DELETED

First Revision No. 146-NFPA 1911-2015 [Global Input]

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

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 14:33:46 EDT 2015

Committee Statement

Committee Statement: The committee has chosen to change the title of the document, and have made the changes throughout the document, to reflect the change in document title. The committee has changed the document title recognizing the fact that more than just fire apparatus can use this document for the intended purpose of the document. By changing the title of the document, as well as with the addition of some new chapters and many textual changes of the requirements within the document, the document is more inclusive of the emergency responder community.

Response Message:

First Revision No. 48-NFPA 1911-2015 [Section No. 1.1.1]

1.1.1

This standard defines the minimum requirements for establishing an inspection, maintenance, and testing program for in-service ~~fire apparatus~~ emergency vehicles .

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Mon Jun 01 10:26:09 EDT 2015

Committee Statement

Committee Statement: The committee agrees with the submitters intent but believe this text better suites the needs of the end user.
Response Message:

Public Input No. 75-NFPA 1911-2014 [Section No. 1.1.1]

First Revision No. 143-NFPA 1911-2015 [Sections 1.1.2, 1.1.3]

1.1.2

This standard includes guidelines for ~~fire apparatus~~ emergency vehicle refurbishment and retirement.

1.1.3

This standard identifies the systems and items on a ~~fire apparatus~~ emergency vehicle that are to be inspected and maintained, the frequency of such inspections and maintenance, and the requirements and procedures for conducting performance tests on components.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 13:52:16 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 49-NFPA 1911-2015 [Section No. 1.2.1]

1.2.1

The primary purpose of this standard is to provide requirements for an inspection, maintenance, and testing program that will ensure that in-service ~~fire apparatus~~ emergency vehicle are serviced and maintained to keep them in safe operating condition and ready for response at all times.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Mon Jun 01 10:28:06 EDT 2015

Committee Statement

Committee Statement: The committee agrees with the submitters intent but they believe this text better meets the needs of the end users of the document.

Response Message:

Public Input No. 76-NFPA 1911-2014 [Section No. 1.2.1]

First Revision No. 144-NFPA 1911-2015 [Section No. 1.2.2]

1.2.2

The secondary purpose of this standard is to establish that safety is a primary concern for the continued in-service use of ~~a fire apparatus~~ an emergency vehicle and the ultimate decision to refurbish or retire that ~~fire apparatus~~ emergency vehicle .

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 13:53:14 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 145-NFPA 1911-2015 [Section No. 1.3]

1.3 Application.

1.3.1

This standard shall apply to public, ~~or private organizations utilizing fire apparatus~~ governmental, military, and private organizations providing rescue, fire suppression, emergency medical services, hazardous materials mitigation, special operations, or other emergency services .

1.3.2

This standard shall apply to all in-service ~~fire apparatus~~ emergency vehicles , regardless of the year of manufacture.

1.3.3

This standard shall apply to permanently installed components on ~~fire apparatus~~ emergency vehicles .

1.3.4

This standard shall not apply to portable equipment carried on ~~fire apparatus~~ emergency vehicles unless otherwise stated in specific requirements.

1.3.5

The provisions of this standard shall not supersede any instructions, specifications, or practices defined or required by the ~~fire apparatus~~ emergency vehicle manufacturer, component manufacturer, equipment manufacturer, or authority having jurisdiction.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 13:54:21 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 1-NFPA 1911-2015 [Chapter 2]

Chapter 2 Referenced Publications

2.1 General.

The documents or portions thereof listed in this chapter are referenced within this standard and shall be considered part of the requirements of this document.

2.2 NFPA Publications.

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

NFPA 1002, *Standard for Fire Apparatus Driver/Operator Professional Qualifications,* 2014 edition.

NFPA 1071, *Standard for Emergency Vehicle Technician Professional Qualifications,* ~~2011~~ 2016 edition.

NFPA 1901, *Standard for Automotive Fire Apparatus,* ~~2009~~ 2016 edition.

NFPA 1906, *Standard for Wildland Fire Apparatus,* 2016 edition.

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

NFPA 1962, *Standard for the Care, Use, Inspection, Service Testing, and Replacement of Fire Hose, Couplings, Nozzles, and Fire Hose Appliances,* 2013 edition.

NFPA 1989, *Standard on Breathing Air Quality for Emergency Services Respiratory Protection,* ~~2008~~ 2013 edition.

2.3 Other Publications.

2.3.1 ASME Publications.

~~American Society of Mechanical Engineers, Three Park~~ American Society of Mechanical Engineers, Two Park Avenue, New York, NY 10016-5990.

ASME B40.100, *Pressure Gauges and Gauge Attachments*, ~~2005~~ 2013 .

2.3.2 ASNT Publications.

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

ASNT CP-189, *Standard for Qualification and Certification of Nondestructive Testing Personnel*, ~~2001~~ 2011 .

2.3.3 ASTM Publications.

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

ASTM ~~B 647~~ B647 , *Standard Test Method for Indentation Hardness of Aluminum Alloys by Means of a Webster Hardness Gage*, ~~1984 (reconfirmed 2006)~~ 2010 .

ASTM ~~B 648~~ B648 , *Standard Test Method for Indentation Hardness of Aluminum Alloys by Means of a Barcol Impressor*, ~~1978 (reconfirmed 2006)~~ 2010 .

ASTM ~~E 6~~ E6 , *Standard Terminology Relating to Methods of Mechanical Testing*, ~~2006~~ 2011 e1 .

ASTM ~~E 10~~ E10 , *Standard Test Method for Brinell Hardness of Metallic Materials*, ~~2001~~ 2012 .

ASTM ~~E 18~~ E18 , *Standard Test Methods for Rockwell Hardness and Rockwell Superficial Hardness of Metallic Materials*, ~~2005~~ 2014 .

~~ASTM E 92, *Standard Test Method for Vickers Hardness of Metallic Materials* , 1982 (reconfirmed 2003).~~

ASTM ~~E 114~~ E114 , *Standard Practice for Ultrasonic Pulse-Echo Straight-Beam Examination by the Contact Method*, ~~1995 (reconfirmed 2005)~~ 2010 .

ASTM ~~E 165~~ E165/E165M , *Standard Test Method for Liquid Penetrant Examination*, ~~2002~~ 2012 .

ASTM E384, *Standard Test Method for Knoop and Vickers Hardness of Materials* , 2011 e1.

ASTM ~~E 569~~ E569/E569M , *Standard Practice for Acoustic Emission Monitoring of Structures During Controlled Stimulation*, ~~2002~~ 2013 .

ASTM ~~E 650~~ E650/E650M , *Standard Guide for Mounting Piezoelectric Acoustic Emission Sensors*, ~~1997 (reconfirmed 2002)~~ 2012 .

ASTM ~~E 709~~ E709 , *Standard Guide for Magnetic Particle Examination*, ~~2001~~ 2014 .

ASTM ~~E 797~~ E797/E797M , *Standard Practice for Measuring Thickness by Manual Ultrasonic Pulse-Echo Contact Method*, ~~2005~~ 2010 .

ASTM ~~E 1004~~ E1004 , *Standard Practice for Determining Electrical Conductivity Using the Electromagnetic (Eddy-Current) Method,*~~2002~~ 2009 .

ASTM ~~E 1220~~ E1220 , *Standard Test Method for Visible Penetrant Examination Using the Solvent-Removable Process*, ~~2005~~ 2010 .

ASTM ~~E 1316~~ E1316 , *Standard Terminology for Nondestructive Testing*, ~~2006~~ 2013 .

ASTM ~~E 1418~~ E1418 , *Standard Test Method for Visible Penetrant Examination Using the Water-Washable Process*, ~~2005~~ 2010 .

2.3.4 AWS Publications.

American Welding Society, ~~550 N.W. LeJeune Road~~ 8669 NW 36 Street, #130 , Miami, FL ~~33126~~ 33166-6672 .

AWS B1.10/B1.10M , *Guide for the Nondestructive Examination of Welds*, ~~1999~~ 2009 .

AWS D1.1/D1.1M , *Structural Welding Code — Steel*, ~~2005~~ 2011 .

AWS D1.2/D1.2M , *Structural Welding Code — Aluminum*, ~~2003~~ 2014 .

2.3.5 ISO Publications.

International Organization for Standardization, ~~1 rue de Varembé, Case postale 56, CH-1211 Genève 20,~~ ISO Central Secretariat, BIBC II, Chemin de Blandonnet 8, CP 401, 1214 Vernier, Geneva, Switzerland.

ISO/IEC 17020, Conformity Assessment - ~~*General criteria*~~ *Requirements* *for the operation of various types of bodies performing inspection*, ~~1998~~ 2012 .

~~**2.3.6** SAE Publications.~~

~~Society of Automotive Engineers, 400 Commonwealth Drive, Warrendale, PA 15096.~~

~~SAE J959, *Lifting Crane, Wire-Rope Strength Factors* , 1991.~~

2.3.6 U.S. Government Publications.

U.S. Government ~~Printing~~ Publishing Office, 732 North Capitol Street, NW, Washington, DC 20402-0001 .

Title 49, Code of Federal Regulations, Part 399.211, Appendix G, “Minimum Periodic Inspection Standards,” ~~1988~~ 2013 .

2.3.7 Other Publications.

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

2.4 References for Extracts in Mandatory Sections.

NFPA 70®, National Electrical Code®, ~~2011~~ 2017 edition.

NFPA 99, *Health Care Facilities Code,* ~~2012~~ 2015 edition.

NFPA 414, *Standard for Aircraft Rescue and Fire-Fighting Vehicles,* ~~2012~~ 2017 edition.

NFPA 1451, *Standard for a Fire Service Vehicle Operations Training Program,* ~~2007~~ 2018 edition.

NFPA 1901, *Standard for Automotive Fire Apparatus,* ~~2009~~ 2016 edition.

NFPA 1912, *Standard for Fire Apparatus Refurbishing,* ~~2011~~ 2016 edition.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 13 09:48:27 EDT 2015

Committee Statement

Committee Statement: Referenced current organization names, addresses, and editions.
Response Message:

Public Input No. 58-NFPA 1911-2014 [Chapter 2]
Public Input No. 63-NFPA 1911-2014 [Section No. 2.3.6]
Public Input No. 62-NFPA 1911-2014 [Section No. 2.3.1]

First Revision No. 58-NFPA 1911-2015 [Section No. 3.3.12]

3.3.12 Automatic Electrical Load Management System.

A device that continuously monitors the electrical system voltage and automatically sheds predetermined loads in a selected order to prevent overdischarging of the ~~apparatus'~~ emergency vehicle's batteries.

[~~**1901,** 2016~~]

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 10:03:21 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 59-NFPA 1911-2015 [Section No. 3.3.37]

3.3.37 Documentation.

Any written or electronic data or information relative to the ~~apparatus~~ emergency vehicle , including information on its operational checks, diagnostic checks, inspection, maintenance, and performance testing.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 10:04:38 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 60-NFPA 1911-2015 [Section No. 3.3.40]

3.3.40 Drivetrain.

The parts of an ~~fire apparatus~~ emergency vehicle that transmit power from the engine to the wheels, including the transmission, split shaft power takeoff, midship pump transmission, drive shaft(s), clutch, differential(s), and axles.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 10:05:29 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 18-NFPA 1911-2015 [New Section after 3.3.46]

3.3.47* Emergency Vehicle.

A motor vehicle with a GVWR of 5001 lbs (2268 kg) or more used by public, governmental, military, and private organizations to provide rescue, fire suppression, emergency medical services, hazardous materials mitigation, special operations, or other emergency services.

Supplemental Information

File Name	Description
Emergency_Vehicle_Definition_and_Annex_A_item.docx	

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 13 16:56:02 EDT 2015

Committee Statement

Committee Statement: The committee has added this definition as there are requirements included in the document now using this term. The committee is also adding new Annex A material to this section as well.

Response Message:

Public Input No. 77-NFPA 1911-2014 [New Section after 3.3.136]

3.3.X* Emergency Vehicle. A motor vehicle with a GVWR of 5001 lbs (2268 kg) or more used by public, governmental, military, and private organizations to provide rescue, fire suppression, emergency medical services, hazardous materials mitigation, special operations, or other emergency services.

A.3.3.X Title 49, CFR 301 defines a motor vehicle, in part, as a vehicle driven or drawn by mechanical power and manufactured primarily for use on public streets, roads and highways. There is nothing in this standard from preventing the AHJ from applying these requirements to any vehicle with a GVWR of less than 5001 lbs.

First Revision No. 61-NFPA 1911-2015 [Section No. 3.3.58]

3.3.59 Frame.

The basic structural system that transfers the weight of the ~~fire apparatus~~ emergency vehicle to the suspension system.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 10:06:28 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 62-NFPA 1911-2015 [Section No. 3.3.63]

3.3.64 In-Service ~~Fire Apparatus~~ Emergency Vehicles .

Any ~~fire apparatus~~ emergency vehicles , including reserve ~~apparatus~~ vehicles , that ~~is~~ are available for use under emergency conditions to transport personnel and equipment and to support suppression of fires and mitigation of other hazardous conditions.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 10:07:07 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 63-NFPA 1911-2015 [Sections 3.3.79, 3.3.80, 3.3.81]

3.3.80 Maintenance.

The act of servicing ~~a fire apparatus~~ an emergency vehicle or a component(s) in order to keep the vehicle and its components in ~~proper~~ the required operating condition.

3.3.81 Manufacturer's Recommendation (Specification).

Any requirement or suggestion an ~~fire apparatus~~ emergency vehicle builder or component producer makes in regard to care and maintenance of its product(s).

3.3.82 Modification.

An alteration or adjustment to any component that is a deviation from the original specifications or design of the ~~fire apparatus~~ emergency vehicle .

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 10:07:58 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency. The committee also removed the unenforceable term "proper".
Response Message:

First Revision No. 64-NFPA 1911-2015 [Sections 3.3.86, 3.3.87]

3.3.87 Operational Check.

~~To determine the operational readiness~~ Observation of the operation of a component on ~~a fire apparatus~~ an emergency vehicle ~~by observing the actual operation of the component~~ to determine its operational readiness .

3.3.88 Operator.

A person qualified to operate ~~a fire apparatus~~ an emergency vehicle . ~~[**1912,** 2011]~~

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 10:11:19 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 65-NFPA 1911-2015 [Section No. 3.3.90]

3.3.91 Out of Service.

~~The condition when an~~ When an ~~apparatus~~ emergency vehicle or component is not usable due to an unsafe or inoperable condition.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 10:12:14 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 66-NFPA 1911-2015 [Section No. 3.3.93]

3.3.94 Performance Tests.
Tests made after ~~a~~ an ~~fire apparatus~~ emergency vehicle has been put into service to determine ~~if~~ whether its performance meets predetermined specifications or standards.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 10:12:44 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 67-NFPA 1911-2015 [Section No. 3.3.97]

3.3.98 Powered Equipment Rack.

A power-operated device that is intended to provide storage of hard suction hoses, ground ladders, or other equipment, generally in a location above ~~apparatus~~ emergency vehicle compartments. [~~**1901,** 2016~~]

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 10:13:16 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 68-NFPA 1911-2015 [Sections 3.3.108, 3.3.109]

3.3.109 Reserve ~~Fire Apparatus~~ Emergency Vehicle .

~~A fire apparatus~~ An emergency vehicle retained as a backup ~~apparatus~~ emergency vehicle and used to replace a primary ~~apparatus~~ emergency vehicle when the primary ~~apparatus~~ emergency vehicle is out of service.

3.3.110 Retired ~~Fire Apparatus~~ Emergency Vehicle .

A vehicle that was previously ~~a fire apparatus~~ an emergency vehicle but ~~which~~ , due to age or condition, is no longer capable of supporting the suppression of fires, the mitigation of hazardous situations, or operations at ~~an~~ emergency scenes .

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 10:14:11 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 69-NFPA 1911-2015 [Section No. 3.3.116]

3.3.117 Severe Service.

Those conditions that apply to the rigorous, harsh, and unique applications of ~~fire apparatus~~ emergency vehicles , including, but not limited to, local operating and driving conditions, frequency of use, and manufacturer's severe service (duty) parameters.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 10:15:19 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 70-NFPA 1911-2015 [Sections 3.3.128, 3.3.129]

3.3.129 Total Continuous Electrical Load.

The total current required to operate all of the devices permanently connected to the ~~apparatus~~ emergency vehicle that can be simultaneously energized excluding intermittent-type loads such as primers and booster reel rewind motors. ~~[**1901,** 2009]~~

3.3.130 Transfer Pump.

A water pump mounted on the ~~apparatus~~ emergency vehicle that is used to transfer water to and from the ~~fire apparatus~~ emergency vehicle .

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 10:15:58 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 2-NFPA 1911-2015 [Section No. 3.3.134]

3.3.135 Visual ~~Inspection~~ Check .
~~Inspection~~ Examination by the eye without recourse to any optical devices~~,~~ except ~~prescription~~ eyeglasses.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 13 09:55:28 EDT 2015

Committee Statement

Committee Statement: Since the word "inspection" is defined as a more in depth look at the system or component we need a way to separate a visual check from an inspection I propose to use visual check in the daily / weekly check area. The committee also removed the word "prescription" so that other types of eyeglasses could be worn and used.

Response Message:

Public Input No. 38-NFPA 1911-2014 [Section No. 3.3.134]

First Revision No. 71-NFPA 1911-2015 [Section No. 4.1]

4.1* General.

All fire ~~apparatus~~ emergency vehicles that could be placed in service for emergency response shall be inspected, maintained, tested, and retired as required by this standard.

4.1.1 Chassis, Driving and Crew Compartment, and Body.

4.1.1.1

The chassis, driving and crew compartment, and body shall be inspected and maintained as required by Chapter 8.

4.1.1.2

The chassis components shall be performance tested as required by Chapter 19.

4.1.2 Electrical Systems.

4.1.2.1

The low-voltage electrical systems on the ~~fire apparatus~~ emergency vehicle shall be inspected and maintained as required by Chapter 9 and performance tested as required by Chapter 20.

4.1.2.2

If the ~~apparatus~~ emergency vehicle is equipped with a line voltage electrical system, that system shall be inspected and maintained as required by Chapter 14 and performance tested as required by Chapter 25.

4.1.3 Water Pumping System or Water Tank.

4.1.3.1

If the ~~fire apparatus~~ emergency vehicle is equipped with a water pumping system or a water tank, the water pumping system(s) or the water tank(s) shall be inspected and maintained as required by Chapter 10.

4.1.3.2

If the ~~apparatus~~ emergency vehicle is equipped with a fire pump or an industrial supply pump, the fire pump system or industrial supply pump system shall be performance tested as required by Chapter 21.

4.1.4 Aerial Device.

If the ~~fire apparatus~~ emergency vehicle is equipped with an aerial device, the aerial device shall be inspected and maintained as required by Chapter 11 and performance tested as required by Chapter 22.

4.1.5 Foam Proportioning System.

If the ~~fire apparatus~~ emergency vehicle is equipped with a foam proportioning system, the system shall be inspected and maintained as required by Chapter 12 and performance tested as required by Chapter 23.

4.1.6 Compressed Air Foam System (CAFS).

If the ~~fire apparatus~~ emergency vehicle is equipped with a compressed air–foam system, the system shall be inspected and maintained as required by Chapter 13 and performance tested as required by Chapter 24.

4.1.7 Compressed Air Systems.

4.1.7.1

If the ~~fire apparatus~~ emergency vehicle is equipped with a compressed air system, the system shall be inspected and maintained as required by Chapter 15.

4.1.7.2

If the ~~apparatus~~ emergency vehicle is equipped with a breathing air system, the system shall be performance tested as required by Chapter 26.

4.1.8 Winches.

If the ~~fire apparatus~~ emergency vehicle is equipped with a winch, the winch shall be inspected and maintained as required by Chapter 18.

4.1.9 Other Components or Auxiliary Systems.

If there are other fixed components or auxiliary systems on the ~~fire apparatus~~ emergency vehicle , those components or auxiliary systems shall be inspected, maintained, and tested in accordance with the component manufacturer's recommendations and this standard to the extent that the requirements are applicable.

4.1.10 Trailers.

Trailers shall be inspected and maintained as required by Chapter 16.

4.1.11 Patient Compartment.

If the emergency vehicle is equipped with a patient compartment, the patient compartment shall be inspected and maintained as required by Chapter 17.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 10:18:04 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 19-NFPA 1911-2015 [New Section after 4.1.9]

4.1.10 Trailers.

Trailers shall be inspected and maintained as required by Chapter 16.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 13 17:00:19 EDT 2015

Committee Statement

Committee Statement: The committee has added new requirements for trailers and has added this text to ensure they are inspected and maintained.

Response Message:

Public Input No. 78-NFPA 1911-2014 [New Section after 4.1.9]

First Revision No. 20-NFPA 1911-2015 [New Section after 4.1.9]

4.1.11 Patient Compartment.

If the emergency vehicle is equipped with a patient compartment, the patient compartment shall be inspected and maintained as required by Chapter 17.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 13 17:41:38 EDT 2015

Committee Statement

Committee Statement: The committee has added this new text as ambulances have been added to to requirements within the document.
Response Message:

Public Input No. 79-NFPA 1911-2014 [New Section after 4.1.9]

First Revision No. 72-NFPA 1911-2015 [Section No. 4.2]

4.2 Taking ~~Fire Apparatus~~ Emergency Vehicles Out of Service.

It shall be the responsibility of the authority having jurisdiction (AHJ) to enforce the criteria for when the ~~apparatus~~ emergency vehicle is to be taken out of service in accordance with the requirements in Chapter 6.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 10:21:13 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 73-NFPA 1911-2015 [Section No. 4.3.1 [Excluding any Sub-Sections]]

Inspections, maintenance, and testing ~~on~~ of ~~fire apparatus~~ emergency vehicles shall be performed by qualified personnel as required by 4.3.1.1 or 4.3.1.2 ~~4.3.1.3~~ .

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 10:22:23 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 3-NFPA 1911-2015 [Section No. 4.3.1.1]

4.3.1.1*

Any person performing diagnostic checks, inspections, performance testing, or maintenance of the ~~fire apparatus~~ emergency vehicle shall meet the qualifications of NFPA 1071, ~~*Standard for Emergency Vehicle Technician Professional Qualifications*~~ , or the equivalent.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 13 10:00:42 EDT 2015

Committee Statement

Committee Statement: The committee has made this change due to missing the word "performance" in front of testing and the committee has made this change for document consistency.

Response Message:

Public Input No. 51-NFPA 1911-2014 [Section No. 4.3.1.1]

First Revision No. 23-NFPA 1911-2015 [Section No. 4.3.1.2]

~~4.3.1.2~~

~~The AHJ shall determine who is qualified to perform the daily/weekly inspection and the operational checks of fire apparatus.~~

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 14 09:04:17 EDT 2015

Committee Statement

Committee Statement: The committee agrees with the submitters intent and have deleted this text as they believe it is already addressed within this document. The associated annex A material needs to be moved to the new 4.3.2 that has been developed by the committee.

Response Message:

Public Input No. 19-NFPA 1911-2014 [Section No. 4.3.1.2]

First Revision No. 24-NFPA 1911-2015 [New Section after 4.3.1.3]

4.3.2*
The AHJ shall determine who is qualified to perform the daily/weekly visual checks and the operational checks of the emergency vehicle as required by NFPA 1002 .

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 14 09:05:02 EDT 2015

Committee Statement

Committee Statement: The committee agrees with the submitter and has added this text to the document believing they meet the submitters intent.
Response Message:
Public Input No. 20-NFPA 1911-2014 [New Section after 4.3.1.3]

First Revision No. 74-NFPA 1911-2015 [Section No. 4.3.1.3]

4.3.1.2

Pump tests and annual aerial tests shall be performed by personnel who are qualified in accordance with NFPA 1071~~*Standard for Emergency Vehicle Technician Professional Qualifications* ,~~ or the equivalent or by an organization that is accredited for inspection and testing systems on fire apparatus in accordance with ISO/IEC 17020, ~~*General criteria*~~ *Requirements for the operation of various types of bodies performing inspections*.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 10:23:47 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 75-NFPA 1911-2015 [Section No. 4.4.1]

4.4.1* Anyone performing operational checks, diagnostic checks, inspections, or maintenance on ~~fire apparatus~~ emergency vehicles shall consult the ~~appropriate~~ correct operator's, service, and maintenance manuals before starting any work on the ~~apparatus~~ emergency vehicle .

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 10:25:18 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency. The committee also removed an unenforceable term, "appropriate".
Response Message:

First Revision No. 4-NFPA 1911-2015 [Section No. 4.4.3]

4.4.3*

All federal, state or provincial , and local laws and regulations governing workplace safety shall be followed when performing maintenance on ~~fire apparatus~~ emergency vehicles .

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 13 10:04:32 EDT 2015

Committee Statement

Committee Statement: To better accommodate Canadian applications of the standard I think we should consider adding the word "provincial" after "state" most Occupational health and safety legislation is provincial jurisdiction in Canada. The committee has made this change for document consistency.

Response Message:

Public Input No. 12-NFPA 1911-2014 [Section No. 4.4.3]

First Revision No. 50-NFPA 1911-2015 [Section No. 4.4.4]

4.4.4

All federal, state~~,~~ or provincial, and local laws shall be followed in the use and disposal of chemicals and hazardous materials.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Mon Jun 01 11:40:31 EDT 2015

Committee Statement

Committee Statement: The committee has added this text for document consistency.
Response Message:

First Revision No. 76-NFPA 1911-2015 [Section No. 4.4.8]

4.4.8

~~Proper~~ Required methods shall be utilized to lift, support, secure, and stabilize ~~as appropriate,~~ the ~~fire apparatus~~ emergency vehicle undergoing maintenance.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 10:26:58 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency. The committee also removed unenforceable terms.
Response Message:

First Revision No. 77-NFPA 1911-2015 [Section No. 4.5.1]

4.5.1

The ~~fire apparatus~~ emergency vehicle shall meet all federal, state or provincial, and local laws for motor vehicle inspection.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 10:27:36 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 78-NFPA 1911-2015 [Section No. 4.5.3]

4.5.3*

It shall be the responsibility of the AHJ to develop and implement a schedule for the operational checking, inspection, diagnostic checking, and maintenance of the ~~fire apparatus~~ emergency vehicle and its systems and components in accordance with this document, the manufacturer's recommendations, local experience, and operating conditions.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 10:28:17 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 52-NFPA 1911-2015 [Section No. 4.5.4 [Excluding any Sub-Sections]]

~~An operational check and visual check of the fire apparatus shall be performed on a daily/weekly basis to ensure the operational readiness of the unit~~ The visual and operational checks shall be done within 24 hours of a run or weekly if no runs are done during the week .

