NFPA Technical Committee on Fire Department Apparatus

1901/1906 Second Draft Meeting Agenda

July 22-24, 2014
Charlotte, NC

July 22, 2014

1. Meeting to Order at 8:00 am
2. Welcome and Opening Remarks
3. Introduction of Attendees
4. Approval of Meeting Minutes from September 9-12, 2013 in San Diego, CA
5. Review Purpose of Meeting and Schedule
6. NFPA Staff – New Process Overview
7. Old Business
8. New Business
    a. Task Group Work
    b. Finalize Recommendations
9. Continue New Business
    a. Begin NFPA 1906 Review
    b. Task Group Reports to Technical Committee
    c. Process Public Comments (Attached)
    d. Process Second Revisions

July 23, 2014

1. Meeting to Order at 8:00 am
2. Continue New Business
    a. Complete NFPA 1906 Review
    b. Task Group Reports to Technical Committee
    c. Process Public Comments (Attached)
    d. Process Second Revisions

3. Continue New Business
    a. Begin NFPA 1901 Review
    b. Task Group Reports to Technical Committee
    c. Process Public Comments (Attached)
    d. Process Second Revisions

July 24, 2014

1. Meeting to Order at 8:00 am

2. Continue New Business
    a. Complete NFPA 1901 Review
    b. Task Group Reports to Technical Committee
    c. Process Public Comments (Attached)
    d. Process Second Revisions

4. Closing Remarks

5. Adjourn Meeting at Close of Business

NFPA Technical Committee on Fire Department Apparatus

1901/1906 First Draft Meeting Minutes

September 9-12, 2013
Westin, Downtown
San Diego, CA

9 September

The following committee members attended:

Don Frazeur
Elden Alexander
Walter Caldwell
Jeff Cranfill
Peter Darley
David Durstine
David Haston
Tom Hillenbrand
Jim Juneau
Roger Lackore
Bill McCombs
Tom McCullough
John McDonald
Tom Mettler
William Peters
Jeff Piechura
Gary Pope
Edward Rice
Jim Salmi
Tom Stalnaker
Tom Stites
John Terefinko
Richard Tull
Stephen Wilde
Robert Bettenhausen
Kirk Bradley
Jim Currin
Wayne Fister
James Garver
Mark Haider
Dan McKenzie
Michael Moore
Michael Schoenberger
Dirk Steyn
Michael Thorn
Bill Yohn
Ryan Depew

The following Guests attended:

Ken Willette
Andrew Holter
Jason Darley
Steve Swayze
Bill Ballantine
Jeff Aiken
Dave Weng
Alan Saulsbury
Gary Handwerk
Doug Miller
Greg Blanchat
Jay Koogler
Neil Bjornstad
Grady North
Doug Ballmann
Terrance Perkins
Paul Bostrom
Matt Stocker
Marv Carroll
Bill Dickson
Darren Hensley
Mike Dupay
Dan Veselsky
John Doperelski
Gordon Gholson
Scott Stranko
Jeff Knosalla
Dan Munn
Eric Linsmeier
Chip Goodson

The full committee meeting was opened by Chair Donald Frazeur at 08:00 on 9 September with the introduction of members and guests followed by opening remarks by the Chair. The chair briefed the committee on administrative and safety procedures.

Ryan Depew, staff liaison, gave an overview of the first revision process.

At 09:15 the committee broke in to groups to complete the work of each task group as follows:

Wild Land, Body, Chassis & Function

Pump, Foam

Admin, Air, Auxiliary, Electrical & Command

Aerial

At 10:00 the committee took a break and viewed the vehicle brought by Mr. Blanchard

The committee returned from a 1 hour lunch at 13:00 and continued task group work.

The chair addressed the committee at 17:15 indicating that the group will start work at 08:00 tomorrow.

Task groups continued work until approx 18:00

10 September

Chair called the meeting to order at 08:00, commending the group for all their work yesterday

Ken Willette from NFPA addressed the group explaining the new electronic processes as related to obtaining input for the standards to improve the consensus standards process. He commended the group for their hard work and shared how widespread the use of the automotive fire apparatus standards are. Ken also shared the NFPA's vision for the future of the committee.

The Chair explained how the group will process the comments for 1906.

The minutes of the 21-23 March 2011 meeting were approved.

The committee processed the PI's & FR's as presented by the administrative task group, setting 2 aside for later processing.

At 09:40 the committee broke to view the crew carrier supplied by Cal Fire.

Work resumed at 10:15 processing the PI's & FR's as presented by the wildland task group

At 10:53 work began on processing the PI's & FR's as presented by the Chassis task group

At 11:17 work began on processing the PI's & FR's as presented by the Electrical task group

The committee broke for lunch at 11:36

Work resumed at 13:00 processing the PI's & FR's as presented by the body task group

After taking a break from 14:35 to 15:00 work began on processing the PI's & FR's as presented by the pump task group, work on tanks began at 16:20

Following a break from 16:48 to 17:00, the committee began processing the PI's & FR's as presented by the foam task group, work on auxiliary equipment began at 17:45.

The meeting was adjourned at 18:00

11 September

Chair called the meeting to order at 08:00, reminding the committee of the events that took place 12 years ago today.

Discussion on new requirements for ultra high pressure pumps was started by the pump task group chair. Documentation was presented to be used to create a trial balloon with respect to this issue. Discussion was held on the values of using a trial balloon vs. a first revision. An FR was created to create a new chapter 28 containing UHPs.

At 8:30 the committee broke to continue task group work.

The full committee reassembled at 10:00, discussing the value of having braking requirements in the standard in addition to what the FMVSS requires and the status of VDRs with respect to the upcoming NHTSA VDR requirements.

The final PI for 1906 was processed
At 10:15 the committee began reviewing the PIs and FRs for 1901 starting with the administrative task group.

The committee broke for lunch at 12:18

At 13:30 the committee began reviewing the PIs and FRs from the function task group (chap 5 thru 11)

The committee began reviewing the PIs and FRs from the chassis task group at 14:13

Following a 15 minute break, the committee began reviewing the PIs and FRs from the electric task group at 15:00

Following a 10 minute break, the committee began reviewing the PIs and FRs from the pump task group at 16:15

Work on PIs and FRs from the pump task group continued at 18:00 following a 15 minute pizza break

The meeting was adjourned at 19:30.

12 September

Chair called the meeting to order at 07:00, Work on PIs and FRs from the pump task group continued

At 07:35 work on PIs and FRs from the body task group began

Following a 10 minute break at 08:00 work on PIs and FRs from the body task group continued

At 08:48 work on PIs and FRs from the foam task group began

Following a 10 minute break at 09:10 work on PIs and FRs from the foam task group continued

At 09:45 work on PIs and FRs from the aerial task group began

Following a 10 minute break at 10:22 work on PIs and FRs from the aerial task group continued

Work on PIs and FRs from the aerial task group was completed at 11:40.

Following a 20 minute break, the committee began reviewing the PIs and FRs from the air systems task group. Review was completed at 12:30.

Work on PIs and FRs from the Auxiliary task group began immediately. Review was completed at 12:36

Work on PIs and FRs from the command task group began immediately. Review was completed at 12:38

The committee approved the revised text presented for Annex D

The committee approved the revised text presented for Annex F

Work on PIs and FRs for Annex F was completed

The next meeting for 1901 & 1906 will occur between June and October of 2014

A proposal was made to enter a committee input to reorganize the headings in both documents. The proposal was approved.

The next meeting for 1912 will occur between January and June of 2014, possibly a virtual meeting

The Chair thanked the group for all their efforts and adjourned the meeting at 12:45.

The Chair met with the task group chairs after the full committee meeting was adjourned.

R/S

John McDonald
Secretary

Public Comment No. 61-NFPA 1901-2014 [Section No. 1.3.1]

1.3.1 *

This standard shall apply to new fire apparatus ~~that~~ , before delivery to the ultimate purchaser, that meet the following criteria:

(1) Have 10,000 lb (4,500 kg) or greater gross vehicle weight rating (GVWR) or are trailers intended to be towed by fire apparatus under emergency response conditions

(2) Are designed for use under emergency conditions to transport personnel and equipment and to support the suppression of fires and mitigation of other hazardous situations

(3) Are contracted for on or after ~~January 1, 2016~~ after the new edition of this standard is available for public use.

Statement of Problem and Substantiation for Public Comment

The standard does not define new apparatus and does not set boundaries for when an apparatus could be considered new. Further, it is possible for a contract be entered for 1/1/2016 at any time during the course of time. The 2015 edition of this standard may not be available when such contracts are awarded/entered. By changing to the proposed language, a boundary is set for the scope as well as allows for contracts to specify which edition of the standard can be adhered to.

Related Item

First Revision No. 1-NFPA 1901-2013 [Sections 1.3.1, 1.3.2]

Submitter Information Verification

Submitter Full Name: Wesley Chestnut
Organization: Spartan Motors, Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Sat Mar 15 14:06:35 EDT 2014

Public Comment No. 62-NFPA 1901-2014 [Section No. 1.3.1]

1.3.1 *

This standard shall apply to new fire apparatus ~~that~~ , other than wildland fire apparatus, that meet the following criteria:

(1) Have 10,000 lb (4,500 kg) or greater gross vehicle weight rating (GVWR) or are trailers intended to be towed by fire apparatus under emergency response conditions

(2) Are designed for use under emergency conditions to transport personnel and equipment and to support the suppression of fires and mitigation of other hazardous situations

(3) Are contracted for on or after January 1, 2016

Statement of Problem and Substantiation for Public Comment

This reduces a line item in the standard that states the exclusion of wildland apparatus.

Related Item

First Revision No. 1-NFPA 1901-2013 [Sections 1.3.1, 1.3.2]

Submitter Information Verification

Submitter Full Name: Wesley Chestnut
Organization: Spartan Motors, Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Sat Mar 15 14:12:52 EDT 2014

Public Comment No. 49-NFPA 1901-2014 [Section No. 1.3.2]

~~1.3.2~~ –
~~Nothing shall prevent the use of the standard prior to January 1, 2016, or for vehicles with less than 10,000 lb (4,500 kg) gross vehicle weight rating (GVWR), if the purchaser and the contractor both agree.~~

Statement of Problem and Substantiation for Public Comment

The standard could not be applied until it is released for publication which generally occurs in the fall before the year it comes into effect. To say nothing would prohibit the use of the standard prior to January 1, 2016 implies there would be no prohibition on the use of the standard at any time which is not the case. Instead, an annex item could be added stating the standard could be applied to fire apparatus less than 10K lbs GVWR, or fire apparatus built before January 1, 2016 so long as the standard is available.

Related Item

First Revision No. 1-NFPA 1901-2013 [Sections 1.3.1, 1.3.2]

Submitter Information Verification

Submitter Full Name: Wesley Chestnut
Organization: Spartan Motors, Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Sat Mar 15 09:08:02 EDT 2014

Public Comment No. 63-NFPA 1901-2014 [Section No. 1.3.3]

~~1.3.3~~ –
~~This standard shall not apply to wildland fire apparatus, which are covered by NFPA 1906.~~

Statement of Problem and Substantiation for Public Comment

This line item would be replaced by language in PC No. 62

Related Public Comments for This Document

Related Comment	Relationship
Public Comment No. 62-NFPA 1901-2014 [Section No. 1.3.1]	Clarifying boundaries in PC N0. 62

Related Item

First Revision No. 1-NFPA 1901-2013 [Sections 1.3.1, 1.3.2]

Submitter Information Verification

Submitter Full Name: Wesley Chestnut
Organization: Spartan Motors, Inc.
Street Address:
City:
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Zip:
Submittal Date: Sat Mar 15 14:14:45 EDT 2014

Public Comment No. 50-NFPA 1901-2014 [New Section after 2.1]

2.2 The current version, or most recent edition, of any document incorporated by reference shall be used.

Statement of Problem and Substantiation for Public Comment

By removing the year of revision, edition, or revision of documents incorporated by reference brings efficiency to future revisions of the standard. Further, it mitigates the need for manufacturers to manage multiple copies of documents incoporated by reference. Lastly, if a technical change occurs within a document incorporated by reference it may require an immediate need for a revision to the standard.

Related Item

First Revision No. 4-NFPA 1901-2013 [Section No. 2.2]

Submitter Information Verification

Submitter Full Name: Wesley Chestnut
Organization: Spartan Motors, Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Sat Mar 15 09:49:39 EDT 2014

Public Comment No. 51-NFPA 1901-2014 [Section No. 2.2]

2.2 NFPA Publications.

National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471, www.NFPA.org.

NFPA 70® , *National Electrical Code®*,~~2014 edition~~ .

NFPA 1911, *Standard for the Inspection, Maintenance, Testing, and Retirement of In-Service Automotive Fire Apparatus,*~~2012 edition.~~

NFPA 1931, *Standard for Manufacturer's Design of Fire Department Ground Ladders,*~~2015 edition.~~

NFPA 1961, *Standard on Fire Hose,*~~2013 edition~~ .

NFPA 1963, *Standard for Fire Hose Connections,*~~2014 edition~~ .

NFPA 1981, *Standard on Open-Circuit Self-Contained Breathing Apparatus (SCBA) for Emergency Services,*~~2013 edition~~ .

NFPA 1983, *Standard on Life Safety Rope and Equipment for Emergency Services,*~~ 2012 edition~~ .

NFPA 1989, *Standard on Breathing Air Quality for Emergency Services Respiratory Protection,*~~ 2013 edition~~ .

Statement of Problem and Substantiation for Public Comment

Refer to public input 50

Related Item

First Revision No. 4-NFPA 1901-2013 [Section No. 2.2]

Submitter Information Verification

Submitter Full Name: Wesley Chestnut
Organization: Spartan Motors, Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Sat Mar 15 09:57:06 EDT 2014

Public Comment No. 52-NFPA 1901-2014 [Section No. 2.3]

2.3 Other Publications.

2.3.1 ANSI Publications.

American National Standards Institute, Inc., 25 West 43rd Street, 4th floor, New York, NY 10036.

ANSI A14.2, *Ladders — Portable Metal — Safety Requirements*~~,~~ ~~2007~~ .

ANSI A14.5, *Ladders — Portable Reinforced Plastic — Safety Requirements*~~,~~ ~~2007~~ .

ANSI/NEMA Z535.4, *Product Safety Signs and Labels*~~,~~ ~~2011~~ .

2.3.2 ASME Publications.

American Society of Mechanical Engineers, Two Park Avenue, New York, NY 10016-5990.www.asme.org.

ASME B40.100, *Pressure Gauges and Gauge Attachments*~~, 2005~~ .

Boiler and Pressure Vessel Code, Section VIII, Division 1~~, 2013~~ .

2.3.3 ASNT Publications.

American Society for Nondestructive Testing, Inc., 1711 Arlingate Lane, Columbus, OH 43228-0518, www.asnt.org.

ANSI/ASNT CP-189, *Standard for Qualification and Certification of Nondestructive Testing Personnel*~~, 2011~~ .

2.3.4 ASTM Publications.

ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, www.astm.org.

ASTM B 647, *Standard Test Method for Indentation Hardness of Aluminum Alloys by Means of a Webster Hardness Gage*~~, 2010~~ .

ASTM B 648, *Standard Test Method for Indentation Hardness of Aluminum Alloys by Means of a Barcol Impressor*~~, 2010~~ .

ASTM D 4956, *Standard Specification for Retroreflective Sheeting for Traffic Control*~~, 2011a~~ .

ASTM E 6, *Standard Terminology Relating to Methods of Mechanical Testing*~~, 2009be1~~ .

ASTM E 10, *Standard Test Method for Brinell Hardness of Metallic Materials*~~, 2012~~ .

ASTM E 18, *Standard Test Methods for Rockwell Hardness and Rockwell Superficial Hardness of Metallic Materials*~~, 2012~~ .

ASTM E 114, *Standard Practice for Ultrasonic Pulse-Echo Straight-Beam Examination by the Contact Method*~~, 2010~~ .

ASTM E 165, *Standard Test Method for Liquid Penetrant Examinations*~~, 2012~~ .

ASTM E 384, *Standard Test Method for Knoop and Vickers Hardness of Metallic Materials*~~, 2011e1~~ .

ASTM E 569, *Standard Practice for Acoustic Emission Monitoring of Structures During Controlled Stimulation*~~, 2013~~ .

ASTM E 650, *Standard Guide for Mounting Piezoelectric Acoustic Emission Sensors*~~, 2012~~ .

ASTM E 709, *Standard Guide for Magnetic Particle Testing*~~, 2008~~ .

ASTM E 797, *Standard Practice for Measuring Thickness by Manual Ultrasonic Pulse-Echo Contact Method*~~, 2010~~ .

ASTM E 1004, *Standard Practice for Determining Electrical Conductivity Using the Electromagnetic (Eddy-Current) Method*~~, 2009~~ .

2.3.5 AWS Publications.

American Welding Society, 550 NW LeJeune Road, Miami, FL 33126, www.aws.org.

AWS B1.10, *Guide for the Nondestructive Examination of Welds*, 1999.

AWS D1.1, *Structural Welding Code — Steel*~~, 2006~~ .

AWS D1.2, *Structural Welding Code — Aluminum*~~, 2003~~ .

AWS D1.3, *Structural Welding Code — Sheet Steel*~~, 2008~~ .

2.3.6 CGA Publications.

Compressed Gas Association, 14501 George Carter Way, Suite 103, Chantilly, VA 20151-2923.www.cganet.com.

G-7, *Compressed Air for Human Respiration*~~, 2008~~ .

G-7.1, *Commodity Specification for Air*~~, 2011~~ .

2.3.7 CSA Publications.

Canadian Standards Association, 5060 Spectrum Way, Mississauga, ON L4W 5N6, Canada, www.csa.ca.

CSA W47.1*, Certification of Companies for Fusion Welding of Steel*~~,~~ ~~2012~~ .

CSA W47.2, *Certification of Companies for Fusion Welding of Aluminum*~~,~~ ~~2012~~ .

2.3.8 FAMA Publications.

Fire Apparatus Manufacturers Association, P.O. Box 397, Lynnfield, MA 01940-0397. www.fama.org

FAMA TC008, *Graphical Symbols for Automotive Fire Apparatus*.

FAMA TC010, *Standard Product Safety Sign Catalog for Automotive Fire Apparatus*~~, 2012~~ .

2.3.9 ISEA Publications.

International Safety Equipment Association, 1901 North Moore Street, Arlington, VA 22209-1762, www.safetyequipment.org.

ANSI/ISEA 207, *Standard for High-Visibility Public Safety Vests*~~, 2011~~ .

2.3.10 ISO Publications.

International Standards Organization, 1 rue de Varembé, Case Postale 56, CH-1211 Genéve 20, Switzerland, www.standardsinfo.net.

ISO 9244, *Earth-moving machinery - Machine safety labels - General principles*~~, 2008~~ .

ISO/IEC 17020, *Conformity Assessment: Requirements for the operation of various types of bodies performing inspection*~~, 2012~~ .

ISO/IEC 17065, *Conformity Assessment: Requirements for bodies certifying products, processess and services*~~, 2012~~ .

2.3.11 Parker Hannifin, Racor Division Publications.

Parker Hannifin, Racor Division, Attn: Dan Haggard, 805 West Street, Holly Springs, MS 38634.

LF 1093-90, *Ember Separation Test Procedure*~~, January 2003~~ .

2.3.12 SAE Publications.

Society of Automotive Engineers, 400 Commonwealth Drive, Warrendale, PA 15096, www.SAE.org.

SAE J156, *Fusible Links*, 2012 .

SAE J541, *Voltage Drop for Starting Motor Circuits*, 1996 .

SAE J551/1, *Performance Levels and Methods of Measurement of Electromagnetic Compatibility of Vehicles, Boats (up to 15 m), and Machines (16.6 Hz to 18 GHz)*, 2010.

SAE J553, *Circuit Breakers*, 2004 .

SAE J554, *Electric Fuses (Cartridge Type)*, 1987 .

SAE J560, *Primary and Auxiliary Seven Conductor Electrical Connector for Truck-Trailer Jumper Cable*, 2009 .

SAE J575, *Test Methods and Equipment for Lighting Devices and Components for Use on Vehicles Less Than 2032 mm in Overall Width*, 2012.

SAE J578, *Color Specification*, 2012 .

SAE J595, *Directional Flashing Optical Warning Devices for Authorized Emergency, Maintenance, and Service Vehicles*, 2008 .

SAE J683, *Tire Chain Clearance — Trucks, Buses (Except Suburban, Intercity, and Transit Buses), and Combinations of Vehicles*, Stabilized 2011 .

SAE J845, *Optical Warning Devices for Authorized Emergency, Maintenance, and Service Vehicles*, 2007 .

SAE J994, *Alarm — Backup — Electric, Laboratory Performance Testing*, 2009 .

SAE J1127, *Low Voltage Battery Cable*, 2012 .

SAE J1128, *Low Voltage Primary Cable*, 2012 .

SAE J1330, *Photometry Laboratory Accuracy Guidelines*, 2007 .

SAE J1690, *Flashers*, 1996 .

SAE J1849, *Emergency Vehicle Sirens*, Stabilized 2012 .

SAE J1888, *High Current Time Lag Electric Fuses*, 1990 .

SAE J1889, *L.E.D. Signal and Marking Lighting Devices*, 2011 .

SAE J2077, *Miniature Blade Type Electrical Fuses*, 1990 .

SAE J2174, *Heavy-Duty Wiring Systems for Trailers 2032 mm or More in Width*, 2009 .

SAE J2180, *A Tilt Table Procedure for Measuring the Static Rollover Threshold for Heavy Trucks*, Stabilized 2011 .

SAE J2202, *Heavy-Duty Wiring Systems for On-Highway Trucks*, 2003 .

SAE J2394, *Seven-Conductor Cable for ABS Power — Truck and Bus*, 2013 .

SAE J2418, *Occupant Restraint System Evaluation — Frontal Impact Component-Level Heavy Trucks*, 2003 .

SAE J2420, *COE Frontal Strength Evaluation — Dynamic Loading Heavy Trucks*, 2010 .

SAE J2422, *Cab Roof Strength Evaluation — Quasi-Static Loading Heavy Trucks*, 2010 .

2.3.13 TRA Publications.

Tire and Rim Association, Inc., 175 Montrose West Ave., Copley, OH 44321, www.US-TRA.org.

Tire and Rim Association — Year Book, 2015 .

2.3.14 UL Publications.

Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, IL 60062-2096, www.ul.com.

ANSI/UL 153, *Standard for Portable Electric Luminaires,* ~~2002, with revisions through March 15, 2013~~ .

ANSI/UL 498, *Standard for Safety Attachment Plugs and Receptacles*, ~~2013 with revisions through November 16, 2012~~ .

ANSI/UL 969, *Standard for Marking and Labeling Systems*, ~~1995 with revisions through November 24, 2008~~ .

ANSI/UL 1598, *Standard for Luminaires*, ~~2008, with revisions through October 17, 2012~~ .

2.3.15 UNECE Publications.

UN Economic Commission for Europe, Palais des Nations, CH – 1211, Geneva 10 Switzerland, www.UNECE.org.

ECE Regulation number 29, *Uniform Provisions Concerning the Approval of Vehicles with Regard to the Protection of the Occupants of the Cab of a Commercial Vehicle,*2011.

2.3.16 U.S. Government Publications.

U.S. Government Printing Office, Washington, DC 20402, www.gpo.gov.

Title 29, Code of Federal Regulations, Part 1910.169, “Air receivers.” 29 CFR 1910.169.

Title 49, Code of Federal Regulations, Part 178.37, “Specification 3AA and 3AAX, seamless steel cylinders.” 49 CFR 178.37.

Title 49, Code of Federal Regulations, Part 393.94, “Interior noise levels in power units, paragraph (c), Test procedure.” 49 CFR 393.94.

Title 49, Code of Federal Regulations, Part 567, “Certification.” 49 CFR 567.

Title 49, Code of Federal Regulations, Part 571, Subpart B, “Federal Motor Vehicle Safety Standards,” No. 108, “Lamps, reflective devices, and associated equipment.” 49 CFR 571.108.

Title 49, Code of Federal Regulations, Part 571, Subpart B, “Federal Motor Vehicle Safety Standards,” No. 302, “Flammability of interior materials.” 49 CFR 571.302.

2.3.17 Other Publications.

Merriam-Webster’s Collegiate Dictionary, 11th edition, Merriam-Webster, Inc., Springfield, MA~~, 2003~~ .

Statement of Problem and Substantiation for Public Comment

See Public Comment 50

Related Item

First Revision No. 4-NFPA 1901-2013 [Section No. 2.2]

Submitter Information Verification

Submitter Full Name: Wesley Chestnut
Organization: Spartan Motors, Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Sat Mar 15 09:59:17 EDT 2014

Public Comment No. 133-NFPA 1901-2014 [Section No. 2.3.4]

2.3.4 ASTM Publications.

ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, www.astm.org.

ASTM B 647, *Standard Test Method for Indentation Hardness of Aluminum Alloys by Means of a Webster Hardness Gage*, 2010.

ASTM B 648, *Standard Test Method for Indentation Hardness of Aluminum Alloys by Means of a Barcol Impressor*, 2010.

ASTM D 4956, *Standard Specification for Retroreflective Sheeting for Traffic Control*, ~~2011a~~ 2013 .

ASTM E 6, *Standard Terminology Relating to Methods of Mechanical Testing*, 2009be1.

ASTM E 10, *Standard Test Method for Brinell Hardness of Metallic Materials*, 2012.

ASTM E 18, *Standard Test Methods for Rockwell Hardness and Rockwell Superficial Hardness of Metallic Materials*, ~~2012~~ 2014 .

ASTM E 114, *Standard Practice for Ultrasonic Pulse-Echo Straight-Beam Examination by the Contact Method*, 2010.

ASTM E 165/E165M , *Standard Test Method for Liquid Penetrant Examinations*, 2012.

ASTM E 384, *Standard Test Method for Knoop and Vickers Hardness of Metallic Materials*, 2011e1.

ASTM E 569/E 569M , *Standard Practice for Acoustic Emission Monitoring of Structures During Controlled Stimulation*, 2013.

ASTM E 650, *Standard Guide for Mounting Piezoelectric Acoustic Emission Sensors*, 2012.

ASTM E 709, *Standard Guide for Magnetic Particle Testing*, ~~2008~~ 2014 .

ASTM E 797, *Standard Practice for Measuring Thickness by Manual Ultrasonic Pulse-Echo Contact Method*, 2010.

ASTM E 1004, *Standard Practice for Determining Electrical Conductivity Using the Electromagnetic (Eddy-Current) Method*, 2009.

Statement of Problem and Substantiation for Public Comment

Update year dates

Related Item

First Revision No. 1-NFPA 1901-2013 [Sections 1.3.1, 1.3.2]

Submitter Information Verification

Submitter Full Name: Steve Mawn
Organization: ASTM International
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 15 16:07:02 EDT 2014

Public Comment No. 102-NFPA 1901-2014 [Section No. 2.3.16]

2.3.16 U.S. Government Publications.

U.S. Government Printing Office, Washington, DC 20402, www.gpo.gov.

Title 29, Code of Federal Regulations, Part 1910.169, “Air receivers.” 29 CFR 1910.169.

Title 49, Code of Federal Regulations, Part 178.37, “Specification 3AA and 3AAX, seamless steel cylinders.” 49 CFR 178.37.

Title 49, Code of Federal Regulations, Part 393.94, “Interior noise levels in power units, paragraph (c), Test procedure.” 49 CFR 393.94.

Title 49, Code of Federal Regulations, Part 567, “Certification.” 49 CFR 567.

Title 49, Code of Federal Regulations, Part 571, Subpart B, “Federal Motor Vehicle Safety Standards,” No. 108, “Lamps, reflective devices, and associated equipment.” 49 CFR 571.108.

~~Title 49, Code of Federal Regulations, Part 571, Subpart B, “Federal Motor Vehicle Safety Standards,” No. 302, “Flammability of interior materials.” 49 CFR 571.302.~~

Statement of Problem and Substantiation for Public Comment

The standard is not being referenced as the section referencing it was deleted . In Public Input 383 I recommended that, at least, a reference should be included that the standard fire test in FMVSS 302 is worthless as was shown by abundant research (and by the work indicated in NFPA 556). If the committee chooses not to protect firefighters appropriately, it should at least note that fact in the standard.

Related Item

Public Input No. 383-NFPA 1901-2013 [Section No. 14.1.4]

Submitter Information Verification

Submitter Full Name: Marcelo Hirschler
Organization: GBH International
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 02 10:49:47 EDT 2014

Public Comment No. 53-NFPA 1901-2014 [Section No. 3.3.80]

3.3.80 * GAWR (Gross Axle Weight Rating).

The ~~final stage manufacturer's specified maximum load~~ value specified by the vehicle as the load -carrying capacity of an axle system, as measured at the tire-ground interfaces.

Statement of Problem and Substantiation for Public Comment

The definition in the standard deviates from the definition found in 49 C.F.R. 571.3. It implies the final stage manufacturer identifies the rating. Pursuant to 49 C.F.R. 567, the incomplete vehicle has that responsibility in the case of vehicles manufacturered in two more stages.

Related Item

First Revision No. 19-NFPA 1901-2013 [Section No. 3.3.87]

Submitter Information Verification

Submitter Full Name: Wesley Chestnut
Organization: Spartan Motors, Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Sat Mar 15 10:15:56 EDT 2014

Public Comment No. 55-NFPA 1901-2014 [Section No. 3.3.81]

3.3.81 * GCWR (Gross Combination Weight Rating).

The ~~final stage manufacturer's specified maximum~~ value specified by the manufacturer as the loaded weight ~~for~~ of a combination ~~(articulated)~~ vehicle ~~consisting of a tow vehicle and one or more towed units~~ .

Statement of Problem and Substantiation for Public Comment

The current definition in the standard is inconsistent with that in 49 C.F.R. 571.3. Further it implies the final stage manufacturer has the responsibility of assigning such value but in the case of vehicles manufactured in two or more stages the incomplete vehicle manufacturer has the responsibility.

Related Item

First Revision No. 19-NFPA 1901-2013 [Section No. 3.3.87]

Submitter Information Verification

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City:
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Submittal Date: Sat Mar 15 11:50:54 EDT 2014

Public Comment No. 54-NFPA 1901-2014 [Section No. 3.3.87]

3.3.87 * GVWR (Gross Vehicle Weight Rating).

The ~~final-stage manufacturer's specified maximum load-carrying capacity of~~ value specified by the manufacturer as the loaded weight of a single vehicle.

Statement of Problem and Substantiation for Public Comment

GVWR is defined in 49 C.F.R 571.3. The definition in the standard deviates from that in the federal regulations. It also implies the final stage manufacturer has the responsibility to assign the value. Pursuant to 49 C.F.R. 567, an incomplete vehicle manufacturer would have that responsiblity in the case of vehicles manufactured in two or more stages.

Related Item

First Revision No. 19-NFPA 1901-2013 [Section No. 3.3.87]

Submitter Information Verification

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Submittal Date: Sat Mar 15 10:22:24 EDT 2014

Public Comment No. 136-NFPA 1901-2014 [New Section after 3.3.108]

TITLE OF NEW CONTENT

Type your content here ...Add new definition:

Maximum discharge gauge pressure capability rating. The maximum permissible discharge gauge pressure at which the fire pump may be operated.

Statement of Problem and Substantiation for Public Comment

The phrase maximum discharge gauge pressure capability rating is used in the standard but is not defined. The proposed definition provides a definition for the phrase.

Related Public Comments for This Document

Related Comment	Relationship
Public Comment No. 115-NFPA 1901-2014 [New Section after 4.20.1]	Refers to same phrase
Public Comment No. 134-NFPA 1901-2014 [Section No. 16.2.5]	Refers to same phrase
Public Comment No. 135-NFPA 1901-2014 [Section No. 4.20.1]	Refers to same phrase

Related Item

First Revision No. 226-NFPA 1901-2013 [New Section after 16.2.4.2]

Submitter Information Verification

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Submittal Date: Thu May 15 17:09:13 EDT 2014

Public Comment No. 59-NFPA 1901-2014 [Section No. 3.3.108]

3.3.108 Manufacturer.

The person or persons, company, firm, corporation, partnership, or other organization responsible for turning raw materials or assembles components into a finished product.

Statement of Problem and Substantiation for Public Comment

The current definition implies the responsible party "turns" a component into a finish product. This clarifies the action of assembling components results in a finished product. In this case, a completed apparatus.

Related Public Comments for This Document

Related Comment	Relationship
Public Comment No. 53-NFPA 1901-2014 [Section No. 3.3.80]	Proposal in definition changes

Related Item

First Revision No. 109-NFPA 1901-2013 [Section No. 21.9.1.3.1]

Submitter Information Verification

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Submittal Date: Sat Mar 15 13:36:39 EDT 2014

Public Comment No. 118-NFPA 1901-2014 [New Section after 3.3.166]

3.3.34.1 Charging Rate

The rating of compressor volume as the time it takes to fill a cylinder of a known, calibrated volume from 0 to the maximum working pressure of the compressor, after the compressor's purification system has satisfied its pressure maintaining value.

Statement of Problem and Substantiation for Public Comment

The use of SCFM ratings for compressors would be confusing and lead to misinterpretation of manufacturers data. Therefore Charging Rate should be defined within NFPA 1901.

Related Item

Public Input No. 117-NFPA 1901-2013 [New Section after 14.1.10.3]

Submitter Information Verification

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Submittal Date: Mon May 12 14:39:23 EDT 2014

Public Comment No. 1-NFPA 1901-2014 [Section No. 4.3.1]

4.3.1*

It shall be the responsibility of the purchaser to specify the following details of the apparatus:

(1) Its required performance, including where operations at elevations above 2000 ft (600 m) ~~or on~~ , extreme humidity in the environment or on grades greater than 6 percent are required.

(2) The maximum number of fire fighters to ride within the apparatus

(3) Specific electrical loads that are to be part of the minimum continuous electrical load defined in 13.3.3

(4) Any hose, ground ladders, or equipment to be carried by the apparatus that exceed the minimum requirements of this standard

(5) If a trailer for the purpose of transporting fire rescue response equipment, whether it is a Type I, Type II, or Type III configuration

Statement of Problem and Substantiation for Public Comment

Some trucks go out USA, where the extreme humidity in the environment affects some devices like: compressors, pneumatic válves, etc.

Related Item

Public Input No. 1-NFPA 1901-2012 [Section No. 22.10 [Excluding any Sub-Sections]]

Submitter Information Verification

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Submittal Date: Tue Feb 18 14:24:25 EST 2014

Public Comment No. 66-NFPA 1901-2014 [Section No. 4.3.1]

4.3.1 * -

It shall be the responsibility of the purchaser to specify the following details of the apparatus:

(1) Its required performance, including where operations at elevations above 2000 ft (600 m) or on grades greater than 6 percent are required

(2) The maximum number of fire fighters to ride within the apparatus

(3) Specific electrical loads that are to be part of the minimum continuous electrical load defined in 13.3.3

(4) Any hose, ground ladders, or equipment to be carried by the apparatus that exceed the minimum requirements of this standard

(5) If a trailer for the purpose of transporting fire rescue response equipment, whether it is a Type I, Type II, or Type III configuration

(6) The function of the fire apparatus

(7) Specify requirements associated with state, provincial, and local regulations.

Statement of Problem and Substantiation for Public Comment

The current requirement in the standard does not identify who defines the function of the fire apparatus or state, provincial, and local statutes. In chapters 5 through 11, there are "if" statements relating to how the apparatus is to function but the standard does not require who defines the function. Further, manufacturers generally manage to federal regulations. There may be statutes, or more local ordinances, manufacturers do not monitor, manage to, or are aware of. By adding the proposed language, the responsibility is defined to ensure the manufacturer meets the appropriate requirements.

Related Item

First Revision No. 17-NFPA 1901-2013 [Section No. 3.3.65]

Submitter Information Verification

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Submittal Date: Sun Mar 16 08:57:58 EDT 2014

Public Comment No. 97-NFPA 1901-2014 [Section No. 4.7.4]

4.7.4

The independent third-party organization shall witness all required tests by an in-person representative(s) at the test site or by use of verifiable automated data collection and image recording equipment. The third-party organization shall refuse to certify any test results for a system if all components of that system requiring testing do not pass the testing required by this standard.

4.7.4.1* Verifiable Automated Data Collection [DR1] The equipment for securing verifiable automated data collection and image recording shall be designed to monitor, collect, and transmit data from a fire apparatus and test pit to a microprocessor and compatible software.

4.7.4.1.1 The software shall be capable of calculations and data collection to automatically populate applicable [DR2] test data forms that meet the requirements of this standard.

4.7.4.1.2 Electronic components shall merge pitot pressure and/or flowmeter input, chassis information input, and video recording to a microprocessor for data storage and output.

4.7.4.1.3

The equipment shall be designed for operation in exterior locations and wet conditions, with waterproof connections and enclosures.

4.7.4.1.4 Electronic equipment shall be have wiring and cables protected from mechanical damage and moisture entry.

4.7.4.1.5 The hardware, software, and data output shall be configured into a 'tamper free' design and operation.

4.7.4.2 Hardware

4.7.4.2.1 Master Pressure/Vacuum Test Gauges Fire Apparatus. Two (2) analog test gauges shall be connected pressure transducers for communication purposes to testing hardware.

4.7.4.2.2* Flow Test Gauges. Two (2) or more analog pitot test gauges shall be connected pressure transducers for communication purposes to testing hardware.

A.4.7.4.2.2 [DR3] Two (2) or more flowmeter displays could be provided.

4.7.4.2.3 Clocks.Two (2) digital clocks with time and date displays shall be provided and recorded or be part of the camera display.

4.7.4.2.4 GPS Integration.GPS recording provisions shall be provided within the operating system.

4.7.4.2.5 Water Temperature and Ambient Air Temperature Monitoring.The test pit water temperature and test area ambient air temperature shall be continuously monitored and recorded continuously during the test period.

4.7.4.2.6 Video Equipment.Master apparatus pressure/vacuum test gauges and pitot/flowmeter readouts and corresponding clock shall be video recorded.

4.7.4.2.6.1 The video output shall be saved within the microprocessor memory.

4.7.4.2.6.2 The video equipment shall be suitable for exterior operations and be third party 'listed' or certified for verifiable test recording.

4.7.4.2.6.3 The cameras shall operate continuously during all sequences of water flow testing, including water tank flow test and priming test.

4.7.4.2.6.4* [DR4] The entire test video shall be available on request by the third-party testing organization.

A.4.7.4.2.6.4 Video snapshot clips can be provided to specific test points.

4.7.4.2.7 Key board.A keyboard shall be provided for manual entry of required information prior to commencement of testing.

4.7.4.2.8 Video monitor shall have the following electronic displays:

a) Master pump pressure

b) Master vacuum (inches of HG)

c) Fire pump drive engine RPM – tachometer

d) Pitot pressure and/or flowmeter display(s)

e) Calculation display of total GPM (LPM)

f) Time and date (day, hour, minute, second)

g) Flow test display at: 100% of capacity at 150PSI, 70% of capacity at 200PSI, 50% of capacity at

250PSI, 100% of capacity at 165PSI

h) Water temperature of test pit and ambient temperature during entire test sequence, in addition to a warning light and alarm to operator.

i) Coolant temperature from the fire pump drive engine radiator during entire test sequence, in addition to a warning light and alarm to operator.

j) Oil pressure monitoring from fire pump drive engine during entire test sequence, in addition to a warning light and alarm to operator.

k) Low voltage monitoring during entire test sequence, in addition to a warning light and alarm to operator.

l) Line voltage monitoring and recording provisions shall be provided. (frequency, voltage, amps, and ambient temperature in the generator area)

4.7.4.3 Data Entry and Supplementary Tests

4.7.4.3.1

Manual Entry of requirednformation.Prior to the commencement of testing, the test operator shall manually enter required information specific to the purchaser, chassis, OEM manufacturer, vertical suction lift distance, no-load governed speed, altitude, barometric pressure and other required test documentation.

4.7.4.3.2

No-load RPM test. Required information shall be manually entered. Software shall show "error" if the engine RPM exceeds the No-Load RPM during the testing period.

4.7.4.3.4

Vacuum test. [DR5] The software shall indicate "pass" or "fail" based on the vacuum lost at the end of the test period.

4.7.4.3.5

Tank to Pump Test. Required information shall be manually entered prior to performance flow testing. Software shall be capable of calculating the GPM (LPM) flow rate and 80% of tank capacity discharged in the required time period.

4.7.4.3.6*

The software shall include provisions for the attachment of supplemental information.

A.4.7.4.3.6 These provisions allow for attaching information such as fire pump manufacturer testing information, engine manufacturer performance curve with No-Load RPM, fire pump manufacturer and OEM hydrostatic test, and other information.

4.7.4.4 Software.

4.7.4.4.1* Unsafe Conditions. The software shall automatically warn the operator on the video screen, record any un-safe or un-acceptable conditions, and the test shall be automatically terminated at a pre-determined timeframe after the alarm and operator notification has occurred.

A.4.7.4.4.1 Un-safe or un-acceptable conditions can include loss of oil pressure, high engine temperature, loss of pressure, low flow condition, high ambient air temperature or high test pit water temperatures.

4.7.4.4.2

Manual Entry. After the required information is entered and test sequences are started, manual entry of data shall be prevented by the software.

4.7.4.4.3

Chassis Information. The hardware and software shall have the capability of receiving chassis engine and transmission information via a SAE #J1939 or mechanical/analog means for required logging chassis operating information.

4.7.4.4.4

Flow Calculations. The software shall be automatically linked to standard flow-chart (nozzle tip/pitot PSI) for a "total" GPM (LPM) reading on the monitor so the pump operator can adjust the drive engine RPM. Flowmeters shall automatically supply the flow data to the microprocessor.

4.7.4.4.5 *

Test Protocols and Manufacturer's Record of Apparatus Construction. The required manually entered information fields and automatically populated test fields shall be combined into a test document.

4.7.4.4.5.1 Test protocol forms shall comply with the requirements of this standard and the manufacturer's record of apparatus construction.

4.7.4.4.5.2 Software shall permit recording of test information in Metric and [DR6] US measurement units.

4.7.4.4.6

Pump testing sequence. The software shall be pre-programmed for a pre-determined sequence of pump testing to be completed.

4.7.4.4.6.1 If the pump operator does not follow the required sequence of events, a test failure indicator shall be display.

4.7.4.4.6.2* If the flow test is not started in a pre-determined period a time delay warning shall be displayed.

A.4.7.4.4.6.2 Time delays can result from a variety of issues including changing nozzles and hoses.

4.7.4.4.6.3 If the time delay is over 5 minutes between tests , a test failure indicator shall be displayed.

4.7.4.4.6.3 The test sequence and time test points shall comply with the requirements of this standard.

4.7.4.4.7

Backup and Transfer of Test Data. The software shall automatically back-up information each minute of data recording.

4.7.4.4.7.1 Test form and video shall be downloadable to an external USB port, local network or Internet connection.

4.7.4.4.7.2 There shall be automatic storage of data during each test, with no loss of data caused by power supply interruption.

4.7.4.4.7.3 Data storage of the microprocesser shall be sufficient for up to three pumper tests and video monitoring.

4.7.4.4.7.4 The pump test shall be automatically and uniquely numbered within the software for each apparatus test.

A.4.7.4.1 (*)

Third Party Certification of Electronic Testing. Following the OEM apparatus test, the test data sheet and video/photo segment may be transmitted via Internet (Cloud), USB, or CD with photo/video data and test data to a third party accredited organization in compliance with the requirements of this standard as it pertains to review and certification.

A.4.7.4.4.5 (*)

Additional Electronic Testing Inputs and Alternate Testing. Connections for line voltage testing and foam equipment testing can be provided in the electronic hardware and software. The software and hardware can also permit testing of apparatus built in accordance with the requirements of NFPA 1906, skid type pumping units, and other OEM testing which may or may not be third-party certified.

Training and Recording Applications [DR8] . Additional video and voice equipment can be used for supplemental apparatus training or test documentation purposes by the OEM manufacturer and could be supplied to the purchaser.

Statement of Problem and Substantiation for Public Comment

The added requierments clarify and formalize remote third party testing with the controls and information needed to do a certification

Related Item

First Revision No. 146-NFPA 1901-2013 [Section No. 4.7.4]

Submitter Information Verification

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Submittal Date:	Thu May 01 06:08:59 EDT 2014

Public Comment No. 69-NFPA 1901-2014 [New Section after 4.9.4.2]

4.9.4.3

Safety Light(s)

Each type of apparatus shall have at least one amber (yellow) light on the left rear (drivers side) at the highest point. Departments may place amber (yellow) lights on both sides.

The purpose of this light is to provide safety to the vehicle and occupants as the vehicle travels and is parked along the side of a road from vehicles approaching from the rear.

Statement of Problem and Substantiation for Public Comment

I have seen many departments place the amber (yellow) light on the left (drivers) side as this is the side that most often is to the on coming lane or outside lane. When the amber light(yellow) light is on the right side (officer) it does not provide the same level of safety. Also if the vehicle is used as a blocker during highway incidents the drier side is facing the oncoming traffice so the D/O can assist with watching for any potintial traffic issues. By placing the amber(yellow) light on the Drivers side it ensures that this light is more visible to the public. This will also standize the placement of the light.
This may also or either fit in Chapter 13.

Related Item

Public Input No. 48-NFPA 1901-2013 [New Section after 13.8.14.3.3]

Submitter Information Verification

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Submittal Date: Tue Mar 18 08:17:32 EDT 2014

Public Comment No. 56-NFPA 1901-2014 [Sections 4.11.2, 4.11.3, 4.11.4, 4.11.5, 4.11.6, 4.11.7, 4....]

Sections 4.11.2, 4.11.3, 4.11.4, 4.11.5, 4.11.6, 4.11.7, 4.11.8

4.11.2 –

~~The~~

The VDR shall

~~be capable of recording the data shown in Table 4.11.2 in that order at least once per second.~~

~~Table 4.11.2 VDR Data~~

~~Data Unit of Measure Vehicle speed mph Acceleration (from speedometer) mph/sec Deceleration (from speedometer) mph/sec Engine speed rpm Engine throttle position % of full throttle Anti-lock braking system event On/off Seat occupied status Occupied: Yes/No by position Seat belt status Buckled: Yes/No by position Master optical warning device switch On/off Time 24-hour clock Date Year/month/day~~

~~4.11.3 –~~

~~Data shall be stored at the sampling rate in a 48-hour loop.~~

~~4.11.4 –~~

~~Memory shall be sufficient to record 100 engine hours' worth of minute-by-minute summary showing the data in Table 4.11.4 .~~

~~Table 4.11.4 VDR Summary Data~~

~~Data Unit of Measure Maximum vehicle speed mph Maximum acceleration (from speedometer) mph/sec Maximum deceleration (from speedometer) mph/sec Maximum engine speed rpm Maximum engine throttle position % of full throttle Anti-lock braking system event On/off Seat occupied with seat belt unbuckled Yes/no by position at 30 sec into minute Master optical warning device switch On/off at 30 sec into minute Time 24-hour clock Date Year/month/day~~

~~4.11.5 –~~

~~When the memory capacity is reached, the system shall erase the oldest data first.~~

~~4.11.6 –~~

~~All data stored in the VDR shall be uploadable by the user to a computer and importable into a data management software package.~~

~~4.11.7 –~~

~~Data shall be password protected with access controlled by the purchaser.~~

~~4.11.8 –~~

~~Software shall be delivered with the apparatus that will run on both Windows ® and Apple ® operating systems and produce the following formatted reports from the uploaded data:~~

(1) ~~Raw second-by-second data over a specified data/time range~~

(2) ~~Daily log for the time the engine is running for a given date (minute-by-minute output of all values)~~

(3) ~~Weekly summary (maximum values each hour for each day of the week)~~

(4) ~~Monthly summary (maximum values each day for each day of the month)~~

meet the requirements of 49 C.F.R. 563 Event Data Recorders

Statement of Problem and Substantiation for Public Comment

The committee's responses to original PI's related to the VDR do not address the public's concern. There is inconsistency in the responses by the committee. The committee response indicates the public comment period closed on the alleged NPRM in May 2013 with final rule expected to be released in Q1 2013. (Note: May 2013 would have been in Q2) There does not appear to be activity with the NHTSA or FMCSA to mandate vehicles be equipped with E/VDR's. Federal rule 49 C.F.R 563 specifies the criteria for information, sampling, etc... for E/VDR's. The rule also specifies requirements for information to be included in the owner's manual which seems to be a short coming of the standard in requirements for VDR's. By making this change, the standard would be better

aligned with federal requirements thus making a transition to future rulemakings that may impact fire apparatus.

Related Item

Public Input No. 152-NFPA 1901-2013 [Section No. 4.11]

Submitter Information Verification

Submitter Full Name: Wesley Chestnut
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City:
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Submittal Date: Sat Mar 15 12:52:08 EDT 2014

Public Comment No. 91-NFPA 1901-2014 [Section No. 4.13.1.1 [Excluding any Sub-Sections]]

The apparatus shall not exceed the chassis manufacturer's maximim allowable vertical center of gravity for a completed vehicle and shall meet the criteria defined in either of the following:

(1) * The apparatus shall remain stable to 26.5 degrees in both directions when tested on a tilt table in accordance with SAE J2180, *A Tilt Table Procedure for Measuring the Static Rollover Threshold for Heavy Trucks*.

(2) The calculated or measured center of gravity (CG) shall be no higher than 80 percent of the rear axle track width.

Statement of Problem and Substantiation for Public Comment

the 80 % rule allows the OEM maximun CG for complete vehicles to be exceeded for vehicles under 19,500 GVWR

Related Item

Public Input No. 14-NFPA 1901-2013 [Section No. 1.3.2]

Submitter Information Verification

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Submittal Date: Fri Apr 18 13:16:28 EDT 2014

Public Comment No. 35-NFPA 1901-2014 [Section No. 4.15.2]

4.15.2 *

The maximum top speed of fire apparatus with a GVWR over 26,000 lb (11,800 kg) shall not exceed either 68 mph (~~105~~ 109 km/hr) or the manufacturer's maximum fire service speed rating for the tires installed on the apparatus, whichever is lower.

Statement of Problem and Substantiation for Public Comment

There may be a conversion error on the speed from MPH to KPH 68mph equals 109.43 KPH.

Related Item

Public Input No. 161-NFPA 1901-2013 [Section No. 4.15]

Submitter Information Verification

Submitter Full Name: PAUL PREVOST
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Street Address:
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Submittal Date: Wed Feb 26 23:36:05 EST 2014

Public Comment No. 36-NFPA 1901-2014 [Section No. 4.15.2]

4.15.2*

The maximum top speed of fire apparatus with a GVWR over 26,000 lb (11,800 kg) shall not exceed either 68 mph (105 km/hr) or the manufacturer's maximum fire service speed rating for the tires installed on the apparatus, whichever is lower.

Statement of Problem and Substantiation for Public Comment

I agree with the two previous respondents regarding vehicle top speed. there is no scientific correlation between speed and apparatus accidents. I live and work in an area where some posted speed limits (Montana and Alberta) are higher than the apparatus speed limits specified in the document. This forces us to purchase non 1901 compliant apparatus. just to go the speed limit. Our response areas are vast and travel distances are sometimes long when responding to our second due areas. the difference between 100kph and 120kph over 50kms is about 9 minutes faster that is a difference of help arriving in 21 minutes instead of 30 minutes.

Related Item

Public Input No. 405-NFPA 1901-2013 [Sections 4.15.2, 4.15.3]

Submitter Information Verification

Submitter Full Name: PAUL PREVOST
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Submittal Date: Wed Feb 26 23:54:01 EST 2014

Public Comment No. 77-NFPA 1901-2014 [Section No. 4.15.2]

4.15.2*

The maximum top speed of fire apparatus ~~with a GVWR over 26,000 lb (11,800 kg)~~ shall not exceed ~~either 68 mph (105 km/hr) or~~ the manufacturer's maximum fire service speed rating for the tires installed on the apparatus~~, whichever is lower~~ .

Statement of Problem and Substantiation for Public Comment

The top speed of the fire apparatus should be regulated by the tire rating and associated components. There is no proof that limiting the "top speed" of fire apparatus has reduced the number of accidents or fatalities. If you review the NIOSH reports for the past 20 years you'll find that nearly all of the fatal incidents that referenced "excessive speed" as a cause were not related to an excessive "top" speed, but more specifically a speed excessive for the roadway or conditions. An overwhelming majority of these incidents involved an apparatus entering a curve and travelling at a speed to fast for the curve, limiting the top speed to 60 mph or 68 mph does not correct this situation/problem. Furthermore, putting a 60 mph limitation on apparatus that travel on interstate roadways causes the apparatus to be more of a hazard on the road.

