Meeting Agenda
Second Draft Meeting NFPA 1917, Standard for Automotive Ambulances
Technical Committee on Ambulances
August 26th and 27th, 2014
La Jolla, CA.

I. Welcome and call to order by Chairman Fischler

II. Introductions - members and guests

III. Review and approve previous meeting minutes

IV. NFPA Update- Ken Holland

V. Task Group Meetings- Times to be determined at meeting

VI. Full TC to meet to address public comments

VII. Task Group reports/recommendations on public comments

VIII. TC development of second revisions, if needed and applicable

IX. Other Business- New and Old

X. Date and location for next meeting

XI. Adjournment
MINUTES OF MEETING
TECHNICAL COMMITTEE on Automotive Ambulances
October 16th-18th, 2013, Indianapolis, In
December 17th, Orlando Fl.

October 16, 2013
Indianapolis, Indiana
8:00 AM

**October 2013 Indianapolis Meeting**
David Fischler- Chair
Ken Holland-NFPA Staff
Scott Braun-Secretary
Andrew Alger
Jay Bradshaw-Adobe Connect/phone
Wesley Chestnut
Charles Drake
Donald Frazeur
James Green
Brian Hicks
Thomas Hillenbrand
Paul Holzapfel
James Juneau
J. Roger Lackore
Don Lundy
Joseph Maruca
Erik McCoy
John McDonald-Phone/abode
John McLoughlin
Mark Meijer
Gary Morris
Steven Rabine
Kenneth Southard
Stephen Spata
William Tansey-Adobe Connect/phone
Ronald Thackery
William Walton
Stephen Wilde
Thomas Breyer-Alternate
Chard Brown-Alternate
Kevin Lyons-Alternate/Adobe Connect/phone
Steve Rowland-Alternate

**Guests**
Jerry Allen-Braun Northwest
Neocles Athanasiredeg-Fire Research Corp
Rashid Bharucha-ROM Corporation
Mike Franckowiaikc-Weldon-Akron Brass
David Cole-Horton Emergency Vehicles
Fred Schimmel-American Emergency Vehicles
Larry Pigg-Knox Company
Dia Gainor-NASEMSO

December 2013 Orlando Meeting
David Fischler-Chairman
Ken Holland-NFPA Staff
Scott Braun-Secretary
Jay Bradshaw
Charles Drake
Donald Frazeur
James Green-Phone/Adobe Connect
Thomas Hillenbrand
Paul Holzapfel
Joseph Maruca
Erik McCoy
Michael McEvoy-Phone/Adobe Connect
Gary Morris
Aarron Reinert
Kenneth Southard
Stephen Spata-Phone/Adobe Connect
Ronald Thackery-Phone/Adobe Connect
William Tricarico
William Walton
Stephen Wilde
Thomas Breyer-Alternate
Chad Brown-Alternate
Randy Hanson-Alternate
Kevin Lyons-Alternate/call in
Steve Rowland-Alternate
Dave Bryson for Drew Dawson

Guests
Fred Schimmel-AEV
Dia Gainor-NASEMSO
Allie Jacobs-BMT Designers and Planners/DHS
Allison Bernard-Feeney-NIST
Tina Lee-NIST
Mike Franckowiaic-Weldon-Akron Brass

The First Draft meeting on NFPA 1917 Standard for Automotive Ambulances was held at the Hilton Indianapolis Hotel and Suites in Indianapolis, Indiana on October 16 - 18,
2013. Present were Chairman David Fischler, Staff Liaison Ken Holland and members of the Technical Committee and Guests.

At 8:00 AM the meeting was called to order by Chairman Fischler followed by an introduction and roll-call of all Committee Members and Guests and those attending via teleconference.

Minutes of the prior meeting were approved as written. Motion made by Ron Thackery and seconded by Bill Walton.

Ken Holland, NFPA Staff Liaison, presented to the Technical Committee a general meeting and facilities overview, an NFPA process and proper conduct review presentation, as well as NFPA 1917 cycle timeline.

Members of the technical committee separated into subject area task groups to finalize subcommittee work for presentation to the technical committee.

At the conclusion of subject area task group work, members of the technical committee joined to review and discuss submitted public inputs, development of first revisions, task group suggested revisions, and sharing of input and recommendations for the 2016 edition of NFPA 1917 including focus on areas of vehicle safety, financial impact, crew and patient ergonomics, and legislative implementation.

With first revision development still underway at the end of the third day, Chairman Fischler requested a continuation of the First Draft meeting to be conducted at a later date.

Therefore, the committee adjourned October 18, 2013 at 3:35 PM.
A continuation of the First Draft meeting on NFPA 1917 Standard for Automotive Ambulances was held at the Embassy Suites Orlando Airport in Orlando, Florida on December 17, 2013. Present were Chairman David Fischler, Staff Liaison Ken Holland and members of the Technical Committee and Guests.

At 11:00 AM the meeting was called to order by Chairman Fischler followed by an introduction and roll-call of all Committee Members and Guests and those attending via teleconference.

Ken Holland, NFPA Staff Liaison, presented to the Technical Committee a brief review of the prior meetings last actions, an overview of remaining First Draft meeting work to be accomplished, and proper NFPA established meeting guidelines.

Members of the technical committee continued the review and conclusion of remaining first revision development in addition to reorganization of elements of the electrical section, testing, definitions, and annex items.

At the conclusion of the continuation meeting, Chairman Fischler voiced appreciation of the Technical Committee’s support, efforts, and cooperation in addressing the First Draft meeting. The committee addressed 476 public inputs and developed a total of 160 first revisions.

Staff Liaison Holland reviewed the upcoming committee balloting process and requirements of each committee member to finalize and submit their ballots when made available in February, 2014.

Therefore, the committee adjourned December 17, 2013 at 5:35 PM.

Respectfully submitted,

Scott Braun
Scott Braun
Committee Secretary
Where compartment volume is expressed as 4 ft³, the metric conversion in some sections (including 6.12.5 and 7.11.7.1) is incorrect. 4 ft³ is equivalent to 0.11 m³

Statement of Problem and Substantiation for Public Comment

Corrects a metric conversion error.

Related Item
Public Input No. 235-NFPA 1917-2013 [Section No. 6.12.5]

Submitter Information Verification

Submitter Full Name: Jerry Allen
Organization: Braun Northwest
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 16 14:22:27 EDT 2014
Public Comment No. 61-NFPA 1917-2014 [Global Input]

Recommend eliminating the need for Chapter 9 by using external reference to AMD Standards 001-026. These test methods, upon which Chapter 9 is based, have been updated and include improvements. External reference to the AMD tests would provide the benefits of utilizing proven and accepted industry test methodologies without the need to seek permission and an updated agreement to capture the improvements and addition to the test methods. Also, this would help harmonize the test methodologies to prevent redundant industry tests for the same ambulance systems which will ultimately increase costs to the end users with no added value.

Type your content here ...

Statement of Problem and Substantiation for Public Comment

Recommend eliminating the need for Chapter 9 by using external reference to AMD Standards 001-026. These test methods, upon which Chapter 9 is based, have been updated and include improvements. External reference to the AMD tests would provide the benefits of utilizing proven and accepted industry test methodologies without the need to seek permission and an updated agreement to capture the improvements and addition to the test methods. Also, this would help harmonize the test methodologies to prevent redundant industry tests for the same ambulance systems which will ultimately increase costs to the end users with no added value.

Related Item

Public Input No. 64-NFPA 1917-2013 [New Section after 2.3.7]

Submitter Information Verification

Submitter Full Name: Stephen Spata
Organization: National Truck Equipment Assoc
Affiliation: NTEA/AMD
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 16 16:19:48 EDT 2014
2.3.3 ASTM Publications.
ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West
ASTM D 4956, Standard Specification for Retroreflective Sheeting for Traffic
Control, 2013.
ASTM E 661, Standard Test Method for Performance of Wood and Wood-
Based Floor and Roof Sheathing Under Concentrated Static and Impact

Statement of Problem and Substantiation for Public Comment

Update year date on standards
Related Item
First Revision No. 1-NFPA 1917-2013 [Global Input]

Submitter Information Verification

Submitter Full Name: Steve Mawn
Organization: ASTM International
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Thu May 15 16:17:48 EDT 2014
Public Comment No. 36-NFPA 1917-2014 [New Section after 3.3.70.3]

Maximum Functional Reach
Maximum functional reach is ....

Additional Proposed Changes

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<th>Description Approved</th>
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<td>maximum_functional_reach_definition_05132014_Final.docx</td>
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</table>

Statement of Problem and Substantiation for Public Comment

The definition of “maximum functional reach” is used several times in the recommended requirements (e.g., Public Comments No. 22, No. 31, and No. 35) and this item will clarify what is meant by the term.