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Mon Jun 01 12:04:32 EDT 2015

Committee Statement

Committee Statement: The committee has made this change to ensure that checks are being done on a regular basis.
Response Message:
Public Input No. 37-NFPA 1911-2014 [Sections 4.5.4.1, 4.5.4.2]

First Revision No. 21-NFPA 1911-2015 [Section No. 4.5.4.1]

4.5.4.1

Defined systems of the ~~apparatus~~ emergency vehicle shall be checked, including the fire pump, aerial device, warning lights, audible warning devices, patient compartment, cab and pump panel instrumentation, seat belts, tires, engine, transmission, drivetrain, and brake system.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 13 17:47:16 EDT 2015

Committee Statement

Committee Statement: Since the committee has added ambulances to the standard they have added patient compartment to the list of defined systems. The committee has made this change for document consistency.

Response Message:

Public Input No. 80-NFPA 1911-2014 [Section No. 4.5.4.1]

First Revision No. 51-NFPA 1911-2015 [Section No. 4.5.4.2]

4.5.4.2

~~An inspection form~~ A check sheet shall be utilized to record the results of the operational ~~and visual check~~ checks . *(See Annex C.)*

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Mon Jun 01 12:02:20 EDT 2015

Committee Statement

Committee Statement: The committee has made these changes for document consistency.
Response Message:

First Revision No. 25-NFPA 1911-2015 [Section No. 4.5.5]

4.5.5*

A complete inspection and diagnostic check of the ~~fire apparatus~~ emergency vehicles in accordance with Chapters 9 through 18 shall be conducted at least as frequently as recommended by ~~the apparatus~~ the emergency vehicle manufacturer or once per year, whichever comes first.

4.5.5.1

A complete inspection and diagnostic check of the emergency vehicles in accordance with Chapter 8 shall be conducted at least as frequently as recommended by the emergency vehicle manufacturer or twice a year, whichever comes first.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 14 09:06:38 EDT 2015

Committee Statement

Committee Statement: These changes were made as it is needed to include all emergency vehicles as well as to include what chapters and frequency of checks.

Response Message:

Public Input No. 81-NFPA 1911-2014 [Section No. 4.5.5]

First Revision No. 79-NFPA 1911-2015 [Section No. 4.5.6]

4.5.6

Component inspections shall be performed at least as frequently as recommended by the manufacturer and when the ~~fire apparatus~~ emergency vehicle or any component is suspected or reported to have defects or deficiencies.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 10:29:59 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 80-NFPA 1911-2015 [Section No. 4.6.2]

4.6.2

Parts or components used to maintain or repair the ~~fire apparatus~~ emergency vehicle shall meet or exceed the original manufacturer's specifications.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 10:30:46 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 81-NFPA 1911-2015 [Section No. 4.7.2]

4.7.2

Separate files shall be established and maintained for each individual ~~fire apparatus~~ emergency vehicle .

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 10:31:23 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 82-NFPA 1911-2015 [Chapter 5]

Chapter 5 Retirement of ~~Fire Apparatus~~ Emergency Vehicles

5.1* General.

5.1.1

The fire department shall consider safety as the primary concern in the retirement of ~~apparatus~~ emergency vehicles .

5.1.2

Retired ~~fire apparatus~~ emergency vehicles shall not be used for emergency operations.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 10:32:15 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 83-NFPA 1911-2015 [Sections 6.1.1, 6.1.2]

6.1.1

It shall be the responsibility of the AHJ to take the ~~apparatus~~ emergency vehicle or the defective portion of the ~~apparatus~~ emergency vehicle out of service if any of the deficiencies defined in this chapter are encountered.

6.1.2

Where a technician conducts an evaluation of the ~~apparatus~~ emergency vehicle to determine if the ~~apparatus~~ emergency vehicle or a component should be taken out of service, the technician shall report the findings to the AHJ in writing~~,~~ with one of the following recommendations:

(1) The ~~apparatus~~ emergency vehicle shall be taken out of service.

(2) The ~~apparatus~~ emergency vehicle shall be retained in service with specified limitations.

(3) The ~~apparatus~~ emergency vehicle shall be retained in service without limitations.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 10:37:52 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 84-NFPA 1911-2015 [Sections 6.1.4, 6.1.5]

6.1.4

The ~~apparatus~~ emergency vehicle shall be returned to service only after the defects and deficiencies that caused the ~~apparatus~~ emergency vehicle to be taken out of service have been corrected and the defective component retested to satisfy the component manufacturer's specification and the requirements of this document.

6.1.5

The AHJ shall establish a means to immediately identify that the ~~apparatus~~ emergency vehicle is out of service for any operator who might have reason to use the ~~apparatus~~ emergency vehicle .

6.1.5.1

Out-of-service ~~apparatus~~ emergency vehicles shall be identified by one of the following means:

(1) Sign on the outside of the driver's door near the door handle

(2) Special bag that covers the steering wheel

(3) Large sign on the driver's window

(4) Highly visible mechanism at the driver's position on the ~~fire apparatus~~ emergency vehicle that all members of the ~~fire~~ department recognize as an out-of-service indicator

6.1.5.2

A technician working on a ~~fire apparatus~~ emergency vehicle shall identify that an emergency vehicle is out of service or indicate that the apparatus is being serviced using one of the means specified in 6.1.5.1.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 10:39:32 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 26-NFPA 1911-2015 [Section No. 6.1.6.3]

~~6.1.6.3~~

~~If the fire pump or the aerial device is out of service, the engagement device shall be disabled so as to prevent operation of the pump or the aerial device.~~

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 14 09:39:36 EDT 2015

Committee Statement

Committee Statement: The committee has chosen to delete this text as they believe that it is not practical for an operator to conduct and the labeling in a previous section is sufficient.
Response Message:

Public Input No. 48-NFPA 1911-2014 [Section No. 6.1.6.3]

First Revision No. 85-NFPA 1911-2015 [Section No. 6.2]

6.2 Driving and Crew Areas, ~~Apparatus~~ Emergency Vehicle Body, and Compartmentation.

6.2.1

The following deficiencies of the driving and crew areas, the ~~apparatus~~ emergency vehicle body, and the compartmentation shall cause the ~~apparatus~~ emergency vehicle to be taken out of service:

(1) Cracked or broken windshield that obstructs the driver's/operator's view

(2) Missing or broken rearview mirrors that obstruct the driver's/operator's view

(3) Missing or broken windshield wipers

(4) Missing or broken door latches

(5) Missing or broken foot throttle

6.2.2

If a seat belt is torn or has melted webbing, missing or broken buckles, or loose mountings, the following shall apply:

(1) If it is at a seat other than the driver's seat, that seat shall be taken out of service.

(2) If it is at the driver's seat, the entire ~~apparatus~~ emergency vehicle shall be taken out of service.

6.2.3*

If there are deficiencies with the following system or components, a qualified technician shall conduct an out-of-service evaluation and make a written report, including recommendations to the AHJ:

(1) Body mounting

(2) Cab mounting

(3) Steering wheel

(4) Required cab instrumentation

(5) Defrosters

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 10:41:06 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 5-NFPA 1911-2015 [Section No. 6.3.1]

6.3.1

The following deficiencies of the chassis, axles, steering and suspension systems, driveline, wheels, and tires shall cause the ~~apparatus~~ vehicle to be taken out of service:

(1) The gross axle weight rating (GAWR) shown on the vehicle weight rating label is greater than the tire manufacturer's load rating.

(2) When weighed in accordance with Section 19.2, the weight on the front axle, the weight on the rear axle, or the total gross weight of the ~~fire apparatus~~ emergency vehicle exceeds the values shown on the vehicle weight rating label.

(3) Tires have cuts in the sidewall that penetrate to the cord.

(4)* Tires have a tread depth of less than 4/32 in. (3.2 mm) on any steering axle or 2/32 in. (1.6 mm) on any nonsteering axle at any two adjacent major tread grooves anywhere on the tire.

(5) Tire speed rating is less than the governed vehicle speed rating of the vehicle.

(6) Suspension components are loose, broken, or missing.

(7) Wheels or rims have the following deficiences:

- (a) Bent, broken, cracked, improperly seated, sprung, or mismatched lock or side ring(s)
- (b) Cracked, broken, or elongated bolt holes
- (c) Loose, missing, broken, cracked, stripped, or ~~otherwise ineffective~~ damaged fasteners
- (d) Weld deficiencies, as follows:
  - i. Cracks in welds attaching disc wheel disc to rim
  - ii. Cracks in welds attaching tubeless demountable rim to adapter
  - iii. Welded repair on aluminum wheel(s) on a steering axle
  - iv. Welded repair, other than disc to rim attachment, on steel disc wheel(s) mounted on the steering axle

(8) Axle flanges have Class 3 leakage.

(9) An axle has Class 3 leakage.

(10) Steering components do not meet the requirements of 49 CFR Part 399.211, Appendix G, "Minimum Periodic Inspection Standards."

(11) A steering component has Class 3 leakage.

(12) Driveline components do not meet the requirements of 49 CFR 399.211, Appendix G.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 13 10:19:04 EDT 2015

Committee Statement

Committee Statement:	Ineffective fastener is hard to define, damaged fasteners is easier to determine. By adding the new item 5 makes sure that the tire speed ratings are checked and if not correct, the tires must be changed.
Response Message:	

Public Input No. 50-NFPA 1911-2014 [Section No. 6.3.1]

First Revision No. 6-NFPA 1911-2015 [Section No. 6.4.1]

6.4.1*

The following defects and deficiencies of the engine system shall cause the ~~apparatus~~ emergency vehicle to be taken out of service:

(1) Engine that will not crank or start

(2) Engine system that has Class 3 leakage of oil

(3) Engine that is overheating

~~Oil that contains coolant~~

~~Oil that is diluted with fuel~~

(4) Fuel system component that has Class 2 leakage of fuel

(5) Stop-engine light that fails to turn off after engine is started

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 13 10:29:16 EDT 2015

Committee Statement

Committee Statement: move item 4 and 5 to technician evaluation area
Response Message:
Public Input No. 49-NFPA 1911-2014 [Section No. 6.4.1]

First Revision No. 7-NFPA 1911-2015 [Section No. 6.4.2]

6.4.2

If there are deficiencies of the following systems or components, a qualified technician shall conduct an out-of-service evaluation and make a written report, including recommendations to the AHJ concerning the following :

(1) Air filter restriction

(2) Fuel tank, mountings, or straps

(3) Exhaust leak into crew compartment

(4) Oil that contains coolant

(5) Oil that is diluted with fuel

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 13 10:30:22 EDT 2015

Committee Statement

Committee Statement: The committee has added this new text, item 3, as any exhaust leak into the crew compartment should be repaired before the apparatus is used and text has been moved, items 4 and 5 from 6.4.1, as these need to be evaluated by technician

Response Message:

Public Input No. 21-NFPA 1911-2014 [Section No. 6.4.2]

First Revision No. 86-NFPA 1911-2015 [Section No. 6.6.1]

6.6.1

The following defects and deficiencies of the transmission and clutch shall cause the ~~apparatus~~ emergency vehicle to be taken out of service:

(1) Automatic transmission that overheats in any range

(2) Automatic transmission that has a “do not shift” light on

(3) Transmission components that have Class 3 leakage of transmission oil

(4) Transmission oil contaminated with coolant

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 10:42:01 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 87-NFPA 1911-2015 [Section No. 6.7.1]

6.7.1

The following defects and deficiencies of the low-voltage electrical system and the line voltage electrical system shall cause the ~~apparatus~~ emergency vehicle to be taken out of service:

(1) Legally required lighting (DOT lighting) or horn that is not operational

(2) Ignition system that is not operational

(3) Charging system that is not operational

(4)* Any failure of the warning light system that creates any position around the ~~apparatus~~ vehicle from which no warning light is visible

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 10:43:01 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 27-NFPA 1911-2015 [Section No. 6.7.3]

6.7.3

If any of the following conditions exist, a qualified technician shall conduct an out-of-service evaluation and make a written report, including recommendations to the AHJ on the following :

(1)* Inoperative siren

(2) Overheating of power source and systems

(3) Tripping of circuit breakers [ground fault circuit interrupter (GFCI), if applicable]

(4) Line voltage power source producing high or low voltage or frequency

(5) Damaged receptacles or observed electrical shock hazard

(6) Any failure of the line voltage system that could affect patient care

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 14 09:42:54 EDT 2015

Committee Statement

Committee Statement: We need to consider the effect of the line voltage system on patient care in an ambulance.

Response Message:

Public Input No. 82-NFPA 1911-2014 [Section No. 6.7.3]

First Revision No. 88-NFPA 1911-2015 [Section No. 6.8.1.1]

6.8.1.1*

~~The~~ Any one of the following deficiencies of the air brake system shall cause the ~~apparatus~~ emergency vehicle to be taken out of service:

(1) Service brakes that have an air pressure drop of more than 2 psi (13.8 kPa) in 1 minute for straight chassis or more than 3 psi (20.7 kPa) in 1 minute for combination chassis, with the engine stopped and the service brakes released

(2) Leak-down rate (time) of the applied side of the air brake that is more than 3 psi (20.7 kPa) in 1 minute for straight chassis or more than 4 psi (27.6 kPa) in 1 minute for combination chassis, with the engine stopped and the service brakes applied

(3) Brakes that are out of adjustment

(4) Braking system components that are not operational

(5) Service brake that does not meet test or DOT requirements

(6) Parking (spring) brake operation that does not meet parking brake tests or standards

(7) Air compressor that fails to build air pressure from 85 psi to 100 psi (586 kPa to 690 kPa) in 45 seconds, with engine at full rpm

(8) Air compressor that fails to maintain 80 psi to 90 psi (552 kPa to 621 kPa) pressure in the system, with the service brakes applied and the engine at idle, or air compressor that fails to fill the air system to the air compressor governor cutout pressure with the service and parking brakes released

(9) Friction surfaces, brake shoes, or disc brake pads that have grease or oil on them

(10) Brake linings or pads that are worn beyond the brake system manufacturer's minimum specifications

(11) Rotors and drums that are worn beyond the brake system manufacturer's minimum specifications

(12) Air gauge or audio low-air warning device that has failed

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 10:44:06 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 89-NFPA 1911-2015 [Section No. 6.8.2.1]

6.8.2.1*

~~The~~ Any one of the following deficiencies of the hydraulic brake system shall cause the ~~apparatus~~ emergency vehicle to be taken out of service:

(1) Brake system components that have Class 2 leakage of brake fluid

(2) Friction surfaces, brake shoes, or disc brake pads that have grease or oil on them

(3) Braking system components that are not operational

(4) Braking operation that does not meet braking tests or standards

(5) Parking (service) brake operation that does not meet parking brake tests or standards

(6) Brake warning light that is activated or brake pedal that falls away or drifts toward the floor when brake pressure is applied

(7) Brake linings or pads that are worn beyond the brake system manufacturer's minimum specifications

(8) Rotors and drums that are worn beyond the brake system manufacturer's minimum specifications

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 10:44:53 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 8-NFPA 1911-2015 [Section No. 6.8.4]

6.8.4 Wheel Chocks.

If the ~~apparatus~~ emergency vehicle is not equipped with two wheel chocks, mounted in readily accessible locations, the ~~condition~~ emergency vehicle shall be ~~reported to the AHJ~~ taken out of service .

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 13 10:36:56 EDT 2015

Committee Statement

Committee Statement: The committee has made this change to provide the end user with further clarification as to what action to take if wheel chocks are missing.
Response Message:

First Revision No. 9-NFPA 1911-2015 [Section No. 6.10.2]

6.10.2

If there are deficiencies of the following systems or components, a qualified technician shall conduct an out-of-service evaluation and make a written report, including recommendations to the AHJ:

(1) Hydraulic relief valve

(2) Hydraulic system components

(3) Emergency hydraulic system

(4) Visual and audible alarm systems

(5) Aerial lighting system

~~Aerial intercom system~~

(6) Labels or warning signs

(7) Aerial water delivery system

(8) Class 3 hydraulic leak

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 13 10:44:03 EDT 2015

Committee Statement

Committee Statement: The committee has added this new text as a class 3 hydraulic leak should be repaired prior to the unit being used. They have also deleted the requirement relating to aerial intercom systems as they believe this is does not meet the out of service criteria.

Response Message:

Public Input No. 70-NFPA 1911-2014 [Section No. 6.10.2]
Public Input No. 24-NFPA 1911-2014 [Section No. 6.10.2]

First Revision No. 17-NFPA 1911-2015 [New Section after 6.10.3]

6.11 Trailers.

6.11.1

The following deficiencies of a trailer and its system shall cause the trailer to be taken out of service:

(1) Cracked trailer frame

(2) Damaged or inoperative hitch

(3) Damaged or missing safety chain or chain latch

(4) The gross axle weight rating (GAWR) shown on the trailer information label is greater than the tires manufacturer's load rating

(5) When weighed in accordance with Section 16.2 , the weight on the axles of the trailer exceeds the values shown on the trailer information label

(6) Tires have cuts in the sidewall that penetrate to the cord

(7)* Tires that have a tread depth of less than $^{2}/_{32}$ in.(1.6 mm) or at any two adjacent major tread grooves anywhere on the tire

(8) Suspension components that are loose, broken, or missing

(9) Wheels or rims having the following deficiencies:

(a) Damaged or mismatched lock or side ring(s)

(b) Cracked, broken, or elongated bolt holes

(c) Loose, missing, broken, cracked, stripped, or damaged fasteners

(d) Weld defects

(10) Braking system components that are not operational

(11) Friction surfaces, brake shoes, or disc brake pads that have grease or oil on them

(12) Brake linings or pads that are worn beyond the brake system manufacturer's minimum specifications

(13) Rotors and drums that are worn beyond the brake system manufacturer's minimum specifications

(14) Brake system components that have Class 2 leakage of brake fluid

(15) Inoperative or damaged breakaway brake system

(16) Inoperative stop, turn, or marker lighting

(17) Damaged or missing trailer cord or plug

6.11.2

A qualified technician shall conduct an out-of-service evaluation of the following tire deficiencies and make a written report, including recommendations to the AHJ, on:

(1) Tire punctures

(2) Tire cuts to the cord

(3) Tire bulges other than bumps or repairs; repair bulges greater than $^{3}/_{8}$ in. (10 mm), or bulges or knots associated with tread

(4) Tire sidewall separation

Supplemental Information

File Name	Description
NEW_6.11_Trailers.docx	
Annex_A_text_for_6.11.1_7_.docx	Annex text for 6.11.1(7) which is taken from the existing 6.3.1(4)

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 13 15:31:02 EDT 2015

Committee Statement

Committee Statement: The committee agrees with the submitters input, however some textual changes were made. The committee has also included annex A text for 6.11.1(7).

Response Message:

Public Input No. 36-NFPA 1911-2014 [New Section after 6.10.3]

6.11 Trailers

6.11.1 The following deficiencies of a trailer and its system shall cause the trailer to be taken out of service:

1. Cracked trailer frame
2. Damaged or inoperative hitch
3. Damaged or missing safety chain or chain latch
4. The gross axle weight rating (GAWR) shown on the trailer information label is greater than the tires manufacturer's load rating
5. When weighed in accordance with Section 16.2, the weight on the axles of the trailer exceeds the values shown on the trailer information label
6. Tires have cuts in the sidewall that penetrate to the cord
7. * Tires that have a tread depth of less than 2/32 in.(1.6 mm) or at any two adjacent major tread grooves anywhere on the tire.
8. Suspension components that are loose, broken, or missing.
9. Wheels or rims having the following deficiencies:

    a. Damaged or mismatched lock or side ring(s)

    b. Cracked, broken, or elongated bolt holes

    c. Loose, missing, broken, cracked, stripped, or damaged fasteners

    d. Weld defects

10. Braking system components that are not operational

11. Friction surfaces, brake shoes, or disc brake pads that have grease or oil on them.

12. Brake linings or pads that are worn beyond the brake system manufacturer's minimum specifications

13. Rotors and drums that are worn beyond the brake system manufacturer's minimum specifications

14. Brake system components that have Class 2 leakage of brake fluid

15. Inoperative or damaged breakaway brake system

16. Inoperative stop, turn or marker lighting.

17. Damaged or missing trailer cord or plug.

6.11.2 A qualified technician shall conduct an out-of-service evaluation of the following tire deficiencies and make a written report, including recommendations to the AHJ:

1. Tire punctures
2. Tire cuts to the cord
3. Tire bulges other than bumps or repairs; repair bulges greater than 3/8 in. (10 mm), or bulges or knots associated with tread
4. Tire sidewall separation.

A.6.11.1(7) Tread depth should be checked with a tread depth gauge. When inserted into the tire tread, the amount of tread left is indicated in 1⁄32 in. (0.8 mm).

First Revision No. 22-NFPA 1911-2015 [New Section after 6.10.3]

6.12 Patient Compartment.

Any one of the following deficiencies of a patient compartment and its systems shall cause the patient compartment to be taken out of service:

(1) Patient compartment entry doors that do not latch properly

(2) Cot retention mechanism that does not hold the cot

(3) HVAC system that does not cool or heat properly

(4) Inoperative patient compartment illumination system

(5) Damaged or inoperative primary patient care seat or seat belt

(6) An inoperative medical gas system

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 13 17:49:59 EDT 2015

Committee Statement

Committee Statement: The committee has added out of service criteria for ambulances.
Response Message:
Public Input No. 83-NFPA 1911-2014 [New Section after 6.10.3]

First Revision No. 53-NFPA 1911-2015 [New Section after 6.10.3]

Chapter 7 Daily / Weekly Visual and Operational Checks.

7.1* General.

A visual and operational check of the apparatus shall be performed within 24 hours of a run or at least weekly.

7.1.1

The visual and operational checks shall be performed to the requirements in Sections 7.2 through 7.4 .

7.1.2

The check sheet in Annex C or an equivalent check sheet shall be used to record the daily / weekly visual and operational checks.

7.1.3

Personnel conducting the visual and operational checks shall meet the requirements of 4.3.2 .

7.2 Visual Checks

A visual check of components, fluid levels, fluid condition, leaks, and systems shall include, but not be limited to, the following (if applicable):

(1) Engine oil fluid level and condition
(2) Transmission fluid level and condition
(3) Coolant level
(4) Power steering fluid level and condition
(5) Fluid leaks on the floor
(6) Tire condition
(7) Tire air pressure
(8) Wheel and lug nuts
(9) Seat belt condition
(10) Windshield, mirrors, and door glass
(11) Steering linkage
(12) Cab doors, handles and steps
(13) Battery condition
(14) Body and compartment door condition
(15) Running boards, steps, ladders, and handles
(16) Ground ladder racks and mounting
(17) Hydraulic brake fluid level
(18) Placards and warning decals
(19) Front and rear springs
(20) Fuel tank level and mounting
(21) Fire pump mounting
(22) Fire pump discharges and suctions valves
(23) Fire pump controls and gauges
(24) Pump drains
(25) Water tank level, leaks, and condition
(26) Primer oil level
(27) Aerial hydraulic system
(28) Hydraulic fluid level and condition
(29) Outriggers and torque box
(30) Aerial device controls
(31) Ladder and basket
(32) Waterway and monitor
(33) Auxiliary equipment and racks

7.3 Operational Check.

An operational check of the components and systems shall include, but not be limited to, the following (if applicable):

(1) Starting system
(2) Battery voltage
(3) Audible and visual alarms
(4) Engine
(5) Charging system
(6) Cab gauges
(7) Steering system
(8) Seat belts
(9) Seat belt warning system
(10) Brake air compressor
(11) Transmission
(12) Warning light system
(13) Fire pump
(14) Pump panel gauges and controls
(15) Relief valve
(16) Pressure governor operation
(17) Foam system
(18) Primer system
(19) Pump valves and reels
(20) Main drain and other drains
(21) Cooler valves
(22) Water tank level indicator
(23) DOT lighting
(24) Horns
(25) Brake system
(26) Parking or spring brakes
(27) Windshield wipers and washers
(28) Line voltage generating source
(29) Work lighting
(30) Cab door glass
(31) Power steps and access ladders
(32) Aerial hydraulic system
(33) Aerial outriggers
(34) Aerial interlocks
(35) Aerial device
(36) Auxiliary equipment and racks
(37) Drain moisture from air brake system reservoirs

7.4 Documentation.

7.4.1
A record of the visual and operational check sheet shall be kept.

7.4.2
The AHJ shall develop and implement a procedure for reporting defects found during the visual and operational checks.

7.4.3
The AHJ shall have a procedure to remove the apparatus from service if an out-of-service criteria defect is found during the visual and operational checks.

Supplemental Information

File Name	Description
Chapter_7_daily_weekly_chapter_1911_oct_2014.1414411495884.docx	This is a NEW chapter 7 where all subsequent chapters will need to be renumbered.
Chapter_7_Annex_A_text.docx	

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Mon Jun 01 13:00:19 EDT 2015

Committee Statement

Committee Statement: The committee has added this new chapter to address the needs and requirements around daily and weekly operational checks.

Response Message:

Public Input No. 56-NFPA 1911-2014 [New Section after 6.10.3]

Chapter 7* Daily / Weekly Visual and Operational Checks.