Related Item

Public Input No. 1-NFPA 1901-2012 [Section No. 22.10 [Excluding any Sub-Sections]]

Submitter Information Verification

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Submittal Date: Thu Apr 03 13:10:27 EDT 2014

Public Comment No. 114-NFPA 1901-2014 [Sections 4.15.2, 4.15.3]

Sections 4.15.2, 4.15.3

4.15.2 * -

The maximum top speed of fire apparatus with a GVWR over 26,000 lb (11,800 kg) shall not exceed either 68 mph (105 km/hr) or the manufacturer's maximum fire service speed rating for the tires installed on the apparatus, whichever is lower.

4.15.3

If the combined water tank and foam agent tank capacities on the fire apparatus exceed 1250 gal (4732 L), or the GVWR of the vehicle is over 50,000 lb (22,680 kg), the maximum top speed of the apparatus shall not exceed either 60 mph (85 km/hr) or the manufacturer's maximum fire service speed rating for the tires installed on the apparatus, whichever is lower.

The weights and speeds cited in Section 4.15.2 and 4.15.3 are inconsistent with the laws of physics. The cited speeds and weights should be reconciled based on the fact that it is the speed squared (multiplied by itself) and the weight that determines the severity of the crash.

Statement of Problem and Substantiation for Public Comment

The proposed change does NOT advocate any increase or decrease in speed in any way, only that the standard should be based on verifiable data developed in a scientific study of apparatus accidents and consistent with the laws of physics. Standards developed by reputable organizations must be based on scientifically validated facts, not opinions or anecdotal data.

Related Item

First Revision No. 222-NFPA 1901-2013 [Chapter 10]

Submitter Information Verification

Submitter Full Name: JOSEPH GUYTHER
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Submittal Date: Mon May 12 06:30:02 EDT 2014

Public Comment No. 32-NFPA 1901-2014 [Sections 4.15.2, 4.15.3]

Sections 4.15.2, 4.15.3

4.15.2 *

The maximum top speed of fire apparatus with a GVWR over 26,000 lb (11,800 kg) shall not exceed ~~either 68~~ either 75 mph (~~105~~ 120 km/hr) or the manufacturer's maximum fire service speed rating for the tires installed on the apparatus, whichever is lower.

4.15.3

If the combined water tank and foam agent tank capacities on the fire apparatus exceed 1250 gal (4732 L), or the GVWR of the vehicle is over 50,000 lb (22,680 kg), the maximum top speed of the apparatus shall not exceed ~~either 60~~ either 65 mph (~~85~~ 104 km/hr) or the manufacturer's maximum fire service speed rating for the tires installed on the apparatus, whichever is lower.

Statement of Problem and Substantiation for Public Comment

Due to the distances that need to be covered in rural areas, these recommendations should either be increased ot there should be a standard for rural response.

Related Item

Public Input No. 1-NFPA 1901-2012 [Section No. 22.10 [Excluding any Sub-Sections]]

Submitter Information Verification

Submitter Full Name: ROSS RYTTING
Organization: TRUCKEE MEADOWS FIRE PD
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Zip:
Submittal Date: Fri Feb 21 20:03:30 EST 2014

Public Comment No. 33-NFPA 1901-2014 [Section No. 4.15.3]

4.15.3

If the combined water tank and foam agent tank capacities on the fire apparatus exceed 1250 gal (4732 L), or the GVWR of the vehicle is over 50,000 lb (22,680 kg), the maximum top speed of the apparatus shall not exceed either 60 mph (~~85~~ 95 km/hr) or the manufacturer's maximum fire service speed rating for the tires installed on the apparatus, whichever is lower.

Statement of Problem and Substantiation for Public Comment

The conversion from MPH to K/HR seems to be erroneous, the correct conversion is 60MPH = 96.56K/hr. I think this should be revised, I assume you want it rounded to the nearest (5k/hr).

Related Item

Public Input No. 161-NFPA 1901-2013 [Section No. 4.15]

Submitter Information Verification

Submitter Full Name: PAUL PREVOST
Organization: CLEARWATER REGIONAL FIRE
Street Address:
City:
State:
Zip:
Submittal Date: Mon Feb 24 23:06:58 EST 2014

Public Comment No. 78-NFPA 1901-2014 [Section No. 4.15.3]

~~4.15.3~~ –

~~If the combined water tank and foam agent tank capacities on the fire apparatus exceed 1250 gal (4732 L), or the GVWR of the vehicle is over 50,000 lb (22,680 kg), the maximum top speed of the apparatus shall not exceed either 60 mph (85 km/hr) or the manufacturer's maximum fire service speed rating for the tires installed on the apparatus, whichever is lower.~~

Statement of Problem and Substantiation for Public Comment

This revision ties into public comment No. 77, if comment on 77 is adopted then 4.15.3 can be deleted.

Related Item

Public Input No. 1-NFPA 1901-2012 [Section No. 22.10 [Excluding any Sub-Sections]]

Submitter Information Verification

Submitter Full Name: Jason Witmier
Organization: Pottsville Fire Department
Street Address:
City:
State:
Zip:
Submittal Date: Thu Apr 03 13:14:14 EDT 2014

Public Comment No. 60-NFPA 1901-2014 [Section No. 4.17.1 [Excluding any Sub-Sections]]

Each apparatus shall be tested before delivery to the ultimate purchaser, by the manufacturer, in order to verify that it meets the criteria in this section.

Statement of Problem and Substantiation for Public Comment

By making the proposed changes, responsibility of performing the test(s) and when is defined. It is currently ambiguous at best.

Related Item

First Revision No. 148-NFPA 1901-2013 [Section No. 4.17]

Submitter Information Verification

Submitter Full Name: Wesley Chestnut
Organization: Spartan Motors, Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Sat Mar 15 13:52:24 EDT 2014

Public Comment No. 64-NFPA 1901-2014 [Section No. 4.17.4]

~~4.17.4~~ –

~~The auxiliary braking system, if so equipped, shall function as intended by the auxiliary braking system manufacturer.~~

Statement of Problem and Substantiation for Public Comment

The standard does not need to specify a requirement that a system operate as designed. The current statement does not define minimum design or performance requirements.

Related Item

First Revision No. 148-NFPA 1901-2013 [Section No. 4.17]

Submitter Information Verification

Submitter Full Name: Wesley Chestnut
Organization: Spartan Motors, Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Sun Mar 16 08:25:00 EDT 2014

Public Comment No. 115-NFPA 1901-2014 [New Section after 4.20.1]

TITLE OF NEW CONTENT

Type your content here ...

New section for 4. 20.1 after (10): If the apparatus has a fire pump with maximum discharge gauge pressure capability rating that exceeds the hydrostatic test pressure of 16.5.2.1, the pump manufacturer's certification of the hydrodynamic test *(16.5.4.2)*

Statement of Problem and Substantiation for Public Comment

New section 16.5.4 covers hydrodynamic test and provides requirements for when the pump manufacturer is required to provide a certification of completion for a hydrodynamic test. Section 4.20.1 should include reference to this certification.

Related Item

First Revision No. 227-NFPA 1901-2013 [Sections 16.5.2, 16.5.3, 16.5.4, 16.5.5]

Submitter Information Verification

Submitter Full Name: Tom Mettler
Organization: Waterous Company
Street Address:
City:
State:
Zip:
Submittal Date: Mon May 12 13:38:03 EDT 2014

Public Comment No. 135-NFPA 1901-2014 [Section No. 4.20.1]

4.20.1 Fire Apparatus Documentation.

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

(1) The manufacturer's record of apparatus construction details, including the following information:

(a) Owner's name and address

(b) Apparatus manufacturer, model, and serial number

(c) Chassis make, model, and serial number

(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) Chassis weight distribution in pounds (kilograms) with water and manufacturer-mounted equipment (front and rear)

(h) Engine make, model, serial number, rated horsepower and related speed, and governed speed; and if so equipped, engine transmission PTO(s) make, model, and gear ratio

(i) Type of fuel and fuel tank capacity

(j) Electrical system voltage and alternator output in amps

(k) Battery make, model, and capacity in cold cranking amps (CCA)

(l) Chassis transmission make, model, and serial number; and if so equipped, chassis transmission PTO(s) make, model, and gear ratio

(m) Ratios of all driving axles

(n) Maximum governed road speed

(o) Pump make, model, rated capacity in gallons per minute (liters per minute where applicable), maximum discharge ~~pressure~~ gauge pressure capability rating, and serial number

(p) Pump transmission make, model, serial number, and gear ratio

(q) Auxiliary pump make, model, rated capacity in gallons per minute (liters per minute where applicable), and serial number

(r) Water tank certified capacity in gallons or liters

(s) Foam tank (if provided) certified capacity in gallons (liters)

(t) Aerial device type, rated vertical height in feet (meters), rated horizontal reach in feet (meters), and rated capacity in pounds (kilograms)

(u) Paint manufacturer and paint number(s)

(v) Company name and signature of responsible company representative

(w) Weight documents from a certified scale showing actual loading on the front axle, rear axle(s), and overall fire apparatus (with the water tank full but without personnel, equipment, and hose)

(2) Certification of compliance of the optical warning system *(see 13.8.16)*

(3) Siren manufacturer’s certification of the siren *(see 13.9.1.1)*

(4) Written load analysis and results of the electrical system performance tests *(see 13.14.1 and Section 13.15)*

(5) Certification of slip resistance of all stepping, standing, and walking surfaces *(see 15.7.4.5)*

(6) If the apparatus has a fire pump, the pump manufacturer's certification of suction capability *(see 16.2.4.1)*

(7) If the apparatus is equipped with a fire pump and special conditions are specified by the purchaser, the pump manufacturer’s certification of suction capacity under the special conditions *(see 16.2.4.2)*

(8) If the apparatus has a fire pump, a copy of the apparatus manufacturer’s approval for stationary pumping applications *(see 16.3.1)*

(9) If the apparatus has a fire pump, the engine manufacturer’s certified brake horsepower curve for the engine furnished, showing the maximum governed speed *(see 16.3.2.2)*

(10) If the apparatus has a fire pump, the pump manufacturer's certification of the hydrostatic test *(see 16.5.2.2)*

(11) If the apparatus has a fire pump, the certification of inspection and test for the fire pump *(see 16.13.1.1.5 or 16.13.1.2.4 as applicable)*

(12) If the apparatus is equipped with an auxiliary pump, the apparatus manufacturer's certification of the hydrostatic test *(see Section 17.12)*

(13) When the apparatus is equipped with a water tank, the certification of water tank capacity *(see Section 18.6)*

(14) If the apparatus has an aerial device, the certification of inspection and test for the aerial device *(see Section 19.24)*

(15) If the apparatus has an aerial device, all the technical information required for inspections to comply with NFPA 1911

(16) If the apparatus has a foam proportioning system, the foam proportioning system manufacturer's certification of accuracy *(see 20.10.4.2)* and the final installer's certification the foam proportioning system meets this standard *(see 20.11.2)*

(17) If the system has a CAFS, the documentation of the manufacturer's predelivery tests *(see Section 21.9)*

(18) If the apparatus has a line voltage power source, the certification of the test for the power source *(see 22.15.7.2)*

(19) If the apparatus is equipped with an air system, air tank certificates *(see 24.5.1.2)*, the SCBA fill station certification *(see 24.9.6)*, and the results of the testing of the air system installation *(see 24.14.5 and 24.15.4)*

(20) Any other required manufacturer test data or reports

Statement of Problem and Substantiation for Public Comment

The phrase in 4.20.1 (1) (o) maximum discharge pressure pressure capability rating doesn't match the wording of this phrase in other parts of the standard. Add the word "gauge" to be consistent.

Related Public Comments for This Document

Related Comment	Relationship
Public Comment No. 134-NFPA 1901-2014 [Section No. 16.2.5]	Refers to same phrase
Public Comment No. 115-NFPA 1901-2014 [New Section after 4.20.1]	Refers to same phrase

Related Item

First Revision No. 226-NFPA 1901-2013 [New Section after 16.2.4.2]

Submitter Information Verification

Submitter Full Name: Tom Mettler
Organization: Waterous Company
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 15 16:45:42 EDT 2014

Public Comment No. 65-NFPA 1901-2014 [Section No. 4.20.2.1]

4.20.2.1

The contractor shall deliver with the fire apparatus ~~at least two sets of~~ complete operation and service documentation covering the completed apparatus as delivered and accepted.

Statement of Problem and Substantiation for Public Comment

The statement currently in the standard seems appropriate for when documentation is in printed format. Additionally, the current requirement implies that two sets for each apparatus would be required. This creates a waste and undue burden for apparatus that are the same, or substantially similar (fleets). By making this change, it allows for various types of formats while still stating the requirement of the information must be supplied.

Related Item

First Revision No. 163-NFPA 1901-2013 [Section No. A.24.3.6.3]

Submitter Information Verification

Submitter Full Name: Wesley Chestnut
Organization: Spartan Motors, Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Sun Mar 16 08:34:40 EDT 2014

Public Comment No. 85-NFPA 1901-2014 [Section No. 4.20.2.3]

4.20.2.3

The contractor shall also deliver with the fire apparatus the following documentation for the entire apparatus and each major operating system or major component of the apparatus:

(1) Manufacturer's name and address

(2) Country of manufacture

(3) Source for service and technical information

(4) Parts replacement information

(5) Descriptions, specifications, and ratings of the chassis, pump (if applicable), and aerial device (if applicable)

(6) Wiring diagrams for low voltage and line voltage systems to include the following information:

- (a) Pictorial representations of circuit logic for all electrical components and wiring
- (b) Circuit identification
- (c) Connector pin identification
- (d) Zone location of electrical components
- (e) Safety interlocks
- (f) Alternator–battery power distribution circuits
- (g) * Input/output assignment sheets or equivalent circuit logic implemented in multiplexing systems

(7) Lubrication charts

(8) Operating instructions for the chassis, any major components such as a pump or aerial device, and any auxiliary systems

(9) Precautions related to multiple configurations of aerial devices, if applicable

(10) Instructions regarding the frequency and procedure for recommended maintenance

(11) Overall apparatus operating instructions

(12) Safety considerations

(13) Limitations of use

(14) Inspection procedures

(15) Recommended service procedures

(16) Troubleshooting guide

(17) Apparatus body, chassis, and other component manufacturer's warranties

(18) Special data required by this standard

(19) A material safety data sheet (MSDS) for any fluid that is specified for use on the apparatus

(20) One copy of the latest edition of the FAMA Fire Apparatus Safety Guide

Statement of Problem and Substantiation for Public Comment

The Fire Apparatus Manufacturer's Association has recently published their Fire Apparatus Safety Guide. This guide provides safety procedures essential to the safe operation of fire apparatus. It is inexpensive, and sized to be carried conveniently in any apparatus. As NFPA 1901 is all about apparatus safety, this publication written for anyone driving or using a fire apparatus should be provided with every apparatus. The FAMA Fire Apparatus Safety Guide includes further information on each of the hazards identified by the FAMA safety signs that were accepted as additions to the first draft of both NFPA 1901 and 1906. This guide can help operators to more fully

understand the risks pointed out by the FAMA safety signs.

Related Item

First Revision No. 29-NFPA 1901-2013 [Section No. 4.9.4]

First Revision No. 99-NFPA 1901-2013 [Section No. 14.1.3.9]

First Revision No. 100-NFPA 1901-2013 [Section No. 14.1.3.8]

First Revision No. 101-NFPA 1901-2013 [Section No. 14.1.8.4.3]

First Revision No. 104-NFPA 1901-2013 [New Section after 15.10.7]

First Revision No. 105-NFPA 1901-2013 [Section No. 15.12.3]

First Revision No. 114-NFPA 1901-2013 [Section No. 23.7.3]

First Revision No. 132-NFPA 1901-2013 [Section No. 19.23.1.2]

Submitter Information Verification

Submitter Full Name: J. Lackore
Organization: Oshkosh Corporation
Affilliation: Committee Member
Street Address:
City:
State:
Zip:
Submittal Date: Tue Apr 15 16:01:15 EDT 2014

Public Comment No. 57-NFPA 1901-2014 [Section No. 4.21 [Excluding any Sub-Sections]]

~~The entity responsible for final assembly of the~~ The final stage manufacturer, or manufacturer of the completed apparatus shall deliver with the fire apparatus either a certification that the apparatus fully complies with all requirements of this standard or, alternatively, a Statement of Exceptions specifically describing each aspect of the completed apparatus that is not fully compliant with the requirements of this standard at the time of delivery to the ultimate purchaser .

Statement of Problem and Substantiation for Public Comment

The entity responsible may be a dealer or the fire department in cerrtain cases. (e.g. addition of miscellaneous equipment or communications equipment). In the case of a fire department installing components/equipment, it doesn't seem logical for them to supply a statement of exceptions to themselves. By making this change, a clear distinction is identified when the transition of responsibility is beyond the manufacturer to which the standard applies by and large.

Related Item

First Revision No. 150-NFPA 1901-2013 [Section No. 4.21]

Submitter Information Verification

Submitter Full Name: Wesley Chestnut
Organization: Spartan Motors, Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Sat Mar 15 13:22:04 EDT 2014

Public Comment No. 58-NFPA 1901-2014 [Section No. 4.21.3]

~~4.21.3~~ –

~~An apparatus that is delivered subject to a Statement of Exceptions other than a certification of full compliance shall not be placed in emergency service until the apparatus has been modified as necessary to accomplish full compliance with this standard.~~

Statement of Problem and Substantiation for Public Comment

This standard is to define the minimum requirements for design and performance of fire apparatus. It does not have the jurisdiction to determine when a vehicle can be placed into service. This is a departmental decision which could be based on non-compliance to the standard but should not be mandated by the standard itself.

Related Item

First Revision No. 150-NFPA 1901-2013 [Section No. 4.21]

Submitter Information Verification

Submitter Full Name: Wesley Chestnut
Organization: Spartan Motors, Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Sat Mar 15 13:30:28 EDT 2014

Public Comment No. 67-NFPA 1901-2014 [Chapter 5]

Chapter 5 Pumper Fire Apparatus

5.1 General.

If the apparatus is to function as a pumper, it shall meet the requirements of this chapter.

5.2 Fire Pump.

The apparatus shall be equipped with a fire pump that meets the requirements of Chapter 16 and that has a minimum rated capacity of 750 gpm (3000 L/min).

5.3 Aerial Device.

~~If the~~ When a pumper fire apparatus is equipped with an aerial device, the ~~requirements of 5.3.1 through 5.3.4 shall apply.~~

~~5.3.1~~

~~The~~

aerial device shall meet the requirements of Chapter 19. 5.3.

~~2~~

~~If the aerial device is equipped with a permanently mounted waterway, the fire pump shall be capable of supplying the flow requirements of 19.6.1 , 19.12.1 , or 19.16.1 with a maximum intake gauge pressure of 20 psi (138 kPa).~~

~~5.~~

3

~~.3~~

Provisions shall be made to ensure that the pump operator is not in contact with the ground.

5.3.4

Signs shall be placed to warn the pump operator ~~of electrocution hazards~~ of all inherent hazards .

5.4 Foam Proportioning System.

If the pumper is equipped with a foam proportioning system, it shall meet the requirements of Chapter 20.

5.5 * Water Tank.

The pumper shall be equipped with a water tank(s) that meets the requirements of Chapter 18 and that has a minimum certified capacity (combined, if applicable) of 300 gal (1100 L).

5.6 * Equipment Storage.

A minimum of 40 ft^3 (1.1 m^3) of enclosed weather-resistant compartmentation that meets the requirements of Section 15.1 shall be provided for the storage of equipment.

5.7 * Hose Storage.

Hose bed area(s), compartments, or reels that comply with Section 15.10 shall be provided to accommodate the following:

(1) A minimum hose storage area of 30 ft^3 (0.8 m^3) for 2 ½ in. (65 mm) or larger fire hose

(2) Two areas, each a minimum of 3.5 ft^3 (0.1 m^3), to accommodate 1 ½ in. (38 mm) or larger preconnected fire hose lines

5.8 * Equipment Supplied by the Contractor.

The contractor shall supply the equipment listed in 5.8.1 and 5.8.2 and shall provide and install such brackets or compartments as are necessary to mount the equipment.

5.8.1 Ground Ladders.

5.8.1.1

All fire department ground ladders carried on the apparatus shall meet the requirements of NFPA 1931, except as permitted by 5.8.1.3 and 5.8.1.4.

5.8.1.2 * _

At a minimum, the following fire department ground ladders shall be carried on the apparatus:

(1) One straight ladder equipped with roof hooks

(2) One extension ladder

(3) One folding ladder

5.8.1.3

Stepladders and other types of multipurpose ladders meeting ANSI A14.2, *Ladders — Portable Metal — Safety Requirements,* or ANSI A14.5, *Ladders — Portable Reinforced Plastic — Safety Requirements,* with duty ratings of Type 1A or 1AA shall be permitted to be substituted for the folding ladder required in 5.8.1.2 (3).

5.8.1.4

Stepladders and other types of multipurpose ladders shall be permitted to be carried in addition to the minimum fire department ground ladders specified in 5.8.1.2 provided they meet either ANSI A14.2 or ANSI A14.5 with duty ratings of Type 1A or 1AA.

5.8.2 Suction Hose or Supply Hose.

5.8.2.1

A minimum of 20 ft (6 m) of suction hose or 15 ft (4.5 m) of supply hose shall be carried.

5.8.2.1.1

Where suction hose is provided, a suction strainer shall be furnished.

5.8.2.1.2

Where suction hose is provided, the friction and entrance loss of the combination suction hose and strainer shall not exceed the losses listed in Table 16.2.4.1(b) or Table 16.2.4.1(c).

5.8.2.1.3

Where supply hose is provided, it shall have couplings compatible with the local hydrant outlet connection on one end and the pump intake connection on the other end.

5.8.2.2

Suction hose and supply hose shall meet the requirements of NFPA 1961.

5.8.2.3 * _

The purchaser shall specify whether suction hose or supply hose is to be provided, the length and size of the hose, the type and size of the couplings, the manner in which the hose is to be carried on the apparatus, and the style of brackets desired.

5.9 * _ Minor Equipment.

5.9.1 General.

The equipment listed in 5.9.3 and 5.9.4 shall be available on the pumper fire apparatus before the apparatus is placed in service.

5.9.2

A detailed list of who is to furnish the items and the method for organizing and mounting these items shall be supplied by the purchasing authority.

5.9.3 * _ Fire Hose and Nozzles.

The following fire hose and nozzles shall be carried on the apparatus:

(1) 800 ft (240 m) of 2 ½ in. (65 mm) or larger fire hose

(2) 400 ft (120 m) of 1 ½ in. (38 mm), 1¾ in. (45 mm), or 2 in. (52 mm) fire hose

(3) One handline nozzle, 200 gpm (750 L/min) minimum

(4) Two handline nozzles, 95 gpm (360 L/min) minimum

(5) One smoothboreor combination nozzle with 2 ½ _ in. shutoff that flows a minimum of 250 gpm

5.9.4 * _ Miscellaneous Equipment.

The following additional equipment shall be carried on the apparatus:

(1) One 6 lb (2.7 kg) flathead axe

(2) One 6 lb (2.7 kg) pickhead axe

(3) One 6 ft (2 m) pike pole or plaster hook

(4) One 8 ft (2.4 m) or longer pike pole

(5) Two portable hand lights

(6) One approved dry chemical portable fire extinguisher with a minimum 80-B:C rating

(7) One 2 ½ gal (9.5 L) or larger water extinguisher

(8) One self-contained breathing apparatus (SCBA) complying with NFPA 1981 for each assigned seating position, but not fewer than four, mounted in brackets fastened to the apparatus or stored in containers supplied by the SCBA manufacturer

(9) One spare SCBA cylinder for each SCBA carried, each mounted in a bracket fastened to the apparatus or stored in a specially designed storage space

(10) One first aid kit

(11) Four combination spanner wrenches

(12) Two hydrant wrenches

(13) One double female 2 ½ in. (65 mm) adapter with National Hose (NH) threads

(14) One double male 2 ½ in. (65 mm) adapter with NH threads

(15) One rubber mallet, suitable for use on suction hose connections

(16) Two salvage covers each a minimum size of 12 ft × 14 ft (3.7 m × 4.3 m)

(17) Two or more wheel chocks, mounted in readily accessible locations, that together will hold the apparatus, when loaded to its GVWR or GCWR, on a hard surface with a 20 percent grade with the transmission in neutral and the parking brake released

(18) One traffic vest for each seating position, each vest to comply with ANSI/ISEA 207, *Standard for High-Visibility Public Safety Vests*, and have a five-point breakaway feature that includes two at the shoulders, two at the sides, and one at the front

(19) Five fluorescent orange traffic cones not less than 28 in. (711 mm) in height, each equipped with a 6 in. (152 mm) retroreflective white band no more than 4 in. (102 mm) from the top of the cone, and an additional 4 in. (102 mm) retroreflective white band 2 in. (51 mm) below the 6 in. (152 mm) band

(20) Five illuminated warning devices such as highway flares, unless the five fluorescent orange traffic cones have illuminating capabilities

(21) One automatic external defibrillator (AED)

5.9.4.1

If the supply hose carried does not use sexless couplings, an additional double female adapter and double male adapter, sized to fit the supply hose carried, shall be carried mounted in brackets fastened to the apparatus.

5.9.4.2

If none of the pump intakes are valved, a hose appliance that is equipped with one or more gated intakes with female swivel connection(s) compatible with the supply hose used on one side and a swivel connection with pump intake threads on the other side shall be carried. Any intake connection larger than 3 in. (75 mm) shall include a pressure relief device that meets the requirements of 16.6.6.

5.9.4.3

If the pumper is equipped with an aerial device with a permanently mounted ladder, four ladder belts meeting the requirements of NFPA 1983,, shall be provided.

5.9.4.4

If the apparatus does not have a 2 ½ in. intake with NH threads, an adapter from 2 ½ in. NH female to a pump intake shall be carried, mounted in a bracket fastened to the apparatus if not already mounted directly to the intake.

5.9.4.5

If the supply hose carried has other than 2 ½ in. NH threads, adapters shall be carried to allow feeding the supply hose from a 2 ½ in. NH thread male discharge and to allow the hose to connect to a 2 ½ in. NH female intake, mounted in brackets fastened to the apparatus if not already mounted directly to the discharge or intake.

Statement of Problem and Substantiation for Public Comment

The current language refers to sections that refer to other chapters. Simplify the document by referring to the appropriate/applicable chapter from the onset.

Related Item

First Revision No. 217-NFPA 1901-2013 [Chapter 5]

Submitter Information Verification

Submitter Full Name: Wesley Chestnut
Organization: Spartan Motors, Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Sun Mar 16 10:18:09 EDT 2014

Public Comment No. 3-NFPA 1901-2014 [Section No. 12.1.5.1]

12.1.5.1*

The label shall show the ~~unladen~~ height of the completed unequipped fire apparatus in feet and inches(meters), the length of the completed fire apparatus in feet and inches (meters), and the GVWR in tons (metric tons).

Statement of Problem and Substantiation for Public Comment

The original PI 328 said unladen. This was edited to unequipped but in the final result both words were included. Saying both unladen and unequipped is repetitively redundant.

Related Item

Public Input No. 328-NFPA 1901-2013 [Section No. 12.1.5.1]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
State:
Zip:
Submittal Date: Thu Feb 20 16:19:02 EST 2014

Public Comment No. 88-NFPA 1901-2014 [Section No. 12.2.4.5]

12.2.4.5

An air restriction indicator shall be mounted in the driving compartment and visible to the driver when available from the chassis manufacturer .

Statement of Problem and Substantiation for Public Comment

An in cab air rertiction fiilter indicator is not available on many chassis 19,500 GVWR and less

Related Item

Public Input No. 354-NFPA 1901-2013 [Section No. 12.2.2.4]

Submitter Information Verification

Submitter Full Name: John McDonald
Organization: US General Services Administra
Street Address:
City:
State:
Zip:
Submittal Date: Fri Apr 18 12:36:40 EDT 2014

Public Comment No. 89-NFPA 1901-2014 [Section No. 12.2.6.7.1]

12.2.6.7.1

The regeneration process shall be activated by two methods:

(1) * Automatically by the engine system but only when the transmission is in gear and the speedometer indicates a speed above 5 mph (8 km/hr), whether the apparatus is in motion or is operating in stationary pump mode with an engine rpm sufficient to register 5 mph (8 km/hr) on the speedometer

(2) Manually when initiated by activation of a switch located in the driver's area of the driving compartment when available from the chassis manufacturer

Statement of Problem and Substantiation for Public Comment

Not all chassis 19,500 and under have this feature available

Related Item

Public Input No. 354-NFPA 1901-2013 [Section No. 12.2.2.4]

Submitter Information Verification

Submitter Full Name: John McDonald
Organization: US General Services Administra
Street Address:
City:
State:
Zip:
Submittal Date: Fri Apr 18 12:53:42 EDT 2014

Public Comment No. 68-NFPA 1901-2014 [New Section after 12.3.1]

12.3.1. Air Brake Systems

Fire apparatus equipped with an axle that is rated greater than 29,000 lbs shall meet 49 C.F.R. 571.121 - Air Brake Systems.

Statement of Problem and Substantiation for Public Comment

In PI 299, the committee responded by not accepting the input of the commenter and stating all requirements being recommended are in FMVSS 121/105. However, for vehicles equipped with air brake systems, vehicles equipped with an axle rated at 29,000 lbs or more are excluded from having to meet the FMVSS 121. (49 C.F.R. 571.121, S3(b)) To address the concerns raised in PI 299, and to incorporate federal requirements on vehicles to which they do not apply, the added section is being proposed.

Related Item

Public Input No. 299-NFPA 1901-2013 [Section No. 12.3.1.1]

Submitter Information Verification

Submitter Full Name: Wesley Chestnut
Organization: Spartan Motors, Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Sun Mar 16 10:28:54 EDT 2014

Public Comment No. 5-NFPA 1901-2014 [Section No. 13.4.6.4]

13.4.6.4*

A green ~~"battery~~ "master disconnect on" pilot light that is visible from the driver's position shall be provided.

Statement of Problem and Substantiation for Public Comment

Per change to 13.4.6, both master LOAD disconnect and master BODY disconnect switches are now allowed, so this statement needs to be made more generic.

Related Item

First Revision No. 204-NFPA 1901-2013 [Section No. 13.4.6 [Excluding any Sub-Sections]]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
State:
Zip:
Submittal Date: Thu Feb 20 16:33:46 EST 2014

Public Comment No. 4-NFPA 1901-2014 [Section No. 13.4.6.5]

13.4.6.5

Rechargeable handlights, radios, and other similar devices shall be permitted to be connected to the electrical system ahead of the master ~~load~~ disconnect switch.

Statement of Problem and Substantiation for Public Comment

Per change to 13.4.6, both master LOAD disconnect and master BODY disconnect switches are now allowed, so this statement needs to be made more generic.

Related Item

First Revision No. 204-NFPA 1901-2013 [Section No. 13.4.6 [Excluding any Sub-Sections]]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
State:
Zip:
Submittal Date: Thu Feb 20 16:29:13 EST 2014

Public Comment No. 92-NFPA 1901-2014 [Section No. 13.8.13.3.4]

13.8.13.3.4 * _

~~It shall be permitted for red zone C lower flashing lights to switch to steady-on lights when the service brakes are applied and the optical warning light system is on in the “Clearing Right-of-Way” mode.~~

Statement of Problem and Substantiation for Public Comment

Delete this section. This permits the emergency warning light system to become non compliant with 13.8.11.1.

If the AHJ requires an auxiliary brake light, they should so specify.

If the committee feels that auxiliary brake lights are an improtant safety enhancement (as the text in the FR would seem to indicate) , we should require them, in addition to our required existing emergeny lighting

Related Item

First Revision No. 48-NFPA 1901-2013 [New Section after 13.8.13.3.3]

Submitter Information Verification

Submitter Full Name: John McDonald
Organization: US General Services Administra
Street Address:
City:
State:
Zip:
Submittal Date: Fri Apr 18 14:44:33 EDT 2014

Public Comment No. 6-NFPA 1901-2014 [Section No. 13.10.1.1.1]

13.10.1.1.1

The work area immediately behind the vehicle shall be illuminated to an average level of at least 3 fc (30 lx), measured at 25 equally spaced points on a 2.5 ft (~~762~~ 750 mm) grid within a 10 ft × 10 ft (3 m × 3 m) square to the rear of the vehicle.

Statement of Problem and Substantiation for Public Comment

Arithmetic error (metric conversion error). 750 mm is 1/4 of 3 meters, just as 2.5 feet is 1/4 of 10 feet.

Related Item

Public Input No. 277-NFPA 1901-2013 [Section No. 13.10.1.1]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
State:
Zip:
Submittal Date: Thu Feb 20 16:39:35 EST 2014

Public Comment No. 99-NFPA 1901-2014 [Section No. 13.10.2.1]

13.10.2.1

If a hose bed is provided, lighting on the hose bed floor shall be at an average level of 3 fc (30 lx) or higher measured at 30 in. equally spaced ~~intervals along the center of the hose bed floor~~ intervals with all dividers and covers removed .

Statement of Problem and Substantiation for Public Comment

As currently written in the standard available for public comment, this paragraph leaves room for interpretation. It is not uncommon to have hose bed dividers in the center of the hose bed which would make it impossible to measure the light intensity as identified. I recommend changing the text to that as proposed by Mike Moore which removes all hose bed dividers and covers prior to the test. This is clear, straight forward, and repeatable.

Related Item

Public Input No. 280-NFPA 1901-2013 [Section No. 13.10.2.1]

Submitter Information Verification

Submitter Full Name: William Proft
Organization: Pierce Manufacturing
Affilliation: Manufacturer of Fire Apparatus
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 01 14:46:45 EDT 2014

Public Comment No. 38-NFPA 1901-2014 [New Section after 14.1.1]

TITLE OF NEW CONTENT

Type your content here ...If the apparatus has a crew carriying area separate from the main chassis cab, this crew area shall have a independant retention system to prevent the crew compartment from separating from the chassis should the primary retetion system fails.

Statement of Problem and Substantiation for Public Comment

Many apparatus builders offer crew and/or crew carrying pump panel enclosures to carry personnel on commercial chassis as a alternative to custom fire chassis. There appears to be little requirements specifically addressing the safety of these crew carrying areas. I have taken this text from the new proposed 1906 standard for wildland crew carriers. Although these wildland carriers typically carry more personnel in quantity but serve a similar purpose. In fact I propose that we copy most of the text from the new 1906 Chapter 10 for crew carrying areas to apply to similar crew carrying areas installed on 1901 apparatus to assure the safety and integrity of these areas on apparatus in the event of a crash or roll over.

Related Item

Public Input No. 317-NFPA 1901-2013 [Section No. 14.1.3.1]

Submitter Information Verification

Submitter Full Name: PAUL PREVOST
Organization: CLEARWATER REGIONAL FIRE
Street Address:
City:
State:
Zip:
Submittal Date: Sun Mar 02 18:54:48 EST 2014

Public Comment No. 127-NFPA 1901-2014 [Section No. 14.1.3.2.3]

14.1.3.2.3

The distance from the buckle anchorage to point D in Figure 14.1.3.1 (buckle tip) shall be no more than 2 in. (51 mm) longer than the distance from the buckle anchorage to the seating reference point (H-Point) of the seat when the seat is adjusted to its lowest and most rearward position.

Statement of Problem and Substantiation for Public Comment

It is important that the distance from the buckle anchorage to point D in figure 14.1.3.1 (buckle tip) be no more than two inches longer than the distance from the buckle anchorage to the seating reference point (Hip point) of the seat when the seat is adjusted to the lowest and most rearward position BECAUSE this prevents the buckle from injuring the abdomen of firefighters. See page two, second bullet point, for a concise description of appropriate seatbelt fit http://www.nhtsa.dot.gov/staticfiles/nti/teen-drivers/pdf/seatbeltuse.pdf.

Serious and sometimes fatal injuries occur from placement of buckles or seatbelts on the abdomen.
This revision limiting buckle distance is needed because the existing standard allows seatbelts which can seriously injure small and medium size firefighters, up to and including 73" tall and 225 lbs., by positioning the buckle and/or webbing on the abdomen, rather than on the hips.

The longer buckles allowed by the current standard also make it more difficult to find the female buckle in order to buckle up. Limiting buckle length as suggested in this revision will reduce the effect of buckles drooping down below the top of the seat, thus make it easier for firefighters to find and use the buckle.

My agency's comparison of seatbelt fit on various size firefighters suggests that this revision limiting buckle distance will allow seatbelts to more safely and comfortably restrain firefighters of different sizes, with or without turnouts, and that they will find it easier to buckle up than with seatbelts allowed under the current standard. Interviews with seatbelt manufacturers support this revision.

One manufacturer told me that "Firefighters not in turnouts are outside the design parameters" of seatbelts allowed by the current standard. Discussions with firefighters from all over the nation, including volunteer, career and combination, show that firefighters commonly ride in fire apparatus without full turnouts.

Firefighters of all sizes need the revision limiting buckle length so that we can more easily buckle up and be safely and comfortably restrained both when wearing turnouts and when wearing less bulky clothing such as a uniform.

Thank you for considering this revision. I appreciate your efforts to provide safe driving and crew areas for fire apparatus.

Related Item

First Revision No. 116-NFPA 1901-2013 [Sections 14.1.3.2, 14.1.3.3]

Submitter Information Verification

Submitter Full Name: JUAN BYRON
Organization: SOUTH SAN FRANCISCO FD
Street Address:
City:
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Zip:
Submittal Date: Wed May 14 01:29:52 EDT 2014

Public Comment No. 80-NFPA 1901-2014 [Section No. 14.1.3.2.3]

14.1.3.2.3

~~The~~
In the case of a Type 2 seat belt, the distance from the buckle anchorage
~~to point~~
(Point E in Figure 14.1.3.2.3) to the buckle tip (Point D in Figure 14.1.3.
~~1 (buckle tip~~
2.3) shall be no more than 2 in. (51 mm) longer than the perpendicular distance from the buckle anchorage to
~~the seating reference point (~~
a lateral axis through the H-Point
~~)~~
of the seat (line 3 in Figure 14.1.3.2.3) 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 A14.1.7.1.

Additional Proposed Changes

File Name	Description	Approved
1901_1906_Figure_14_1_3_2_3.pdf	Proposed Figure 14.1.3.2.3 corresponding to the changes proposed to section 14.1.3.2.3	

Statement of Problem and Substantiation for Public Comment

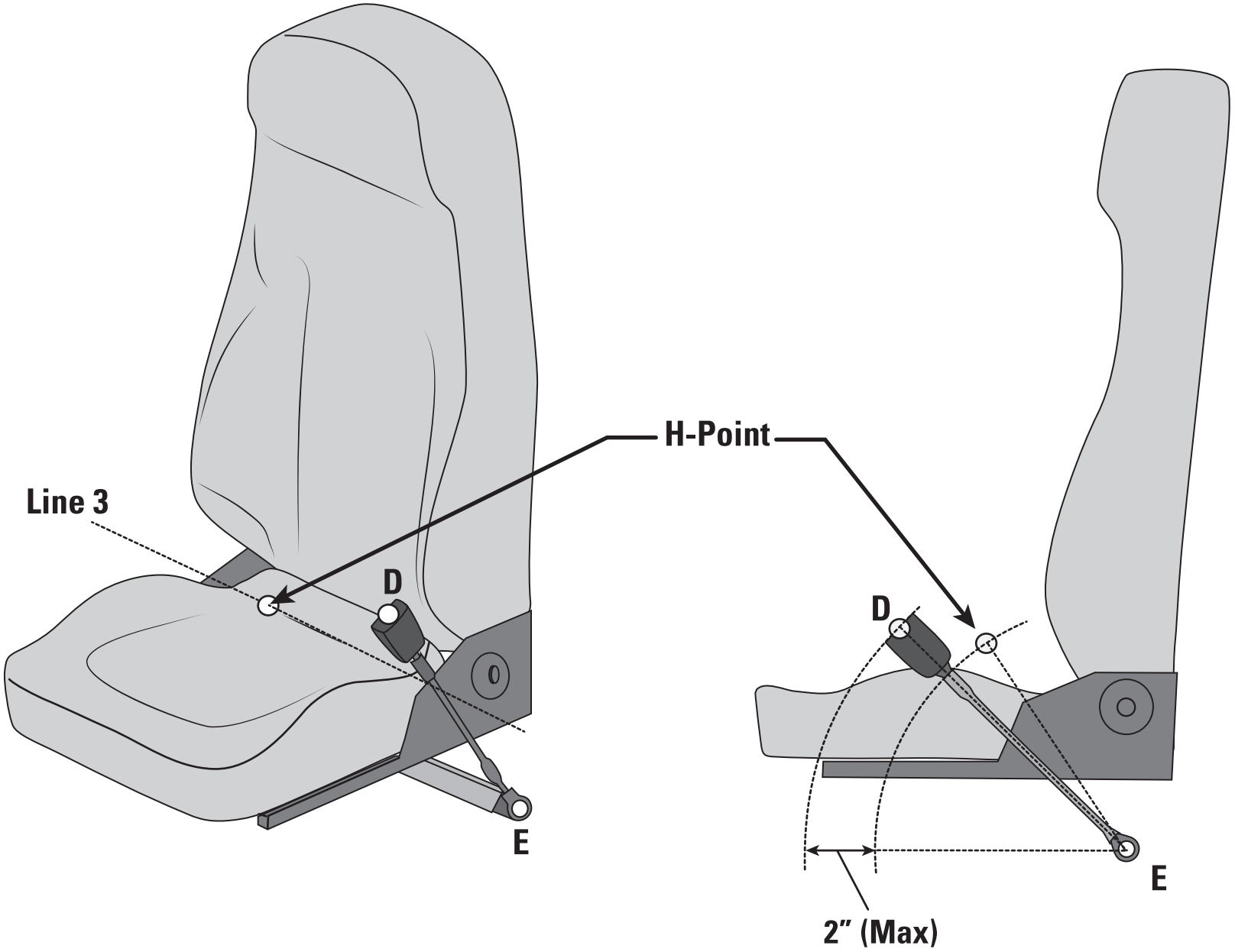
Justification: Buckles of extreme length can compromise the position and fit of a type II seat belt and make it less effective in the event of a crash. First draft language aimed to limit buckle length in accordance with SAE recommended practice J1834. SAE J1834 states: “As a guide, the latch plate entry should be no higher than the H-Point of the seat.” SAEJ1834 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”. First draft language proposed a buckle length specification which strikes the necessary balance between ease of access and restraint effectiveness.
First draft language allowed for multiple interpretations of the proposed buckle length specification. Second draft language, with illustration, seeks to reduce the possibility of misinterpretation.

Related Item

First Revision No. 116-NFPA 1901-2013 [Sections 14.1.3.2, 14.1.3.3]

Submitter Information Verification

Submitter Full Name: SCOTT STRANKO
Organization: IMMI
Street Address:
City:
State:
Zip:
Submittal Date: Mon Apr 07 09:08:35 EDT 2014


H-Point
Line 3
D
E
D
E
2" (Max)

Public Comment No. 81-NFPA 1901-2014 [Section No. 14.1.3.2.4]

~~**14.1.3.2.4** –~~
~~Alternatively, for ease of measurement, the distance CD in Figure 14.1.3.1 shall be no longer than 8 in. (203 mm) with the seat adjusted to its lowest and most rearward position.~~

Statement of Problem and Substantiation for Public Comment

Justification: Reference to Annex A.14.1.7.1 in the second draft proposal for section 14.1.3.2.3 gives the reader a means for estimating the H-Point from the location of the seat cushions. This reference to A.14.1.7.1 makes section 14.1.3.2.4 unnecessary.

Related Item

First Revision No. 116-NFPA 1901-2013 [Sections 14.1.3.2, 14.1.3.3]

Submitter Information Verification

Submitter Full Name: SCOTT STRANKO
Organization: IMMI
Street Address:
City:
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Zip:
Submittal Date: Mon Apr 07 09:26:01 EDT 2014

Public Comment No. 103-NFPA 1901-2014 [New Section after 14.1.4]

14.1.4* Flammability. The materials contained within the driver and crew compartement shall be protected to ensure that the flammability performance is sufficient to protect the driver and crew.

*A.14.1.4 FMVSS 302 is a mandatory flammability 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, discuss the usefulness (or lack of it) of compliance with FMVSS 302 to ensure fire safety of occupants of passenger road vehicles. Abundant added research has shown the fact that FMVSS 302 is not an adequate flammability test. 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 and FMVSS 302 into the annex on referenced standards.

Statement of Problem and Substantiation for Public Comment

Interior materials must be protected for flammability. At least information should be provided that no adequate test is being required to protect firefighters.

Related Public Comments for This Document

Related Comment	Relationship
Public Comment No. 102-NFPA 1901-2014 [Section No. 2.3.16]	

Related Item

First Revision No. 181-NFPA 1901-2013 [Section No. 14.1.4]

Public Input No. 383-NFPA 1901-2013 [Section No. 14.1.4]

Submitter Information Verification

Submitter Full Name: Marcelo Hirschler
Organization: GBH International
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City:
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Zip:
Submittal Date: Fri May 02 10:55:35 EDT 2014

Public Comment No. 154-NFPA 1901-2014 [Section No. 14.1.8.1]

14.1.8.1

Each seating space shall have a minimum width ~~of 22~~ of 28 in. (~~560~~ 711 mm) ~~at~~ at the shoulder level and 27 in . (686 mm) at the hip level..

Statement of Problem and Substantiation for Public Comment

Section 14.1.9 of the 2009 edition of NFPA 1901 specifies the minimum dimensions for seats and seating spaces inside fire apparatus cabs. The current dimensions permit seats to be located in areas that provide insufficient space for firefighters wearing protective clothing. The firefighters who are required to use these seats are often unable to fasten their seatbelts and may be forced to sit in awkward positions that expose them to increased risk of death or injury in the event of a crash. The proposed revisions are intended to provide appropriate seating spaces based on validated anthropometric data.

The Technical Committee did not incorporate any of the recommended changes in the first draft document. This public comment incorporates the changes that were previously submitted as two separate proposals and asks the committee to reconsider the previous action. Minor adjustments to the proposed dimensions are incorporated into this comment, based on refinements to the data since the original proposals were submitted.

Justification

Paragraph 14.1.3 states the intent of the standard as "Each crew riding position shall be provided with a seat and an approved seat belt designed to accommodate a person with and without heavy clothing." The minimum seating dimensions are found in Section 14.1.9. The same minimum dimensions have been incorporated in NFPA 1901 (and previously NFPA 19) for decades.

It is believed that the existing minimum dimensions were based on a data set that was obtained from US military personnel in the 1950s. This data was representative of the general military population at that time and made no allowances for the protective clothing that is worn by firefighters. The average weight and body dimensions of the general population have been increasing with each successive generation. In addition, firefighters are generally larger and heavier than the general population.

Complaints of cramped space inside fire apparatus have been heard and largely ignored for many years. The focus on this problem began in 2006 when it was recognized that many firefighters were unable to fasten their seatbelts because of the severely limited seating spaces that were provided for them. This recognition resulted in extensive efforts to develop accurate anthropometric data (measurements of the human body) for firefighters in the United States.

Between 2007 and 2013 a multi-phase project was conducted with the specific objective of supporting safety improvements in the design of fire apparatus as well as protective clothing and equipment. This effort involved an investment of approximately two million dollars by the National Institute of Occupational Safety and Health (NIOSH) and the National Institute of Standards and Technology (NIST) to develop the methodology and then to produce comprehensive data based on a statistically validated sample of 951 firefighters in the United States.

The efforts to gather and assemble this data were supported by the National Fallen Firefighters Foundation, the Safety, Health and Survival Section of the International Association of Fire Chiefs, the International Association of Firefighters, the Fire Apparatus Manufacturers Association (FAMA), numerous fire departments and hundreds of individual firefighters. The data collection phase was hosted by the Phoenix, Fort Worth, Philadelphia and Montgomery County (MD) Fire Departments and involved members of many additional fire departments in order to achieve the necessary distribution of subjects to statistically represent the population of firefighters in the United States.

The data shows that both male and female firefighters are significantly taller, heavier and larger in stature than the general population and that protective clothing adds significant additional bulk to their body dimensions. The seating areas in fire apparatus must be designed to safely accommodate the individuals who will be using them, including their protective clothing. The scientific data is now available to make the appropriate adjustments to the

standard; in fact it is probably the most extensive scientific data that has been provided to support any changes to this standard, I urge the committee to examine the supporting documentation and to reconsider the proposed changes to 14.1.9.

Paragraph 14.1.9.1 specifies the minimum width that must be provided for each seating position at the shoulder level. The current allowance of 22 inches allows for a row of four seats to be installed within a cab that provides 88 inches of interior width. The data shows that the median shoulder width for a seated male firefighter wearing protective clothing is 27.9 inches (709mm). The proposed revision to allow a minimum of 28 inches per seat is barely sufficient to accommodate a median width male firefighter in each seat.

The use of the median width for each seat in a row of seats is justifiable, because it is unlikely that an entire row of seats would be occupied by “extra large” firefighters at the same time. The allowance would have to be increased to 31.3 inches (796mm) to accommodate a firefighter with the 95th percentile shoulder width in each seat.

Paragraph 14.1.9.2 establishes 18 inches as the minimum width of a seat cushion. Single seats, particularly driver and officer positions, are often installed in spaces that are barely wide enough to accommodate an 18 inch wide cushion with no allowance for additional hip width. It is a common complaint that officers who are wearing protective clothing must sit with a semi-rotated posture, wedged against the cab door on one side and the engine enclosure on the other side.

A minimum clear width of 27 inches (686mm) is proposed at the hip level order to accommodate the 95th percentile firefighter width in a single seat. The data indicates that the median hip level width of a firefighter wearing protective clothing is 23.5 inches (597mm), while the 95th percentile width is 26.7 inches (678mm).

The Technical Committee rejected the public proposals on this subject with the justification “It is not possible to build to these dimensions in the current configurations commonly used, especially in the officers seating area.” This suggests that the committee believes that the challenge of making changes in cab configurations outweighs the benefits of accommodating the firefighters who have to use them. It is important to note that there are existing cab configurations that already comply with the proposed changes.

The proposed changes are directed toward recognized safety issues, not simply comfort and convenience. The failure to provide sufficient space to accommodate even median dimension firefighters creates a significant risk of death or injury. If the space is so constrained that the firefighter is unable to fasten the seat belt, the firefighter’s safety is severely compromised. In addition, seatbelts and harnesses are designed to secure individuals who are properly seated, not twisted in awkward positions.

In the past this technical committee has taken a leadership position in mandating significant design changes to increase the level of safety for firefighters, often based on little more than opinion and persuasion. In this case the proposals are supported by well documented scientific research and validated data. Please refer to the accompanying document "Sizing Firefighters: Method and Implications" from the Journal of the Human Factors and Ergonomics Society.

Note: Supporting material is available for review at NFPA Headquarters.

Related Item

Public Input No. 447-NFPA 1901-2013 [Section No. 14.1.9.1]

Public Input No. 448-NFPA 1901-2013 [Section No. 14.1.9.2]

Submitter Information Verification

Submitter Full Name: J Gordon Routley
Organization: Montreal Fire Department
Affilliation: National Fallen Firefighters Foundation
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 16 11:52:11 EDT 2014

Public Comment No. 94-NFPA 1901-2014 [Section No. 14.1.9.1]

14.1.9.1 * -

Where SCBA holders are mounted within a driving or crew compartment,they shall comply with the following:.

(1) The SCBA holder shall retain a pack and bottle combination for the published weight rating of the holder when subjected to the dynamic force pulse per SAE J2418, Occupant Restraint System Evaluation — Frontal Impact Component-Level Heavy Trucks and be third party certified .

(2) If the SCBA unit is mounted in a seatback, the release mechanism shall be accessible to the user while seated.

(3) Brackets that lock automatically either in the event of impact or when the parking brake is released, but are not locked at other times, shall be permitted.

(4) * The SCBA holder shall retain the bottle when subjected to the deceleration pulse at 0, 30, 90, and 180 degrees with respect to the direction of bottle extraction and in the horizontal plane.

(5) The SCBA holder shall retain the bottle when subjected to a deceleration pulse that exceeds 2 g for at least 60 ms in the vertical direction.

(6) The deceleration pulse shall meet the SAE J2418 deceleration profile with an accuracy of ±10 percent within the 35 to 95 ms range.

(7) The deceleration pulse shall be measured on a rigid portion of the base of the test fixture.

(8) The test component shall be retained in the holder during and after the dynamic test.

(9) The force required to extract the bottle after each test shall be no more than 125 percent of the initial extraction force.

(10) The SCBA holder shall be attached to the fixture in the same manner that it will be fastened to the seat or vehicle.

(11) The test bottle shall not move more than 3 in. relative to the frame of the holder during each test.

(12) The test fixture shall not allow the holder frame to move more than 3 in. relative to the base of the test sled.

