TRB EMS Subcommittee ANB10(5)

EMS Safety Summit 2012

Safety Systems, Strategies and Solutions

Vehicle and Fleet Standards

Nadine Levick MD, MPH
Chair ANB10(5)
CEO, Research Director EMS Safety Foundation

February 29th , 2012

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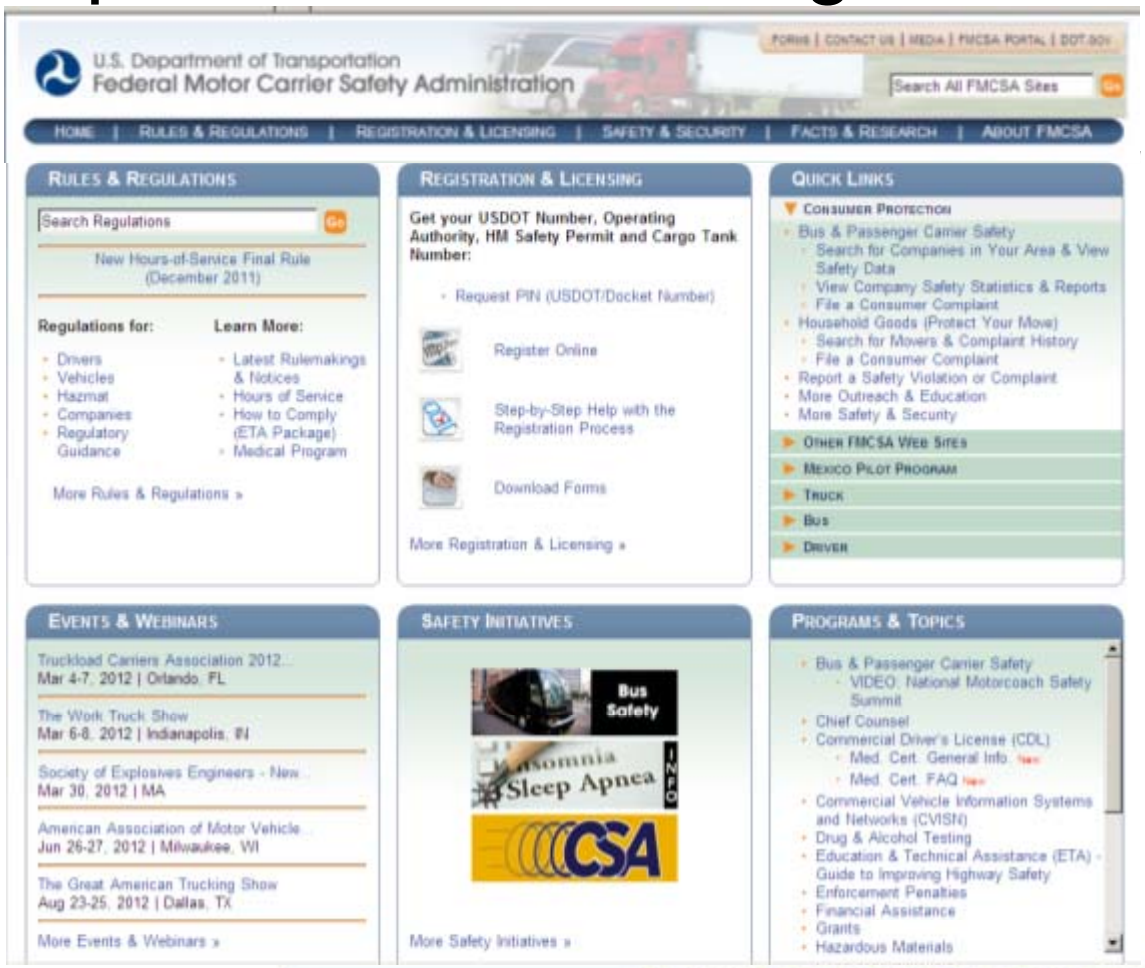
Outline

- Fleet
  - FMCSA/Exemptions
  - ANSI/ASSE Z.15
  - ISO 39001 – December 2012
- Vehicle
  - AMD
  - KKK
  - NFPA
  - ASTM
  - FMVSS
  - SAE
  - International - CEN/ASA

In the USA there are more safety standards for moving cattle than for moving patients