7.1 A visual and operational check of the apparatus shall be performed within 24 hours of a run or at least weekly.
7.1.1 The visual and operational checks shall be performed to the requirements sections 7.2 -- 7. 4.
7.1.2 The check sheet in annex C or equivalent check sheet shall be used to record the daily / weekly visual and operational checks.
7.1.3 Personnel conducting the visual and operational checks shall meet the requirements of section 4.3.2

7. 2 Visual Checks
A visual check of components, fluid levels, fluid condition, leaks and systems shall include, but not be limited to, the following (if applicable):

1. Engine oil fluid level and condition
2. Transmission fluid level and condition
3. Coolant level
4. Power steering fluid level and condition
5. Fluid leaks on the floor
6. Tire condition
7. Tire air pressure
8. Wheel and lug nuts
9. Seat belt condition
10. Windshield, mirrors and door glass
11. Steering linkage
12. Cab doors, handles and steps
13. Battery condition
14. Body and compartment door condition
15. Running boards, steps, ladders and handles
16. Ground ladder racks and mounting
17. Hydraulic brake fluid level
18. Placards and warning decals
19. Front and rear springs
20. Fuel tank level and mounting
21. Fire pump mounting
22. Fire pump discharges and suctions valves
23. Fire pump controls and gauges
24. Pump drains
25. Water tank level, leaks and condition
26. Primer oil level
27. Aerial hydraulic system
28. Hydraulic Fluid level and condition
29. Outriggers and torque box
30. Aerial device controls
31. Ladder and basket
32. Waterway and monitor
33. Auxiliary equipment and racks

7.3 Operational Check

An operational check of the components and systems shall include, but not be limited to, the following (if applicable):

1. Starting system
2. Battery voltage
3. Audible and visual alarms
4. Engine
5. Charging system
6. Cab gauges
7. Steering system
8. Seat belts
9. Seat belt warning system
10. Brake Air compressor
11. Transmission
12. Warning light system
13. Fire pump
14. Pump panel gauges and controls
15. Relief Valve
16. Pressure governor operation
17. Foam system
18. Primer system
19. Pump Valves and reels
20. Main drain and other drains
21. Cooler valves
22. Water tank level indicator
23. DOT lighting
24. Horns
25. Brake system
26. Parking or spring brakes
27. Windshield wipers and washers
28. Line voltage generating source
29. Work lighting
30. Cab door glass
31. Power steps and access ladders
32. Aerial hydraulic system
33. Aerial outriggers
34. Aerial interlocks
35. Aerial device
36. Auxiliary equipment and racks
37. Drain moisture from air brake system reservoirs

7.4 Documentation

7.4.1 A record of the visual and operational check sheet shall be kept.

7.4.2 The AHJ shall develop and implement a procedure for reporting defects found during the visual and operational checks

7.4.3 The AHJ shall have a procedure to remove the apparatus from service should an out of service criteria defect be found during the visual and operational checks.

Chapter 7 Daily/Weekly Visual and Operational Checks. The importance of the daily / weekly checks cannot be stressed enough. For a preventive maintenance plan to succeed the daily/weekly visual and operational checks must be done correctly. Properly done daily/weekly checks locate problems quickly, which then can be corrected before they become worse. The AHJ should work with the maintenance department to develop a plan to complete the daily/weekly checks within the allotted time, complete the checks properly and document the results properly. The driver/ operators assigned to perform the daily/weekly checks should be trained with the help of the maintenance department and technicians regarding the expected outcome of each item on the check sheet. Other groups, such as state mechanics associations, apparatus manufacturers and independent trainers offer some training for driver operators. NFPA 1002 has requirements for what a driver operator should know to perform the daily/weekly checks.

First Revision No. 54-NFPA 1911-2015 [New Section after 7.3.3]

8.3.3*

Tires shall be inspected for damage and shall be inflated to the tire manufacturer's recommended pressure.

8.3.4*

The tire load rating shall be checked to verify that it meets or exceeds the GAWR.

8.3.5

The tire speed rating shall be checked to verify that it meets or exceeds the maximum top speed of the apparatus.

Supplemental Information

File Name	Description
New_Section_after_7.3.3.docx	This is the new text for text that is to come after the existing 7.3.3. There is Annex A text also for 7.3.4, which is part of the attachment.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Mon Jun 01 13:14:25 EDT 2015

Committee Statement

Committee Statement: The committee believes this text they have developed will address the needs and concerns regarding tire load and speed rating.

Response Message:

Public Input No. 61-NFPA 1911-2014 [New Section after 7.3.3]

New Section after 7.3.3

7.3.4* The tire load rating shall be checked to verify that it meets or exceeds the GAWR.

A.7.3.4 Some apparatus may use tires based on an intermittent duty (fire service) load rating. This information is available from the tire manufacturer or the apparatus manufacturer. Fire service ratings are based on the assumption that the truck will never drive with this load for more than 50 miles (80 km) (1 hour for some manufacturers) without stopping to cool the tires. The AHJ must understand this limitation.

7.3.5 The tire speed rating shall be checked to verify that it meets or exceeds the maximum top speed of the apparatus.

6.11 Trailers

6.11.1 The following deficiencies of a trailer and its system shall cause the trailer ro be taken out of service.

1. Cracked trailer frame
2. Damaged or inoperative hitch
3. Damaged or missing safety chain or chain latch
4. The gross axle weight rating (GAWR) shown on the trailer information label is greater than the tires manufacturer's load rating
5. When weighed in accordance with Section 16.2, the weight on the axles of the trailer exceeds the values shown on the trailer information label
6. Tires have cuts in the sidewall that penetrate to the cord
7. * Tires that have a tread depth of less than 2 32 in.(1.6 mm) or at any two adjacent major tread grooves anywhere on the tire. (Use annex item from 6.3.1 (4))
8. Suspension components that are loose, broken, or missing.
9. Wheels or rims have the following deficiences:

   a. Bent, broken, cracked, improperly seated, sprung, or mismatched lock or side ring(s)

   b. Cracked, broken, or elongated bolt holes

   c. Loose, missing, broken, cracked, stripped, or otherwise ineffective fasteners

d. Weld deficiencies, as follows:

i. Cracks in welds attaching disc wheel disc to rim

ii. Cracks in welds attaching tubeless demountable rim to adapter

iii. Welded repair, other than disc to rim attachment, on steel disc wheel(s) mounted on the steering axle

10. Braking system components that are not operational

11. Friction surfaces, brake shoes, or disc brake pads that have grease or oil on them.

12. Brake linings or pads that are worn beyond the brake system manufacturer's minimum specifications

13. Rotors and drums that are worn beyond the brake system manufacturer's minimum specifications

14. Braking system components that are not operational

15. Brake system components that have Class 2 leakage of brake fluid

16. Inoperative or damaged breakaway brake system

17. Inoperative stop, turn or marker lighting.

18. Damaged or missing trailer cord or plug.

6.11.2 A qualified technician shall conduct an out-of-service evaluation of the following tire deficiencies and make a written report, including recommendations to the AHJ:

1. Tire Punctures
2. Tire Cuts to the cord
3. Tire Bulges other than bumps or repairs; repair bulges greater than 3 8 in. (10 mm), or bulges or knots associated with tread
4. Tire Sidewall separation.

First Revision No. 10-NFPA 1911-2015 [Section No. 7.6.6]

8.6.6

All electronic throttle components and throttle position sensors (TPS) shall be inspected ~~for counts~~ and diagnostically checked.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 13 12:23:05 EDT 2015

Committee Statement

Committee Statement: no need to inspect counts during pm inspection unless there is a problem
Response Message:
Public Input No. 44-NFPA 1911-2014 [Section No. 7.6.6]

First Revision No. 90-NFPA 1911-2015 [Section No. 7.9.2]

8.9.2

The clutch and linkage, if the ~~fire apparatus~~ emergency vehicle is so equipped, shall be inspected for condition and adjustment, diagnostically checked, and maintained in accordance with the manufacturer's recommendations.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 10:46:19 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 91-NFPA 1911-2015 [Section No. 7.12.9]

8.12.9

If the ~~fire apparatus~~ emergency vehicle has a hydraulic brake system, the components to be inspected and maintained shall include, but not be limited to, the following:

(1) Pedal and linkage
(2) Brake switches
(3) Master cylinder
(4) Brake booster
(5) Hydraulic lines
(6) Valves
(7) Wheel cylinders or calipers
(8) Brake shoes or pads
(9) Brake drums or rotors
(10) Warning devices
(11) Mounting hardware
(12) Fluid level and contamination

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 10:47:11 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 92-NFPA 1911-2015 [Section No. 7.12.10 [Excluding any Sub-Sections]]

If the ~~fire apparatus~~ emergency vehicle has an air brake system, the components to be inspected and maintained shall include, but not be limited to, the following:

(1) Air compressor
(2) Pedal assembly
(3) All valves
(4) Hoses and lines
(5) Brake switches
(6) Brake air chambers
(7) Slack adjusters
(8) Cams and wedges
(9) Brake shoes or pads
(10) Brake drums or rotor
(11) Calipers
(12) Air dryers
(13) Drain valves
(14) Air tanks
(15) Warning devices
(16) Mounting hardware

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 10:47:42 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 11-NFPA 1911-2015 [Section No. 7.12.10.9]

8.12.10.9

Leak-down rate (time) of the applied side of the air brake system shall ~~be~~ be performance tested with the engine stopped and the service brakes applied, and the air pressure shall not drop more than 3 psi (20.7 kPa) in 1 minute for a straight vehicle or more than 4 psi (27.6 kPa) in 1 minute for a combination vehicle.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 13 12:23:54 EDT 2015

Committee Statement

Committee Statement: The word "test" cannot be used without the word performance, because we are testing the leak down rate to a predetermined specification

Response Message:

Public Input No. 30-NFPA 1911-2014 [Section No. 7.12.10.9]

First Revision No. 12-NFPA 1911-2015 [Section No. 7.12.10.10]

8.12.10.10

Leak-down rate (time) of the supply-side of the chassis air system shall be performance tested with the engine stopped and the service brakes released, and the air pressure shall not drop more than 2 psi (13.8 kPa) in 1 minute for a straight vehicle or more than 3 psi (20.7 kPa) in 1 minute for a combination vehicle.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 13 12:24:18 EDT 2015

Committee Statement

Committee Statement: The word "test" cannot be used without the word performance, because we are testing the leak down rate to a predetermined specification

Response Message:

Public Input No. 31-NFPA 1911-2014 [Section No. 7.12.10.10]

First Revision No. 93-NFPA 1911-2015 [Section No. 7.14.7 [Excluding any Sub-Sections]]

If the ~~apparatus~~ emergency vehicle has a cab tilting system, it shall be inspected and maintained in accordance with 8.14.7.1 and 8.14.7.2.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 10:48:20 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 94-NFPA 1911-2015 [Section No. 7.16 [Excluding any Sub-Sections]]

If the ~~apparatus~~ emergency vehicle is equipped with powered equipment racks, the racks shall be inspected and maintained in accordance with 8.16.1 through 8.16.5.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 10:48:55 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 95-NFPA 1911-2015 [Section No. 7.16.1]

8.16.1

All locks used to hold equipment racks in the road travel position and all interlocks to prevent operation of equipment racks when the ~~fire apparatus~~ emergency vehicle is in motion shall be inspected for security of mounting and deformation.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 10:49:23 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 96-NFPA 1911-2015 [Section No. 8.1.1]

9.1.1

All electrical equipment on the ~~apparatus~~ emergency vehicle shall be inspected and maintained, regardless of whether it is specified in Sections 9.2 through 9.12.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 10:50:15 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 97-NFPA 1911-2015 [Sections 8.9, 8.10, 8.11, 8.12]

9.9 ~~Apparatus~~ Emergency Vehicle Lighting.

All ~~fire apparatus~~ emergency vehicle lighting including, but not limited to, the following shall be inspected for security of mounting and deformation and shall be diagnostically checked:

(1) Headlights

(2) Marker lights

(3) Clearance lights

(4) Turn signals and hazard lights

(5) Brake lights

(6) Backup lights

(7) Dash lights

(8) Other ~~fire apparatus~~ emergency vehicle lighting equipment on the ~~apparatus~~ vehicle not otherwise specified in Section 9.9(1) through 9.9(7)

9.10 Work Lighting.

All work lighting including, but not limited to, the following shall be inspected for security of mounting and deformation and shall be diagnostically checked:

(1) Ground lights

(2) Step lights

(3) Flood, spot, and scene lights

(4) Cab interior lights

(5) Compartment lights

(6) Other work lighting on the ~~apparatus~~ emergency vehicle not otherwise specified in Section 9.10(1) through 9.10(5)

9.11 Electrical Accessories.

All electrical accessories including, but not limited to, the following shall be diagnostically checked:

(1) Heater and defroster

(2) Air-conditioning system

(3) Windshield wipers and washers

(4) Instrumentation

(5) Traffic pre-emption

(6) Other electrical accessories on the ~~apparatus~~ emergency vehicle not otherwise specified in Section 9.11(1)through 9.11(5)

9.12 Warning Devices.

All warning devices including, but not limited to, the following shall be inspected for security of mounting and deformation and shall be diagnostically checked:

(1) Emergency warning lights

(2) Electric and electronic sirens

(3) Automotive traffic horn

(4) Air horns

(5) Backup alarm

(6) Other warning devices on the ~~apparatus~~ emergency vehicle not otherwise specified in Section 9.12(1) through 9.12(5)

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 10:51:22 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 46-NFPA 1911-2015 [New Section after 8.12]

9.13 Electric Trailer Brake Actuator.

9.13.1

If the emergency vehicle is equipped with an electric trailer brake actuator, it shall be inspected and diagnostically checked.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 14 14:18:13 EDT 2015

Committee Statement

Committee Statement: The committee has added this text as they have added requirements for trailers in the document.
Response Message:

First Revision No. 13-NFPA 1911-2015 [New Section after 9.2.6]

10.2.6 Instrumentation and Gauges.

All instrumentation, gauges, and lighting shall be inspected for security of mounting and condition and shall be diagnostically checked.

10.2.7 Pump Test Label.

The pump test label shall be inspected to ensure that it is legible and attached to the vehicle.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 13 12:37:37 EDT 2015

Committee Statement

Committee Statement: The committee has made this change as they believe it meets the submitters intent on PI 25.
Response Message:

Public Input No. 25-NFPA 1911-2014 [Section No. 9.2.6]

First Revision No. 98-NFPA 1911-2015 [Section No. 13.1]

14.1 General.

If the ~~apparatus~~ emergency vehicle has a line voltage electrical system, it shall be inspected and maintained in accordance with this chapter.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 10:53:15 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 99-NFPA 1911-2015 [Sections 14.1.1, 14.1.2]

15.1.1

If the ~~apparatus~~ emergency vehicle has a breathing air compressor system, the compressor system shall be serviced annually by a manufacturer's authorized representative.

15.1.2

If the ~~apparatus~~ emergency vehicle has a breathing air compressor system, the quality of air produced by the breathing air compressor system shall be tested in accordance with NFPA 1989 following completion of the annual servicing required by 15.1.1.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 10:53:48 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 14-NFPA 1911-2015 [New Section after 15.5]

Chapter 16 Inspection and Maintenance of Trailers

16.1 General.

Trailers shall be inspected and maintained in accordance with this chapter.

16.2 Frame, Hitch, Axle, and Suspension.

16.2.1

All frame rails and members shall be inspected for defects, structural integrity, corrosion, perforations, and missing or loose parts.

16.2.2

All suspension components including, but not limited to, the following shall be inspected for defects, missing or loose parts, and functional operation and shall be lubricated:

(1) Springs and spring hangers

(2) Air springs (bags), mounting brackets, and attaching hardware

(3) Equalizer beams and torque arms

(4) Shock absorbers

16.2.3

The safety chains and chain latches shall be inspected for defects, structural integrity, corrosion, perforations, and missing or loose parts.

16.2.4

The hitch mounting shall be inspected for defects, structural integrity, corrosion, perforations, and missing or loose parts.

16.2.4.1

The hitch operation and lock shall be diagnostically checked.

16.2.5

The axle shall be inspected for alignment.

16.2.6

All axle components including, but not limited to, the following shall be inspected for security of mounting, structural integrity, deformation, and abnormal wear; functionally operated; and lubricated:

(1) Spindles and bushings

(2) Attaching hardware

(3) Axle beams

16.2.7

Wheel bearings and seals shall be cleaned; inspected for deformation, wear, cracks, and leakage; and lubricated.

16.2.8*

Tires shall be inspected for damage and inflated to the tire manufacturer's recommended pressure.

16.2.9*

Tires shall be replaced at least every 7 years or more frequently when the tread wear exceeds federal, state, or provincial standards as determined by measuring with a tread depth gauge. *[See 6.3.1(4) .]*

16.2.10

The tire load rating times the number of tires on the axle shall be checked to verify that it meets or exceeds the GAWR.

16.2.11

Wheel attaching nuts shall be torqued to the wheel manufacturer's specifications.

16.2.12

Wheels and rims shall be inspected for cracks, deformation, structural integrity, and corrosion.

16.3 Trailer Brake Systems.

16.3.1

The braking system shall be inspected and maintained in accordance with the manufacturer's recommendations.

16.3.2

The brake linings shall be replaced in accordance with the brake manufacturer's recommendations when they are contaminated, when the lining is worn to the minimum thickness for safe operation as defined by the brake manufacturer, or when the brake drum or rotor is replaced.

16.3.3

The drums or rotors shall be inspected during scheduled maintenance, when there is a suspected problem, or at the time of brake lining replacement.

16.3.3.1

The inspection shall consist of, but not be limited to, inspecting for the following:

(1) Evidence of extensive heat or heat cracking

(2) Out of round drums/warped rotors

(3) Wear beyond manufacturer's specifications

(4) Rust pitting

(5) Tapered drums

(6) Rotor parallelism

(7) Metal fatigue

16.3.4

If the trailer has an electric brake system, the following additional components shall be inspected and maintained:

(1) Wiring and ground connections

(2) Magnets and mounting

(3) Mounting hardware

(4) Electrical break away system and battery

16.3.5

If the trailer has a hydraulic brake system, the following additional components shall be inspected and maintained:

(1) Actuator and linkage

(2) Hydraulic lines

(3) Master cylinder

(4) Valves

(5) Wheel cylinders or calipers

(6) Mounting hardware

(7) Fluid level and contamination

(8) Break away system

16.3.6

If the trailer has an air brake system, the following additional components shall be inspected and maintained:

(1) All valves
(2) Hoses and lines
(3) Brake air chambers
(4) Slack adjusters
(5) Cams and wedges
(6) Calipers
(7) Air tanks
(8) Drain valves
(9) Mounting hardware
(10) Glad hands and hoses

16.3.6.1
The air brake system pressure protection valve(s) shall be diagnostically checked to the shutoff point.

16.3.6.2
Leak-down rate (time) of the applied side of the air brake system shall be diagnostically checked with the engine stopped and the service brakes applied, and the air pressure shall not drop more than 4 psi (27.6 kPa) in 1 minute for a combination vehicle.

16.3.7
All components of the braking system shall be inspected for damage and wear when performing a brake overhaul.

16.4 Trailer Electrical and Lighting.
All trailer electrical systems and lighting shall be inspected and maintained to the applicable requirements of Chapter 8 of this document.

Supplemental Information

File Name	Description
NEW_Chapter_16_Inspection_and_Maintenance_of_Trailers.docx	This is new text to be numbered for chapter 16. This does not replace the existing chapter 16.
NEW_text_for_A.16.2.8.docx	Annex text for 16.2.8
New_annex_text_for_new_16.2.9.docx	

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 13 14:10:38 EDT 2015

Committee Statement

Committee Statement: The committee has included this chapter on trailers and agrees with the submitters intent, however made changes to the text that was provided by the submitter.

Response Message:

Public Input No. 35-NFPA 1911-2014 [New Section after 15.5]

Chapter 16 Inspection and Maintenance of Trailers

16.1 General. Trailers shall be inspected and maintained in accordance with this chapter.

16.2 Frame, Hitch, Axle and Suspension

16.2.1 All frame rails and members shall be inspected for defects, structural integrity, corrosion, perforations, and missing or loose parts.

16.2.2 All suspension components including, but not limited to, the following shall be inspected for defects, missing or loose parts, and functional operation and shall be lubricated:

1. Springs and spring hangers
2. Air springs (bags), mounting brackets, and attaching hardware
3. Equalizer beams and torque arms
4. Shock absorbers

16.2.3 The safety chains and chain latches shall be inspected for defects, structural integrity, corrosion, perforations, and missing or loose parts

16.2.4 The hitch mounting shall be inspected for defects, structural integrity, corrosion, perforations, and missing or loose parts.

16.2.4.1 The hitch operation and lock shall be diagnostically checked.

16.2.5 The axle shall be inspected for alignment.

16.2.6 All axle components including, but not limited to, the following shall be inspected for security of mounting, structural integrity, deformation, and abnormal wear; functionally operated; and lubricated:

1. Spindles and bushings
2. Attaching hardware
3. Axle beams

16.2.7 Wheel bearings and seals shall be cleaned; inspected for deformation, wear, cracks, and leakage; and lubricated.

16.2.8* Tires shall be inspected for damage and inflated to the tire manufacturer's recommended pressure.

16.2.9* Tires shall be replaced at least every 7 years or more frequently when the tread wear exceeds federal, state, or provincial standards as determined by measuring with a tread depth gauge. [See 6.3.1 (4).]

16.9.10 The tire load rating times the number of tires on the axle shall be checked to verify that it meets or exceeds the GAWR.

16.2.11 Wheel attaching nuts shall be torqued to the wheel manufacturer's specifications.

16.2.12 Wheels and rims shall be inspected for cracks, deformation, structural integrity and corrosion.

16.3. Trailer brake Systems

16.3.1 The braking system shall be inspected and maintained in accordance with the manufacturer's recommendations.

16.3.2 The brake linings shall be replaced in accordance with the brake manufacturer's recommendations when they are contaminated, when the lining is worn to the minimum thickness for safe operation as defined by the brake manufacturer, or when the brake drum or rotor is replaced.

16.3.3 The drums or rotors shall be inspected during scheduled maintenance, when there is a suspected problem, or at the time of brake lining replacement.

16.3.3.1 The inspection shall consist of, but not be limited to, inspecting for the following:

1. Evidence of extensive heat or heat cracking
2. Out of round drums/warped rotors
3. Wear beyond manufacturer's specifications
4. Rust pitting
5. Tapered drums
6. Rotor parallelism
7. Metal fatigue

16.3.4 If the trailer has an electric brake system, the following additional components shall be inspected and maintained:

1. Wiring and ground connections
2. Magnets and mounting
3. Mounting hardware
4. Electrical break away system and battery

16.3.5 If the Trailer has a hydraulic brake system, the following additional components shall be inspected and maintained:

1. Actuator and linkage
2. Hydraulic lines
3. Master cylinder
4. Valves

5. Wheel cylinders or calipers
6. Mounting hardware
7. Fluid level and contamination
8. Break away system

16.3.6 If the trailer has an air brake system, the following additional components shall be inspected and maintained:

1. All valves
2. Hoses and lines
3. Brake air chambers
4. Slack adjusters
5. Cams and wedges
6. Calipers
7. Air tanks
8. Drain valves
9. Mounting hardware
10. Glad hands and hoses

16.3.6.1 The air brake system pressure protection valve(s) shall be diagnostically checked to the shutoff point.

16.3.6.2 Leak-down rate (time) of the applied side of the air brake system shall be diagnostically checked with the engine stopped and the service brakes applied, and the air pressure shall not drop more than 4 psi (27.6 kPa) in 1 minute for a combination vehicle.

16.3.7 All components of the braking system shall be inspected for damage and wear when performing a brake overhaul.

16.4. Trailer electrical and lighting. All trailer electrical systems and lighting shall be inspected and maintained to the applicable requirements of chapter 8 of this document.

A.16.2.8 It is important that the cold tire inflation be maintained to the fire apparatus manufacturer's recommended tire pressure, which is based on the weight of the completed apparatus, and not to the maximum pressure shown on the sidewall of the tire. If the information from the fire apparatus manufacturer is not available for the tires on the vehicle, each axle should be weighed with the vehicle fully loaded and the tires inflated to the tire manufacturer's inflation specification for the tire model, size, and axle load.

First Revision No. 15-NFPA 1911-2015 [New Section after 15.5]

Chapter 17 Inspection and Maintenance of Patient Compartment

17.1 General.

The patient compartment shall be inspected and maintained in accordance with this chapter.

17.2 Patient Compartment Interior.

17.2.1

Seats and seat belts shall be inspected for defects, structural integrity, corrosion, perforations, and missing or loose parts.

17.2.2

Seats and seat belts operation shall be diagnostically checked and lubricated.

17.2.3

The cot retention system shall be inspected for defects, structural integrity, corrosion, perforations, and missing or loose parts.

17.2.4

The cot retention system shall be diagnostically checked and lubricated.

17.2.5

The HVAC system shall be inspected for defects, structural integrity, corrosion, perforations, and missing or loose parts.

17.2.6

The HVAC system shall be diagnostically checked.

17.2.7

Action panel switches shall be inspected and diagnostically checked.

17.2.8

The medical gas system and components shall be inspected for defects, structural integrity, leaks, and missing or loose parts.

17.2.9

The medical gas system and components shall be diagnostically checked.

17.2.10

Interior compartments, doors, locks and latches shall be inspected for defects, structural integrity, corrosion, perforations, and missing or loose parts.

17.2.11

Line voltage outlets shall be inspected and diagnostically checked.

17.2.12

The line voltage power source shall be inspected and diagnostically checked.

17.2.13

Low-voltage outlets shall be inspected and diagnostically checked.

17.2.14

Fire extinguishers and mounts shall be inspected for defects, structural integrity, corrosion, charge, and missing or loose parts.

17.2.15

Handrails and mounts shall be inspected for defects, structural integrity, corrosion, and missing or loose parts.

17.2.16

The seat belt warning system shall be diagnostically checked.

17.2.17

The air exhaust fan system shall be diagnostically checked.

17.2.18

The automatic patient compartment illumination and scene light activation from patient compartment doors shall be diagnostically checked.

17.2.19
The manual patient compartment illumination and scene light activation shall be diagnostically checked.
17.2.20
The carbon monoxide detector shall be diagnostically checked.
17.3 Auxiliary Equipment.
17.3.1
Medical gas tank mounts and lifts shall be inspected for defects, structural integrity, corrosion, perforations, and missing or loose parts.
17.3.2
Oxygen lifts shall be diagnostically checked.
17.3.3
Medical equipment mounts shall be inspected for defects, structural integrity, corrosion, perforations, and missing or loose parts.
17.3.4
Suction pumps and outlets shall be inspected for defects, structural integrity, leaks, and missing or loose parts.
17.3.5
Suction pumps and outlets shall be diagnostically checked.

Supplemental Information

File Name	Description
NEW_Chapter_17_Inspection_and_Maintenance_of_Patient_Compartment.docx	New text for a new chapter 17. This text is not to replace the existing chapter 17 but to come before the existing chapter 17, thus causing subsequent chapters to be re-numbered.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
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Committee Statement

Committee Statement: This new text adds inspection and maintenance requirements for ambulances.
Response Message:
Public Input No. 85-NFPA 1911-2014 [New Section after 15.5]

Chapter 17 Inspection and Maintenance of Patient Compartment

17.1 General. The patient compartment shall be inspected and maintain in accordance with this chapter.

17.2 Patient Compartment Interior

17.2.1 Seats and seat belts shall be inspected for defects, structural integrity, corrosion, perforations, and missing or loose parts.