(13) Each holder shall bear a label affixed by the holder manufacturer certifying compliance to these specifications.

(14) Manufacturers shall keep third party teesting certification on file for anyone's inspection.

Additional Proposed Changes

File Name	Description	Approved
1901_Ziaylek.pdf	PC Form	

Statement of Problem and Substantiation for Public Comment

The new SCBA holder requirements were written in order to ensure an adequae level of safety and to eliminate any loopholes in the test requirements. The additional requirement of third party certification follows the same thinking. When a firefighter has made the decision to purchase a particular product, he or she can have peace of mind that the safety of the product has indeed been checked. Most testing companies can provide a licensed professional engineer to witness tests to confirm compliances at a reasonable cost.

Related Item

First Revision No. 175-NFPA 1901-2013 [Section No. 14.1.10]

Submitter Information Verification

Submitter Full Name: Michael Ziaylek
Organization: Ziamatic Corp
Street Address:
City:
State:
Zip:
Submittal Date: Thu Apr 24 14:01:01 EDT 2014

Public Comment No. 96-NFPA 1901-2014 [Section No. 14.1.9.1]

14.1.9.1*

Where SCBA holders are mounted within a driving or crew compartment,they shall comply with the following:.

(1) The SCBA holder shall retain a pack and bottle combination for the published weight rating of the holder when subjected to the dynamic force pulse per SAE J2418, Occupant Restraint System Evaluation — Frontal Impact Component-Level Heavy Trucks and be third party certified .

(2) If the SCBA unit is mounted in a seatback, the release mechanism shall be accessible to the user while seated.

(3) Brackets that lock automatically either in the event of impact or when the parking brake is released, but are not locked at other times, shall be permitted.

(4) * The SCBA holder shall retain the bottle when subjected to the deceleration pulse at 0, 30, 90, and 180 degrees with respect to the direction of bottle extraction and in the horizontal plane.

(5) The SCBA holder shall retain the bottle when subjected to a deceleration pulse that exceeds 2 g for at least 60 ms in the vertical direction.

(6) The deceleration pulse shall meet the SAE J2418 deceleration profile with an accuracy of ±10 percent within the 35 to 95 ms range.

(7) The deceleration pulse shall be measured on a rigid portion of the base of the test fixture.

(8) The test component shall be retained in the holder during and after the dynamic test.

(9) The force required to extract the bottle after each test shall be no more than 125 percent of the initial extraction force.

(10) The SCBA holder shall be attached to the fixture in the same manner that it will be fastened to the seat or vehicle.

(11) The test bottle shall not move more than 3 in. relative to the frame of the holder during each test.

(12) The test fixture shall not allow the holder frame to move more than 3 in. relative to the base of the test sled.

(13) Each holder shall bear a label affixed by the holder manufacturer certifying compliance to these specifications.

(14) Manufacturers shall keep third party testing certification on file for anyone's inspection.

Statement of Problem and Substantiation for Public Comment

The new SCBA holder requirements were written in order to ensure an adequate level of safety and to eliminate any loopholes in the testing requirements. The additional requirement of third party certification follows the same thinking. When a firefighters has made the decision to purchase a particular product, he or she can have peace of mind that the safety of the product has indeed been checked. Most testing companies can provide a licensed professional engineer to witness tests to confirm compliances at a reasonable cost.

Related Item

First Revision No. 175-NFPA 1901-2013 [Section No. 14.1.10]

Submitter Information Verification

Submitter Full Name: MICHAEL ZIAYLEK
Organization: ZIAMATIC CORP
Street Address:
City:

State:

Zip:

Submittal Date: Wed Apr 30 14:49:10 EDT 2014

Public Comment No. 100-NFPA 1901-2014 [Section No. 15.1.1]

15.1.1 *

Any enclosed external compartments shall be weather resistant and ventilated and have provisions for drainage of moisture. Drainage holes may serve a dual role as vents.

Statement of Problem and Substantiation for Public Comment

The added note is intended to clearly indicate that drainage holes may have a dual role as vents. This was submitted last year but was not included and the Committee Statement was "The current wording already allows drain holes to serve as vents". However, that is an interpretation which has been cause for discussion. Let's make the wording clear by adding what has been proposed.

Related Item

Public Input No. 344-NFPA 1901-2013 [Section No. 15.1.1]

Submitter Information Verification

Submitter Full Name: William Proft
Organization: Pierce Manufacturing
Affilliation: Manufacturer of Fire Apparatus
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 01 18:16:05 EDT 2014

Public Comment No. 42-NFPA 1901-2014 [Section No. 15.4.2]

15.4.2

A means shall be provided that will retain the equipment rack in the road travel position when the vehicle is in motion unless the equipment rack is powered by a self-contained device that will eliminate the system from deploying unintentionally. A separate control shall be provided for the means of retention that serves to prevent unintentional movement of the equipment rack.

Statement of Problem and Substantiation for Public Comment

The failure of the powered system components such as hydraulic hoses as mentioned in the previous public comment is not the only means of unintentional movement of powered equipment racks. I am aware of several events (one in Nanaimo BC) where these racks have moved due to failure of the control mechanism such as a switch or wire. therefore they should have a separate control to prevent unintentional movement should the control system fail, causing the power system to operate.

Related Item

Public Input No. 244-NFPA 1901-2013 [Section No. 15.4.2]

Submitter Information Verification

Submitter Full Name: PAUL PREVOST
Organization: CLEARWATER REGIONAL FIRE RESCUE SERVICE
Street Address:
City:
State:
Zip:
Submittal Date: Sun Mar 02 22:28:21 EST 2014

Public Comment No. 90-NFPA 1901-2014 [Section No. 15.7.1.2]

15.7.1.2 * -

All steps shall have a minimum area of 35 in.^{2} (22,580 mm^2), shall be of such a shape that a 5 in. (125 mm) diameter disk does not overlap any side when placed on the step, and shall be arranged to provide at least 8 in. (200 mm) of clearance between the leading edge of the step and any obstruction. This measurement shall be taken at 45% from the leading edge of the step

Additional Proposed Changes

File Name	Description	Approved
1901_STEP_REQUIREMENTS.pdf		

Statement of Problem and Substantiation for Public Comment

Limits need to be etablished for taking the 8" measurment or the requirement needs to be removed

Related Item

Public Input No. 401-NFPA 1901-2013 [Section No. 15.7.1.1 [Excluding any Sub-Sections]]

Submitter Information Verification

Submitter Full Name: John McDonald
Organization: US General Services Administra
Street Address:
City:
State:
Zip:
Submittal Date: Fri Apr 18 13:00:14 EDT 2014

1901 STEP REQUIREMENTS

COMMERCIAL VEHICLE STEPS

Freightliner M270

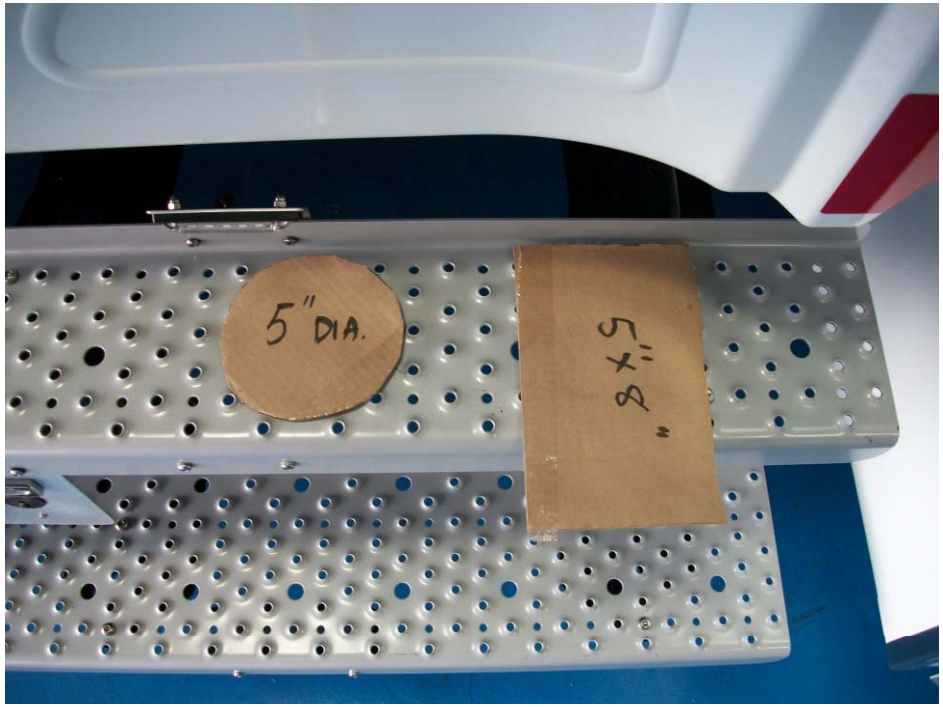
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- VIN 1FDVACYDT4EHFP2355
- GSA RPN# GU753

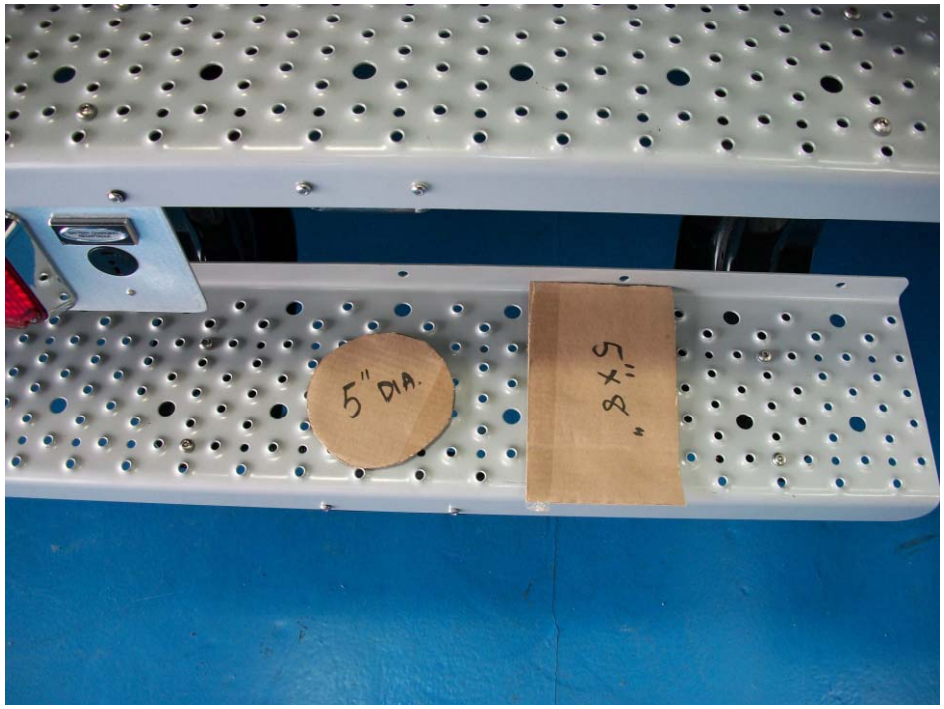
1901 Requirements

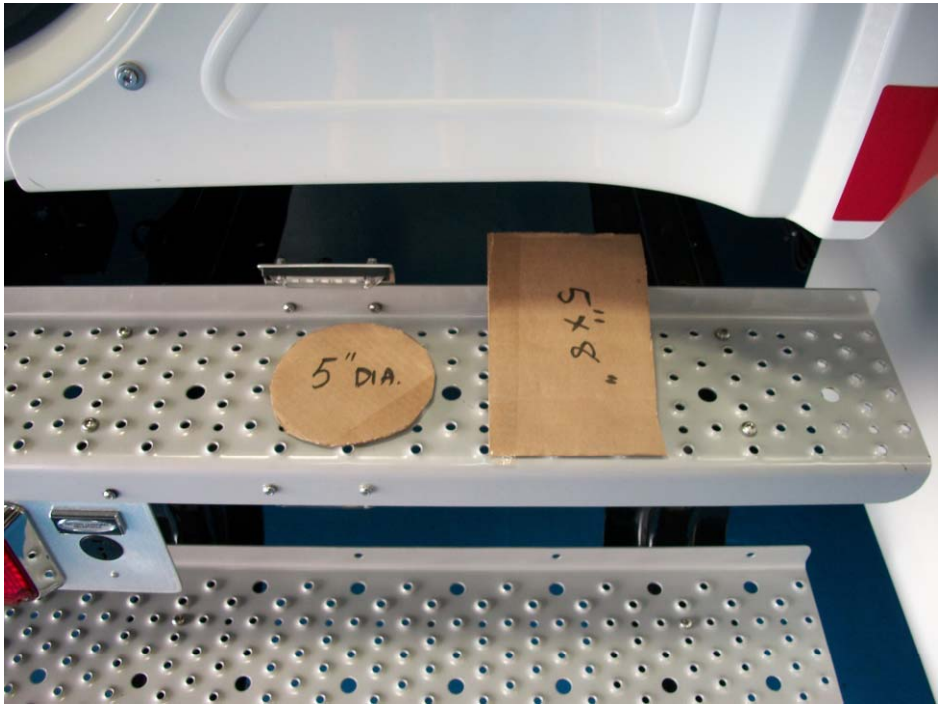
- **15.7.1.2*** All steps shall have a minimum area of 35 in.2 (22,580 mm2), shall be of such a shape that a 5 in. (125 mm) diameter disk does not overlap any side when placed on the step, and shall be arranged to provide at least 8 in. (200 mm) of clearance between the leading edge of the step and any obstruction.
- **15.7.1.3** All platforms shall have a minimum depth of 8 in. (200 mm) from the leading edge of the platform to any obstruction.
- **15.7.1.4** All access ladders shall have at least 8 in. (200 mm) clearance between the leading edge of any rung and the body of the fire apparatus or other obstruction.

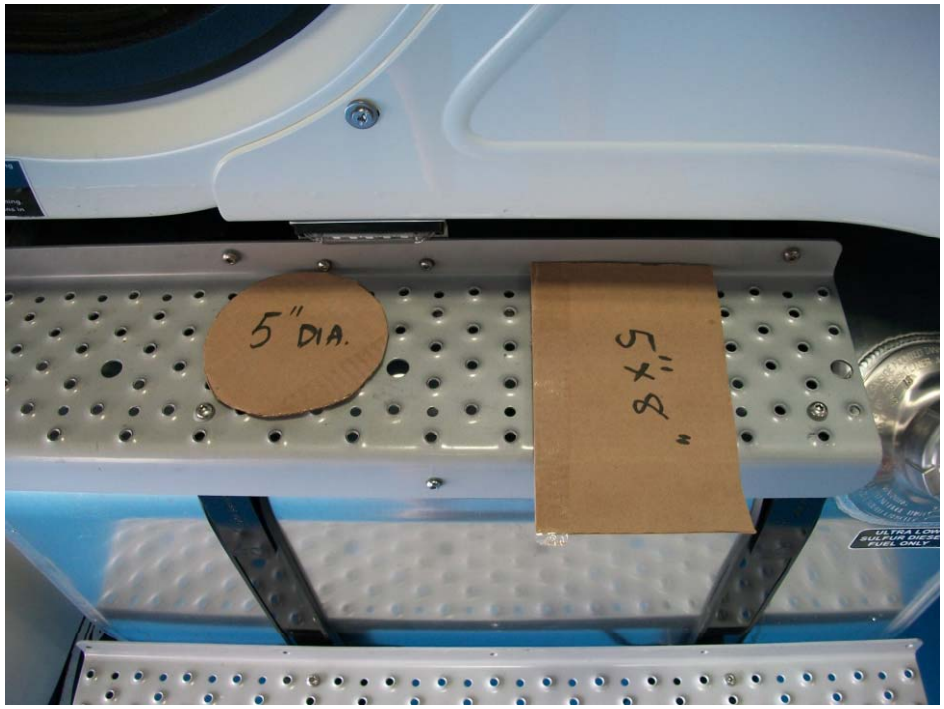
Streetside

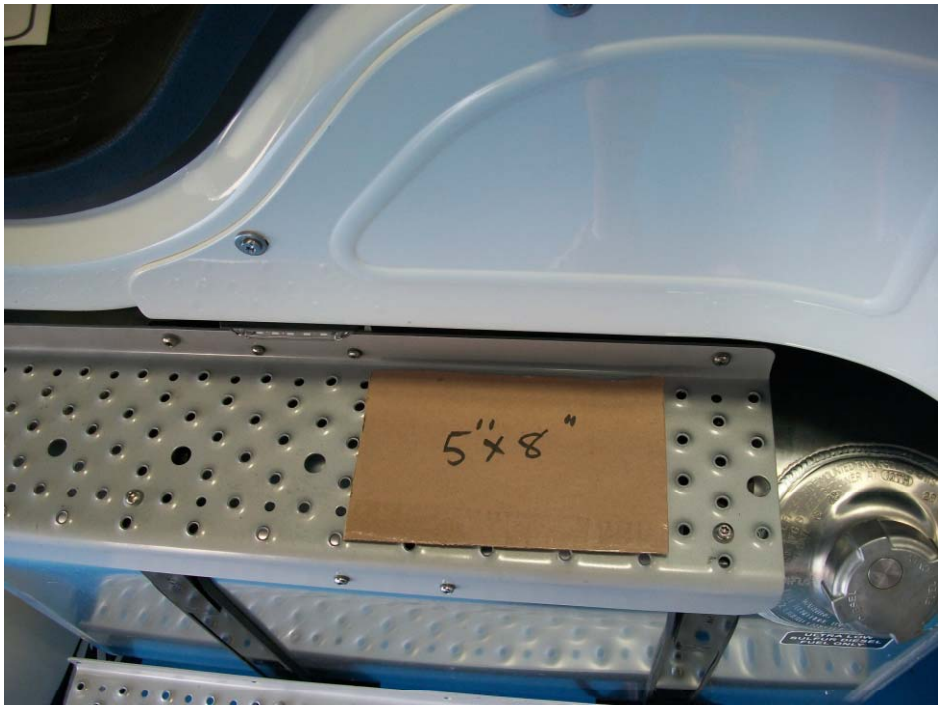


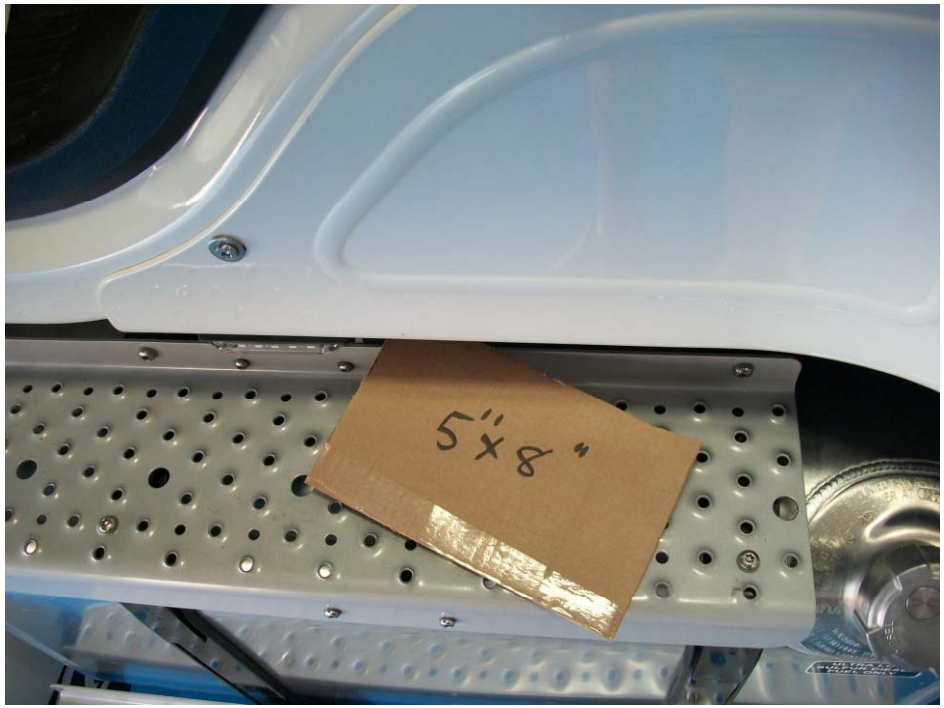

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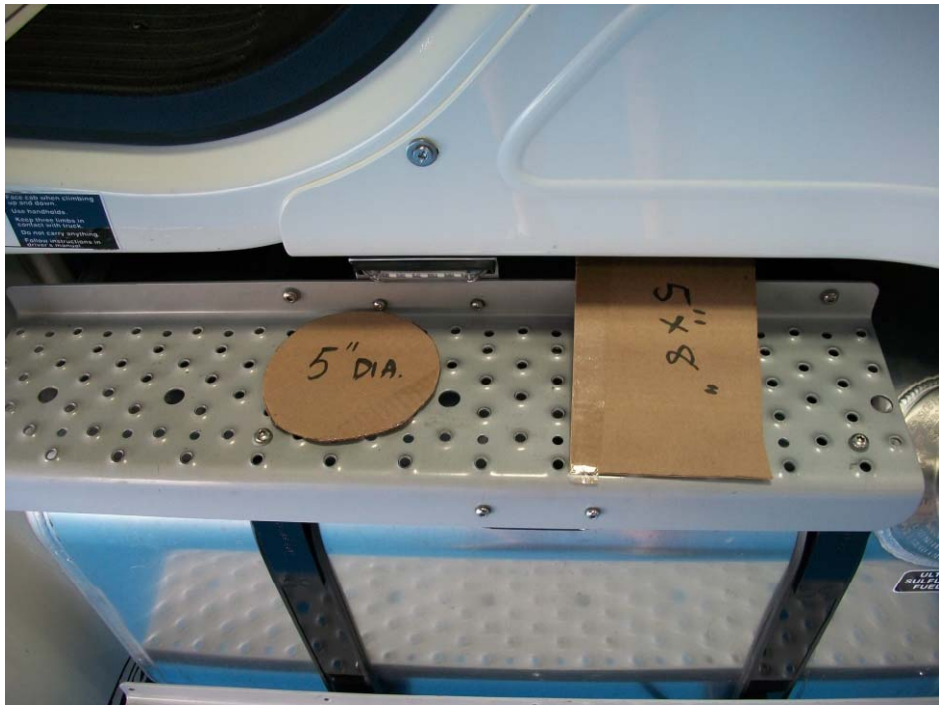

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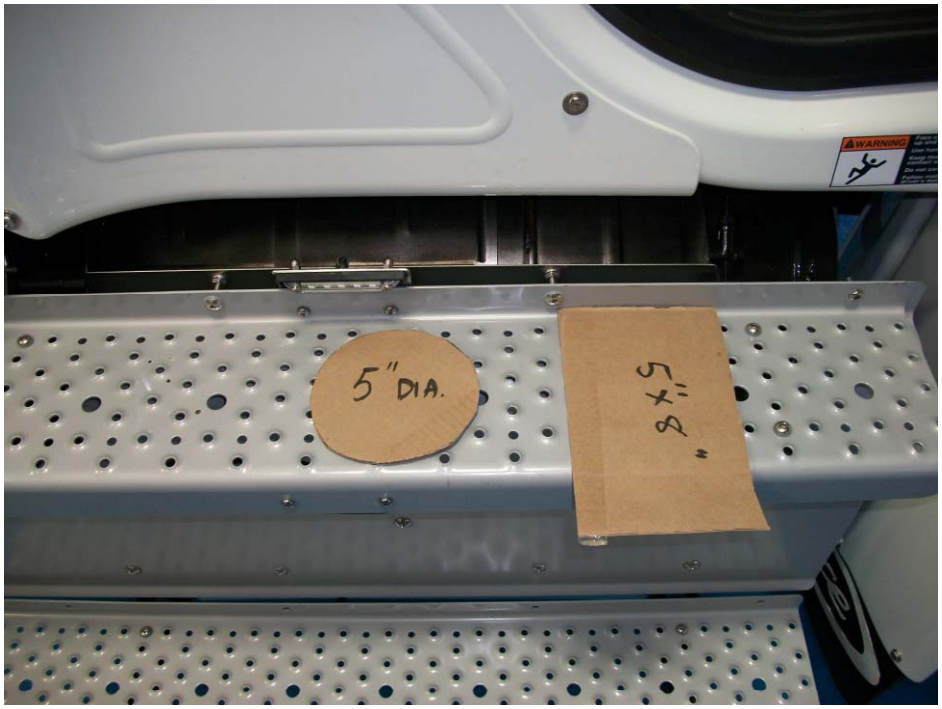

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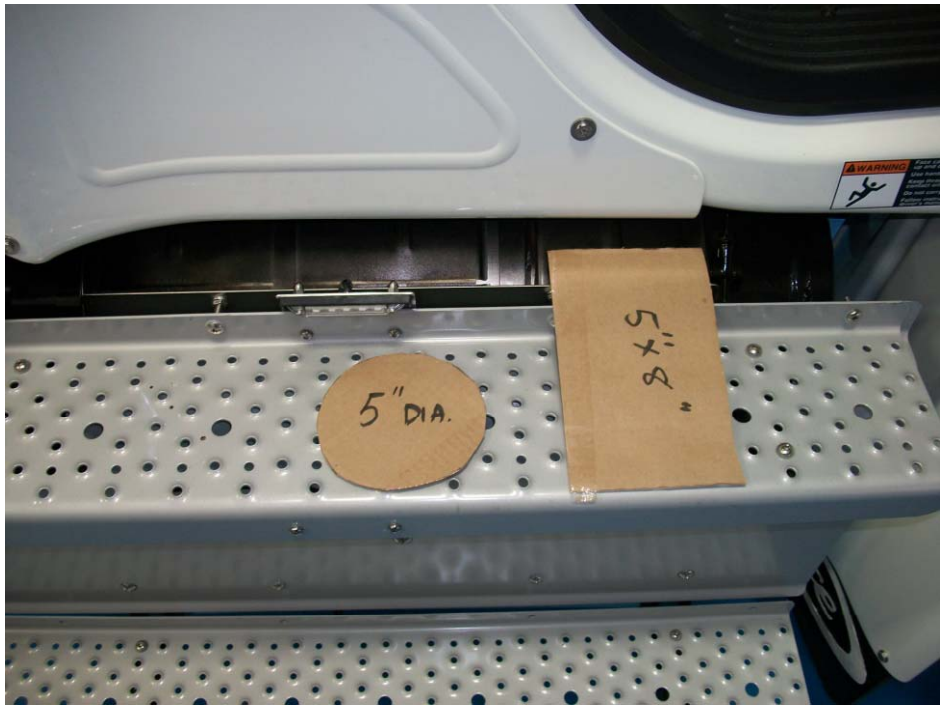

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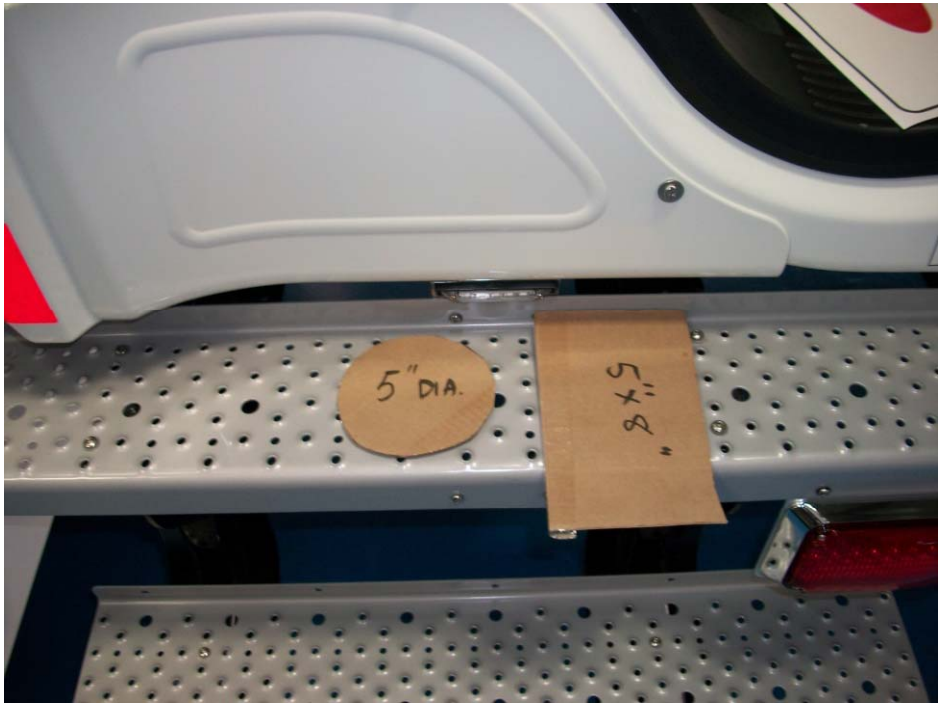

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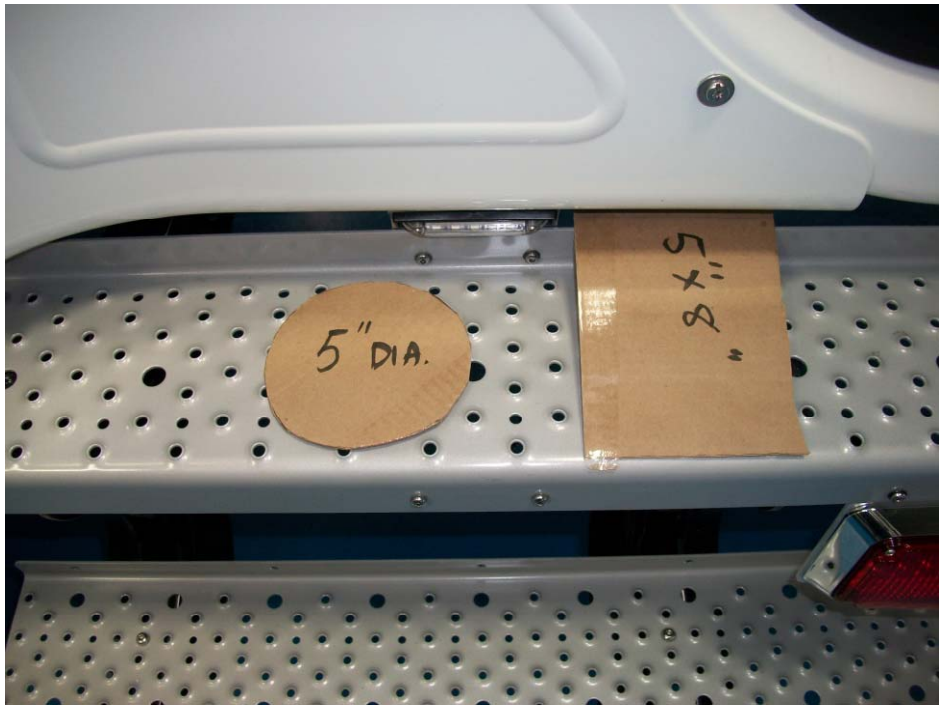
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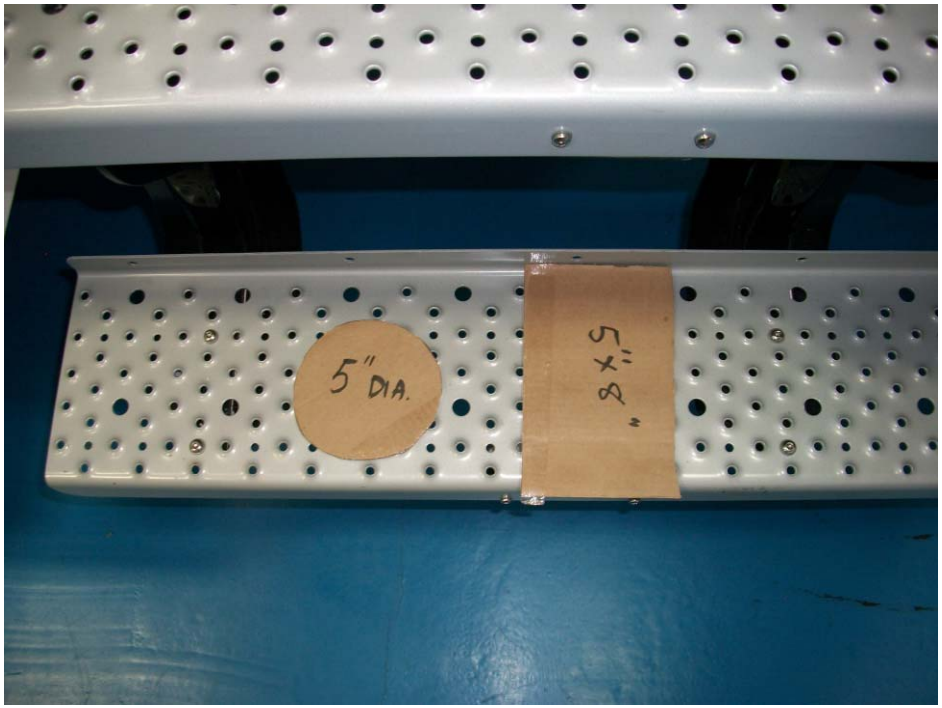


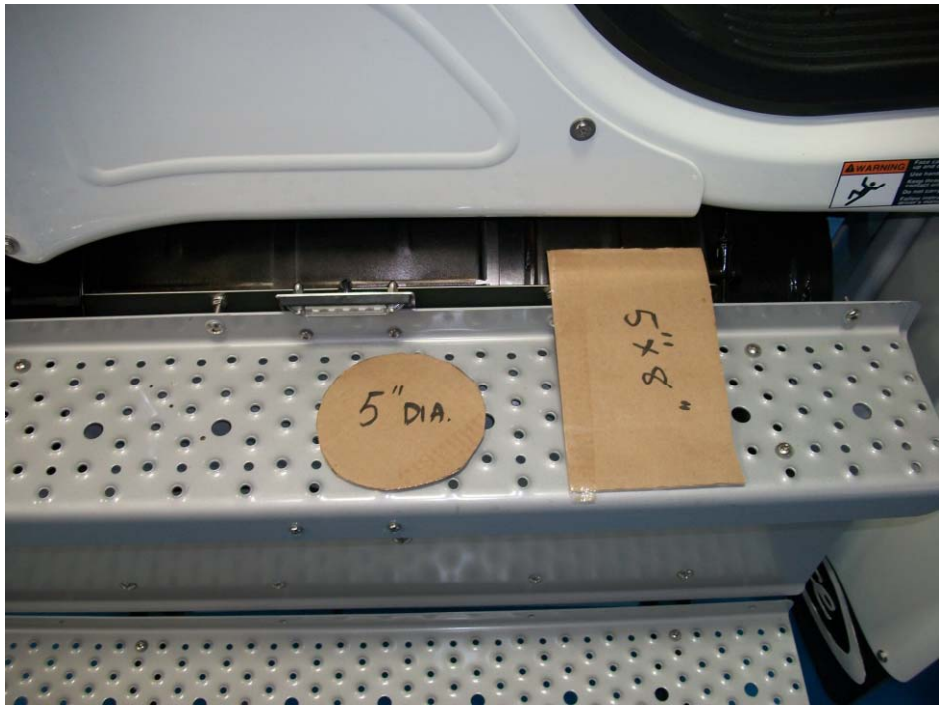

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So, Given the above

- How do these steps comply with 1901?

AUTOMOTIVE FIRE APPARATUS CERTIFICATE OF INSPECTION

Certificate No.: 26699-01
Date of Issue: September 20, 2013
Purchaser: USMC Indian Head
Manufacturer: Pierce Manufacturing Inc.
Apparatus Type: Special Services
Mfg. Serial No.: 26699-01

UL inspected this apparatus to requirements of NFPA 1901, Standard for Automotive Fire Apparatus, 2009 Edition, except for the following features expressly excluded by the Purchaser ("Purchaser Requirements") for this apparatus type:

Miscellaneous Equipment as supplied by the purchaser or dealer.

The inspection of this vehicle included (1) visual inspection of the chassis, driving and crew areas, body, compartments and equipment mounting, and pump operators panel (if equipped); (2) visual inspection and measurement of installed components to verify compliance of construction features (e.g. dimensions and placement) to NFPA 1901; and (3) witnessing or conducting the following test(s) and issuance of a certificate of inspection for each test:

NFPA 1901 Line-Voltage Test

Note: Apparatus was not loaded to its estimated in-service weight for 4.15.1 & 4.17.4 tests.

UL's inspection of this vehicle also took into consideration audits of the manufacturing process conducted by UL, and the manufacturer's documentation from component suppliers. UL does not independently verify claims regarding installed components.

Based on UL's inspection, as of the inspection date, this apparatus was found to comply with the "Purchaser Requirements" as defined above.

For additional details regarding the scope of UL's inspection, go to www.UL.com/fes

Not Valid Unless Signed

Thomas Hillenbrand
UL

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Public Comment No. 101-NFPA 1901-2014 [Section No. 15.7.1.6]

15.7.1.6

~~Designated horizontal standing or walking surfaces higher than 48 in. (1220 mm) from the ground and not guarded by a railing, when measured with the apparatus at curb weight, shall have a safety yellow line at least 1 in. (25 mm) wide marking the outside perimeter of the surface, excluding steps and ladders.~~

Statement of Problem and Substantiation for Public Comment

Delete this requirement in its entirety. It will result in confusion and interpretation. A prime example is non-walk-in Rescue bodies. The entire roof area is often covered in aluminum diamond plate with an anti-slip surface since there are many horizontal areas that could be used as stepping surfaces. This new requirement could be interpreted to mean that the entire roof periphery needs to be outlined with a yellow line. That is impractical. Fire fighters are highly trained individuals that are expected to know how to use and operate their apparatus appropriately. The yellow line will do little, if anything, to prevent potential injuries.

Related Item

First Revision No. 185-NFPA 1901-2013 [New Section after 15.7.1.4]

Submitter Information Verification

Submitter Full Name: William Proft
Organization: Pierce Manufacturing
Affilliation: Manufacturer of Fire Apparatus
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 01 18:21:35 EDT 2014

Public Comment No. 119-NFPA 1901-2014 [Section No. 15.7.1.6]

~~15.7.1.6~~ –

~~Designated horizontal standing or walking surfaces higher than 48 in. (1220 mm) from the ground and not guarded by a railing, when measured with the apparatus at curb weight, shall have a safety yellow line at least 1 in. (25 mm) wide marking the outside perimeter of the surface, excluding steps and ladders.~~

Statement of Problem and Substantiation for Public Comment

There is not enough data provided to justify that this change will adequately enhance safety of personnel. It is proposed that the problem be studied in depth, root cause be defined, and resolution proposals be developed to properly address the risk.

Related Item

First Revision No. 185-NFPA 1901-2013 [New Section after 15.7.1.4]

Submitter Information Verification

Submitter Full Name: Dirk Steyn
Organization: E-One, Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Mon May 12 15:50:47 EDT 2014

Public Comment No. 43-NFPA 1901-2014 [Section No. 15.7.1.6]

15.7.1.6

Designated horizontal standing or walking surfaces and lift up style diamond plate doors ie: ladder tunnel doors, pump service doors, that are higher than 48 in. (1220 mm) from the ground and not guarded by a railing, when measured with the apparatus at curb weight, shall have a safety yellow line at least 1 in. (25 mm) wide marking the outside perimeter of the surface, excluding steps and ladders.

Statement of Problem and Substantiation for Public Comment

This is a very good idea, I personally had a near miss last year when I stepped on an open lift up diamond plate door on a ladder tunnel that was part of a all diamond plate surfaced ladder tunnel in a hose bed on top of a truck. Luckily I was just able to grab a nearby handrail to save myself from a potentially fatal injury. we need to include this on lift up doors that look like walking surfaces.

Related Item

First Revision No. 185-NFPA 1901-2013 [New Section after 15.7.1.4]

Submitter Information Verification

Submitter Full Name: PAUL PREVOST
Organization: CLEARWATER REGIONAL FIRE RESCUE SERVICES
Street Address:
City:
State:
Zip:
Submittal Date: Sun Mar 02 22:44:44 EST 2014

Public Comment No. 73-NFPA 1901-2014 [Section No. 15.9.3.2.1]

15.9.3.2.1

~~Each stripe~~ The stripes in the chevron shall be ~~a single color alternating between red and either yellow, fluorescent yellow, or fluorescent yellow-green~~ alternating colors .

Statement of Problem and Substantiation for Public Comment

Striping on the side of the apparatus has been in the code for several years now and there has not been a requirement for specific colors. The specific requirement of the red/yellow color pattern has not been shown to provide any additional safety than other color combinations. When the red/yellow color combination was originally proposed the logic was that this color pattern would define a "fire apparatus" to the motorists on the roadway, several states use Red/Yellow on vehicles other than fire apparatus. Pennsylvania for example uses Red/Yellow chevron on the back of their department of transportation vehicles, so the justification that Red/Yellow defines the vehicle is not credible. Providing high visibility chevrons on the back of the apparatus does add a safety element to the vehicle, but there is no reason/need to define the color combinations.

Related Item

Public Input No. 1-NFPA 1901-2012 [Section No. 22.10 [Excluding any Sub-Sections]]

Submitter Information Verification

Submitter Full Name: Jason Witmier
Organization: Pottsville Fire Department
Street Address:
City:
State:
Zip:
Submittal Date: Thu Apr 03 11:53:11 EDT 2014

Public Comment No. 74-NFPA 1901-2014 [Section No. 15.9.3.3.1]

15.9.3.3.1

All retroreflective materials used to satisfy the requirements of 15.9.3.1 and 15.9.3.2 that are colors not listed in ASTM D 4956, Section 6.1.1, shall have a minimum coefficient of retroreflection of 10 with observation angle of 0.2 degrees and entrance angle of -4 degrees.

Statement of Problem and Substantiation for Public Comment

This relates to public comment No. 73, if the color requirement is removed from 15.9.3.2.1 then this item will apply to both.

Related Item

Public Input No. 1-NFPA 1901-2012 [Section No. 22.10 [Excluding any Sub-Sections]]

Submitter Information Verification

Submitter Full Name: Jason Witmier
Organization: Pottsville Fire Department
Street Address:
City:
State:
Zip:
Submittal Date: Thu Apr 03 12:47:09 EDT 2014

Public Comment No. 75-NFPA 1901-2014 [Section No. 15.9.3.3.2]

~~15.9.3.3.2~~ –

~~Fluorescent yellow and fluorescent yellow-green retroreflective materials used to meet the requirements of 15.9.3.2 shall conform to the minimum requirements specified for yellow Type I Sheeting in ASTM D 4956, Section 6.1.1.~~

Statement of Problem and Substantiation for Public Comment

This relates to Public comment No. 73, if the color requirement is removed then this section is no longer necessary and 15.9.3.3.1 will be sufficient.

Related Item

Public Input No. 1-NFPA 1901-2012 [Section No. 22.10 [Excluding any Sub-Sections]]

Submitter Information Verification

Submitter Full Name: Jason Witmier
Organization: Pottsville Fire Department
Street Address:
City:
State:
Zip:
Submittal Date: Thu Apr 03 12:49:41 EDT 2014

Public Comment No. 76-NFPA 1901-2014 [Section No. 15.9.3.3.3]

15.9.3.3.3

Any printed or processed retroreflective film construction used to meet the requirements of 15.9.3.1 ~~and 15.9.3.2~~ shall conform to the standards required of an integral colored film as specified in ASTM D 4956, Section 6.1.1.

Statement of Problem and Substantiation for Public Comment

This relates to public comment No. 73, if the color requirement is removed from 15.9.3.2.1 then 15.9.3.3.2 is deleted and this item needs to be changed as proposed.

Related Item

Public Input No. 1-NFPA 1901-2012 [Section No. 22.10 [Excluding any Sub-Sections]]

Submitter Information Verification

Submitter Full Name: Jason Witmier
Organization: Pottsville Fire Department
Street Address:
City:
State:
Zip:
Submittal Date: Thu Apr 03 12:50:50 EDT 2014

Public Comment No. 44-NFPA 1901-2014 [Section No. 15.10.1]

15.10.1*

The bottom shall be constructed to prevent the accumulation of water ~~and~~ , allow ventilation to aid in drying hose and be constructed of non corrosive materials .

Statement of Problem and Substantiation for Public Comment

In the changes from the first draft the requirement of non corrosive materials was lost.

Related Item

Public Input No. 351-NFPA 1901-2013 [Section No. 24.5.1.3]

Submitter Information Verification

Submitter Full Name: PAUL PREVOST
Organization: CLEARWATER REGIONAL FIRE RESCUE SERVICES
Street Address:
City:
State:
Zip:
Submittal Date: Mon Mar 03 00:12:06 EST 2014

Public Comment No. 98-NFPA 1901-2014 [Section No. 15.12.2]

15.12.2

Receivers or anchors installed at any location on the apparatus for use with rope operations shall be designed and affixed to the apparatus to provide at least a ~~9000 lbf (40,000 N) no-yield condition with a straight line pull~~ 1.5 to 1 straight line pull no-yield safety factor over the load rating of the receiver or anchor .

Statement of Problem and Substantiation for Public Comment

There is no clear understanding as to how the 9,000 pound minimum rating was derived. There are many locations on fire apparatus where customers want rope eyes or anchors that cannot be rated to that level, but can be rated to something lower such as 3,000 pounds. We can provide those items but also have to rate them as "non-compliant" since they are not rated for 9,000 pounds. Let's simply provide a minimum safety factor and allow the manufacturer of the apparatus and the customer decide what they can provide and where.

Related Item

Public Input No. 352-NFPA 1901-2013 [Section No. 15.12.2]

Submitter Information Verification

Submitter Full Name: William Proft
Organization: Pierce Manufacturing
Affilliation: Manufacturer of Fire Apparatus
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 01 14:17:44 EDT 2014

Public Comment No. 134-NFPA 1901-2014 [Section No. 16.2.5]

16.2.5 Fire Pump Maximum Discharge Gauge Pressure Capability Rating.

16.2.5.1

The fire pump manufacturer shall establish the maximum discharge gauge pressure capability rating of the pump.

16.2.5.2

The fire pump manufacturer shall certify the maximum discharge gauge pressure capability rating of the pump if it exceeds the hydrostatic test gauge pressure in 16.5.2.1.

Statement of Problem and Substantiation for Public Comment

The title of 16.2.5 doesn't match the use of this phrase elsewhere in the standard. For consistency, add "Gauge" to the title of 16.2.5 to match the use of this phrase elsewhere in the standard.

Related Item

First Revision No. 226-NFPA 1901-2013 [New Section after 16.2.4.2]

Submitter Information Verification

Submitter Full Name: Tom Mettler
Organization: Waterous Company
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 15 16:30:35 EDT 2014

Public Comment No. 152-NFPA 1901-2014 [Section No. 16.5.3]

16.5.3

The entire discharge and intake piping system, valves, drain cocks and lines, and intake and outlet closures, excluding the tank fill and tank-to-pump lines on the tank side of the valves in those lines, shall be capable of withstanding a minimum hydrostatic gauge pressure of 500 psi (3400 kPa). The aerial water system from the base of the aerial to the tip shal be tested to a pressure of 250 psi.

Statement of Problem and Substantiation for Public Comment

The aerial waterway components are very weight sensitive. A pressure test of 250 psi has been in place and worked successfully for many years. This requirement will reduce the capability of the ladder.

Related Item

Public Input No. 177-NFPA 1901-2013 [Section No. 16.13.10.2]

Submitter Information Verification

Submitter Full Name: James Salmi
Organization: Spartan ERV
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 16 08:10:05 EDT 2014

Public Comment No. 17-NFPA 1901-2014 [Section No. 16.6.5 [Excluding any Sub-Sections]]

Each valved intake shall be equipped with a bleeder valve having a minimum ¾ in. (~~19~~ 20 mm) pipe thread connection to bleed off air or water.

Statement of Problem and Substantiation for Public Comment

There is no "19 mm pipe thread". The closest nominal size is 20 mm. All pipe sizes are nominal (name) sizes and not an exact dimension.

Related Item

First Revision No. 242-NFPA 1901-2013 [New Section after 26.11.3]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
State:
Zip:
Submittal Date: Fri Feb 21 10:21:26 EST 2014

Public Comment No. 126-NFPA 1901-2014 [Section No. 16.7.5 [Excluding any Sub-Sections]]

Each discharge outlet shall be equipped with a valve that can be opened and closed by the operator with a maximum force ~~of 55~~ of 75 lbf (~~240~~ 300 N) from full open to full closed or from full closed to full open with ~~250~~ 150 psi (~~1700~~ 1000 kPa) pump discharge gauge pressure and at the flows shown in Table 16.7.1 when the valve is in the full open position.

Statement of Problem and Substantiation for Public Comment

The proposed 55 lbs is much lower than what is acceptable per established standards and at a much higher pressure (250) than what is typically used on the majority of operations. Keeping the requirement as written will result in unnecessarily longer vehicles and higher pump enclosures (and higher preconnects) due to required changes of mechanical valve controls. It also has the potential of driving vehicle costs unnecessarily higher.

MIL STD 1472D Table XXIV allows for a 70lb force with both hands on a high traction surface at 20" - 50" above the floor and up to 110 lbs if braced (such as against a running board or back of the cab on a top mount).

In addition, Liberty Mutual Group Loss Prevention tables (commonly referred to as Snook Tables) provide guidelines to acceptable lift, lowering, pushing, and pulling values. They list an acceptable initial push value for a 90% male as 70 lbs at a height of 57" and 75lb at a height of 37" at the lowest frequency of cylces. Both of these push/pull standards are within reasonable ranges of each other and should be considered as reasonable values in fire apparatus applications.

Furthermore, the majority of nozzles, hose lays and operations revolve around attack lines where the operational pump pressures are ran at or below 150 psi. It seems reasonalble the standard is created around the majority of operations otherwise valve operating forces at 250 psi will require the unnecessary use of more expensive valve operators (electric) and/or larger/higher pump panels and longer wheelbases for alternative mechanical controls.

Related Item

Public Input No. 53-NFPA 1901-2013 [Sections 16.7.5.1, 16.7.5.2]

Submitter Information Verification

Submitter Full Name: Michael Moore
Organization: Pierce Manufacturing, Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 13 18:20:00 EDT 2014

Public Comment No. 70-NFPA 1901-2014 [Section No. 16.7.5 [Excluding any Sub-Sections]]

Each discharge outlet shall be equipped with a valve that can be opened and closed by the operator with a maximum force ~~of 55 lbf (~~ of (to be determined) lbf (240 N) from full open to full closed or from full closed to full open with 250 psi (1700 kPa) pump discharge gauge pressure and at the flows shown in Table 16.7.1 when the valve is in the full open position.

Statement of Problem and Substantiation for Public Comment

The 55 lbf was discussed at the last NFPA meeting but I do not believe this was approved by the committee. There was discussion and it was decided that more scientific data was required to determine what the proper force should be. Our research has determined that very few push pull type valve linkages can be operated at 55ldf or less, therefore more expensive electric valve controls or hand wheel type will be required. Many customers require unique pump and plumbing configurations which make it difficult to install valve control linkages in locations that reduce the force to operate the valve. If customers want a force requirements on valve controls they can specify such requirements in their purchasing process.

Related Item

Public Input No. 53-NFPA 1901-2013 [Sections 16.7.5.1, 16.7.5.2]

Submitter Information Verification

Submitter Full Name: Mike Schoenberger
Organization: Rosenbauer America
Street Address:
City:
State:
Zip:
Submittal Date: Wed Mar 26 08:40:55 EDT 2014

Public Comment No. 83-NFPA 1901-2014 [Section No. 16.7.5 [Excluding any Sub-Sections]]

~~Each discharge outlet shall be equipped with a valve that can be opened and closed by the operator with a maximum force of 55 lbf (240 N) from full open to full closed or from full closed to full open with 250 psi (1700 kPa) pump discharge gauge pressure and at the flows shown in Table 16.7.1 when the valve is in the full open position.~~

Statement of Problem and Substantiation for Public Comment

This paragraph is adding additional requirements that are not justified by complaints from the industry. Further, the proposed value is exceptionally low, and does not account for any of the following:
- Plumbing geometry
- Control type, including slow-close devices
- Maintenance

In practice, even new trucks often have pull forces in the 80 lbs range under the conditions specified, but it is a momentary pull, and the force decreases once the valve starts to move.

This should remain something the operator can work through with their manufacturer on an as-needed basis.

Related Item

First Revision No. 233-NFPA 1901-2013 [Section No. 16.7.5]

Submitter Information Verification

Submitter Full Name: DOUGLAS KELLEY
Organization: KME FIRE APPARATUS
Street Address:
City:
State:
Zip:
Submittal Date: Mon Apr 14 09:31:14 EDT 2014

Public Comment No. 87-NFPA 1901-2014 [Section No. 16.7.8.1]

16.7.8.1

Each pump discharge shall have a valve that can be controlled from the pump operator's position. All discharges 2" or larger shall have gateable positioning.