Federal Motor Carrier Safety Administration - FMCSA

- http://www.fmcsa.dot.gov/



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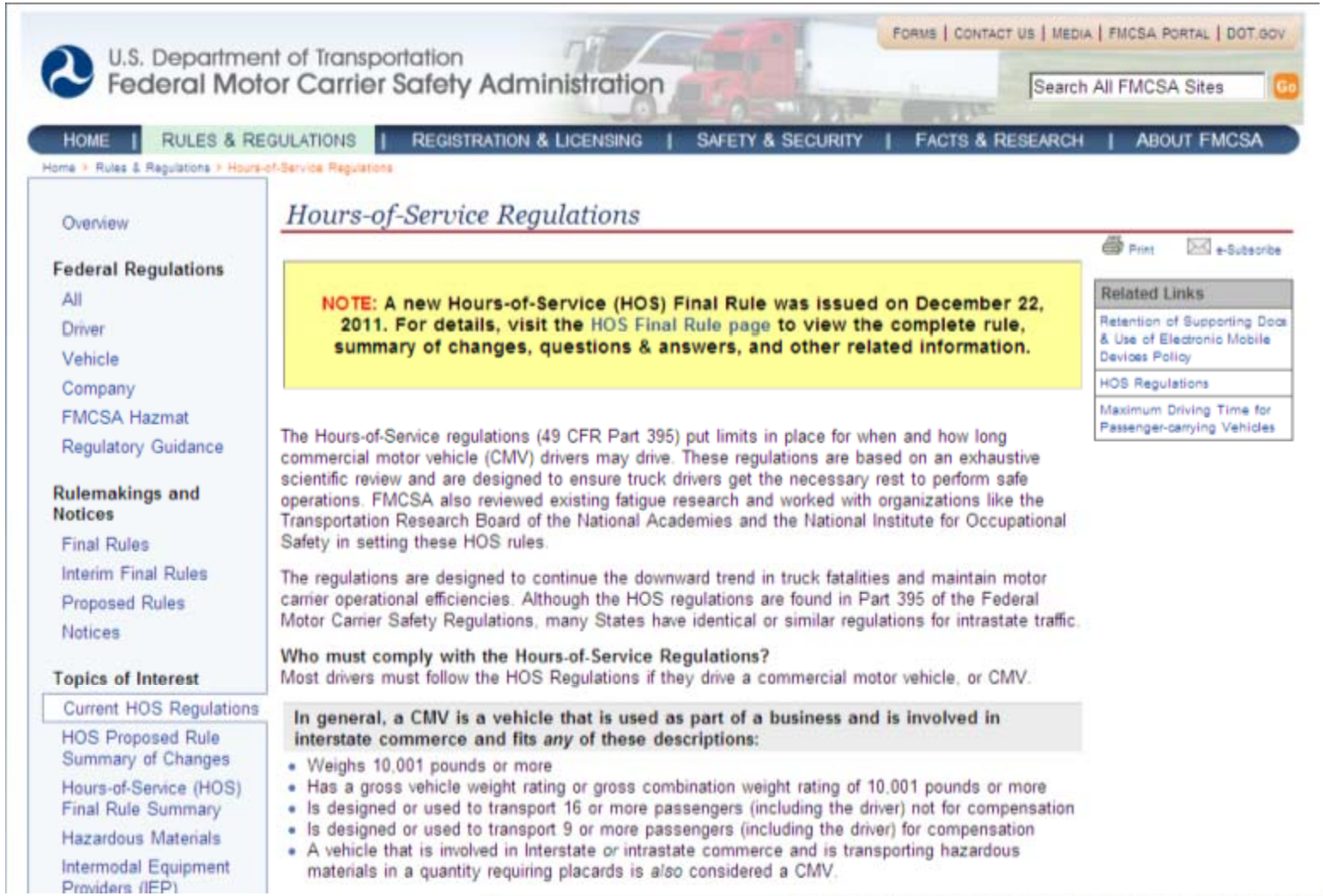
FMCSA - Exceptions

- Unless otherwise specifically provided, the rules do not apply to —
  - (f)(1) All school bus operations as defined in §390.5;
  - (f)(2) Transportation performed by the Federal government, a State, or any political subdivision of a State, or an agency established under a compact between States
  - (f)(3) The occasional transportation of personal property by individuals not for compensation nor in the furtherance of a commercial enterprise;
  - (f)(4) The transportation of human corpses or sick and injured persons;
  - (f)(5) The operation of fire trucks and rescue vehicles while involved in emergency and related operations;

Dec 2011, New FMCSA Hours of Service

http://www.fmcsa.dot.gov/rules-regulations/topics/hos/index.htm



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

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Home > Rules & Regulations > Hours-of-Service Regulations

Overview

Federal Regulations
All
Driver
Vehicle
Company
FMCSA Hazmat
Regulatory Guidance

Rulemakings and Notices
Final Rules
Interim Final Rules
Proposed Rules
Notices

Topics of Interest
Current HOS Regulations
HOS Proposed Rule Summary of Changes
Hours-of-Service (HOS) Final Rule Summary
Hazardous Materials
Intermodal Equipment Providers (IEP)

Hours-of-Service Regulations

Print e-Subscribe

NOTE: A new Hours-of-Service (HOS) Final Rule was issued on December 22, 2011. For details, visit the HOS Final Rule page to view the complete rule, summary of changes, questions & answers, and other related information.