Related Item

Public Input No. 262-NFPA 1917-2013 [Section No. 4.9.2.3.2]

Submitter Information Verification

Submitter Full Name: Jennifer Marshall
Organization: NIST
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Tue May 13 18:31:43 EDT 2014
4.2.3
After acceptance of the ambulance, the purchaser shall be responsible for ongoing training of personnel to develop and maintain proficiency regarding the proper and safe use of the ambulance and the associated equipment.

Statement of Problem and Substantiation for Public Comment

Training is an operational issue that needs to be completed by the EMS agency. It is not a vehicle design standard. This section should be deleted or if the Committee insists on it being included - move it to the annex.

Related Item
Public Input No. 316-NFPA 1917-2013 [Section No. 4.2.3]

Submitter Information Verification

Submitter Full Name: Ronald Thackery
Organization: American Medical Response, Inc
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 16 13:18:46 EDT 2014
4.9.2.3.2  
Controls and switches that are expected to be operated by the belted emergency medical service provider (EMSP) while the ambulance is in motion shall be visible and within maximum functional reach of the EMSP, from a 5th percentile female through a 95th percentile male, while remaining seated and restrained in the designated primary patient care position.

Statement of Problem and Substantiation for Public Comment

For EMSPs to remain safely seated and restrained, it is essential for EMSPs to have an easy reach to the control panel area or a stored remote control that communicates with the patient compartment controls. By accommodating the functional reach to these tools by a shorter demographic with a smaller reach, EMSPs will have fewer difficulties in reaching and accessing the controls. This will enhance their safety by allowing them to stay restrained more often and will also increase working efficiency. Using maximum functional reach, as proposed and defined in 3.3, provides a measurable reference point.

Related Item
Public Input No. 262-NFPA 1917-2013 [Section No. 4.9.2.3.2]

Submitter Information Verification

Submitter Full Name: Jennifer Marshall  
Organization: NIST  
Street Address:  
City:  
State:  
Zip:  
Submittal Date: Tue May 13 16:45:39 EDT 2014
Where temperature requirements are not otherwise specified, the ambulance shall be designed to function in ambient temperature conditions between 0°F (-18°C) to 110°F (43°C).

Statement of Problem and Substantiation for Public Comment

The high end of the temperature range should be reduced to 90 degrees from 110 degrees. There is no need for this extra expense for any EMS agency that does not operate in these higher temperature extremes. For those agencies that operate in these higher temperature climates - additional testing can be requested and funded by those agencies as needed. Perhaps a comment indicating the need to test at these higher temperatures could be added to the annex.

Related Item
Public Input No. 77-NFPA 1917-2013 [Section No. 4.11.3]

Submitter Information Verification

Submitter Full Name: Ronald Thackery
Organization: American Medical Response, Inc
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 16 13:51:59 EDT 2014
Public Comment No. 12-NFPA 1917-2014 [New Section after 4.12.3]

Section 4.12.3
The maximum top speed of the ambulance shall not exceed the tire manufactures maximum service speed rating for the tires installed on the vehicle.

Statement of Problem and Substantiation for Public Comment

Exceeding the rated speed of a tire can cause excessive heat buildup that exceeds the limitations and performance of the tire. The heat buildup that exceeds the tires limitations can cause a loss of traction between the tire and the road service, resulting in an undesirable loss of control of the entire vehicle. It can also cause a catastrophic failure of the tire while the vehicle is in motion, also resulting in an undesirable loss of control of the vehicle.

Related Item
Public Input No. 301-NFPA 1917-2013 [Section No. 4.12.3]

Submitter Information Verification

Submitter Full Name: Erik McCoy
Organization:
Affiliation: International Association of Fire Fighters
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 09 16:14:40 EDT 2014
4.16.1 Ambulance Documentation.

The contractor shall deliver with the ambulance at least one copy of the following documents:

1. The manufacturer's record of ambulance construction details, including the following information:
   a. Owner's name and address
   b. Ambulance manufacturer, model, and serial number
   c. Chassis make, model, and vehicle identification number (VIN)
   d. GAWR of front and rear axles and GVWR
   e. Front tire size and total rated capacity in pounds (kilograms)
   f. Rear tire size and total rated capacity in pounds (kilograms)
   g. Type of fuel and fuel tank capacity
   h. Electrical system voltage and alternator output in amps
   i. Paint manufacturer and paint number(s)
   j. Company name and signature of responsible company representative
   k. Documents from a certified scale showing curb weight on the front axle and rear axle(s) (without personnel and equipment)

2. Certification of compliance of the optical warning system (see 7.9.16)

3. Siren manufacturer's certification of the siren (see 7.10.1.1)

4. Written load analysis and results of the electrical system performance tests (see Section 9.1 and Section 9.2)

5. Certification of slip resistance of all exterior stepping, standing, and walking surfaces (see Section 6.12)

Statement of Problem and Substantiation for Public Comment

With the utilization of AMD testing standards, Ambulance Manufacturers will need to represent that all necessary testing in accord with those standards has been completed successfully to a purchaser. The AMD standards listed in (l) prescribe testing to be done on each ambulance. The documentation should be included with the ambulance as a record of the performance of each ambulance in each area of required testing.

Related Item

Public Input No. 79-NFPA 1917-2013 [Section No. 4.16.1]
Submitter Full Name: Ronald Thackery
Organization: American Medical Response, Inc
Submittal Date: Fri May 16 14:01:08 EDT 2014
5.1.2 The manufacturer shall establish the required GVWR during the design of the ambulance using the method and values specified in Table 5.1.2. (Cot weights provided in Table 5.1.2 are estimates for initial calculation purposes, and are not to be interpreted as maximum allowable cot weights.)

Table 5.1.2 Required GVWR Calculation

<table>
<thead>
<tr>
<th>Component</th>
<th>Specification</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chassis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambulance body complete</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Automotive fluids</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Permanently mounted equipment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loose equipment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Use one of these values unless the required loose equipment is specified by the purchaser)</td>
<td>Type I</td>
<td>750</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Type I-AD</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Type II</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Type III</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Type III-AD</td>
</tr>
<tr>
<td>Belted occupant seating positions</td>
<td>(No. Seats) ×</td>
<td>171</td>
</tr>
<tr>
<td>Cot patient</td>
<td></td>
<td>171</td>
</tr>
<tr>
<td>Cot</td>
<td>Standard cot</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>Power cot</td>
<td>150</td>
</tr>
<tr>
<td>Spare capacity</td>
<td></td>
<td>200</td>
</tr>
<tr>
<td>Minimum GVWR required</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For SI units, 1 lb = 0.45 kg.

Statement of Problem and Substantiation for Public Comment

As materials of construction, design parameters and other factors affecting cot design continuously change, inserting this text would remove any misunderstanding that the table weights are a regulated "maximum" weight, rather than a preliminary design consideration.

Related Item
First Revision No. 134-NFPA 1917-2013 [Section No. 5.1.1]

Submitter Information Verification
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<tr>
<th><strong>Submitter Full Name:</strong></th>
<th>Steve Rowland</th>
</tr>
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<tbody>
<tr>
<td><strong>Organization:</strong></td>
<td>Ferno Washington, Inc.</td>
</tr>
<tr>
<td><strong>Street Address:</strong></td>
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<td><strong>City:</strong></td>
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<tr>
<td><strong>Submittal Date:</strong></td>
<td>Fri May 16 18:02:19 EDT 2014</td>
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Public Comment No. 38-NFPA 1917-2014 [Section No. 5.8.2]

5.8.2 *
A feature to increase available traction control feature shall be provided if available from the OEM. (I.E.: Limited-slip rear differential)

Statement of Problem and Substantiation for Public Comment

The term "traction control" refers to systems that limit the power being sent to the wheels by cutting engine output momentarily. This traction control system can be useful to reduce excessive wheelspin, but it does not increase available traction.

In order to provide optimal traction for the vehicle in situations of low friction (snow, heavy rain, dirt on the road-side, etc), the way to increase the traction is to equip the truck with a limited-slip rear differential which can power both rear wheels equally. Standard "open" rear differentials are often used on trucks but can only power one rear wheel which can leave an ambulance stranded in deep snow. 4x4 drive is another option but this raises the tailgate height so that is not normally used.

[Other terms or brand-specific names for a limited-slip differential (LSD) would be posi-trac, positraction (Chevy/GMC), Equa-Lock (Ford), Traction-Lok (Ford), auto-locking differential, etc.]