Statement of Problem and Substantiation for Public Comment

Nowhere in the standard do we require gating capability on discharge outlets, adding this phrase rectifies this situation

Related Item

Public Input No. 174-NFPA 1901-2013 [Section No. 16.7.10]

Submitter Information Verification

Submitter Full Name: Gary Handwerk
Organization: handwerk consulting services
Street Address:
City:
State:
Zip:
Submittal Date: Thu Apr 17 12:07:57 EDT 2014

Public Comment No. 86-NFPA 1901-2014 [Section No. 16.7.10]

16.7.10

Where the valve-operating mechanism does not indicate the position of the valve, an indicator shall be provided to show when the valve is closed and when open ..

Statement of Problem and Substantiation for Public Comment

from a safety stand point you need to know if the valve is either open or closed, if you only indicate closed and are using an indicator light and it fails you will have no indication that the valve is closed.

Related Item

Public Input No. 174-NFPA 1901-2013 [Section No. 16.7.10]

Submitter Information Verification

Submitter Full Name: Gary Handwerk
Organization: handwerk consulting services
Street Address:
City:
State:
Zip:
Submittal Date: Thu Apr 17 11:43:41 EDT 2014

Public Comment No. 122-NFPA 1901-2014 [New Section after 16.10.1.2]

TITLE OF NEW CONTENT

Type your content here ...

New section after 16.10.1.2

Where the pump is driven by the chassis engine and transmission through a split-shaft PTO, an interlock system shall be provided to prevent the pump drive system from being shifted out of the “Pump Engaged” pumping mode of operation when the chassis transmission is in pump gear.

Statement of Problem and Substantiation for Public Comment

Substantiation: FR-74 eliminated the requirement for apparatus where the pump is driven by the chassis engine and transmission through a split-shaft transmission that the speedometer shall register when the pump drive system is engaged. This was justified by technical realities of the electronics on today’s vehicles but it also removes a visual reminder of the status of the pump drive system. Section 16.10.1.2 has for a very long time required that “Any control device used in the pumping system power train between the engine and the pump, except a manual pump shift override device if provided, shall be equipped with a means to prevent unintentional movement of the control device from its set position in the pumping mode.” The control of a split-shaft pump drive system consists not only of the shift control of the pump transmission; it also consists of the chassis transmission shift control and its relation with the pump shift control. There have been countless occurrences of the pump drive system being inadvertently shifted from the pumping mode of operation while the chassis transmission is in pump gear.
This proposed new interlock requirement will compensate for the upcoming loss of speedometer registration during pump drive system engagement and will ensure that the intent of 16.10.1.2 is met to prevent unintentional movement of the pump drive system control. Additionally, extensive damage to pump drive system components will be prevented.

Related Item

First Revision No. 74-NFPA 1901-2013 [Section No. 16.10.1.4]

Public Input No. 235-NFPA 1901-2013 [Section No. 16.10.1.4]

Submitter Information Verification

Submitter Full Name: Tom Mettler
Organization: Waterous Company
Affilliation: Not Applicable
Street Address:
City:
State:
Zip:
Submittal Date: Mon May 12 16:58:31 EDT 2014

Public Comment No. 146-NFPA 1901-2014 [Section No. 16.13.8 [Excluding any Sub-Sections]]

The engine speed advancement interlock system shall be tested to verify that engine speed cannot be increased at the pump operator's panel unless there is throttle-ready indication and meet all the test conditions in the following tables . (This requires moving A.16.13.8 to 16.13.8).

Statement of Problem and Substantiation for Public Comment

By moving A.16.13.8 to the body and requiring the fire apparatus to meet all test conditions of A.16.13.8 will require the fire truck fabricator to perform all tests necessary to insure that the pump throttle system is operating correctly and safely. It only takes two people 10 to 15 minutes and no equipment to carry out the testing of an apparatus.

Related Item

Public Input No. 340-NFPA 1901-2013 [Section No. 16.13.8.1]

Submitter Information Verification

Submitter Full Name: Dan McKenzie
Organization: US Department of Agriculture
Affilliation: US Forest Service
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 15 23:06:32 EDT 2014

Public Comment No. 147-NFPA 1901-2014 [Section No. 16.13.8.1]

~~16.13.8.1~~ –

~~If the apparatus is equipped with a stationary pump driven through split-shaft PTO, the test shall verify that the engine speed control at pump operator's panel cannot be advanced when either of the following conditions exists:~~

(1) ~~The chassis transmission is in neutral, the parking brake is off, and the pump shift in the driving compartment is in the road position.~~

(2) ~~The chassis transmission has been placed in the position for pumping as indicated on the label provided in the driving compartment, the parking brake is on, and the pump shift in the driving compartment is in the road position.~~

Statement of Problem and Substantiation for Public Comment

By moving A.16.13.8 to the body of the Standard there no longer a need for 16.13.8.1.

Related Item

Public Input No. 340-NFPA 1901-2013 [Section No. 16.13.8.1]

Submitter Information Verification

Submitter Full Name: Dan McKenzie
Organization: US Department of Agriculture
Affilliation: US Forest Service
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 15 23:50:01 EDT 2014

Public Comment No. 148-NFPA 1901-2014 [Section No. 16.13.8.2]

~~16.13.8.2~~ –

~~If the apparatus is equipped with a stationary pump driven through a transmission mounted PTO, front-of-engine crankshaft PTO, or engine flywheel PTO, the test shall verify that the engine speed control on the pump operator's panel cannot be advanced when either of the following conditions exists:~~

(1) ~~The chassis transmission is in neutral, the parking brake is off, and the pump shift status in the driving compartment is disengaged.~~

(2) ~~The chassis transmission is in any gear other than neutral, the parking brake is on, and the pump shift in the driving compartment is in the "Pump Engaged" position.~~

Statement of Problem and Substantiation for Public Comment

By moving A.16.13.8 to the body of the Standard there no longer a need for 16.13.8.2.

Related Item

Public Input No. 340-NFPA 1901-2013 [Section No. 16.13.8.1]

Submitter Information Verification

Submitter Full Name: Dan McKenzie
Organization: US Department of Agriculture
Affilliation: US Forest Service
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 15 23:55:52 EDT 2014

Public Comment No. 149-NFPA 1901-2014 [Section No. 16.13.8.3]

~~**16.13.8.3** –~~

~~If the apparatus is equipped with a pump driven by the chassis engine designed for both stationary pumping and pump-and-roll, the test shall verify that the engine speed control at pump operator's panel cannot be advanced when any of the following conditions exists:~~

(1) ~~The chassis transmission is in neutral, the parking brake is off, and the pump shift status in the driving compartment is disengaged.~~

(2) ~~The chassis transmission is in any gear other than neutral, the parking brake is on, and the pump shift in the driving compartment is in the pump engaged position.~~

(3) ~~The chassis transmission is in any gear other than neutral, the parking brake is off, the pump shift in the driving compartment is in the pump engaged position and the "OK to Pump-and-Roll" indicator is on.~~

Statement of Problem and Substantiation for Public Comment

By moving A.16.13.8 to the body of the Standard there no longer a need for 16.13.8.3.

Related Item

Public Input No. 340-NFPA 1901-2013 [Section No. 16.13.8.1]

Submitter Information Verification

Submitter Full Name: Dan McKenzie
Organization: US Department of Agriculture
Affilliation: US Forest Service
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 16 00:12:28 EDT 2014

Public Comment No. 150-NFPA 1901-2014 [Section No. 16.13.8.4]

~~**16.13.8.4** –~~

~~If the apparatus is equipped with a stationary pump driven through transfer case PTO, the test shall verify that the engine speed control on the pump operator's panel cannot be advanced when one of the following conditions exists:~~

(1) ~~The chassis transmission is in neutral, the transfer case is in neutral, the parking brake is off, and the pump shift in the driving compartment is in the road position.~~

(2) ~~The chassis transmission is in neutral, the transfer case is engaged, the parking brake is off, and the pump shift in the driving compartment is in the road position.~~

(3) ~~The chassis transmission has been placed in the position for pumping as indicated on the label provided in the driving compartment, the parking brake is on, and the pump shift in the driving compartment is in the road position.~~

Statement of Problem and Substantiation for Public Comment

By moving A.16.13.8 to the body of the Standard there no longer a need for 16.13.8.4.

Related Item

Public Input No. 340-NFPA 1901-2013 [Section No. 16.13.8.1]

Submitter Information Verification

Submitter Full Name: Dan McKenzie
Organization: US Department of Agriculture
Affilliation: US Forest Service
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 16 01:38:47 EDT 2014

Public Comment No. 153-NFPA 1901-2014 [Section No. 16.13.10]

Proposed change is to replace sections 16.13.10 .2 and all following with new text to be uploaded.

16.13.10 * Manufacturer's Predelivery Test.

16.13.10.1

The manufacturer shall conduct a piping hydrostatic test prior to delivery of the apparatus.

~~16.13.10.2 –~~

~~The test shall be conducted as follows:~~

(1) ~~The pump and its connected piping system shall be hydrostatically tested to a gauge pressure of 500 psi (3400 kPa).~~

(2) ~~The hydrostatic test shall be conducted with the tank fill line valve, the bypass line valve if so equipped, and the tank-to-pump valve closed.~~

(3) ~~All discharge valves shall be open and the outlets capped.~~

(4) ~~All intake valves shall be closed, and nonvalved intakes shall be capped.~~

(5) ~~This pressure shall be maintained for 3 minutes.~~

~~16.13.10.3 –~~

~~If the maximum discharge gauge pressure capability rating of the pump is greater than 500 psi, either a hydrostatic test in accordance with 16.13.10.3.1 or hydrodynamic test in accordance with 16.13.10.3.2 shall be conducted.~~

~~16.13.10.3.1 –~~

~~If a hydrostatic test is conducted, the hydrostatic test in 16.13.10.3.2 shall be performed at the prescribed maximum discharge gauge pressure rating.~~

~~16.13.10.3.2 –~~

~~If a hydrodynamic test is conducted, the pump and its connected piping system shall be hydrodynamically tested at the prescribed maximum discharge gauge pressure capability rating pressure for a minimum of 3 minutes.~~

~~16.13.10.3.3 * – –~~

~~The tests in 16.13.10.3.1 or 16.13.10.3.2 shall be permitted to be omitted if the pumping system is provided with a pressure control system that limits the maximum discharge gauge pressure to 500 psi (3400 kPa) or less.~~

~~16.13.10.3.4 –~~

~~The test in 16.13.10.3.2 shall be permitted to be performed in conjunction with the pumping test performed in 16.13.2 .~~

Additional Proposed Changes

File Name	Description	Approved
Predelivery_Hyd_Test.docx	Mettler proposed changes for 16.13.10	

Statement of Problem and Substantiation for Public Comment

Substantiation is provided in the uploaded file.

Related Item

First Revision No. 229-NFPA 1901-2013 [Section No. 16.13.10.2]

Submitter Information Verification

Submitter Full Name: Tom Mettler

Organization: Waterous Company

Street Address:
City:
State:
Zip:
Submittal Date: Fri May 16 10:55:48 EDT 2014

16.13.10* Manufacturer's Predelivery Test

16.13.10.1 The manufacturer shall conduct a piping hydrostatic test prior to the delivery of the apparatus. (no change)

16.13.10.2

The test shall be conducted as follows on all pump and piping systems regardless of the pump's maximum discharge gauge pressure capability rating:

(1) If the apparatus is equipped without CAFS, the pump and its connected piping system shall be hydrostatically tested to a gauge pressure of 500 psi (3400 kPa).

(2) If the apparatus is equipped with CAFS, the pump and its connected piping system shall be hydrostatically tested to a gauge pressure of 250 psi (1700 kPa).

(~~2~~3) The hydrostatic test shall be conducted with the tank fill line valve, the bypass line valve if so equipped, and the tank-to-pump valve closed.

(~~3~~4) All discharge valves shall be open and the outlets capped.

(~~4~~5) All intake valves shall be closed with intakes uncapped, and nonvalved intakes shall be capped.

(~~5~~6) This pressure shall be maintained for 3 minutes.

16.13.10.3 If the maximum discharge gauge pressure capability rating of the pump is greater than 500 psi (3400 kPa), either a hydrostatic test in accordance with 16.13.10.~~3.1~~5 or a hydrodynamic test in accordance with 16.13.10.~~3.2~~6 shall be conducted.

16.13.10.4 If the apparatus is equipped with CAFS, a hydrodynamic test in accordance with 16.13.10.6 shall be conducted.

16.13.10.~~3.1~~5 If a hydrostatic test is conducted, the hydrostatic test in 16.13.10.~~3~~.2 shall be performed at the prescribed maximum discharge gauge pressure rating.

16.13.10.~~3.2~~6 If a hydrodynamic test is conducted, the pump and its connected piping system shall be hydrodynamically tested at the prescribed maximum discharge gauge pressure capability rating pressure or the maximum pump close-off pressure, whichever is less, for a minimum of 3 minutes.

16.13.10.~~3~~6.1 ~~3~~* For apparatus equipped without CAFS and with maximum discharge gauge pressure capability rating greater than 500 psi, t~~T~~he tests in 16.13.10.~~3.1~~5 or 16.13.10.~~3.2~~6 shall be permitted to be omitted if the pumping system is provided with a pressure control system that limits the maximum discharge gauge pressure to 500 psi (3400 kPa) or less.

16.13.10.6.2 The hydrodynamic test conducted in 16.13.10.6 shall be permitted to be performed with a bypass valve open to prevent overheating of the pump.

16.13.10.~~3.4~~6.3 The test in 16.13.10.~~3.2~~6 shall be permitted to be performed in conjunction with the pumping test performed in16.13.2.

Substantiation: 16.13.10.2: First Draft text 16.13.10.3 and 16.13.10.3.3 could be interpreted that no hydrostatic test would be required for pumps with maximum discharge gauge pressure capability rating greater than 500 psi. The proposed test makes it clear that the hydrostatic test in 16.13.10.2 is required for all pumps.

Proposed (1) and (2) provides for different hydrostatic test pressures depending on whether the apparatus is equipped with CAFS. This is required since certain components of CAF systems that are designed to operate at pressures typical of CAF systems (125 psig) or are exposed to higher water pressures only in a dynamic situation such as when the fire pump is operated at pressures up to or greater than 250 psig and when subjected to the 250 psig hydrostatic test that is currently performed on finished apparatus. The proposed wording requires a 250 psig hydro test and a hydrodynamic test for apparatus with CAFS in order to ensure piping integrity prior to being placed into service.

Proposed (~~4~~5) clarifies that the hydrostatic test is to be performed with intake valves closed (present wording) and with intakes uncapped. Without this clarification, a potentially unsafe condition could be created during the test if the intakes were capped with the intake valve closed. A leaking valve could pressurize trapped air between the valve and the cap and should there be a failure of the intake connection, the pressurized air could result in a rapid release of stored energy.

16.13.10.4 – New proposal requires that apparatus with CAFS shall be hydrodynamically tested. As stated above, this is a follow-on test to the 250 psig hydrostatic test for apparatus with CAFS.

16.13.10.~~3.2~~6 - Added the hydrodynamic test pressure objective to be either the maximum discharge gauge pressure capability rating pressure or the maximum pump close-off pressure. This proposal addresses those situations where the maximum discharge gauge pressure capability rating pressure cannot be attained possibly as a result of the apparatus power train not having sufficient speed or power capability. Maximum pump close-off pressure would suffice to ensure piping integrity for those apparatus.

16.13.10.~~3~~6.1 ~~3~~ – This section permits the high pressure hydrostatic test or hydrodynamic test to be avoided if a pressure control system is in place. The proposed change limits this possible avoidance choice of the hydrodynamic test or high pressure hydrostatic test to those apparatus whose pump has a maximum discharge gauge pressure greater than 500 psi but is without CAFS. If it has CAFS, it must have a hydrodynamic test.

16.13.10.6.2 – This new section permits the use of a bypass line to avoid overheating the pump. This is important for those apparatus where the maximum pump close-off pressure test is performed with all discharges closed.

Public Comment No. 120-NFPA 1901-2014 [Section No. 16.13.10.2]

16.13.10.2

The test shall be conducted as follows:

(1) The pump and its connected piping system shall be hydrostatically tested to a gauge pressure ~~of 500~~ of 250 psi (~~3400~~ 1700 kPa).

(2) The hydrostatic test shall be conducted with the tank fill line valve, the bypass line valve if so equipped, and the tank-to-pump valve closed.

(3) All discharge valves shall be open and the outlets capped.

(4) All intake valves shall be closed, and nonvalved intakes shall be capped.

(5) This pressure shall be maintained for 3 minutes.

Statement of Problem and Substantiation for Public Comment

Modern fire apparatus are custom designed for specific pump applications operating at specific pressures. The 2009 standard as written meets the need as minimum standard. Our proposal is to retain 250psi as minimum standard, and cover concerns related to higher pressure systems,with section 16.13.10.3,

Related Item

First Revision No. 229-NFPA 1901-2013 [Section No. 16.13.10.2]

Submitter Information Verification

Submitter Full Name: Dirk Steyn
Organization: E-One, Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Mon May 12 15:59:33 EDT 2014

Public Comment No. 123-NFPA 1901-2014 [Section No. 16.13.10.2]

16.13.10.2

The test shall be conducted as follows:

(1) The pump and its connected piping system shall be hydrostatically tested to a gauge pressure ~~of 500~~ of 250 psi (3400 kPa).

(2) The hydrostatic test shall be conducted with the tank fill line valve, the bypass line valve if so equipped, and the tank-to-pump valve closed.

(3) All discharge valves shall be open and the outlets capped.

(4) All intake valves shall be closed, and nonvalved intakes shall be capped.

(5) This pressure shall be maintained for 3 minutes.

Statement of Problem and Substantiation for Public Comment

500 psi is excessive. Many suction relief valves cannot be set that high. Some joints and connections may not withstand such a pressure. The suction side of the pump is unlikely to ever encounter that pressure level, and even on the discharge side, it is highly unlikely.

Related Item

Public Input No. 177-NFPA 1901-2013 [Section No. 16.13.10.2]

Submitter Information Verification

Submitter Full Name: Michael Ruthy
Organization: Darley Co
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 13 14:31:25 EDT 2014

Public Comment No. 132-NFPA 1901-2014 [Section No. 16.13.10.2]

16.13.10.2

The test shall be conducted as follows:

(1) The pump and its connected piping system shall be hydrostatically tested to a gauge pressure of 500 psi (3400 kPa).

(2) The hydrostatic test shall be conducted with the tank fill line valve, the bypass line valve if so equipped, ~~and~~ the tank-to-pump valve ~~closed~~ and the master stream device vavle closed .

(3) All discharge valves shall be open and the outlets capped.

(4) All intake valves shall be closed, and nonvalved intakes shall be capped.

(5) This pressure shall be maintained for 3 minutes.

Statement of Problem and Substantiation for Public Comment

Master stream devices (monitors) are typically rated for a maximum operating pressure of 200psi. Akron Brass performs a hydrostatic test on master stream devices that is 1.5 times operating pressure (350psi). The 500psi requirement would exceed the manufactures hydrostatic test requirement and could potentially cause damage to the device. Either the device needs to be removed completely and the waterway capped or an exception to keep the master stream / aerial waterway valve closed should be considered.

Related Item

First Revision No. 229-NFPA 1901-2013 [Section No. 16.13.10.2]

Submitter Information Verification

Submitter Full Name: Jeffrey Benson
Organization: Akron Brass Company
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 15 13:59:52 EDT 2014

Public Comment No. 121-NFPA 1901-2014 [Section No. 16.13.10.3 [Excluding any Sub-Sections]]

If the maximum discharge gauge pressure capability rating of the pump is greater ~~than 500 psi~~ than 250 psi (1700 kPa) , either a hydrostatic test in accordance with 16.13.10.3.1 or hydrodynamic test in accordance with 16.13.10.3.2 shall be conducted.

Statement of Problem and Substantiation for Public Comment

As stated in comments under section 16.13.10.2, our proposal is to use this section for pressure application above 250psi.

Related Item

First Revision No. 229-NFPA 1901-2013 [Section No. 16.13.10.2]

Submitter Information Verification

Submitter Full Name: Dirk Steyn
Organization: E-One, Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Mon May 12 16:12:39 EDT 2014

Public Comment No. 47-NFPA 1901-2014 [New Section after 17.1]

medium or high pressure pump system rating plate

If the apparatus is equipped with an auxillary medium or high pressure pump system, a rating plate showing the rated flow and pressure capacities of the auxillary pump system shall be supplied at the pump operators location.

Statement of Problem and Substantiation for Public Comment

many auxiliary medium and high pressure pump systems installed on apparatus either separate or chassis engine drive do not have rating labels on the the pump operators panel. the only way to know the capacity of the auxiliary system with looking at the specifications

Related Item

Committee Input No. 237-NFPA 1901-2013 [Chapter 17]

Submitter Information Verification

Submitter Full Name: PAUL PREVOST
Organization: CLEARWATER REGIONAL FIRE RESCUE SERVICES
Street Address:
City:
State:
Zip:
Submittal Date: Mon Mar 03 01:29:45 EST 2014

Public Comment No. 45-NFPA 1901-2014 [New Section after 17.2.2]

HIGH PRESSURE PUMP RELIEF VALVES

The high pressure pump system shall have an automatic discharge pressure relief valve that will be preset at or below the maximum discharge pressure setting. This relief valve system shall discharge to atmosphere and be directed away from the pump operators position.

The high pressure pump system shall also be equipped with a thermal relief valve system that will automaticaly dump water from the pump above 160degrees F to atmosphere.

Statement of Problem and Substantiation for Public Comment

High pressure pump systems need an adjustable spring type preset relief valve to prevent accidental over pressure of the pump system, most high pressure pump systems have these. Also the chance of rapid pump overheating in small capacity/high pressure pumps due to the size of the pump and pressures it operates at often with little throttle increase. therefore an automatic thermal relief valve system that dumps to atmosphere is required.

Related Item

Committee Input No. 237-NFPA 1901-2013 [Chapter 17]

Submitter Information Verification

Submitter Full Name: PAUL PREVOST
Organization: CLEARWATER REGIONAL FIRE RESCUE SERVICES
Street Address:
City:
State:
Zip:
Submittal Date: Mon Mar 03 00:59:59 EST 2014

Public Comment No. 46-NFPA 1901-2014 [Section No. 17.11.1 [Excluding any Sub-Sections]]

A master discharge pressure gauge shall be provided for medium and high pressure pump systems that is a separate master pressure gauge from the main normal pressure pump system master pressure guage .

Statement of Problem and Substantiation for Public Comment

many high pressure pump system are installed on apparatus that have rated normal pressure pumps. some of these are capable of operating normal and high pressure simultaneously. A separate high pressure pump system master gauge should be supplied. Many apparatus only have the booster reel or turret presure gauge to indicate the pressure of the high pressure system.

Related Item

Committee Input No. 237-NFPA 1901-2013 [Chapter 17]

Submitter Information Verification

Submitter Full Name: PAUL PREVOST
Organization: CLEARWATER REGIONAL FIRE RESCUE SERVICES
Street Address:
City:
State:
Zip:
Submittal Date: Mon Mar 03 01:12:17 EST 2014

Public Comment No. 9-NFPA 1901-2014 [Section No. 19.2.11 [Excluding any Sub-Sections]]

The apparatus shall be equipped with steps that meet the skid resistance requirements of 15.7.4 and/ or with rungs, ~~either of which provides~~ that provide a path at any degree of elevation from the bottom rung of the aerial ladder to the ground.

Statement of Problem and Substantiation for Public Comment

The path could be a all rungs, all steps, or a combination of both. The suggested language is more accurate if there are some of each.

Related Item

Public Input No. 70-NFPA 1901-2013 [Section No. 19.2.11 [Excluding any Sub-Sections]]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
State:
Zip:
Submittal Date: Thu Feb 20 17:30:54 EST 2014

Public Comment No. 71-NFPA 1901-2014 [Section No. 19.3.1 [Excluding any Sub-Sections]]

The rated capacity of the aerial ladder shall be a minimum load of 250 lb (114 kg) carried on the outermost rung of the outermost fly section with the aerial ladder placed in the horizontal position at maximum horizontal extension and with the stabilizers fully deployed.

For an aerial ladder whose control system is designed to prevent placing the minimum load beyond any point of defined stability, the rated capacity of the aerial ladder shall be a minimum load of 250 lb (114 kg) carried on the outermost rung of the outermost fly section with the aerial ladder placed in any position allowed by the manufacturer's defined operating envelope and with the stabilizers fully deployed.

Statement of Problem and Substantiation for Public Comment

I agree with the previous submitter from UL, the current text does not properly address aerials that use envelope controls to meet the minimum load rating when stabilizers are not fully depolyed. Several manufacturers currently offer envelope controls that allow the aerial device to operate with the minimum rated load with the stabilizers not fully deployed the standard needs to address this technology to ensure firefighter safety.

Related Item

Public Input No. 436-NFPA 1901-2013 [New Section after 19.3.1]

Submitter Information Verification

Submitter Full Name: Paul Prevost
Organization: Clearwater Regional Fire Rescue Services
Street Address:
City:
State:
Zip:
Submittal Date: Sun Mar 30 22:09:59 EDT 2014

Public Comment No. 131-NFPA 1901-2014 [Section No. 19.18.6]

19.18.6

A spotlight of not less than 75,000 beam cp (75,000 lumens per steradian) or a floodlight with a total luminous flux of not less than 10,500

~~lumens~~

lm shall be provided on the apparatus by which the operator shall be able to observe the effect of the stream from the ladder pipe or monitor nozzle.

19.18.6.1

For diode based lighting instruments, total luminous flux measurement must be attained through measurement using either a Goniophotometer or an integrating sphere. Measurement must be taken after the diodes have reached their operating temperature; typically no less than 2 hours after the fixture is powered on.

Statement of Problem and Substantiation for Public Comment

19.18.6 outlines a specified value without qualifying how that value is to be measured. Using a qualified spectrometry report summary is the only accurate way to ensure a fixture meets or exceeds the required light output requirements set forth in section 19.18.6. Lumens can not simple be measured like Lux can with a handheld meter. While a definition of “lumens” is needed, more importantly a clarification as to how “lumens” are to be measured is needed in this section. 13.10.2.1 and other lighting sections of 1901 each rely on a spec based on a measurable value.

Currently in the Fire/Rescue industry manufacturers often advertise misleading rating scales. Of 3 independently tested "15,000 lumen" LED scene lights by 3 different manufacturers, photometrically verified luminous flux ranged from 4,200 to 10,500 lumens with NONE of the manufacturers meeting their advertised "lumen" output. Therefore, it can be assumed that to date, none of the current NFPA qualified Ariel devices using LED solutions meet the spec as written.

If adopted, 10,500 effective lumens may indeed prove to be more light than is required to do the job of illuminating the water stream. It would be my recommendation to adjust that value to something between 5,500 and 6,500 effective lumens.

"Total luminous flux" is commonly referred (in other industries) to as “effective lumens” while the calculated and misleading “lumens” most fire market manufacturers use today is commonly referred to as “RAW lumens.” The global mining lighting market has made the shift to using effective lumens in specs so as to ensure data is measurable and replaceable in the event that the data were ever called in to question.

Note: Supporting material is available for review at NFPA Headquarters.

Related Item

First Revision No. 209-NFPA 1901-2013 [Section No. 13.10.1.1]

First Revision No. 210-NFPA 1901-2013 [Section No. 13.10.2.1]

Submitter Information Verification

Submitter Full Name: Sam Massa
Organization: HiViz LED Lighting
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 15 11:57:52 EDT 2014

Public Comment No. 31-NFPA 1901-2014 [Section No. 19.23.1.2]

19.23.1.2

Safety signs warning of hazards that are substantially similar to the following found in FAMA TC010, *Standard Product Safety Sign Catalog for Automotive Fire Apparatus*, shall be provided where applicable:

(1) FAMA 25 (Training Required): One sign visible to the operator at the main aerial controls

(2) FAMA 30 (Stabilizer Crush): One sign visible to personnel near each stabilizer and one sign at the stabilizer deployment control(s)

(3) FAMA 31 (Stabilizers with Pins) or FAMA 32 (Stabilizers without Pins): One sign in a location visible to personnel at the stabilizer deployment control(s)

(4) FAMA 34 (Fall Restraint Required): One sign in a location visible to personnel at the base of any aerial device with a ladder capable of being climbed and one sign visible to personnel in any aerial platform

(5) FAMA 35 (Electrocution): One sign in a location visible to the aerial operator and one sign in a location visible to the pump operator

(6) FAMA 36 (Electrocution): One sign on each side of the vehicle and one sign on the back

(7) FAMA 37 (Aerial Device Load Capacity): One sign visible to operators at any location where the aerial can be controlled

(8) FAMA 38 (Aerial Ladder Rung Pinch): One sign visible to operators at any location where the aerial can be controlled

(9) FAMA ~~38~~ 39 (Aerial Inspection and Maintenance): One sign visible to the operator at the main aerial controls

Statement of Problem and Substantiation for Public Comment

Typo in the original Public Input. FAMA 39 is the Aerial Inspection label.

Related Item

First Revision No. 132-NFPA 1901-2013 [Section No. 19.23.1.2]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
State:
Zip:
Submittal Date: Fri Feb 21 16:42:34 EST 2014

Public Comment No. 10-NFPA 1901-2014 [Section No. 20.6.3.4]

20.6.3.4

The fill tower shall be arranged so that foam concentrate from a standard container [5 gal (19 ~~L) up~~ to ~~6.6 gal (~~ 25 L)] can be poured directly into the tank without the use of funnels or other special devices.

Statement of Problem and Substantiation for Public Comment

In the US, the standard foam container is 5 gal, not 6.6 gal. In other countries, the corresponding containers are 19, 20, or 25 L.

Related Item

Public Input No. 73-NFPA 1901-2013 [Section No. 20.6.3.3]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
State:
Zip:
Submittal Date: Thu Feb 20 17:43:08 EST 2014

Public Comment No. 11-NFPA 1901-2014 [Section No. 21.9.1.1.1]

21.9.1.1.1*

The compressed air system shall be operated at its flow capacity at a minimum gauge pressure of 125 psi (862 kPa), and the water pump shall discharge a minimum of 2 gpm (~~7.6~~ 250 L/min) of water at 125 psi (862 kPa) net pump pressure for every 1 SCFM [~~28.3 L/min at standard temperature and pressure~~ 1 SCMM] of compressed air discharge.

Statement of Problem and Substantiation for Public Comment

Air discharge from as CAF system in metric is measured in SCMM per 21.2.2.1. This change corrects the units while providing the same ratio of air to water as the US units.

Related Item

First Revision No. 201-NFPA 1901-2013 [Section No. 21.2.2.1]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
State:
Zip:
Submittal Date: Thu Feb 20 18:24:09 EST 2014

Public Comment No. 13-NFPA 1901-2014 [Section No. 23.11.3]

23.11.3 Computer Electrical Outlets. ~~23.11.3.1~~ –

–

Electrical outlets specifically for computer use, whether low voltage or line voltage, shall be marked with a label for their intended usage and power output.

Statement of Problem and Substantiation for Public Comment

PI 79, PI 390, FR 60 eliminated 23.11.3.2 so the sub section number 23.11.3.1 is not needed.

Related Item

First Revision No. 60-NFPA 1901-2013 [Section No. 23.11.3.2]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
State:
Zip:
Submittal Date: Fri Feb 21 09:14:50 EST 2014

Public Comment No. 14-NFPA 1901-2014 [Section No. 24.2.7.9 [Excluding any Sub-Sections]]

All exposed piping compressed air lines shall be clamped to a rigid body or chassis component at a minimum of every 24 in. (610 mm) and within 6 in. (~~152~~ 150 mm) on each side of a coupling or elbow.

Statement of Problem and Substantiation for Public Comment

Correct the precision of SI conversion consistent with the NFPA Manual of Style.

Related Item

First Revision No. 157-NFPA 1901-2013 [Section No. 24.2.7.9]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
State:
Zip:
Submittal Date: Fri Feb 21 09:27:05 EST 2014

Public Comment No. 93-NFPA 1901-2014 [Section No. 24.5.3]

24.5.3

~~Air tanks shall be permanently stamped or identified in accordance with DOT or ASME regulations.~~

Statement of Problem and Substantiation for Public Comment

This paragraph appears to duplicate the information included in 24.5.1.2. If there is in fact a difference between the two, it should be made more clear.

Related Item

Public Input No. 350-NFPA 1901-2013 [Section No. 24.5.1.2]

Submitter Information Verification

Submitter Full Name: William Proft
Organization: Pierce Manufacturing
Affilliation: Manufacturer of Fire Apparatus
Street Address:
City:
State:
Zip:
Submittal Date: Wed Apr 23 12:10:22 EDT 2014

Public Comment No. 116-NFPA 1901-2014 [Section No. 24.9.6.3]

24.9.6.3

All tests shall be witnessed and the test results certified by ~~an independent third-party certification organization.~~ a nationally recognized testing laboratory. The fill station / fill enclosure shall be listed (NFPA 1901 3.2.4) and shall be labeled (NFPA 1901 3.2.3) indicating compliance with this standard (NFPA 1901 24.9.6.1).

Statement of Problem and Substantiation for Public Comment

The reasoning behind this request for this insertion is that a certificate based on just a one-time rupture test of a prototype device is technically insufficient and risks subjecting operators to severe injuries including dismemberment and death as a result of degrading manufacturing processes after the initial prototype rupture test. The listed and labeled requirement by a nationally recognized testing laboratory is more in keeping with established NFPA definitions and would not result in misinterpretation and/or an "open interpretation".

Related Item

First Revision No. 166-NFPA 1901-2013 [Section No. 24.9.7.1.1]

Submitter Information Verification

Submitter Full Name: GEORGE MARPLE
Organization: EAGLE COMPRESSORS
Street Address:
City:
State:
Zip:
Submittal Date: Mon May 12 14:21:45 EDT 2014

Public Comment No. 125-NFPA 1901-2014 [Section No. 26.10.4.5]

26.10.4.5

For trailers using electric or hydraulic brakesor small trailers without brakes, the umbilical cable for the federally required lighting and brake system shall be connected using a seven-wire heavy duty cable and a seven-way flat blade recreational vehicle connector meeting SAE J2863 *Automotive Trailer Tow Connector* .

Statement of Problem and Substantiation for Public Comment

The standard for the seven-way flat blade recreational connector was released as under SAE document J2863 in 2010. Since this standard references it without the SAE designation, it should be updated accordingly.

Related Item

First Revision No. 44-NFPA 1901-2013 [Section No. 26.10.4.5]

Submitter Information Verification

Submitter Full Name: Neil Bjornstad
Organization: Pierce Mfg. Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 13 15:15:44 EDT 2014

Public Comment No. 145-NFPA 1901-2014 [Section No. 28.2.1]

28.2.1*

An ultra-high pressure fire pump shall have a minimum rated capacity of ~~6~~ 9 gpm (~~25~~ 34 L/min) and shall have a rated discharge pressure greater than or equal to 1100 psi (7600 kPa).

Statement of Problem and Substantiation for Public Comment

6 gpm is too low for effective fire suppression, even at 1100 psi.

Related Item

First Revision No. 242-NFPA 1901-2013 [New Section after 26.11.3]

Submitter Information Verification

Submitter Full Name: WILLIAM E CARROLL
Organization: HMA FIRE LLC
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 15 20:04:35 EDT 2014

Public Comment No. 15-NFPA 1901-2014 [Section No. 28.2.3]

28.2.3

If the completed pumping system is capable of taking suction, it shall do so within 30 seconds under the following conditions:

(1) At an altitude of 2000 ft (600 m) above sea level

(2) Through 10 ft (3 m) of suction hose of the size specified in Table 28.2.3 and equipped with a suction hose strainer

(3) With a lift of 3 ft (1 m)

(4) At 29.9 in. Hg (101 kPa) atmospheric pressure (corrected to sea level)

(5) At a water temperature of ~~60^{0}F (16^{0}C~~ 60?F (16?C)

Table 28.2.3 Suction Hose Size by Rated Capacity

Flow Rate		Suction Hose Size	
gpm	L/min	in.	mm
20 and less~~75~~	80 or less	1	25
30~~115~~	120	1 ½	38
50~~190~~	200	2	51
100~~375~~	400	2 ½	65
150~~568~~	600	2 ½	65
200~~750~~	800	2 ½	75
250~~950~~	1000	3	75
300~~1100~~	1200	3	75

Statement of Problem and Substantiation for Public Comment

Throughout this document, the equivalency of 1 gpm to 4 Lpm is used, and the same should be used here. NOTE: TerraView added the change to temperature (no change) and put the old lpm numbers into the wrong column.

Related Item

First Revision No. 242-NFPA 1901-2013 [New Section after 26.11.3]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
State:
Zip:
Submittal Date: Fri Feb 21 09:45:26 EST 2014

Public Comment No. 156-NFPA 1901-2014 [Section No. 28.2.3]

28.2.3

If the completed pumping system is capable of taking suction, it shall do so within 30 seconds under the following conditions:

(1) At an altitude of 2000 ft (600 m) above sea level

(2) Through 10 ft (3 m) of suction hose of the size specified in Table 28.2.3 and equipped with a suction hose strainer

(3) With a lift of 3 ft (1 m)

(4) At 29.9 in. Hg (101 kPa) atmospheric pressure (corrected to sea level)

(5) At a water temperature of ~~60^{0}F (16^{0}C~~ 60?F (16?C)

Table 28.2.3 Suction Hose Size by Rated Capacity

Flow Rate		Minimum Suction Hose Size	
gpm	L/min	in.	mm
20 and less	75	1	25
30	115	1 ½	38
50	190	2	51
100	375	2 ½	65
150	568	2 ½	65
200	750	2 ½	75
250	950	3	75
300	1100	3	75

Statement of Problem and Substantiation for Public Comment

There should be no requirement that precludes using a larger hose.

Related Item

Public Input No. 156-NFPA 1901-2013 [New Section after 21.4.2]

Submitter Information Verification

Submitter Full Name: Michael Ruthy
Organization: Darley Co
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 16 15:53:02 EDT 2014

Public Comment No. 157-NFPA 1901-2014 [Section No. 28.2.4]

28.2.4*

The pump manufacturer shall certify for each ultra-high pressure fire pump the rated capacity in gpm (L/min), rated discharge pressure in psi (kPa) and Net Positive Suction Head Required (NPSHR) in ft (m) of water at ~~60^{0}F (16^{0}C~~ 60?F (16?C) and 29.9 in. Hg (101 kPa) atmospheric pressure (corrected to sea level) for an elevation up to 2000 feet .

Statement of Problem and Substantiation for Public Comment

Without defining elevation, NPSHR cannot be defined.

Related Item

Public Input No. 157-NFPA 1901-2013 [Section No. 9.4]

Submitter Information Verification

Submitter Full Name: Michael Ruthy
Organization: Darley Co
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 16 15:57:14 EDT 2014

Public Comment No. 158-NFPA 1901-2014 [Section No. 28.2.5.2]

28.2.5.2

The requirements of 28.2.5.1 shall be met with all intake valves open, with all intakes capped or plugged, with all discharge caps removed and valves closed , and without the use of the pump primer during the 5-minute period.

Statement of Problem and Substantiation for Public Comment

Clarification.

Related Item

Public Input No. 158-NFPA 1901-2013 [New Section after 4.10.4]

Submitter Information Verification

Submitter Full Name: Michael Ruthy
Organization: Darley Co
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 16 16:00:44 EDT 2014

Public Comment No. 130-NFPA 1901-2014 [Section No. 28.4.1]

28.4.1

The pump body, discharge piping excluding tank fill line, pump intake and associated intake plumbing and valves shall be capable of withstanding a minimum hydrostatic pressure of 1.4 times the rated discharge pressure.

Statement of Problem and Substantiation for Public Comment

Some pumps utilized in UHP applications have a lower pressure intake and should never see the pressures that are on the high pressure side.

Related Item

First Revision No. 242-NFPA 1901-2013 [New Section after 26.11.3]

Submitter Information Verification

Submitter Full Name: WILLIAM E CARROLL
Organization: HMA FIRE LLC
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 14 17:28:34 EDT 2014

Public Comment No. 105-NFPA 1901-2014 [Section No. 28.4.3.1]

28.4.3.1

If the pump body is subjected to a hydrostatic test, it shall be hydrostatically tested to a gauge pressure of 1.4 times the rated discharge pressure for a minimum of ~~10~~ 15 minutes.

Statement of Problem and Substantiation for Public Comment

NFPA 414 requires a 15 minute hydrostatic test.

Related Item

First Revision No. 242-NFPA 1901-2013 [New Section after 26.11.3]

Submitter Information Verification

Submitter Full Name: DOUGLAS KELLEY
Organization: KME FIRE APPARATUS
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 08 16:16:03 EDT 2014

Public Comment No. 137-NFPA 1901-2014 [Section No. 28.4.3.1]

28.4.3.1

If the pump body is subjected to a hydrostatic test, it shall be hydrostatically tested to a gauge pressure of 1.4 times the rated discharge pressure for a minimum of 10 minutes~~.~~ , excluding the pump intake, which is not subjected to discharge pressures

Statement of Problem and Substantiation for Public Comment

Triplex piston pump has a low pressure and a high pressure side; the low pressure side should not be subjected to high pressure testing.

Related Item

First Revision No. 242-NFPA 1901-2013 [New Section after 26.11.3]

Submitter Information Verification

Submitter Full Name: WILLIAM E CARROLL
Organization: HMA FIRE LLC
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 15 18:21:28 EDT 2014

Public Comment No. 106-NFPA 1901-2014 [Section No. 28.4.3.2]

28.4.3.2

If the pump body is subjected to a hydrodynamic test, it shall be hydrodynamically tested to a gauge pressure of 1.4 times the rated discharge pressure for a minimum of ~~10~~ 15 minutes.

Statement of Problem and Substantiation for Public Comment

NFPA 414 requires a 15 minute hydrostatic test.

Related Item

First Revision No. 242-NFPA 1901-2013 [New Section after 26.11.3]

Submitter Information Verification

Submitter Full Name: DOUGLAS KELLEY
Organization: KME FIRE APPARATUS
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 08 16:17:27 EDT 2014

Public Comment No. 34-NFPA 1901-2014 [New Section after 28.5.3]

TITLE OF NEW CONTENT Intake Strainer (Piston type UHPS pump)

Type your content here ...If the Ultra High Pressure Pump is a piston type pump, it shall have an in-line "Y" type corrosion resistant strainer. The strainer shall be easily accessible for cleaning.

Statement of Problem and Substantiation for Public Comment

many UHPS pumps are a piston type pumps, these pumps are sensitive to debris in the intake water. Typically these pumps should have a in-line "Y" type strainer that are easily accesible for frequent service.

Related Item

Public Input No. 242-NFPA 1901-2013 [Section No. 14.1.3.10]

Submitter Information Verification

Submitter Full Name: PAUL PREVOST
Organization: CLEARWATER REGIONAL FIRE
Street Address:
City:
State:
Zip:
Submittal Date: Mon Feb 24 23:36:52 EST 2014

Public Comment No. 104-NFPA 1901-2014 [Section No. 28.5.3.2]

28.5.3.2

Each external valved intake ~~shall~~ larger than 1-1/2" shall be equipped with a bleeder valve to bleed off air or water from a hose connected to the intake.

Statement of Problem and Substantiation for Public Comment

This will match the intake requirements for regular pumps. Only larger intakes require bleeder valves.

Related Item

First Revision No. 242-NFPA 1901-2013 [New Section after 26.11.3]

Submitter Information Verification

Submitter Full Name: DOUGLAS KELLEY
Organization: KME FIRE APPARATUS
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 08 16:08:16 EDT 2014

Public Comment No. 37-NFPA 1901-2014 [New Section after 28.6]

TITLE OF NEW CONTENT

Type your content here ...The pump system discharge manifold shall be equipped with a "Start/Run" valve that will bypass the normal operating discharge system and primary pressure valve. This "start/Run" valve shall divert water flow from the pump dishcharge to atmosphere or the tank providing easy starting of the pump engine or drive system and avoiding pressure build up in the discharge manifold until it is needed for operation.

Statement of Problem and Substantiation for Public Comment

Most smalll UHP systems provide a valve on the control panel to allow starting without building discharge pressure against the normal pressure operating valve. this is usually identified as a "Start/Run" valve. This valve facilitates starting or engaging the UHP system pump without a "load" from the pressure build up in the discharge manifold. The discharge stream from this valve can be discharges to atmoshpere or to water tank to provide circulation in cold weather operations.

Related Item

Public Input No. 242-NFPA 1901-2013 [Section No. 14.1.3.10]

Submitter Information Verification

Submitter Full Name: PAUL PREVOST
Organization: CLEARWATER REGIONAL FIRE
Street Address:
City:
State:
Zip:
Submittal Date: Thu Feb 27 00:28:07 EST 2014

Public Comment No. 138-NFPA 1901-2014 [Section No. 28.6.1]

28.6.1*

~~Each pump discharge shall be equipped with a valve that can be controlled from the pump operator's position.~~

Statement of Problem and Substantiation for Public Comment

What about the bumper turret? It does not make sense to control that from the pump panel. Also systems with auto-throttle and low water shutdown do not require a pump panel operator so it does not make sense to open/close valves at the pump panel. for a handline, why can't a valve be located at the hose reel?

Related Item

First Revision No. 242-NFPA 1901-2013 [New Section after 26.11.3]

Submitter Information Verification

Submitter Full Name: WILLIAM E CARROLL
Organization: HMA FIRE LLC
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 15 18:36:26 EDT 2014

Public Comment No. 139-NFPA 1901-2014 [Section No. 28.6.5]

28.6.5

All preconnected hose connections and preconnected hoses shall be capable of withstanding a hydrostatic gauge pressure of 1.4 times the maximum ~~pump close-off~~ maximum discharge pressure.

Statement of Problem and Substantiation for Public Comment

What is the maximum pump close-off pressure? It would seems that a system should be able to hold up to the maximum discharge pressure, which is value that will be known.

Related Item

First Revision No. 242-NFPA 1901-2013 [New Section after 26.11.3]

Submitter Information Verification

Submitter Full Name: WILLIAM E CARROLL
Organization: HMA FIRE LLC
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 15 18:42:53 EDT 2014

Public Comment No. 107-NFPA 1901-2014 [Section No. 28.6.7]

~~28.6.7 –~~

~~All 1 - 1/2 - in. (38 mm) or larger discharge outlets shall be equipped with a drain or bleeder valve having a minimum 3/4 - in. (19 mm) pipe thread connection for draining or bleeding off pressure from a hose connected to the outlet.~~

Statement of Problem and Substantiation for Public Comment

UHP systems do not have handline outlets larger than 1" because the flow rates at high pressure would be too large to control. These hoses are more like hydraulic lines than traditional fire hoses, so bleeder valves are not recommended.

Related Item

First Revision No. 242-NFPA 1901-2013 [New Section after 26.11.3]

Submitter Information Verification

Submitter Full Name: DOUGLAS KELLEY
Organization: KME FIRE APPARATUS
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 08 16:18:28 EDT 2014

Public Comment No. 128-NFPA 1901-2014 [Section No. 28.6.7]

28.6.7

~~All 1 - 1/2 - in. (38 mm) or larger discharge outlets shall be equipped with a drain or bleeder valve having a minimum 3/4 - in. (19 mm) pipe thread connection for draining or bleeding off pressure from a hose connected to the outlet.~~

Statement of Problem and Substantiation for Public Comment

UHP line of 1 1/2" are not practical, and bleading these line will be unsafe

Related Item

First Revision No. 242-NFPA 1901-2013 [New Section after 26.11.3]

Submitter Information Verification

Submitter Full Name: Gary Handwerk
Organization: handwerk consulting services
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 14 11:22:46 EDT 2014

Public Comment No. 16-NFPA 1901-2014 [Section No. 28.6.7]

28.6.7

All 1 ½ in. (38 mm) or larger discharge outlets shall be equipped with a drain or bleeder valve having a minimum ¾ in. (~~19~~ 20 mm) pipe thread connection for draining or bleeding off pressure from a hose connected to the outlet.

Statement of Problem and Substantiation for Public Comment

There is no "19 mm pipe thread". The closest nominal size is 20 mm. All pipe sizes are nominal (name) sizes and not an exact dimension.

Related Item

First Revision No. 242-NFPA 1901-2013 [New Section after 26.11.3]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
State:
Zip:
Submittal Date: Fri Feb 21 10:14:31 EST 2014

Public Comment No. 41-NFPA 1901-2014 [New Section after 28.6.10]

TITLE OF NEW CONTENT Hose reel discharge air blowout provision

Type your content here ...If the UHP system is equipped with one or more hose reel discharges. an air blow out provision shall be provided for the reel hoses to facilitate drainingwater in cold weather. This air blow out shall be either from chassis air supply or a separate external inlet. This air blowout shall be provided with a manual operated valve and a check valve to prevent water from entering the chassis or external air supply.

Statement of Problem and Substantiation for Public Comment

Getting the water out of these UHP hose reels is often problematic especially as most of them currently in service are small diameter hydraulic type hose with quick connect fittings that prevent easy draining. these hoses are very susceptible to freeze damage. this damage can be unperceived and dangerous if they burst in use. the only way to assure complete drainage is to equip them with an air blowout connection from either chassis air or external air sources. this requires a valve to operate and a check valve to prevent inadvertent water entry into the air supply especially since the high water pressure would be capable of damaging most air supply systems.

Related Item

First Revision No. 242-NFPA 1901-2013 [New Section after 26.11.3]

Submitter Information Verification

Submitter Full Name: PAUL PREVOST
Organization: CLEARWATER REGIONAL FIRE RESCUE SERVICES
Street Address:
City:
State:
Zip:
Submittal Date: Sun Mar 02 20:11:59 EST 2014

Public Comment No. 108-NFPA 1901-2014 [Section No. 28.6.10]

~~28.6.10~~ * - –

~~All 1 in. (25 mm) or larger discharge outlets, except outlets to which a hose will be preconnected, shall be equipped with a drain or bleeder valve for draining or bleeding off pressure connected to the outlet.~~

Statement of Problem and Substantiation for Public Comment

UHP hose is more like hydraulic hose and must be preconnected to for a tight connection. Bleeder valves are prone to leakage and are not recommended.

Related Item

First Revision No. 242-NFPA 1901-2013 [New Section after 26.11.3]

Submitter Information Verification

Submitter Full Name: DOUGLAS KELLEY
Organization: KME FIRE APPARATUS
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 08 16:20:51 EDT 2014

Public Comment No. 159-NFPA 1901-2014 [Section No. 28.6.10]

28.6.10*

All 1 -1/2 in. (~~25~~ 38 mm) or larger discharge outlets, except outlets to which a hose will be preconnected, shall be equipped with a drain or bleeder valve for draining or bleeding off pressure connected to the outlet.

Statement of Problem and Substantiation for Public Comment

Matches 28.6.7. This appears redundant, except for the preconnected hose clause.

Related Item

Public Input No. 159-NFPA 1901-2013 [Section No. 4.13.1.1.3.2]

Submitter Information Verification

Submitter Full Name: Michael Ruthy
Organization: Darley Co
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 16 16:03:40 EDT 2014

Public Comment No. 28-NFPA 1901-2014 [Section No. 28.7.3]

28.7.3

One safety sign warning of the need for training prior to operating the apparatus that is substantially similar to ~~FAMA2~~ FAMA20 from FAMA TC010, *Standard Product Safety Sign Catalog for Automotive Fire Apparatus,* shall be located on the pump operator's panel.

Statement of Problem and Substantiation for Public Comment

One digit got lost, making the reference incorrect.

Related Item

First Revision No. 242-NFPA 1901-2013 [New Section after 26.11.3]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
State:
Zip:
Submittal Date: Fri Feb 21 15:54:28 EST 2014

Public Comment No. 29-NFPA 1901-2014 [Section No. 28.8.3]

~~28.8.3 – Parallel/Series Control.~~

~~28.8.3.1 –~~

~~With parallel/series pumps, the positions for parallel operation (volume) and series operation (pressure) shall be indicated.~~

~~28.8.3.2 –~~

~~The control for changing the pump from series to parallel and vice versa shall be located on the pump operator's panel.~~

Statement of Problem and Substantiation for Public Comment

This section is not relevant to an Ultra High Pressure pump. For positive displacement pump (most UHP systems), series connection would not help, although parallel systems are occasionally used for increased volume capacity. For centrifugal UHP pumps, series connections are often used to achieve UHP, but a parallel connection of these same pumps would no longer be a UHP pump. Series connections of 2 centrifugal UHP pumps would produce such a high pressure that a completely different system would be required and would not be practical.