Related Links
Retention of Supporting Docs & Use of Electronic Mobile Devices Policy
HOS Regulations
Maximum Driving Time for Passenger-carrying Vehicles

The Hours-of-Service regulations (49 CFR Part 395) put limits in place for when and how long commercial motor vehicle (CMV) drivers may drive. These regulations are based on an exhaustive scientific review and are designed to ensure truck drivers get the necessary rest to perform safe operations. FMCSA also reviewed existing fatigue research and worked with organizations like the Transportation Research Board of the National Academies and the National Institute for Occupational Safety in setting these HOS rules.

The regulations are designed to continue the downward trend in truck fatalities and maintain motor carrier operational efficiencies. Although the HOS regulations are found in Part 395 of the Federal Motor Carrier Safety Regulations, many States have identical or similar regulations for intrastate traffic.

Who must comply with the Hours-of-Service Regulations?
Most drivers must follow the HOS Regulations if they drive a commercial motor vehicle, or CMV.

In general, a CMV is a vehicle that is used as part of a business and is involved in interstate commerce and fits *any* of these descriptions:

- Weighs 10,001 pounds or more
- Has a gross vehicle weight rating or gross combination weight rating of 10,001 pounds or more
- Is designed or used to transport 16 or more passengers (including the driver) not for compensation
- Is designed or used to transport 9 or more passengers (including the driver) for compensation
- A vehicle that is involved in Interstate *or* intrastate commerce and is transporting hazardous materials in a quantity requiring placards is *also* considered a CMV.

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Providers (IEP)
New Entrant Safety Assurance
Medical Program
Medical Expert Panels
NAFTA Rules
Drug & Alcohol Testing

HOS Reference Materials

- Interstate Truck Driver's Guide to HOS
- Interstate Passenger Carrying Driver's Guide To Hours of Service
- Frequently Asked Questions
- Logbook Examples [PDF]
- HOS Final Rule [Federal Register Notice PDF]

Summary of the Hours-of-Service Regulations

The following table summarizes the HOS regulations for property-carrying and passenger-carrying CMV drivers.

HOURS-OF-SERVICE RULES	
Property-Carrying CMV Drivers	**Passenger-Carrying CMV Drivers**
11-Hour Driving Limit May drive a maximum of 11 hours after 10 consecutive hours off duty.	**10-Hour Driving Limit** May drive a maximum of 10 hours after 8 consecutive hours off duty.
14-Hour Limit May not drive beyond the 14th consecutive hour after coming on duty, following 10 consecutive hours off duty. Off-duty time does not extend the 14-hour period.	**15-Hour On-Duty Limit** May not drive after having been on duty for 15 hours, following 8 consecutive hours off duty. Off-duty time is not included in the 15-hour period.
60/70-Hour On-Duty Limit May not drive after 60/70 hours on duty in 7/8 consecutive days. A driver may restart a 7/8 consecutive day period after taking 34 or more consecutive hours off duty.	**60/70-Hour On-Duty Limit** May not drive after 60/70 hours on duty in 7/8 consecutive days.
Sleeper Berth Provision Drivers using the sleeper berth provision must take at least 8 consecutive hours in the sleeper berth, plus a separate 2 consecutive hours either in the sleeper berth, off duty, or any combination of the two.	**Sleeper Berth Provision** Drivers using a sleeper berth must take at least 8 hours in the sleeper berth, and may split the sleeper-berth time into two periods provided neither is less than 2 hours.

Federal Motor Carrier Safety Administration
1200 New Jersey Avenue SE, Washington, DC 20590 • 1-800-832-5660 • TTY: 1-800-877-8339 • Field Office Contacts

Nov 2011, Hand Held Cell Phone Ban

http://www.fmcsa.dot.gov/about/news/news-releases/2011/Secretary-LaHood-Announces-Step-towards-Safer-Highways.aspx

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

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IT Development Division

Other
Related Web Sites

News Release

Print

U.S. Department of Transportation
Office of Public Affairs
1200 New Jersey Ave., S.E.
Washington, DC 20590
www.dot.gov/briefing-room.html

Related Links
- Final Rule: Drivers of CMVs Restricting the Use of Cellular Phones
- Frequently Asked Questions (FAQ) - Ban on Hand Held Cellular Phones
- Current News Releases
- Archived News Releases (1996-2010)

FMCSA 35-11
Wednesday, November 23, 2011
Contact: Candice Tolliver Burns
Tel: 202-366-9999

U.S. Transportation Secretary LaHood Announces Final Rule That Bans Hand-Held Cell Phone Use by Drivers of Buses and Large Trucks

Today's Action is the Latest by the Department to End Distracted Driving

WASHINGTON - U.S. Transportation Secretary Ray LaHood today announced a final rule specifically prohibiting interstate truck and bus drivers from using hand-held cell phones while operating their vehicles. The joint rule from the Federal Motor Carrier Safety Administration (FMCSA) and the Pipeline and Hazardous Materials Safety Administration (PHMSA) is the latest action by the U.S. Department of Transportation to end distracted driving.

