National Association of State EMS Officials
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January 24, 2011

O. Kevin Vincent, Chief Counsel
National Highway Traffic Safety Administration
NCC-110
1200 New Jersey Ave. SE
Washington, D.C. 20590

Dear Mr. Vincent:

On behalf of the National Association of State Emergency Medical Services Officials (NASEMSO), I am writing to request your opinion on a matter that is of increasing concern to our members. NASEMSO is comprised of individuals from EMS offices in all the states and U.S. territories. Our members are engaged in ensuring the safety and effectiveness of EMS systems in their respective jurisdictions. Not only do we oversee the training and licensing of individual EMS practitioners, but the overwhelming majority of our members are also responsible for the licensing and oversight of the EMS agencies, including most of the ambulances on our nation's roadways.

The concern we would like to bring to your attention is related to the safety of EMS personnel and patients who are being transported in ambulances. We know that data indicate that the greatest safety risk for EMS personnel is ambulance crashes. EMS personnel in the United States have an estimated fatality rate of 12.7 per 100,000 workers, more than twice the national average. In fact, they have twice the fatality rate of police or firefighters and 74% of those are transportation related (Maguire, 2002). Our members, as well as the EMS community at large, have frequently heard at national and state seminars and read in EMS journals that most ambulances are exempt from the U.S.D.O.T. Federal Motor Vehicle Safety Standards (FMVSS), or that the patient compartment or "box" on the back of the ambulance is exempt from the FMVSS occupant protection standards.

The amount of scientific and technical articles making this claim are too numerous to reference herein, but a sampling includes the following: 1) *Crash Protection for Children in Ambulances*, MJ Bull, K Weber, J Talty, 2001; 2) *EMS, First Responders and Crash Injury*, C. Kahn, Emerg Med, Vol 28, No. 1, pp. 68-74, 2006; 3) *Ambulance Vehicle Crashworthiness and Passive Safety Design: A Comparative Evaluation*, NR Levick, R Grzebieta R, SAE International, 2008; and 4) *Safety First*, J Goodwin, Best Pract Emerg Serv, Vol. 13, No. 6, June 2010.

A review of the literature also indicates that as far back as 1979, following a fatal ambulance crash, the National Transportation Safety Board issued recommendations H-79-27 and 28 to NHTSA, noting that the patient compartment, which is added following the manufacture of the chassis, is not subject to the same occupant protection standards as the basic vehicle. The NTSB reasoned:

Federal standards should also include regulations on general body construction and ambulance body structure that insures the patients and medical technicians riding in the ambulance body have the safe protection as the driver. The completed ambulance should be capable of withstanding reasonable impact forces. The current FMVSS are applicable only to the basic vehicle before modification, rather than the completed after-market product.

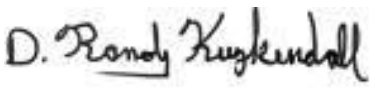
As a result of the assertions that occupant protection standards fall short of protecting the patient and workers riding in the back, some of our members and staff have examined the regulations trying to ascertain the veracity of these statements. It appears that that these claims, particularly in regard to occupant protection in the patient compartment, are accurate. However, we would like your interpretation. We have prepared the following questions in an attempt to provide answers to our members.

1) To what extent do the Federal Motor Vehicle Safety Standards (FMVSS) apply to ground ambulances?
2) More specifically, is the patient compartment of ground ambulances exempt from the occupant and/or side impact protections of the FMVSS?

While not meant to be an exhaustive review of the federal regulations, included with this letter are various excerpted sections of the FMVSS that would indicate that ambulances (or at least the patient compartments of ambulances) are exempt from occupant protection/side impact standards.

We look to you for further guidance on this important issue.

Sincerely,



Randy Kuykendall, President
National Association of State EMS Officials

C: Drew Dawson, NHTSA Office of EMS
Dia Gainor, Chair, NASEMSO Highway and Traffic Systems Committee
Chair, National EMS Advisory Committee

Sections of the FMVSS (Federal Motor Vehicle Safety Standards) that appear to exempt ambulances

(Note: Green font represents our comments/questions. Red font and underlining have been added to certain sections for emphasis.)

49 CFR § 571.201 Standard No. 201; Occupant protection in interior impact.

S1. *Purpose and scope.* This standard specifies requirements to afford impact protection for occupants.

S2. *Application.* This standard applies to passenger cars and to multipurpose passenger vehicles, trucks, and buses with a GVWR of 4,536 kilograms or less, except that the requirements of S6 do not apply to buses with a GVWR of more than 3,860 kilograms.