Related Item
Public Input No. 383-NFPA 1917-2013 [Section No. 5.8.2]

Submitter Information Verification

Submitter Full Name: Chris Mattessich
Organization: Impact Instrumentation Inc
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 14 16:24:22 EDT 2014
## Public Comment No. 45-NFPA 1917-2014 [Section No. 5.8.2]

| 5.8.2 * | A traction control feature shall be provided if available from the OEM. |

### Statement of Problem and Substantiation for Public Comment

All chassis used to build ambulances should have traction control. If it is not available from the manufacturer, the chassis should not be used. This is a proven safety feature and the change is not justified by the fact that some chassis are available without it.

**Related Item**

First Revision No. 113-NFPA 1917-2013 [Section No. 5.8.2]

### Submitter Information Verification

- **Submitter Full Name:** Dia Gainor  
- **Organization:** Nat'l Assn. of State EMS Offic  
- **Street Address:**  
- **City:**  
- **State:**  
- **Zip:**  
- **Submittal Date:** Fri May 16 14:08:57 EDT 2014
PUBLIC COMMENT NO. 23-NFPA 1917-2014 [ NEW SECTION AFTER 5.11.2.8.7 ]

TITLE OF NEW CONTENT
A safety grating step at the rear door opening shall be designed to pivot to permit EMSPs to move closer when loading and unloading a cot.

STATEMENT OF PROBLEM AND SUBSTANTIATION FOR PUBLIC COMMENT

One of the major causes of injuries among EMSPs is back strain due to heavy lifting such as when loading a patient onto the ambulance. To reduce potential lifting burden on EMSPs, the step should be designed to pivot and get out of the way to enable the cot to be moved close to the ambulance rear entrance. The requirement is according to Section 3.10.2, Rear Step Bumper, of the Canadian Ambulance Vehicle Code, January 2010.

RELATED ITEM
Public Input No. 140-NFPA 1917-2013 [New Section after 5.11.2.8.7]

SUBMITTER INFORMATION VERIFICATION

Submitter Full Name: Jennifer Marshall
Organization: NIST
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 13 16:57:09 EDT 2014
Public Comment No. 55-NFPA 1917-2014 [Section No. 6.1.3]

6.1.3
The compartment shall provide a minimum of 12 in. (300 mm) of clear aisle walkway on at least one side of the patient cot.

Statement of Problem and Substantiation for Public Comment

We acknowledge we previously submitted comments in favor of this change. After further deliberation, however, we realize that however improbable, this means a manufacturer could build an ambulance within which the litter would be flush with the wall on one side and have only 3 inches of clearance on the other. If/when ergonomic studies suggest a minimum appropriate width, then the change should be contemplated.

Related Item
First Revision No. 136-NFPA 1917-2013 [Section No. 6.1.2]

Submitter Information Verification

Submitter Full Name: Dia Gainor  
Organization: Nat'l Assn. of State EMS Offic 
Street Address:  
City:  
State:  
Zip:  
Submittal Date: Fri May 16 14:41:42 EDT 2014
6.4.3 Each exterior door of the vehicle shall be capable of being opened and closed during the full application of force and after release of force.

Statement of Problem and Substantiation for Public Comment

Add the word "exterior" to make this section consistent with 6.3.5.

Related Item

Public Input No. 219-NFPA 1917-2013 [New Section after 6.4.2]

Submitter Information Verification

Submitter Full Name: Jerry Allen
Organization: Braun Northwest
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 16 10:59:18 EDT 2014
Public Comment No. 25-NFPA 1917-2014 [Section No. 6.8.4]

6.8.4
All exterior access and interior access handrails shall be designed and mounted to reduce the possibility of hand slippage and to avoid snagging of equipment or clothing.

Statement of Problem and Substantiation for Public Comment

Slippery surfaces in the patient compartment can cause avoidable injuries to the EMSP. The patient compartment exterior and interior both need to be designed in a way such that potential slips, falls, and trips can be avoided. Handrails and handholds need to be slip-resistant as they are frequently accessed by EMSPs. Handrails and handholds are especially important to be slip-resistant since their primary function is to provide balance support for EMSPs.

Related Item
Public Input No. 180-NFPA 1917-2013 [Section No. 6.8.2]

Submitter Information Verification

Submitter Full Name: Jennifer Marshall
Organization: NIST
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Tue May 13 17:18:29 EDT 2014
Public Comment No. 26-NFPA 1917-2014 [New Section after 6.9.11]

TITLE OF NEW CONTENT
The doors shall have a failsafe latching mechanisms.

Statement of Problem and Substantiation for Public Comment

EMSPs need to be able to quickly exit the patient compartment in the event of an emergency or at the hospital, regardless of whether the door is locked or not. If the doors cannot be opened as quickly as desired, delays can occur for EMSPs to exit or for unloading of the patient. Such delays can lead to deterioration of the patient’s condition or increased injury risk for EMS providers. This requirement should ensure there is an alternative guaranteed method of exiting the ambulance.

Related Public Comments for This Document

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<tr>
<td>Public Input No. 149-NFPA 1917-2013 [New Section after 6.9.11]</td>
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Submitter Information Verification

Submitter Full Name: Jennifer Marshall
Organization: NIST
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Tue May 13 17:21:18 EDT 2014
TITLE OF NEW CONTENT
Secondary egress door shall not be blocked by patient compartment structures that would prevent the unloading of a patient.

Statement of Problem and Substantiation for Public Comment
A patient needs to be unloaded from the ambulance as soon as the ambulance reaches the hospital. In case the primary entrance cannot be used due to a mechanical problem, doors being blocked at the medical facility, or other reasons then the secondary exit has to be used. The requirement is that this secondary exit door shall allow for quick unloading of the patient on a patient transport device and the compartment configured such that nothing (e.g., cabinets, seating, workstations) prevents or delays maneuvering the patient out the door.

Related Item
Public Input No. 150-NFPA 1917-2013 [New Section after 6.9.11]

Submitter Information Verification
Submitter Full Name: Jennifer Marshall
Organization: NIST
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 13 17:35:44 EDT 2014
6.10.2
Each means of egress opening shall be a minimum of 30 in. (762 mm) by 46 in. (1168 mm).

Statement of Problem and Substantiation for Public Comment

There is insufficient justification for the 30" minimum width on the secondary means of egress. Increasing the minimum width to that degree has an adverse consequence for customers who want or need a full-size right stack on a short module where the side passage door width is constrained by the wheel well.

Related Item
Public Input No. 92-NFPA 1917-2013 [Section No. 6.10]

Submitter Information Verification

Submitter Full Name: Jerry Allen
Organization: Braun Northwest
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 16 16:46:32 EDT 2014
Public Comment No. 47-NFPA 1917-2014 [Section No. 6.11.4]

6.11.4
The contractor shall deliver with the ambulance a certification that all materials used for exterior surfaces designated as stepping, standing, and walking areas meet the requirements of Section 6.11.

Statement of Problem and Substantiation for Public Comment

This section continues to duplicate the requirements of section 4.17 and could easily cause confusion to an individual attempting to understand what certifications are required. It would be much simpler and easier to understand to require all certifications in one section of the Standard. To the extent the standard requires a feature (such as slip resistance) and stipulates that all exceptions must be documented, it logically follows that all requirements other than those documented as an exception are compliant.

Related Item
Public Input No. 93-NFPA 1917-2013 [Section No. 6.11.4]

Submitter Information Verification

Submitter Full Name: Ronald Thackery
Organization: American Medical Response, Inc
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 16 14:21:33 EDT 2014
### Public Comment No. 17-NFPA 1917-2014 [ New Section after 6.12 ]

#### 6.13 Fire safety of interior materials

6.13.1 FMVSS 302 is a US federal standard that specifies flammability requirements for materials used in the occupant compartments of motor vehicles. Its purpose is to reduce deaths and injuries to motor vehicle occupants caused by vehicle fires, especially those originating in the interior of the vehicle from sources such as matches or cigarettes.

6.13.2 Any portion of a single or composite material which is within 0.5 inches (13 mm) of the occupant compartment air space is required to meet one of the following requirements:

(a) the material shall not burn, nor transmit a flame front across its surface, at a rate of more than 4 inches (102 mm) per minute, or

(b) If the material stops burning before it has burned for 60 seconds from the start of timing, and has not burned more than 2 inches (51 mm) from the point where the timing was started, it shall be considered to meet the burn-rate requirement of 6.14.2 (a).

6.13.3* NFPA 556, Guide on Methods for Evaluating Fire Hazard to Occupants of Passenger Road Vehicles, has demonstrated that FMVSS 302 does not ensure passenger road vehicle fire safety.