"When drivers of large trucks, buses and hazardous materials take their eyes off the road for even a few seconds, the outcome can be deadly," said Transportation Secretary Ray LaHood. "I hope that this rule will save lives by helping commercial drivers stay laser-focused on safety at all times while behind the wheel."

The final rule prohibits commercial drivers from using a hand-held mobile telephone while operating a commercial truck or bus. Drivers who violate the restriction will face federal civil penalties of up to $2,750 for each offense and disqualification from operating a commercial motor vehicle for multiple offenses. Additionally, states will suspend a driver's commercial driver's license (CDL) after two or more serious traffic violations. Commercial truck and bus companies that allow their drivers to use hand-held cell phones while driving will face a maximum penalty of $11,000. Approximately four million commercial drivers would be affected by this final rule.

A “Fleet” to many in Emergency Medical care means….

RESEARCH BOARD

New Standards Update

- Fleet Standards
  - ANSI/ASSE Z.15, an EMS version?
  - ISO 39001 – International Dec 2012
- Ambulance Vehicle Standards
  - NFPA – for June 2013
- Ambulance Equipment Mounting Standards
  - SAE – 2917, 2956

American National Standard ANSI/ASSE Z15.1-2006

Safe Practices for Fleet Motor Vehicle Operations

Z15 COMMITTEE
SAFE PRACTICES FOR MOTOR VEHICLE OPERATIONS
AN ANSI ACCREDITED STANDARDS COMMITTEE
1800 E. OAKTON STREET DES PLAINES, IL 60018
PHONE 847-699-2929
FAX 847-296-9221

May 15, 2005

Z15.1-200X Public Review and Comment Period

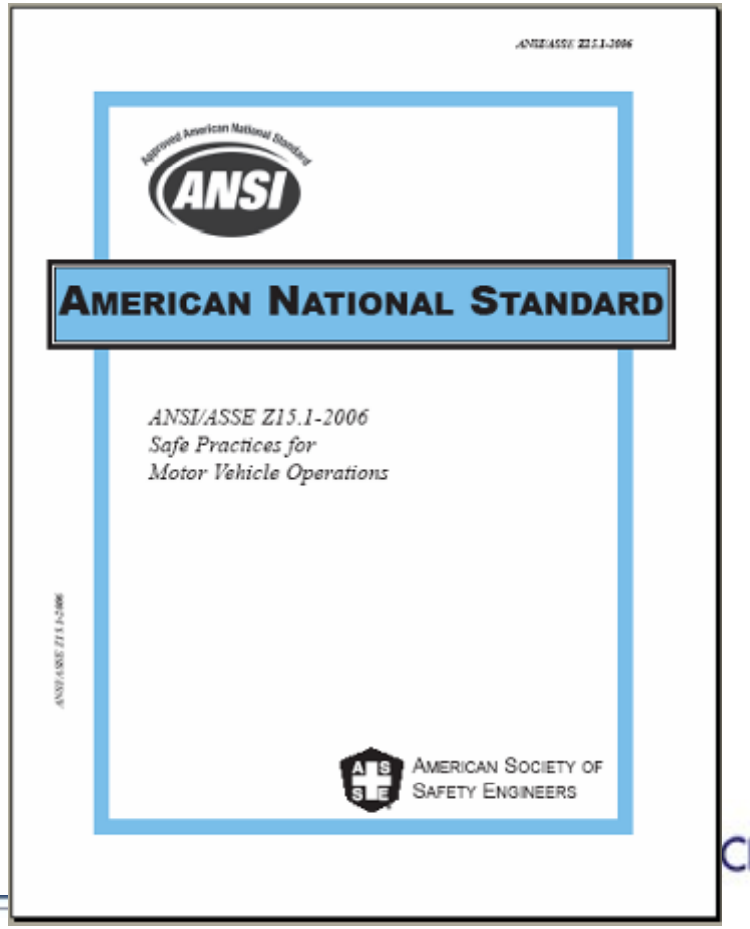
We know from data and member response that motor vehicle operations represent significant SH&E hazards and exposures. Interest in the proposed Z15.1-200X Standard has been literally almost overwhelming. We are pleased to announce that public review of this important proposed standard will run from May 15th to July 15th.

Technical comments must be submitted in writing within the attached format sheet, preferably electronically, by July 15, 2005, 5:00 p.m. CDT to the attention of Tim Fisher at TFisher@ASSE.Org or in hardcopy to ASSE, 1800 E. Oakton, Des Plaines, IL 60018.