17.2.2 Seats and seat belts operation shall be diagnostically checked and lubricated.

17.2.3 Cot retention system shall be inspected for defects, structural integrity, corrosion, perforations, and missing or loose parts.

17.2.4 Cot retention system shall be diagnostically checked and lubricated.

17.2.5 HVAC system shall be inspected for defects, structural integrity, corrosion, perforations, and missing or loose parts.

17.2.6 HVAC system shall be diagnostically checked.

17.2.7 Action panel switches shall be inspected and diagnostically checked.

17.2.8 Medical gas system and components shall be inspected for defects, structural integrity, leaks, and missing or loose parts.

17.2.9 Medical gas system and components shall be diagnostically checked.

17.2.10 Interior compartments, doors, locks and latches shall be inspected for defects, structural integrity, corrosion, perforations, and missing or loose parts.

17.2.11 Line voltage outlets shall be inspected and diagnostically checked.

17.2.12 Line voltage power source shall be inspected and diagnostically checked.

17.2.13 Low voltage outlets shall be inspected and diagnostically checked.

17.2.14 Fire extinguishers and mounts shall be inspected for defects, structural integrity, corrosion, charge, and missing or loose parts.

17.2.15 Handrails and mounts shall be inspected for defects, structural integrity, corrosion, and missing or loose parts.

17.2.16 Seatbelt warning system shall be diagnostically checked.

17.2.17 The air exhaust fan system shall be diagnostically checked.

17.2.18 Automatic patient compartment illumination and scene light activation from patient compartment doors shall be diagnostically checked.

17.2.19 Manual patient compartment illumination and scene light activation shall be diagnostically checked.

17.2.20 Carbon monoxide detector shall be diagnostically checked.

17.3 Auxiliary Equipment

17.3.1 Medical gas tank mounts and lifts shall be inspected for defects, structural integrity, corrosion, perforations, and missing or loose parts.

17.3.2 Oxygen lifts shall be diagnostically checked.

17.3.3 Medical equipment mounts shall be inspected for defects, structural integrity, corrosion, perforations, and missing or loose parts.

17.3.4 Suction pumps and outlets shall be inspected for defects, structural integrity, leaks, and missing or loose parts.

17.3.5 Suction pumps and outlets shall be diagnostically checked.

First Revision No. 100-NFPA 1911-2015 [Section No. 16.2]

19.2 ~~Fire Apparatus~~ Emergency Vehicle Axle Weight Test.

19.2.1

The fully loaded ~~fire apparatus~~ emergency vehicle shall be weighed following the procedure specified in 19.2.2 through 19.2.5 to ensure that the weight on the front and rear axles and the gross vehicle weight do not exceed the gross axle weight ratings (GAWRs) and the gross vehicle weight rating (GVWR) or gross combination weight rating (GCWR) as shown on the rating plate on the ~~fire apparatus~~ emergency vehicle .

19.2.2

The ~~fire apparatus~~ emergency vehicle shall be prepared to be weighed as follows:

(1) Load the ~~apparatus~~ emergency vehicle with all items that are onboard while it is in service.

(2) Fill all fluid tanks, including the following:

(a) Fuel tank

(b) Foam tank(s)

(c) Water tank

(d) Drinking water coolers

(e) Ice chests

(f) Portable equipment fuel containers

(3) Remove all personnel from the driving and crew compartments.

19.2.3*

The ~~fire apparatus~~ emergency vehicle shall be weighed using a certified truck scale as follows:

(1) Weigh the front axle.

(2) Weigh the rear axle, whether single or tandem.

(3) Weigh the entire apparatus.

19.2.4

The ~~apparatus~~ emergency vehicle weight form shown in Figure 19.2.4 shall be completed as follows to determine if the ~~apparatus~~ emergency vehicle is overloaded:

(1) Record the axle weight ratings shown on the rating plate of the ~~apparatus~~ vehicle on line A.

(2) Record the weight data obtained when the ~~apparatus~~ emergency vehicle is weighed, as required by 19.2.3, on line B.

(3)* Determine the personnel allowance by multiplying the number of riding positions in the driving and crew compartment by 200 lb (90 kg) and record that value on line C.

(4)* Determine other weight that might be added, including any items ~~normally~~ found on the ~~fire apparatus~~ emergency vehicle when it is in service but missing during the weighing, such as personal clothing, and additional equipment that might be carried during response to certain incidents, and enter those values on line D.

(5) Add lines B, C, and D for each column and record the value on line E.

(6) Subtract line E from line A and record the value on line F.

Figure 19.2.4 ~~Apparatus~~ Emergency Vehicle Weight Form.

	Front Axle	Rear Axle	Tiller Axle	Total Vehicle
A. GAWR				
B. Recorded weight				
C. Personnel allowance				
D. Other adjustments				
E. Total of rows B, C, and D				
F. Reserve capacity (row A minus row E)				

19.2.5

If all of the reserve capacity values (line F of Figure 19.2.4) are not positive, equipment on the ~~apparatus~~ vehicle shall be removed or redistributed as necessary and the ~~apparatus~~ vehicle reweighed until all reserve values are positive.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
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Submittal Date: Tue Jun 02 10:55:03 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency. The unenforceable term "normally" was also removed.
Response Message:

First Revision No. 101-NFPA 1911-2015 [Sections 16.4.2, 16.4.3]

19.4.2*

The parking brake system shall hold the fully loaded ~~fire apparatus~~ emergency vehicle on a grade of 20 percent or the steepest grade in the ~~fire~~ department's jurisdiction if a grade of 20 percent is not available.

19.4.3

The parking brake shall be tested with the ~~apparatus~~ vehicle stopped while facing uphill and again while facing downhill on the same grade.

Submitter Information Verification

Submitter Full Name: Ken Holland
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City:
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Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 102-NFPA 1911-2015 [Section No. 16.5.1]

19.5.1

A road test of the ~~fire apparatus~~ emergency vehicle shall be conducted at least annually, after each scheduled maintenance interval, and after repair, adjustment, or modification of the engine, transmission, drivetrain, suspension, brakes, or steering.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
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City:
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Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 103-NFPA 1911-2015 [Section No. 17.3.2.1]

20.3.2.1* Conductivity Testing.

The following procedure shall be used to test the batteries if an electronic battery conductance tester is used:

(1) If the battery terminal voltage is below 12.4 volts for a 12-volt battery, or 6.2 volts for a 6-volt battery, fully charge the battery before proceeding.

(2) Turn off the fire ~~apparatus~~ emergency vehicle and remove any charger.

(3) Disconnect all battery cables from the battery to be tested.

(4) Connect the tester to the battery to be tested, making the connection to the lead pad of the battery post or terminal and not to a battery cable.

(5) Perform the test in accordance with the instructions provided by the tester manufacturer.

(6) Record the cold cranking amperage (CCA) value reported in the ~~apparatus~~ vehicles maintenance records for trend analysis.

(7) If the measured CCA of the battery is less than 80 percent of the original CCA rating of the battery, the battery has failed.

Submitter Information Verification

Submitter Full Name: Ken Holland
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City:
State:
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Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 104-NFPA 1911-2015 [Section No. 17.3.2.2.1]

20.3.2.2.1 General.

The following procedure shall be used to test the batteries if a battery load tester is used instead of an electronic battery conductance tester:

(1) If the battery terminal voltage is below 12.6 volts for a 12-volt battery or 6.3 volts for a 6-volt battery, fully charge the battery before proceeding.

(2) Turn off the fire ~~apparatus~~ emergency vehicle and remove any charger.

(3) Disconnect all battery cables from the battery to be tested.

(4) Connect a load tester to the battery to be tested.

(5) Connect a digital voltmeter that has a ±0.5 percent dc voltage accuracy or better if the load tester has no dc voltage meter.

(6) Adjust the current load of the load tester to one-half the CCA rating for the battery being tested.

(7) Measure and record the temperature of the battery.

(8) Apply the load for 15 seconds.

(9) Record the battery terminal voltage at the end of 15 seconds.

(10) Discontinue the load test.

(11) If the voltage is below the value shown in Table 20.3.2.2.1, the battery has failed.

Table 20.3.2.2.1 Voltage for Battery to Pass Load Test

Battery Temperature		Voltage (V)	
°F	°C	12-Volt Battery	6-Volt Battery
80	27	9.70	4.85
70	21	9.60	4.80
60	16	9.50	4.75
50	10	9.40	4.70
40	4	9.30	4.65
30	-1	9.10	4.55
20	-6	8.90	4.45
10	-12	8.70	4.35
0	-18	8.50	4.25

Submitter Information Verification

Submitter Full Name: Ken Holland
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Street Address:
City:
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Zip:
Submittal Date: Tue Jun 02 11:02:05 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.

Response Message:

First Revision No. 105-NFPA 1911-2015 [Section No. 17.5.5]

20.5.5*

The alternator shall be tested as follows:

(1) Start the test with the engine temperature below 100°F (38°C).

(2) Increase the engine speed to 75 percent of maximum (governed) engine speed.

(3) Turn on enough electrical loads on the ~~apparatus~~ emergency vehicle for the total draw to exceed the alternator output, adding load at the battery, if necessary.

(4) Record the maximum alternator current and the voltage drop in the positive (+) and negative (- –) alternator leads.

(5) Stop the test and turn off loads.

(6) If the alternator output current does not reach at least 80 percent of its nameplate rated output current, the test has failed.

(7)* If the voltage drop exceeds 0.2 volts for a 12-volt nominal system or 0.4 volts for a 24-volt nominal system in either alternator lead, the test has failed.

Submitter Information Verification

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State:
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Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 28-NFPA 1911-2015 [Section No. 17.7.1]

20.7.1

If the ~~apparatus~~ emergency vehicle is equipped with a battery charger or conditioner, it shall be tested as follows: ~~described in 18.7.2 and 18.7.3 .~~

(1) Batteries shall be fully charged to at least 12.66 volts for a 12-volt nominal system, 25.32 volts for a 24-volt nominal system, and 44.31 volts for a 42-volt nominal system before starting the test.

(2) Engine shall be turned off, and the shoreline power cord shall be attached.

(3) Record battery voltage at the beginning of the test.

(4) Apply a load of at least 80 percent of nominal charger output for 1 hour.

(5) Remove the load and record battery voltage at end of test.

(6) The battery charger test shall fail if the charger does not maintain battery voltage of at least 12.54 volts or higher for a 12-volt nominal system, 25.02 volts or higher for a 24-volt nominal system, and 43.75 volts or higher for a 42-volt nominal system.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 14 09:54:36 EDT 2015

Committee Statement

Committee Statement: The current test can not be done because most batteries have a float voltage lower then 13.8 volts. Since there are different battery chargers and batteries available a performance type test would work better. The test I have added is a variation of the test we are proposing to use in 1917 the ambulance standard. I have tried both the old test and new test in my shop and we were not able to meet the 13.8 float voltage even if left the charger on overnight with no load on the battery system. The new test is doable and if the charger, wiring and circuit breaker are ok the test is successful.

Response Message:

Public Input No. 52-NFPA 1911-2014 [Section No. 17.7.1]

First Revision No. 29-NFPA 1911-2015 [Section No. 17.7.2]

~~18.7.2~~

~~With the apparatus turned off, and electrical loads that exceed the rated output of the charger/conditioner turned on, the output of the battery charger/conditioner shall be at least 80 percent of the rated output of the battery charger/conditioner.~~

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 14 09:59:17 EDT 2015

Committee Statement

Committee Statement: see section 17.7.1 changes
Response Message:
Public Input No. 53-NFPA 1911-2014 [Section No. 17.7.2]

First Revision No. 30-NFPA 1911-2015 [Section No. 17.7.3]

~~**18.7.3**~~

~~With the battery fully charged, the float voltage of the battery charger/conditioner shall not drop to less than 13.8 volts for a 12-volt nominal system, 27.6 volts for a 24-volt nominal system, or 41.4 volts for a 42-volt nominal system.~~

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
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Committee Statement

Committee Statement: see Substantiation in 17.7.1
Response Message:
Public Input No. 54-NFPA 1911-2014 [Section No. 17.7.3]

First Revision No. 106-NFPA 1911-2015 [Section No. 17.8.3]

20.8.3

The following test procedure shall be used:

(1) Advance the engine speed to at least 50 percent of the governed speed of the engine.

(2)* Turn on all loads that comprise the total continuous electrical load, except loads associated with the following:

(a) Aerial hydraulic pump

(b) Foam pump

(c) Hydraulic-driven equipment

(d) Winch

(e) Windshield wipers

(f) Four-way hazard flashers

(g) Compressed air foam system (CAFS) compressor

(3) Measure the battery voltage at the battery terminals.

(4) Operate the ~~apparatus~~ emergency vehicle under the conditions specified in 20.8.3(1) through 20.8.3(3) continuously for at least 20 minutes, with load shedding permitted by the system if the ~~apparatus~~ vehicle is equipped with an automatic electrical load management system.

(5) Measure the battery voltage at the battery terminals.

(6) Turn off electrical loads and reduce engine speed, unless required for other simultaneous testing.

Submitter Information Verification

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Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 31-NFPA 1911-2015 [New Section after 17.9.3]

20.10 Low-Voltage Alarm Test.

20.10.1

The following test shall be started with the engine off and the battery voltage at or above 12 volts for a 12 volt nominal system, 24 volts for a 24 volt nominal system, or 36 volts for a 42 volt nominal system.

20.10.2

With the engine shut off, the total continuous electrical load shall be activated and shall continue to be applied until the excessive battery discharge alarm activates.

20.10.3

The battery voltage shall be measured at the battery terminals.

20.10.4

The test shall be considered a failure if the alarm does not sound in less than 140 seconds after the voltage drops to 11.70 volts for a 12-volt nominal system, 23.4 volts for a 24-volt nominal system, or 35.1 volt for a 42-volt nominal system.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
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Committee Statement

Committee Statement: 1901 now requires the testing of the low voltage alarm so it needs to be checked annually.

Response Message:

Public Input No. 32-NFPA 1911-2014 [New Section after 17.9.3]

First Revision No. 32-NFPA 1911-2015 [Chapter 18 [Title Only]]

Performance Testing of Fire Pumps, Wildland Fire Pumps, Ultra High-Pressure Pumps, and Industrial Supply Pumps

Submitter Information Verification

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Committee Statement

Committee Statement: The committee made these changes as there is a need to add annual testing for wildland fire pumps and ultra high pressure pumps.
Response Message:

Public Input No. 26-NFPA 1911-2014 [Chapter 18 [Title Only]]

First Revision No. 33-NFPA 1911-2015 [Section No. 18.2]

21.2* Frequency.

Performance tests shall be conducted at least annually; ~~and whenever major repairs or~~ whenever repairs ~~modifications~~ , as listed below, are done; and whenever modifications are made to the pump or to any component~~s~~ of the ~~apparatus~~ emergency vehicle that ~~is~~ are used in pump operations ~~have been made~~ .

Repairs requiring a performance test include, but are not limited to, the following;

(1) Removal of the pump transmission

(2) Removal of fire, wildland, ultra high-pressure, or industrial pumps

(3) Removal of chassis transmission, pump PTO, or pump hydraulic drive

(4) Engine overhaul or removal

(5) Engine injector or injection pump replacement or repair

(6) Engine or transmission electronic control module (ECM) replacement or reprogramming

(7) Engine turbo charger replacement

(8) Radiator removal

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Committee Statement

Committee Statement: These changes were made as the committee needs to provide guidance to the AHJ and technicians as to what a repairs require a pump test

Response Message:

Public Input No. 27-NFPA 1911-2014 [Section No. 18.2]

First Revision No. 34-NFPA 1911-2015 [Section No. 18.4]

21.4* Environmental Conditions.

Tests shall be performed when the ~~environmental~~ conditions are ~~within the limits shown in~~ ~~Table 19.4~~ 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)

~~Table 19.4 Environmental Conditions for Testing Pumps~~

~~Condition~~	~~Limits~~
~~Air temperature~~	~~0°F to 110°F (-18°C to 43°C)~~
~~Water temperature~~	~~35°F to 90°F (2°C to 32°C)~~
~~Barometric pressure~~	~~29 in. Hg (98.2 kPa) minimum (corrected to sea level)~~

Supplemental Information

File Name	Description
NEW_text_for_A.18.4_with_table.docx	New text and table to be added to the existing Annex A item for A.18.4. This does not replace the existing annex A text for A.18.4 but it is to be added to the existing text.

Submitter Information Verification

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Committee Statement

Committee Statement: These changes were made in order to match 1901: 16.13.2.1.2
Response Message:

Public Input No. 42-NFPA 1911-2014 [Section No. 18.4]
Public Input No. 90-NFPA 1911-2014 [Section No. 18.6.2]
Public Input No. 40-NFPA 1911-2014 [New Section after A.18.4]

The suction lift capability of a fire pump is certified by the pump manufacturer for specific conditions of altitude above sea level, atmospheric pressure, water temperature, and friction and entrance loss caused by the flow of water through intake strainers and hose. The AHJ should be aware that as the temperature of the water increases and barometric pressures decreases, the suction lift capability of the fire pump is reduced. The test site configuration must not provide a vertical lift that exceeds the suction lift capability of the pump as a result of elevated water temperatures and reduced barometric pressure. See Table A.18.4

Table A.18.4 Effect on Water Temperature and Barometric Pressure on Suction Lift

Water Temperature Effect		Barometric Pressure Effect	
60 ° F	0 ft	29.9 in-Hg	0 ft
90 ° F	-1 ft	29.0 in-Hg	-1 ft
110 ° F	-2.3 ft		
120 ° F	-3.3 ft		

First Revision No. 35-NFPA 1911-2015 [Section No. 18.5.1.1 [Excluding any Sub-Sections]]

When a pump is tested from draft at elevations up to 2000 ft (610 m), the suction hose arrangement shall be as specified in ~~19.5.1.1.1~~ ~~or~~ ~~19.5.1.1.2~~ ~~, as appropriate~~ NFPA 1901 and NFPA 1906 for the particular pump capacity rating. .

Supplemental Information

File Name	Description
New_A.21.5.1.1_old_A.18.5.1.1.docx	

Submitter Information Verification

Submitter Full Name: Ken Holland
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Submittal Date: Thu May 14 10:59:56 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for the ease of document consistency. Changes to NFPA 1901 will not make NFPA 1911 out of date. See attached document for the associated Annex A text changes too.

Response Message:

~~**A.18.5.1.1** Table 18.5.1.1.1(a) shows the suction hose size and number of suction lines to be used for testing at elevations up to 2000 ft (600 m).~~ **A.21.5.1.1** For elevations greater than 2000 ft (600 m), suction hose size and quantity might have to be increased to maintain the desired pump performance.

First Revision No. 55-NFPA 1911-2015 [Sections 18.5.1.1.1, 18.5.1.1.2]

~~**19.5.1.1.1**~~ ~~Pumps Rated in Gallons per Minute.~~

If the pump was originally rated in gallons per minute at pressures measured in pounds per square inch, the following shall be used:

Suction hose of the appropriate size for the rated capacity of the pump as shown in Table 19.5.1.1.1(a)

A suction strainer and hose that will allow flow with total friction and entrance loss not greater than that specified in Table 19.5.1.1.1(b) through Table 19.5.1.1.1(e)

Table 19.5.1.1.1(a) Suction Hose Size, Number of Suction Lines, and Lift for Fire Pump

Rated Capacity		Maximum Suction Hose Size		Maximum Number of Suction Lines*	Maximum Lift	
gpm	L/min	in.	mm		ft	m
250	1,000	3	75	1	10	3
300	1,100	3	75	1	10	3
350	1,300	4	100	1	10	3
500	2,000	4	100	1	10	3
750	3,000	4 1½	110	1	10	3
1000	4,000	6	150	1	10	3
1250	5,000	6	150	1	10	3
1500	6,000	6	150	2	10	3
1750	7,000	6	150	2	8	2.4
2000	8,000	6	150	2	6	1.8
2000	8,000	8	200	1	6	1.8
2250	9,000	6	150	3	6	1.8
2250	9,000	8	200	1	6	1.8
2500	10,000	6	150	3	6	1.8
2500	10,000	8	200	1	6	1.8
3000	12,000	6	150	4	6	1.8
3000	12,000	8	200	2	6	1.8
3500	14,000	6	150	4	6	1.8
3500	14,000	8	200	2	6	1.8
4000	16,000	6	150	4	6	1.8
4000	16,000	8	200	2	6	1.8
4500	18,000	6	150	4	6	1.8
4500	18,000	8	200	2	6	1.8
5000	20,000	6	150	4	6	1.8
5000	20,000	8	200	2	6	1.8

*Where more than one suction line is used, all suction lines are not required to be the same hose size.

Table 19.5.1.1.1(b) Friction and Entrance Loss in 20 Feet of Suction Hose, Including Strainer (Inch-Pound Units)

	Suction Hose Size (Inside Diameter)							
	One 3 in.		One 3 1½ in.		One 4 in.		One 4 1½ in.	
Flow Rate (gpm)	ft Water	in. Hg	ft Water	in. Hg	ft Water	in. Hg	ft Water	in. Hg
250	5.2 (1.2)	4.6						
175	2.6 (0.6)	2.3						
125	1.4 (0.3)	1.2						

	Suction Hose Size (Inside Diameter)							
	One 3 in.		One 3 1½ in.		One 4 in.		One 4 1½ in.	
Flow Rate (gpm)	ft Water	in. Hg	ft Water	in. Hg	ft Water	in. Hg	ft Water	in. Hg
300	7.5 (1.7)	6.6	3.5 (0.8)	3.1				
210	3.8 (0.8)	3.4	1.8 (0.4)	1.6				
150	1.9 (0.4)	1.7	0.9 (0.2)	0.8				
350			4.8 (1.1)	4.2	2.5 (0.7)	2.1		
245			2.4 (0.5)	2.1	1.2 (0.3)	1.1		
175			1.2 (0.3)	1.1	0.7 (0.1)	0.6		
500					5.0 (1.3)	4.4	3.6 (0.8)	3.2
350					2.5 (0.7)	2.1	1.8 (0.4)	1.6
250					1.3 (0.4)	1.1	0.9 (0.3)	0.8
750					11.4 (2.9)	9.8	8.0 (1.6)	7.1
525					5.5 (1.5)	4.9	3.9 (0.8)	3.4
375					2.8 (0.7)	2.5	2.0 (0.4)	1.8

Note: Values in parentheses indicate increment to be added or subtracted for each 10 ft of hose greater than or less than 20 ft.

Table 19.5.1.1.1(c) Friction and Entrance Loss in 20 Feet of Suction Hose, Including Strainer (Inch-Pound Units)

	Suction Hose Size (Inside Diameter)							
	One 4 1½ in.		One 5 in.		One 6 in.		Two 4 1½ in.	
Flow Rate (gpm)	ft Water	in. Hg	ft Water	in. Hg	ft Water	in. Hg	ft Water	in. Hg
750	8.0 (1.6)	7.1	4.7 (0.9)	4.2	1.9 (0.4)	1.7		
525	3.9 (0.8)	3.4	2.3 (0.5)	2.0	0.9 (0.2)	0.8		
375	2.0 (0.4)	1.8	1.2 (0.2)	1.1	0.5 (0.1)	0.5		
1000	14.5 (2.8)	12.5	8.4 (1.6)	7.4	3.4 (0.6)	3.0		
700	7.0 (1.4)	6.2	4.1 (0.8)	3.7	1.7 (0.3)	1.5		
500	3.6 (0.8)	3.2	2.1 (0.4)	1.9	0.9 (0.2)	0.8		
1250			13.0 (2.4)	11.5	5.2 (0.9)	4.7	5.5 (1.2)	4.9
875			6.5 (1.2)	5.7	2.6 (0.5)	2.3	2.8 (0.7)	2.5
625			3.3 (0.7)	2.9	1.3 (0.3)	1.1	1.4 (0.3)	1.2
1500					7.6 (1.4)	6.7	8.0 (1.6)	7.1
1050					3.7 (0.7)	3.3	3.9 (0.8)	3.4
750					1.9 (0.4)	1.7	2.0 (0.4)	1.8
1750					10.4(1.8)	9.3	11.0 (2.2)	9.7
1225					5.0 (0.9)	4.6	5.3 (1.1)	4.7
875					2.6 (0.5)	2.3	2.8 (0.6)	2.5
2000							14.5 (2.8)	12.5
1400							7.0 (1.4)	6.2
1000							3.6 (0.8)	3.2

Note: Values in parentheses indicate increment to be added or subtracted for each 10 ft of hose greater than or less than 20 ft.

Table 19.5.1.1.1(d) Friction and Entrance Loss in 20 Feet of Suction Hose, Including Strainer (Inch-Pound Units)

Flow Rate	Suction Hose Size (Inside Diameter)

(gpm)	Two 5 in.		Two 6 in.		Three 6 in.		One 8 in.		Two 8 in.	
	ft Water	in. Hg	ft Water	in. Hg	ft Water	in. Hg	ft Water	in. Hg	ft Water	in. Hg
1500	4.7 (0.9)	4.2	1.9 (0.4)	1.7						
1050	2.3 (0.5)	2.0	0.9 (0.3)	0.8						
750	1.2 (0.2)	1.1	0.5 (0.1)	0.5						
1750	6.5 (1.2)	5.7	2.6 (0.5)	2.3						
1225	3.1 (0.7)	2.7	1.2 (0.3)	1.1						
875	1.6 (0.3)	1.4	0.7 (0.2)	0.6						
2000	8.4 (1.6)	7.4	3.4 (0.6)	3.0			4.3 (1.1)	3.8		
1400	4.1 (0.8)	3.7	1.7 (0.3)	1.5			2.0 (0.6)	1.8		
1000	2.1 (0.4)	1.9	0.9 (0.2)	0.8			1.0 (0.3)	0.9		
2250	10.8 (2.2)	9.5	4.3 (0.8)	3.8	2.0 (0.5)	1.8	5.6 (1.4)	5.0	1.2 (0.4)	1.1
1575	5.3 (1.1)	4.7	2.2 (0.4)	1.9	1.0 (0.2)	0.9	2.5 (0.9)	2.2	0.6 (0.2)	0.5
1125	2.8 (0.5)	2.5	1.1 (0.2)	1.0	0.5 (0.1)	0.5	1.2 (0.4)	1.1	0.3 (0.1)	0.3
2500	13.0 (2.4)	11.5	5.2 (0.9)	4.7	2.3 (0.6)	2.0	7.0 (1.7)	6.2	1.5 (0.4)	1.3
1750	6.5 (1.2)	5.7	2.6 (0.5)	2.3	1.2 (0.2)	1.1	3.2 (1.0)	2.8	0.8 (0.2)	0.7
1250	3.3 (0.7)	2.9	1.3 (0.3)	1.1	0.6 (0.1)	0.5	1.5 (0.4)	1.3	0.4 (0.1)	0.4
3000			7.6 (1.4)	6.9	3.4 (0.6)	3.0	10.1 (3.0)	9.0	2.3 (0.6)	2.1
2100			3.7 (0.7)	3.4	1.7 (0.3)	1.5	4.7 (1.3)	4.2	1.0 (0.3)	0.9
1500			1.9 (0.4)	1.7	0.9 (0.2)	0.8	2.3 (0.7)	2.1	0.6 (0.2)	0.5

Note: Values in parentheses indicate increment to be added or subtracted for each 10 ft of hose greater than or less than 20 ft.