A.6.13.3 FMVSS 302 is a mandatory test for the flammability of some of the materials contained within the passenger compartment of passenger road vehicles in the US. NFPA 556, Guide on Methods for Evaluating Fire Hazard to Occupants of Passenger Road Vehicles, discusses the usefulness (or lack of it) of compliance with FMVSS 302 to ensure fire safety of occupants of passenger road vehicles. Guide NFPA 556 also provides some guidance into improved flammability requirements for materials and products in various areas of passenger road vehicles. Also: add NFPA 556 into chapter 2 and the annex on referenced NFPA standards.

### Statement of Problem and Substantiation for Public Comment
It is clear that automotive interior surfaces (including the interior surfaces of automotive ambulances) are required to comply with FMVSS 302, which is a flame spread test that has been proven to be virtually useless. NFPA 556 has discussed this in detail and so have multiple publications, including the following: “Human Survivability in Motor Vehicle Fires”, K.H. Digges, R.G. Gann, S.J. Grayson, M.M. Hirschler, R.E. Lyon, D.A. Purser, J.G. Quintiere, R.R. Stephenson and A. Tewarson, Fire and Materials, 32, 249-258, 2008. The same conclusion was reached by NIST reports and reports from other research organizations (SwRI, SP in Sweden, and so on). I understand that the NFPA 1917 committee can't change the US law (as administered by NHTSA) but it has a duty to inform that the flammability requirements do not provide safety.

See the following links as examples of the research showing the lack of utility of FMVSS 302:
http://www.mvfri.org/Contracts/Final%20Reports/SWRI_toxicity.pdf

The language provided will give guidance to the user of NFPA 1917.

Note also that FMVSS 302 measures flame spread and not fire resistance.

Related Public Comments for This Document

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Related Item

Public Input No. 307-NFPA 1917-2013 [New Section after 6.13]

Submitter Information Verification

Submitter Full Name: Marcelo Hirschler  
Organization: GBH International  
Street Address:  
City:  
State:  
Zip:  
Submittal Date: Sun May 11 17:33:43 EDT 2014
6.14 Floor Covering.

6.14.1 Floor covering shall be nonpermeable and seamless.

6.14.2 The floor covering shall cover the entire length and width of the compartment's exposed floor.

6.14.3 Joints where the floor covering meets the sidewalls shall be sealed and bordered with corrosion-resistant cove molding, or the floor covering shall extend at least 3 in. (76 mm) up the sidewalls.

6.14.4 All floor covering materials shall comply with a critical radiant flux of not less than Class II (0.22 Watts/cm²) when tested in accordance with NFPA 253 (Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source). Also: add NFPA 253 to Chapter 2 on referenced standards.

Statement of Problem and Substantiation for Public Comment

Floor coverings do not need to meet the requirements of FMVSS 302 as they are added after the fact. Interior floor finish must meet FMVSS 302. Note also the information, in public comment 17, about the lack of utility of FMVSS 302 in providing fire safety.

Related Public Comments for This Document

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Submitter Information Verification

Submitter Full Name: Marcelo Hirschler
Organization: GBH International
Street Address:
City:
State:
Zip:
Submittal Date: Sun May 11 17:43:58 EDT 2014
6.15 Insulation.

6.15.1 Where the patient compartment is insulated, it shall be insulated with a nonsettling type, verminproof, mildewproof, nontoxic, and nonhygroscopic material that meets the requirements of FMVSS 302.

6.15.2 Insulation shall be separated from the patient compartment by interior surfaces complying with 6.17.

6.15.3 If fiberglass insulation is used, it shall be protected from exposure to water.

6.15.4 If foam plastic insulation is used it shall be separated from the interior of the patient compartment by a thermal barrier meeting the requirements of NFPA 275 (Standard Method of Fire Tests for the Evaluation of Thermal Barriers).

6.15.5 Insulation shall comply with a flame spread index not exceeding 200 when tested in accordance with ASTM E84 or UL 723. The smoke development shall not be limited.

Also: add the following standards into chapter 2:

- NFPA 275 (Standard Method of Fire Tests for the Evaluation of Thermal Barriers)
- ASTM E84 (Standard Test Method for Surface Burning Characteristics of Building Materials; 2013a)
- UL 723 (Standard for Test for Surface Burning Characteristics of Building Materials)

Statement of Problem and Substantiation for Public Comment

Insulation is not exposed to the interior surface of the compartment and is, thus, not tested via FMVSS 302. The requirements for FMVSS 302 covers only the materials exposed to the interior atmosphere of the compartment. Note also the comments made with the public input (PI 284) and with other public comments.

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Submitter Information Verification
6.16.7
Interior storage cabinets, shelves, and drawers, designed for storing common and critical equipment or supplies shall be within a maximum functional reach of 26 in. (678 mm) to the EMSPs with height as short as 59.3 inches (1506 mm) while seated and restrained. 

Statement of Problem and Substantiation for Public Comment

This requirement does not take into account that mounting the storage cabinets, shelves and drawers might encroach into areas that should be clear for EMSPs that are taller than 59.3 inches (1506mm). This standard does not define how to measure the reach of the EMSPs. Until it can be determined what impact mounting these items has on the encroachment areas for EMSPs that are or exceed 59.3 inches (1506mm) and it is defined how to measure the reach, I feel this should be removed from the standard.

Related Item
First Revision No. 188-NFPA 1917-2013 [New Section after 6.16.6]

Submitter Information Verification

Submitter Full Name: Erik McCoy
Organization: 
Affiliation: International Association of Fire Fighters
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Fri May 09 16:22:59 EDT 2014
Public Comment No. 30-NFPA 1917-2014 [New Section after 6.16.9]

TITLE OF NEW CONTENT

The contents and securing mechanism of all storage areas shall be within functional reach of EMSPs, from a 5th percentile female through a 95th percentile male, while standing and vehicle is not in motion.

Statement of Problem and Substantiation for Public Comment

The equipment, medicine, devices, and supplies stored in the patient compartment cabinets, shelves, or drawers are hard to reach for many EMSPs. By accommodating the functional reach of these items to a shorter demographic with a smaller reach, EMSPs will have fewer difficulties in reaching and retrieving what they need in a stationary ambulance. This will increase working efficiency.

Related Item

Public Input No. 71-NFPA 1917-2013 [New Section after 6.16.6]

Submitter Information Verification

Submitter Full Name: Jennifer Marshall
Organization: NIST
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 13 17:38:51 EDT 2014
6.17 Interior Surfaces.
6.17.1 The interior of the body shall be free of all sharp projections and sharp corners.
6.17.2 The finish of the entire patient compartment and exterior storage, including interiors of storage cabinets, shall be as follows:
   (1) Impervious to soap, water, body fluids, and disinfectants
   (2) Mildew resistant
   (3) Fire resistant in compliance with 49 CFR 571, FMVSS No. 302
   (4) Able to be cleaned and disinfected
6.17.3 Countertop horizontal surface shall be seamless and impervious to contaminants.
6.17.4 All edges that meet vertical cabinets shall be sealed.
6.17.5 Countertop horizontal surfaces shall be surrounded by a lip of not less than \(\frac{1}{2}\) in. (12 mm) in height.
6.17.6 Interior surface materials shall meet the flammability requirements of FMVSS 302 as well as one of the following:
   (a) They shall exhibit a flame spread index not exceeding 200 when tested in accordance with ASTM E84 or ANSI/UL 723. The smoke developed index shall not be limited.
   (b) They shall exhibit a radiant panel index not exceeding 200 when tested in accordance with ASTM E 162, Standard Test Method for Surface Flammability of Materials Using a Radiant Heat Energy Source.

Flammability of Materials Using a Radiant Heat Energy Source.

Also: add ASTM E84, UL 723 and ASTM E162 to chapter 2 on referenced standards.
Interior surfaces need to meet FMVSS 302 by law. However, they also need to be fire safe. Surfaces that comply with ASTM E84 Class C (Flame spread index not exceeding 200) provide a minimum level of safety. See also comments regarding FMVSS 302, which is not a fire resistance test.

**Related Public Comments for This Document**

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**Related Item**

| Public Input No. 285-NFPA 1917-2013 [Section No. 6.17] |               |

**Submitter Information Verification**

- **Submitter Full Name:** Marcelo Hirschler
- **Organization:** GBH International
- **Street Address:**
- **City:**
- **State:**
- **Zip:**
- **Submittal Date:** Sun May 11 17:59:53 EDT 2014
6.17 Interior Surfaces.

