive materials			
Load Securement - HM	7,650	10	177.834(a)	Package not secure in vehicle	1	H	
			173.24(b)(1)	Release of HM from package			
			173.35(f)(2)	Intermediate bulk container (IBC) not secured to or within vehicle			
Markings- HM	26,974	5	172.516(c)(6)	Placard damaged, deteriorated, or obscured	6	M	
			172.504(a)	Vehicle not placarded as required			
			177.823(a)	No placards/markings when required			
Package Integrity - HM	3,577	8	178.345-6	DOT 406/407/412 supports and anchoring	2	H	
			178.337-9(c)	Marking inlets/outlets MCÂ 331			
			178.340-10(b)	MC 306/307/312 metal certification plate missing			
Package Testing - HM	2,767	7	180.415(b)	Cargo tank test or inspection markings - HM	7	L	
			180.407(c)	Failing to periodically test and inspect cargo tank			
			180.405(b)	Cargo tank specifications			

Non-HM Cargo-Related Violation Groups							
Roadside Non-HM Cargo-Related Violation Group	Number of inspections with violations in this Group last 24 months	Current Grouping Severity Weight	Top 3 Most frequently cited violations in the group for Example Purposes		MCSAC Recommended Rank (1-7) for the 7 Groups in this BASIC	MCSAC Recommended Relative Crash Risk within BASIC "High/Medium/Low"	Notes
Equipment	30,044	7	393.104(b)	Damaged securement system/tiedowns	6	M	
			393.104(a)	Inadequate/damaged securement device/system			
			393.104(c)	Damaged vehicle structures/anchor points			
Failure to Prevent Movement	7,660	8	393.106(b)	Cargo not immobilized or secured	3	H	
			393.102(a)(1)(ii)	Insufficient means to prevent rearward movement			
			393.110(d)	Large/odd-shaped cargo not adequately secured			
General Securement	126,363	7	393.100(a)	Failure to prevent cargo shifting	4	H	
			392.9(a)(2)	Failing to secure vehicle equipment			
			392.9(a)	Failing to secure load			
Improper Securement	27,909	10	393.100(b)	Leaking/spilling/blowing/falling cargo	2	H	
			393.134(b)(3)	Container not secured to rear of vehicle			
			393.130(b)	Item not properly prepared for transport			
Passenger	6	10	392.63	Pushing/towing a loaded bus	1	H	
Tiedown	39,354	8	393.110(b)	Insufficient tiedowns; without headerboard/blocking	5	H	
			393.104(f)(3)	Loose/unfastened tiedown.			
			393.102(a)	Improper securement system (tiedown assemblies)			
Warning Flags	6,683	4	393.87(a)	Warning flag required on projecting load	7	M	
			393.87	Warning flag required on projecting load			
			393.87(b)	Improper warning flag placement			