Related Item

First Revision No. 242-NFPA 1901-2013 [New Section after 26.11.3]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
State:
Zip:
Submittal Date: Fri Feb 21 16:09:35 EST 2014

Public Comment No. 39-NFPA 1901-2014 [New Section after 28.8.7]

TITLE OF NEW CONTENT Freeze prevention provisions

Type your content here ...If the ultra high pressure system pump is a positive displacement type and therefore unable to be easily drained, the system shall have provisions provided for the eduction of Anti freeze fluid to be siphoned into the water and foam portions of the system from the pump operators position.

Statement of Problem and Substantiation for Public Comment

Freeze protection for UHP systems is a very significant issue field,with many services experiencing down time and costs incurred due to freeze ups. Many of these pumps are piston type positive displacement pumps that cannot be easily drained. therefore the typical arrangement is to put a separate intake with valve and pick up tube for educting either low temp Windshield washer fluid or RV winterization antifreeze into the pump system. Also on many of these systems the foam system is an ATP system and this system also have to be filled with antifreeze fluid to prevent freezing.

Related Item

Public Input No. 61-NFPA 1901-2013 [Section No. 16.13.2.3.5.3]

Submitter Information Verification

Submitter Full Name: PAUL PREVOST
Organization: CLEARWATER REGIONAL FIRE
Street Address:
City:
State:
Zip:
Submittal Date: Sun Mar 02 19:21:32 EST 2014

Public Comment No. 129-NFPA 1901-2014 [Section No. 28.8.7]

28.8.7*

A pump cooling/recirculation line of sufficient size to prevent the pump from overheating when no discharge lines are open shall be provided between the pump discharge and the water tank. When the pump is of a positive displacment type an automatic bypass reflief valve will be provided inplace of the recirculation line.

Statement of Problem and Substantiation for Public Comment

recirculation line is good for centrifical pumps, for positive displacement pumps an automatic bypass relief valve is required

Related Item

First Revision No. 242-NFPA 1901-2013 [New Section after 26.11.3]

Submitter Information Verification

Submitter Full Name: Gary Handwerk
Organization: handwerk consulting services
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 14 11:32:38 EDT 2014

Public Comment No. 40-NFPA 1901-2014 [New Section after 28.9.3]

TITLE OF NEW CONTENT Anti cavitation system

Type your content here ...The pump engine will be equipped with a system that senses pump discharge water pressure less than 30psi (200kpa) for more than two (2) minutes and shuts the engine off.

Statement of Problem and Substantiation for Public Comment

These systems are often operated by minimally staffed crews without a pump operator attending the pump system at all times. Many of these systems are small and do not have engine governor controls with anti cavitation features. Typically the discharge pressure is controlled with the use of spring operated relief valves that return discharge water into intake. But there is a lack of anti cavitation control when the tank runs dry, piston type pumps are subject to significant damage if run out of water.

Related Item

First Revision No. 242-NFPA 1901-2013 [New Section after 26.11.3]

Submitter Information Verification

Submitter Full Name: PAUL PREVOST
Organization: CLEARWATER REGIONAL FIRE RESCUE SERVICES
Street Address:
City:
State:
Zip:
Submittal Date: Sun Mar 02 19:50:06 EST 2014

Public Comment No. 18-NFPA 1901-2014 [Section No. 28.9.3]

28.9.3

If a separate pumping engine is provided, it shall meet the requirements of 12.2.1.1, 12.2.1.2, 12.2.1.7, 12.2.2, 12.2.3.1, 12.2.3.2, 12.2.4, 12.2.5, 12.2.6, 13.2, 13.4.3, 13.4.4, 13.4.4.1, 13.4.4.3, 13.4.4.4, 13.4.5, and 13.5.

Statement of Problem and Substantiation for Public Comment

12.2.6 Exhaust Systems is included in the requirements in chapter 17 for separate pumping engines and is applicable here as well.

Related Item

First Revision No. 242-NFPA 1901-2013 [New Section after 26.11.3]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
State:
Zip:
Submittal Date: Fri Feb 21 12:06:47 EST 2014

Public Comment No. 19-NFPA 1901-2014 [Section No. 28.11]

28.11 Gauges and Instruments.

28.11.1 Master Pump Discharge Pressure Gauge.

A master discharge pressure gauge shall be provided.

28.11.1.1

The master discharge pressure gauge shall read from a gauge pressure of 0 to not less than 500 psi (3500 kPa) higher than the maximum pressure that can be developed by the pump when it is operating with zero intake pressure.

28.11.1.2

Where an analog pressure gauge is used, it shall have a minimum accuracy of Grade 1A as defined in ASME B40.100, *Pressure Gauges and Gauge Attachments*.

28.11.1.2.1

Numerals for master gauges shall be a minimum 0.25 in. (6.4 mm) high.

28.11.1.2.2

There shall be graduation lines showing at least every 50 psi (~~350~~ 200 kPa), with major and intermediate graduation lines emphasized and figures at least every 500 psi (~~700~~ 2000 kPa).

28.11.1.2.3

Analog pressure gauges shall be vibration and pressure pulsation dampened; be resistant to corrosion, condensation, and shock; and have internal mechanisms that are factory lubricated for the life of the gauge.

28.11.1.3

If a digital pressure gauge is used, the digits shall be at least 0.25 in. (6.4 mm) high.

28.11.1.3.1

Digital pressure gauges shall display pressure in increments of not more than 10 psi (~~70~~ 50 kPa).

28.11.1.3.2

Digital master pressure gauges shall have an accuracy of ±3 percent over the full scale.

28.11.2 Discharge Outlet Instrumentation.

If the apparatus is equipped with two or more discharge outlets that are 1 ½ in. (38 mm) or larger and that can be supplied only by the ultra-high pressure fire pump, these discharge outlets shall be equipped with pressure gauges or flowmeters.

28.11.2.1

The pressure gauge or flowmeter display shall be located adjacent to the corresponding valve control with no more than 6 in. (150 mm) separating the pressure gauge or flowmeter bezel and the valve control centerline.

28.11.2.2

Pressure gauges shall be connected to the outlet side of the valve.

28.11.2.3

Flowmeters shall display flow in increments not greater than 5 gpm (~~19~~ 20 L/min).

28.11.2.4

Where an analog pressure gauge is used, the gauge shall have a minimum accuracy of Grade B as defined in ASME B40.100, *Pressure Gauges and Gauge Attachments*.

28.11.2.4.1

Numerals for gauges shall be a minimum 5/32 in. (4 mm) high.

28.11.2.4.2

There shall be graduation lines showing at least every 50 psi (~~70~~ 200 kPa), with major and intermediate graduation lines emphasized and figures at least every 500 psi (~~3500~~ 2000 kPa).

28.11.2.4.3

Analog pressure gauges shall be vibration and pressure pulsation dampened; be resistant to corrosion, condensation, and shock; and have internal mechanisms that are factory lubricated for the life of the gauge.

28.11.2.5

If a digital pressure gauge is used, the digits shall be at least 0.25 in. (6.4 mm) high.

28.11.2.5.1

Digital pressure gauges shall display pressure in increments of not more than 10 psi (~~70~~ 50 kPa).

28.11.2.5.2

Digital pressure gauges shall have an accuracy of ±3 percent over the full scale.

28.11.3 Protection of Gauges and Instruments.

Each pressure gauge or flowmeter and its respective display shall be mounted and attached so it is protected from accidental damage and excessive vibration.

28.11.4* Cab Gauges.

If the pump on the apparatus is driven by the chassis engine through a PTO, and the apparatus is designed for pump-and-roll operations using that chassis engine-driven pump, a second gauge that meets the same requirements as the discharge pressure gauge required by 28.11.1 shall be mounted in the driving compartment in view of the driver.

Statement of Problem and Substantiation for Public Comment

Pressure gauges are not manufactured with graduations of 7 or 35. They would be 1, 2, 5; times powers of 10. The numbers proposed are consistent with the numbers used in chapter 16.

Related Item

First Revision No. 242-NFPA 1901-2013 [New Section after 26.11.3]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
State:
Zip:
Submittal Date: Fri Feb 21 12:43:34 EST 2014

Public Comment No. 160-NFPA 1901-2014 [Section No. 28.11.1.3.1]

28.11.1.3.1

Digital pressure gauges shall display pressure in increments of not more than ~~10~~ 50 psi (70 kPa).

Statement of Problem and Substantiation for Public Comment

When working at pressures over 1000 psi, resolution to 10 psi is not needed.

Related Item

Public Input No. 160-NFPA 1901-2013 [New Section after 4.14]

Submitter Information Verification

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Submittal Date: Fri May 16 16:08:17 EDT 2014

Public Comment No. 109-NFPA 1901-2014 [Section No. 28.11.2 [Excluding any Sub-Sections]]

~~If the apparatus is equipped with two or more discharge outlets that are 1 - 1/2 - in. (38 mm) or larger and that can be supplied only by the ultra-high pressure fire pump, these discharge outlets shall be equipped with pressure gauges or flowmeters.~~

Statement of Problem and Substantiation for Public Comment

This requirement comes from traditional fire pumps to determine engine pressure for a specific line so you can determine nozzle pressure for each discharge. UHP discharges are not throttled, so there is no need for individual line gauges. In addition, it is unlikely there would be a UHP handline larger than 1" because it would be very difficult to handle or control.

Related Item

First Revision No. 242-NFPA 1901-2013 [New Section after 26.11.3]

Submitter Information Verification

Submitter Full Name: DOUGLAS KELLEY
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Submittal Date: Thu May 08 16:23:33 EDT 2014

Public Comment No. 141-NFPA 1901-2014 [Section No. 28.11.2.2]

28.11.2.2

Pressure gauges shall be connected to the outlet side of the discharge valve.

Statement of Problem and Substantiation for Public Comment

clarification of the section

Related Item

First Revision No. 242-NFPA 1901-2013 [New Section after 26.11.3]

Submitter Information Verification

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Public Comment No. 161-NFPA 1901-2014 [Section No. 28.11.2.3]

28.11.2.3

Flowmeters shall display flow in increments not greater than 5 gpm (19 L/min) for pumps up to 100 GPM and in increments of 10 GPM for larger pumps .

Statement of Problem and Substantiation for Public Comment

A 300 GPM pump doesn't need to be within 5 GPM.

Related Item

Public Input No. 161-NFPA 1901-2013 [Section No. 4.15]

Submitter Information Verification

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Submittal Date: Fri May 16 16:11:43 EDT 2014

Public Comment No. 162-NFPA 1901-2014 [Section No. 28.11.2.5.1]

28.11.2.5.1

Digital pressure gauges shall display pressure in increments of not more than ~~10~~ 50 psi (70 kPa).

Statement of Problem and Substantiation for Public Comment

We don't need this level of resolution when operating over 1000 psi.

Related Item

Public Input No. 162-NFPA 1901-2013 [Section No. 4.18]

Submitter Information Verification

Submitter Full Name: Michael Ruthy
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Submittal Date: Fri May 16 16:15:33 EDT 2014

Public Comment No. 163-NFPA 1901-2014 [Section No. 28.11.4]

28.11.4* Cab Gauges.

If the pump on the apparatus is driven by the chassis engine through a PTO, or separate engine drive, and the apparatus is designed for pump-and-roll operations using that chassis engine-driven pump, or the separate engine driven pump, a second gauge that meets the same requirements as the discharge pressure gauge required by 28.11.1 shall be mounted in the driving compartment in view of the driver.

Statement of Problem and Substantiation for Public Comment

Separate engines are often used for pump and roll and the driver should know what that pump is doing.

Related Item

Public Input No. 163-NFPA 1901-2013 [Section No. 4.20.1]

Submitter Information Verification

Submitter Full Name: Michael Ruthy
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Submittal Date: Fri May 16 16:17:32 EDT 2014

Public Comment No. 21-NFPA 1901-2014 [Section No. 28.12]

28.12 Required Testing.

28.12.1 Apparatus Pump System Certification.

28.12.1.1 General.

The UHP pump shall be tested after the pump and all its associated piping and equipment have been installed on the fire apparatus.

28.12.1.1.1

The testing shall include at least the water tank–to–pump flow test in 28.12.5, the 30-minute pumping test in 28.12.6, priming system test in 28.12.8, the vacuum test in 28.12.9, the gauge and flowmeter test in 28.12.11, the piping integrity test in 28.12.12.1, and the water tank capacity test in 28.12.13.

28.12.1.1.2

If the ~~fire~~ UHP pump is driven by the chassis engine, the engine speed advancement interlock test in 28.12.10 shall be included.

28.12.1.1.3

The test results shall be certified by the manufacturer.

28.12.1.2* Test Label.

28.12.1.2.1

A test label shall be provided at the pump operator's position that gives the rated discharges and pressures and, if so equipped, the position of the parallel/series pump control.

28.12.1.2.2

If powered by an engine, the speed of the engine as determined by the certification test for each unit and the governed speed of the engine as stated by the engine manufacturer on a certified brake horsepower curve shall be provided on the test label.

28.12.1.2.3

The label shall be stamped with all information at the factory and attached to the vehicle prior to shipping.

28.12.2 Conditions for Tests.

28.12.2.1

Tests shall be performed when conditions are as follows:

(1) Air temperature: 0°F to 110°F (-18°C to 43°C)

(2) Water temperature: 35°F to 90°F (2°C to 32°C)

(3) Barometric pressure: 29 in. Hg (98.2 kPa), minimum (corrected to sea level)

28.12.2.2

If it is necessary to perform the test outside the air or water temperature ranges or the minimum barometric pressure stated in 28.12.2.1 and the pump passes the certification test, the test results shall be acceptable.

28.12.2.3

Engine-driven accessories shall not be functionally disconnected or otherwise rendered inoperative during the tests.

28.12.2.3.1

If the chassis engine drives the UHP pump, the total continuous electrical loads, excluding those loads associated with the equipment defined in 28.12.2.3.3, shall be applied for the entire pumping portion of this test.

28.12.2.3.2

If the vehicle is equipped with a fixed power source driven by the same engine that drives the ultra-high pressure fire pump, it shall be running at a minimum of 50 percent of its rated capacity throughout the pumping portion of the pump test.

28.12.2.3.3

The following devices shall be permitted to be turned off or not operating during the pump test:

(1) Foam pump

(2) Hydraulically driven equipment (other than hydraulically driven line voltage generator)

(3) Winch

(4) Windshield wipers

(5) Four-way hazard flashers

(6) Compressed air foam system (CAFS) compressor

28.12.2.3.4

All structural enclosures, such as floorboards, gratings, grilles, and heat shields not furnished with a means for opening them in normal service shall be kept in place during the tests.

28.12.3 Equipment.

28.12.3.1

One or more lines of fire hose of sufficient diameter shall be provided to allow discharge of the rated capacity of the pump without exceeding a flow velocity of 35 ft/sec (10.7 m/sec) through the hose.

28.12.3.2

Discharge rate shall be measured using equipment such as flowmeters, volumetric tanks, or weigh tanks.

28.12.3.3 Test Gauges.

28.12.3.3.1

All test gauges shall meet the requirements for Grade A gauges as defined in ASME B40.100 and shall be at least size 3 ½ per ASME B40.100, *Pressure Gauges and Gauge Attachments*.

28.12.3.3.2

The pump intake gauge shall have a range of 30 in. Hg (100 kPa) vacuum to zero for a vacuum gauge or 30 in. Hg (100 kPa) vacuum to a gauge pressure of 150 psi (1000 kPa) for a compound gauge.

28.12.3.3.3

The discharge pressure gauge shall have a gauge pressure range of 0 psi (0 kPa) to not less than 500 psi (3500 kPa) over the rated pump discharge pressure.

28.12.3.3.4

All gauges shall have been calibrated in the year preceding the tests using a deadweight gauge tester or a master gauge meeting the requirements for Grade 3A or Grade 4A gauges, as defined in ASME B40.100, that has been calibrated within the preceding year.

28.12.3.3.5

Each test gauge connection shall include a means for snubbing, such as a needle valve to damp out rapid needle movements.

28.12.3.4

Speed-measuring equipment shall consist of a tachometer or other device for measuring revolutions per minute.

28.12.4 Procedure.

28.12.4.1*

The ambient air temperature, water temperature, elevation of test site, and atmospheric pressure (corrected to sea level) shall be determined and recorded prior to the pump test.

28.12.4.2*

The engine, pump, transmission, and all parts of the fire apparatus shall exhibit no undue heating, loss of power, overspeed, leaks, or other defect during the entire test.

28.12.5 Water Tank–to–Pump Flow Test.

28.12.5.1

The water tank–to–pump flow test shall be performed with water being supplied from the apparatus water tank to verify the rated capacity and rated discharge pressure capability of the apparatus.

28.12.5.2

The water tank–to–pump flow test shall be conducted as follows:

(1) The apparatus shall be placed on level ground and the water tank filled until it overflows.

(2) All intakes to the pump shall be closed.

(3) The tank fill line shall be closed.

(4) A hose line(s) and nozzle(s) for discharging water at the rated pump capacity flow rate shall be connected to one or more discharge outlets.

(5) The water tank–to–pump valve(s) and the discharge valve(s) leading to the hose line(s) and nozzle(s) shall be opened.

(6) The pumping system shall be operated and adjusted as required until the rated pump capacity flow rate, -0/+ 5 percent, at the rated discharge pressure is established.

(7) The discharge pressure shall be recorded.

(8) The discharge valves shall be closed and the water tank refilled.

(9) The bypass cooling line shall be permitted to be opened temporarily, if needed, to keep the water temperature in the pump within acceptable limits.

(10) The discharge valves shall be reopened and the time noted.

(11) If necessary, the pumping system shall be adjusted to maintain the discharge pressure recorded as noted in 28.12.5.2(6).

(12) The pumping system shall be operated at these conditions for 30 minutes or the discharge pressure drops by 100 psi (700 kPa) or more, at which time the time shall be noted and the elapsed time from the opening of the discharge valves shall be calculated and recorded.

28.12.5.3 Volume Discharge Calculation.

28.12.5.3.1

The volume discharged shall be calculated by multiplying the rate of discharge in gallons per minute (liters per minute) by the time in minutes elapsed from the opening of the discharge valves until the discharge pressure drops by at least 100 psi (700 kPa).

28.12.5.3.2

Other means shall be permitted to be used to determine the volume of water pumped from the tank such as a totalizing flowmeter, weighing the truck before and after, or refilling the tank using a totalizing flowmeter.

28.12.5.3.3

The flow rate shall be maintained for 30 minutes or until 80 percent of the rated capacity of the tank has been discharged.

28.12.6 30-Minute Pumping Test.

28.12.6.1

The pump shall be subjected to a 30-minute pumping test consisting of continuous pumping at rated capacity at rated pump discharge pressure.

28.12.6.2

The 30-minute pumping test shall be permitted to be performed from the apparatus water tank with provisions to maintain tank level during the duration of the test.

28.12.6.3

The 30-minute pumping test shall be permitted to be performed with water supplied to the pump intake from separate water supply that provides a positive pressure to the pump intake.

28.12.6.4

If the 30-minute pumping test is performed with water supplied to the pump that provides a positive pressure at the pump intake, the net pump pressure shall be equal to the rated pump discharge pressure.

28.12.6.5

The 30-minute pumping test shall be permitted to be run at a test site that provides a supply of clear water and close enough to allow the suction strainer to be submerged at least 2 ft (0.6 m) below the surface of the water, when connected to the pump by a minimum of 10 ft (3 m) of suction hose.

28.12.6.6

If the pump is stopped before the test is completed, the entire pump test shall be repeated.

28.12.6.7

The flow discharge pressure, intake pressure, and engine speed shall be recorded at least every 15 minutes but not fewer than three times for each test sequence.

28.12.6.8

The average net pump pressure shall be calculated and recorded based on the average values for discharge and intake pressure.

28.12.7 Pressure Control Test.

At the pump rated flow and pressure for pumps with two or more discharges, the pump system shall be tested for pressure rise as follows:

(1) The pump shall be operated at rated capacity and rated discharge gauge pressure.

(2) If a pressure control system is supplied, it shall maintain the rated discharge gauge pressure within ±5 percent, or if it is adjustable, it shall be set in accordance with the manufacturer's instructions to maintain the rated discharge gauge pressure within ±5 percent.

(3) All discharge valves shall be closed not more rapidly than in 3 seconds and not more slowly than in 7 seconds.

(4) The rise in discharge pressure shall not exceed 10 percent of the rated discharge pressure and shall be recorded.

28.12.8 Priming System Test.

If the UHP pumping system is equipped with a priming system, it shall be operated in accordance with the manufacturer's instructions until the pump has been primed and is discharging water.

28.12.8.1*

This test shall be run at a test site that provides a supply of clear water and close enough to allow 10 ft (3 m) of suction hose of the size specified in Table 28.2.3 and equipped with a suction hose strainer to be connected to the pump intake to be submerged at least 2 ft (0.6 m) below the surface of the water, with the water level 3 ft (0.91 m) below the center of the pump intake corrected for the following conditions:

(1) At an altitude of 2000 ft (600 m) above sea level

(2) At 29.9 in. H (101 kPa) atmospheric pressure (corrected to sea level)

(3) At a water temperature of ~~60^{0}F (16^{0}C~~ 60?F (16?C)

28.12.8.2

The interval from the time the priming system is started until the time the pump is discharging water shall be noted.

28.12.8.3

The time required to prime the pump shall not exceed 30 seconds.

28.12.8.4

Only biodegradable products shall be permitted to be discharged onto the ground.

28.12.9 Vacuum Test.

If the UHP pumping system is equipped with a priming system, a vacuum test shall be performed that consists of subjecting the interior of the pump, with all intake valves open, all intakes capped or plugged, and all discharge caps removed to a vacuum of 17 in. Hg (57.6 kPa) by means of the pump priming system.

28.12.9.1

At altitudes above 2000 ft (600 m), the vacuum attained shall be permitted to be less than 17 in. Hg (57.6 kPa) by 1 in. Hg (3.4 kPa) for each 1000 ft (300 m) of altitude above 2000 ft (600 m).

28.12.9.2

The primer shall not be used after the 5-minute test period has begun.

28.12.9.3

The engine shall not be operated at any speed greater than the governed speed during this test.

28.12.9.4

The vacuum shall not drop more than 10 in. Hg (34 kPa) in 5 minutes.

28.12.9.5

The vacuum test shall then be repeated with all intake valves closed and the caps or plugs on all gated intakes removed.

28.12.10* Engine Speed Advancement Interlock Test.

If the UHP pump is driven by the chassis engine, the engine speed advancement interlock system shall be tested to verify that engine speed cannot be increased at the pump operator's panel unless there is throttle-ready indication.

28.12.10.1

If the apparatus is equipped with a stationary UHP pump driven through split-shaft PTO, the test shall verify that the engine speed control at the pump operator's panel cannot be advanced when either of the following conditions exists:

(1) The chassis transmission is in neutral, the parking brake is off, and the UHP pump shift in the driving compartment is in the road position.

(2) The chassis transmission has been placed in the position for pumping as indicated on the label provided in the driving compartment, the parking brake is on, and the UHP pump shift in the driving compartment is in the road position.

28.12.10.2

If the apparatus is equipped with a stationary UHP pump driven through a transmission-mounted PTO, front-of-engine crankshaft PTO, or engine flywheel PTO, the test shall verify that the engine speed control on the pump operator's panel cannot be advanced when either of the following conditions exists:

(1) The chassis transmission is in neutral, the parking brake is off, and the UHP pump shift status in the driving compartment is disengaged.

(2) The chassis transmission is in any gear other than neutral, the parking brake is on, and the UHP pump shift in the driving compartment is in the "Pump Engaged" position.

28.12.10.3

If the apparatus is equipped with a UHP pump driven by the chassis engine designed for both stationary pumping and pump-and-roll, the test shall verify that the engine speed control at the pump operator's panel cannot be advanced when any of the following conditions exists:

(1) The chassis transmission is in neutral, the parking brake is off, and the UHP pump shift status in the driving compartment is disengaged.

(2) The chassis transmission is in any gear other than neutral, the parking brake is on, and the UHP pump shift in the driving compartment is in the "Pump Engaged" position.

(3) The chassis transmission is in any gear other than neutral, the parking brake is off, the UHP pump shift in the driving compartment is in the "Pump Engaged" position and the "OK to Pump-and-Roll" indicator is on.

28.12.10.4

If the apparatus is equipped with a stationary UHP pump driven through transfer case PTO, the test shall verify that the engine speed control on the pump operator's panel cannot be advanced when one of the following conditions exists:

(1) The chassis transmission is in neutral, the transfer case is in neutral, the parking brake is off, and the UHP pump shift in the driving compartment is in the road position.

(2) The chassis transmission is in neutral, the transfer case is engaged, the parking brake is off, and the UHP pump shift in the driving compartment is in the road position.

(3) The chassis transmission has been placed in the position for pumping as indicated on the label provided in the driving compartment, the parking brake is on, and the UHP pump shift in the driving compartment is in the road position.

28.12.11 Gauge and Flowmeter Test.

28.12.11.1

Pump intake and discharge pressure gauges shall be checked for accuracy while pumping at rated capacity at pump rated pressure.

28.12.11.2

Any gauge that does not meet Grade B ASME B40 requirements as compared to the calibrated test gauge shall be recalibrated, repaired, or replaced.

28.12.11.3

Each flowmeter shall be checked for accuracy while pumping at rated capacity at pump rated pressure.

28.12.11.4

Any flowmeter that is off by more than 10 percent shall be recalibrated, repaired, or replaced.

28.12.12 Manufacturer's Predelivery Test.

28.12.12.1 Piping Integrity Test.

The UHP pump and its connected piping system shall be subjected to either a hydrostatic test per 28.12.12.2 or hydrodynamic test per 28.12.12.3.

28.12.12.2

If the pump and its connected piping system are subjected to a hydrostatic test, they shall be hydrostatically tested to a gauge pressure of 1.4 times the rated pump discharge pressure.

28.12.12.2.1

The hydrostatic test shall be conducted with the tank fill line valve, the tank–to–pump valve closed, and the pump bypass line return to the water tank disconnected and capped.

28.12.12.2.2

The hydrostatic test shall be conducted with all discharge valves open and the outlets capped.

28.12.12.2.3*

The hydrostatic test shall be conducted with all external intakes capped and intake valves left open in external intakes equipped with valves.

28.12.12.2.4

The hydrostatic test pressure shall be maintained for 3 minutes.

28.12.12.3*

If the pump and its connected piping system are subjected to a hydrodynamic test, they shall be hydrodynamically tested to a gauge pressure of 1.4 times the rated pump discharge pressure.

28.12.12.4

The hydrodynamic test pressure shall be maintained for 3 minutes.

28.12.13 Water Tank Capacity Test.

The water tank shall be tested for usable water capacity by either a totalizing flowmeter method or truck weight method.

28.12.13.1

The water tank shall be filled until it overflows.

28.12.13.2

If the unit is equipped with an automatic shutdown due to a low pressure feature, the feature shall be engaged.

28.12.13.3

If a totalizing flowmeter is used, the meter shall be connected to a discharge and set to zero.

28.12.13.3.1

If the totalizing flowmeter is connected to a discharge valve, the valve shall be opened and the unit run at between 25 and 35 percent of the pump's rated flow until it automatically shuts down or the pressure drops below 1000 psi (7000 kPa).

28.12.13.3.2

The total volume that was discharged shall be recorded.

28.12.13.4

If the truck weight method is used, the truck shall be weighed and the weight recorded.

28.12.13.4.1

The pump shall be started and brought up to a flow rate of between 25 percent and 35 percent of the pump's rated flow by partly opening a discharge valve.

28.12.13.4.2

The discharge valve shall be closed when the unit automatically shuts down or the pump pressure drops below 1000 psi (7000 kPa).

28.12.13.4.3

The truck shall be reweighed.

28.12.13.4.4

The water tank empty weight shall be subtracted from water tank full weight and the result divided by 8.33 lb/gal to obtain the usable water volume in gallons.

Statement of Problem and Substantiation for Public Comment

"fire pump" is a term defined in chapter 3, so it can not be used to refer to a pump that does not meet that definition.
In cases where a UHP pump and another pump are both installed, some of the wording need UHP to clarify the meaning.
Additional changes may still be needed to define the throttle interlocks and testing for cases with 2 pumps both driven by the chassis engine.

Related Item

First Revision No. 242-NFPA 1901-2013 [New Section after 26.11.3]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
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Submittal Date: Fri Feb 21 13:42:08 EST 2014

Public Comment No. 30-NFPA 1901-2014 [Section No. 28.12.1.2.1]

28.12.1.2.1

A test label shall be provided at the pump operator's position that gives the rated discharges and pressures ~~and, if so equipped, the position of the parallel/series pump control~~ .

Statement of Problem and Substantiation for Public Comment

Parallel/Series pump control not relevant to UHP pumps (See Public Comment 29).

Related Item

First Revision No. 242-NFPA 1901-2013 [New Section after 26.11.3]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
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Submittal Date: Fri Feb 21 16:22:38 EST 2014

Public Comment No. 164-NFPA 1901-2014 [Section No. 28.12.2.3.2]

28.12.2.3.2

If the vehicle is equipped with a fixed power source driven by the same engine that drives the ultra-high pressure fire pump, it shall be running at a minimum of ~~50~~ 85 percent of its ~~rated~~ gross horsepower capacity throughout the pumping portion of the pump test.

Statement of Problem and Substantiation for Public Comment

50% is quite low compared to conventional fire pumps that have no similar requirements. If they did, a 500 HP engine would be required for a 1500 GPM pump. There is no compelling reason to single out UHP pumps as being different. Rated capacity of an engine is undefined as written. Gross HP isn't much clearer but it gets us on the same page. In the automotive world, that's what is generally published. In the industrial, separate engine world, they generally have numerous ratings, such as Na, Nb, and Nc. It may be a suggestion to pick one SAE standard and see if you can get the engine manufacturers to publish certified curves to that.

Related Item

Public Input No. 164-NFPA 1901-2013 [New Section after 15.2]

Submitter Information Verification

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Submittal Date: Fri May 16 16:23:43 EDT 2014

Public Comment No. 22-NFPA 1901-2014 [Section No. 28.12.3.1]

28.12.3.1

One or more lines of ~~fire~~ UHP hose of sufficient diameter shall be provided to allow discharge of the rated capacity of the pump without exceeding a flow velocity of 35 ft/sec (10.7 m/sec) through the hose.

Statement of Problem and Substantiation for Public Comment

Fire hose (per NFPA 1961) does not include the hoses typically used with UHP systems, so the term Fire Hose should not be used here.

Related Item

First Revision No. 242-NFPA 1901-2013 [New Section after 26.11.3]

Submitter Information Verification

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Submittal Date: Fri Feb 21 14:13:19 EST 2014

Public Comment No. 110-NFPA 1901-2014 [Section No. 28.12.3.3.2]

28.12.3.3.2

~~The pump~~ If the UHP pump system is capable of drafting, the pump intake gauge shall have a range of 30 in. Hg (100 kPa) vacuum to zero for a vacuum gauge or 30 in. Hg (100 kPa) vacuum to a gauge pressure of 150 psi (1000 kPa) for a compound gauge.

Statement of Problem and Substantiation for Public Comment

Many UHP systems cannot draft and can only be supplied from the tank.

Related Item

First Revision No. 242-NFPA 1901-2013 [New Section after 26.11.3]

Submitter Information Verification

Submitter Full Name: DOUGLAS KELLEY
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Submittal Date: Thu May 08 16:27:37 EDT 2014

Public Comment No. 111-NFPA 1901-2014 [Section No. 28.12.5]

~~28.12.5 – Water Tank–to–Pump Flow Test.~~

~~28.12.5.1 –~~

~~The water tank–to–pump flow test shall be performed with water being supplied from the apparatus water tank to verify the rated capacity and rated discharge pressure capability of the apparatus.~~

~~28.12.5.2 –~~

~~The water tank–to–pump flow test shall be conducted as follows:~~

(1) ~~The apparatus shall be placed on level ground and the water tank filled until it overflows.~~

(2) ~~All intakes to the pump shall be closed.~~

(3) ~~The tank fill line shall be closed.~~

(4) ~~A hose line(s) and nozzle(s) for discharging water at the rated pump capacity flow rate shall be connected to one or more discharge outlets.~~

(5) ~~The water tank–to–pump valve(s) and the discharge valve(s) leading to the hose line(s) and nozzle(s) shall be opened.~~

(6) ~~The pumping system shall be operated and adjusted as required until the rated pump capacity flow rate, -0/+5 percent, at the rated discharge pressure is established.~~

(7) ~~The discharge pressure shall be recorded.~~

(8) ~~The discharge valves shall be closed and the water tank refilled.~~

(9) ~~The bypass cooling line shall be permitted to be opened temporarily, if needed, to keep the water temperature in the pump within acceptable limits.~~

(10) ~~The discharge valves shall be reopened and the time noted.~~

(11) ~~If necessary, the pumping system shall be adjusted to maintain the discharge pressure recorded as noted in 28.12.5.2(6) .~~

(12) ~~The pumping system shall be operated at these conditions for 30 minutes or the discharge pressure drops by 100 psi (700 kPa) or more, at which time the time shall be noted and the elapsed time from the opening of the discharge valves shall be calculated and recorded.~~

~~28.12.5.3 – Volume Discharge Calculation.~~

~~28.12.5.3.1 –~~

~~The volume discharged shall be calculated by multiplying the rate of discharge in gallons per minute (liters per minute) by the time in minutes elapsed from the opening of the discharge valves until the discharge pressure drops by at least 100 psi (700 kPa).~~

~~28.12.5.3.2 –~~

~~Other means shall be permitted to be used to determine the volume of water pumped from the tank such as a totalizing flowmeter, weighing the truck before and after, or refilling the tank using a totalizing flowmeter.~~

~~28.12.5.3.3 –~~

~~The flow rate shall be maintained for 30 minutes or until 80 percent of the rated capacity of the tank has been discharged.~~

Statement of Problem and Substantiation for Public Comment

Most UHP system are low volume systems < 300 gpm. Since they will be supplied from the tank, measuring the rating of the pump is the same as measuring the flow rate from the tank, and a separate tank-to-pump flow test is not required.

Related Item

First Revision No. 242-NFPA 1901-2013 [New Section after 26.11.3]

Submitter Information Verification

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Submittal Date: Thu May 08 16:29:06 EDT 2014

Public Comment No. 165-NFPA 1901-2014 [Section No. 28.12.7]

28.12.7 Pressure Control Test.

At the pump rated flow and pressure for pumps with two or more discharges, the pump system shall be tested for pressure rise as follows:

(1) The pump shall be operated at rated capacity and rated discharge gauge pressure.

(2) If a pressure control system is supplied, it shall maintain the rated discharge gauge pressure within ~~±5~~ 10 percent, or if it is adjustable, it shall be set in accordance with the manufacturer's instructions to maintain the rated discharge gauge pressure within ~~±5~~ 10 percent.

(3) All discharge valves shall be closed not more rapidly than in 3 seconds and not more slowly than in 7 seconds.

(4) The rise in discharge pressure shall not exceed 10 percent of the rated discharge pressure and shall be recorded.

Statement of Problem and Substantiation for Public Comment

This figure matches 28.8.4.1

Related Item

Public Input No. 165-NFPA 1901-2013 [New Section after 16.6.4]

Submitter Information Verification

Submitter Full Name: Michael Ruthy
Organization: Darley Co
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 16 16:36:42 EDT 2014

Public Comment No. 23-NFPA 1901-2014 [Section No. 28.12.8.1]

28.12.8.1*

This test shall be run at a test site that provides a supply of clear water and close enough to allow 10 ft (3 m) of suction hose of the size specified in Table 28.2.3 and equipped with a suction hose strainer to be connected to the pump intake to be submerged at least 2 ft (0.6 m) below the surface of the water, with the water level at least 3 ft (0.91 m) below the center of the pump intake corrected for the following conditions:

(1) At an altitude of 2000 ft (600 m) above sea level

(2) At 29.9 in. H (101 kPa) atmospheric pressure (corrected to sea level)

(3) At a water temperature of ~~60^{0}F (16^{0}C~~ 60?F (16?C)

Statement of Problem and Substantiation for Public Comment

The words "at least: are needed in many cases. If the pump were on a flat bed with the intake 48" above the ground, as written the truck would have to be partially (12") submersed in the water supply to run the test as written. The other requirements in the sentence include "at least".

Related Item

First Revision No. 242-NFPA 1901-2013 [New Section after 26.11.3]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
State:
Zip:
Submittal Date: Fri Feb 21 14:24:50 EST 2014

Public Comment No. 26-NFPA 1901-2014 [Section No. 28.12.9 [Excluding any Sub-Sections]]

If the pumping system is equipped with a priming system, a vacuum test shall be performed that consists of subjecting the interior of the pump, with all intake valves open, all intakes capped or plugged, and all discharge caps removed; to a vacuum of 17 in. Hg (57.6 kPa) by means of the pump priming system.

Statement of Problem and Substantiation for Public Comment

Grammar correction. As written, the caps have to be removed to a vacuum. With the semicolon, the interior of the pump has to be subjected to a vacuum (with further subordinate conditions).

Related Item

First Revision No. 242-NFPA 1901-2013 [New Section after 26.11.3]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
State:
Zip:
Submittal Date: Fri Feb 21 14:44:28 EST 2014

Public Comment No. 25-NFPA 1901-2014 [Section No. 28.12.12.2.1]

28.12.12.2.1

The hydrostatic test shall be conducted with the tank fill line valve closed , the tank–to–pump valve closed, and the pump bypass line return to the water tank disconnected and capped or its valve closed .

Statement of Problem and Substantiation for Public Comment

One word is missing.
If bypass line has a valve, it could be closed rather than disconnected.

Related Item

First Revision No. 242-NFPA 1901-2013 [New Section after 26.11.3]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
State:
Zip:
Submittal Date: Fri Feb 21 14:38:56 EST 2014

Public Comment No. 112-NFPA 1901-2014 [Section No. 28.12.12.2.4]

28.12.12.2.4

The hydrostatic test pressure shall be maintained for ~~3~~ 15 minutes.

Statement of Problem and Substantiation for Public Comment

The test procedure needs to be consistent with the time listed earlier in the chapter.

Related Item

First Revision No. 242-NFPA 1901-2013 [New Section after 26.11.3]

Submitter Information Verification

Submitter Full Name: DOUGLAS KELLEY
Organization: KME FIRE APPARATUS
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 08 16:32:51 EDT 2014

Public Comment No. 166-NFPA 1901-2014 [Section No. 28.12.12.3]

28.12.12.3*

If the pump and its connected piping system are subjected to a hydrodynamic test at a minimum of 6 GPM , they shall be hydrodynamically tested to a gauge pressure of 1.4 times the rated pump discharge pressure.

Add appendix item stating:

Pressure control systems may need to be deactivated to achieve this pressure, and this pressure may not be obtainable with the engine and powertrain on a particular vehicle, depending on transmission, PTO, and pump gear ratios selected, along with engine power. Depending on system rated pressures, gauges may need to be disconnected as well.

Note that the gauge issue applies to hydrostatic tests as well.

Statement of Problem and Substantiation for Public Comment

Establishes a flow rate for hydrodynamic testing and provides a warning for such testing. Note that Annex material may need to be added for these tests that exceed the 10% pressure rise requirements earlier in this chapter.

Related Item

Public Input No. 166-NFPA 1901-2013 [Section No. 16.5.2.1]

Submitter Information Verification

Submitter Full Name: Michael Ruthy
Organization: Darley Co
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 16 16:41:58 EDT 2014

Public Comment No. 113-NFPA 1901-2014 [Section No. 28.12.12.4]

28.12.12.4

The hydrodynamic test pressure shall be maintained ~~for 3~~ for 15 minutes.

Statement of Problem and Substantiation for Public Comment

The test time needs to be consistent with the requirements listed earlier in the chapter.

Related Item

First Revision No. 242-NFPA 1901-2013 [New Section after 26.11.3]

Submitter Information Verification

Submitter Full Name: DOUGLAS KELLEY
Organization: KME FIRE APPARATUS
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 08 16:34:05 EDT 2014

Public Comment No. 24-NFPA 1901-2014 [Section No. 28.12.13.3.1]

28.12.13.3.1

If the totalizing flowmeter is connected to a discharge valve, the valve shall be opened and the unit run at between ~~25~~ 50 and ~~35~~ 100 percent of the pump's rated flow until it automatically shuts down or the pressure drops below 1000 psi (7000 kPa).

Statement of Problem and Substantiation for Public Comment

Many UHP systems run a single line and a nozzle that is matched to the pump. 25%-35% is both difficult to achieve and very slow. A typical NFPA 1901 test corresponding to this test takes 1-3 minutes. At written this test for a 8gpm pump x 25% with 100 gal. tank would take 50 minutes. At typical UHP system flows, discharging even 100% of the rated flow should not create significant turbulence or air suction in the tank, and virtually none at 50%.

Related Item

First Revision No. 242-NFPA 1901-2013 [New Section after 26.11.3]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
State:
Zip:
Submittal Date: Fri Feb 21 14:32:44 EST 2014

Public Comment No. 143-NFPA 1901-2014 [Section No. 28.12.13.4.1]

28.12.13.4.1

The pump shall be started and brought up to a flow rate of between ~~25~~ 20 percent and ~~35~~ 40 percent of the pump's rated flow by partly opening a discharge valve.

Statement of Problem and Substantiation for Public Comment

Open up the the standard for low flow systems make sense.

Related Item

First Revision No. 242-NFPA 1901-2013 [New Section after 26.11.3]

Submitter Information Verification

Submitter Full Name: WILLIAM E CARROLL
Organization: HMA FIRE LLC
Street Address:
City:
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Submittal Date: Thu May 15 19:53:17 EDT 2014

Public Comment No. 144-NFPA 1901-2014 [Section No. 28.12.13.4.1]

28.12.13.4.1

The pump shall be started and brought up to a flow rate of between ~~25~~ 20 percent and ~~35~~ 40 percent of the pump's rated flow by partly opening a discharge valve.

Statement of Problem and Substantiation for Public Comment

20 to 40 percent makes more sense for low flow systems.

Related Item

First Revision No. 242-NFPA 1901-2013 [New Section after 26.11.3]

Submitter Information Verification

Submitter Full Name: WILLIAM E CARROLL
Organization: HMA FIRE LLC
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 15 20:02:52 EDT 2014

Public Comment No. 117-NFPA 1901-2014 [Section No. A.3.3.166]

A.3.3.166 Standard Cubic Feet per Minute (SCFM).

Standard ~~temperature is 60°F (15°C), and standard pressure is 14.696 psi (101.33 kPa) or 29.92 in. Hg (760 mm Hg)~~ conditions of pressure and temperatures to which gas volumes are frequently referred "will vary considerably between sections of the world and, to some degree, with the profession or industry involved.[1] " As such, the SCFM rating from manufacturers will be based on "standard" conditions at its manufacturing plant locations. Such a method of rating compressor volume, in fact, inhibits the possibility of the user to fairly compare the volume of discharged air from various manufacturers. Refer to the definition of Charging Rate .

Statement of Problem and Substantiation for Public Comment

The use of SCFM ratings for compressors would be confusing and lead to misinterpretation of manufacturers data. The rating of compressor volume should remain as it is, Charging Rate, as that is precisely the application of compressors, in this case, re-charging Self Contained Breathing Apparatus (SCBA) and Underwater Breathing Apparatus (SCUBA) cylinders.

Note that reference [1] is quoted from: Compressed Air and Gas Data, Second Edition, Copyright 1969, 1971 Ingersoll Rand Company.

Related Item

First Revision No. 22-NFPA 1901-2013 [Section No. 3.3.164]

Submitter Information Verification

Submitter Full Name: GEORGE MARPLE
Organization: EAGLE COMPRESSORS
Street Address:
City:
State:
Zip:
Submittal Date: Mon May 12 14:35:19 EDT 2014

Public Comment No. 2-NFPA 1901-2014 [New Section after A.4.15.2]

A.4.15.3

Special fire service tire ratings could apply that are different from the sidewall rating on the tire. The purchaser might want to consider requesting the tire manufacturer's rating documentation. Fire service ratings are based on the assumption that the truck will never drive at this speed for more than 50 mi (80 km) (1 hour for some manufacturers) without stopping to cool the tires. If longer responses or trips are anticipated, the fire service ratings should not be used.

Statement of Problem and Substantiation for Public Comment

Additional information about what a fire service rating is, and when it might not be appropriate.

This was originally Pubilc Input No. 90-NFPA 1901-2013 and I believe it was approved at the San Diego meeting but it for lost in the editing and balloting stage. Fire service ratings are referred to in both 4.15.2 (where it did get added to the annex) and 4.15.3.

Related Item

Public Input No. 90-NFPA 1901-2013 [New Section after A.4.15.2]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
State:
Zip:
Submittal Date: Thu Feb 20 16:12:32 EST 2014

Public Comment No. 95-NFPA 1901-2014 [Section No. A.14.1.7.1]

A.14.1.7.1

The H point is the mechanically hinged hip point of the torso and thigh on the 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. (130 mm) ahead of the seat back and 3 in. (75 mm) up from the nondepressed seat cushion surface.

Suspension-style seats have been developed for long-haul truck operations where the operator is driving for many hours at a time. Acceleration and braking are controlled, with an eye to fuel economy. The suspension-style seat in this duty profile provides a smoother ride and reduces fatigue from long hours in the seats. In contrast, the operator of a fire apparatus typically is making short runs with fast acceleration, quick maneuvers, and sudden braking. The bouncing motion of the suspension seat could hinder the driver's ability to maintain precise control of the throttle, brake, steering wheel, and other driving controls.

Selection of seating options should be made with consideration to the frequency of time that the driver will spend in the vehicle each day, and whether the fire department ~~standard operating procedure (SOP) requires or encourages the occupant of the seat to be equipped with~~ strictly enforces not wearing head gear during travel. The use of headgear reduces headroom and increases the chance of injury should the vehicle encounter unexpected road undulation or speed bumps. The effect of such road conditions during high-speed operation might be intensified by the action of a seat suspension. Potential for injury is greatly increased by failure to use or properly adjust the seat belt.

Proper seat adjustment is another issue that should be addressed by the fire department SOPs if apparatus are equipped with suspension seats. Too much pressure in a suspension seat air bag will reduce static headroom height and will negate the potential benefits of the suspension. Too little pressure will cause the seat to bounce excessively. The proper amount of pressure is dependent on the weight of the occupant. Departments where multiple drivers share an apparatus should recognize that adjustments need to be made between each shift. Seat adjustment should not be postponed until the driver is exiting the station on the way to a call.

Statement of Problem and Substantiation for Public Comment

Both NFPA 1901 and NFPA 1500 say that headgear should not be worn. The wording here should be based on the assumption that this s correct but might not be followed in all departments. The existing wording is obsolete and contradicts these other statements in 1901 and 1500.

This was originally submitted as Public Input No. 93-NFPA 1901-2013. It was not processed and so was published as Committee Input 252.

Related Item

Public Input No. 93-NFPA 1901-2013 [Section No. A.14.1.8.1]

Committee Input No. 252-NFPA 1901-2013 [Section No. A.14.1.8.1]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
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Submittal Date: Mon Apr 28 08:43:46 EDT 2014

Public Comment No. 142-NFPA 1901-2014 [Section No. A.16.13.8]

A.16.13.8

Move entire section to body of Standard. Add a column between "Pump Indicator Status (Pump Operator's Panel)" and "Engine Speed Control at Pump Operator's Panel" titled "Throttle Authority in Cab" with all entries "Yes." Delete column "Required Test."

The test of the engine speed advancement interlock system should verify proper functioning for the conditions of chassis transmission(s), parking brake and pump shift control action status, and indicator status in driving compartment and pump operator's panel indicated in Table A.16.13.8(a) through Table A.16.13.8(d). Testing should be performed with a qualified person positioned in the driving compartment and a qualified person verifying engine speed control status at the pump operator's panel. Shifting of the pump transmission/PTO should be done in accordance with the manufacturer's instructions.

Table A.16.13.8(a) Stationary Pump Driven Through Split-Shaft PTO

Chassis Transmission Gear Selected	Parking Brake Status	Pump Shift Control Action Status (Driving Compartment)[a]	Pump Indicator Status (Driving Compartment)	Pump Indicator (Pump Operator's Panel	Engine Speed Control at Pump Operator's Panel	Required Test
Neutral	On	Road	None	None	No	
Neutral	On	Road	None	"Throttle Ready"	Yes[b]	
Neutral	Off	Road	None	None	No	X
Neutral	On	Engaged	"Pump Engaged"	None	No	
Neutral	On	Engaged	"Pump Engaged"	"Throttle Ready"	Yes[b]	
Neutral	Off	Engaged	"Pump Engaged"	None	No	
Pump gear[c]	On	Engaged	"Pump Engaged" & "Okay to Pump"	"Throttle Ready"	Yes	X
Pump gear[c]	Off	Engaged	"Pump Engaged"	None	No	
Pump gear[c]	On	Road	None	None	No	X
Pump gear[c]	Off	Road	None	None	No	
Any gear other than neutral and pump gear[c]	On or off	Road	None	None	No	
Any gear other than neutral and pump gear[c]	On or off	Engaged	None	None	No	

[a]Refers to the physical position of the pump shift control (or status of an electrical control action) in the driving compartment. The indicators associated with a particular pump shift control position might or might not provide indication of a particular status.

[b]Engine speed control at the pump operator's panel is permitted for those apparatus that have "Throttle Ready" indication on the pump operator's panel when the chassis transmission is in neutral and the parking brake is engaged. If there is no "Throttle Ready" indication, there is no engine speed control at the pump operator's panel.

[c]Chassis transmission shift selector is placed in position for pumping as indicated on the label provided in the driving compartment.

Table A.16.13.8(b) Stationary Pump Driven Through Transmission-Mounted PTO, Front-of-Engine Crankshaft PTO, or Engine Flywheel PTO

Chassis Transmission Gear Selected	Parking Brake Status	Pump Shift Control Action Status (Driving Compartment)*	Indicator Status (Driving Compartment)	Indicator Status (Pump Operator's Panel)	Engine Speed Control at Pump Operator's Panel	Required Test
Neutral	On	Disengaged	None	None	No	

Chassis Transmission Gear Selected	Parking Brake Status	Pump Shift Control Action Status (Driving Compartment)*	Indicator Status (Driving Compartment)	Indicator Status (Pump Operator's Panel)	Engine Speed Control at Pump Operator's Panel	Required Test
Neutral	On	Disengaged	None	"Throttle Ready"	Yes†	
Neutral	Off	Disengaged	None	None	No	X
Neutral	On	Engaged	"Pump Engaged" & "Okay to Pump"	"Pump Engaged & "Throttle Ready"	Yes	
Neutral	Off	Engaged	"Pump Engaged"	"Pump Engaged"	No	
Any gear other than neutral	On	Engaged	"Pump Engaged"	"Pump Engaged"	No	X
Any gear other than neutral	Off	Engaged	"Pump Engaged"	"Pump Engaged"	No	
Any gear other than neutral	On or off	Disengaged	None	None	No	

*Refers to the physical position of the pump shift control (or status of an electrical control action) in the driving compartment. The indicators associated with a particular pump shift control position might or might not provide indication of a particular status.

†Engine speed control at the pump operator's panel is permitted for those apparatus that have "Throttle Ready" indication on the pump operator's panel when the chassis transmission is in neutral and the parking brake is engaged. If there is no "Throttle Ready" indication, there is no engine speed control at the pump operator's panel.

Table A.16.13.8(c) Stationary and Pump-and-Roll Pump

Chassis Transmission Gear Selected	Parking Brake Status	Pump Shift Control Action Status (Driving Compartment)*	Indicator Status (Driving Compartment)	Indicator Status (Pump Operator's Panel)	Engine Speed Control at Pump Operator's Panel	Required Test
Neutral	On	Disengaged	None	None	No	
Neutral	On	Disengaged	None	"Throttle Ready"	Yes†	
Neutral	Off	Disengaged	None	None	No	X
Neutral	On	Engaged	"Pump Engaged" & "Okay to Pump"	"Pump Engaged & "Throttle Ready"	Yes	
Neutral	Off	Engaged	"Pump Engaged"	"Pump Engaged"	No	
Any gear other than neutral	On	Engaged	"Pump Engaged"	"Pump Engaged"	No	X
Any gear other than neutral	Off	Engaged	"Pump Engaged" & "Okay to Pump and Roll"	"Pump Engaged"	No	X
Any gear other than neutral	On or off	Disengaged	None	None	No	

*Refers to the physical position of the pump shift control (or status of an electrical control action) in the driving compartment. The indicators associated with a particular pump shift control position might or might not provide indication of a particular status.

†Engine speed control at the pump operator's panel is permitted for those apparatus that have "Throttle Ready" indication on the pump operator's panel when the chassis transmission is in neutral and the parking brake is engaged. If there is no "Throttle Ready" indication, there is no engine speed control at the pump operator's panel.