Respectfully Yours,

Timothy R. Fisher, CSP, ARM, CPEA
Secretary, Z15 ASC

American Society of Safety Engineers, Secretariat – C. Daecher, Chairman



CH BOARD

What Z15 encompasses

- Safety Program
- Safety Policy
- Responsibilities and Accountabilities
- Driver Recruitment, Selection and Assessment
- Organizational Safety Rules
- Orientation and Training
- Reporting Rates and Major Incidents to Executives
- Oversight

ISO 39001

- Road traffic safety management systems standard

- Based on the **new common MSS template/framework**
- **Integrate** with the **organization´s management system**
- **Unique content**
- Is a **requirement standard - for certification**
- For all **organizations; public and private sector**

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ISO 39001 - Principles of RTS management systems

a) Focus on loss of life and health

b) Holistic view

c) Focus on results

d) Leadership

e) Process approach

f) Continual improvement

g) Best available information

h) Transparent and inclusive process

i) Tailored implementation

j) Systematic and structured

k) Part of decision making

NTSB 1979… and 30 years later and still the same problem

NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

ISSUED: May 17, 1979

The interior of the ambulance body was severely damaged. The flooring, oxygen bottles, litter, cabinets, and bench were either destroyed or ejected from the ambulance. Because the plywood flooring was not secured to the floor or chassis, everything attached to or resting on it came loose when the ambulance rolled over. All body structures were deformed downward and to the right.

A review of the Federal Motor Vehicle Safety Standards (FMVSS) revealed that there are no standards or specifications which assure that the total design and construction of ambulances as modified by the after-market installers are of sufficient structural strength and stability to withstand impact forces similar to requirements imposed on the original vehicle manufacturer. FMVSS 208, "Occupant Crash Protection in Passenger Cars, Multipurpose Passenger Vehicles, Trucks and Buses," applied to the 1974 Chevrolet Suburban Custom 10 Van as manufactured. However, this protection was not extended to the patient(s) or medical personnel occupying the body of the ambulance since it did not apply to the modifications made after the vehicle was sold by the manufacturer.

There are no performance requirements for the after-market modifications to vehicle structural integrity, crashworthiness, interior occupant protection, and the anchorage of items such as litters, benches, cabinets, oxygen bottles, or flooring. The only guidance concerning these safety

USA Ambulances: FMVSS Exempt

DEPARTMENT OF TRANSPORTATION
National Highway Traffic Safety Administration

49 CFR Parts 571, 572, and 589
[Docket No. 92-28; Notice 7]
[RIN No. 2127-AB85]

Federal Motor Vehicle Safety Standards;
Head Impact Protection

S6.1 Vehicles manufactured on or after September 1, 1998 and before September 1, 2002. Except as provided in S6.3, for vehicles manufactured on or after September 1, 1998 and before September 1, 2002, a percentage of the manufacturer's production, as specified in S6.1.1, S6.1.2, S6.1.3, or S6.1.4, shall, when tested under the conditions of S8, comply with the requirements specified in S7 at the target locations specified in S10 when impacted by the free motion headform specified in S8.9 at any speed up to and including 24 kilometers per hour. The requirements do not apply to any target that cannot be located using the procedures of S10. The phase-in schedule the manufacturer chooses to use during this period shall be reported to the National Highway Traffic Safety Administration pursuant to 49 CFR 589.6.

S6.2 Vehicles manufactured on or after September 1, 2002. Except as provided in S6.3, vehicles manufactured on or after September 1, 2002 shall, when tested under the conditions of S8, comply with the requirements specified in S7 at the target locations specified in S10 when impacted by the free motion headform specified in S8.9 at any speed up to and including 24 kilometers per hour. The requirements do not apply to any target that cannot be located using the procedures of S10.

S6.3 A vehicle need not meet the requirements of S6.1 through S6.2 for:

(a) Any target located on a convertible roof frame or a convertible roof linkage mechanism.

(b) Any target located rearward of a vertical plane 600 mm behind the seating reference point of the rearmost designated seating position.

(c) Any target located rearward of a vertical plane 600 mm behind the seating reference point of the driver's seating position in an ambulance or a motor home.

(d) Any target in a walk-in van-type vehicles.

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DOT NHTSA, FMVSS 49 CFR Parts 571, 572 & 589 Docket no. 92-28; notice 7

ASTM 2009

Standard Details

Print

ASTM F2020-02a (2009): Standard Practice for Design, Construction, and Procurement of Emergency Medical Services Systems (EMSS) Ambulances (2009)

Standard Title: Standard Practice for Design, Construction, and Procurement of Emergency Medical Services Systems (EMSS) Ambulances

Standard Number: ASTM F2020-02a (2009)

Edition: 2009

Effective Date: not provided

Description

1. Scope

ASTM Logo

1.1 This practice covers certified, tested, commercial type, EMSS ambulances built on chassis that are suitable for the intended application and meet the requirements herein. The ambulances are front or rear wheel driven (4x2) or four wheel driven (4x4) and warranted as specified in Section 9.

1.1.1 Definition of Ambulance—An ambulance is a vehicle for emergency medical care which provides: a driver's compartment; a patient compartment to accommodate an emergency medical technician (EMT)/paramedic and two litter patients (one patient located on the primary cot and a secondary patient on a folding litter located on the squad bench) so positioned that the primary patient can be given intensive life-support during transit; equipment and supplies for emergency care at the scene as well as during transport; two-way radio communication; and, when necessary, equipment for light rescue/extrication procedures. The ambulance shall be designed and constructed to afford safety, comfort, and avoid aggravation of the patient's injury or illness.