6.17.1 The interior of the body shall be free of all sharp projections and sharp corners.

6.17.2 The finish of the entire patient compartment and exterior storage, including interiors of storage cabinets, shall be as follows:

(1) Impervious to soap, water, body fluids, and disinfectants
(2) Mildew resistant
(3) Fire resistant in compliance with 49 CFR 571, FMVSS No. 302
(4) Able to be cleaned and disinfected

6.17.3 Countertop horizontal surface shall be seamless and impervious to contaminants.

6.17.4 All edges that meet vertical cabinets shall be sealed.

6.17.5 Countertop horizontal surfaces shall be surrounded by a lip of not less than 1/2 in. (12 mm) in height.

6.17.6 All hangers or supports for equipment and devices shall be mounted as flush as possible with the surrounding surface.

Statement of Problem and Substantiation for Public Comment

Rewording is superior to deletion. Deletion results in the ability to install hangars or supports of any dimension, creating risk of injury or impalement.

Related Item
First Revision No. 43-NFPA 1917-2013 [Section No. 6.17.2]

Submitter Information Verification

Submitter Full Name: Dia Gainor
Organization: Nat'l Assn. of State EMS Offic
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 16 14:47:37 EDT 2014
6.18.3 (proposed) Standardized Medical Equipment Wall-Mounting Provision

An area to attach medical equipment items shall be provided that complies with SAE J3043. This area shall be within the reach of the seated care provider, be within easy reach of the patient cot (in accordance with section 6.16.7), and be capable of mounting medical equipment, that in combination, weighs at least 30 pounds. This area shall be made from solid reinforced wall that has the ability for equipment mounts or equipment rails to be securely attached.

Statement of Problem and Substantiation for Public Comment

In the SAE, NFPA, and KKK-A-1822 documents, there are very clear guidelines that outline the acceptable methods to connect a patient cot to the ambulance floor [NFPA 6.22.1]. These guidelines also require that the ambulance manufacturer builds the floor with enough integrity to properly hold the cot during use and during a crash.

There are also guidelines that govern the storage cabinets for equipment [NFPA 6.16.6-6.16.7, 6.18.1-6.18.2] and requirements for standard items such as fire extinguishers. These guidelines ensure these areas will be safe during use and will not fail during a crash as they come from the manufacturer or FSAM.

There is a guideline that equipment weighing 3+ pounds must be mounted safely in the orientation it will be used in a bracket strong enough to withstand a crash [NFPA 6.18.2]. However, there is no guideline that requires the ambulance manufacturer to provide an area inside the ambulance that is within the caregiver’s reach, and can provide the strength to meet SAE J2917 / J2956 / J3043 Ambulance Equipment Mounting Integrity crash standards. The ambulance manufacturer is required to provide an area of sufficient strength for the cot to attach to prevent it from becoming a projectile. The same concept applies to equipment mounting.

Related Item

Public Input No. 340-NFPA 1917-2013 [Section No. 6.18.2]

Submitter Information Verification

Submitter Full Name: Chris Mattessich
Organization: Impact Instrumentation Inc
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 14 11:04:59 EDT 2014
TITLE OF NEW CONTENT

Container for contaminated sharps shall be within a maximum functional reach of EMSPs, from a 5th percentile female through a 95th percentile male, while remaining seated and restrained.

Statement of Problem and Substantiation for Public Comment

The waste and sharps disposals in the patient compartment are frequently accessed by EMS providers in order to throw away unnecessary byproducts and keep a hygienic patient compartment. By accommodating the reachability of the disposal containers to a shorter demographic with a smaller reach, EMS providers will have fewer difficulties in reaching them and throwing out their waste. This will enhance their safety by allowing them to stay restrained and will also increase working efficiency, as well as helping them maintain a clean working environment. Using maximum functional reach, as proposed and defined in 3.3, provides a measureable reference point.

Related Item

Public Input No. 201-NFPA 1917-2013 [New Section after 6.19]

Submitter Information Verification

Submitter Full Name: Jennifer Marshall
Organization: NIST
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Tue May 13 17:46:44 EDT 2014
Public Comment No. 4-NFPA 1917-2014 [Section No. 6.21.3.2]

6.21.3.2
If the occupant crash protection system must include a seat belt system, the seat belt shall comply with 6.21.3.3.1 and 6.21.3.3.2.

Statement of Problem and Substantiation for Public Comment

Alternative occupant protection strategies should be considered supplemental in nature only. The word "if" in the first draft language suggests to OEMs and end users that seat belts can be replaced entirely by alternative occupant protection strategies. This language is misleading.

Ambulances over 10,000 lbs. GVWR are subject to FMVSS 208 section 4.3.2 which requires the vehicle manufacturer to equip the vehicle with one of the following:

Option 1: A "Complete Passenger Protection System" compliant with FMVSS 208 Section 5. Demonstration of compliance with FMVSS 208 S5 includes: belted and unbelted frontal barrier crash tests, side impact tests and rollover tests.

Option 2: A Type I or Type II seat belt must be installed in all designated seating positions and must be compliant with the requirements of FMVSS 209 and Section 7.2 of FMVSS 208.

No ambulance manufacturer is currently able to demonstrate compliance with FMVSS 208 S5 in the patient compartment nor are they likely to do so in the future. As such, a type I or type II seat belt in each designated seating position is required by the FMVSS regulations (option 2 above).

Related Item
First Revision No. 52-NFPA 1917-2013 [Section No. 6.21.3]

Submitter Information Verification

Submitter Full Name: SCOTT STRANKO
Organization: IMMI
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Wed Apr 09 16:02:02 EDT 2014
Effective seat belt web length for a single retractor Type 2 seat belt shall be measured according to the following procedure:

1. Locate an imaginary line where the plane of the center of the seat back surface intersects the plane of the center of the seat cushion surface (see line 1 in Figure 6.21.3.3.1).
2. Locate an imaginary line parallel with line 1 and lying on the center of the seat back surface 29 in. (740 mm) from line 1 (see line 2 in Figure 6.21.3.3.1).
3. Locate point A on line 1 at the outside of the seat on the retractor side of the seat.
4. Locate point B on line 2 at the shoulder strap edge of the seat back.
5. Locate point C on line 1 at the outside of the seat on the receiver side of the seat.
6. Locate point D at the tip of the receiver.
7. Pull the seat belt webbing entirely out of the retractor and measure along the webbing between points A and B.
8. Record this length as AB.
9. Measure from point C to point D and record this length as CD.
10. Add AB and 2 × CD for the effective seat belt web length.

Statement of Problem and Substantiation for Public Comment

The proposed change to section 6.21.3.3.2 requires new sections to distinguish between the measurement methods for single and dual retractor seat belts. This new section aims to define the measurement method for a single retractor Type 2 seat belt.

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6.21.3.3.2 Effective seat belt web length for a dual retractor Type 2 seat belt shall be measured according to the following procedure:

1. Locate an imaginary line where the plane of the center of the seat back surface intersects the plane of the center of the seat cushion surface (see line 1 in Figure 6.21.3.3.1).
2. Locate point A on line 1 at the outside of the seat on the retractor side of the seat.
3. Locate point C on line 1 at the outside of the seat on the buckle side of the seat.
4. Locate point D at the tip of the buckle.
5. Pull the lap belt webbing entirely out of the lap belt retractor and measure along the webbing between point A and the seat belt latch plate (tongue). Record this length as AD.
6. Locate an imaginary line parallel with line 1 and lying on the center of the seat back surface 29 in (740 mm) from line 1 (line 2 in Figure 6.21.3.3.1).
7. Locate point B on line 2 at the shoulder strap edge of the seat back.
8. Pull the shoulder belt webbing entirely out of the shoulder belt retractor and measure along the webbing between point B and the seat belt latch plate (tongue). Record this length as BD.
9. Measure from point C to point D and record this length as CD.
10. The effective lap belt web length equals AD CD.
11. The effective shoulder belt web length equals BD CD.

Statement of Problem and Substantiation for Public Comment

The proposed change to section 6.21.3.3.2 requires new sections for distinguishing between the measurement methods for single and dual retractor seat belts. This proposal aims to define the measurement procedure for a dual retractor Type 2 seat belt.

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Submitter Information Verification
Public Comment No. 8-NFPA 1917-2014 [New Section after 6.21.3.3.2]

6.21.3.3.2.3
In the case of a Type 2 seat belt, the distance from the buckle anchorage (point E in Figure 6.21.3.3.2.3) to the buckle tip (point D in Figure 6.21.3.3.2.3) shall be no more than 2 in. (51 mm) longer than the perpendicular distance from the buckle anchorage to a lateral axis through the H-Point of the seat (line 3 in Figure 6.21.3.3.2.3) when the seat is adjusted to its lowest and most rearward position. If the H-Point of the seat is unknown, it can be estimated by the method outlined in annex A6.21.3.3.