Table A.16.13.8(d) Stationary Pump Driven Through Transfer Case PTO

Chassis Transmission Gear Selected	Transfer Case	Parking Brake Status	Pump Shift Control Action Status (Driving Compartment)[a]	Indicator Status (Driving Compartment)	Indicator Status (Pump Operator's Panel)	Engine Speed Control at Pump Operator's Panel	Required Test
Neutral	Neutral or engaged	On	Road	None	None	No	
Neutral	Neutral or engaged	On	Road	None	"Throttle Ready"	Yes[b]	
Neutral	Neutral	Off	Road	None	None	No	X
Neutral	Engaged	Off	Road	None	None	No	X
Neutral	Neutral or engaged	On	Engaged	"Pump Engaged"	"Throttle Ready"	Yes[b]	
Neutral	Neutral or engaged	Off	Engaged	"Pump Engaged"	None	No	
Pump gear[c]	Neutral	On	Engaged,	"Pump Engaged" & "Okay to Pump"	None	Yes	
Pump gear[c]	Engaged	On	Engaged,	"Pump Engaged"	None	No	
Pump gear[c]	Neutral or engaged	Off	Engaged	"Pump Engaged"	None	No	
Pump gear[c]	Neutral or engaged	On	Road	None	None	No	X
Pump gear[c]	Neutral or engaged	Off	Road	None	None	No	
Any gear other than neutral and pump gear[c]	Neutral or engaged	On or off	Road or engaged	None	None	No	

[a]Refers to the physical position of the pump shift control (or status of an electrical control action) in the driving compartment. The indicators associated with a particular pump shift control position might or might not provide indication of a particular status.

[b]Engine speed control at the pump operator's panel is permitted for those apparatus that have "Throttle Ready" indication on the pump operator's panel when the chassis transmission is in neutral and the parking brake is engaged. If there is no "Throttle Ready" indication, there is no engine speed control at the pump

operator's panel.

[c]Chassis transmission shift selector is placed in position for pumping as indicated on the label provided in the driving compartment.

Statement of Problem and Substantiation for Public Comment

This section encompasses very important safety requirements that all fire apparatus must meet; therefore, these testing requirements should be in the body of the Standard and not in the Annex. It only takes two people 10 to 15 minutes and no equipment to carry out the testing of an apparatus.

Related Item

Public Input No. 340-NFPA 1901-2013 [Section No. 16.13.8.1]

Submitter Information Verification

Submitter Full Name: Dan McKenzie
Organization: US Department of Agriculture
Affilliation: US Forest Service
Street Address:
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Zip:
Submittal Date: Thu May 15 19:51:55 EDT 2014

Public Comment No. 7-NFPA 1901-2014 [Section No. A.16.13.8]

A.16.13.8

The test of the engine speed advancement interlock system should verify proper functioning for the conditions of chassis transmission(s), parking brake and pump shift control action status, and indicator status in driving compartment and pump operator's panel indicated in Table A.16.13.8(a) through Table A.16.13.8(d). Testing should be performed with a qualified person positioned in the driving compartment and a qualified person verifying engine speed control status at the pump operator's panel. Shifting of the pump transmission/PTO should be done in accordance with the manufacturer's instructions.

Table A.16.13.8(a) Stationary Pump Driven Through Split-Shaft PTO

Chassis Transmission Gear Selected	Parking Brake Status	Pump Shift Control Action Status (Driving Compartment)[a]	Pump Indicator Status (Driving Compartment)	Pump Indicator (Pump Operator's Panel	Engine Speed Control at Pump Operator's Panel	Required Test
Neutral	On	Road	None	None	No	
Neutral	On	Road	None	"Throttle Ready"	Yes[b]	
Neutral	Off	Road	None	None	No	X
Neutral	On	Engaged	"Pump Engaged"	None	No	
Neutral	On	Engaged	"Pump Engaged"	"Throttle Ready"	Yes[b]	
Neutral	Off	Engaged	"Pump Engaged"	None	No	
Pump gear[c]	On	Engaged	"Pump Engaged" & "Okay to Pump"	"Throttle Ready"	Yes	~~X~~
Pump gear[c]	Off	Engaged	"Pump Engaged"	None	No	
Pump gear[c]	On	Road	None	None	No	X
Pump gear[c]	Off	Road	None	None	No	
Any gear other than neutral and pump gear[c]	On or off	Road	None	None	No	
Any gear other than neutral and pump gear[c]	On or off	Engaged	None	None	No	

[a]Refers to the physical position of the pump shift control (or status of an electrical control action) in the driving compartment. The indicators associated with a particular pump shift control position might or might not provide indication of a particular status.

[b]Engine speed control at the pump operator's panel is permitted for those apparatus that have "Throttle Ready" indication on the pump operator's panel when the chassis transmission is in neutral and the parking brake is engaged. If there is no "Throttle Ready" indication, there is no engine speed control at the pump operator's panel.

[c]Chassis transmission shift selector is placed in position for pumping as indicated on the label provided in the driving compartment.

Table A.16.13.8(b) Stationary Pump Driven Through Transmission-Mounted PTO, Front-of-Engine Crankshaft PTO, or Engine Flywheel PTO

Chassis Transmission Gear Selected	Parking Brake Status	Pump Shift Control Action Status (Driving Compartment)*	Indicator Status (Driving Compartment)	Indicator Status (Pump Operator's Panel)	Engine Speed Control at Pump Operator's Panel	Required Test
Neutral	On	Disengaged	None	None	No	

Chassis Transmission Gear Selected	Parking Brake Status	Pump Shift Control Action Status (Driving Compartment)*	Indicator Status (Driving Compartment)	Indicator Status (Pump Operator's Panel)	Engine Speed Control at Pump Operator's Panel	Required Test
Neutral	On	Disengaged	None	"Throttle Ready"	Yes†	
Neutral	Off	Disengaged	None	None	No	X
Neutral	On	Engaged	"Pump Engaged" & "Okay to Pump"	"Pump Engaged & "Throttle Ready"	Yes	
Neutral	Off	Engaged	"Pump Engaged"	"Pump Engaged"	No	
Any gear other than neutral	On	Engaged	"Pump Engaged"	"Pump Engaged"	No	X
Any gear other than neutral	Off	Engaged	"Pump Engaged"	"Pump Engaged"	No	
Any gear other than neutral	On or off	Disengaged	None	None	No	

*Refers to the physical position of the pump shift control (or status of an electrical control action) in the driving compartment. The indicators associated with a particular pump shift control position might or might not provide indication of a particular status.

†Engine speed control at the pump operator's panel is permitted for those apparatus that have "Throttle Ready" indication on the pump operator's panel when the chassis transmission is in neutral and the parking brake is engaged. If there is no "Throttle Ready" indication, there is no engine speed control at the pump operator's panel.

Table A.16.13.8(c) Stationary and Pump-and-Roll Pump

Chassis Transmission Gear Selected	Parking Brake Status	Pump Shift Control Action Status (Driving Compartment)*	Indicator Status (Driving Compartment)	Indicator Status (Pump Operator's Panel)	Engine Speed Control at Pump Operator's Panel	Required Test
Neutral	On	Disengaged	None	None	No	
Neutral	On	Disengaged	None	"Throttle Ready"	Yes†	
Neutral	Off	Disengaged	None	None	No	X
Neutral	On	Engaged	"Pump Engaged" & "Okay to Pump"	"Pump Engaged & "Throttle Ready"	Yes	
Neutral	Off	Engaged	"Pump Engaged"	"Pump Engaged"	No	
Any gear other than neutral	On	Engaged	"Pump Engaged"	"Pump Engaged"	No	X
Any gear other than neutral	Off	Engaged	"Pump Engaged" & "Okay to Pump and Roll"	"Pump Engaged"	No	X
Any gear other than neutral	On or off	Disengaged	None	None	No	

*Refers to the physical position of the pump shift control (or status of an electrical control action) in the driving compartment. The indicators associated with a particular pump shift control position might or might not provide indication of a particular status.

†Engine speed control at the pump operator's panel is permitted for those apparatus that have "Throttle Ready" indication on the pump operator's panel when the chassis transmission is in neutral and the parking brake is engaged. If there is no "Throttle Ready" indication, there is no engine speed control at the pump operator's panel.

Table A.16.13.8(d) Stationary Pump Driven Through Transfer Case PTO

Chassis Transmission Gear Selected	Transfer Case	Parking Brake Status	Pump Shift Control Action Status (Driving Compartment)[a]	Indicator Status (Driving Compartment)	Indicator Status (Pump Operator's Panel)	Engine Speed Control at Pump Operator's Panel	Required Test
Neutral	Neutral or engaged	On	Road	None	None	No	
Neutral	Neutral or engaged	On	Road	None	"Throttle Ready"	Yes[b]	
Neutral	Neutral	Off	Road	None	None	No	X
Neutral	Engaged	Off	Road	None	None	No	X
Neutral	Neutral or engaged	On	Engaged	"Pump Engaged"	"Throttle Ready"	Yes[b]	
Neutral	Neutral or engaged	Off	Engaged	"Pump Engaged"	None	No	
Pump gear[c]	Neutral	On	Engaged,	"Pump Engaged" & "Okay to Pump"	None	Yes	
Pump gear[c]	Engaged	On	Engaged,	"Pump Engaged"	None	No	
Pump gear[c]	Neutral or engaged	Off	Engaged	"Pump Engaged"	None	No	
Pump gear[c]	Neutral or engaged	On	Road	None	None	No	X
Pump gear[c]	Neutral or engaged	Off	Road	None	None	No	
Any gear other than neutral and pump gear[c]	Neutral or engaged	On or off	Road or engaged	None	None	No	

[a]Refers to the physical position of the pump shift control (or status of an electrical control action) in the driving compartment. The indicators associated with a particular pump shift control position might or might not provide indication of a particular status.

[b]Engine speed control at the pump operator's panel is permitted for those apparatus that have "Throttle Ready" indication on the pump operator's panel when the chassis transmission is in neutral and the parking brake is engaged. If there is no "Throttle Ready" indication, there is no engine speed control at the pump

operator's panel.

[c]Chassis transmission shift selector is placed in position for pumping as indicated on the label provided in the driving compartment.

Statement of Problem and Substantiation for Public Comment

Per 16.13.8.1, this case is not a required case, and the test can not apply to a case where throttle control is supposed to be enabled.

Related Item

First Revision No. 236-NFPA 1901-2013 [Section No. A.16.13.8]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
State:
Zip:
Submittal Date: Thu Feb 20 17:05:41 EST 2014

Public Comment No. 8-NFPA 1901-2014 [Section No. A.16.13.8]

A.16.13.8

The test of the engine speed advancement interlock system should verify proper functioning for the conditions of chassis transmission(s), parking brake and pump shift control action status, and indicator status in driving compartment and pump operator's panel indicated in Table A.16.13.8(a) through Table A.16.13.8(d). Testing should be performed with a qualified person positioned in the driving compartment and a qualified person verifying engine speed control status at the pump operator's panel. Shifting of the pump transmission/PTO should be done in accordance with the manufacturer's instructions.

Table A.16.13.8(a) Stationary Pump Driven Through Split-Shaft PTO

Chassis Transmission Gear Selected	Parking Brake Status	Pump Shift Control Action Status (Driving Compartment)[a]	Pump Indicator Status (Driving Compartment)	Pump Indicator (Pump Operator's Panel	Engine Speed Control at Pump Operator's Panel	Required Test
Neutral	On	Road	None	None	No	
Neutral	On	Road	None	"Throttle Ready"	Yes[b]	
Neutral	Off	Road	None	None	No	X
Neutral	On	Engaged	"Pump Engaged"	None	No	
Neutral	On	Engaged	"Pump Engaged"	"Throttle Ready"	Yes[b]	
Neutral	Off	Engaged	"Pump Engaged"	None	No	
Pump gear[c]	On	Engaged	"Pump Engaged" & "Okay to Pump"	"Throttle Ready"	Yes	X
Pump gear[c]	Off	Engaged	"Pump Engaged"	None	No	
Pump gear[c]	On	Road	None	None	No	X
Pump gear[c]	Off	Road	None	None	No	
Any gear other than neutral and pump gear[c - d]	On or off	Road	None	None	No	
Any gear other than neutral and pump gear[c - d]	On or off	Engaged	None	None	No	

[a]Refers to the physical position of the pump shift control (or status of an electrical control action) in the driving compartment. The indicators associated with a particular pump shift control position might or might not provide indication of a particular status.

[b]Engine speed control at the pump operator's panel is permitted for those apparatus that have "Throttle Ready" indication on the pump operator's panel when the chassis transmission is in neutral and the parking brake is engaged. If there is no "Throttle Ready" indication, there is no engine speed control at the pump operator's panel.

[c]Chassis transmission shift selector is placed in position for pumping as indicated on the label provided in the driving compartment.

[d] Chassis transmission shift selector is placed in some position other than neutral or the position for pumping as indicated on the label provided in the driving compartment.

Table A.16.13.8(b) Stationary Pump Driven Through Transmission-Mounted PTO, Front-of-Engine Crankshaft PTO, or Engine Flywheel PTO

Chassis Transmission Gear Selected	Parking Brake Status	Pump Shift Control Action Status (Driving Compartment)*	Indicator Status (Driving Compartment)	Indicator Status (Pump Operator's	Engine Speed Control at Pump	Required Test

		a		Panel)	Operator's Panel	
Neutral	On	Disengaged	None	None	No	
Neutral	On	Disengaged	None	"Throttle Ready"	Yes‡ - b	
Neutral	Off	Disengaged	None	None	No	X
Neutral	On	Engaged	"Pump Engaged" & "Okay to Pump"	"Pump Engaged & "Throttle Ready"	Yes	
Neutral	Off	Engaged	"Pump Engaged"	"Pump Engaged"	No	
Any gear other than neutral	On	Engaged	"Pump Engaged"	"Pump Engaged"	No	X
Any gear other than neutral	Off	Engaged	"Pump Engaged"	"Pump Engaged"	No	
Any gear other than neutral	On or off	Disengaged	None	None	No	

* a Refers to the physical position of the pump shift control (or status of an electrical control action) in the driving compartment. The indicators associated with a particular pump shift control position might or might not provide indication of a particular status.

‡ b Engine speed control at the pump operator's panel is permitted for those apparatus that have "Throttle Ready" indication on the pump operator's panel when the chassis transmission is in neutral and the parking brake is engaged. If there is no "Throttle Ready" indication, there is no engine speed control at the pump operator's panel.

Table A.16.13.8(c) Stationary and Pump-and-Roll Pump

Chassis Transmission Gear Selected	Parking Brake Status	Pump Shift Control Action Status (Driving Compartment)* a	Indicator Status (Driving Compartment)	Indicator Status (Pump Operator's Panel)	Engine Speed Control at Pump Operator's Panel	Required Test
Neutral	On	Disengaged	None	None	No	
Neutral	On	Disengaged	None	"Throttle Ready"	Yes‡ - b	
Neutral	Off	Disengaged	None	None	No	X
Neutral	On	Engaged	"Pump Engaged" & "Okay to Pump"	"Pump Engaged & "Throttle Ready"	Yes	
Neutral	Off	Engaged	"Pump Engaged"	"Pump Engaged"	No	
Any gear other than neutral	On	Engaged	"Pump Engaged"	"Pump Engaged"	No	X
Any gear other than neutral	Off	Engaged	"Pump Engaged" & "Okay to Pump and Roll"	"Pump Engaged"	No	X
Any gear other than neutral	On or off	Disengaged	None	None	No	

* a Refers to the physical position of the pump shift control (or status of an electrical control action) in the driving compartment. The indicators associated with a particular pump shift control position might or might

not provide indication of a particular status.

‡ b Engine speed control at the pump operator's panel is permitted for those apparatus that have "Throttle Ready" indication on the pump operator's panel when the chassis transmission is in neutral and the parking brake is engaged. If there is no "Throttle Ready" indication, there is no engine speed control at the pump operator's panel.

Table A.16.13.8(d) Stationary Pump Driven Through Transfer Case PTO

Chassis Transmission Gear Selected	Transfer Case	Parking Brake Status	Pump Shift Control Action Status (Driving Compartment)[a]	Indicator Status (Driving Compartment)	Indicator Status (Pump Operator's Panel)	Engine Speed Control at Pump Operator's Panel	Required Test
Neutral	Neutral or engaged	On	Road	None	None	No	
Neutral	Neutral or engaged	On	Road	None	"Throttle Ready"	Yes[b]	
Neutral	Neutral	Off	Road	None	None	No	X
Neutral	Engaged	Off	Road	None	None	No	X
Neutral	Neutral or engaged	On	Engaged	"Pump Engaged"	"Throttle Ready"	Yes[b]	
Neutral	Neutral or engaged	Off	Engaged	"Pump Engaged"	None	No	
Pump gear[c]	Neutral	On	Engaged,	"Pump Engaged" & "Okay to Pump"	None	Yes	
Pump gear[c]	Engaged	On	Engaged,	"Pump Engaged"	None	No	
Pump gear[c]	Neutral or engaged	Off	Engaged	"Pump Engaged"	None	No	
Pump gear[c]	Neutral or engaged	On	Road	None	None	No	X
Pump gear[e] d	Neutral or engaged	Off	Road	None	None	No	
Any gear other than neutral and pump gear[e] - d	Neutral or engaged	On or off	Road or engaged	None	None	No	

[a] Refers to the physical position of the pump shift control (or status of an electrical control action) in the driving compartment. The indicators associated with a particular pump shift control position might or might not provide indication of a particular status.

[b] Engine speed control at the pump operator's panel is permitted for those apparatus that have "Throttle Ready" indication on the pump operator's panel when the chassis transmission is in neutral and the parking brake is engaged. If there is no "Throttle Ready" indication, there is no engine speed control at the pump operator's panel.

[c] Chassis transmission shift selector is placed in position for pumping as indicated on the label provided in

the driving compartment.

[d] Chassis transmission shift selector is placed in some position other than neutral or the position for pumping as indicated on the label provided in the driving compartment.

Statement of Problem and Substantiation for Public Comment

Make the footnotes correct and make symbols consistent across all 4 tables to reduce confusion.

Related Item

First Revision No. 236-NFPA 1901-2013 [Section No. A.16.13.8]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
State:
Zip:
Submittal Date: Thu Feb 20 17:12:25 EST 2014

Public Comment No. 12-NFPA 1901-2014 [Section No. A.21.9.1.1.1]

A.21.9.1.1.1

The CAFS capacity rating test is performed with the system discharging 2 gpm (~~7.6~~ 250 L/min) of water for every 1 SCFM (~~28.3 L/min at standard temperature and pressure~~ 1 SCMM) of compressed air discharge. This test verifies that the system is capable of these capacities without failure of any component of the CAFS. It is recognized that in actual fire fighting use, the ratio of waterflow to airflow might vary depending on how wet or dry the CAF stream is desired for a particular application.

Statement of Problem and Substantiation for Public Comment

Per 21.2.2.1 air flow from a CAF system is measured in SCMM. These numbers give the same ratio as the US units.

Related Item

Public Input No. 201-NFPA 1901-2013 [Section No. 6.7.3 [Excluding any Sub-Sections]]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
State:
Zip:
Submittal Date: Fri Feb 21 08:46:52 EST 2014

Public Comment No. 27-NFPA 1901-2014 [Section No. A.28.6.10]

A.28.6.10

For apparatus that will be exposed to freezing temperatures, consideration should be given to a winterization system to include a small tank for antifreeze solution and proper valves to inject a mixture of antifreeze into the pump and hose reel system. It can be very difficult to drain a piston or ~~plunge~~ plunger type pump and hose reel with a standard drain valve. Air blow out systems could be used on trucks with air systems. An antifreeze injection system is a simple and effective way to winterize the pump and hose reel system .

Statement of Problem and Substantiation for Public Comment

This may be a typo, or may be the use of a seldom used term. These pumps are much more often called plunger pumps than plunge pumps, although plunge is used occasionally.

Related Item

First Revision No. 242-NFPA 1901-2013 [New Section after 26.11.3]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
State:
Zip:
Submittal Date: Fri Feb 21 15:45:25 EST 2014

Public Comment No. 15-NFPA 1906-2014 [Section No. 1.3.2]

1.3.2
Nothing shall prevent the use of the standard prior to January 1, 2016, or for vehicles with less than 10,000 lb (4,500 kg) gross vehicle weight rating (GVWR), if the purchaser and the contractor agree.

Statement of Problem and Substantiation for Public Comment

Same change was made in NFPA 1901. Should allow this option if both parties agree.

Related Item

Public Input No. 57-NFPA 1906-2013 [Sections 1.3.1, 1.3.2]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
State:
Zip:
Submittal Date: Sat Feb 22 16:08:31 EST 2014

Public Comment No. 70-NFPA 1906-2014 [Section No. 2.3.3]

2.3.3 ASTM Publications.
ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959.

ASTM D 4956, *Standard Specification for Retroreflective Sheeting for Traffic Control*, ~~2011a~~ 2013 .

Statement of Problem and Substantiation for Public Comment

Update year date on standard

Related Item

First Revision No. 1-NFPA 1906-2013 [Global Input]

Submitter Information Verification

Submitter Full Name: Steve Mawn
Organization: ASTM International
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 15 16:16:14 EDT 2014

Public Comment No. 24-NFPA 1906-2014 [Section No. 2.3.8]

2.3.8 SAE Publications.

Society of Automotive Engineers, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

SAE J156, *Fusible Links*, 2012.

SAE J335, *Multiposition Small Engine Exhaust System Fire Ignition Suppression*, 2000.

SAE J541, *Voltage Drop for Starting Motor Circuits*, 1996.

SAE J551/1, *Performance Levels and Methods of Measurement of Electromagnetic Compatibility of Vehicles, Boats (up to 15 m), and Machines (16.6 Hz to 18 GHz)*, 2010.

SAE J553, *Circuit Breakers*, 2004.

SAE J554, *Electric Fuses (Cartridge Type)*, 1987.

SAE J575, *Test Methods and Equipment for Lighting Devices and Components for Use on Vehicles Less Than 2032 mm in Overall Width*, 2012.

SAE J578, *Color Specification*, 2012.

SAE J595, *Directional Flashing Optical Warning Devices for Authorized Emergency, Maintenance, and Service Vehicles*, 2008.

SAE J683, *Tire Chain Clearance — Trucks, Buses (Except Suburban, Intercity, and Transit Buses), and Combinations of Vehicles*, 2011.

SAE J845, *Optical Warning Devices for Authorized Emergency, Maintenance, and Service Vehicles*, 2007.

SAE J994, *Alarm — Backup — Electric, Laboratory Performance Testing*, 2009.

SAE J1127, *Low Voltage Battery Cable*, 2012.

SAE J1128, *Low Voltage Primary Cable*, 2012.

SAE J1194, *Rollover Protective Structures (ROPS) for Wheeled Agricultural Tractors*, 2009.

SAE J1330, *Photometry Laboratory Accuracy Guidelines*, 2007.

SAE J1690, *Flashers*, 1996.

SAE J1849, *Emergency Vehicle Sirens*, 2012.

SAE J1888, *High Current Time Lag Electric Fuses*, 1990.

SAE J1889, *L.E.D. Signal and Marking Lighting Devices*, 2011.

SAE J2077, *Miniature Blade Type Electrical Fuses*, 1990.

SAE J2180, *A Tilt Table Procedure for Measuring the Static Rollover Threshold for Heavy Trucks*, Stabilized 2011.

SAE J2202, *Heavy-Duty Wiring Systems for On-Highway Trucks*, 2008.

SAE J2418, *Occupant Restraint System Evaluation — Frontal Impact Component-Level Heavy Trucks*,

SAE J2420, *COE Frontal Strength Evaluation — Dynamic Loading Heavy Trucks*, 2010.

SAE J2422, *Cab Roof Strength Evaluation — Quasi-Static Loading Heavy Trucks*, 2010.

SAE ~~J2917, Occupant Restraint and Equipment Mounting Integrity — Frontal Impact System Level~~ J3026, *Ambulance Patient Compartment Seating Integrity and Occupant Restraint* , 2012

Statement of Problem and Substantiation for Public Comment

Change reference in 10.6.2.

Related Public Comments for This Document

Related Comment	Relationship
Public Comment No. 23-NFPA 1906-2014 [Section No. 10.6.2]	

Related Item

Public Input No. 96-NFPA 1906-2013 [Chapter 10]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
State:
Zip:
Submittal Date: Sat Feb 22 18:31:36 EST 2014

Public Comment No. 71-NFPA 1906-2014 [New Section after 3.3.53]

TITLE OF NEW CONTENT

Type your content here ...

3.3.54 In-Service Weight . The weight of an apparatus when all fixed and portable equipment installed, all tanks full, and all personnel seating positions occupied. Sometimes referred to as gross vehicle weight.

Statement of Problem and Substantiation for Public Comment

The Standard has estimated in-service weight in the definitions but “estimated” is only a modifier. Other modifiers besides “estimated” can and are used with “in-service weight” such as “actual,” “planned,” “calculated,” and “real.” Gross Vehicle Weight is an old and obsolete term which use to mean Gross Vehicle Weight Rating. Gross Vehicle Weight is still use in parts of the insurance industry to mean Gross Vehicle Weight Rating.

Related Item

Public Input No. 73-NFPA 1906-2013 [Section No. 3.3.54]

Submitter Information Verification

Submitter Full Name: Dan McKenzie
Organization: US Department of Agriculture
Affilliation: US Forest Service
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 15 17:52:42 EDT 2014

Public Comment No. 72-NFPA 1906-2014 [Section No. 10.2.1.3]

10.2.1.3
Primary ~~and secondary mounting requirements~~ mounting system shall withstand lateral impacts as defined by SAE J2422, *Cab Roof Strength Evaluation — Quasi-Static Loading Heavy Trucks*.

Statement of Problem and Substantiation for Public Comment

Can't re-test in order to test secondary mounting system. Furthermore secondary retention system in not necessarily a hard point mount. Performance criteria for secondary mounting system is included in 10.2.1.2 above

Related Item

First Revision No. 99-NFPA 1906-2013 [Chapter 10]

Submitter Information Verification

Submitter Full Name: William Yohn
Organization: US Department of the Interior
Affilliation: NWCG Mobile Equipment Subcommittee
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 16 13:42:35 EDT 2014

Public Comment No. 17-NFPA 1906-2014 [Section No. 10.2.3]

~~10.2.3~~ –
~~Each internal storage compartment shall be permanently labeled with the load capacity. [**414:** 4.13.10]~~

Statement of Problem and Substantiation for Public Comment

This has been suggested before for both NFPA 1901 and NFPA 1906 and has consistently been rejected. If the number is based on the compartment structural strength, it encourages overloading the vehicle if all compartments are loaded to the stated limit. If it is based on apportioning the table 12.1.2 miscellaneous equipment weight among the compartments, it is unnecessarily usage restrictive because it does not allow for heaver equipment in one compartment and lighter equipment in another compartment.

Related Item

Public Input No. 96-NFPA 1906-2013 [Chapter 10]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
State:
Zip:
Submittal Date: Sat Feb 22 16:55:36 EST 2014

Public Comment No. 16-NFPA 1906-2014 [Section No. 10.3.1.1]

10.3.1.1
The crew compartment body shall withstand a force equal to 2.5 times the ~~curb~~ in service weight of the vehicle applied to the roof of the vehicle's body structure, validated by testing a substantially similar crew compartment in accordance with 10.3.2.

Statement of Problem and Substantiation for Public Comment

Curb weight is not defined. In service weight is defined. Alternatively could define curb weight as it is to be used in this section.

Related Item

Public Input No. 96-NFPA 1906-2013 [Chapter 10]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
State:
Zip:
Submittal Date: Sat Feb 22 16:42:34 EST 2014

Public Comment No. 20-NFPA 1906-2014 [Section No. 10.3.2.1]

10.3.2.1

The following steps shall be performed during the roof crush test:

(1) Support the crew compartment on a rigid fixture independent of the vehicle suspension.

(2) Remove any components that extend upward from the vehicle roof.

(3) Measure and record the distance from the mounting surface to each of the four corners of the roof.

(4) Employ a rectangular force application plate fitted as near as possible to the contour of the crew compartment roof.

(5) Position the force application plate so that it is centered on the roof.

(6) Close all crew compartment doors.

(7) Load the application plate to 500 lb (227 kg) at a deflection rate less than 0.5 in. (13 mm) per second.

(8) Record elevation readings of all four corners of the roof.

(9) Load the application plate to 50 percent of the final load at a deflection rate less than 0.5 in. (13 mm) per second.

(10) Record elevation readings of all four corners of the roof.

(11) Load the application plate to 100 percent of the final load at a deflection rate less than 0.5 in. (13 mm) per second.

(12) Record elevation readings of all four corners of the roof.

(13) Verify that ~~the~~ crew compartment doors and any emergency escape windows are capable of being opened and closed.

(14) Remove load.

(15) Verify that crew compartment doors and any emergency escape windows are capable of being opened and closed. [**1917:**9.1.1.1]

Statement of Problem and Substantiation for Public Comment

Consistency with 10.3.2.1 (15) and 1917:9.1.1.1.

Related Item

Public Input No. 96-NFPA 1906-2013 [Chapter 10]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
State:
Zip:
Submittal Date: Sat Feb 22 17:32:04 EST 2014

Public Comment No. 19-NFPA 1906-2014 [Section No. 10.3.2.3]

10.3.2.3

For the purposes of the measurements in 10.3.2.2, the crew compartment roof shall be that structure, seen in the top projected view, that coincides with the crew riding area, as shown in Figure 10.3.2.3(a) and Figure 10.3.2.3 (b).

FIGURES NEED TO BE PROVIDED. THEY ARE REFERRED TO BUT ARE MISSING.

Statement of Problem and Substantiation for Public Comment

Figures are missing.

Related Item

Public Input No. 96-NFPA 1906-2013 [Chapter 10]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
State:
Zip:
Submittal Date: Sat Feb 22 17:06:27 EST 2014

Public Comment No. 18-NFPA 1906-2014 [Section No. 10.3.3.1]

10.3.3.1

The crew compartment body shall withstand a force equal to 2.5 times the ~~curb~~ in service weight of the vehicle applied to either the driver or passenger side of the vehicle's body structure, validated by testing a substantially similar crew compartment in accordance with 10.3.4.

Statement of Problem and Substantiation for Public Comment

Curb weight is not defined. In service weight is defined. Alternatively could define curb weight as it is to be used in this section.

Related Item

Public Input No. 96-NFPA 1906-2013 [Chapter 10]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
State:
Zip:
Submittal Date: Sat Feb 22 17:02:25 EST 2014

Public Comment No. 21-NFPA 1906-2014 [Section No. 10.4]

10.4 Crew Compartment Entry Doors.

10.4.1 –

The crew compartment shall be equipped with at least one primary access door opening with minimum dimensions of 30. in (760 mm) wide by 60 in. (1500 mm) high.

10.4.2

Door handles shall be designed and installed to protect against accidental or inadvertent opening. [**1917:** 6.9.~~1~~ 2]

10.4.~~2~~ – 3

Entry doors and door openings shall be designed to minimize inadvertent snagging of apparel. [**1917:** 6.9.~~2~~ 3]

10.4.~~3~~ – 4

When doors are open, the hinges ~~,~~ – and latches ~~, and doorchecks~~ shall not protrude into the access area. [**1917:** 6.9.~~4~~ 5]

10.4.~~4~~ – 5

Doors shall ~~have hardware or devices to prevent inadvertent closing~~ be equipped with a hold-open device . [**1917:** 6.9.~~5~~ 6]

10.4.~~5~~ – 6

One externally operated lock for each door opening shall be provided. [**1917:** 6.9.~~6~~ 7]

10.4.~~6~~ – 7

An internal lock on each crew compartment primary entry door shall be provided. [**1917** :6.9.8]

10.4.~~7~~ –

~~If a key lock is provided, all~~

8

All crew compartment entry door locks shall be identically keyed. [**1917:** 6.9.~~8~~ 9]

10.4.~~8~~ – 9

Doors shall be equipped with not less than 250 $in.^2$ (160,000 mm^2) of safety glass area per door. ~~[**1917:** 6.9.9]~~

10.4.~~9~~ – 10

Doors and windows shall be designed to prevent leakage of exhaust fumes, dust, water, and air into the crew compartment.

10.4.~~10~~ – 11

Doors shall not open during SAE J2422, *Cab Roof Strength Evaluation — Quasi-Static Loading Heavy Trucks,* evaluation.

Statement of Problem and Substantiation for Public Comment

NFPA 1917:6.9 has been revised. This change pulls those changes (where applicable) and the correct references into 1906:10.4. The door size is different that called for in 1917 because it is not a patient loading door. Since NFPA 1917 is on the same schedule, staff may need to re-verify reference links after the second revisions of both documents are completed.

Related Item

Public Input No. 96-NFPA 1906-2013 [Chapter 10]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
State:
Zip:
Submittal Date: Sat Feb 22 17:50:05 EST 2014

Public Comment No. 73-NFPA 1906-2014 [Section No. 10.4.10]

~~10.4.10 –~~
~~Doors shall not open during SAE J2422, *Cab Roof Strength Evaluation — Quasi-Static Loading Heavy Trucks,* evaluation.~~

Statement of Problem and Substantiation for Public Comment

Occupants are seated and belted while the vehicle is in motion. Therefore occupants do no risk ejection during a crash. Consequently, it is not necessary to test if doors will remain closed during an accident to prevent this

Related Item

First Revision No. 99-NFPA 1906-2013 [Chapter 10]

Submitter Information Verification

Submitter Full Name: William Yohn
Organization: US Department of the Interior
Affilliation: NWCG Mobile Equipment Subcommittee
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 16 13:50:40 EDT 2014

Public Comment No. 22-NFPA 1906-2014 [Section No. 10.5]

10.5 Crew Compartment Body Means of ~~Escape~~ Egress .

~~10.5.1~~ –

The interior area to be occupied by personnel shall have a minimum of two ~~additional~~ means of ~~escape~~ egress .

Statement of Problem and Substantiation for Public Comment

Sub section number not needed.
Two additional would require 2 roof hatches or windows in addition to the door(s). Two means of egress would allow 2 doors or 1 door and a roof hatch.
Egress is a better word than escape if it includes the main door.

Related Item

First Revision No. 96-NFPA 1906-2013 [Section No. A.5.7.1(1)]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
State:
Zip:
Submittal Date: Sat Feb 22 18:11:03 EST 2014

Public Comment No. 68-NFPA 1906-2014 [Section No. 10.6.1]

10.6.1
All seats shall face fore or aft.

10.6.1.1

A seat shall be provided with an approved Type 1 seat belt.

10.6.1.2

A seat belt warning system shall be provided in compliance with 14.1.3.9 of NFPA 1901.

10.6.1.3

The roof height of the enclosure shall be no higher than 42 in. (106.7 cm) above the H-point of the seat.

Statement of Problem and Substantiation for Public Comment

These are requirements for all fire trucks with riding positions traveling on the road by NFPA 1901. The height requirement is intended to make it inconvenient or uncomfortable for crew members to be standing up traveling down the road. The firefighter must be seated while the vehicle is in motion.

Related Item

First Revision No. 99-NFPA 1906-2013 [Chapter 10]

Submitter Information Verification

Submitter Full Name: GREG BLANCHAT
Organization: BLANCHAT MFG INC
Street Address:
City:
State:
Zip:
Submittal Date: Mon May 05 16:44:26 EDT 2014

Public Comment No. 23-NFPA 1906-2014 [Section No. 10.6.2]

10.6.2 Seat Integrity.

Any seat mounted ~~on an adjustable seat device shall be dynamically tested along the direction of the adjustment using the crash pulse in SAE J2917, Occupant Restraint and Equipment Mounting Integrity — Frontal Impact System Level Ambulance Patient Compartment~~ in a patient compartment shall comply with SAE J3026, *Ambulance Patient Compartment Seating Integrity adn Occupant Restraint* . [**1917:**6.21.1]

10.6.~~2.1~~ –

~~The test shall be conducted with the seat oriented in the direction of adjustment for both the forward-facing and rear-facing directions. [**1917:** 6.21.1.1]~~

~~10.6.2.2 – During and after the test, the seat shall remain securely attached to the adjustment device. [**1917:** 6.21.1.2]~~

~~10.6.2.3 –~~ 3 SCBA Storage.

SCBA packs shall not be stored in the seat backs of seats in the crew compartment. ~~[**1917:** 6.21.2]~~

Statement of Problem and Substantiation for Public Comment

NFPA 1917:6.21.1 has been revised and references a new SAE document. 1917 has removed the statement about SCBA. It makes better sense to make it a separate section at the same level as 10.6.2

Related Item

Public Input No. 96-NFPA 1906-2013 [Chapter 10]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
State:
Zip:
Submittal Date: Sat Feb 22 18:24:55 EST 2014

Public Comment No. 74-NFPA 1906-2014 [Section No. 10.6.2 [Excluding any Sub-Sections]]

~~Any seat mounted on an adjustable seat device shall be dynamically tested along the direction of the adjustment using the crash pulse in SAE J2917, *Occupant Restraint and Equipment Mounting Integrity — Frontal Impact System-Level Ambulance Patient Compartment.* [**1917:** 6.21.1]~~

Statement of Problem and Substantiation for Public Comment

This applies to adjustable seats in ambulances. Crew carriers do not use these seats.

Related Item

First Revision No. 99-NFPA 1906-2013 [Chapter 10]

Submitter Information Verification

Submitter Full Name: William Yohn
Organization: US Department of the Interior
Affilliation: NWCG Mobile Equipment Subcommittee
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 16 13:58:41 EDT 2014

Public Comment No. 75-NFPA 1906-2014 [Section No. 10.6.2.1]

~~10.6.2.1~~ –
~~The test shall be conducted with the seat oriented in the direction of adjustment for both the forward-facing and rear-facing directions.~~ [~~**1917:** 6.21.1.1~~]

Statement of Problem and Substantiation for Public Comment

This applies to adjustable seats in ambulances. Crew carriers do not use these seats.

Related Item

First Revision No. 99-NFPA 1906-2013 [Chapter 10]

Submitter Information Verification

Submitter Full Name: William Yohn
Organization: US Department of the Interior
Affilliation: NWCG Mobile Equipment Subcommittee
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 16 14:00:25 EDT 2014

Public Comment No. 76-NFPA 1906-2014 [Section No. 10.6.2.2]

~~10.6.2.2~~ –
~~During and after the test, the seat shall remain securely attached to the adjustment device. [**1917:** 6.21.1.2]~~

Statement of Problem and Substantiation for Public Comment

This applies to adjustable seats in ambulances. Crew carriers do not use these seats.

Related Item

First Revision No. 99-NFPA 1906-2013 [Chapter 10]

Submitter Information Verification

Submitter Full Name: William Yohn
Organization: US Department of the Interior
Affilliation: NWCG Mobile Equipment Subcommittee
Street Address:
City:
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Submittal Date: Fri May 16 14:06:04 EDT 2014

Public Comment No. 25-NFPA 1906-2014 [Section No. 10.7.1]

10.7.1

The following steps shall be performed during the occupant head clearance zones test:

(1) Construct a rigid rectangular test box 43 in. (~~1092~~ 1100 mm) high, 24 in. (~~457~~ 460 mm) wide, and 15 in. (~~381~~ 380 mm) deep.

(2) Place the test box in each seating position, centered laterally on the seat cushion, with the bottom edge resting against the seat back.

(3) Align the test box so that the sides of the box are perpendicular to the crew compartment floor. [**1917:**9.~~25~~ 24 .1]

Statement of Problem and Substantiation for Public Comment

Adjust precision of metric conversion in compliance with the NFPA Manual of Style. Correct reference to NFPA 1917.

Related Item

First Revision No. 96-NFPA 1906-2013 [Section No. A.5.7.1(1)]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
State:
Zip:
Submittal Date: Sat Feb 22 18:37:54 EST 2014

Public Comment No. 26-NFPA 1906-2014 [Section No. 10.8 [Excluding any Sub-Sections]]

Connecting hoses for the heating and air-conditioning system shall be supported by rubber-insulated metal clamping devices at least every 18 in. (~~457~~ 460 mm). [**1917:**6.23]

Statement of Problem and Substantiation for Public Comment

Adjust metric conversion in compliance with NFPA Manual of Style.

Related Item

Public Input No. 96-NFPA 1906-2013 [Chapter 10]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
State:
Zip:
Submittal Date: Sat Feb 22 18:44:44 EST 2014

Public Comment No. 77-NFPA 1906-2014 [Section No. 10.8.1]

10.8.1 Heating.

~~10.8.1.1 –~~

~~A heating system shall be provided that is capable of raising the interior temperature from 32°F to 68°F (0°C to 20°C) within 30 minutes.~~

~~[**1917:** 6.23.1.1]~~

~~10.8.1.2 –~~

~~Compliance of the heating system shall be validated by testing a substantially similar crew carrier in accordance with Section 9.12 of NFPA 1917.~~

The crew compartment area shall be provided with a heater capable of maintaining the temperature at a minimum of 60°F (16°C) with the fire apparatus' doors closed. [1901: 23.3.1]

Statement of Problem and Substantiation for Public Comment

Crew carriers are not for patient transport. The climate control standards from CH. 23 - Command and Communications in NFPA 1901 are more applicable.

Related Item

First Revision No. 99-NFPA 1906-2013 [Chapter 10]

Submitter Information Verification

Submitter Full Name: William Yohn
Organization: US Department of the Interior
Affilliation: NWCG Mobile Equipment Subcommittee
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 16 14:08:09 EDT 2014

Public Comment No. 27-NFPA 1906-2014 [Section No. 10.8.1.2]

10.8.1.2
Compliance of the heating system shall be validated by testing a substantially similar crew carrier in accordance with Section 9.~~12~~ 11 of NFPA 1917.

Statement of Problem and Substantiation for Public Comment

Correct reference to NFPA 1917.

Related Item

Public Input No. 96-NFPA 1906-2013 [Chapter 10]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
State:
Zip:
Submittal Date: Sat Feb 22 18:49:36 EST 2014

Public Comment No. 78-NFPA 1906-2014 [Section No. 10.8.2]

10.8.2 Air Conditioning.

~~10.8.2.1 –~~

~~An air-conditioning system shall be provided that is capable of lowering the interior temperature from 95°F to 78°F (35°C to 25°C) at a minimum of 40 percent relative humidity within 30 minutes. [**1917:** 6.23.2.1]~~

~~10.8.2.2 –~~

~~Compliance of the air-conditioning system shall be validated by testing a substantially similar crew carrier in accordance with Section 9.12 of NFPA 1917.~~

If an air conditioner is provided, it shall be capable of maintaining a minimum temperature of 20°F (11°C) below ambient down to 72°F (22°C) with the fire apparatus' doors closed. [1901:23.3.2]

Statement of Problem and Substantiation for Public Comment

Crew carriers are not for patient transport. The climate control standards from CH. 23 - Command and Communications in NFPA 1901 are more applicable.

Related Item

First Revision No. 99-NFPA 1906-2013 [Chapter 10]

Submitter Information Verification

Submitter Full Name: William Yohn
Organization: US Department of the Interior
Affilliation: NWCG Mobile Equipment Subcommittee
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 16 14:16:53 EDT 2014

Public Comment No. 28-NFPA 1906-2014 [Section No. 10.8.2.2]

10.8.2.2
Compliance of the air-conditioning system shall be validated by testing a substantially similar crew carrier in accordance with Section 9.~~12~~ 11 of NFPA 1917.

Statement of Problem and Substantiation for Public Comment

Correct reference to NFPA 1917.

Related Item

Public Input No. 96-NFPA 1906-2013 [Chapter 10]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
State:
Zip:
Submittal Date: Sat Feb 22 18:51:21 EST 2014

Public Comment No. 29-NFPA 1906-2014 [Section No. 12.1.2]

12.1.2

The estimated in-service weight shall include the following:

(1) Chassis, body, and tank(s)

(2) Full fuel, lubricant, and other chassis or component fluid tanks or reservoirs

(3) Full water and other agent tanks, if equipped

(4)* 250 lb (114 kg) in each seating position

(5)* Fixed equipment such as pumps, generators, reels, and air systems as installed

(6) Ground ladders, suction hose, designed hose load in their hose beds and on their reels

(7)* An allowance for miscellaneous equipment that is at least as great as the values shown in Table 12.1.2

(8)* If the apparatus is designed to accommodate SCBA, an additional 25 lb (11.4 kg) per seating position to the miscellaneous equipment allowance.

Table 12.1.2 Minimum Miscellaneous Equipment Allowance

	Chassis GVWR		Equipment Weight	
	lb	kg	lb	kg
Wildland fire suppression apparatus	15,000	7,000	200	90
	15,001–20,000	7,001–9,000	500	225
	20,001–26,000	9,001–12,000	500	225
	>26,000	>12,000	750	340
Wildland mobile water supply fire apparatus	All	All	200	90
Wildland fire crew carrier apparatus	<19,500	<8,845	500	225
	>19,500	>8,845	750	340

Statement of Problem and Substantiation for Public Comment

The word "suppression" got lost from the changes to this table in PI-97. It is needed since all the entries in this table are various forms of Wildland Fire Apparatus.

Related Item

Public Input No. 97-NFPA 1906-2013 [Section No. 12.1.2]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
State:
Zip:
Submittal Date: Sat Feb 22 18:54:11 EST 2014

Public Comment No. 48-NFPA 1906-2014 [Section No. 12.1.2]

12.1.2

The estimated in-service weight shall include the following:

(1) Chassis, body, and tank(s)

(2) Full fuel, lubricant, and other chassis or component fluid tanks or reservoirs

(3) Full water and other agent tanks, if equipped

(4)* 250 lb (114 kg) in each seating position

(5)* Fixed equipment such as pumps, generators, reels, and air systems as installed

(6) Ground ladders, suction hose, designed hose load in their hose beds and on their reels

(7)* An allowance for miscellaneous equipment that is at least as great as the values shown in Table 12.1.2

(8)* If the apparatus is designed to accommodate SCBA, an additional 25 lb (11.4 kg) per seating position to the miscellaneous equipment allowance.

Table 12.1.2 Minimum Miscellaneous Equipment Allowance

	Chassis GVWR		Equipment Weight	
	lb	kg	lb	kg
Wildland fire apparatus	10,000-15,000	4,500-7,000	200	90
	15,~~001–20~~ 001–26 ,000	7,~~001–9,000~~	~~500~~	~~225~~
	~~20,001–26,000~~	~~9,~~ 001–12,000	500	225
	>26,000	>12,000	750	340
Wildland mobile water supply fire apparatus	All	All	200	90
Wildland fire crew carrier apparatus	<19,500	<8,845	500	225
	>19,500	>8,845	750	340

Statement of Problem and Substantiation for Public Comment

we needed to include the equipment loads for apparatus less than 15000gvwr

also we do not need two catogoes for 15001 to 26000 both with a 500 allotment

Related Item

First Revision No. 34-NFPA 1906-2013 [Section No. 12.1.2]

Submitter Information Verification

Submitter Full Name: Gary Handwerk
Organization: handwerk consulting services
Street Address:
City:
State:
Zip:
Submittal Date: Tue Apr 15 15:16:36 EDT 2014

Public Comment No. 30-NFPA 1906-2014 [Section No. 12.3.1.5]

~~12.3.1.5~~ * - –
~~Any time auxiliary braking systems are used, they shall have a switch to turn them off during adverse road conditions.~~

Statement of Problem and Substantiation for Public Comment

12.3.1.5 and 12.3.14.2 are duplicates.
ALSO MOVE ANNEX ITEM TO BE A.12.3.1.4.2

Related Item
Public Input No. 142-NFPA 1906-2013 [Section No. 12.3.1.5]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
State:
Zip:
Submittal Date: Sat Feb 22 19:44:56 EST 2014

Public Comment No. 59-NFPA 1906-2014 [New Section after 12.3.2.3]

TITLE OF NEW CONTENT

Type your content here ...12.3.2.4 On commercial chassis excluding skid plates the ramp breakover angle shall be maintained with the installation of the fire package.

Statement of Problem and Substantiation for Public Comment

When the ramp breakover is not maintained with the installation of the fire package damage can and often does result from a reduced ramp breakover angle. The proposed language accounts for skid plates, both OEM and aftermarket. This is a critical requirement for wildland fire apparatus and should be included in a minimum standard for wildland fire apparatus; for wildland fire apparatus often operate on “truck trails” with “water bars” which require a good ramp breakover angle to negotiate. Ramp breakover angles on commercial chassis can vary from about 12 to 25 degrees. Requiring that the ramp breakover angle be maintained during fabrication will only add a small or no cost to the apparatus, but fixing it after fabrication can be costly. By requiring that the ramp breakover angle be maintained is saying “do not make it any worse than it is.” In the Standard there are many places where the “manufacturer’s” standard or requirement is used such as in 1901 24.3.3.4 where the temperature alarm is set to the “manufacturer’s requirement.”

Related Item

Public Input No. 131-NFPA 1906-2013 [New Section after 12.3.2.3]

Submitter Information Verification

Submitter Full Name: Dan McKenzie
Organization: US Department of Agriculture
Affilliation: USDA Forest Service
Street Address:
City:
State:
Zip:
Submittal Date: Thu Apr 24 04:00:03 EDT 2014

Public Comment No. 55-NFPA 1906-2014 [Section No. 13.4.6.4]

13.4.6.4
A green “Master Body Disconnect On” indicator that is visible from the driver's position shall be provided. The indicator shall dim when the headlights are turned on.

Statement of Problem and Substantiation for Public Comment

When a green indicator is used with a master load disconnect switch it is not telling the operator anything that he does not already know, for it is obvious to the operator as he is driving down the road that that the master load disconnect switch is on. This is an indicator that is not needed; therefore, since this is a minimum standard should not be required. (This indicator has out lived the original reason for installing on a fire truck. The original reason for installing on a fire truck was when the crew left the fire house at night they could easily see that the master load disconnect switch was off. Years ago electrical components were not as reliable as they are now and sometimes started fires when left on for long periods.) If the green indicator can be seen in the daytime it is too bright when driving at night and needs to dim when the headlights are turned on. It is not safe to drive at night with a bright green indicator light shining in your eyes.

Related Item

First Revision No. 104-NFPA 1906-2013 [Sections 13.4.6.3, 13.4.6.4]

Submitter Information Verification

Submitter Full Name: Dan McKenzie
Organization: US Department of Agriculture
Affilliation: USDA Forest Service
Street Address:
City:
State:
Zip:
Submittal Date: Sat Apr 19 23:27:23 EDT 2014

Public Comment No. 41-NFPA 1906-2014 [Section No. 14.1.3.2.3]

14.1.3.2.3

~~The~~

In the case of a Type 2 seat belt, the distance from the buckle anchorage (point E in Figure 14.1.3.2.3) to the buckle tip (point D in Figure 14.1.3.

~~1 (buckle tip~~

2.3) shall be no more than 2 in. (51 mm) longer than the perpendicular distance from the buckle anchorage to

~~the seating reference point (~~

a lateral axis through the H-Point

~~)~~

of the seat (line 3 in Figure 14.1.3.2.3) when the seat is adjusted to its lowest and most rearward position.

~~[1901: 14~~

If the H-Point of the seat is unknown, it can be estimated by the method outlined in annex A14 .1.

~~3~~

7 .

~~2~~

1 .