1.1.2 This practice may be used to procure an ambulance and the applicable additional systems and equipment.

1.1.3 Purchasers should follow the ordering data in 9.2 to aid them with the preparation of their procurement specification, requisition, and contract. The purpose of this practice is to describe minimum requirements for design, construction, performance, equipment, testing, and appearance of EMSS ambulances that are authorized to display the "Star of Life" symbol so as to provide a practical degree of standardization. The reasons for such standardization are to provide ambulances that are easily detected, nationally recognizable, properly constructed, easily maintained, and, when appropriately equipped, will enable Emergency Medical Technicians (EMTs) to safely and reliably perform their functions as basic and advanced prehospital life support providers as set forth in national EMSS standard training guidelines. These functions include:

NFPA 1917

National Fire Protection Association
The authority on fire, electrical, and building safety

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NFPA 1917: STANDARD FOR AUTOMOTIVE AMBULANCES

Current Edition: Proposed Standard Next Edition: 2013

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This is a Proposed Document
See Next edition tab for revision cycle information and the ROP draft.

Document scope
Read the document scope

FIND A CODE OR STANDARD

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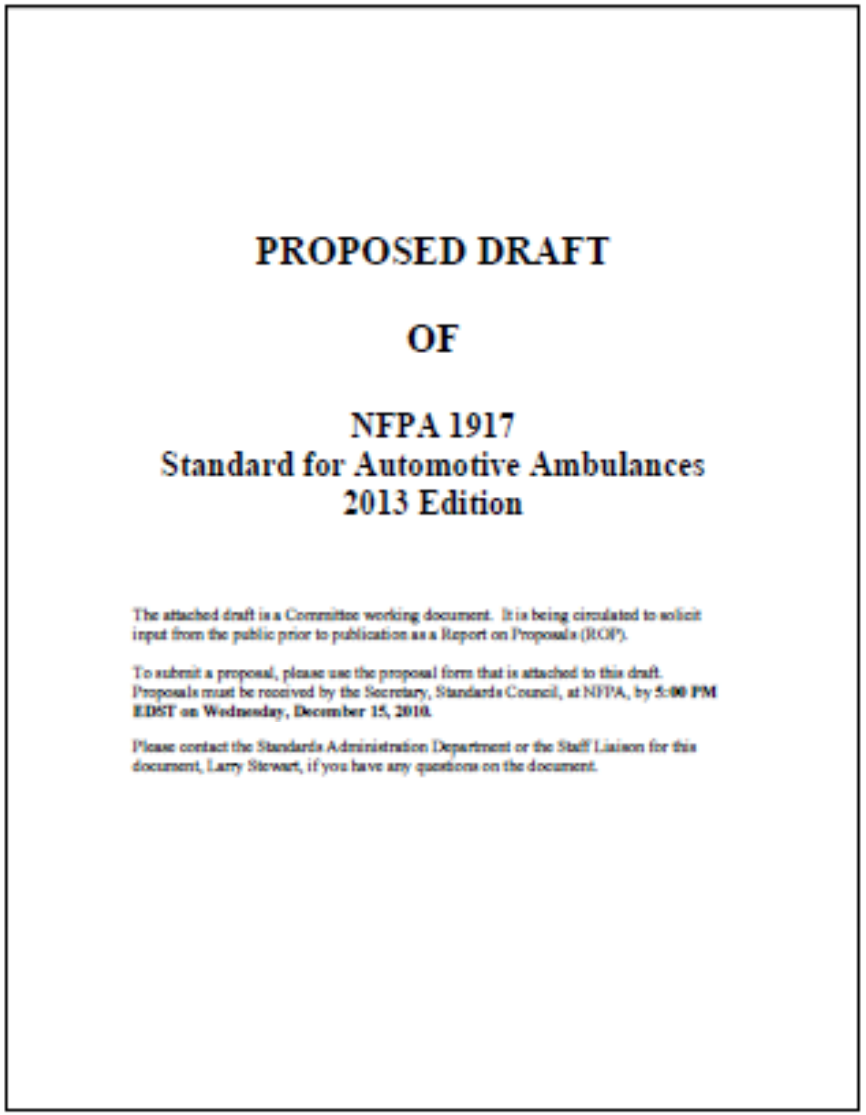
NFPA 1917

- Integrates KKK and AMD approaches
- Brings increased focus on operational safety
- Seat belt and speed monitoring
- Increased safety warning devices
- To be implemented in 2013

What will this mean to the EMS Industry?



PROPOSED DRAFT

OF

NFPA 1917
Standard for Automotive Ambulances
2013 Edition

The attached draft is a Committee working document. It is being circulated to solicit input from the public prior to publication as a Report on Proposals (ROP).