Additional Proposed Changes

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Statement of Problem and Substantiation for Public Comment

Justification: Buckles of extreme length can compromise the position and fit of a type II seat belt and make it less effective in the event of a crash. Proposed language aims to limit buckle length in accordance with SAE recommended practice J1834. SAE J1834 states: “As a guide, the latch plate entry should be no higher than the H-Point of the seat.” SAE J1834 also states: “Specialty vehicles intended to be operated by personnel wearing heavy clothing (i.e. fire fighters, hazmat crews, etc…) should provide belt length sufficient to accommodate the extra bulk of the heavy clothing and protective gear”. This proposal is a buckle length specification which strikes the necessary balance between ease of access and restraint effectiveness.

Similar proposals have been made for the second drafts of NFPA 1901 and NFPA 1906 (2016 Editions). This proposal also aims to maintain consistency across all applicable NFPA standards.

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Public Comment No. 5-NFPA 1917-2014 [ Section No. 6.21.3.3.2 ]

6.21.3.3.2
The effective A Type 2 seat belt web length for a shall have either a single retractor or dual retractors. A single retractor A Type 2 pelvic and upper torso restraint-style seat belt assembly shall have a minimum effective seat belt web length of 110 in. (2800 mm) with the seat adjusted all the way back and down and when measured using the following procedure: Locate an imaginary line where the plane of the center of the seat back surface intersects the plane of the center of the seat cushion surface (see line 1 in Figure in accordance with 6.21.3.3.2.1).

• Locate an imaginary line parallel with line 1 and lying on the center of the seat back surface 29 in. (740 mm) from line 1 (see line 2 in Figure 6.21.3.3.1 -).

• Locate point A on line 1 at the outside of the seat on the retractor side of the seat.

• Locate point B on line 2 at the shoulder strap edge of the seat back.

• Locate point C on line 1 at the outside of the seat on the receiver side of the seat.

• Locate point D at the tip of the receiver.

• Pull the seat belt webbing entirely out of the retractor and measure along the webbing between points A and B.

• Record this length as AB.

• Measure from point C to point D and record this length as CD.

Add AB and 2 × CD for the effective seat belt web length. A dual retractor Type 2 pelvic and upper torso restraint-style seat belt assembly shall have a minimum effective shoulder belt web length of 50 in. (1270 mm) and a minimum effective lap belt web length of 60 in. (1530 mm) with the seat all the way back and down and as measured in 6.21.3.3.2.2.

Statement of Problem and Substantiation for Public Comment

Dual retractor seat belts are becoming increasingly common in emergency vehicles. The current language does not offer a means for specifying or measuring the minimum lap and shoulder belt lengths of a dual retractor seat belt.

The proposed language has already been accepted into the first revisions of NFPA 1901 and NFPA 1906 (2016 Editions). This proposal seeks to maintain consistency across all applicable NFPA standards.

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<td>Public Comment No. 8-NFPA 1917-2014 [New Section after 6.21.3.3.2]</td>
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<td>Public Comment No. 10-NFPA 1917-2014 [New Section after A.6.21.3.1]</td>
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<td>First Revision No. 52-NFPA 1917-2013 [Section No. 6.21.3]</td>
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**Submitter Information Verification**

- **Submitter Full Name:** SCOTT STRANKO
- **Organization:** IMMI
- **Street Address:**
- **City:**
- **State:**
- **Zip:**
- **Submittal Date:** Wed Apr 09 17:20:22 EDT 2014
Public Comment No. 32-NFPA 1917-2014 [New Section after 6.21.3.4]

TITLE OF NEW CONTENT
Restraint systems shall fit all occupants from a 5th percentile female through a 95th percentile male including girth.

Statement of Problem and Substantiation for Public Comment

In order to provide the necessary safety for users, restraints and restraint systems need to adhere to standard human factors practices. With a more ergonomic design, EMSPs will be allowed to perform work activities more efficiently. An ergonomic, appropriately-sized restraint will give them an extra support to comfortably work in a restrained position.

Related Item
Public Input No. 118-NFPA 1917-2013 [New Section after 6.21.3.3]

Submitter Information Verification

Submitter Full Name: Jennifer Marshall
Organization: NIST
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 13 17:52:14 EDT 2014
Public Comment No. 33-NFPA 1917-2014 [New Section after 6.21.5]

TITLE OF NEW CONTENT
6.21.5.1
Seats that can rotate shall have a locking detent at a minimum of every 45° throughout the range of the seat rotation.

Statement of Problem and Substantiation for Public Comment

Seats that can rotate are of value for EMSPs. Seat rotation provides mobility for the EMSPs to access different parts of the patient’s body while simultaneously allowing them to remain in their seated, restrained position. If such a seat is used, it is important for it to be capable of locking at fixed positions. This stabilizes the EMSPs’ seating as they shift from one seating position to the other, and as a result allows a more efficient work process. A minimum of a locking detent at every 45° throughout the range of seat rotation provides a reference point for enhancing the usability of the seat’s feature. This compliments the crashworthiness work completed by NIOSH which identifies the need for seats to be crashworthy in each locking position.

Related Item
Public Input No. 287-NFPA 1917-2013 [New Section after 6.21.5]

Submitter Information Verification

Submitter Full Name: Jennifer Marshall
Organization: NIST
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 13 17:54:36 EDT 2014
6.21.10 – Seatbelt Warning System.
6.21.10.1 – An occupant restraint warning system shall be provided for each designated seating position in the patient compartment.
6.21.10.2 – The warning system shall indicate if an occupant in the patient compartment is not belted or restrained.
6.21.10.3 – The warning system shall consist of an audible and visual warning device that can be heard and seen by the driver and seen by the occupants of the patient compartment.
6.21.10.3.1 – The audible portion of the warning system shall comply at a minimum with 49 CFR 571, FMVSS No. 208.
6.21.10.4 – The warning shall be activated when the parking brake is released and the transmission is not in neutral or park.
6.21.10.5 – The warning system shall not show an affirmative indication unless it has determined that the seat was occupied before the seat belt or restraint was buckled.

Statement of Problem and Substantiation for Public Comment

This change is being recommended as it this feature could harm the safety of the patient, Caregiver and Community by distracting the driver. It is inherently unsafe, as the easiest way to override the system is to engage in more unsafe behavior, by having the occupant leave the seat so that the alarm does not sound. Until protocols change regarding CPR en route, there may be clinical demands warranting seat departure. The function of the system does not correspond to the need to stop the vehicle. This could be moved to the annex and expand to include policy issues as well as other crew monitoring mechanisms. A design/construction standard should not include operational parameters. It was previously added to the standard as a good idea and through the many years it has been considered by the Committee - it still has not become a marketed product that is readily available, cost efficient and functional throughout EMS. It is well established that this is a good idea - it should be a good idea mentioned in the annex. Any recommendation or requirement of this type should be based upon peer reviewed scientific research.

Related Item
Public Input No. 115-NFPA 1917-2013 [Section No. 6.21.10]

Submitter Information Verification
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<tr>
<th><strong>Submitter Full Name:</strong></th>
<th>Ronald Thackery</th>
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<tr>
<td><strong>Organization:</strong></td>
<td>American Medical Response, Inc</td>
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<td><strong>Submittal Date:</strong></td>
<td>Fri May 16 14:35:54 EDT 2014</td>
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Public Comment No. 46-NFPA 1917-2014 [Section No. 6.25.1]

6.25.1 * A retroreflective stripe or combination of stripes shall, or Battenburg markings shall be affixed to the ambulance in the following proportions:

   (1) 25 percent of the length of each of the cab side surfaces when approached from each side
   (2) 75 percent of the patient compartment side surfaces when approached from each side

Statement of Problem and Substantiation for Public Comment

Battenburg markings may be used in lieu of stripes.

Related Item
First Revision No. 200-NFPA 1917-2014 [Section No. 6.25.1]

Submitter Information Verification

Submitter Full Name: Dia Gainor
Organization: Nat'l Assn. of State EMS Offic
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 16 14:19:46 EDT 2014
6.25.4
A graphic design shall be permitted to replace all or part of the required striping material if the design or combination thereof covers at least the same perimeter.

Statement of Problem and Substantiation for Public Comment

This standard 6.25.4 should be removed because there is no scientific evidence that a graphic design is as safe as a chevron pattern. This standard does not specify what constitutes a graphic design and could actually attract drivers towards the rear of the ambulance depending on what the design looks like.