Table 19.5.1.1.1(e) Friction and Entrance Loss in 20 Feet of Suction Hose, Including Strainer (Inch-Pound Units)

Flow Rate (gpm)	Suction Hose Size (Inside Diameter)					
	Three 6 in.		Four 6 in.		Two 8 in.	
	ft Water	in. Hg	ft Water	in. Hg	ft Water	in. Hg
3500			2.6 (0.5)	2.3	3.2 (0.8)	2.8
2450			1.2 (0.3)	1.1	1.5 (0.4)	1.3
1750			0.7 (0.2)	0.6	0.7 (0.2)	0.7
4000	4.8 (0.9)	4.3	3.4 (0.6)	3.0	4.3 (1.1)	3.8
2800	2.8 (0.5)	2.5	1.7 (0.3)	1.5	2.0 (0.6)	1.8
2000	1.4 (0.3)	1.2	0.9 (0.2)	0.8	1.0 (0.3)	0.9
4500	7.6 (1.4)	6.7	4.3 (0.8)	3.8	5.6 (1.4)	5.0
3150	3.7 (0.7)	3.3	2.2 (0.4)	1.9	2.5 (0.9)	2.2
2250	1.9 (0.4)	1.7	1.1 (0.2)	1.0	1.2 (0.4)	1.1
5000	7.6 (1.4)	6.7	4.5 (0.9)	4.0	7.0 (1.7)	6.2
3500	3.8 (0.7)	3.4	2.6 (0.5)	2.3	3.2 (1.0)	2.8
2500	2.3 (0.6)	2.0	1.3 (0.3)	1.2	1.5 (0.4)	1.3

Note: Values in parentheses indicate increment to be added or subtracted for each 10 ft of hose greater than or less than 20 ft.

~~19.5.1.1.2~~ ~~Pumps Rated in Liters per Minute.~~

If the pump was originally rated in liters per minute at pressures measured in kilopascals (kPa) or bars, the following shall be used:

Suction hose of the appropriate size for the rated capacity of the pump as shown in Table 19.5.1.1.1(a)

A suction strainer and hose that will allow flow with total friction and entrance loss not greater than that specified in Table 19.5.1.1.2(a) through Table 19.5.1.1.2(d)

Table 19.5.1.1.2(a) Friction and Entrance Loss in 6 Meters of Suction Hose, Including Strainer (Metric Units)

Flow Rate (L/min)	Suction Hose Size (Inside Diameter)							
	One 75 mm		One 90 mm		One 100 mm		One 110 mm	
	m water	kPa	m Water	kPa	m Water	kPa	m Water	kPa
1000	1.6 (0.04)	16						
700	0.8 (0.02)	8						
500	0.4 (0.01)	4						
1100	2.2 (0.05)	22	1.1 (0.02)	10				
770	1.1 (0.02)	12	0.6 (0.01)	5				
550	0.6 (0.01)	6	0.3 (0.01)	3				
1300			1.5 (0.03)	14	0.7 (0.02)	7		
910			0.7 (0.01)	7	0.4 (0.01)	4		
650			0.4 (0.01)	4	0.2 (0.01)	2		
2000					1.5 (0.04)	15	1.1 (0.02)	11
1400					0.7 (0.02)	7	0.5 (0.01)	5
1000					0.4 (0.01)	4	0.3 (0.01)	3
3000					3.5 (0.09)	33	2.4 (0.05)	24
2100					1.7 (0.05)	17	1.2 (0.02)	11
1500					0.9 (0.02)	8	0.6 (0.01)	6

Note: Values in parentheses indicate increment to be added or subtracted for each 3 m of hose greater than or less than 6 m.

Table 19.5.1.1.2(b) Friction and Entrance Loss in 6 Meters of Suction Hose, Including Strainer (Metric Units)

Flow Rate (L/min)	Suction Hose Size (Inside Diameter)							
	One 110 mm		One 125 mm		One 150 mm		Two 110 mm	
	m Water	kPa	m Water	kPa	m Water	kPa	m Water	kPa
3000	2.4 (0.05)	24	1.4 (0.03)	14	0.6 (0.01)	6		
2100	1.2 (0.02)	11	0.7 (0.01)	7	0.3 (0.01)	3		
1500	0.6 (0.01)	6	0.4 (0.01)	4	0.2 (0.01)	2		
4000	4.4 (0.08)	42	2.6 (0.05)	25	1.0 (0.02)	10		
2800	2.1 (0.04)	21	1.2 (0.02)	13	0.5 (0.01)	5		
2000	1.1 (0.02)	11	0.6 (0.01)	6	0.3 (0.01)	3		
5000			4.0 (0.07)	39	1.6 (0.03)	16	1.7 (0.04)	17
3500			2.0 (0.04)	19	0.8 (0.02)	8	0.9 (0.02)	8
2500			1.0 (0.02)	10	0.4 (0.01)	4	0.4 (0.01)	4
6000					2.3 (0.04)	23	2.4 (0.05)	24
4200					1.1 (0.02)	11	1.2 (0.02)	12

Flow Rate (L/min)	Suction Hose Size (Inside Diameter)							
	One 110 mm		One 125 mm		One 150 mm		Two 110 mm	
	m Water	kPa	m Water	kPa	m Water	kPa	m Water	kPa
3000					0.6 (0.01)	6	0.6 (0.01)	6
7000					3.2 (0.05)	31	3.6 (0.07)	33
4900					1.5 (0.03)	16	1.6 (0.03)	16
3500					0.8 (0.02)	8	0.9 (0.02)	8
8000							4.4 (0.08)	42
5600							2.1 (0.04)	21
4000							1.1 (0.02)	11

Note: Values in parentheses indicate increment to be added or subtracted for each 3 m of hose greater than or less than 6 m.

Table 19.5.1.1.2(c) Friction and Entrance Loss in 6 Meters of Suction Hose, Including Strainer (Metric Units)

Flow Rate (L/min)	Suction Hose Size (Inside Diameter)									
	Two 125 mm		Two 150 mm		Three 150 mm		One 200 mm		Two 200 mm	
	m Water	kPa	m Water	kPa	m Water	kPa	m Water	kPa	m Water	kPa
6,000	1.4 (0.03)	14	0.6 (0.01)	6						
4,200	0.7 (0.02)	7	0.3 (0.01)	3						
3,000	0.4 (0.01)	4	0.2 (0.01)	2						
7,000	2.0 (0.04)	19	0.8 (0.02)	8						
4,900	0.9 (0.02)	9	0.4 (0.01)	4						
3,500	0.5 (0.01)	5	0.2 (0.01)	2						
8,000	2.6 (0.05)	25	1.0 (0.02)	10			1.3 (0.03)	13		
5,600	1.2 (0.02)	13	0.5 (0.01)	5			0.6 (0.02)	6		
4,000	0.6 (0.01)	6	0.3 (0.01)	3			0.3 (0.01)	3		
9,000	3.3 (0.07)	32	1.3 (0.02)	13	0.6 (0.01)	6	1.7 (0.05)	17	0.4 (0.01)	4
6,300	1.6 (0.03)	16	0.7 (0.01)	6	0.3 (0.01)	3	0.7 (0.03)	7	0.2 (0.01)	2
4,500	0.9 (0.02)	8	0.3 (0.01)	3	0.2 (0.01)	2	0.4 (0.01)	4	0.1 (0.01)	1
10,000	4.0 (0.07)	39	1.6 (0.03)	16	0.7 (0.02)	7	2.1 (0.05)	21	0.5 (0.01)	4
7,000	2.0 (0.04)	19	0.8 (0.02)	8	0.4 (0.01)	4	1.0 (0.03)	9	0.2 (0.01)	2
5,000	1.0 (0.02)	10	0.4 (0.01)	4	0.2 (0.01)	2	0.5 (0.01)	4	0.1 (0.01)	1

Flow Rate (L/min)	Suction Hose Size (Inside Diameter)									
	Two 125 mm		Two 150 mm		Three 150 mm		One 200 mm		Two 200 mm	
	m Water	kPa	m Water	kPa	m Water	kPa	m Water	kPa	m Water	kPa
12,000			2.3 (0.04)	23	1.0 (0.02)	10	3.0 (0.09)	30	0.7 (0.02)	7
8,400			1.1 (0.02)	12	0.5 (0.01)	5	1.4 (0.04)	14	0.3 (0.01)	3
6,000			0.6 (0.01)	6	0.3 (0.01)	3	0.7 (0.02)	7	0.2 (0.01)	2

Note: Values in parentheses indicate increment to be added or subtracted for each 3 m of hose greater than or less than 6 m.

Table 19.5.1.1.2(d) Friction and Entrance Loss in 6 Meters of Suction Hose, Including Strainer (Metric Units)

Flow Rate (L/min)	Suction Hose Size (Inside Diameter)					
	Three 150 mm		Four 150 mm		Two 200 mm	
	m Water	kPa	m Water	kPa	m Water	kPa
14,000			0.8 (0.2)	8	1.0 (0.2)	9
9,800			0.4 (0.1)	4	0.5 (0.1)	4
7,000			0.2 (0.1)	2	0.2 (0.1)	2
16,000	1.5 (0.3)	15	1.0 (0.2)	10	1.3 (0.3)	13
11,200	0.9 (0.2)	8	0.5 (0.1)	5	0.6 (0.2)	6
8,000	0.4 (0.1)	4	0.3 (0.1)	3	0.3 (0.1)	3
18,000	2.3 (0.4)	23	1.3 (0.2)	13	1.7 (0.4)	17
12,600	1.1 (0.2)	11	0.7 (0.1)	6	0.8 (0.3)	7
9,000	0.6 (0.1)	6	0.3 (0.1)	3	0.4 (0.1)	4
20,000	2.3 (0.4)	23	1.4 (0.3)	14	2.1 (0.5)	21
14,000	1.2 (0.2)	12	0.8 (0.2)	8	1.0 (0.3)	9
10,000	0.7 (0.2)	7	0.4 (0.1)	4	0.5 (0.1)	4

Note: Values in parentheses indicate increment to be added or subtracted for each 3 m of hose greater than or less than 6 m.

Submitter Information Verification

Submitter Full Name: Ken Holland
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Street Address:
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Submittal Date: Mon Jun 01 14:06:53 EDT 2015

Committee Statement

Committee Statement: The committee has chosen to delete this text and the associated tables as they have now referred the end user to the applicable tables in NFPA 1901 and NFPA 1906. See FR 35

Response Message:

Public Input No. 43-NFPA 1911-2014 [Section No. 18.5.1.1.1]

First Revision No. 36-NFPA 1911-2015 [New Section after 18.5.2.1]

21.5.2.2

All fire hose shall meet the requirements of NFPA 1961 and be current with NFPA 1962 .

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
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Submittal Date: Thu May 14 11:12:11 EDT 2015

Committee Statement

Committee Statement: The committee has added this new text as they believe that it addresses the concerns of the submitter.

Response Message:

Public Input No. 92-NFPA 1911-2015 [Section No. 18.5.2.2]

First Revision No. 37-NFPA 1911-2015 [Section No. 18.6.2]

~~**19.6.2** Alternative Conditions.~~

~~If it is impractical to provide all the conditions specified in Sections 19.3 and 19.4 , the AHJ shall be permitted to authorize tests under other conditions.~~

Submitter Information Verification

Submitter Full Name: Ken Holland
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Street Address:
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Submittal Date: Thu May 14 11:24:29 EDT 2015

Committee Statement

Committee Statement: The committee agrees with the submitter and has chosen to delete this section of text.
Response Message:
Public Input No. 28-NFPA 1911-2014 [Section No. 18.6.2]

First Revision No. 47-NFPA 1911-2015 [New Section after 18.7.4.5]

21.7.4.6

For wildland and fire apparatus compliant with the 2016 editions, or later, of NFPA 1906 and NFPA 1901, respectively, where the pump is driven by the chassis engine and automatic transmission through a split shaft PTO, compliance shall be verified that an interlock system prevents the pump drive system from being shifted out of the “Pump Engaged” mode of operation when the chassis transmission is in pump gear.

Submitter Information Verification

Submitter Full Name: Ken Holland
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Street Address:
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Submittal Date: Thu May 14 14:38:24 EDT 2015

Committee Statement

Committee Statement: The committee has added this text to provide a higher level of safety.
Response Message:

First Revision No. 56-NFPA 1911-2015 [Sections 18.7.7, 18.7.8, 18.7.9, 18.7.10]

21.7.7 ~~Pumping Test for Fire Pumps.~~ Pumping Tests.

21.7.7.1 Wildland and Ultra High-Pressure Fire Pumps.

21.7.7.1.1

Wildland fire pumps and ultra high-pressure pumps shall be subjected to a 30-minute pumping test consisting of continuous pumping at rated capacity at rated net pump pressure.

21.7.7.1.2

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.

21.7.7.2

If the fire pump has a rated capacity of 250 gpm (1000 L/min) or greater but less than 3000 gpm (12,000 L/min), the pump shall be subjected to a pumping test consisting of the following:

(1) At least 20 minutes of pumping at 100 percent of rated capacity at 150 psi (1000 kPa) net pump pressure

(2) At least 10 minutes of pumping at 70 percent of rated capacity at 200 psi (1400 kPa) net pump pressure

(3) At least 10 minutes of pumping 50 percent of rated capacity at 250 psi (1700 kPa) net pump pressure

21.7.7.3 Overload Test.

~~The pumping test shall not be started until the pump pressure and the discharge quantity are stabilized at the current values.~~

21.7.7.3.1

If the fire pump has a rated capacity of 750 gpm (3000 L/min) or greater~~,~~ but less than 3000 gpm (12,000 L/min), the ~~apparatus~~ pump shall be subjected to an overload test consisting of pumping rated capacity at 165 psi (1100 kPa) net pump pressure ~~for at least 5 minutes~~ .

21.7.7.3.2

The overload test shall be performed immediately following the test of pumping at rated capacity at 150 psi (1000 kPa) net pump pressure.

21.7.7.4*

If the fire pump or industrial supply pump ~~is~~ has a ~~two stage, parallel/series type pump, the following criteria shall apply:~~ rated capacity of 3000 gpm (12,000 L/min) or greater, the pump shall be subjected to ~~the~~ a pumping test consisting of the following:

(1) At least 20 minutes of pumping at 100 percent of rated capacity at 100 psi (700 kPa) net pump pressure

(2) At least 10 minutes of pumping at 70 percent of rated capacity at 150 psi (1000 kPa) net pump pressure

(3) At least 10 minutes of pumping 50 percent of rated capacity at 200 psi (1400 kPa) net pump pressure

21.7.7.5

The pumping test~~s~~ shall not be started until the pump pressure and the discharge ~~quality~~ flow are stabilized ~~at the current values~~ .

21.7.7.6*

If the pump is a two-stage, parallel/series-type pump, the following criteria shall apply:

(1) The test at 100 percent of capacity shall be run with the pump in parallel mode.

(2) The test at 70 percent of capacity shall be permitted to be run with the pump in either series or parallel mode.

(3) The test at 50 percent of capacity shall be run with the pump in series mode.

21.7.7.7

The engine shall not be throttled down, except when the hose, a nozzle, or the position of a transfer valve is being changed.

21.7.7.8

A complete set of readings shall be taken and recorded a minimum of five times during the 20-minute test for 100 percent rated capacity, a minimum of twice during the overload test, and a minimum of three times during each of the 10-minute tests for 70 percent capacity and 50 percent capacity.

21.7.7.9

If the fire pump flow or pressure readings vary by more than 5 percent during a particular test, the reason for the fluctuation shall be determined, the cause corrected, and the test continued or repeated.

~~**21.7.8** Pumping Test for Industrial Supply Pumps.~~

~~**21.7.8.1**~~

~~The pump shall be subjected to a pumping test consisting of the following:~~

~~At least 20 minutes of pumping at 100 percent of rated capacity at 100 psi (700 kPa) net pump pressure~~

~~At least 10 minutes of pumping 70 percent of rated capacity at 150 psi (1000 kPa) net pump pressure~~

~~At least 10 minutes of pumping 50 percent of rated capacity at 200 psi (1400 kPa) net pump pressure~~

~~**21.7.8.2**~~

~~The pumping tests shall not be started until the pump pressure and the discharge quantity are stabilized~~

21.7.8* Pressure Control Test ~~for Fire Pumps~~ .

21.7.8.1 Fire Pumps.

21.7.8.1.1

The wildland fire pump shall be operated to deliver rated capacity at rated net pump pressure.

21.7.8.1.2

If a pressure control system is supplied, it shall be set in accordance with the manufacturer's instructions to maintain the discharge at rated net pump pressure +/− 5 percent.

21.7.8.1.3

All discharge valves shall be closed not more rapidly than in 3 seconds and not more slowly than in 10 seconds.

21.7.8.1.4

The rise in discharge pressure shall not exceed 60 psi (400 kPa) and shall be recorded.

21.7.8.2

~~The~~ If the fire pump has a rated capacity of 250 gpm (3000 L/min) or greater but less than 3000 gpm (12,000 L/min), the pressure control device shall be tested at rated capacity at 150 psi (1000 kPa) net pump pressure as specified in 21.7.8.2.1 through 21.7.8.2.4.

21.7.8.2.1

The pump shall be delivering rated capacity at 150 psi (1000 kPa) net pump pressure.

21.7.8.2.2

The pressure control device shall be set in accordance with the manufacturer's instructions to maintain the discharge at 150 psi (1000 kPa) net pump pressure.

21.7.8.2.3*

All discharge valves shall be closed no faster than in 3 seconds and no slower than in 10 seconds.

21.7.8.2.4

The rise in discharge pressure shall not exceed 30 psi (200 kPa).

21.7.8.3

The pressure control device shall be tested at 90 psi (620 kPa) net pump pressure as specified in 21.7.8.3.1~~21.7.8.3.121.7.8.3.121.7.8.3.121.7.9.2.1~~ through 21.7.8.3.5~~21.7.8.3.521.7.8.3.521.7.8.3.521.7.9.2.5~~ .

21.7.8.3.1

The original conditions of pumping rated capacity at 150 psi (1000 kPa) net pump pressure shall be reestablished.

21.7.8.3.2

The discharge pressure shall be reduced to 90 psi (620 kPa) net pump pressure by throttling the engine fuel supply with no change to the discharge valve setting, hose, or nozzles.

21.7.8.3.3

The pressure control device shall be set in accordance with the manufacturer's instructions to maintain the discharge at 90 psi (620 kPa) net pump pressure.

21.7.8.3.4

All discharge valves shall be closed no faster than in 3 seconds and no slower than in 10 seconds.

21.7.8.3.5

The rise in discharge pressure shall not exceed 30 psi (200 kPa).

21.7.8.4

The pressure control device shall be tested at 50 percent of rated capacity at 250 psi (1700 kPa) net pump pressure as specified in 21.7.8.4.1~~21.7.8.4.121.7.8.4.121.7.8.4.121.7.8.4.121.7.9.3.1~~ through 21.7.8.4.4~~21.7.8.4.421.7.8.4.421.7.8.4.421.7.8.4.421.7.9.3.4~~ .

21.7.8.4.1

The pump shall be delivering 50 percent of rated capacity at 250 psi (1700 kPa) net pump pressure.

21.7.8.4.2

The pressure control device shall be set in accordance with the manufacturer's instructions to maintain the discharge at 250 psi (1700 kPa) net pump pressure.

21.7.8.4.3

All discharge valves shall be closed no faster than in 3 seconds and no slower than in 10 seconds.

21.7.8.4.4

The rise in discharge pressure shall not exceed 30 psi (200 kPa).

21.7.8.5

If the fire pump or industrial supply pump has a rated capacity of 3000 gpm (12,000 L/min) or greater but less than 3000 gpm (12,000 L/min), the pressure control device shall be tested at rated capacity at 100 psi (700 kPa) net pump pressure.

21.7.8.5.1

The pressure control device shall be tested at rated pump capacity at 100 psi (700 kPa) net pump pressure as follows:

(1) The pump shall be delivering rated capacity at 100 psi (700 kPa) net pump pressure.

(2) The pressure control device shall be set in accordance with the manufacturer's instructions to maintain the discharge at 100 psi (700 kPa) net pump pressure.

(3)* All discharge valves shall be closed no more rapidly than in 3 seconds and no more slowly than in 10 seconds.

(4) The rise in discharge pressure shall not exceed 30 psi (200 kPa).

21.7.8.5.2

The pressure control device shall be tested at 90 psi (620 kPa) net pump pressure as follows:

(1) The original conditions of pumping rated capacity at 100 psi (700 kPa) net pump pressure shall be reestablished.

(2) The discharge pressure shall be reduced to 90 psi (620 kPa) net pump pressure by throttling the engine fuel supply with no change to the discharge valve setting, hose, or nozzles.

(3) The pressure control device shall be set in accordance with the manufacturer's instructions to maintain the discharge at 90 psi (620 kPa) net pump pressure.

(4) All discharge valves shall be closed no more rapidly than in 3 seconds and no more slowly than in 10 seconds.

(5) The rise in discharge pressure shall not exceed 30 psi (200 kPa).

21.7.8.5.3

The pressure control device shall be tested at 50 percent of rated pump capacity at 200 psi (1400 kPa) net pump pressure as follows:

(1) The pump shall be delivering ~~50~~ 0 percent of rated capacity at 200 psi (1400 kPa) net pump pressure.

(2) The pressure control device shall be set in accordance with the manufacturer's instructions to maintain the discharge at 200 psi (1400 kPa) net pump pressure.

(3) All discharge valves shall be closed no more rapidly than in 3 seconds and no more slowly than in 10 seconds.

(4) The rise in discharge pressure shall not exceed 30 psi (200 kPa).

21.7.8.6 Ultra High-Pressure Fire Pumps

21.7.8.6.1

The ultra high-pressure fire pump shall be operated to deliver rated capacity at rated net pump pressure.

21.7.8.6.2

All discharge valves shall be closed not more rapidly than in 3 seconds and not more slowly than in 10 seconds.

21.7.8.6.3

The rise in discharge pressure shall not exceed 10 percent of the rated pump pressure.

~~**21.7.9***~~ ~~Pressure Control Test for Industrial Supply Pumps.~~

Supplemental Information

File Name	Description
NEW_18.7.7_and_18.7.8.docx	This is the new text to replace the existing text for 18.7.7 and 18.7.8
A.18.7.7.6_Text.docx	
A.18.7.8.2.3_Text.docx	

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Mon Jun 01 15:21:30 EDT 2015

Committee Statement

Committee Statement: The committee has chosen to delete these sections and replace it with the following text as they believe it better meets the needs of the end user.

Response Message:

Public Input No. 57-NFPA 1911-2014 [Section No. 18.7.8]

18.7.7 Pumping Tests.

18.7.7.1 Wildland and Ultra-High Pressure fire pumps

18.7.7.1.1 Wildland fire pumps and ultra-high pressure pumps shall be subjected to a 30-minute pumping test consisting of continuous pumping at rated capacity at rated net pump pressure.

18.7.7.1.2 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.

18.7.7.2 If the fire pump has a rated capacity of 250 gpm (1000 L/min) or greater but less than 3000 gpm (12,000 L/min), the pump shall be subjected to the pumping test consisting of the following:

(1) At least 20 minutes of pumping at 100 percent of rated capacity at 150 psi (1000 kPa) net pump pressure

(2) At least 10 minutes of pumping at 70 percent of rated capacity at 200 psi (1400 kPa) net pump pressure

(3) At least 10 minutes of pumping 50 percent of rated capacity at 250 psi (1700 kPa) net pump pressure

18.7.7.3 Overload Test

18.7.7.3.1 If the fire pump has a rated capacity of 750 gpm (3000 L/min) or greater but less than 3000 gpm (12,000 L/min), the pump shall be subjected to an overload test consisting of pumping rated capacity at 165 psi (1100 kPa) net pump pressure.

18.7.7.3.2 The overload test shall be performed immediately following the test of pumping at rated capacity at 150 psi (1000 kPa) net pump pressure.

18.7.7.4 If the fire pump or industrial supply pump has a rated capacity of 3000 gpm (12,000 L/min) or greater, the pump shall be subjected to the pumping test consisting of the following:

(1) At least 20 minutes of pumping at 100 percent of rated capacity at 100 psi (700 kPa) net pump pressure

(2) At least 10 minutes of pumping at 70 percent of rated capacity at 150 psi (1000 kPa) net pump pressure

(3) At least 10 minutes of pumping 50 percent of rated capacity at 200 psi (1400 kPa) net pump pressure)

18.7.7.5 The pumping test shall not be started until the pump pressure and the discharge flow are stabilized.

18.7.7.6* If the pump is a two-stage, parallel/series-type pump, the following criteria shall apply:

(1) The test at 100 percent of capacity shall be run with the pump in parallel mode.

(2) The test at 70 percent of capacity shall be permitted to be run with the pump in either series or parallel mode.

(3) The test at 50 percent of capacity shall be run with the pump in series mode.

18.7.7.7 The engine shall not be throttled down, except when the hose, a nozzle, or the position of a transfer valve is being changed.

18.7.7.8 A complete set of readings shall be taken and re- corded a minimum of five times during the 20-minute test for 100 percent rated capacity, a minimum of twice during the overload test, and a minimum of three times during each of the 10-minute tests for 70 percent capacity and 50 percent capacity.