~~3]~~

Additional Proposed Changes

File Name	Description	Approved
1901_1906_Figure_14_1_3_2_3.pdf	New Figure 14.1.3.2.3 corresponding to the proposed changes to section 14.1.3.2.3	

Statement of Problem and Substantiation for Public Comment

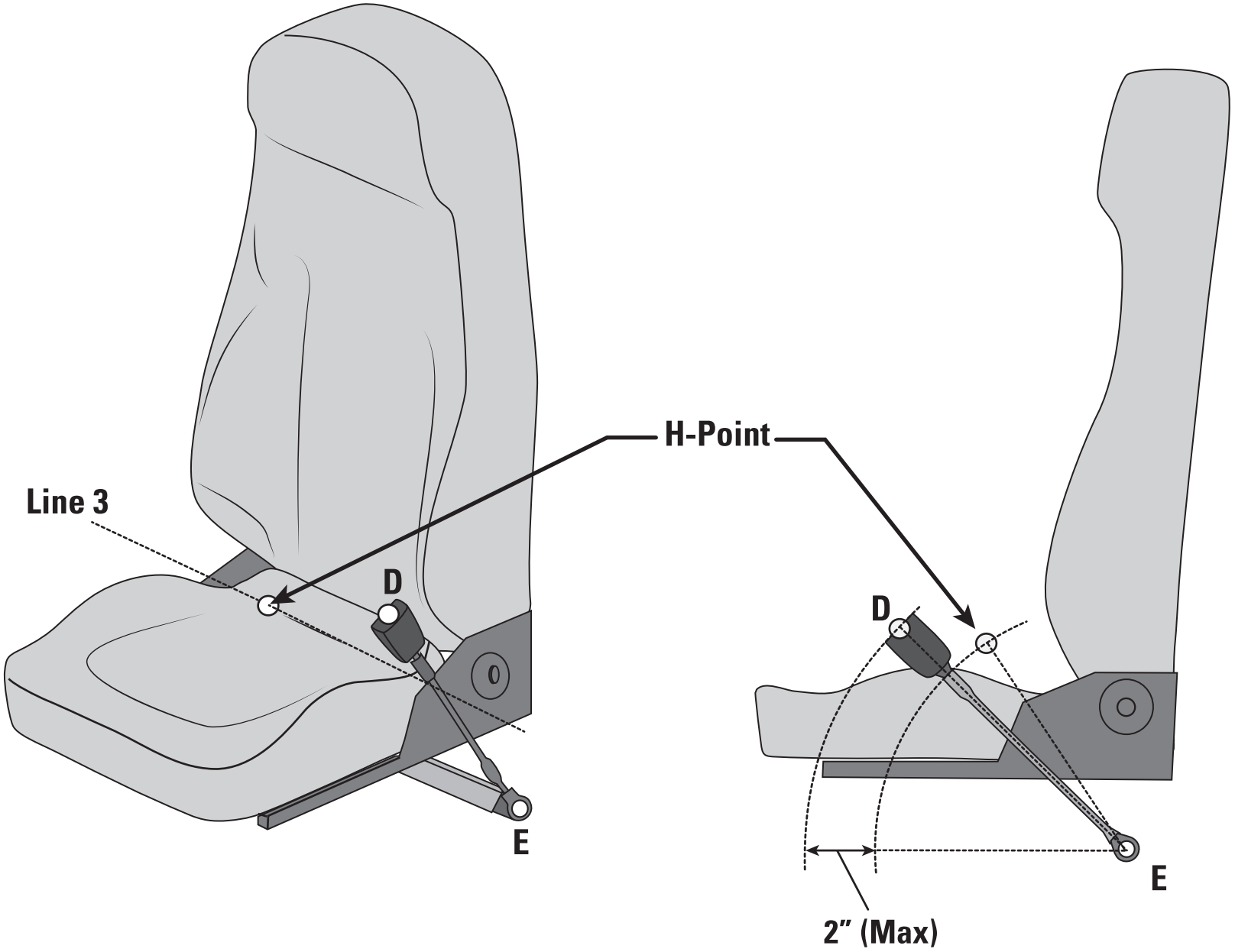
Justification: Buckles of extreme length can compromise the position and fit of a type II seat belt and make it less effective in the event of a crash. First draft language aimed to limit buckle length in accordance with SAE recommended practice J1834. SAE J1834 states: “As a guide, the latch plate entry should be no higher than the H-Point of the seat.” SAEJ1834 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”. First draft language proposed a buckle length specification which strikes the necessary balance between ease of access and restraint effectiveness.
First draft language allowed for multiple interpretations of the proposed buckle length specification. Second draft language, with illustration, seeks to reduce the possibility of misinterpretation.

Related Item

First Revision No. 114-NFPA 1906-2013 [Sections 14.1.3.2, 14.1.3.3]

Submitter Information Verification

Submitter Full Name: SCOTT STRANKO
Organization: IMMI
Street Address:
City:
State:
Zip:
Submittal Date: Wed Apr 09 14:50:25 EDT 2014


H-Point
Line 3
D
E
D
E
2" (Max)

Public Comment No. 42-NFPA 1906-2014 [Section No. 14.1.3.2.4]

~~14.1.3.2.4~~ –
~~Alternatively, for ease of measurement, the distance CD in~~ ~~Figure 14.1.3.1~~ ~~shall be no longer than 8 in. (203 mm) with the seat adjusted to its lowest and most rearward position. [~~ ~~**1901:**~~ ~~14.1.3.2.4]~~

Statement of Problem and Substantiation for Public Comment

Justification: Reference to Annex A.14.1.7.1 in the second draft proposal for section 14.1.3.2.3 gives the reader a means for estimating the H-Point from the location of the seat cushions. This reference to A.14.1.7.1 makes section 14.1.3.2.4 unnecessary.

Related Item

First Revision No. 114-NFPA 1906-2013 [Sections 14.1.3.2, 14.1.3.3]

Submitter Information Verification

Submitter Full Name: SCOTT STRANKO
Organization: IMMI
Street Address:
City:
State:
Zip:
Submittal Date: Wed Apr 09 15:05:07 EDT 2014

Public Comment No. 58-NFPA 1906-2014 [Section No. 14.4.1]

14.4.1
If an on-board pump-and-roll fire fighting position is provided, it shall include the following:

(1) A seat with an approved Type 1 seat belt

(2) Controls required by the operator within reach without removing the seat belt

(3) A means of communication with the driver

(4) One safety sign warning of the hazards of this riding position that is substantially similar to ~~FAMAxx~~ FAMA44 from FAMA TC010, *Standard Product Safety Sign Catalog for Automotive Fire Apparatus*, visible to the driver, and one safety sign visible to the riding position

Statement of Problem and Substantiation for Public Comment

Test should refer to a specific sign. Needs to be coordinated with FAMA.

Related Item

First Revision No. 51-NFPA 1906-2013 [New Section after 14.3.6.2]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
State:
Zip:
Submittal Date: Mon Apr 21 22:53:25 EDT 2014

Public Comment No. 80-NFPA 1906-2014 [Sections 14.4.1, 14.4.2]

Sections 14.4.1, 14.4.2

14.4.1

If an on-board pump-and-roll fire ~~fighting~~ attack position is provided, it shall include the following:

(1) A ~~seat with an approved Type 1 seat belt~~ restraint system that contains the firefighter within the fire attack position.

(2) Controls required by the ~~operator~~ firefighter within reach without removing the ~~seat belt~~ restraint system.

(3) A means of communication with the driver

(4) One safety sign warning of the hazards of this riding position that is substantially similar to FAMAxx from FAMA TC010, *Standard Product Safety Sign Catalog for Automotive Fire Apparatus*, visible to the driver, and one safety sign visible to the riding position

14.4.2

If the ~~seating~~ fire attack position is located outside the cab, it shall meet the following additional requirements:

(1) It shall be located behind the cab.

(2) A ~~seat belt~~ restraint warning system shall be provided in compliance with 14.1.3.9 of NFPA 1901.

(3) It shall be protected with a structure in compliance with the side impact and crush criteria from SAE J1194,*Rollover Protective Structures (ROPS) for Wheeled Agricultural Tractors*.

(4) The structure shall be designed to allow transverse entry or exit out of either side of the vehicle.

(5)* The structure shall include a perforated plate or mesh with openings no larger than 1.5 in. (3.8 cm) × 1.5 in. (3.8 cm) or other solid guard to protect from brush hazards at the front, the back, and the roof.

(6) ~~The roof height of the enclosure shall be no higher than 42 in. (106.7 cm) above the H-point of the seat.~~

(7) Equipment located within the ~~seating enclosure~~ fire attack position shall meet the requirements of 14.1.10.

(8) The fire attack position shall be designed to accomodate a firefighter in full protective bunker gear with SCBA.

Statement of Problem and Substantiation for Public Comment

14.4.1 (seat vs restraint system)
This statement suppresses the creativity and development of safer innovations. For instance, the racing industry developed and implemented the HANS restraint as a result of Dale Earnhardt's death. The restraint system must be setup to contain the firefighter inside the fire attack position. It must be a tactical advantage to accomplish the firefighting task as well safe and user-friendly, not encouraging a place to ride to and from scene. The seated position and front monitor has been established inside the chassis cab but this is not being used because it does not have the tactical advantage in a fast-moving fine fuel scenario as opposed to a firefighter in an exterior fire attack position. We do not want to encourage riding to and from the scene because a seated position is looked upon as a place to ride. (A person will always look for a place to be seated when riding). The fire attack position should be a tactical advantage, safe and easy to use. If it does not have a tactical advantage it will not be used. Fine fuel firefighters are always seen riding the truck because of the tactical advantage. I observed this tactic being used today in the San Diego county fire on national news.
14.4.2.4 (transverse)
If the truck has rolled onto its side or there is a fire on one side of the truck, the firefighter should have a means of escape from the fire attack position.
14.4.2.6 (roof height)
A lower roof height will greatly impair the firefighter's ability for escape. This is a safety issue. (The fire attack position is lowered below the chassis frame which inhibits transverse access to both sides of the vehicle. Also, limiting the roof height to 42" above the seat lowers the safety cage crush zone.)
14.4.2.8 (protective gear)
This gives the firefighter an opportunity to be in full protective structure / bunker gear with a smoke mask which is a much safer tactic than using wildland gear walking the fire line. Many departments are adapting to full structure / bunker gear because of the increased protection. This is like wearing your fire shelter.

Related Item

Public Input No. 54-NFPA 1906-2013 [New Section after 14.3.6.2]

Submitter Information Verification

Submitter Full Name: GREG BLANCHAT
Organization: BLANCHAT MFG INC
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 16 16:31:24 EDT 2014

Public Comment No. 32-NFPA 1906-2014 [Section No. 16.3.8.3.2]

16.3.8.3.2
Drain valves shall be designed or positioned such that they will not open accidentally- ~~due to vibration or encounters with brush or other objects~~ .

Statement of Problem and Substantiation for Public Comment

Match changes to 12.2.2.2.2 made in FR-32.

Related Item

First Revision No. 32-NFPA 1906-2013 [Section No. 12.2.2.2.2]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
State:
Zip:
Submittal Date: Sat Feb 22 19:56:51 EST 2014

Public Comment No. 31-NFPA 1906-2014 [Section No. 16.3.8.3.4]

~~16.3.8.3.4~~ –
~~Radiator cores shall be compatible with commercial antifreeze solutions.~~

Statement of Problem and Substantiation for Public Comment

The corresponding section 12.2.2.4 was deleted by FR-146.

Related Item

First Revision No. 146-NFPA 1906-2013 [Section No. 12.2.2.4]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
State:
Zip:
Submittal Date: Sat Feb 22 19:54:50 EST 2014

Public Comment No. 47-NFPA 1906-2014 [Section No. 16.7.8.3.1]

16.7.8.3.1

~~Where a foam proportioning system is provided, the pump recirculation line shall be plumbed so the water returning to the water tank is free of foam solution.~~

Statement of Problem and Substantiation for Public Comment

This requirement eliminates the around the pump foam system, which is used in over 60 precent of all wild land fire apparatus. this requirement also would require a very expensive foam system which in many cases would cost more than the entire pump and engine package.

Related Item

First Revision No. 68-NFPA 1906-2013 [New Section after 16.7.8.3.1]

Submitter Information Verification

Submitter Full Name: Gary Handwerk
Organization: handwerk consulting services
Street Address:
City:
State:
Zip:
Submittal Date: Tue Apr 15 14:19:08 EDT 2014

Public Comment No. 43-NFPA 1906-2014 [Section No. 16.7.8.3.2]

~~16.7.8.3.2~~ –
~~When a foam proportioning system is installed, a water-only (no foam) discharge valve shall be provided.~~

Statement of Problem and Substantiation for Public Comment

Many smaller volunteer departments, particularly on the East Coast, rely upon around-the-pump foam eductors. While in operation, those systems will not support a water-only discharge.

The committee has not presented sufficient justification to mandate that these commonly used systems must be banned and replaced with a more expensive direct injection foam system. The main justification appears to be that some brush trucks operate in federally controlled environmentally sensitive areas where a water-only attack may be necessary, but those areas are not nationwide, and the department should be trusted to determine if those requirements apply to them. Such departments are unlikely to respond out of their initial response area or immediate mutual aid area onto federal land.

In addition, every fire truck has a water only discharge if the foam system is turned off.

Related Item

First Revision No. 68-NFPA 1906-2013 [New Section after 16.7.8.3.1]

Submitter Information Verification

Submitter Full Name: DOUGLAS KELLEY
Organization: KME FIRE APPARATUS
Street Address:
City:
State:
Zip:
Submittal Date: Mon Apr 14 09:47:07 EDT 2014

Public Comment No. 46-NFPA 1906-2014 [Section No. 16.7.8.3.2]

~~16.7.8.3.2~~ –
~~When a foam proportioning system is installed, a water-only (no foam) discharge valve shall be provided.~~

Statement of Problem and Substantiation for Public Comment

16.7.8.2 (*) Annex

If the AHJ requires a clear water discharge, it should be specified. Such a clear water discharge is not available with around-the-pump proportioners..

REASON: An around-the-pump foam systems are the most popular foam system; the reasons are low cost, simple operation and use, and do not required electronic motors or computers. 60% of all wildland fire apparatus use ATP foam systems. Keeping the water only discharge, requires an injection type foam system. The cost of such systems equal to or exceed the complete fire pump and engine drive assembly.

Related Item

First Revision No. 68-NFPA 1906-2013 [New Section after 16.7.8.3.1]

Submitter Information Verification

Submitter Full Name: Gary Handwerk
Organization: handwerk consulting services
Street Address:
City:
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Zip:
Submittal Date: Tue Apr 15 14:00:40 EDT 2014

Public Comment No. 79-NFPA 1906-2014 [Section No. 16.10.1.4]

16.10.1.4

Where the pump is driven by the chassis engine and transmission through a split shaft PTO, ~~the driving compartment speedometer shall register when~~ an interlock system shall be provided to prevent the pump drive system ~~is engaged. [**1901:** 16.10.1.4]~~ from being shifted out of the "Pump Engaged" pumping mode of operation when the chassis transmission is in pump gear.

Statement of Problem and Substantiation for Public Comment

Substantiation: FR-74 for NFPA 1901 eliminated the requirement for apparatus where the pump is driven by the chassis engine and transmission through a split-shaft transmission that the speedometer shall register when the pump drive system is engaged. This was justified by technical realities of the electronics on today's vehicles but it also removes a visual reminder of the status of the pump drive system. This change and justification should also apply to those 1906 wildland apparatus that are equipped with split shaft transmissions. If the speedometer indication is retained for 1906, the expected usage would likely not justify suppliers of vehicle chassis to continue to make such a configuration available.

The proposed change to provide an interlock has also been proposed to NFPA 1901 as Public Comment 122. Substantiation for this proposal includes the same justification as submitted for 1901 and would keep apparatus requirements consistent between the two standards: Section 16.10.1.2 has for a very long time required that "Any control device used in the pumping system power train between the engine and the pump, except a manual pump shift override device if provided, shall be equipped with a means to prevent unintentional movement of the control device from its set position in the pumping mode." The control of a split-shaft pump drive system consists not only of the shift control of the pump transmission; it also consists of the chassis transmission shift control and its relation with the pump shift control. There have been countless occurrences of the pump drive system being inadvertently shifted from the pumping mode of operation while the chassis transmission is in pump gear.

This proposed new interlock requirement will compensate for the anticipated upcoming loss of speedometer registration during pump drive system engagement for 1906 apparatus and will ensure that the intent of 16.10.1.2 is met to prevent unintentional movement of the pump drive system control. Additionally, extensive damage to pump drive system components will be prevented.

Related Item

First Revision No. 117-NFPA 1906-2013 [Section No. 16.10.1.5]

Submitter Information Verification

Submitter Full Name: Tom Mettler
Organization: Waterous Company
Street Address:
City:
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Submittal Date: Fri May 16 15:20:20 EDT 2014

Public Comment No. 33-NFPA 1906-2014 [Section No. 16.10.6.5]

16.10.6.5

~~Throttle authority shall be maintained~~ The foot throttle at the driver's position shall remain active at all times.

Statement of Problem and Substantiation for Public Comment

"Throttle authority" is not defined and is subject to several interpretations.

Related Item

Public Input No. 168-NFPA 1906-2013 [Section No. 16.10.6 [Excluding any Sub-Sections]]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
State:
Zip:
Submittal Date: Sat Feb 22 20:00:18 EST 2014

Public Comment No. 34-NFPA 1906-2014 [Section No. 16.10.7.5]

16.10.7.5

~~Throttle authority shall be maintained~~ The foot throttle at the driver's position shall remain active at all times.

Statement of Problem and Substantiation for Public Comment

"Throttle authority" is not defined and is subject to several interpretations.

Related Item

Public Input No. 149-NFPA 1906-2013 [Section No. 16.10.7 [Excluding any Sub-Sections]]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
State:
Zip:
Submittal Date: Sat Feb 22 20:03:47 EST 2014

Public Comment No. 60-NFPA 1906-2014 [Section No. 16.11.2]

16.11.2

The throttle control on vertically (greater than 45 degrees) arranged pump panels shall be located not higher ~~than 66~~ than 72 in. (1680 mm) nor lower than 42 in. (1070 mm) from the operator's standing position with all instruments in full view.

Statement of Problem and Substantiation for Public Comment

Change the height requirement back to the original 72" which matches NFPA 1901. Wild land vehicle are usually taller making this requirement more difficult to achieve. Where is the scientific data to support the change to 66".

Related Item

Public Input No. 121-NFPA 1906-2013 [Section No. 4.15.2]

Submitter Information Verification

Submitter Full Name: Mike Schoenberger
Organization: Rosenbauer America
Street Address:
City:
State:
Zip:
Submittal Date: Thu Apr 24 15:14:10 EDT 2014

Public Comment No. 44-NFPA 1906-2014 [Section No. 16.11.3]

~~16.11.3~~ –
~~The throttle control on horizontally (less than 45 degrees) arranged pump panels shall be located not higher than 50 in. (1270 mm) nor lower than 32 in. (810 mm) from the operator's standing position with all instruments in full view.~~ [~~**1901:** 16.11.3~~]

Statement of Problem and Substantiation for Public Comment

The maximum height of all pump controls has already been mandated by NFPA for many years, and there does not appear to be any justification as to why those requirements have become insufficient for throttle controls. In addition, throttle control usually consists of a switch, dial, or button control that requires the least amount of force to actuate of any control, and is therefore most likely to be easy to operate at any height.

Further, the tight space reserved on brush trucks for plumbing, particularly Type 3 style units, means that the apparatus builder must design the panels around the plumbing first, and then position all other controls and indicators according to the space that is left. Mandating a more restrictive requirement for the throttle adds additional burden for little additional benefit.

This item is best left to the AHJ on a case-by-case basis according to their specific operational needs.

Related Item

First Revision No. 121-NFPA 1906-2013 [Section No. 16.11.2]

Submitter Information Verification

Submitter Full Name: DOUGLAS KELLEY
Organization: KME FIRE APPARATUS
Street Address:
City:
State:
Zip:
Submittal Date: Mon Apr 14 09:54:36 EDT 2014

Public Comment No. 62-NFPA 1906-2014 [Section No. 16.13.8 [Excluding any Sub-Sections]]

If the pump is driven by the chassis engine, the engine speed advancement interlock system shall be tested to verify that engine speed cannot be increased at the pump operator's panel unless there is throttle-ready indication and meet all the test conditions in the following tables . (This requires moving A.16.13.8 to 16.13.8)

Statement of Problem and Substantiation for Public Comment

By moving A.16.13.8 to the body and requiring the fire apparatus to meet all test conditions of A.16.13.8 will require the fire truck fabricator to perform all tests necessary to insure that the pump throttle system is operating correctly and safely.

Related Item

Public Input No. 119-NFPA 1906-2013 [Section No. 20.5.5]

Submitter Information Verification

Submitter Full Name: Dan McKenzie
Organization: US Department of Agriculture
Affilliation: USDA Forest Service
Street Address:
City:
State:
Zip:
Submittal Date: Sun Apr 27 21:46:10 EDT 2014

Public Comment No. 63-NFPA 1906-2014 [Section No. 16.13.8.1]

~~16.13.8.1 –~~

~~If the apparatus is equipped with a stationary pump driven through split-shaft PTO, the test shall verify that the engine speed control at the pump operator's panel cannot be advanced when either of the following conditions exists:~~

~~(1) The chassis transmission is in neutral, the parking brake is off, and the pump shift in the driving compartment is in the road position.~~

~~(2) The chassis transmission has been placed in the position for pumping as indicated on the label provided in the driving compartment, the parking brake is on, and the pump shift in the driving compartment is in the road position.~~

[~~**1901:** 16.13.8.1~~]

Statement of Problem and Substantiation for Public Comment

By moving A.16.13.8 to the body of the Standard there no longer a need for 16.13.8.1.

Related Item

Public Input No. 119-NFPA 1906-2013 [Section No. 20.5.5]

Submitter Information Verification

Submitter Full Name: Dan McKenzie
Organization: US Department of Agriculture
Affilliation: USDA Forest Service
Street Address:
City:
State:
Zip:
Submittal Date: Mon Apr 28 00:12:15 EDT 2014

Public Comment No. 64-NFPA 1906-2014 [Section No. 16.13.8.2]

~~16.13.8.2~~ –

~~If the apparatus is equipped with a stationary pump driven through a transmission-mounted PTO, front-of-engine crankshaft PTO, or engine flywheel PTO, the test shall verify that the engine speed control on the pump operator's panel cannot be advanced when either of the following conditions exists:~~

~~(1) The chassis transmission is in neutral, the parking brake is off, and the pump shift status in the driving compartment is disengaged.~~

~~(2) The chassis transmission is in any gear other than neutral, the parking brake is on, and the pump shift in the driving compartment is in the "Pump Engaged" position.~~

[~~**1901:** 16.13.8.2~~]

Statement of Problem and Substantiation for Public Comment

By moving A.16.13.8 to the body of the Standard there no longer a need for 16.13.8.2.

Related Item

Public Input No. 119-NFPA 1906-2013 [Section No. 20.5.5]

Submitter Information Verification

Submitter Full Name: Dan McKenzie
Organization: US Department of Agriculture
Affilliation: USDA Forest Service
Street Address:
City:
State:
Zip:
Submittal Date: Mon Apr 28 00:18:07 EDT 2014

Public Comment No. 65-NFPA 1906-2014 [Section No. 16.13.8.3]

~~16.13.8.3~~ –

~~If the apparatus is equipped with a pump driven by the chassis engine designed for both stationary pumping and pump-and-roll, the test shall verify that the engine speed control at the pump operator's panel cannot be advanced when any of the following conditions exists:~~

~~(1) The chassis transmission is in neutral, the parking brake is off, and the pump shift status in the driving compartment is disengaged.~~

~~(2) The chassis transmission is in any gear other than neutral, the parking brake is on, and the pump shift in the driving compartment is in the pump engaged position.~~

~~(3) The chassis transmission is in any gear other than neutral, the parking brake is off, the pump shift in the driving compartment is in the pump engaged position and the "OK to Pump-and-Roll" indicator is on.~~

[~~**1901:** 16.13.8.3~~]

Statement of Problem and Substantiation for Public Comment

By moving A.16.13.8 to the body of the Standard there no longer a need for 16.13.8.3.

Related Item

Public Input No. 119-NFPA 1906-2013 [Section No. 20.5.5]

Submitter Information Verification

Submitter Full Name: Dan McKenzie
Organization: US Department of Agriculture
Affilliation: USDA Forest Service
Street Address:
City:
State:
Zip:
Submittal Date: Mon Apr 28 00:28:17 EDT 2014

Public Comment No. 66-NFPA 1906-2014 [Section No. 16.13.8.4]

~~16.13.8.4~~ –
~~If the apparatus is equipped with a stationary pump driven through transfer case PTO, the test shall verify that the engine speed control on the pump operator's panel cannot be advanced when one of the following conditions exists:~~

~~(1) The chassis transmission is in neutral, the transfer case is in neutral, the parking brake is off, and the pump shift in the driving compartment is in the road position.~~

~~(2) The chassis transmission is in neutral, the transfer case is engaged, the parking brake is off, and the pump shift in the driving compartment is in the road position.~~

~~(3) The chassis transmission has been placed in the position for pumping as indicated on the label provided in the driving compartment, the parking brake is on, and the pump shift in the driving compartment is in the road position.~~

[~~**1901:** 16.13.8.4~~]

Statement of Problem and Substantiation for Public Comment

By moving A.16.13.8 to the body of the Standard there no longer a need for 16.13.8.4.

Related Item

Public Input No. 119-NFPA 1906-2013 [Section No. 20.5.5]

Submitter Information Verification

Submitter Full Name: Dan McKenzie
Organization: US Department of Agriculture
Affilliation: USDA Forest Service
Street Address:
City:
State:
Zip:
Submittal Date: Mon Apr 28 00:32:49 EDT 2014

Public Comment No. 69-NFPA 1906-2014 [Section No. 18.2.6.1.3]

18.2.6.1.3
There shall be a maximum distance of 48 in. (1220 mm) between any combination of tank vertical walls and baffles, or between parallel baffles except for a truck with a chassis designed with a 102 in (2590 mm) width; then longitudinal baffles can have up to 51 in . (1295 mm) between any combination of tank baffles and tank walls . . . [**1901:**18.2.5.1.3]. [**1901:** 18.2.5.1.3]

Additional Proposed Changes

File Name	Description	Approved
A._K._Rosenhan_tank_baffling.doc	Water tank baffling, review and opinion by A. K. Rosenhan that increasing baffling spacing to 51-in for a 102 wide chassis is well founded.	

Statement of Problem and Substantiation for Public Comment

Trucks are built with 102 in. wide chassis and with 102 in. wide water tanks with one longitudinal baffle and are used on fires. By using a 102 in. wide water tank the center of gravity is lower making the water tender more stable. There is no data that shows and increase of 2 in. in baffle spacing will have a significant effect on baffle performance. Professor A. K. Rosenham, of Mississippi State University, has looked at water tank baffling (see attached) and states allowing a 51 in. spacing in a water tender with a 102 in. wide chassis is well founded.

Related Item

Public Input No. 115-NFPA 1906-2013 [Section No. 18.2.5.1.3]

Submitter Information Verification

Submitter Full Name: Dan McKenzie
Organization: US Department of Agriculture
Affilliation: US Forest Service
Street Address:
City:
State:
Zip:
Submittal Date: Sun May 11 20:49:51 EDT 2014

To: Robert Tutterow and Dan McKenzie 12 July 09

Re: water tank baffling

I have read the submission to the NFPA 1901 Committee regarding tank baffling submitted by Dan McKenzie. The change in baffling dimensions as listed in section 11.2.5.1.3 is well founded. The design of wider tanks would, indeed, require two longitudinal baffles due to the current 48" requirement. To my recollection (from many, many years ago) the 48" dimension was basically a convenience as being ½ of a tank width and the fact that sheet metal came in 48" widths. Obviously, times have changed with the "plastic" tanks and the overall design of water carrying vehicles.

While increasing the longitudinal baffles to a spacing of 52" is a change, it would have minimal effect on the "slosh" stability of a water tank. Further, with such a wider tank and keeping the same tank capacity, the vertical center of gravity would be reduced accordingly which is a rather significant safety consideration. Given the updated requirements for vcg it would appear changing water tank dimensions would be a positive move. Providing these wider tanks does not automatically provide bigger tanks, as the gross weight of the vehicle would assumedly stay about the same regardless.

Certainly the issue of tank baffles has been a long, tedious, and inconclusive study. There remain several basic concepts that need to be defined, studied, evaluated, and incorporated into tank design. Over the years various baffle "systems" have been looked at, but no really significant studies have been accomplished.

Given the capabilities of Fluids Engineering these days, specifically the incorporation of Finite Element Analysis, it is possible to model pressure distributions, forces (both dynamic and quasi-dynamic) in various configurations of tank envelopes, baffles, and operating conditions. At least one manufacturer has done some work in this area but, apparently, only some graphics have been published. Other segments of industry, namely the chemical/bulk hauler area, have accomplished such projects although they usually are more concerned with structural aspects of the tank rather than dynamic fluid aspects.

I would suggest the Committee, or a sub-committee thereof, look into what work has been done with regard to tank baffling by various segments of the tank industry, look into sponsoring some analytical work by a competent FEA source, sponsor or initiate some experimental work to actually measure various baffles configurations during operations, and review the history of tank baffling and how it has affected safety/operations.

A. K. Rosenhan
Mississippi State University

Public Comment No. 49-NFPA 1906-2014 [Section No. 20.3.7.2]

20.3.7.2

~~A means shall be provided to prevent foam solution backflow through the foam proportioning system into the water source.~~

Statement of Problem and Substantiation for Public Comment

This requirement doesn't apply to the around the pump foam system used on 60% of the wild land apparatus,

Related Item

First Revision No. 68-NFPA 1906-2013 [New Section after 16.7.8.3.1]

Submitter Information Verification

Submitter Full Name: Gary Handwerk
Organization: handwerk consulting services
Street Address:
City:
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Submittal Date: Wed Apr 16 11:13:24 EDT 2014

Public Comment No. 50-NFPA 1906-2014 [Section No. 20.9.3.2]

20.9.3.2
If an around-the-pump system is provided on the apparatus, the following information shall also be provided on the plate:

(1) Maximum intake pressure or required intake to discharge pressure differential

(2) A table or caculator to indicate flow rate and the corresponding metering valve setting

[**1901:**20.9.3.2]

Statement of Problem and Substantiation for Public Comment

some systems have a mechanical or electronic (manual or automatic) calculators built into the controls that replace the table

Related Item

First Revision No. 68-NFPA 1906-2013 [New Section after 16.7.8.3.1]

Submitter Information Verification

Submitter Full Name: Gary Handwerk
Organization: handwerk consulting services
Street Address:
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Submittal Date: Wed Apr 16 11:17:47 EDT 2014

Public Comment No. 37-NFPA 1906-2014 [Section No. 21.9.1.1.1]

21.9.1.1.1*
The compressed air system shall be operated at its flow capacity at a minimum gauge pressure of 125 psi (862 kPa), and the water pump shall discharge a minimum of 2 gpm (~~7.6~~ 250 L/min) of water at 125 psi (862 kPa) net pump pressure for every 1 SCFM [~~28.3 L/min at standard temperature and pressure~~ 1 SCMM] of compressed air discharge. [**1901:**21.9.1.1.1]

Statement of Problem and Substantiation for Public Comment

Air discharge from as CAF system in metric is measured in SCMM per 21.2.2.1. This change corrects the units while providing the same ratio of air to water as the US units.

Related Item

Public Input No. 33-NFPA 1906-2013 [Section No. 21.7.5.1]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
State:
Zip:
Submittal Date: Sat Feb 22 20:49:41 EST 2014

Public Comment No. 1-NFPA 1906-2014 [Section No. 28.2.3]

28.2.3

If the completed pumping system is capable of taking suction, it shall do so within 30 seconds under the following conditions:

(1) At an altitude of 2000 ft (600 m) above sea level

(2) Through 10 ft (3 m) of suction hose of the size specified in Table 28.2.3 and equipped with a suction hose strainer

(3) With a lift of 3 ft (1 m)

(4) At 29.9 in. Hg (101 kPa) atmospheric pressure (corrected to sea level)

(5) At a water temperature of ~~60 °F (16 °C~~ 60?F (16?C)

[**1901:**28.2.3]

Table 28.2.3 Suction Hose Size by Rated Capacity

Flow Rate		Suction Hose Size	
gpm	L/min	in.	mm
20 and less~~75~~	80 or less	1	25
30~~115~~	120	1 ½	38
50~~190~~	200	2	51
100~~375~~	400	2 ½	65
150~~568~~	600	2 ½	65
200~~750~~	800	2 ½	75
250~~950~~	1000	3	75
300~~1100~~	1200	3	75

[**1901:**Table 28.2.3]

Statement of Problem and Substantiation for Public Comment

Throughout this document, the equivalency of 1 gpm to 4 Lpm is used, and the same should be used here.
NOTE: TerraView added the change to temperature (no change) and put the old lpm numbers into the wrong column.

Related Item

First Revision No. 124-NFPA 1906-2013 [New Section after 27.3.5]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
State:
Zip:
Submittal Date: Fri Feb 21 09:45:32 EST 2014

Public Comment No. 2-NFPA 1906-2014 [Section No. 28.6.7]

28.6.7

All 1 ½ in. (38 mm) or larger discharge outlets shall be equipped with a drain or bleeder valve having a minimum ¾ in. (~~19~~ 20 mm) pipe thread connection for draining or bleeding off pressure from a hose connected to the outlet. [**1901:**28.6.7]

Statement of Problem and Substantiation for Public Comment

There is no "19 mm pipe thread". The closest nominal size is 20 mm. All pipe sizes are nominal (name) sizes and not an exact dimension.

Related Item

First Revision No. 124-NFPA 1906-2013 [New Section after 27.3.5]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
State:
Zip:
Submittal Date: Fri Feb 21 10:14:28 EST 2014

Public Comment No. 12-NFPA 1906-2014 [Section No. 28.7.3]

28.7.3
One safety sign warning of the need for training prior to operating the apparatus that is substantially similar to ~~FAMA2~~ FAMA20 from FAMA TC010,*Standard Product Safety Sign Catalog for Automotive Fire Apparatus*, shall be located on the pump operator's panel. [**1901:**28.7.3]

Statement of Problem and Substantiation for Public Comment

One digit got lost, making the reference incorrect.

Related Item

First Revision No. 124-NFPA 1906-2013 [New Section after 27.3.5]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
State:
Zip:
Submittal Date: Fri Feb 21 15:54:07 EST 2014

Public Comment No. 13-NFPA 1906-2014 [Section No. 28.8.3]

~~28.8.3 – Parallel/Series Control.~~ -

~~28.8.3.1 –~~

~~With parallel/series pumps, the positions for parallel operation (volume) and series operation (pressure) shall be indicated. [**1901:** 28.8.3.1]~~

~~28.8.3.2 –~~

~~The control for changing the pump from series to parallel and vice versa shall be located on the pump operator's panel. [**1901:** 28.8.3.2]~~

Statement of Problem and Substantiation for Public Comment

This section is not relevant to an Ultra High Pressure pump. For positive displacement pump (most UHP systems), series connection would not help, although parallel systems are occasionally used for increased volume capacity. For centrifugal UHP pumps, series connections are often used to achieve UHP, but a parallel connection of these same pumps would no longer be a UHP pump. Series connections of 2 centrifugal UHP pumps would produce such a high pressure that a completely different system would be required and would not be practical.

Related Item

First Revision No. 124-NFPA 1906-2013 [New Section after 27.3.5]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
State:
Zip:
Submittal Date: Fri Feb 21 16:09:19 EST 2014

Public Comment No. 3-NFPA 1906-2014 [Section No. 28.9.3]

28.9.3

If a separate pumping engine is provided, it shall meet the requirements of 12.2.1.1, 12.2.1.2, 12.2.2, 12.2.3.1, 12.2.3.2, 12.2.4, 12.2.5, 12.2.6, 13.2, 13.4.3, 13.4.4, 13.4.4.1, 13.4.4.3, 13.4.4.4, 13.4.5, and 13.5. [**1901:**28.9.3]

Statement of Problem and Substantiation for Public Comment

12.2.6 Exhaust Systems is included in the requirements in chapter 17 for separate pumping engines and is applicable here as well.

Related Item

First Revision No. 124-NFPA 1906-2013 [New Section after 27.3.5]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
State:
Zip:
Submittal Date: Fri Feb 21 12:06:45 EST 2014

Public Comment No. 4-NFPA 1906-2014 [Section No. 28.11]

28.11 Gauges and Instruments.

28.11.1 Master Pump Discharge Pressure Gauge.

A master discharge pressure gauge shall be provided. [**1901:**28.11.1]

28.11.1.1

The master discharge pressure gauge shall read from a gauge pressure of 0 to not less than 500 psi (3500 kPa) higher than the maximum pressure that can be developed by the pump when it is operating with zero intake pressure. [**1901:**28.11.1.1]

28.11.1.2

Where an analog pressure gauge is used, it shall have a minimum accuracy of Grade 1A as defined in ASME B40.100, *Pressure Gauges and Gauge Attachments*. [**1901:**28.11.1.2]

28.11.1.2.1

Numerals for master gauges shall be a minimum 0.25 in. (6.4 mm) high. [**1901:**28.11.1.2.1]

28.11.1.2.2

There shall be graduation lines showing at least every 50 psi (~~350~~ 200 kPa), with major and intermediate graduation lines emphasized and figures at least every 500 psi (~~700~~ 2000 kPa). [**1901:**28.11.1.2.2]

28.11.1.2.3

Analog pressure gauges shall be vibration and pressure pulsation dampened; be resistant to corrosion, condensation, and shock; and have internal mechanisms that are factory lubricated for the life of the gauge. [**1901:**28.11.1.2.3]

28.11.1.3

If a digital pressure gauge is used, the digits shall be at least 0.25 in. (6.4 mm) high. [**1901:**28.11.1.3]

28.11.1.3.1

Digital pressure gauges shall display pressure in increments of not more than 10 psi (~~70~~ 50 kPa). [**1901:**28.11.1.3.1]

28.11.1.3.2

Digital master pressure gauges shall have an accuracy of ±3 percent over the full scale. [**1901:**28.11.1.3.2]

28.11.2 Discharge Outlet Instrumentation.

If the apparatus is equipped with two or more discharge outlets that are 1 ½ in. (38 mm) or larger and that can be supplied only by the ultra-high pressure fire pump, these discharge outlets shall be equipped with pressure gauges or flowmeters. [**1901:**28.11.2]

28.11.2.1

The pressure gauge or flowmeter display shall be located adjacent to the corresponding valve control with no more than 6 in. (150 mm) separating the pressure gauge or flowmeter bezel and the valve control centerline. [**1901:**28.11.2.1]

28.11.2.2

Pressure gauges shall be connected to the outlet side of the valve. [**1901:**28.11.2.2]

28.11.2.3

Flowmeters shall display flow in increments not greater than 5 gpm (~~19~~ 20 L/min). [**1901:**28.11.2.3]

28.11.2.4

Where an analog pressure gauge is used, the gauge shall have a minimum accuracy of Grade B as defined in ASME B40.100, *Pressure Gauges and Gauge Attachments*. [**1901:**28.11.2.4]

28.11.2.4.1

Numerals for gauges shall be a minimum ~~5~~ 5/32 in. (4 mm) high. [**1901:**28.11.2.4.1]

28.11.2.4.2

There shall be graduation lines showing at least every 50 psi (~~70~~ 200 kPa), with major and intermediate graduation lines emphasized and figures at least every 500 psi (~~3500~~ 2000 kPa). [**1901:**28.11.2.4.2]

28.11.2.4.3

Analog pressure gauges shall be vibration and pressure pulsation dampened; be resistant to corrosion, condensation, and shock; and have internal mechanisms that are factory lubricated for the life of the gauge. [**1901:**28.11.2.4.3]

28.11.2.5

If a digital pressure gauge is used, the digits shall be at least 0.25 in. (6.4 mm) high. [**1901:**28.11.2.5]

28.11.2.5.1

Digital pressure gauges shall display pressure in increments of not more than 10 psi (~~70~~ 50 kPa). [**1901:**28.11.2.5.1]

28.11.2.5.2

Digital pressure gauges shall have an accuracy of ±3 percent over the full scale. [**1901:**28.11.2.5.2]

28.11.3 Protection of Gauges and Instruments.

Each pressure gauge or flowmeter and its respective display shall be mounted and attached so it is protected from accidental damage and excessive vibration. [**1901:**28.11.3]

28.11.4* Cab Gauges.

If the pump on the apparatus is driven by the chassis engine through a PTO, and the apparatus is designed for pump-and-roll operations using that chassis engine-driven pump, a second gauge that meets the same requirements as the discharge pressure gauge required by 28.11.1 shall be mounted in the driving compartment in view of the driver. [**1901:**28.11.4]

Statement of Problem and Substantiation for Public Comment

Pressure gauges are not manufactured with graduations of 7 or 35. They would be 1, 2, 5; times powers of 10. The numbers proposed are consistent with the numbers used in chapter 16.

Related Item

First Revision No. 124-NFPA 1906-2013 [New Section after 27.3.5]

Submitter Information Verification

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Submittal Date: Fri Feb 21 12:43:33 EST 2014

Public Comment No. 5-NFPA 1906-2014 [Section No. 28.12]

28.12 Required Testing.

28.12.1 Apparatus Pump System Certification.

28.12.1.1 General.

The UHP pump shall be tested after the pump and all its associated piping and equipment have been installed on the fire apparatus. [**1901:**28.12.1.1]

28.12.1.1.1

The testing shall include at least the water tank–to–pump flow test in 28.12.5, the 30-minute pumping test in 28.12.6, the priming system test in 28.12.8, the vacuum test in 28.12.9, the gauge and flowmeter test in 28.12.11, the piping integrity test in 28.12.12.1, and the water tank capacity test in 28.12.13. [**1901:**28.12.1.1.1]

28.12.1.1.2

If the ~~fire~~ UHP pump is driven by the chassis engine, the engine speed advancement interlock test in 28.12.10 shall be included. [**1901:**28.12.1.1.2]

28.12.1.1.3

The test results shall be certified by the manufacturer. [**1901:**28.12.1.1.3]

28.12.1.2* Test Label.

28.12.1.2.1

A test label shall be provided at the pump operator's position that gives the rated discharges and pressures and, if so equipped, the position of the parallel/series pump control. [**1901:**28.12.1.2.1]

28.12.1.2.2

If powered by an engine, the speed of the engine as determined by the certification test for each unit and the governed speed of the engine as stated by the engine manufacturer on a certified brake horsepower curve shall be provided on the test label. [**1901:**28.12.1.2.2]

28.12.1.2.3

The label shall be stamped with all information at the factory and attached to the vehicle prior to shipping. [**1901:**28.12.1.2.3]

28.12.2 Conditions for Tests.

28.12.2.1

Tests shall be performed when conditions are as follows:

(1) Air temperature: 0°F to 110°F (–18°C to 43°C)

(2) Water temperature: 35°F to 90°F (2°C to 32°C)

(3) Barometric pressure: 29 in. Hg (98.2 kPa), minimum (corrected to sea level)

[**1901:**28.12.2.1]

28.12.2.2

If it is necessary to perform the test outside the air or water temperature ranges or the minimum barometric pressure stated in 28.12.2.1 and the pump passes the certification test, the test results shall be acceptable. [**1901:**28.12.2.2]

28.12.2.3

Engine-driven accessories shall not be functionally disconnected or otherwise rendered inoperative during the tests. [**1901:**28.12.2.3]

28.12.2.3.1

If the chassis engine drives the UHP pump, the total continuous electrical loads, excluding those loads associated with the equipment defined in 28.12.2.3.3, shall be applied for the entire pumping portion of this test. [**1901:**28.12.2.3.1]

28.12.2.3.2

If the vehicle is equipped with a fixed power source driven by the same engine that drives the ultra-high pressure fire pump, it shall be running at a minimum of 50 percent of its rated capacity throughout the pumping portion of the pump test. [**1901:**28.12.2.3.2]

28.12.2.3.3

The following devices shall be permitted to be turned off or not operating during the pump test:

(1) Foam pump

(2) Hydraulically driven equipment (other than hydraulically driven line voltage generator)

(3) Winch

(4) Windshield wipers

(5) Four-way hazard flashers

(6) Compressed air foam system (CAFS) compressor

[**1901:**28.12.2.3.3]

28.12.2.3.4

All structural enclosures, such as floorboards, gratings, grilles, and heat shields, not furnished with a means for opening them in normal service shall be kept in place during the tests. [**1901:**28.12.2.3.4]

28.12.3 Equipment.

28.12.3.1

One or more lines of fire hose of sufficient diameter shall be provided to allow discharge of the rated capacity of the pump without exceeding a flow velocity of 35 ft/sec (10.7 m/sec) through the hose. [**1901:**28.12.3.1]

28.12.3.2

Discharge rate shall be measured using equipment such as flowmeters, volumetric tanks, or weigh tanks. [**1901:**28.12.3.2]

28.12.3.3 Test Gauges.

28.12.3.3.1

All test gauges shall meet the requirements for Grade A gauges as defined in ASME B40.100 and shall be at least size 3 ½ per ASME B40.100, *Pressure Gauges and Gauge Attachments*. [**1901:**28.12.3.3.1]

28.12.3.3.2

The pump intake gauge shall have a range of 30 in. Hg (100 kPa) vacuum to zero for a vacuum gauge or 30 in. Hg (100 kPa) vacuum to a gauge pressure of 150 psi (1000 kPa) for a compound gauge. [**1901:**28.12.3.3.2]

28.12.3.3.3

The discharge pressure gauge shall have a gauge pressure range of 0 psi (0 kPa) to not less than 500 psi (3500 kPa) over the rated pump discharge pressure. [**1901:**28.12.3.3.3]

28.12.3.3.4

All gauges shall have been calibrated in the year preceding the tests using a deadweight gauge tester or a master gauge meeting the requirements for Grade 3A or Grade 4A gauges, as defined in ASME B40.100, that has been calibrated within the preceding year. [**1901:**28.12.3.3.4]

28.12.3.3.5

Each test gauge connection shall include a means for snubbing, such as a needle valve to damp out rapid needle movements. [**1901:**28.12.3.3.5]

28.12.3.4

Speed-measuring equipment shall consist of a tachometer or other device for measuring revolutions per minute. [**1901:**28.12.3.4]

28.12.4 Procedure.

28.12.4.1*

The ambient air temperature, water temperature, elevation of test site, and atmospheric pressure (corrected to sea level) shall be determined and recorded prior to the pump test. [**1901:**28.12.4.1]

28.12.4.2*

The engine, pump, transmission, and all parts of the fire apparatus shall exhibit no undue heating, loss of power, overspeed, leaks, or other defect during the entire test. [**1901:**28.12.4.2]

28.12.5 Water Tank–to–Pump Flow Test.

28.12.5.1

The water tank–to–pump flow test shall be performed with water being supplied from the apparatus water tank to verify the rated capacity and rated discharge pressure capability of the apparatus. [**1901:**28.12.5.1]

28.12.5.2

The water tank–to–pump flow test shall be conducted as follows:

(1) The apparatus shall be placed on level ground and the water tank filled until it overflows.

(2) All intakes to the pump shall be closed.

(3) The tank fill line shall be closed.

(4) A hose line(s) and nozzle(s) for discharging water at the rated pump capacity flow rate shall be connected to one or more discharge outlets.

(5) The water tank–to–pump valve(s) and the discharge valve(s) leading to the hose line(s) and nozzle(s) shall be opened.

(6) The pumping system shall be operated and adjusted as required until the rated pump capacity flow rate, -0/ ± 5 percent, at the rated discharge pressure is established.

(7) The discharge pressure shall be recorded.

(8) The discharge valves shall be closed and the water tank refilled.

(9) The bypass cooling line shall be permitted to be opened temporarily, if needed, to keep the water temperature in the pump within acceptable limits.

(10) The discharge valves shall be reopened and the time noted.

(11) If necessary, the pumping system shall be adjusted to maintain the discharge pressure recorded as noted in 28.12.5.2(6).

(12) The pumping system shall be operated at these conditions for 30 minutes or the discharge pressure drops by 100 psi (700 kPa) or more, at which time the time shall be noted and the elapsed time from the opening of the discharge valves shall be calculated and recorded.

[**1901:**28.12.5.2]

28.12.5.3 Volume Discharge Calculation.

28.12.5.3.1

The volume discharged shall be calculated by multiplying the rate of discharge in gallons per minute (liters per minute) by the time in minutes elapsed from the opening of the discharge valves until the discharge pressure drops by at least 100 psi (700 kPa). [**1901:**28.12.5.3.1]

28.12.5.3.2

Other means shall be permitted to be used to determine the volume of water pumped from the tank such as a totalizing flowmeter, weighing the truck before and after, or refilling the tank using a totalizing flowmeter. [**1901:**28.12.5.3.2]

28.12.5.3.3

The flow rate shall be maintained for 30 minutes or until 80 percent of the rated capacity of the tank has been discharged. [**1901:**28.12.5.3.3]

28.12.6 30-Minute Pumping Test.

28.12.6.1

The pump shall be subjected to a 30-minute pumping test consisting of continuous pumping at rated capacity at rated pump discharge pressure. [**1901:**28.12.6.1]

28.12.6.2

The 30-minute pumping test shall be permitted to be performed from the apparatus water tank with provisions to maintain tank level during the duration of the test. [**1901:**28.12.6.2]

28.12.6.3

The 30-minute pumping test shall be permitted to be performed with water supplied to the pump intake from separate water supply that provides a positive pressure to the pump intake. [**1901:**28.12.6.3]

28.12.6.4

If the 30-minute pumping test is performed with water supplied to the pump that provides a positive pressure at the pump intake, the net pump pressure shall be equal to the rated pump discharge pressure. [**1901:**28.12.6.4]

28.12.6.5

The 30-minute pumping test shall be permitted to be run at a test site that provides a supply of clear water and close enough to allow the suction strainer to be submerged at least 2 ft (0.6 m) below the surface of the water, when connected to the pump by a minimum of 10 ft (3 m) of suction hose. [**1901:**28.12.6.5]

28.12.6.6

If the pump is stopped before the test is completed, the entire pump test shall be repeated. [**1901:**28.12.6.6]

28.12.6.7

The flow discharge pressure, intake pressure, and engine speed shall be recorded at least every 15 minutes but not fewer than three times for each test sequence. [**1901:**28.12.6.7]

28.12.6.8

The average net pump pressure shall be calculated and recorded based on the average values for discharge and intake pressure. [**1901:**28.12.6.8]

28.12.7 Pressure Control Test.

At the pump rated flow and pressure for pumps with two or more discharges, the pump system shall be tested for pressure rise as follows:

(1) The pump shall be operated at rated capacity and rated discharge gauge pressure.

(2) If a pressure control system is supplied, it shall maintain the rated discharge gauge pressure within ±5 percent, or if it is adjustable, it shall be set in accordance with the manufacturer's instructions to maintain the rated discharge gauge pressure within ±5 percent.

(3) All discharge valves shall be closed not more rapidly than in 3 seconds and not more slowly than in 7 seconds.

(4) The rise in discharge pressure shall not exceed 10 percent of the rated discharge pressure and shall be recorded.

[**1901:**28.12.7]

28.12.8 Priming System Test.

If the UHP pumping system is equipped with a priming system, it shall be operated in accordance with the manufacturer's instructions until the pump has been primed and is discharging water. [**1901:**28.12.8]

28.12.8.1* This test shall be run at a test site that provides a supply of clear water and close enough to allow 10 ft (3 m) of suction hose of the size specified in Table 28.2.3 and equipped with a suction hose strainer to be connected to the pump intake to be submerged at least 2 ft (0.6 m) below the surface of the water, with the water level 3 ft (0.91 m) below the center of the pump intake corrected for the following conditions:

(1) At an altitude of 2000 ft (600 m) above sea level

(2) At 29.9 in. Hg (101 kPa) atmospheric pressure (corrected to sea level)

(3) At a water temperature of ~~60°~~ 60? F (~~16°~~ 16? C)

[**1901:**28.12.8.1]

28.12.8.2 The interval from the time the priming system is started until the time the pump is discharging water shall be noted. [**1901:**28.12.8.2]

28.12.8.3 The time required to prime the pump shall not exceed 30 seconds. [**1901:**28.12.8.3]

28.12.8.4 Only biodegradable products shall be permitted to be discharged onto the ground. [**1901:**28.12.8.4]

28.12.9 Vacuum Test.

If the UHP pumping system is equipped with a priming system, a vacuum test shall be performed that consists of subjecting the interior of the pump, with all intake valves open, all intakes capped or plugged, and all discharge caps removed to a vacuum of 17 in. Hg (57.6 kPa) by means of the pump priming system. [**1901:**28.12.9]

28.12.9.1 At altitudes above 2000 ft (600 m), the vacuum attained shall be permitted to be less than 17 in. Hg (57.6 kPa) by 1 in. Hg (3.4 kPa) for each 1000 ft (300 m) of altitude above 2000 ft (600 m). [**1901:**28.12.9.1]

28.12.9.2 The primer shall not be used after the 5-minute test period has begun. [**1901:**28.12.9.2]

28.12.9.3 The engine shall not be operated at any speed greater than the governed speed during this test. [**1901:**28.12.9.3]

28.12.9.4 The vacuum shall not drop more than 10 in. Hg (34 kPa) in 5 minutes. [**1901:**28.12.9.4]

28.12.9.5 The vacuum test shall then be repeated with all intake valves closed and the caps or plugs on all gated intakes removed. [**1901:**28.12.9.5]

28.12.10* Engine Speed Advancement Interlock Test.

If the UHP pump is driven by the chassis engine, the engine speed advancement interlock system shall be tested to verify that engine speed cannot be increased at the pump operator's panel unless there is throttle-ready indication. [**1901:**28.12.10]

28.12.10.1

If the apparatus is equipped with a stationary UHP pump driven through a split-shaft PTO, the test shall verify that the engine speed control at the pump operator's panel cannot be advanced when either of the following conditions exists:

(1) The chassis transmission is in neutral, the parking brake is off, and the UHP pump shift in the driving compartment is in the road position.