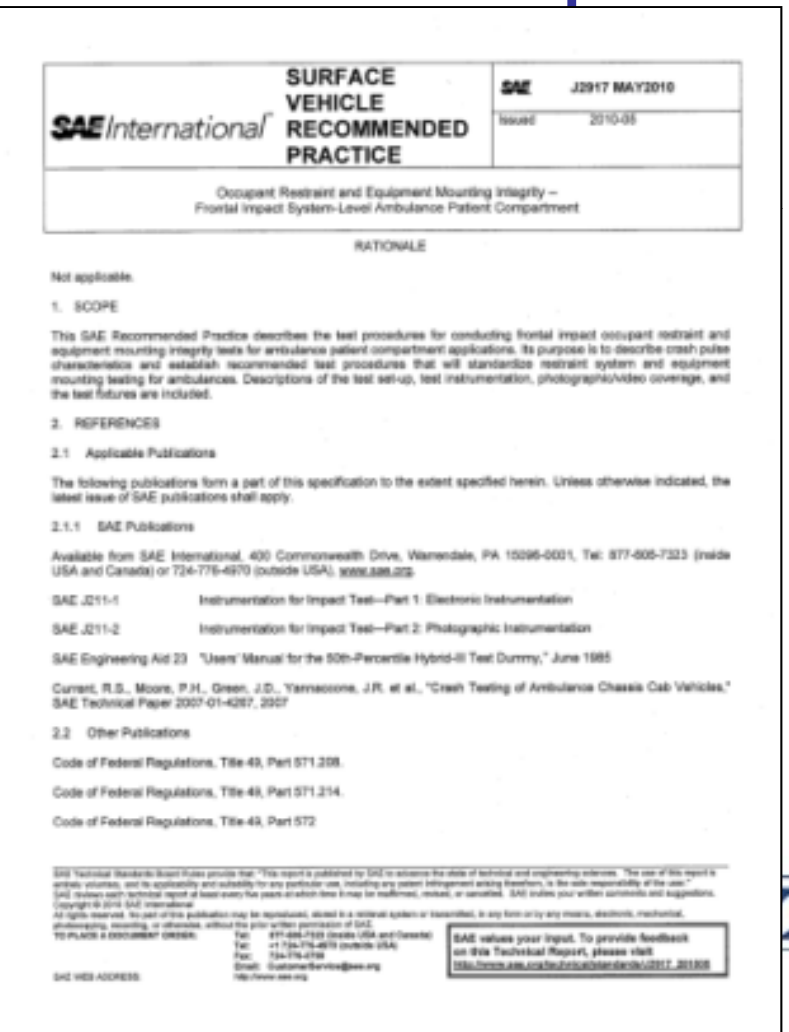
To submit a proposal, please use the proposal form that is attached to this draft. Proposals must be received by the Secretary, Standards Council, at NFPA, by **5:00 PM EDST on Wednesday, December 15, 2010.**

Please contact the Standards Administration Department or the Staff Liaison for this document, Larry Stewart, if you have any questions on the document.

SAE Ambulance Equipment mounting testing standards

Frontal Impact SAE 2917, published May 2010

Side Impact SAE 2956, published June 2011



SAE International

SURFACE VEHICLE RECOMMENDED PRACTICE

SAE J2917 MAY2010

Issued 2010-05

Occupant Restraint and Equipment Mounting Integrity – Frontal Impact System-Level Ambulance Patient Compartment

RATIONALE

Not applicable.

1. SCOPE

This SAE Recommended Practice describes the test procedures for conducting frontal impact occupant restraint and equipment mounting integrity tests for ambulance patient compartment applications. Its purpose is to describe crash pulse characteristics and establish recommended test procedures that will standardize restraint system and equipment mounting testing for ambulances. Descriptions of the test set-up, test instrumentation, photographic/video coverage, and the test fixtures are included.

2. REFERENCES

2.1 Applicable Publications

The following publications form a part of this specification to the extent specified herein. Unless otherwise indicated, the latest issue of SAE publications shall apply.

2.1.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or 724-776-4970 (outside USA), www.sae.org.

SAE J211-1 Instrumentation for Impact Test—Part 1: Electronic Instrumentation

SAE J211-2 Instrumentation for Impact Test—Part 2: Photographic Instrumentation

SAE Engineering Aid 23 "Users' Manual for the 50th-Percentile Hybrid-III Test Dummy," June 1985

Current, R.S., Moore, P.H., Green, J.D., Yannaccone, J.R. et al., "Crash Testing of Ambulance Chassis Cab Vehicles," SAE Technical Paper 2007-01-4267, 2007