18.7.7.9 If the fire pump flow or pressure readings vary by more than 5 percent during a particular test, the reason for the fluctuation shall be determined, the cause corrected, and the test continued or repeated.

18.7.8 Pressure Control Test

18. 7.8.1 Wildland Fire Pumps

18.7.8.1.1 The wildland fire pump shall be operated to deliver rated capacity at rated net pump pressure.

18.7.8.1.2 If a pressure control system is supplied, it shall be set in accordance with the manufacturer's instructions to maintain the discharge at rated net pump pressure +/- 5 percent.

18.7.8.1.3 All discharge valves shall be closed not more rapidly than in 3 seconds and not more slowly than in 10 seconds.

18.7.8.1.4 The rise in discharge pressure shall not exceed 60 psi (400 kPa) and shall be recorded.

18.7.8.2 If the fire pump has a rated capacity of 250 gpm (3000 L/min) or greater but less than 3000 gpm (12,000 L/min), the pressure control device shall be tested at rated capacity at 150 psi (1000 kPa) net pump pressure as specified in 18.7.8.2.1 through 18.7.8.2.4.

18.7.8.2.1 The pump shall be delivering rated capacity at 150 psi (1000 kPa) net pump pressure**.**

18.7.8.2.2 The pressure control device shall be set in accordance with the manufacturer's instructions to maintain the discharge at 150 psi (1000 kPa) net pump pressure.

18.7.8.2.3* All discharge valves shall be closed no faster than in 3 seconds and no slower than in 10 seconds.

18.7.8.2.4 The rise in discharge pressure shall not exceed 30 psi (200 kPa).

18.7.8.3 The pressure control device shall be tested at 90 psi (620 kPa) net pump pressure as specified in 18.7.8.3.1 through 18.7.8.3.5.

18.7.8.3.1 The original conditions of pumping rated capacity at 150 psi (1000 kPa) net pump pressure shall be reestablished.

18.7.8.3.2 The discharge pressure shall be reduced to 90 psi (620 kPa) net pump pressure by throttling the engine fuel supply with no change to the discharge valve setting, hose, or nozzles.

18.7.8.3.3 The pressure control device shall be set in accordance with the manufacturer's instructions to maintain the discharge at 90 psi (620 kPa) net pump pressure.

18.7.8.3.4 All discharge valves shall be closed no faster than in 3 seconds and no slower than in 10 seconds.

18.7.8.3.5 The rise in discharge pressure shall not exceed 30 psi (200 kPa).

18.7.8.4 The pressure control device shall be tested at 50 per- cent of rated capacity at 250 psi (1700 kPa) net pump pressure as specified in 18.7.9.3.1 through 18.7.9.3.4.

18.7.8.4.1 The pump shall be delivering 50 percent of rated capacity at 250 psi (1700 kPa) net pump pressure.

18.7.8.4.2 The pressure control device shall be set in accordance with the manufacturer's instructions to maintain the discharge at 250 psi (1700 kPa) net pump pressure.

18.7.8.4.3 All discharge valves shall be closed no faster than in 3 seconds and no slower than in 10 seconds.

18.7.8.3.4 The rise in discharge pressure shall not exceed 30 psi (200 kPa).

18.7.8.5 If the fire pump or industrial supply pump has a rated capacity of 3000 gpm (12,000 L/min) or greater but less than 3000 gpm (12,000 L/min), the pressure control device shall be tested at rated capacity at 100 psi (700 kPa) net pump pressure.

18.7.8.5.1 The pressure control device shall be tested at rated pump capacity at 100 psi (700 kPa) net pump pressure as follows:

(1) The pump shall be delivering rated capacity at 100 psi

(700 kPa) net pump pressure.

(2) The pressure control device shall be set in accordance with the manufacturer's instructions to maintain the dis- charge at 100 psi (700 kPa) net pump pressure.

(3) All discharge valves shall be closed no more rapidly than in 3 seconds and no more slowly than in 10 seconds.

(4) The rise in discharge pressure shall not exceed 30 psi (200 kPa).

18.7.8.5.2 The pressure control device shall be tested at 90 psi (620 kPa) net pump pressure as follows:

(1) The original conditions of pumping rated capacity at 100 psi (700 kPa) net pump pressure shall be reestablished.

(2) The discharge pressure shall be reduced to 90 psi (620 kPa) net pump pressure by throttling the engine fuel supply with no change to the discharge valve setting, hose, or nozzles.

(3) The pressure control device shall be set in accordance with the manufacturer's instructions to maintain the discharge at 90 psi (620 kPa) net pump pressure.

(4) All discharge valves shall be closed no more rapidly than in 3 seconds and no more slowly than in 10 seconds.

(5) The rise in discharge pressure shall not exceed 30 psi (200 kPa).

18.7.8.5.3 The pressure control device shall be tested at 50 percent of rated pump capacity at 200 psi (1400 kPa) net pump pressure as follows:

(1) The pump shall be delivering 0 percent of rated capacity at 200 psi (1400 kPa) net pump pressure.

(2) The pressure control device shall be set in accordance with the manufacturer's instructions to maintain the discharge at 200 psi (1400 kPa) net pump pressure.

(3) All discharge valves shall be closed no more rapidly than in 3 seconds and no more slowly than in 10 seconds.

(4) The rise in discharge pressure shall not exceed 30 psi (200 kPa).

18.7.8.6 Ultra-High Pressure Fire Pumps

18.7.8.6.1 The ultra-high pressure fire pump shall be operated to deliver rated capacity at rated net pump pressure.

18.7.8.6.2 All discharge valves shall be closed not more rapidly than in 3 seconds and not more slowly than in 10 seconds.

18.7.8.6.3 The rise in discharge pressure shall not exceed 10 percent of the rated pump pressure.

A.18.7.7.6 If the pump is a two-stage, parallel/series-type unit, then operation of the transfer (that is, changeover) valve should be checked thoroughly. Conducting the pumping test with the transfer valve positioned as specified in 18.7.7.4 will ensure that the valve is exercised. If a comparison with the original engine speeds shows a significant difference for any of the tests, one of the problems could be with the transfer valve.

A.18.7.8.2.3 Closing all discharges in less than 3 seconds could cause instantaneous pressure rises that the pressure control device might not be able to respond to rapidly enough to avoid damage to the pumping system. Taking more than 10 seconds to close the discharges is not a reasonable test of the pressure control device response capability. Controlling closure of the discharges can be done manually or otherwise.

First Revision No. 57-NFPA 1911-2015 [New Section after 18.8.3]

21.8.4

If the engine speed required to meet the any of the test points during the pumping test exceeds the engine speed on the test label attached to the apparatus, the pump shall be repaired or replaced.

Submitter Information Verification

Submitter Full Name: Ken Holland
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Submittal Date: Mon Jun 01 15:32:20 EDT 2015

Committee Statement

Committee Statement: The committee has added this new text to provide provide further clarification and what corrective action should be taken for the end user.
Response Message:

Public Input No. 29-NFPA 1911-2014 [Section No. 18.8.4]

First Revision No. 39-NFPA 1911-2015 [Section No. 19.8.6.14]

22.8.6.14 Extension Cables.

The extension cables shall be inspected for compliance with ~~Appendix A of SAE J959, *Lifting Crane, Wire-Rope Strength Factors*~~ Chapter 5-2 of ASME B30.5 2004 .

Submitter Information Verification

Submitter Full Name: Ken Holland
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Street Address:
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Submittal Date: Thu May 14 12:23:25 EDT 2015

Committee Statement

Committee Statement: The committee has included the ASME reference to this section as they believe it better serves the end user and this document.
Response Message:

Public Input No. 47-NFPA 1911-2014 [Section No. 19.8.6.14]
Public Input No. 66-NFPA 1911-2014 [New Section after 19.8.6.14]

First Revision No. 40-NFPA 1911-2015 [Section No. 19.8.6.28.2]

22.8.6.28.2*

The extension cylinder shall be subjected to a drift test as follows:

(1) With the hydraulic fluid at ambient temperature, place the aerial device at ~~full elevation and 10 ft (3 m) of~~ 60 degrees elevation at full extension.

(2) Mark the cylinder position or the second aerial ladder section in relation to the base section.

(3) Allow the ladder to stand for 1 hour with the engine off.

(4) Measure the drift and verify that the results do not exceed the manufacturer's specifications for allowable cylinder drift.

Submitter Information Verification

Submitter Full Name: Ken Holland
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Street Address:
City:
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Submittal Date: Thu May 14 12:28:55 EDT 2015

Committee Statement

Committee Statement: test
Response Message:

First Revision No. 38-NFPA 1911-2015 [Section No. 19.9.9.5]

22.9.9.5* ~~Extension Cables.~~

~~Extension cables shall be inspected for compliance with Appendix A of SAE J959.~~ The aerial extension and retraction cables shall be inspected to verify that the cables are tensioned according to the manufacturer's requirements and inspected to comply with Chapter 5-2 of ASME B30.5 2004.

Supplemental Information

File Name	Description
NEW_A.19.9.9.5_text.docx	This is the text for the new annex A item for 19.9.9.5

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 14 12:18:53 EDT 2015

Committee Statement

Committee Statement: The committee has made these changes, which includes a new annex A item as well as referencing a new ASME document. These changes were made to provide the end user with the highest level of safety. Please see the attached document for the annex A text. The committee also removed an unenforceable term, "properly".

Response Message:

Public Input No. 65-NFPA 1911-2014 [Section No. 19.9.9.5]
Public Input No. 63-NFPA 1911-2014 [Section No. 2.3.6]
Public Input No. 67-NFPA 1911-2014 [New Section after 19.9.9.5]
Public Input No. 68-NFPA 1911-2014 [New Section after 3.3]
Public Input No. 62-NFPA 1911-2014 [Section No. 2.3.1]
Public Input No. 64-NFPA 1911-2014 [Section No. 19.8.6.14]

A.19.9.9.5 The proper tensioning of extension and retraction cables of an aerial device is very important to insure the smooth and safe operation of the aerial. When cable tension is too loose, the cable can jump the sheave wheel causing damage. When tension is too tight, the cable can cause damage to the sheave groove and bearings that can damage the pulley and the cable. The manufacturers of aerial devices have different methods to determine that proper cable tensions have been achieved. It is important that the manufacturer's guidelines are strictly followed in for establishing cable tension.

First Revision No. 107-NFPA 1911-2015 [Section No. 22.1]

25.1 General.

If the fire ~~apparatus~~ emergency vehicle is equipped with a line voltage electrical system, the system and components shall be tested as required by this chapter.

Submitter Information Verification

Submitter Full Name: Ken Holland
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Street Address:
City:
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Submittal Date: Tue Jun 02 11:05:46 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 108-NFPA 1911-2015 [Section No. 22.3.2]

25.3.2

The power source shall be tested using the electrical loads ~~normally~~ typically carried on the ~~apparatus~~ emergency vehicle connected simultaneously, up to the limit specified in 25.3.3.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 11:06:20 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency. The unenforceable term "normally" was also replaced.
Response Message:

First Revision No. 43-NFPA 1911-2015 [New Section after 22.3.6]

25.3.7

The frequency shall be within ±3 Hz of the rated frequency at all points throughout the test.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 14 13:59:55 EDT 2015

Committee Statement

Committee Statement: The committee has added this text for document consistency.
Response Message:

First Revision No. 44-NFPA 1911-2015 [Section No. 22.3.6]

25.3.6

The voltage ~~and frequency~~ shall be within ~~the limits specified by NFPA 1901 at the time the apparatus was built~~ ±10 percent of the rated voltage at all points throughout the test .

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 14 14:01:00 EDT 2015

Committee Statement

Committee Statement: The committee has made these changes for document consistency.
Response Message:

First Revision No. 109-NFPA 1911-2015 [Section No. 22.5 [Excluding any Sub-Sections]]

If the wiring system or any appliances on the ~~apparatus~~ emergency vehicle incorporate ground fault circuit interrupters (GFCIs), they shall be operationally checked in accordance with this section.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 11:07:31 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 110-NFPA 1911-2015 [Section No. 22.6.1]

25.6.1*

All line voltage equipment on the ~~apparatus~~ emergency vehicle shall be run for a minimum of 10 minutes.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 11:08:05 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 111-NFPA 1911-2015 [Section No. 22.7.3]

25.7.3

If the ~~apparatus~~ emergency vehicle is equipped with a fire pump, during the power source test, the fire pump shall be running at 150 psi (1000 kPA) net pump pressure and flowing rated capacity for 20 minutes, followed by 200 psi (1400 kPA) net pump pressure and flowing at 70 percent rated capacity for 10 minutes, followed by 250 psi (1700 kPA) net pump pressure and flowing at 50 percent rated capacity for 10 minutes.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 11:08:36 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 112-NFPA 1911-2015 [Section No. 23.1.1]

26.1.1

If the ~~apparatus~~ emergency vehicle is supplied with a breathing air compressor system, the compressor system shall be tested annually by the manufacturer or the manufacturer's authorized representative to verify that the system still meets the manufacturer's requirements for the system when it was new.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 11:09:16 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 113-NFPA 1911-2015 [Section No. A.4.1]

A.4.1

The intent is to include reserve ~~fire apparatus~~ emergency vehicle that ~~is~~ are fully equipped as well as reserve ~~fire apparatus~~ emergency vehicle that might need to be equipped with hose, tools, and equipment before being ready to respond.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 11:13:07 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 45-NFPA 1911-2015 [Section No. A.4.3.1.2]

See FR-23

A.4.3.2

Persons performing daily/weekly inspections and ~~the~~ operational checks of ~~fire apparatus should meet the qualifications of NFPA 1002 , *Standard for Fire Apparatus Driver/Operator Professional Qualifications* ,~~ emergency vehicles should be qualified to be drivers/operators for the type of ~~fire apparatus~~ vehicle being checked.

Supplemental Information

File Name	Description
A.4.3.2_Text.docx	This is how the text should read.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 14 14:03:58 EDT 2015

Committee Statement

Committee Statement: This change was made for document consistency and needs to be relocated to the new 4.3.2 that has been developed.
Response Message:

A.4.3.2 Persons performing daily/weekly inspection and the operational checks of emergency vehicles should be qualified as a driver/operator for the type of vehicle being checked.

First Revision No. 114-NFPA 1911-2015 [Section No. A.4.4.1]

A.4.4.1

~~Fire apparatus~~ Emergency vehicles are complex machines that involve all kinds of mechanical, electrical, and chemical hazards. Failure to consult the appropriate manuals might result in serious injury to the person performing the inspection or maintenance or to other persons in the area.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 11:14:17 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 133-NFPA 1911-2015 [Section No. A.4.5.2]

A.4.5.2

If the ~~fire apparatus~~ emergency vehicle manufacturer is no longer in business, or the servicing and maintenance criteria or recommendations are no longer available from the manufacturer, the fire department should establish the criteria that are necessary to inspect and maintain the specific ~~piece of fire apparatus~~ emergency vehicle . These criteria can be established by discussing inspection and maintenance procedures for similar types or styles of ~~fire apparatus~~ emergency vehicles or components with persons experienced with such maintenance and by reviewing the industry standards that were in effect at the time the ~~fire apparatus~~ emergency vehicle or component was built. The criteria should be developed in writing.

The ~~*Vehicle Inspection Handbook, Passenger Vehicles & Light Trucks* and the *Vehicle Inspection Handbook, Trucks, Buses, & Trailers*~~ *Passenger Vehicles & Light Trucks Vehicle Inspection Handbook and the Trucks, Buses, & Trailers Vehicle Inspection Handbook* , prepared by the American Association of Motor Vehicle Administrators, provide a valuable resource in developing an inspection program.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 13:04:01 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 134-NFPA 1911-2015 [Section No. A.4.5.3]

A.4.5.3

The frequency of use (for example, hours, miles, and time) of ~~apparatus~~ emergency vehicles (duty cycle) might require that diagnostic checking, inspection, and maintenance be completed on a monthly, quarterly, or semiannual basis.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 13:05:23 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 135-NFPA 1911-2015 [Section No. A.4.5.5]

A.4.5.5

During an inspection, the technician should conduct a diagnostic check of the entire ~~apparatus~~ emergency vehicle to detect abnormal vibrations that could indicate a component defect or possible failure.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 13:05:56 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 136-NFPA 1911-2015 [Section No. A.5.1]

See FR-82

A.5.1

Unsafe ~~fire apparatus~~ emergency vehicles pose severe safety risks to ~~fire fighters~~ emergency responders and the general public. These risks result in death, severe injury, and property loss. These risks are particularly prevalent in older ~~apparatus~~ emergency vehicles . See Annex D for safety criteria on older ~~apparatus~~ emergency vehicles .

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 13:06:41 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 137-NFPA 1911-2015 [Section No. A.6.1.6]

A.6.1.6

When a component on the ~~fire apparatus~~ emergency vehicle is taken out of service, a determination needs to be made as to whether the ~~apparatus~~ emergency vehicle is suitable for continued use. If any component that affects the operation of the chassis, the other components used during response, or the operational safety of the ~~apparatus~~ emergency vehicle is taken out of service, the entire ~~apparatus~~ emergency vehicle should be taken out of service.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 13:07:48 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 138-NFPA 1911-2015 [Section No. A.6.2.3]

A.6.2.3

Deficiencies or problems might or might not make the ~~apparatus~~ emergency vehicle unsafe but will render it unusable for some operations. The AHJ should provide a list of limitations to be imposed or a list of enforced conditions under which the ~~apparatus~~ emergency vehicle *cannot* continue to be used, pending repair of the deficiency. That list should include, but is not limited to, the following:

(1) Compartment doors will not stay closed.

(2) Running boards are not secure.

(3) Tailboard is not secure.

(4) Accessory step (folding step) is broken or missing.

Although this standard identifies that cracked or broken windshields and mirrors should be consideration for taking the ~~apparatus~~ emergency vehicle out of service, consideration should also be given to state, provincial, or local regulations. The AHJ should identify and follow the pertinent state, provincial, and local regulations.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 13:08:45 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 139-NFPA 1911-2015 [Section No. A.6.7.1(4)]

A.6.7.1(4)

Burned-out lamps and other deficiencies should be corrected immediately. While all systems have a degree of redundancy, they are not designed to operate with multiple deficiencies. When more than one optical source in the warning light system is inoperative and the ~~apparatus~~ emergency vehicle must be used, it should be driven as a nonemergency vehicle.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 13:15:06 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 140-NFPA 1911-2015 [Section No. A.6.7.3(1)]

A.6.7.3(1)

When the audible warning system is inoperative and the ~~apparatus~~ emergency vehicle must be used, it should be driven as a nonemergency vehicle.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 13:15:51 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 118-NFPA 1911-2015 [Section No. A.7.3.3]

A.8.3.3

It is important that the cold tire inflation be maintained to the ~~fire apparatus~~ emergency vehicle manufacturer's recommended tire pressure, which is based on the weight of the completed ~~apparatus~~ vehicle , and not to the maximum pressure shown on the sidewall of the tire. If the information from the ~~fire apparatus~~ emergency vehicle manufacturer is not available for the tires on the vehicle, each axle should be weighed with the vehicle fully loaded and the tires inflated to the tire manufacturer's inflation specification for the tire model, size, and axle load.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 11:20:51 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 119-NFPA 1911-2015 [Section No. A.7.12.1]

A.8.12.1

Severe duty (conditions) scheduling applies to brake system maintenance due to the normal hard braking encountered with ~~fire apparatus~~ the emergency vehicle .

A brake maintenance schedule for each ~~fire apparatus~~ emergency vehicle should be set after the brakes have been inspected several times. This schedule should include both minor inspections and major inspections as follows:

(1) For minor inspections, the brakes, brake linings or pads, and slack adjusters should be inspected for freedom of movement, security of mounting, and deformation and should be tested for proper operation.

(2) The slack adjuster should be lubricated according to a schedule that provides the most frequent inspection and lubrication based on one of the following:

(a) Schedule for chassis lubrication used by the ~~fire~~ department

(b) Schedule for chassis lubrication recommended by the manufacturer of the chassis

(c) At least four times during the life of the linings

(3) Major inspections should be performed whenever the brakes are relined, or at least once a year, whichever comes first, and should include the following:

(a) All procedures, inspections, and measurements recommended by the manufacturer for relining the brakes

(b) Lubrication of the slack adjuster and caliper, if equipped

(c) Adjustment of the brakes as described in the manufacturer's literature

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 11:21:53 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 141-NFPA 1911-2015 [Section No. A.7.15.4]

A.8.15.4

If the ~~apparatus~~ emergency vehicle does not have the reflective striping, consideration should be given to adding the striping in accordance with applicable sections of the current editions of NFPA 1901, NFPA 1906 , NFPA 1917 , or other applicable documents .

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 13:17:02 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 142-NFPA 1911-2015 [Section No. A.7.15.5]

A.8.15.5

If the ~~apparatus~~ emergency vehicle does not have the warning labels, consideration should be given to adding the warning labels in accordance with applicable sections of the current editions of NFPA 1901, NFPA 1906 , NFPA 1917 , or other applicable documents .

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 13:18:15 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 41-NFPA 1911-2015 [Section No. A.8.7.2]

~~A.9.7.2~~

~~Starting with the 1996 edition of NFPA 1901 , the low-voltage alarm is required to sound if the system voltage at the battery or at the master load disconnect switch drops below 11.8 volts for a 12-volt nominal system or 23.6 volts for a 24-volt nominal system for more than 120 seconds (2 minutes). This alarm can be tested easily by loading the electrical system, at idle, and waiting for the alarm to sound. In many cases, once the alarm has sounded, the fire apparatus's engine will proceed to fast idle to recuperate the voltage loss. To test the load management system load-shedding function, it might be necessary to disable the fast idle by placing the pump in gear or placing the transmission in gear (it is important to hold the apparatus by depressing the brake pedal).~~

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 14 13:47:50 EDT 2015

Committee Statement

Committee Statement: 1901 Added test for low voltage alarm and changed the specifications of the requirements and the association to the section should also be removed.
Response Message:

Public Input No. 34-NFPA 1911-2014 [Section No. A.8.7.2]

First Revision No. 121-NFPA 1911-2015 [Section No. A.14.8]

A.15.8

There are refill stations currently on ~~fire apparatus~~ emergency vehicles that were never designed to the current requirements of NFPA 1901 and whose design has never been certified by an independent third-party certification organization. These include open-top fragmentation tubes and closed systems that have never been tested to determine if they will contain all fragments of a failed cylinder so as to protect the operator. If a commercial refill station is on the ~~fire apparatus~~ emergency vehicle , it might be possible to confirm with the manufacturer whether the design of the unit meets current standards. Older refill stations should be considered for replacement with refill stations that meet the current NFPA 1901 standard.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 11:27:18 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 122-NFPA 1911-2015 [Section No. A.16.2.3]

A.19.2.3

If the scales allow, the right side and the left side of the ~~apparatus~~ emergency vehicle should also be weighed. The side-to-side tire load variation should be no more than 7 percent of the total tire load for a given tire's axle.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 11:29:28 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 123-NFPA 1911-2015 [Section No. A.16.2.4(3)]

A.19.2.4(3)

In some chassis designs, the personnel weight is centered over the front axle and the entire personnel weight can be entered in the front axle column. If not, the weight allocation for each seating position can be calculated as follows:

$$\text{front weight} = \frac{200 \text{ lb } (90 \text{ kg}) \times \begin{pmatrix}\text{wheel base} - \text{distance aft} \\ \text{of front axle to seat}\end{pmatrix}}{\text{wheel base}} \quad \text{[A.17.2.4.3a]}$$

If the seat is forward of the front axle, the distance is negative or the value should be added to the wheel base in the numerator formula (wheel base + seat distance forward of front axle).

The weight on the rear axle attributed to each seating position equals 200 lb (90 kg) minus the weight attributed to that seating position on the front axle.

~~rear weight = 200 lb (90 kg) - front weight~~

$$\text{rear weight} = 200 \text{ lb } (90 \text{ kg}) - \text{front weight} \quad \text{[A.16.2.4.3b]}$$

If the seat is not between the front and rear axle, one of the weights will be negative.

Figure A.19.2.4(3) is an example that shows four potential seating areas along the length of an ~~apparatus~~ emergency vehicle with a 240 in. wheelbase. Each seating area could have more than one seating position (e.g., the driver's seat and officer's seat at the front of the ~~apparatus~~ vehicle).

Figure A.19.2.4(3) Diagram of an ~~Fire Apparatus~~ Emergency Vehicle Showing Potential Seating Locations.

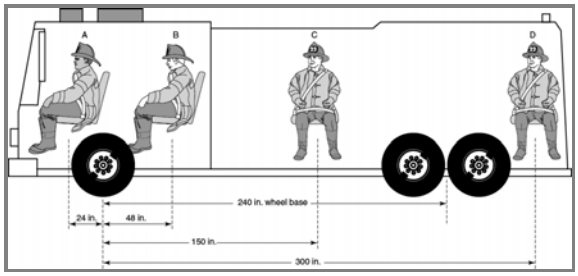

Table A.19.2.4(3) shows the net effect of a seating position on the axle loadings at each of the four seating locations along the ~~apparatus~~ vehicle as shown in Figure A.19.2.4(3).

Table A.19.2.4(3) Effect of Seat Location on Axle Loading

Seating Location on Figure	Distance from Front Axle (in.)	Wheelbase (in.)	Weight on Front Axle (lb)	Weight on Rear Axle (lb)	Total Value (lb)
A	-24	240	220*	-20*	200
B	48	240	160*	40*	200
C	150	240	75*	125*	200
D	300	240	-50*	250*	200

*Final weight entered on Figure 16.2.4 needs to reflect this weight times the number of seating positions at this location.

Submitter Information Verification

Submitter Full Name: Ken Holland

Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 11:30:14 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 124-NFPA 1911-2015 [Section No. A.16.2.4(4)]

A.19.2.4(4)

The reference to “additional equipment” is intended to account for equipment added to an ~~apparatus~~ emergency vehicle for specific calls. This equipment could include, but is not limited to, ice rescue sleds, water rescue crafts, wildland fire fighter supplies, hose bridges, and portable water tanks added to ~~apparatus~~ the vehicle for particular responses. The purpose of such additions is to honestly assess the fully loaded weight of an ~~apparatus~~ emergency vehicle responding to any emergency or any service offered by the department. For this reason, where the equipment added to the apparatus is as important as standard equipment, the added equipment’s weight should be recorded on line D of Figure 19.2.4 to represent where the additional weight impacts the apparatus.