(2) The chassis transmission has been placed in the position for pumping as indicated on the label provided in the driving compartment, the parking brake is on, and the UHP pump shift in the driving compartment is in the road position.

[**1901:**28.12.10.1]

28.12.10.2

If the apparatus is equipped with a stationary UHP pump driven through a transmission-mounted PTO, front-of-engine crankshaft PTO, or engine flywheel PTO, the test shall verify that the engine speed control on the pump operator's panel cannot be advanced when either of the following conditions exists:

(1) The chassis transmission is in neutral, the parking brake is off, and the UHP pump shift status in the driving compartment is disengaged.

(2) The chassis transmission is in any gear other than neutral, the parking brake is on, and the UHP pump shift in the driving compartment is in the "Pump Engaged" position.

[**1901:**28.12.10.2]

28.12.10.3

If the apparatus is equipped with a UHP pump driven by the chassis engine designed for both stationary pumping and pump-and-roll, the test shall verify that the engine speed control at the pump operator's panel cannot be advanced when any of the following conditions exists:

(1) The chassis transmission is in neutral, the parking brake is off, and the UHP pump shift status in the driving compartment is disengaged.

(2) The chassis transmission is in any gear other than neutral, the parking brake is on, and the UHP pump shift in the driving compartment is in the "Pump Engaged" position.

(3) The chassis transmission is in any gear other than neutral, the parking brake is off, the UHP pump shift in the driving compartment is in the "Pump Engaged" position, and the "OK to Pump-and-Roll" indicator is on.

[**1901:**28.12.10.3]

28.12.10.4

If the apparatus is equipped with a stationary UHP pump driven through transfer case PTO, the test shall verify that the engine speed control on the pump operator's panel cannot be advanced when one of the following conditions exists:

(1) The chassis transmission is in neutral, the transfer case is in neutral, the parking brake is off, and the UHP pump shift in the driving compartment is in the road position.

(2) The chassis transmission is in neutral, the transfer case is engaged, the parking brake is off, and the UHP pump shift in the driving compartment is in the road position.

(3) The chassis transmission has been placed in the position for pumping as indicated on the label provided in the driving compartment, the parking brake is on, and the UHP pump shift in the driving compartment is in the road position.

[**1901:**28.12.10.4]

28.12.11 Gauge and Flowmeter Test.

28.12.11.1

Pump intake and discharge pressure gauges shall be checked for accuracy while pumping at rated capacity at pump rated pressure. [**1901:**28.12.11.1]

28.12.11.2

Any gauge that does not meet Grade B ASME B40 requirements as compared to the calibrated test gauge shall be recalibrated, repaired, or replaced. [**1901:**28.12.11.2]

28.12.11.3

Each flowmeter shall be checked for accuracy while pumping at rated capacity at pump rated pressure. [**1901:**28.12.11.3]

28.12.11.4

Any flowmeter that is off by more than 10 percent shall be recalibrated, repaired, or replaced. [**1901:**28.12.11.4]

28.12.12 Manufacturer's Predelivery Test.

28.12.12.1 Piping Integrity Test.

The UHP pump and its connected piping system shall be subjected to either a hydrostatic test per 28.12.12.2 or hydrodynamic test per 28.12.12.3. [**1901:**28.12.12.1]

28.12.12.2

If the pump and its connected piping system are subjected to a hydrostatic test, they shall be hydrostatically tested to a gauge pressure of 1.4 times the rated pump discharge pressure. [**1901:**28.12.12.2]

28.12.12.2.1

The hydrostatic test shall be conducted with the tank fill line valve, the tank–to–pump valve closed, and the pump bypass line return to the water tank disconnected and capped. [**1901:**28.12.12.2.1]

28.12.12.2.2

The hydrostatic test shall be conducted with all discharge valves open and the outlets capped. [**1901:**28.12.12.2.2]

28.12.12.2.3*

The hydrostatic test shall be conducted with all external intakes capped and intake valves left open in external intakes equipped with valves. [**1901:**28.12.12.2.3]

28.12.12.2.4

The hydrostatic test pressure shall be maintained for 3 minutes. [**1901:**28.12.12.2.4]

28.12.12.3*

If the pump and its connected piping system are subjected to a hydrodynamic test, they shall be hydrodynamically tested to a gauge pressure of 1.4 times the rated pump discharge pressure. [**1901:**28.12.12.3]

28.12.12.4

The hydrodynamic test pressure shall be maintained for 3 minutes. [**1901:**28.12.12.4]

28.12.13 Water Tank Capacity Test.

The water tank shall be tested for usable water capacity by either a totalizing flowmeter method or a truck weight method. [**1901:**28.12.13]

28.12.13.1

The water tank shall be filled until it overflows. [**1901:**28.12.13.1]

28.12.13.2
If the unit is equipped with an automatic shutdown due to a low pressure feature, that feature shall be engaged. [**1901:**28.12.13.2]

28.12.13.3
If a totalizing flowmeter is used, the meter shall be connected to a discharge and set to zero. [**1901:**28.12.13.3]

28.12.13.3.1
If the totalizing flowmeter is connected to a discharge valve, the valve shall be opened and the unit run at between 25 percent and 35 percent of the pump's rated flow until it automatically shuts down or the pressure drops below 1000 psi (7000 kPa). [**1901:**28.12.13.3.1]

28.12.13.3.2
The total volume that was discharged shall be recorded. [**1901:**28.12.13.3.2]

28.12.13.4
If the truck weight method is used, the truck shall be weighed and the weight recorded. [**1901:**28.12.13.4]

28.12.13.4.1
The pump shall be started and brought up to a flow rate of between 25 and 35 percent of the pump's rated flow by partly opening a discharge valve. [**1901:**28.12.13.4.1]

28.12.13.4.2
The discharge valve shall be closed when the unit automatically shuts down or the pump pressure drops below 1000 psi (7000 kPa). [**1901:**28.12.13.4.2]

28.12.13.4.3
The truck shall be reweighed. [**1901:**28.12.13.4.3]

28.12.13.4.4
The water tank empty weight shall be subtracted from water tank full weight and the result divided by 8.33 lb/gal to obtain the usable water volume in gallons. [**1901:**28.12.13.4.4]

Statement of Problem and Substantiation for Public Comment

"fire pump" is a term defined in chapter 3, so it can not be used to refer to a pump that does not meet that definition.
In cases where a UHP pump and another pump are both installed, some of the wording need UHP to clarify the meaning.
Additional changes may still be needed to define the throttle interlocks and testing for cases with 2 pumps both driven by the chassis engine.

Related Item

First Revision No. 124-NFPA 1906-2013 [New Section after 27.3.5]

Submitter Information Verification

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Submittal Date: Fri Feb 21 13:42:12 EST 2014

Public Comment No. 14-NFPA 1906-2014 [Section No. 28.12.1.2.1]

28.12.1.2.1
A test label shall be provided at the pump operator's position that gives the rated discharges and pressures~~- and, if so equipped, the position of the parallel/series pump control~~ . [**1901:**28.12.1.2.1]

Statement of Problem and Substantiation for Public Comment

Parallel/Series pump control not relevant to UHP pumps (See Public Comment 13).

Related Item

First Revision No. 124-NFPA 1906-2013 [New Section after 27.3.5]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
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Submittal Date: Fri Feb 21 16:22:37 EST 2014

Public Comment No. 6-NFPA 1906-2014 [Section No. 28.12.3.1]

28.12.3.1
One or more lines of ~~fire~~ UHP hose of sufficient diameter shall be provided to allow discharge of the rated capacity of the pump without exceeding a flow velocity of 35 ft/sec (10.7 m/sec) through the hose. [**1901:**28.12.3.1]

Statement of Problem and Substantiation for Public Comment

Fire hose (per NFPA 1961) does not include the hoses typically used with UHP systems, so the term Fire Hose should not be used here.

Related Item

First Revision No. 124-NFPA 1906-2013 [New Section after 27.3.5]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
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Submittal Date: Fri Feb 21 14:13:17 EST 2014

Public Comment No. 7-NFPA 1906-2014 [Section No. 28.12.8.1]

28.12.8.1*

This test shall be run at a test site that provides a supply of clear water and close enough to allow 10 ft (3 m) of suction hose of the size specified in Table 28.2.3 and equipped with a suction hose strainer to be connected to the pump intake to be submerged at least 2 ft (0.6 m) below the surface of the water, with the water level at least 3 ft (0.91 m) below the center of the pump intake corrected for the following conditions:

(1) At an altitude of 2000 ft (600 m) above sea level

(2) At 29.9 in. Hg (101 kPa) atmospheric pressure (corrected to sea level)

(3) At a water temperature of ~~60 0~~ 60? F (~~16 0~~ 16? C)

[**1901:**28.12.8.1]

Statement of Problem and Substantiation for Public Comment

The words "at least: are needed in many cases. If the pump were on a flat bed with the intake 48" above the ground, as written the truck would have to be partially (12") submersed in the water supply to run the test as written. The other requirements in the sentence include "at least".

Related Item

First Revision No. 124-NFPA 1906-2013 [New Section after 27.3.5]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
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Submittal Date: Fri Feb 21 14:26:24 EST 2014

Public Comment No. 10-NFPA 1906-2014 [Section No. 28.12.9 [Excluding any Sub-Sections]]

If the pumping system is equipped with a priming system, a vacuum test shall be performed that consists of subjecting the interior of the pump, with all intake valves open, all intakes capped or plugged, and all discharge caps removed; to a vacuum of 17 in. Hg (57.6 kPa) by means of the pump priming system. [**1901:**28.12.9]

Statement of Problem and Substantiation for Public Comment

Grammar correction. As written, the caps have to be removed to a vacuum. With the semicolon, the interior of the pump has to be subjected to a vacuum (with further subordinate conditions).

Related Item

First Revision No. 124-NFPA 1906-2013 [New Section after 27.3.5]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
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Submittal Date: Fri Feb 21 14:44:48 EST 2014

Public Comment No. 9-NFPA 1906-2014 [Section No. 28.12.12.2.1]

28.12.12.2.1
The hydrostatic test shall be conducted with the tank fill line valve closed , the tank–to–pump valve closed, and the pump bypass line return to the water tank disconnected and capped or its valve closed . [**1901:**28.12.12.2.1]

Statement of Problem and Substantiation for Public Comment

One word is missing.
If bypass line has a valve, it could be closed rather than disconnected.

Related Item

First Revision No. 124-NFPA 1906-2013 [New Section after 27.3.5]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
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Submittal Date: Fri Feb 21 14:39:04 EST 2014

Public Comment No. 8-NFPA 1906-2014 [Section No. 28.12.13.3.1]

28.12.13.3.1
If the totalizing flowmeter is connected to a discharge valve, the valve shall be opened and the unit run at between ~~25 percent~~ 50 and ~~35~~ 100 percent of the pump's rated flow until it automatically shuts down or the pressure drops below 1000 psi (7000 kPa). [**1901:**28.12.13.3.1]

Statement of Problem and Substantiation for Public Comment

Many UHP systems run a single line and a nozzle that is matched to the pump. 25%-35% is both difficult to achieve and very slow. A typical NFPA 1901 test corresponding to this test takes 1-3 minutes. At written this test for a 8gpm pump x 25% with 100 gal. tank would take 50 minutes. At typical UHP system flows, discharging even 100% of the rated flow should not create significant turbulence or air suction in the tank, and virtually none at 50%.

Related Item

First Revision No. 124-NFPA 1906-2013 [New Section after 27.3.5]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
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Submittal Date: Fri Feb 21 14:31:57 EST 2014

Public Comment No. 51-NFPA 1906-2014 [Section No. A.5.7.1(1)]

A.5.7.1(1)

Parking brakes on FMVSS-certified apparatus ~~equipped with hydraulic brakes~~ are only designed to ~~hold on a maximum grade of 30 percent. Parking brakes on FMVSS-certified apparatus equipped with air brakes are designed to hold on a maximum grade of 20 percent~~ hold on a 20 percent grade . If departments intend to park on grades above 20 percent~~ or 30 percent (depending on brake type)~~ , they should consider specifying wheel chocks with higher performance. Chock performance criteria are not meant to encourage parking on a grade above 20 percent~~ or 30 percent (depending on brake type)~~ . The practice of parking on a grade above 20 percent ~~or 30 percent (depending on brake type)~~ should be performed by a two-person crew, with the driver staying in the cab with a foot on the service brake pedal and the second crew member setting or removing the chocks.

Statement of Problem and Substantiation for Public Comment

This is a correction for FMVSS (105) only requires the parking brake to hold up to a 20% grade for vehicles with hydraulic brake systems.

Related Item

First Revision No. 95-NFPA 1906-2013 [Section No. 7.7.1]

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State:
Zip:
Submittal Date: Thu Apr 17 04:03:52 EDT 2014

Public Comment No. 54-NFPA 1906-2014 [Section No. A.7.7.1(1)]

A.7.7.1(1)

Parking brakes on FMVSS-certified apparatus ~~equipped with hydraulic brakes~~ are only designed to hold on ~~a maximum grade of 30 percent. Parking brakes on FMVSS-certified apparatus equipped with air brakes are designed to hold on a maximum grade of 20 percent~~ a 20 percent grade . If departments intend to park on grades above 20 percent ~~or 30 percent (depending on brake type)~~ , they should consider specifying wheel chocks with higher performance. Chock performance criteria are not meant to encourage parking on a grade above 20 percent~~ or 30 percent (depending on brake type)~~ . The practice of parking on a grade above 20 percent ~~or 30 percent (depending on brake type)~~ should only be performed by a two-person crew, with the driver staying in the cab with a foot on the service brake pedal and the second crew member setting or removing the chocks.

Statement of Problem and Substantiation for Public Comment

This is a correction for FMVSS (105) only requires the parking brake to hold up to a 20% grade for vehicles with a hydraulic brake system.

Related Item

First Revision No. 97-NFPA 1906-2013 [Section No. A.7.7.1(1)]

Submitter Information Verification

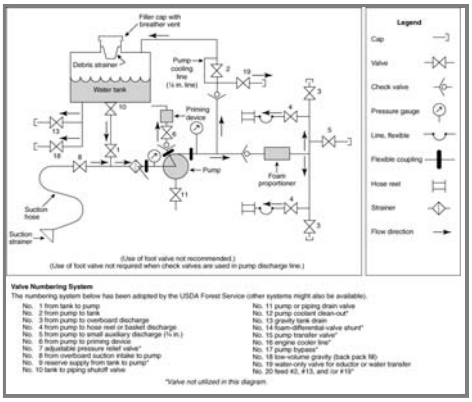
Submitter Full Name: Dan McKenzie
Organization: US Department of Agriculture
Affilliation: US Forest Service
Street Address:
City:
State:
Zip:
Submittal Date: Sat Apr 19 19:37:19 EDT 2014

Public Comment No. 67-NFPA 1906-2014 [Section No. A.16.5]

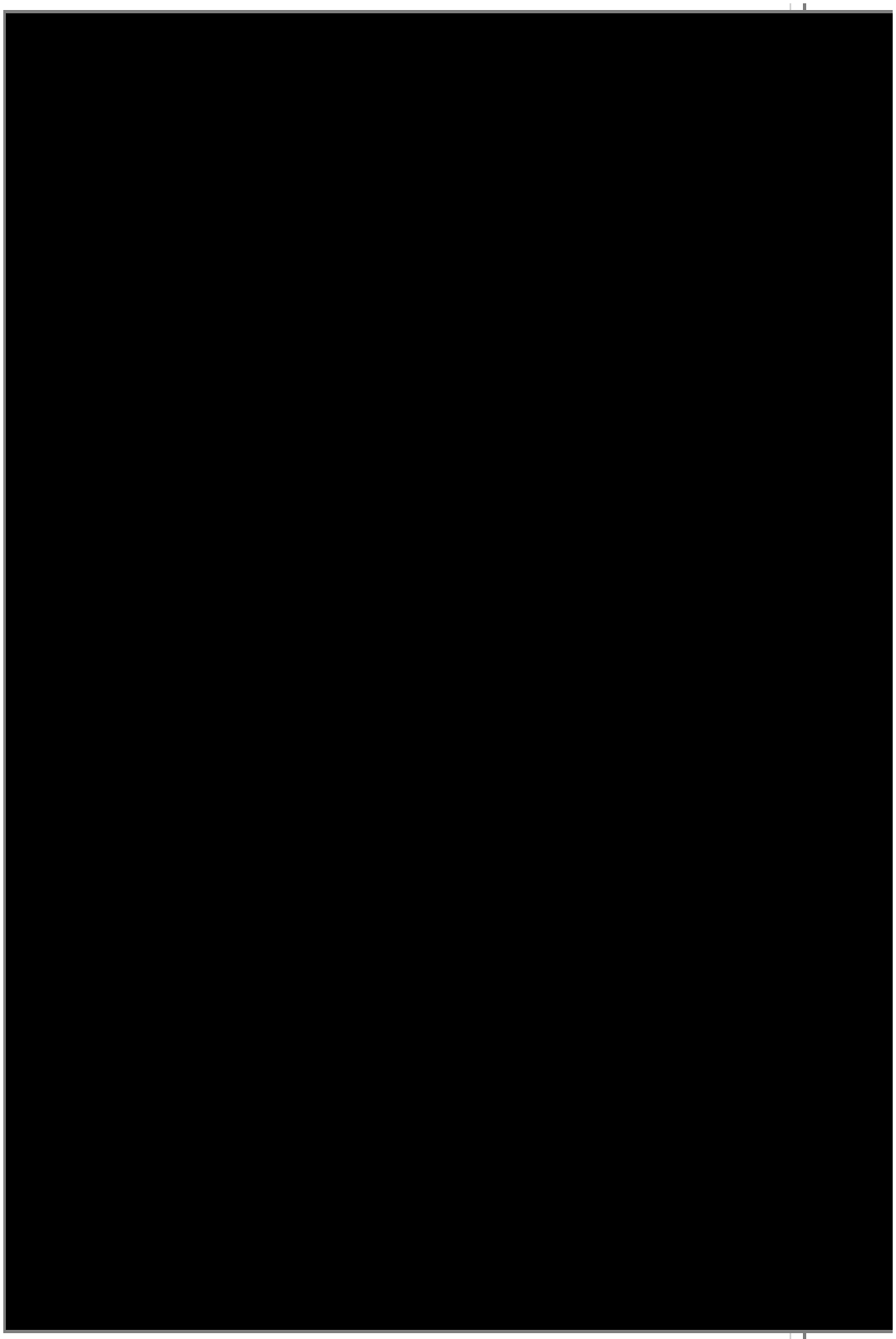
A.16.5

Figure A.16.5 shows a typical plumbing schematic for an apparatus with a centrifugal pump. The valves on the schematic are identified by numbers corresponding to a valve numbering system that is used by a number of federal wildland fire-fighting agencies. This numbering system is detailed in the schematic in Figure A.16.5.

Figure A.16.5 Typical Plumbing Schematic for Centrifugal Pump.



~~Delete current Figure A.16.5 and replalce with the following:~~



Additional Proposed Changes

File Name	Description	Approved
WHEG_Chap_I_plumbing.pdf	Figure A.16.5 Typical Plumbing Schematic for Centrifugal Pumpl	

Statement of Problem and Substantiation for Public Comment

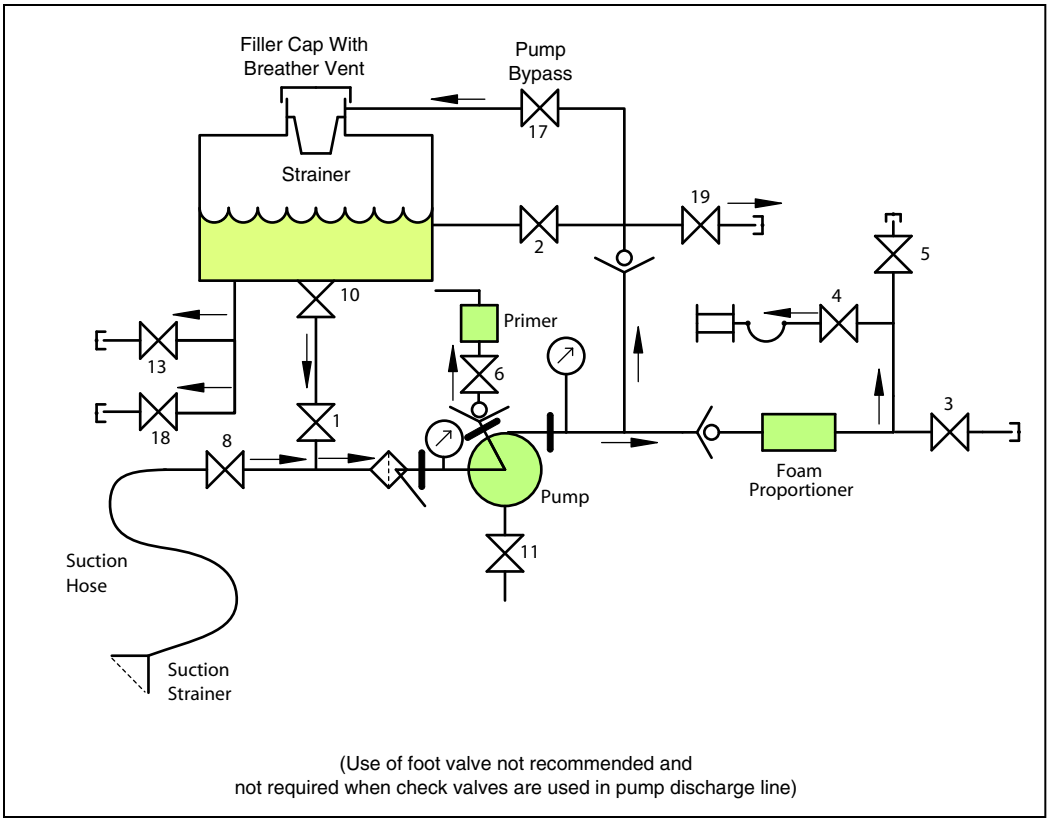
Update Figure A.16.5

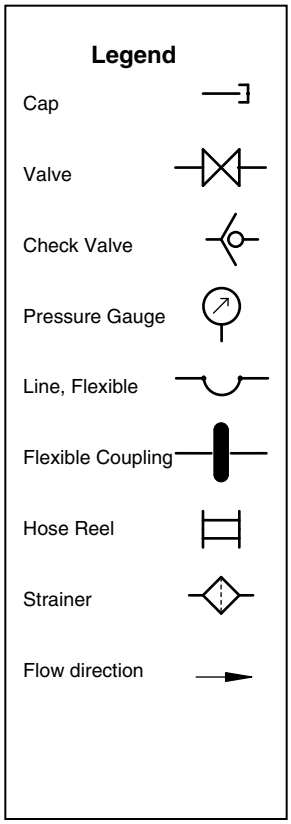
Related Item

First Revision No. 161-NFPA 1906-2013 [Section No. 16.6.1.2]

Submitter Information Verification

Submitter Full Name: Dan McKenzie
Organization: US Department of Agriculture
Affilliation: US Forest Service
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Submittal Date: Mon Apr 28 18:51:56 EDT 2014





Valve Numbering System

The numbering system below has been adopted by the USDA Forest Service (other systems may also be available).

No. 1 tank to pump
No. 2 pump to tank
No. 3 pump to overboard discharge
No. 4 pump to hose reel
No. 5 engine protection
No. 6 pump to primer
No. 7 adjustable pressure relief valve*
No. 8 overboard suction intake to pump
No. 9 reserve supply from tank to pump* ‡
No. 10 tank to plumbing shut-off valve
No. 11 pump or plumbing drain valve
No. 12 pump coolant clean-out* ‡
No. 13 gravity tank drain
No. 14 foam-differential-valve shunt* ‡
No. 15 pump transfer valve*
No. 16 engine cooler line (heat exchanger)* ‡
No. 17 pump bypass
No. 18 low volume gravity (back pack fill)
No. 19 water only valve
No. 20 feed #2 and/or #19*
No. 21 discharge plumbing isolation valve*
No. 22 tank fill with air gap*

** Valves not shown in diagram.*
‡ Valves not commonly used.

Public Comment No. 35-NFPA 1906-2014 [Section No. A.16.13.8]

A.16.13.8

The test of the engine speed advancement interlock system should verify proper functioning for the conditions of chassis transmission(s), parking brake, and pump shift control action status, and indicator status in driving compartment and pump operator's panel indicated in Table A.16.13.8(a) through Table A.16.13.8(d). Testing should be performed with a qualified person positioned in the driving compartment and a qualified person verifying engine speed control status at the pump operator's panel. Shifting of the pump transmission/PTO should be done in accordance with the manufacturer's instructions. [**1901:**A.16.13.8]

Table A.16.13.8(a) Stationary Pump Driven Through Split-Shaft PTO

Chassis Transmission Gear Selected	Parking Brake Status	Pump Shift Control Action Status (Driving Compartment) [a]	Pump Indicator Status (Driving Compartment)	Pump Indicator Status (Pump Operator's Panel)	Engine Speed Control at Pump Operator's Panel	Requir Test
Neutral	On	Road	None	None	No	
Neutral	On	Road	None	"Throttle Ready"	Yes[b]	
Neutral	Off	Road	None	None	No	X
Neutral	On	Engaged	"Pump Engaged"	None	No	
Neutral	On	Engaged	"Pump Engaged"	"Throttle Ready"	Yes[b]	
Neutral	Off	Engaged	"Pump Engaged"	None	No	
Pump gear[c]	On	Engaged	"Pump Engaged" & "Okay to Pump"	"Throttle Ready"	Yes	~~X~~
Pump gear[c]	Off	Engaged	"Pump Engaged"	None	No	
Pump gear[c]	On	Road	None	None	No	X
Pump gear[c]	Off	Road	None	None	No	
Any gear other than neutral and pump gear[c]	On or off	Road	None	None	No	
Any gear other than neutral and pump gear[c]	On or off	Engaged	None	None	No	

[a]Refers to the physical position of the pump shift control (or status of an electrical control action) in the driving compartment. The indicators associated with a particular pump shift control position might or might not provide indication of a particular status.

[b]Engine speed control at the pump operator's panel is permitted for those apparatus that have "Throttle Ready" indication on the pump operator's panel when the chassis transmission is in neutral and the parking brake is engaged. If there is no "Throttle Ready" indication, there is no engine speed control at the pump operator's panel.

[c]Chassis transmission shift selector is placed in position for pumping as indicated on the label provided in the driving compartment.

[**1901:**Table A.16.13.8(a)]

Table A.16.13.8(b) Stationary Pump Driven Through Transmission-Mounted PTO, Front-of-Engine Crankshaft PTO, or Engine Flywheel PTO

Chassis Transmission Gear Selected	Parking Brake Status	Pump Shift Control Action Status (Driving Compartment) *	Indicator Status (Driving Compartment)	Indicator Status (Pump Operator's Panel)	Engine Speed Control at Pump Operator's Panel	Requir Test
Neutral	On	Disengaged	None	None	No*	
Neutral	On	Disengaged	None	"Throttle Ready"	Yes†	
Neutral	Off	Disengaged	None	None	No	X
Neutral	On	Engaged	"Pump Engaged" & "Okay to Pump"	"Pump Engaged & "Throttle Ready"	Yes	
Neutral	Off	Engaged	"Pump Engaged"	"Pump Engaged"	No	
Any gear other than neutral	On	Engaged	"Pump Engaged"	"Pump Engaged"	No	X
Any gear other than neutral	Off	Engaged	"Pump Engaged"	"Pump Engaged"	No	
Any gear other than neutral	On or off	Disengaged	None	None	No	

*Refers to the physical position of the pump shift control (or status of an electrical control action) in the driving compartment. The indicators associated with a particular pump shift control position might or might not provide indication of a particular status.

†Engine speed control at the pump operator's panel is permitted for those apparatus that have "Throttle Ready" indication on the pump operator's panel when the chassis transmission is in neutral and the parking brake is engaged. If there is no "Throttle Ready" indication, there is no engine speed control at the pump operator's panel.

[**1901:**Table A.16.13.8(b)]

Table A.16.13.8(c) Stationary and Pump-and-Roll Pump

Chassis Transmission Gear Selected	Parking Brake Status	Pump Shift Control Action Status (Driving Compartment) *	Indicator Status (Driving Compartment)	Indicator Status (Pump Operator's Panel)	Engine Speed Control at Pump Operator's Panel	Requir Test
Neutral	On	Disengaged	None	None	No	
Neutral	On	Disengaged	None	"Throttle Ready"	Yes†	
Neutral	Off	Disengaged	None	None	No	X
Neutral	On	Engaged	"Pump Engaged" & "Okay to Pump"	"Pump Engaged & "Throttle Ready"	Yes	
Neutral	Off	Engaged	"Pump Engaged"	"Pump Engaged"	No	
Any gear other than neutral	On	Engaged	"Pump Engaged"	"Pump Engaged"	No	X
Any gear other than neutral	Off	Engaged	"Pump Engaged" & "Okay to Pump and Roll"	"Pump Engaged"	No	X
Any gear other than neutral	On or off	Disengaged	None	None	No	

*Refers to the physical position of the pump shift control (or status of an electrical control action) in the driving compartment. The indicators associated with a particular pump shift control position might or might not provide indication of a particular status.

†Engine speed control at the pump operator's panel is permitted for those apparatus that have "Throttle Ready" indication on the pump operator's panel when the chassis transmission is in neutral and the parking brake is engaged. If there is no "Throttle Ready" indication, there is no engine speed control at the pump operator's panel.

[**1901:**Table A.16.13.8(c)]

Table A.16.13.8(d) Stationary Pump Driven Through Transfer Case PTO

Chassis Transmission Gear Selected	Transfer Case	Parking Brake Status	Pump Shift Control Action Status (Driving Compartment) [a]	Indicator Status (Driving Compartment)	Indicator Status (Pump Operator's Panel)	Engine Speed Control at Pump Operator Panel
Neutral	Neutral or engaged	On	Road	None	None	No
Neutral	Neutral or engaged	On	Road	None	"Throttle Ready"	Yes[b]
Neutral	Neutral	Off	Road	None	None	No
Neutral	Engaged	Off	Road	None	None	No
Neutral	Neutral or engaged	On	Engaged	"Pump Engaged"	"Throttle Ready"	Yes[b]
Neutral	Neutral or engaged	Off	Engaged	"Pump Engaged"	None	No
Pump gear[c]	Neutral	On	Engaged	"Pump Engaged" & "Okay to Pump"	None	Yes
Pump gear[c]	Engaged	On	Engaged	"Pump Engaged"	None	No
Pump gear[c]	Neutral or engaged	Off	Engaged	"Pump Engaged"	None	No
Pump gear[c]	Neutral or engaged	On	Road	None	None	No
Pump gear[c]	Neutral or engaged	Off	Road	None	None	No
Any gear other than neutral and pump gear[c]	Neutral or engaged	On or off	Road or engaged	None	None	No

[a]Refers to the physical position of the pump shift control (or status of an electrical control action) in the driving compartment. The indicators associated with a particular pump shift control position might or might not provide indication of a particular status.

[b]Engine speed control at the pump operator's panel is permitted for those apparatus that have "Throttle Ready" indication on the pump operator's panel when the chassis transmission is in neutral and the parking brake is engaged. If there is no "Throttle Ready" indication, there is no engine speed control at the pump operator's panel.

[c]Chassis transmission shift selector is placed in position for pumping as indicated on the label provided in the driving compartment.

[**1901:**Table A.16.13.8(d)]

Statement of Problem and Substantiation for Public Comment

Per 16.13.8.1, this case is not a required case, and the test can not apply to a case where throttle control is supposed to be enabled.

Related Item

Public Input No. 137-NFPA 1906-2013 [Section No. A.16.13.8]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
State:
Zip:
Submittal Date: Sat Feb 22 20:21:07 EST 2014

Public Comment No. 36-NFPA 1906-2014 [Section No. A.16.13.8]

A.16.13.8

The test of the engine speed advancement interlock system should verify proper functioning for the conditions of chassis transmission(s), parking brake, and pump shift control action status, and indicator status in driving compartment and pump operator's panel indicated in Table A.16.13.8(a) through Table A.16.13.8(d). Testing should be performed with a qualified person positioned in the driving compartment and a qualified person verifying engine speed control status at the pump operator's panel. Shifting of the pump transmission/PTO should be done in accordance with the manufacturer's instructions. [**1901:**A.16.13.8]

Table A.16.13.8(a) Stationary Pump Driven Through Split-Shaft PTO

Chassis Transmission Gear Selected	Parking Brake Status	Pump Shift Control Action Status (Driving Compartment) [a]	Pump Indicator Status (Driving Compartment)	Pump Indicator Status (Pump Operator's Panel)	Engine Speed Control at Pump Operator's Panel	Requir Test
Neutral	On	Road	None	None	No	
Neutral	On	Road	None	"Throttle Ready"	Yes[b]	
Neutral	Off	Road	None	None	No	X
Neutral	On	Engaged	"Pump Engaged"	None	No	
Neutral	On	Engaged	"Pump Engaged"	"Throttle Ready"	Yes[b]	
Neutral	Off	Engaged	"Pump Engaged"	None	No	
Pump gear[c]	On	Engaged	"Pump Engaged" & "Okay to Pump"	"Throttle Ready"	Yes	~~X~~
Pump gear[c]	Off	Engaged	"Pump Engaged"	None	No	
Pump gear[c]	On	Road	None	None	No	X
Pump gear[c]	Off	Road	None	None	No	
Any gear other than neutral and pump gear[c] - [d]	On or off	Road	None	None	No	
Any gear other than neutral and pump gear[c] - [d]	On or off	Engaged	None	None	No	

[a]Refers to the physical position of the pump shift control (or status of an electrical control action) in the driving compartment. The indicators associated with a particular pump shift control position might or might not provide indication of a particular status.

[b]Engine speed control at the pump operator's panel is permitted for those apparatus that have "Throttle Ready" indication on the pump operator's panel when the chassis transmission is in neutral and the parking brake is engaged. If there is no "Throttle Ready" indication, there is no engine speed control at the pump operator's panel.

[c]Chassis transmission shift selector is placed in position for pumping as indicated on the label provided in the driving compartment.

[d] Chassis transmission shift selector is placed in some position other than neutral or the position for pumping as indicated on the label provided in the driving compartment.

[**1901:**Table A.16.13.8(a)]

Table A.16.13.8(b) Stationary Pump Driven Through Transmission-Mounted PTO, Front-of-Engine Crankshaft PTO, or Engine Flywheel PTO

Chassis Transmission Gear Selected	Parking Brake Status	Pump Shift Control Action Status (Driving Compartment) *[a]	Indicator Status (Driving Compartment)	Indicator Status (Pump Operator's Panel)	Engine Speed Control at Pump Operator's Panel	Requi Tes
Neutral	On	Disengaged	None	None	No*	
Neutral	On	Disengaged	None	"Throttle Ready"~~Yes‡~~	Yes [b]	
Neutral	Off	Disengaged	None	None	No	X
Neutral	On	Engaged	"Pump Engaged" & "Okay to Pump"	"Pump Engaged & "Throttle Ready"	Yes	
Neutral	Off	Engaged	"Pump Engaged"	"Pump Engaged"	No	
Any gear other than neutral	On	Engaged	"Pump Engaged"	"Pump Engaged"	No	X
Any gear other than neutral	Off	Engaged	"Pump Engaged"	"Pump Engaged"	No	
Any gear other than neutral	On or off	Disengaged	None	None	No	

* [a] Refers to the physical position of the pump shift control (or status of an electrical control action) in the driving compartment. The indicators associated with a particular pump shift control position might or might not provide indication of a particular status.

~~‡Engine~~ [b] Engine speed control at the pump operator's panel is permitted for those apparatus that have "Throttle Ready" indication on the pump operator's panel when the chassis transmission is in neutral and the parking brake is engaged. If there is no "Throttle Ready" indication, there is no engine speed control at the pump operator's panel.

[**1901:**Table A.16.13.8(b)]

Table A.16.13.8(c) Stationary and Pump-and-Roll Pump

Chassis Transmission Gear Selected	Parking Brake Status	Pump Shift Control Action Status (Driving Compartment) *[a]	Indicator Status (Driving Compartment)	Indicator Status (Pump Operator's Panel)	Engine Speed Control at Pump Operator's Panel	Requi Tes
Neutral	On	Disengaged	None	None	No	
Neutral	On	Disengaged	None	"Throttle Ready"~~Yes‡~~	Yes[b]	
Neutral	Off	Disengaged	None	None	No	X
Neutral	On	Engaged	"Pump Engaged" & "Okay to Pump"	"Pump Engaged & "Throttle Ready"	Yes	
Neutral	Off	Engaged	"Pump Engaged"	"Pump Engaged"	No	
Any gear other than neutral	On	Engaged	"Pump Engaged"	"Pump Engaged"	No	X
Any gear other than neutral	Off	Engaged	"Pump Engaged" & "Okay to Pump and Roll"	"Pump Engaged"	No	X
Any gear other than neutral	On or off	Disengaged	None	None	No	

*[a] Refers to the physical position of the pump shift control (or status of an electrical control action) in the driving compartment. The indicators associated with a particular pump shift control position might or might not provide indication of a particular status.

~~‡Engine~~ [b] Engine speed control at the pump operator's panel is permitted for those apparatus that have "Throttle Ready" indication on the pump operator's panel when the chassis transmission is in neutral and the parking brake is engaged. If there is no "Throttle Ready" indication, there is no engine speed control at the pump operator's panel.

[**1901:**Table A.16.13.8(c)]

Table A.16.13.8(d) Stationary Pump Driven Through Transfer Case PTO

Chassis Transmission Gear Selected	Transfer Case	Parking Brake Status	Pump Shift Control Action Status (Driving Compartment) [a]	Indicator Status (Driving Compartment)	Indicator Status (Pump Operator's Panel)	Engine Speed Control at Pump Operator Panel
Neutral	Neutral or engaged	On	Road	None	None	No
Neutral	Neutral or engaged	On	Road	None	"Throttle Ready"	Yes[b]
Neutral	Neutral	Off	Road	None	None	No
Neutral	Engaged	Off	Road	None	None	No
Neutral	Neutral or engaged	On	Engaged	"Pump Engaged"	"Throttle Ready"	Yes[b]
Neutral	Neutral or engaged	Off	Engaged	"Pump Engaged"	None	No
Pump gear[c]	Neutral	On	Engaged	"Pump Engaged" & "Okay to Pump"	None	Yes
Pump gear[c]	Engaged	On	Engaged	"Pump Engaged"	None	No
Pump gear[c]	Neutral or engaged	Off	Engaged	"Pump Engaged"	None	No
Pump gear[c]	Neutral or engaged	On	Road	None	None	No
Pump gear[c]	Neutral or engaged	Off	Road	None	None	No
Any gear other than neutral and pump gear[c] - [d]	Neutral or engaged	On or off	Road or engaged	None	None	No

[a]Refers to the physical position of the pump shift control (or status of an electrical control action) in the driving compartment. The indicators associated with a particular pump shift control position might or might not provide indication of a particular status.

[b]Engine speed control at the pump operator's panel is permitted for those apparatus that have "Throttle Ready" indication on the pump operator's panel when the chassis transmission is in neutral and the parking brake is engaged. If there is no "Throttle Ready" indication, there is no engine speed control at the pump operator's panel.

[c]Chassis transmission shift selector is placed in position for pumping as indicated on the label provided in the driving compartment.

[d] Chassis transmission shift selector is placed in some position other than neutral or the position for pumping as indicated on the label provided in the driving compartment.

[**1901:**Table A.16.13.8(d)]

Statement of Problem and Substantiation for Public Comment

Make the footnotes correct and make symbols consistent across all 4 tables to reduce confusion.

Related Item

Public Input No. 137-NFPA 1906-2013 [Section No. A.16.13.8]

Submitter Information Verification

Submitter Full Name: Thomas Stalnaker
Organization: Goshen Fire Company
Street Address:
City:
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Submittal Date: Sat Feb 22 20:28:41 EST 2014

Public Comment No. 56-NFPA 1906-2014 [Section No. A.16.13.8]

A.16.13.8—

Move entire section to body of Standard. Add a column between "Pump Indicator Status (Pump Operator's Panel)" and "Engine Speed Control at Pump Operator's Panel" titled "Throttle Authority in Cab" with all entries "Yes." Delete column "Required Test."

—

The test of the engine speed advancement interlock system should verify proper functioning for the conditions of chassis transmission(s), parking brake, and pump shift control action status, and indicator status in driving compartment and pump operator's panel indicated in Table A.16.13.8(a) through Table A.16.13.8(d) . Testing should be performed with a qualified person positioned in the driving compartment and a qualified person verifying engine speed control status at the pump operator's panel. Shifting of the pump transmission/PTO should be done in accordance with the manufacturer's instructions. [**1901:** A.16.13.8]

Table A.16.13.8(a) Stationary Pump Driven Through Split-Shaft PTO

Chassis Transmission Gear Selected	Parking Brake Status	Pump Shift Control Action Status (Driving Compartment) [a]	Pump Indicator Status (Driving Compartment)	Pump Indicator Status (Pump Operator's Panel)	Engine Speed Control at Pump Operator's Panel	R
Neutral	On	Road	None	None	No	
Neutral	On	Road	None	"Throttle Ready"	Yes[b]	
Neutral	Off	Road	None	None	No	
Neutral	On	Engaged	"Pump Engaged"	None	No	
Neutral	On	Engaged	"Pump Engaged"	"Throttle Ready"	Yes[b]	
Neutral	Off	Engaged	"Pump Engaged"	None	No	
Pump gear[c]	On	Engaged	"Pump Engaged" & "Okay to Pump"	"Throttle Ready"	Yes	
Pump gear[c]	Off	Engaged	"Pump Engaged"	None	No	
Pump gear[c]	On	Road	None	None	No	
Pump gear[c]	Off	Road	None	None	No	
Any gear other than neutral and pump gear[c]	On or off	Road	None	None	No	
Any gear other than neutral and pump gear[c]	On or off	Engaged	None	None	No	

[a] Refers to the physical position of the pump shift control (or status of an electrical control action) in the driving compartment. The indicators associated with a particular pump shift control position might or might not provide indication of a particular status.

[b] Engine speed control at the pump operator's panel is permitted for those apparatus that have "Throttle Ready" indication on the pump operator's panel when the chassis transmission is in neutral and the parking brake is engaged. If there is no "Throttle Ready" indication, there is no engine speed control at the pump operator's panel.

[c] Chassis transmission shift selector is placed in position for pumping as indicated on the label provided in the driving compartment.

[**1901:** Table A.16.13.8(a)]

Table A.16.13.8(b) Stationary Pump Driven Through Transmission-Mounted PTO, Front-of-Engine Crankshaft PTO, or Engine Flywheel PTO

Chassis Transmission Gear Selected	Parking Brake Status	Pump Shift Control Action Status (Driving Compartment) *	Indicator Status (Driving Compartment)	Indicator Status (Pump Operator's Panel)	Engine Speed Control at Pump Operator's Panel	R
Neutral	On	Disengaged	None	None	No*	
Neutral	On	Disengaged	None	"Throttle Ready"	Yes†	
Neutral	Off	Disengaged	None	None	No	
Neutral	On	Engaged	"Pump Engaged" & "Okay to Pump"	"Pump Engaged & "Throttle Ready"	Yes	
Neutral	Off	Engaged	"Pump Engaged"	"Pump Engaged"	No	
Any gear other than neutral	On	Engaged	"Pump Engaged"	"Pump Engaged"	No	
Any gear other than neutral	Off	Engaged	"Pump Engaged"	"Pump Engaged"	No	
Any gear other than neutral	On or off	Disengaged	None	None	No	

*Refers to the physical position of the pump shift control (or status of an electrical control action) in the driving compartment. The indicators associated with a particular pump shift control position might or might not provide indication of a particular status.

†Engine speed control at the pump operator's panel is permitted for those apparatus that have "Throttle Ready" indication on the pump operator's panel when the chassis transmission is in neutral and the parking brake is engaged. If there is no "Throttle Ready" indication, there is no engine speed control at the pump operator's panel.

[**1901:** Table A.16.13.8(b)]

Table A.16.13.8(c) Stationary and Pump-and-Roll Pump

Chassis Transmission Gear Selected	Parking Brake Status	Pump Shift Control Action Status (Driving Compartment) *	Indicator Status (Driving Compartment)	Indicator Status (Pump Operator's Panel)	Engine Speed Control at Pump Operator's Panel	R
Neutral	On	Disengaged	None	None	No	
Neutral	On	Disengaged	None	"Throttle Ready"	Yes†	
Neutral	Off	Disengaged	None	None	No	
Neutral	On	Engaged	"Pump Engaged" & "Okay to Pump"	"Pump Engaged & "Throttle Ready"	Yes	
Neutral	Off	Engaged	"Pump Engaged"	"Pump Engaged"	No	
Any gear other than neutral	On	Engaged	"Pump Engaged"	"Pump Engaged"	No	
Any gear other than neutral	Off	Engaged	"Pump Engaged" & "Okay to Pump and Roll"	"Pump Engaged"	No	
Any gear other than neutral	On or off	Disengaged	None	None	No	

*Refers to the physical position of the pump shift control (or status of an electrical control action) in the driving compartment. The indicators associated with a particular pump shift control position might or might not provide indication of a particular status.

†Engine speed control at the pump operator's panel is permitted for those apparatus that have "Throttle Ready" indication on the pump operator's panel when the chassis transmission is in neutral and the parking brake is engaged. If there is no "Throttle Ready" indication, there is no engine speed control at the pump operator's panel.

[**1901:** Table A.16.13.8(c)]

Table A.16.13.8(d) Stationary Pump Driven Through Transfer Case PTO

Chassis Transmission Gear Selected	Transfer Case	Parking Brake Status	Pump Shift Control Action Status (Driving Compartment) [a]	Indicator Status (Driving Compartment)	Indicator Status (Pump Operator's Panel)	E S Co P Op P
Neutral	Neutral or engaged	On	Road	None	None	
Neutral	Neutral or engaged	On	Road	None	"Throttle Ready"	Y
Neutral	Neutral	Off	Road	None	None	
Neutral	Engaged	Off	Road	None	None	
Neutral	Neutral or engaged	On	Engaged	"Pump Engaged"	"Throttle Ready"	Y
Neutral	Neutral or engaged	Off	Engaged	"Pump Engaged"	None	
Pump gear[c]	Neutral	On	Engaged	"Pump Engaged" & "Okay to Pump"	None	
Pump gear[c]	Engaged	On	Engaged	"Pump Engaged"	None	
Pump gear[c]	Neutral or engaged	Off	Engaged	"Pump Engaged"	None	
Pump gear[c]	Neutral or engaged	On	Road	None	None	
Pump gear[c]	Neutral or engaged	Off	Road	None	None	
Any gear other than neutral and pump gear[c]	Neutral or engaged	On or off	Road or engaged	None	None	

[a] Refers to the physical position of the pump shift control (or status of an electrical control action) in the driving compartment. The indicators associated with a particular pump shift control position might or might not provide indication of a particular status.

[b] Engine speed control at the pump operator's panel is permitted for those apparatus that have "Throttle Ready" indication on the pump operator's panel when the chassis transmission is in neutral and the parking brake is engaged. If there is no "Throttle Ready" indication, there is no engine speed control at the pump operator's panel.

[c] Chassis transmission shift selector is placed in position for pumping as indicated on the label provided in the driving compartment.

[**1901:** Table A.16.13.8(d)]

Statement of Problem and Substantiation for Public Comment

This section encompasses very important safety requirements that all fire apparatus must meet; therefore, these testing requirements should be in the body of the Standard and not in the Annex. It only takes two people 10 to 15 minutes and no equipment to carry out the testing of an apparatus.

Related Item

First Revision No. 119-NFPA 1906-2013 [Section No. A.16.13.8]

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Public Comment No. 45-NFPA 1906-2014 [Section No. A.20.2.4]

A.20.2.4

Around-the-pump proportioning systems operate with an eductor installed between the water pump discharge and the intake. A small flow of water from the water pump discharge passes through the eductor, which creates a vacuum that causes foam concentrate to be pushed into the eductor and discharged into the pump intake. Around-the-pump foam proportioning systems require a pressure differential ~~of 30 percent to 50 percent of inlet pressure~~ for efficient operation. Most systems are limited to a maxium intake pressure of 7 to 15 psi. [**1901:**A.20.2.4]

A manual around-the-pump proportioning system utilizes a manually adjustable foam concentrate metering valve to control the proportioning ratio. *[See Figure A.20.2.4(a).]* [**1901:**A.20.2.4]

A flowmeter-sensing around-the-pump proportioning system utilizes a flowmeter-sensing system to monitor total solution flow and foam concentrate flow. The flow data are transmitted to an electronic control that controls the proportioning ratio through a foam concentrate metering valve. *[See Figure A.20.2.4(b).]* [**1901:**A.20.2.4]

Figure A.20.2.4(a) Manual Around-the-Pump Proportioning System. [1901:Figure A.20.2.4(a)]

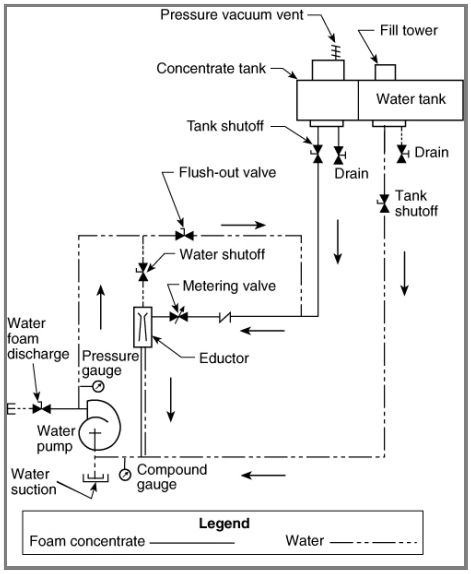
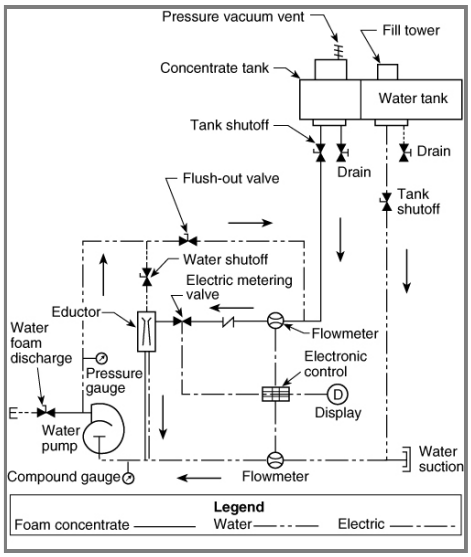


Figure A.20.2.4(b) Flowmeter-Sensing Around-the-Pump Proportioning System. [1901:Figure A.20.2.4(b)]



Statement of Problem and Substantiation for Public Comment

The current around the pump foam systems are designed for a limited intake pressure which calculates out to a greater pressure differential than the 30 to 50 precent we were listing. Additionally most of the systems limit the pump intake pressure up to 7 to 15psi.

Related Item

First Revision No. 68-NFPA 1906-2013 [New Section after 16.7.8.3.1]

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Public Comment No. 38-NFPA 1906-2014 [Section No. A.21.9.1.1.1]

A.21.9.1.1.1

The CAFS capacity rating test is performed with the system discharging 2 gpm (~~7.6~~ 250 L/min) of water for every 1 SCFM (~~28.3 L/min at standard temperature and pressure~~ 1 SCMM) of compressed air discharge. This test verifies that the system is capable of these capacities without failure of any component of the CAFS. It is recognized that in actual fire fighting use, the ratio of waterflow to airflow might vary depending on how wet or dry the CAF stream is desired for a particular application. [**1901:**A.21.9.1.1.1]

Statement of Problem and Substantiation for Public Comment

Air discharge from as CAF system in metric is measured in SCMM per 21.2.2.1. This change corrects the units while providing the same ratio of air to water as the US units.

Related Item

Public Input No. 33-NFPA 1906-2013 [Section No. 21.7.5.1]

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Public Comment No. 11-NFPA 1906-2014 [Section No. A.28.6.10]

A.28.6.10

For apparatus that will be exposed to freezing temperatures, consideration should be given to a winterization system to include a small tank for antifreeze solution and proper valves to inject a mixture of antifreeze into the pump and hose reel system. It can be difficult to drain a piston or ~~plunge~~ plunger type pump and hose reel with a standard drain valve. Air blowout systems could be used on trucks with air systems. An antifreeze injection system is a simple and effective way to winterize the pump and hose reel system.

Statement of Problem and Substantiation for Public Comment

This may be a typo, or may be the use of a seldom used term. These pumps are much more often called plunger pumps than plunge pumps, although plunge is used occasionally.

Related Item

First Revision No. 124-NFPA 1906-2013 [New Section after 27.3.5]

Submitter Information Verification

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