Related Item
First Revision No. 199-NFPA 1917-2014 [Section No. 6.25.4]

Submitter Information Verification

Submitter Full Name: Erik McCoy
Organization:
Affiliation: International Association of Fire Fighters
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 09 15:57:25 EDT 2014
6.25.4 A graphic design, design, and/or lettering made of retroreflective material shall be permitted to replace all or part of the required striping material if the design or combination thereof covers at least the same perimeter length(s) required by 6.25.1.

Statement of Problem and Substantiation for Public Comment

Lettering (agency name, etc.) in retroreflective material would also fulfill this requirement.

Related Item

First Revision No. 199-NFPA 1917-2014 [Section No. 6.25.4]

Submitter Information Verification

Submitter Full Name: Dia Gainor
Organization: Nat'l Assn. of State EMS Offic
Street Address: City:
State: Zip:
Submittal Date: Fri May 16 14:25:04 EDT 2014
Public Comment No. 50-NFPA 1917-2014 [Section No. 6.25.6 [Excluding any Sub-Sections]]

At least 50 percent of the rear-facing vertical surfaces, visible from other than glass and lenses, visible when facing the rear of the ambulance, shall be equipped with retroreflective material.

Statement of Problem and Substantiation for Public Comment

Glass and lens surfaced should not be included in the surface measurement. “When facing the rear” is clearer than “from the rear”. Details should not be in the annex. Details should require chevrons OR Battenburg cover 50%, any other graphics and lettering may cover some or all of the rest of the surface.

Related Item

First Revision No. 203-NFPA 1917-2014 [Section No. 6.25.6 [Excluding any Sub-Sections]]

Submitter Information Verification

Submitter Full Name: Dia Gainor
Organization: Nat'l Assn. of State EMS Offic
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Fri May 16 14:29:23 EDT 2014
Public Comment No. 16-NFPA 1917-2014 [New Section after 6.25.6.3]

6.25.6.4
Battenburg Patterns shall not be used on the rear of vehicles in the place of chevron markings.

Statement of Problem and Substantiation for Public Comment

In the High Conspicuity Livery for Police Vehicles report conducted by the Police Scientific Development Branch for the United Kingdom, it is illustrated for both Full Battenburg and Half Battenburg patterns that Chevrons should be used on the rear of the vehicle on pages 11 and 14 of the report in photographs 7 and 12. Chevrons are also widely associated with a message of slowing down due to the widespread use on traffic barriers as listed by the U.S. manual on Uniform Traffic Control Devices (FHWA 2007) and in the FEMA Emergency Vehicle Visibility and Conspicuity Study on page 21 of the report.

Related Item
First Revision No. 205-NFPA 1917-2014 [Section No. 6.25.6.2]

Submitter Information Verification

Submitter Full Name: Erik McCoy
Organization: International Association of Fire Fighters
Affiliation: International Association of Fire Fighters
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Fri May 09 16:32:43 EDT 2014
Public Comment No. 34-NFPA 1917-2014 [New Section after 6.28.7]

TITLE OF NEW CONTENT
Medical gas and suction ports shall be within maximum functional reach of EMSPs, from a 5th percentile female through a 95th percentile male, while remaining seated and belted at the designated primary patient care position.

Statement of Problem and Substantiation for Public Comment

Providing appropriate functional reach to essential devices, equipment, tools, or ports in the patient compartment can increase the efficiency of the working environment, result in less time that the EMSP has to spend for obtaining their work needs, and reduce the likelihood of acute or cumulative trauma due to awkward body postures. Medical gas and suction devices and ports are critically important to patient care and frequently used and should be easily accessible by all EMSPs.

Related Item
Public Input No. 164-NFPA 1917-2013 [New Section after 6.28.11]

Submitter Information Verification

Submitter Full Name: Jennifer Marshall
Organization: NIST
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Tue May 13 17:59:24 EDT 2014
6.29.1
A suction aspirator system shall be furnished. The system must be battery or electrical powered, and mounted.

Statement of Problem and Substantiation for Public Comment

This change prevents manual powered devices from being regarded as acceptable, and assures that the equipment is not provided in solely portable means.

Related Item
First Revision No. 60-NFPA 1917-2013 [Section No. 6.29.1]

Submitter Information Verification

Submitter Full Name: Dia Gainor
Organization: Nat'l Assn. of State EMS Offic
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 16 14:34:22 EDT 2014
Public Comment No. 54-NFPA 1917-2014 [Section No. 7.1.1.2]

7.1.1.2
Printed circuit assemblies shall be qualified in accordance with one of the following:

Non–life saving systems shall comply with IPC A-610E, Acceptability of Electronic Assemblies, Classification 1.4.1 as Class 2, For Commercial and Industrial Assemblies, or better.

Life–saving systems shall comply with IPC A-610E, Acceptability of Electronic Assemblies, Classification 1.4.1 as Class 3, High Performance Electronic Products, or better.

Statement of Problem and Substantiation for Public Comment

Supportive of the restoration of the higher class rating for printed circuit assemblies "life-saving" versus "non-life saving" cannot be objectively determined? Restore wording to original and replace "Class 2" with "Class 3".

Related Item
First Revision No. 164-NFPA 1917-2013 [Section No. 7.1.1.2]

Submitter Information Verification

Submitter Full Name: Dia Gainor
Organization: Nat'l Assn. of State EMS Offic
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 16 14:38:45 EDT 2014
7.2.1.3
The use of star washers by the final-stage ambulance manufacturer for circuit ground connections shall not be permitted.

Statement of Problem and Substantiation for Public Comment

Some chassis manufacturers utilize star washers in their manufacturing process. The original statement would require that those chassis would not be allowed, or those connections would require replacement. There is no scientific research that supports the inclusion of this requirement in 1917. It may be appropriate for 1901, but not 1917.

Related Item
Public Input No. 121-NFPA 1917-2013 [Section No. 7.2.1.3]

Submitter Information Verification

Submitter Full Name: Ronald Thackery
Organization: American Medical Response, Inc
Street Address:
City:
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Zip:
Submittal Date: Fri May 16 15:03:37 EDT 2014
Public Comment No. 2-NFPA 1917-2014 [Section No. 7.6.5.1]

7.6.5.1
The onboard charger shall be tested to the requirements of 9.8.6.

Statement of Problem and Substantiation for Public Comment

wrong section number listed for testing chapter

Related Item
First Revision No. 174-NFPA 1917-2013 [New Section after 7.6.5]

Submitter Information Verification

Submitter Full Name: Stephen Wilde
Organization: Certified Fleet Services, Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Thu Mar 27 13:27:21 EDT 2014
7.11.5 Ground Lighting.

7.11.5.1 The ambulance shall be equipped with lighting that is capable of providing illumination at a minimum level of 0.3 fc on ground areas within 30 in. (800 mm) of the edge of the ambulance in areas designed for personnel to climb into or onto the ambulance or descend from the ambulance to the ground level.

7.11.5.2 Lighting designed to provide illumination on areas under the driver and crew riding area exits shall be switchable but activated automatically when the exit doors are opened.

7.11.5.3 All other ground area lighting shall be switchable.

Statement of Problem and Substantiation for Public Comment

This is another good idea that should not be codified into a Standard without being proven as effective and efficient by peer reviewed scientific research. It is believed that this should either be moved to the annex or deleted because existing exterior and scene lighting provides sufficient illumination for the vast majority of ambulance applications. If desired, annex information could prompt consideration of ground lighting for ambulances that regularly operate in areas with little or no ambient illumination. Given the option, most customers elect not to add ground lighting.

Related Item

Public Input No. 127-NFPA 1917-2013 [Section No. 7.11.5]

Submitter Information Verification

Submitter Full Name: Ronald Thackery
Organization: American Medical Response, Inc
Street Address:
City:
State:
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Submittal Date: Fri May 16 15:13:05 EDT 2014
### 7.11.6.3.5

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<td>The patient compartment lighting shall be automatically activated when the side entry or rear entry patient compartment doors are opened and the module power is on.</td>
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### Statement of Problem and Substantiation for Public Comment

Correct typo.

**Related Item**

**Public Input No. 54-NFPA 1917-2013 [Section No. 7.11.6.3.5]**

### Submitter Information Verification

- **Submitter Full Name:** Jerry Allen
- **Organization:** Braun Northwest
- **Street Address:**
- **City:**
- **State:**
- **Zip:**
- **Submittal Date:** Fri May 16 16:55:29 EDT 2014
Public Comment No. 35-NFPA 1917-2014 [New Section after 7.15.2]

TITLE OF NEW CONTENT
Built-in communication devices installed in the patient compartment shall be secured within maximum functional reach of EMSPs, from a 5th percentile female through a 95th percentile male, while seated and restrained.