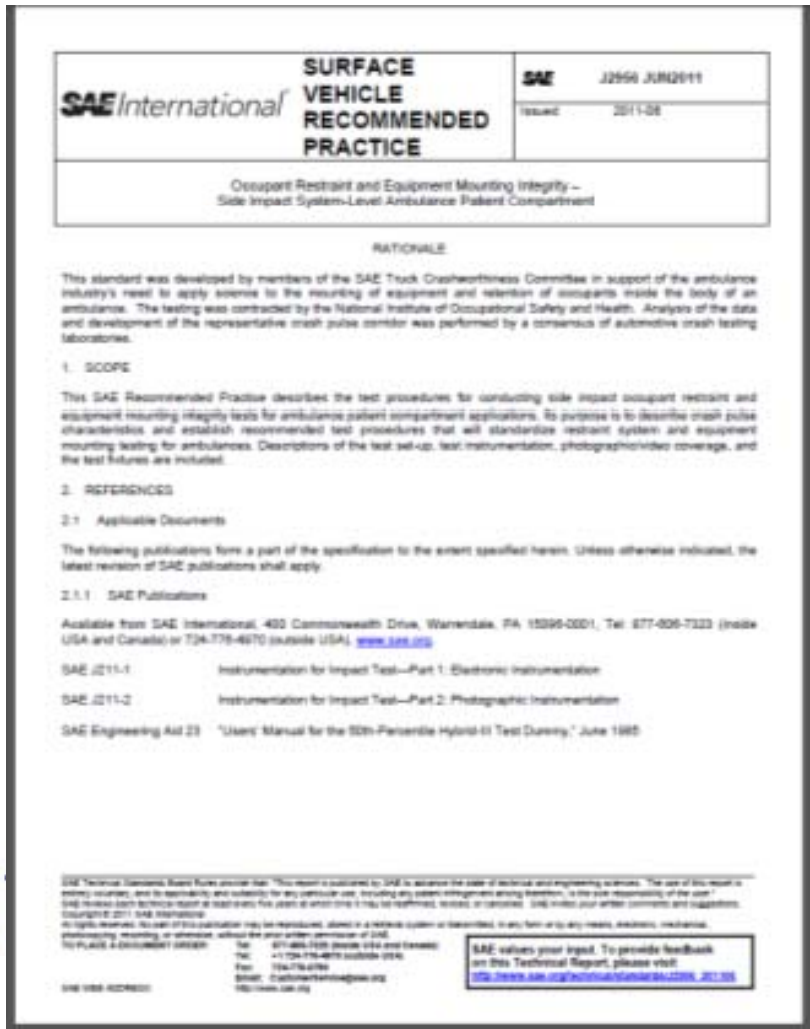
2.2 Other Publications

Code of Federal Regulations, Title 49, Part 571.208.

Code of Federal Regulations, Title 49, Part 571.214.

Code of Federal Regulations, Title 49, Part 572

TRB



SAE International

SURFACE VEHICLE RECOMMENDED PRACTICE

SAE J2956 JUN2011

Issued 2011-06

Occupant Restraint and Equipment Mounting Integrity – Side Impact System-Level Ambulance Patient Compartment

RATIONALE

This standard was developed by members of the SAE Truck Crashworthiness Committee in support of the ambulance industry's need to apply science to the mounting of equipment and retention of occupants inside the body of an ambulance. The testing was contracted by the National Institute of Occupational Safety and Health. Analysis of the data and development of the representative crash pulse corridor was performed by a consensus of automotive crash testing laboratories.

1. SCOPE

This SAE Recommended Practice describes the test procedures for conducting side impact occupant restraint and equipment mounting integrity tests for ambulance patient compartment applications. Its purpose is to describe crash pulse characteristics and establish recommended test procedures that will standardize restraint system and equipment mounting testing for ambulances. Descriptions of the test set-up, test instrumentation, photographic/video coverage, and the test fixtures are included.

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SAE Engineering Aid 23 "Users' Manual for the 50th-Percentile Hybrid-III Test Dummy," June 1985

Vehicle Safety Dynamic Testing Types

- Deceleration Sled Tests (not usually a full vehicle) – no intrusion
- Barrier impact tests – intrusion
- Full vehicle to vehicle tests – intrusion
- Computer predictive modeling - must be based on real world injury and vehicle crashworthiness data

International Ambulance Design Safety and Occupant Protection Standards

In existence since 1999

- Australia – ASA
- Europe - CEN

Australia & New Zealand Ambulance restraint standard AS/NZS 4535:1999

- "Restraint systems shall apply to all equipment and people carried in an ambulance…"
- Dynamic Testing - 50th & 95th percentile manikins
  - 24G in Forward and Rearward
  - 10G in Transverse

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Common European Community (CEN) EN 1789:1999/A1:2007

European Committee for Standardization

Medical vehicles and their equipment - Road Ambulances

- "Without exception, all persons, medical devices, equipment, and objects normally carried on the road ambulance shall be maintained to prevent them from becoming a projectile when subject to a force…"

- 50th percentile manikins - 10 G in Forward, Rearward, Transverse, & Vertical directions
- Certified by Notified Body and Ambulance Mfg.

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