If the ~~apparatus~~ emergency vehicle is to be used for extended operations away from the community where it is normally housed, such that the ~~fire fighters~~ emergency responders will be taking personal clothing and equipment with them, an additional allowance of 70 lb (32 kg) per seating position should be included.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 11:33:15 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 125-NFPA 1911-2015 [Section No. A.16.4.1]

A.19.4.1

The parking brake should be tested to the chassis manufacturer's recommendations. NFPA 1901 has required a parking brake system to hold a fully loaded ~~apparatus~~ emergency vehicle on at least a 20 percent grade since 1991. If the ~~fire apparatus~~ emergency vehicle parking brake system was not designed to perform up to these or applicable federal standards, or if the AHJ operates the ~~apparatus~~ emergency vehicle beyond these standards, the AHJ should develop a standard operating guideline to supplement the ~~apparatus~~ emergency vehicle parking brake system.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 11:36:20 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 126-NFPA 1911-2015 [Section No. A.16.4.2]

A.19.4.2

If grades of over 20 percent are present in the normal response area of the ~~apparatus~~ emergency vehicle , the ~~apparatus~~ emergency vehicle parking brake system should be tested on the steeper grade. If the vehicle fails to hold, the AHJ should develop a standard operating guideline to supplement the ~~apparatus~~ emergency vehicle parking brake system.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 11:40:46 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 127-NFPA 1911-2015 [Section No. A.22.6]

A.25.6

Dielectric Voltage Withstand Test. At least every 5 years and after a vehicle accident or body repair, a dielectric test should be performed on the line voltage electrical system. The wiring and permanently connected devices and equipment should be subjected to a dielectric voltage withstand test of 900 volts for 1 minute. The test should be conducted as follows:

(1) If the system has a neutral conductor bonded to the vehicle chassis, isolate the power source from the panel board.

(2) Disconnect any solid-state low-voltage components.

(3) Connect one lead of the dielectric tester to all the hot and neutral busses tied together.

(4) Connect the other lead to the fire ~~vehicles~~ vehicle frame or body.

(5) Close any switches and circuit breakers in the circuit(s).

(6) Apply the dielectric voltage for 1 minute in accordance with the testing equipment manufacturer's instructions.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 11:43:11 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 128-NFPA 1911-2015 [Section No. C.1]

C.1 General.

~~Fire~~ ~~apparatus~~ Emergency vehicles are increasingly complex pieces of machinery that require regular preventive maintenance to keep them safe and reliable and to maximize their life and value. It is not enough just to repair problems when they occur or to perform maintenance when it is convenient or someone thinks to have it done. In order to keep a fleet of ~~fire apparatus~~ emergency vehicles in good condition, a good plan is necessary to ensure that all the required maintenance is performed.

Fire departments vary widely in their character, and thus in their requirements of a preventive maintenance program. At one end might be a small rural volunteer fire department with two ~~pieces of apparatus~~ emergency vehicles and five runs per month. At the other end might be a large city with several hundred ~~pieces of apparatus~~ emergency vehicles , each of which makes 10 or more runs per day. While the specifics of the preventive maintenance program for each department will be different, the goals in each should be to ensure that all the necessary preventive maintenance is performed to make certain that the apparatus is ready and safe for responding to an emergency when needed. It is important that each department develop a program appropriate for its ~~apparatus~~ vehicles , circumstances, resources, capabilities, and special circumstances.

This annex is designed to provide some guidance to a ~~fire~~ department in developing a plan to ensure that the preventive maintenance program performs all the necessary work needed to keep the ~~apparatus~~ emergency vehicle in top condition.

Many departments already have a very effective preventive maintenance program in place. If the existing program works for the department and meets the requirements of this standard, then no changes are needed. If a department does not have a program in place, or ~~their~~ its program is not meeting the requirements of this standard, then this annex can help guide the department through the process of setting up an effective preventive maintenance program.

Submitter Information Verification

Submitter Full Name: Ken Holland
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jun 02 11:45:52 EDT 2015

Committee Statement

Committee Statement: The committee has made this change for document consistency.
Response Message:

First Revision No. 129-NFPA 1911-2015 [Section No. C.2]

C.2 Resources.

Part of preparing a preventive maintenance program is to identify the resources that are available for maintenance and testing. A large city department might have extensive resources in a fire department or city public works shop. Even in such a department, some work, such as transmission overhauls and body work, might be sent to outside service facilities. The ~~fire fighters~~ emergency responders and driver/operators who operate the equipment on a regular basis can, in most cases, perform daily or weekly operational checks.

In many areas of the country there are businesses that specialize in servicing ~~fire apparatus~~ emergency vehicles . There are also businesses and organizations that specialize in testing ~~fire apparatus~~ emergency vehicles , especially specific components, such as aerial devices and pumps. Many ~~fire apparatus~~ emergency vehicle dealers and manufacturers have personnel qualified to perform many service tasks. These services often can be performed in the fire station with mobile service trucks. Qualified personnel who perform service on other types of heavy trucks can perform many types of service on ~~fire apparatus~~ emergency vehicles , especially on components common with heavy trucks, such as drivetrains and suspensions. Many departments, especially volunteer departments, might find that they have personnel in the department who are qualified to do some of the required maintenance. These resources can be used to perform some of the maintenance and reduce costs.

It is helpful to identify not only the resources that will perform routine preventive maintenance and testing but also resources to perform emergency repairs. If such resources are not available within the fire department or city public works shop, these resources should be identified in advance, including establishing financial arrangements and 24-hour contact information, if possible. Services that should be included are as follows:

(1) Towing

(2) Tire service or replacement

(3) Provision of fuel and lubricants

(4) Repair of engine and drivetrain problems

(5) Repair of pump or plumbing problems

(6) Repair of fire service components, such as rescue tools

(7) Supplying replacement hose, tools, gear, and equipment damaged at an incident

In any case, it is up to the department and the AHJ to determine that the persons and facilities selected for maintenance and testing are qualified for the work they perform. Section 4.3 provides some requirements on the qualification of personnel.

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Committee Statement

Committee Statement: The committee has made this change for document consistency.

Response Message:

First Revision No. 130-NFPA 1911-2015 [Section No. C.3]

C.3 Form and Format.

The information needed for an effective preventive maintenance program can take many forms. It is important that the information is easy to keep updated as ~~apparatus~~ emergency vehicles are replaced, and that it is easy for the fire department and the maintenance providers to use. Typically there are two types of information needed when establishing the preventive maintenance program. The first is when maintenance is needed, and the second is what maintenance tasks should be performed and, if necessary, how they should be performed.

Scheduled preventive maintenance activities are typically based on time (every 3 months, every 6 months, annually, and every 5 years) or a specified number of hours of operation.

Small departments might want to prepare a list, by month, of which ~~apparatus~~ emergency vehicle is due for service and which service is to be performed at that time. It is important that the schedule be updated whenever ~~a piece of apparatus~~ an emergency vehicle is added or removed. Larger departments might find it more functional to prepare a schedule by month or by number of hours for each piece of ~~apparatus~~ emergency vehicle .

There are many software programs available to assist in tracking maintenance schedules. Some vehicle record systems might even be available as a free download.

Operational checks that are to be performed at the start of each day, shift, or week are usually best documented with a check sheet to be used by the station crew. An example check sheet is shown in Figure C.3(a). It should be adapted for each ~~specific piece of apparatus~~ emergency vehicle .

Figure C.3(a) Daily/Weekly ~~Apparatus~~ Emergency Vehicle Check Form.

DAILY/WEEKLY WALK-AROUND CHECK
FOR MOBILE FIRE APPARATUS

Fire department name ..... Date .....

Apparatus no. ..... Station no. .....

Start mileage ..... End mileage ..... Start engine hours ..... End engine hours .....

Inspectors: Mon ..... Tue ..... Wed ..... Thur ..... Fri ..... Sat ..... Sun .....

Legend: X = OK R = Repair required (requires a comment regarding problem)

OPERATIONS	Mon	Tue	Wed	Thur	Fri	Sat	Sun
Engine							
1. Check engine oil and transmission level.							
2. Check engine coolant level.							
3. Check for integrity of frame and suspension.							
4. Check power steering fluid.							
Outside							
1. Check for fluid leaks under vehicle.							
2. Check steering shafts and linkages.							
3. Check wheels and lug nuts.							
4. Check tire condition.							
5. Check tire air pressure.							
Cab							
1. Check seats and seat belts.							
2. Start engine, check all gauges.							
3. Check windshield wipers.							
4. Check rear view mirror adjustment and operation.							
5. Check horn.							
6. Check steering shafts.							
7. Check cab glass and mirrors.							
Body							
1. Check steps and running boards.							
2. Check body condition.							
3. Check grab handles.							
Electric							
1. Check battery voltage and charging system voltage.							
2. Check line voltage system.							
3. Check all lights (ICC and warning).							

 NFPA 1911 (p. 1 of 2)

OPERATIONS	Mon	Tue	Wed	Thur	Fri	Sat	Sun
Brakes							
1. Check air system for proper air pressure.							
2. Check parking brake.							
3. Check hydraulic brake fluid level.							
Pump							
1. Operate pump, check pump panel engine gauges.							
2. Check pump for pressure operation.							
3. Check discharge relief or pressure governor operation.							
4. Check all pump drain valves.							
5. Check all discharge and intake valve operation.							
6. Check pump and tank for water leaks.							
7. Check all valve bleeder/drain operation.							
8. Check primer pump operation.							
9. Check system vacuum hold.							
10. Check water tank level indicator.							
11. Check primer oil level (if applicable).							
12. Check transfer valve operation (if equipped).							
13. Check booster reel operation (if equipped).							
14. Check all pump pressure gauge operation.							
15. Check all cooler valves.							
16. Check for oil leaks in pump area.							
Aerial							
1. Operate aerial hydraulics.							
2. Check aerial outrigger operation.							
3. Check aerial operation.							
4. Check aerial hydraulic fluid level.							
5. Visually inspect aerial structure.							

Comments

DAILY/WEEKLY WALK-AROUND CHECK FOR MOBILE FIRE EMERGENCY VEHICLE

Fire department name _____ Date _____

Emergency vehicle no. _____ Station no. _____

Start mileage _____ End mileage _____ Start engine hours _____ End engine hours _____

Inspectors: Mon _____ Tue _____ Wed _____ Thur _____ Fri _____ Sat _____ Sun _____

Legend: X = OK R = Repair required (requires a comment regarding problem)

OPERATIONS	Mon	Tue	Wed	Thur	Fri	Sat	Sun
Engine							
1. Check engine oil and transmission level.							
2. Check engine coolant level.							
3. Check for integrity of frame and suspension.							
4. Check power steering fluid.							
Outside							
1. Check for fluid leaks under vehicle.							
2. Check steering shafts and linkages.							
3. Check wheels and lug nuts.							
4. Check tire condition.							
5. Check tire air pressure.							
Cab							
1. Check seats and seat belts.							
2. Start engine, check all gauges.							
3. Check windshield wipers.							
4. Check rear view mirror adjustment and operation.							
5. Check horn.							
6. Check steering shafts.							
7. Check cab glass and mirrors.							
Body							
1. Check steps and running boards.							
2. Check body condition.							
3. Check grab handles.							
Electric							
1. Check battery voltage and charging system voltage.							
2. Check line voltage system.							
3. Check all lights (ICC and warning).							

OPERATIONS	Mon	Tue	Wed	Thur	Fri	Sat	Sun
Brakes							
1. Check air system for proper air pressure.							
2. Check parking brake.							
3. Check hydraulic brake fluid level.							
Pump							
1. Operate pump, check pump panel engine gauges.							
2. Check pump for pressure operation.							
3. Check discharge relief or pressure governor operation.							
4. Check all pump drain valves.							
5. Check all discharge and intake valve operation.							
6. Check pump and tank for water leaks.							
7. Check all valve bleeder/drain operation.							
8. Check primer pump operation.							
9. Check system vacuum hold.							
10. Check water tank level indicator.							
11. Check primer oil level (if applicable).							
12. Check transfer valve operation (if equipped).							
13. Check booster reel operation (if equipped).							
14. Check all pump pressure gauge operation.							
15. Check all cooler valves.							
16. Check for oil leaks in pump area.							
Aerial							
1. Operate aerial hydraulics.							
2. Check aerial outrigger operation.							
3. Check aerial operation.							
4. Check aerial hydraulic fluid level.							
5. Visually inspect aerial structure.							

Comments _____

 NFPA 1911 (p. 2 of 2)

The documentation of which maintenance tasks should be performed at other intervals might be done in many ways. Simple tasks might be listed on the schedule. More extensive lists of tasks are often best put into a check sheet that the technician can use during the inspection and servicing process. An example of such a check sheet is shown in Figure C.3(b). This is just an example that must be customized to meet the requirements for specific ~~apparatus~~ emergency vehicles and department policies.

Figure C.3(b) Quarterly/Annual Emergency Vehicle ~~Apparatus~~ Inspection Report.

QUARTERLY/ANNUAL
MOBILE FIRE APPARATUS INSPECTION REPORT

Inspection date _____
Fire department _____ Apparatus no. _____

Apparatus
Manufacturer _____
Model _____
Serial no. _____
Hourmeter _____

Chassis
Make _____
Model _____
VIN _____
Odometer _____

Legend:
X = Acceptable visually, checked R = Requires repair or adjustment
U = Unsafe condition requires repair prior to use C = Corrected NA = Not applicable

CHASSIS INSPECTION

Engine and Cooling Systems

_____ Oil level and condition
_____ Oil leaks
_____ Coolant level
_____ Antifreeze protection
_____ Coolant additive level
_____ Fuel system for leaks
_____ Fuel system plumbing condition
_____ Power steering fluid level
_____ Power steering pump and plumbing
_____ Coolant hose condition and leaks
_____ Alternator mounting brackets
_____ Alternator connections
_____ Charging system output _____ volts
_____ Auxiliary cooler connections
_____ Battery condition and hold downs

_____ Battery cables and clamps
_____ Battery fluid level
_____ Battery terminal voltage _____ volts
_____ Chassis grounds and connections
_____ Starter motor cable condition
_____ Starter motor operation
_____ Fan mounting bolts and adjustment
_____ Fan shroud clearance and condition
_____ Fan clutch or shutters operation
_____ Air filter element condition
_____ Air intake tubes and hoses
_____ All belts condition and adjustment
_____ After-cooler or intercooler tubes and hoses
_____ Motor mount condition
_____ Radiator cap pressure

Comments on engine and cooling systems inspection _____

 NFPA 1911 (p. 1 of 7)

Chassis and Components

Fluid levels

- ..... Lubricate chassis
- ..... All fluid levels

Steering

- ..... Steering linkage and tie rods
- ..... Steering box mounting
- ..... Steering system plumbing for leaks
- ..... Manual steering box fluid level

Transmission

- ..... Auto trans fluid level
- ..... Auto trans mounting and condition
- ..... Auto trans and plumbing for leaks
- ..... Auto trans lockup system
- ..... Manual trans oil level
- ..... Manual trans mounting
- ..... Manual trans for leaks

Fuel

- ..... Fuel tank and plumbing for leaks
- ..... Fuel tank mounting

Tires/Wheels

- ..... Tire and wheel conditions
- ..... Lug nuts for torque
- ..... Tire tread depth Front _____ Rear _____
- ..... Tire air pressure Front _____ Rear _____

Driveline

- ..... Driveline U-joints and yokes
- ..... Driveline carrier bearings
- ..... Differential oil level and leaks

Front axle

- ..... Front spring and shock condition
- ..... Front wheel bearings and king pins

Rear axle

- ..... Rear spring condition
- ..... Rear spring torque tubes and shocks
- ..... Axle flanges for leaks and tightness
- ..... Frame rails and cross members

Brakes

- ..... Brake condition (amount of material)
- ..... Brake adjustment and operation
- ..... Air brake valves and tanks
- ..... Lubricate brake pedal pivot pin
- ..... Drain air tanks and check air dryer
- ..... Air brake lines and chambers
- ..... Air brake leaks and buildup
- ..... Hydraulic brakes for leaks
- ..... Hydraulic brake components
- ..... Hydro-vac operation and mounting
- ..... Parking brake operation

Exhaust system

- ..... Exhaust system and muffler

Comments on chassis and components inspection _____

Cab and Body

Cab

- ..... Cab mounting and tilt mechanism
- ..... Cab frame and sheet metal
- ..... Cab hoist motor solenoid volt drop _____ volts
- ..... Door mounting and latches
- ..... Cab glass condition
- ..... Cab seat condition and mounting
- ..... Seat belt condition and mounting
- ..... Steering wheel mounting and alignment
- ..... Horn operation
- ..... Heater and defroster operation
- ..... Throttle controls and linkage
- ..... Window operation
- ..... Auto transmission shift controls
- ..... Manual transmission shift controls
- ..... Clutch pedal linkage
- ..... Clutch pedal free play
- ..... Windshield wipers and washers
- ..... Mirror condition and mounting

Body

- ..... Compartment door latches
- ..... Compartment door and hinge condition
- ..... Body compartment condition
- ..... Step and auxiliary equipment condition

Comments on cab and body inspection _____

Cab and Body Electrical

- ..... Headlights and high beams
- ..... Parking and clearance lights
- ..... Tail and stop lights
- ..... Backup lights and alarm
- ..... Turn signal and hazard operation
- ..... Cab spot lights operation
- ..... Auxiliary light operation
- ..... Front warning lights
- ..... Rear warning lights
- ..... Front beacon lights
- ..... Intersection warning lights
- ..... Body deck lights
- ..... Compartment lights
- ..... Siren operation and mounting
- ..... Siren solenoid voltage drop _____ volts
- ..... Voltage drops of all solenoids

List solenoids and voltage drop below

Solenoid	Voltage Drop

Comments on cab and body electrical inspection _____

Line Voltage Inspection

_____ Power source
_____ Generator drive engine or power drivetrain
_____ Cord reels and receptacles
_____ Electrically driven equipment
_____ Electrical controls
_____ Output voltage _____ volts
_____ Output frequency _____ Hz

Comments on line voltage electrical inspection _____

Road and Operational Test

_____ Engine oil pressure
_____ Engine coolant temperature
_____ Tachometer operation
_____ Auto transmission shifting
_____ Clutch release and operation
_____ Manual transmission shifting
_____ Brake operation
_____ Drive line vibration
_____ Air compressor operation
_____ Air compressor governor setting
_____ Speedometer operation
_____ Shimmy or front end noises
_____ Clutch fan or shutter operation

Comments on road and operational test _____

PUMP AND WATER TANK INSPECTION

Pump manufacturer _____ Model _____ S/N _____
Pump location _____ Pump hours _____ Capacity _____

_____ Pump shift and indicator lights
_____ Automatic transmission lockup system
_____ Clutch disengagement and manual transmission
_____ Pump transmission shift cylinders or motor
_____ Pump transmission oil level and condition
_____ Pump panel tachometer and engine gauges
_____ Engine speed counter
_____ Pump panel electrical switches and panel light
_____ Master gauges for accuracy and operation
_____ Discharge gauges for accuracy and operation
_____ Water tank indicator system
_____ Pump

_____ Pump plumbing
_____ High-pressure pump system
_____ Pressure control device operation and response time
_____ Transfer valve operation
_____ Intake relief operation
_____ Primer operation
_____ Dry vacuum test
Initial reading _____ in. vacuum
Leakage in 5 minutes _____ in. vacuum
_____ Primer motor solenoid voltage drop _____ volts
_____ Pump packing— adjust if necessary
_____ Mechanical seals for leaks
_____ Discharge and intake valves
_____ Valves, linkage, remote rods, and pivot points
_____ Drain valves
_____ Tank-to-pump and tank fill valves
_____ Auxiliary cooler
_____ Suction strainer
_____ Preconnect valves and plumbing
_____ Deck gun valve and plumbing
_____ Front or rear suction valves and plumbing and valves
_____ Auto-lube level and fluid condition
_____ Water tank mounting and integrity
_____ Booster reel mounting and operation
_____ Anodes in tank and pump
_____ Reel motor solenoid voltage drop _____ volts
_____ Pump mounting integrity
_____ Pump driveline U-joints, yokes and flanges

Comments on pump and tank inspection _____

FOAM PROPORTIONING SYSTEM INSPECTION

Foam system manufacturer _____ Model _____ S/N _____

_____ Instrumentation, gauges, and controls
_____ Strainer or filter
_____ Foam concentrate pump
_____ Lubricant level and condition
_____ Hydraulic pump
_____ Hydraulic system
_____ Hydraulic fluid tank mounting and integrity
_____ Foam concentrate tank mounting and integrity
_____ Foam eductor system, metering, and check valve

Comments on foam proportioning system inspection _____

AERIAL DEVICE INSPECTION

Aerial manufacturer _____ Model _____ S/N _____

Aerial hours _____ Rated capacity _____

Hydraulic Systems

Turntable

- ..... Rotation gear reduction box
- ..... Rotation hydraulic swivel
- ..... Lines and hoses
- ..... Control valve

Chassis

- ..... Hydraulic tank
- ..... Hydraulic fluid levels
- ..... Hydraulic fluid sample
- ..... PTO
- ..... Hydraulic pump
- ..... Auxiliary power pump
- ..... Lines and hoses

Stabilizer

- ..... Cylinders
- ..... Control valve
- ..... Lines and hoses
- ..... Diverter valve

Aerial

- ..... Elevation cylinder
- ..... Extension cylinder
- ..... Lines and hoses
- ..... Tip controls

Platform

- ..... Control valve
- ..... Leveling cylinders
- ..... Lines and hoses

Structural Fasteners

- ..... Turntable mounting bolts
- ..... Torque box mounting to frame bolts
- ..... Suspension system bolts

Tractor Drawn Components

- ..... Mounting to frame bolts
- ..... Rotation gear reduction box mounting bolts
- ..... Boom support/ ladder cradle mounting bolts

Stabilizer

- ..... Mounting to frame or torque box
- ..... Mounting bolts

Lubrication

- ..... Sheaves
- ..... Cables
- ..... Ladder section base rails
- ..... Ladder heel pin
- ..... Rotation gear and bearing
- ..... Rotation gear reduction box
- ..... Elevation cylinder pins
- ..... Extension cylinder pins
- ..... Stabilizer extension cylinder pins
- ..... Aerial waterway pipe sections

Indicators

- ..... Rung alignment
- ..... PTO engaged
- ..... Aerial alignment
- ..... Turntable alignment
- ..... Elevation
- ..... Extension
- ..... Turntable level

Turntable Components

- ..... Safety signs
- ..... Communication system
- ..... Emergency hydraulic power
- ..... Interlock systems
- ..... Electrical lines

Aerial Components

- ..... Gore tube
- ..... Waterway
- ..... Sheaves
- ..... Pinable waterway
- ..... Rung covers
- ..... Breathing air
- ..... Wear strips

Stabilizers Components

- ..... Lights
- ..... Pads
- ..... Interlocks
- ..... Safety pins

Comments on aerial device inspection _____

Inspector _____ Date _____

AHJ representative _____ Date _____

QUARTERLY/ANNUAL
MOBILE FIRE EMERGENCY VEHICLE INSPECTION REPORT

Inspection date _____

Fire department _____ Emergency vehicle no. _____

Emergency Vehicle

Manufacturer _____

Model _____

Serial no. _____

Hourmeter _____

Chassis

Make _____

Model _____

VIN _____

Odometer _____

Legend:
X =Acceptable visually, checked R = Requires repair or adjustment
U = Unsafe condition requires repair prior to use C = Corrected NA = Not applicable

CHASSIS INSPECTION

Engine and Cooling Systems

_____ Oil level and condition
_____ Oil leaks
_____ Coolant level
_____ Antifreeze protection
_____ Coolant additive level
_____ Fuel system for leaks
_____ Fuel system plumbing condition
_____ Power steering fluid level
_____ Power steering pump and plumbing
_____ Coolant hose condition and leaks
_____ Alternator mounting brackets
_____ Alternator connections
_____ Charging system output _____ volts
_____ Auxiliary cooler connections
_____ Battery condition and hold downs
_____ Battery cables and clamps
_____ Battery fluid level
_____ Battery terminal voltage _____ volts
_____ Chassis grounds and connections
_____ Starter motor cable condition
_____ Starter motor operation
_____ Fan mounting bolts and adjustment
_____ Fan shroud clearance and condition
_____ Fan clutch or shutters operation
_____ Air filter element condition
_____ Air intake tubes and hoses
_____ All belts condition and adjustment
_____ After-cooler or intercooler tubes and hoses
_____ Motor mount condition
_____ Radiator cap pressure

Comments on engine and cooling systems inspection _____

Chassis and Components

Fluid levels
_____ Lubricate chassis
_____ All fluid levels

Steering
_____ Steering linkage and tie rods
_____ Steering box mounting
_____ Steering system plumbing for leaks
_____ Manual steering box fluid level

Transmission
_____ Auto trans fluid level
_____ Auto trans mounting and condition
_____ Auto trans and plumbing for leaks
_____ Auto trans lockup system
_____ Manual trans oil level
_____ Manual trans mounting
_____ Manual trans for leaks

Fuel
_____ Fuel tank and plumbing for leaks
_____ Fuel tank mounting

Tires / Wheels
_____ Tire and wheel conditions
_____ Lug nuts for torque
_____ Tire tread depth Front _____ Rear _____
_____ Tire air pressure Front _____ Rear _____

Driveline
_____ Driveline U-joints and yokes
_____ Driveline carrier bearings
_____ Differential oil level and leaks

Front axle
_____ Front spring and shock condition
_____ Front wheel bearings and king pins

Rear axle
_____ Rear spring condition
_____ Rear spring torque tubes and shocks
_____ Axle flanges for leaks and tightness
_____ Frame rails and cross members

Brakes
_____ Brake condition (amount of material)
_____ Brake adjustment and operation
_____ Air brake valves and tanks
_____ Lubricate brake pedal pivot pin
_____ Drain air tanks and check air dryer
_____ Air brake lines and chambers
_____ Air brake leaks and buildup
_____ Hydraulic brakes for leaks
_____ Hydraulic brake components
_____ Hydro-vac operation and mounting
_____ Parking brake operation