Statement of Problem and Substantiation for Public Comment

Communication mechanisms and devices in the patient compartment are frequently sought for use by EMSPs to be in contact with the emergency medical services dispatcher, hospital, or ambulance driver. By accommodating the reachability of communication devices to a shorter demographic with a smaller reach, EMS providers will have fewer difficulties in reaching them. This will enhance their safety by allowing them to stay restrained and will also increase working efficiency. Using maximum functional reach, as proposed and defined in 3.3, provides a measureable reference point.

Related Item
Public Input No. 206-NFPA 1917-2013 [New Section after 7.15.2]

Submitter Information Verification

Submitter Full Name: Jennifer Marshall
Organization: NIST
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Tue May 13 18:26:24 EDT 2014
Public Comment No. 62-NFPA 1917-2014 [Section No. 8.3.3.1]

8.3.3.1 –
The neutral conductor of the power source shall be bonded to the vehicle frame. [1901: 22.3.2.1]

Statement of Problem and Substantiation for Public Comment

This section was pulled from 1901: 22.3.2.1 which deals with on-board generators. As noted in 1917: 8.3.1.5, the grounded current-carrying conductor (neutral) is to be insulated from the equipment-grounding conductors and from the equipment enclosures and other grounded parts. And as 1917: 8.3.3.2 notes, the neutral-to-ground bond is to occur only at the power source. For an ambulance, that bond should occur on the vehicle only if it is equipped with an independent power source (generator or inverter). If there is no generator or inverter on the ambulance, there should be no bond on the ambulance between neutral and the vehicle frame (which is grounded). In that case, the neutral-to-ground bond is made at the service panel that powers the station’s shorepower circuit. I encourage consultation with an electrical engineer on this matter as the standard as written appears to provide unsound guidance.

Related Item

Public Input No. 511-NFPA 1917-2013 [Section No. 8.3.1.7]

Submitter Information Verification

Submitter Full Name: Jerry Allen
Organization: Braun Northwest
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 16 16:27:20 EDT 2014
9.8.8 OnBoard Battery Charger Test

9.8.8.1 the ambulance onboard battery charger shall be tested for 2 hours as follows

1. Batteries shall be fully charged to at least 12.66 volts before starting test.
2. Engine off and shoreline power cord attached.
3. Apply a load of at least 80% of nominal charger output
4. Inverter / battery charger compartment closed
5. Record battery voltage at beginning of test
6. Remove the load and record battery voltage at end of test.
7. The battery charger test shall be considered a failure if charger does not maintain battery voltage at 12.54 volts or higher.

Statement of Problem and Substantiation for Public Comment

testing text was not included in first draft even though it was voted on and added.

Related Item

First Revision No. 174-NFPA 1917-2013 [New Section after 7.6.5]

Submitter Information Verification

Submitter Full Name: Stephen Wilde
Organization: Certified Fleet Services, Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Thu Mar 27 13:32:30 EDT 2014
A.5.2
For weight distribution measurement and calculation methods for payload determination, subtract the total curb weight of the completed vehicle from the GVWR. Any permanently attached, optional items of equipment specified by the customer are to be included in the curb weight of the completed vehicle. Any other items of optional equipment (i.e., not permanently attached and/or removable) are to be included in the payload requirement. Each ambulance's payload capacity, horizontal, and vertical CG, should be determined by completing an NTEA UltraMod spreadsheet (available at www.ntea.com) or equal. A copy of the spreadsheet should be included in the ambulance documentation. The following should be shown on the spreadsheet:

1. **Completed vehicle at curb weight**
2. **171 pounds at the horizontal center of each patient location and at each seated position**
3. **The maximum remaining Cargo/Equipment capacity (in pounds) located at the horizontal center of the patient compartment**

The total usable Cargo/Equipment capacity value of Figure 2, item 10 should be displayed on the certification and payload signage as shown in Figure 4.16.3.1

**New figure 4.16.3.1**

Manufactured By Mo./Yr.
Address
City
State
Zip
VIN
Job No.
Chassis Model
Statement of Exception Applies
Vehicle Type Usable Cargo/Equipment capacity, Payload (lb or kg)*

Total Occupant Weight – 171 lbs. X number of designated seating positions (lbs or kg)

This ambulance is certified by the manufacturer to conform to the edition of NFPA 1917, *Standard for Automotive Ambulances*, in effect on the date the ambulance is contracted for, subject to any applicable statement of exception as mandated by this standard.

*Usable Cargo/Equipment capacity, payload is the weight of the loose equipment, occupants, and cot(s) as defined by NFPA 1917 that can be carried in this ambulance without exceeding the GVWR.*
simple math does not accurately calculate available payload, it typically furnishes a payload calculation that is artificially high

Related Item
First Revision No. 134-NFPA 1917-2013 [Section No. 5.1.1]

Submitter Information Verification

Submitter Full Name: John McDonald
Organization: US General Services Administra
Street Address:
City:
State:
Zip:
Submittal Date: Fri Apr 18 13:39:15 EDT 2014
PUBLIC COMMENT NO. 24-NFPA 1917-2014 [NEW SECTION AFTER A.5.14]

TITLE OF NEW CONTENT
A.6.1 Interior height of patient compartment should be at least 76 in. (1930 mm).

STATEMENT OF PROBLEM AND SUBSTANTIATION FOR PUBLIC COMMENT

A study carried out by the National Institute of Standards and Technology showed that taller EMSPs have difficulty keeping upright around the ambulance, forcing them to adopt uncomfortable postures. In some cases, they have injured themselves when they knock their heads against the ceiling. (Reference: "Survey Report for Ambulance Patient Compartment Design," NIST Technical Note 1772, http://nvlpubs.nist.gov/nistpubs/TechnicalNotes/NIST.TN.1772.pdf) Unnatural statures and postures such as hunching can be detrimental to the health of EMSPs. By taking into account human factors principles, an appropriate height can be required to accommodate most EMSPs. Looking into anthropometric data for other emergency providers in "Fire Apparatus Manufacturer’s Association Firefighter Anthropometric Data White Paper," 76 inches accommodates most EMSPs up to 95% males. (Refer to Table 2, Page 5 of the White Paper: http://www.fama.org/pdf/tools/FirefighterAnthroDataWhitePaper.pdf)

PUBLIC INPUT NO. 294-NFPA 1917-2013 [NEW SECTION AFTER 6.1.2]

SUBMITTER INFORMATION VERIFICATION

Submitter Full Name: Jennifer Marshall
Organization: NIST
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 13 17:13:38 EDT 2014
**Title of New Content**

A.6.9.12

In the event of an accident where the door linkage and/or the door handle(s) has been damaged to the point where the latching mechanisms do not respond to the entrance door handles, the latching mechanisms can be overridden to exit the vehicle.

### Statement of Problem and Substantiation for Public Comment

EMSPs need to be able to quickly exit the patient compartment in the event of an emergency or at the hospital, regardless of whether the door is locked or not. If the doors cannot be opened as quickly as desired, delays can occur for EMSPs to exit or for unloading of the patient. Such delays can lead to deterioration of the patient’s condition or increased injury risk for EMS providers. This requirement should ensure there is an alternative guaranteed method of exiting the ambulance.

### Related Public Comments for This Document

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### Submitter Information Verification

**Submitter Full Name:** Jennifer Marshall  
**Organization:** NIST  
**Street Address:**  
**City:**  
**State:**  
**Zip:**  
**Submittal Date:** Tue May 13 17:32:03 EDT 2014
A.6.21.3.3

The H-Point is the mechanically hinged hip point of the torso and thigh on devices used in defining and measuring vehicle seating accommodation in SAE J826, "Devices for use in Defining and Measuring Vehicle Seating Accommodation". It is an imaginary point located in two-dimensional space above the seat cushion. The H-Point is measured using a tool that simulates human hips and torso of a specific size and weight. The H-Point will vary with the size, shape, and material of the seat back, seat frame, and seat cushion. If the H-Point measurement is not available, it can be approximated by measuring 5 in. (130mm) ahead of the seat back and 3 in. (75mm) up from the nondepressed seat cushion surface.

Statement of Problem and Substantiation for Public Comment

This annex gives the reader a means for estimating the location of the H-Point for use in evaluating seat belt buckle length as proposed in section 6.21.3.3.

The text for this new annex was extracted from the current editions of NFPA 1901 and 1906 (Annex A.14.1.8.1) and adoption of this language into NFPA 1917 maintains consistency across all three standards.

Related Public Comments for This Document

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| Related Item | |
|--------------| |
| First Revision No. 52-NFPA 1917-2013 [Section No. 6.21.3] | |

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<tr>
<th>Submitter Full Name:</th>
<th>SCOTT STRANKO</th>
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<td>IMMI</td>
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