Note: 4536 kilograms is equal to 10000.17 pounds. Are there no standards for patient compartments in ambulances that exceed this weight? Many, if not most, ambulances made in the U.S. exceed this weight.

S3. *Definitions.* …

Ambulance means a motor vehicle designed exclusively for the purpose of emergency medical care, as evidenced by the presence of a passenger compartment to accommodate emergency medical personnel, one or more patients on litters or cots, and equipment and supplies for emergency care at a location or during transport.

…

S6 *Requirements for upper interior components.*

S6.1 *Vehicles manufactured on or after September 1, 1998.* Except as provided in S6.3 and S6.1.4, 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, or S6.1.3 shall conform, at the manufacturer's option, to either S6.1(a) or S6.1(b). For vehicles manufactured by final stage manufacturers on or after September 1, 1998 and before September 1, 2006, a percentage of the manufacturer's production as specified in S6.1.4 shall, except as provided in S6.3, conform, to either S6.1(a) or S6.1(b). The manufacturer shall select the option by the time it certifies the vehicle and may not thereafter select a different option for the vehicle.

…

S6.2 *Vehicles manufactured on or after September 1, 2002 and vehicles built in two or more stages manufactured after September 1, 2006.* Except as provided in S6.1.4 and S6.3, vehicles manufactured on or after September 1, 2002 shall, when tested under the conditions of S8, conform, at the manufacturer's option, to either S6.2(a) or S6.2(b). Vehicles manufactured by final stage manufacturers on or after September 1, 2006 shall, except as provided in S6.3, when tested under the conditions of S8, conform, at the manufacturer's option, to either S6.2(a) or S6.2(b). The manufacturer shall select the option by the time it certifies the vehicle and may not thereafter select a different option for the vehicle.

…

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. For altered vehicles and vehicles built in two or more stages, including ambulances and motor homes, any target located rearward of a vertical plane 300 mm behind the seating reference point of the driver's designated seating position (tests for altered vehicles and vehicles built in two or more stages do not include, within the time period for measuring HIC(d), any free motion headform contact with components rearward of this plane). If an altered vehicle or vehicle built in two or more stages is equipped with a transverse vertical partition positioned between the seating reference point of the driver's designated seating position and a vertical plane 300 mm behind the seating reference point of the driver's designated seating position, any target located rearward of the vertical partition is excluded.

(c) Any target in a vehicle manufactured in two or more stages that is delivered to a final stage manufacturer without an occupant compartment. Note: Motor homes, ambulances, and other vehicles manufactured using a chassis cab, a cut-away van, or any other incomplete vehicle delivered to a final stage manufacturer with a furnished front compartment are not excluded under this S6.3(c).

Does this last sentence mean that ambulances are not excluded under S6.3(c) because they are already excluded under S6.3(b)?

49 CFR § 571.214 Standard No. 214; Side impact protection.

Link to an amendment published at 75 FR 12139, Mar. 15, 2010.

S1 *Scope and purpose.*

(a) *Scope.* This standard specifies performance requirements for protection of occupants in side impacts.

(b) *Purpose.* The purpose of this standard is to reduce the risk of serious and fatal injury to occupants of passenger cars, multipurpose passenger vehicles, trucks and buses in side impacts by specifying strength requirements for side doors, limiting the forces, deflections and accelerations measured on anthropomorphic dummies in test crashes, and by other means.

S2 *Applicability.* This standard applies to passenger cars, and to multipurpose passenger vehicles, trucks and buses with a gross vehicle weight rating (GVWR) of 4,536 kilograms (kg) (10,000 pounds (lb)) or less, except for walk-in vans, or otherwise specified.

…

S5 *General exclusions.*

…

(b) *Exclusions from S7 (moving deformable barrier test).* The following vehicles are excluded from S7 (moving deformable barrier test):

(1) Motor homes, ambulances and other emergency rescue/medical vehicles (including vehicles with fire-fighting equipment), vehicles equipped with wheelchair lifts, and vehicles which have no doors or exclusively have doors that are designed to be easily attached or removed so the vehicle can be operated without doors.

...

(c) *Exclusions from S9 (vehicle-to-pole test).* The following vehicles are excluded from S9 (vehicle-to-pole test) (wholly or in limited part, as set forth below):

(1) Motor homes;

(2) Ambulances and other emergency rescue/medical vehicles (including vehicles with fire-fighting equipment) except police cars;

…