Exhaust system
_____ Exhaust system and muffler

Comments on chassis and components inspection _____

Cab and Body

Cab

- ____ Cab mounting and tilt mechanism
- ____ Cab frame and sheet metal
- ____ Cab hoist motor solenoid volt drop _____ volts
- ____ Door mounting and latches
- ____ Cab glass condition
- ____ Cab seat condition and mounting
- ____ Seat belt condition and mounting
- ____ Steering wheel mounting and alignment
- ____ Horn operation
- ____ Heater and defroster operation
- ____ Throttle controls and linkage
- ____ Window operation
- ____ Auto transmission shift controls
- ____ Manual transmission shift controls
- ____ Clutch pedal linkage
- ____ Clutch pedal free play
- ____ Windshield wipers and washers
- ____ Mirror condition and mounting

Body

- ____ Compartment door latches
- ____ Compartment door and hinge condition
- ____ Body compartment condition
- ____ Step and auxiliary equipment condition

Comments on cab and body inspection _____

Cab and Body Electrical

- ____ Headlights and high beams
- ____ Parking and clearance lights
- ____ Tail and stop lights
- ____ Backup lights and alarm
- ____ Turn signal and hazard operation
- ____ Cab spot lights operation
- ____ Auxiliary light operation
- ____ Front warning lights
- ____ Rear warning lights
- ____ Front beacon lights
- ____ Intersection warning lights
- ____ Body deck lights
- ____ Compartment lights
- ____ Siren operation and mounting
- ____ Siren solenoid voltage drop _____ volts
- ____ Voltage drops of all solenoids

List solenoids and voltage drop below

Solenoid	Voltage Drop

Comments on cab and body electrical inspection _____

Line Voltage Inspection

- ____ Power source
- ____ Generator drive engine or power drivetrain
- ____ Cord reels and receptacles
- ____ Electrically driven equipment
- ____ Electrical controls
- ____ Output voltage _____ volts
- ____ Output frequency _____ Hz

Comments on line voltage electrical inspection _____

Road and Operational Test

- ____ Engine oil pressure
- ____ Engine coolant temperature
- ____ Tachometer operation
- ____ Auto transmission shifting
- ____ Clutch release and operation
- ____ Manual transmission shifting
- ____ Brake operation
- ____ Drive line vibration
- ____ Air compressor operation
- ____ Air compressor governor setting
- ____ Speedometer operation
- ____ Shimmy or front end noises
- ____ Clutch fan or shutter operation

Comments on road and operational test _____

PUMP AND WATER TANK INSPECTION

Pump manufacturer _____ Model _____ S/N _____

Pump location _____ Pump hours _____ Capacity _____

- ____ Pump shift and indicator lights
- ____ Automatic transmission lockup system
- ____ Clutch disengagement and manual transmission
- ____ Pump transmission shift cylinders or motor
- ____ Pump transmission oil level and condition
- ____ Pump panel tachometer and engine gauges
- ____ Engine speed counter
- ____ Pump panel electrical switches and panel light
- ____ Master gauges for accuracy and operation
- ____ Discharge gauges for accuracy and operation
- ____ Water tank indicator system
- ____ Pump

_____ Pump plumbing
_____ High-pressure pump system
_____ Pressure control device operation and response time
_____ Transfer valve operation
_____ Intake relief operation
_____ Primer operation
_____ Dry vacuum test
Initial reading _____ in. vacuum
Leakage in 5 minutes _____ in. vacuum
_____ Primer motor solenoid voltage drop _____ volts
_____ Pump packing—adjust if necessary
_____ Mechanical seals for leaks
_____ Discharge and intake valves
_____ Valves, linkage, remote rods, and pivot points
_____ Drain valves
_____ Tank-to-pump and tank fill valves
_____ Auxiliary cooler
_____ Suction strainer
_____ Preconnect valves and plumbing
_____ Deck gun valve and plumbing
_____ Front or rear suction valves and plumbing and valves
_____ Auto-lube level and fluid condition
_____ Water tank mounting and integrity
_____ Booster reel mounting and operation
_____ Anodes in tank and pump
_____ Reel motor solenoid voltage drop _____ volts
_____ Pump mounting integrity
_____ Pump driveline U-joints, yokes and flanges

Comments on pump and tank inspection _____

FOAM PROPORTIONING SYSTEM INSPECTION

Foam system manufacturer _____ Model _____ S/N _____

_____ Instrumentation, gauges, and controls
_____ Strainer or filter
_____ Foam concentrate pump
_____ Lubricant level and condition
_____ Hydraulic pump
_____ Hydraulic system
_____ Hydraulic fluid tank mounting and integrity
_____ Foam concentrate tank mounting and integrity
_____ Foam eductor system, metering, and check valve

Comments on foam proportioning system inspection _____

AERIAL DEVICE INSPECTION

Aerial manufacturer _____ Model _____ S/N _____
Aerial hours _____ Rated capacity _____

Hydraulic Systems

Turntable
_____ Rotation gear reduction box
_____ Rotation hydraulic swivel
_____ Lines and hoses
_____ Control valve

Chassis
_____ Hydraulic tank
_____ Hydraulic fluid levels
_____ Hydraulic fluid sample
_____ PTO
_____ Hydraulic pump
_____ Auxiliary power pump
_____ Lines and hoses

Stabilizer
_____ Cylinders
_____ Control valve
_____ Lines and hoses
_____ Diverter valve

Aerial
_____ Elevation cylinder
_____ Extension cylinder
_____ Lines and hoses
_____ Tip controls

Platform
_____ Control valve
_____ Leveling cylinders
_____ Lines and hoses

Structural Fasteners
_____ Turntable mounting bolts
_____ Torque box mounting to frame bolts
_____ Suspension system bolts

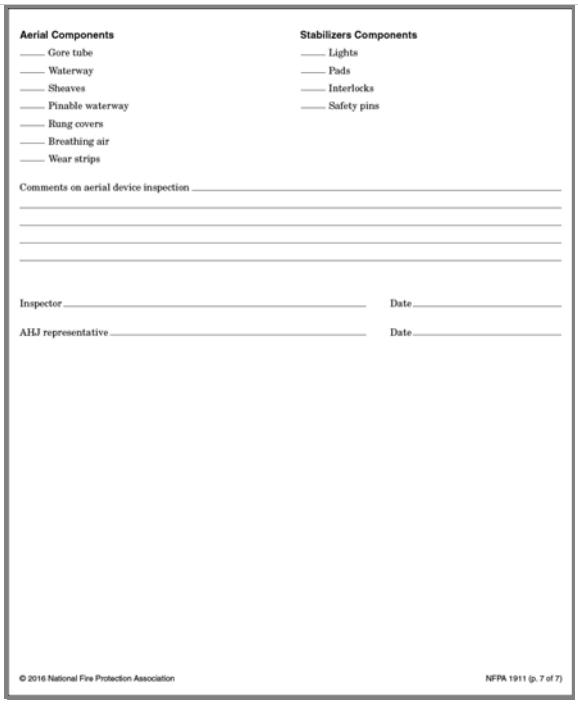
Tractor Drawn Components
_____ Mounting to frame bolts
_____ Rotation gear reduction box mounting bolts
_____ Boom support/ladder cradle mounting bolts

Stabilizer
_____ Mounting to frame or torque box
_____ Mounting bolts

Lubrication
_____ Sheaves
_____ Cables
_____ Ladder section base rails
_____ Ladder heel pin
_____ Rotation gear and bearing
_____ Rotation gear reduction box
_____ Elevation cylinder pins
_____ Extension cylinder pins
_____ Stabilizer extension cylinder pins
_____ Aerial waterway pipe sections

Indicators
_____ Rung alignment
_____ PTO engaged
_____ Aerial alignment
_____ Turntable alignment
_____ Elevation
_____ Extension
_____ Turntable level

Turntable Components
_____ Safety signs
_____ Communication system
_____ Emergency hydraulic power
_____ Interlock systems
_____ Electrical lines



Aerial Components

_____ Gore tube
_____ Waterway
_____ Sheaves
_____ Pinable waterway
_____ Rung covers
_____ Breathing air
_____ Wear strips

Stabilizers Components

_____ Lights
_____ Pads
_____ Interlocks
_____ Safety pins

Comments on aerial device inspection _____

Inspector _____ Date _____

AHJ representative _____ Date _____

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The performance testing described in Chapters 19 through 26 of this standard should be included in the maintenance schedule. The details of how to perform the testing, and the information that is to be collected, are detailed in those chapters. Figure C.3(c) is a form that can be used to record the performance test results for a ~~fire~~ pump or industrial supply pump. Figure C.3(d) is a form that can be used to record the inspection and performance test results for an aerial device. Figure C.3(e) is a form that can be used to record the performance test results for the low-voltage electrical system on the ~~fire apparatus~~ emergency vehicle , and Figure C.3(f) is a form that can be used to record the performance test results for a line voltage electrical system. Figure C.3(g) is a form that can be used to record the performance test results for a foam proportioning system and, if the ~~apparatus~~ emergency vehicles also has a CAFS compressor system, Figure C.3(h) is the form for recording the performance test results for that system.

Figure C.3(c) Pump Performance Test Form.

PUMP PERFORMANCE TEST

Apparatus number or designation _____ Year manufactured _____
Manufacturer _____ Model _____
Serial no. _____ Vehicle identification no. _____
Engine make _____ Model _____
Pump make _____ Model _____
Pump rated capacity _____ (gpm) (L/min) at _____ (psi) (kPa)
Speed check taken from _____ Ratio to engine _____
Test site location _____
Tests performed from ❑ Draft ❑ Hydrant
Suction hose size _____ (in.) (mm) Length _____ (ft) (m)

	At start of tests	At end of tests
Atmospheric pressure		
Air temperature		
Water temperature		
Elevation of test site		
Lift		

Governed engine speed _____ Actual maximum engine speed _____
Verify operation of pump shift indicator _____
Verify operation of pump engine control interlock at pump operator's panel _____
Maximum vacuum attained _____ Vacuum drop in 5 minutes _____
Time to prime pump _____
Pressure control device test:
Rise while pumping capacity at 150 psi _____
Rise while pumping capacity at 90 psi _____
Rise while pumping 50 percent capacity at 250 psi _____
Intake relief valve test results _____
Tank to pump water flow test _____ (gpm) (L/min)
Gauge accuracy _____ Flowmeter accuracy _____

Pump Test Results

	Capacity test	Overload test	200 psi test	250 psi test
Duration				
Average nozzle pressure				
Corrected pressure				
Gallons per minute				
Average pump pressure				
rpm—engine				
rpm—pump				

Comments _____

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20-Minute Capacity Test

Layout ____ Nozzle size ____ Position of transfer valve ____

Time	Counter (if used)	rpm	Tach	Engine Temperature	Oil Pressure	Voltage	Automatic Transmission Temp (if equipped)	Pump Intake: Apparatus gauge	Pump Intake: Test gauge	Pump Discharge: Apparatus gauge	Pump Discharge: Test gauge	Pitot/ Flow

5-Minute Overload Test

Layout ____ Nozzle size ____ Position of transfer valve ____

10-Minute 200 psi Test

Layout ____ Nozzle size ____ Position of transfer valve ____

10-Minute 250 psi Test

Layout ____ Nozzle size ____ Position of transfer valve ____

Person conducting the test ____

Representing ____

Signature ____ Date ____

AHJ representative ____ Date ____

PUMP PERFORMANCE TEST

Emergency vehicle number or designation ____ Year manufactured ____

Manufacturer ____ Model ____

Serial no. ____ Vehicle identification no. ____

Engine make ____ Model ____

Pump make ____ Model ____

Pump rated capacity ____ (gpm) (L/min) at ____ (psi) (kPa)

Speed check taken from ____ Ratio to engine ____

Test site location ____

Tests performed from ❑ Draft ❑ Hydrant

Suction hose size ____ (in.) (mm) Length ____ (ft) (m)

	At start of tests	At end of tests
Atmospheric pressure		
Air temperature		
Water temperature		
Elevation of test site		
Lift		

Governed engine speed ____ Actual maximum engine speed ____

Verify operation of pump shift indicator ____

Verify operation of pump engine control interlock at pump operator's panel ____

Maximum vacuum attained ____ Vacuum drop in 5 minutes ____

Time to prime pump ____

Pressure control device test:

Rise while pumping capacity at 150 psi ____

Rise while pumping capacity at 90 psi ____

Rise while pumping 50 percent capacity at 250 psi ____

Intake relief valve test results ____

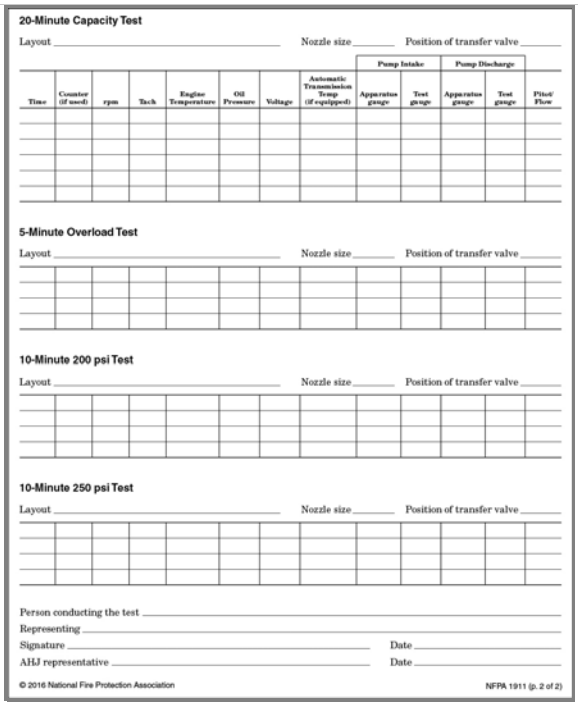
Tank to pump water flow test ____ (gpm) (L/min)

Gauge accuracy ____ Flowmeter accuracy ____

Pump Test Results

	Capacity test	Overload test	200 psi test	250 psi test
Duration				
Average nozzle pressure				
Corrected pressure				
Gallons per minute				
Average pump pressure				
rpm—engine				
rpm—pump				

Comments ____



20-Minute Capacity Test

Layout _____ Nozzle size _____ Position of transfer valve _____

Time	Counter (if used)	rpm	Tach	Engine Temperature	Oil Pressure	Voltage	Automatic Transmission Temp (if equipped)	Pump Intake: Apparatus gauge	Pump Intake: Test gauge	Pump Discharge: Apparatus gauge	Pump Discharge: Test gauge	Pitot/ Flow

5-Minute Overload Test

Layout _____ Nozzle size _____ Position of transfer valve _____

10-Minute 200 psi Test

Layout _____ Nozzle size _____ Position of transfer valve _____

10-Minute 250 psi Test

Layout _____ Nozzle size _____ Position of transfer valve _____

Person conducting the test _____

Representing _____

Signature _____ Date _____

AHJ representative _____ Date _____

 NFPA 1911 (p. 2 of 2)

Figure C.3(d) Aerial Device Inspection and Performance Test Form.

AERIAL DEVICE INSPECTION AND PERFORMANCE TEST

Apparatus no. or designation _____ Year manufactured _____

Manufacturer _____ Model _____

Serial no. _____ Vehicle identification no. _____

Engine make _____ Model _____

Aerial device manufacturer _____ Model _____

Serial no. of aerial device _____ Rated vertical height _____

Type of aerial device ❑ Aerial ladder ❑ Elevating platform ❑ Water tower

Apparatus miles _____ Apparatus hours _____ Aerial hours _____

Reason for test _____

Test location _____

Weather conditions at time of test _____

Temperature _____ (F) (C) Wind velocity (estimate) _____ (mph) (km/hr)

Visual Inspection (attach copy of any checklist)

Comments _____

Disposition of any problems _____

Operational Inspection

Comments _____

Disposition of any problems _____

 NFPA 1911 (p. 1 of 2)

Load Test

Total weight used

Comments

Disposition of any problems

Water System Test

Comments

Disposition of any problems

Person conducting the inspection and test

Representing

Signature Date

AHJ representative Date

AERIAL DEVICE INSPECTION AND PERFORMANCE TEST

Emergency vehicle no. or designation _____ Year manufactured _____

Manufacturer _____ Model _____

Serial no. _____ Vehicle identification no. _____

Engine make _____ Model _____

Aerial device manufacturer _____ Model _____

Serial no. of aerial device _____ Rated vertical height _____

Type of aerial device ❑ Aerial ladder ❑ Elevating platform ❑ Water tower

Emergency vehicle miles _____ Emergency vehicle hours _____ Aerial hours _____

Reason for test _____

Test location _____

Weather conditions at time of test _____

Temperature _____ (F) (C) Wind velocity (estimate) _____ (mph) (km/hr)

Visual Inspection (attach copy of any checklist)

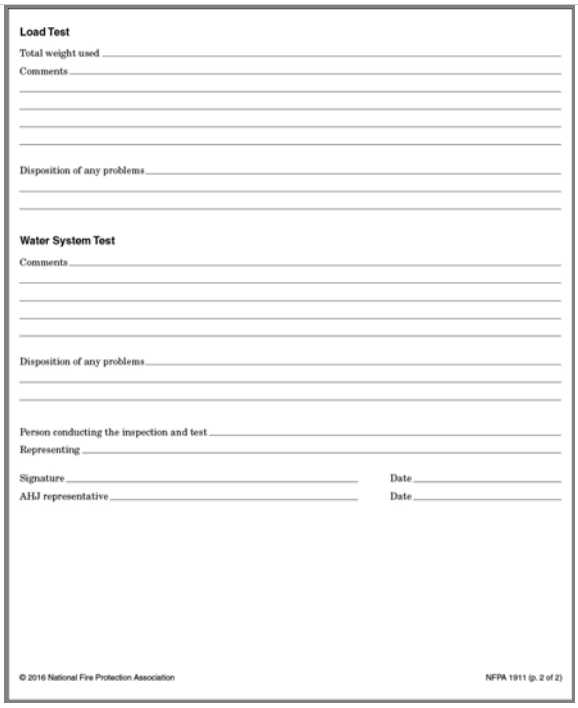
Comments _____

Disposition of any problems _____

Operational Inspection

Comments _____

Disposition of any problems _____



Load Test

Total weight used _____

Comments _____

_____

_____

_____

_____

Disposition of any problems _____

_____

_____

Water System Test

Comments _____

_____

_____

_____

_____

Disposition of any problems _____

_____

_____

Person conducting the inspection and test _____

Representing _____

Signature _____ Date _____

AHJ representative _____ Date _____

 NFPA 1911 (p. 2 of 2)

Figure C.3(e) Low-Voltage Electrical System Performance Test Form.

LOW-VOLTAGE ELECTRICAL SYSTEM PERFORMANCE TEST

Apparatus no. or designation _____ Year manufactured _____

Manufacturer _____ Serial no. _____

Number of batteries _____ Voltage _____

Battery manufacturer _____ Size/model _____

Battery Tests

Battery rated CCA _____ Open circuit voltage(s) before testing _____

Conductivity test results: CCA value(s) _____ ❑ Pass ❑ Fail

or

Load test results: Test current _____ Battery temperature _____ F (C)

Minimum allowed voltage _____

Terminal voltage(s) _____ ❑ Pass ❑ Fail

Starter Wiring Test

Voltage drop in positive (+) lead _____ ❑ Pass ❑ Fail

Voltage drop in negative (–) lead _____ ❑ Pass ❑ Fail

Alternator Test

Alternator manufacturer _____ Model _____

Alternator nameplate rating _____

Alternator test output _____ ❑ Pass ❑ Fail

Voltage drop in positive (+) lead _____ ❑ Pass ❑ Fail

Voltage drop in negative (–) lead _____ ❑ Pass ❑ Fail

Regulator Test

Regulator temperature _____

Regulator voltage, minimum load _____ ❑ Pass ❑ Fail

Regulator voltage, loaded _____ ❑ Pass ❑ Fail

Battery Charger/Conditioner Test

Rated output _____ Test output _____ ❑ Pass ❑ Fail

Float voltage _____ ❑ Pass ❑ Fail

Total Continuous Load Test

Battery voltage at start of test _____

Battery voltage at end of test _____ ❑ Pass ❑ Fail

 NFPA 1911 (p. 1 of 2)

Solenoid and Power Relay Test

Device tested ______ Voltage drop ______ ❑ Pass ❑ Fail
Device tested ______ Voltage drop ______ ❑ Pass ❑ Fail
Device tested ______ Voltage drop ______ ❑ Pass ❑ Fail
Device tested ______ Voltage drop ______ ❑ Pass ❑ Fail
Device tested ______ Voltage drop ______ ❑ Pass ❑ Fail
Device tested ______ Voltage drop ______ ❑ Pass ❑ Fail
Device tested ______ Voltage drop ______ ❑ Pass ❑ Fail
Device tested ______ Voltage drop ______ ❑ Pass ❑ Fail
Device tested ______ Voltage drop ______ ❑ Pass ❑ Fail
Device tested ______ Voltage drop ______ ❑ Pass ❑ Fail
Device tested ______ Voltage drop ______ ❑ Pass ❑ Fail
Device tested ______ Voltage drop ______ ❑ Pass ❑ Fail

Comments on low-voltage electrical system performance test ______

Person conducting the test ______
Representing ______
Signature ______ Date ______
AHJ representative ______ Date ______

 NFPA 1911 (p. 2 of 2)

LOW-VOLTAGE ELECTRICAL SYSTEM PERFORMANCE TEST

Emergency vehicle no. or designation ______ Year manufactured ______
Manufacturer ______ Serial no. ______
Number of batteries ______ Voltage ______
Battery manufacturer ______ Size/model ______

Battery Tests

Battery rated CCA ______ Open circuit voltage(s) before testing ______
Conductivity test results: CCA value(s) ______ ❑ Pass ❑ Fail
or
Load test results: Test current ______ Battery temperature ______ F (C)
Minimum allowed voltage ______
Terminal voltage(s) ______ ❑ Pass ❑ Fail

Starter Wiring Test

Voltage drop in positive (+) lead ______ ❑ Pass ❑ Fail
Voltage drop in negative (–) lead ______ ❑ Pass ❑ Fail

Alternator Test

Alternator manufacturer ______ Model ______
Alternator nameplate rating ______
Alternator test output ______ ❑ Pass ❑ Fail
Voltage drop in positive (+) lead ______ ❑ Pass ❑ Fail
Voltage drop in negative (–) lead ______ ❑ Pass ❑ Fail

Regulator Test

Regulator temperature ______
Regulator voltage, minimum load ______ ❑ Pass ❑ Fail
Regulator voltage, loaded ______ ❑ Pass ❑ Fail

Battery Charger/Conditioner Test

Rated output ______ Test output ______ ❑ Pass ❑ Fail
Float voltage ______ ❑ Pass ❑ Fail

Total Continuous Load Test

Battery voltage at start of test ______
Battery voltage at end of test ______ ❑ Pass ❑ Fail

 NFPA 1911 (p. 1 of 2)

Solenoid and Power Relay Test

Device tested ________ Voltage drop ________ ❑ Pass ❑ Fail
Device tested ________ Voltage drop ________ ❑ Pass ❑ Fail
Device tested ________ Voltage drop ________ ❑ Pass ❑ Fail
Device tested ________ Voltage drop ________ ❑ Pass ❑ Fail
Device tested ________ Voltage drop ________ ❑ Pass ❑ Fail
Device tested ________ Voltage drop ________ ❑ Pass ❑ Fail
Device tested ________ Voltage drop ________ ❑ Pass ❑ Fail
Device tested ________ Voltage drop ________ ❑ Pass ❑ Fail
Device tested ________ Voltage drop ________ ❑ Pass ❑ Fail
Device tested ________ Voltage drop ________ ❑ Pass ❑ Fail
Device tested ________ Voltage drop ________ ❑ Pass ❑ Fail
Device tested ________ Voltage drop ________ ❑ Pass ❑ Fail

Comments on low-voltage electrical system performance test ________

Person conducting the test ________
Representing ________
Signature ________ Date ________
AHJ representative ________ Date ________

 NFPA 1911 (p. 2 of 2)

Figure C.3(f) Line Voltage Electrical System Performance Test Form.

LINE VOLTAGE ELECTRICAL SYSTEM PERFORMANCE TEST

Apparatus no. or designation ________ Year manufactured ________
Manufacturer ________ Serial no. ________
Power source type ________ Manufacturer ________
Model ________
Ratings — Volts ________ ac/dc ________ Phase ________ Frequency ________
Amps ________ Watts ________
Line voltage system is: ❑ Isolated ❑ Bonded neutral

Power Source Annual Load Test

Test load total wattage ________

Test Case	Voltage	Frequency
No load at start		
Loaded at start		
Loaded, 10 minutes		
Loaded at end		
No load at end		
Minimum allowed		
Maximum allowed		
	❑ Pass ❑ Fail	❑ Pass ❑ Fail

Receptable Wiring Tests

❑ Pass ❑ Fail Number of tests ________
Identify any problem receptacles ________
Comments ________

Ground Fault Circuit Interrupters (GFCIs)

❑ Pass ❑ Fail Number of GFCIs tested ________
Comments ________

 NFPA 1911 (p. 1 of 2)

Operational Tests of Line Voltage Equipment

❑ Pass ❑ Fail Describe any failures or problems

Comments

Power Source Full Load Test

Test load total wattage

Test Case	Voltage	Frequency
0% load at start		
50% load at start		
100% load, 0 minutes		
100% load, 10 minutes		
100% load, 20 minutes		
100% load, 30 minutes		
100% load, 40 minutes		
50% load at end		
0% load at end		
Minimum allowed	(–10%)	(–3Hz)
Maximum allowed	(+10%)	(+3Hz)
	❑ Pass ❑ Fail	❑ Pass ❑ Fail

Dielectric Withstand test

❑ Pass ❑ Fail ❑ Not applicable Comments

Comments on line voltage electrical system performance test

Person conducting the test

Representing

Signature Date

AHJ representative Date

LINE VOLTAGE ELECTRICAL SYSTEM PERFORMANCE TEST

Emergency vehicle no. or designation Year manufactured

Manufacturer Serial no.

Power source type Manufacturer

Model

Ratings — Volts ac/dc Phase Frequency

Amps Watts

Line voltage system is: ❑ Isolated ❑ Bonded neutral

Power Source Annual Load Test

Test load total wattage

Test Case	Voltage	Frequency
No load at start		
Loaded at start		
Loaded, 10 minutes		
Loaded at end		
No load at end		
Minimum allowed		
Maximum allowed		
	❑ Pass ❑ Fail	❑ Pass ❑ Fail

Receptacle Wiring Tests

❑ Pass ❑ Fail Number of tests

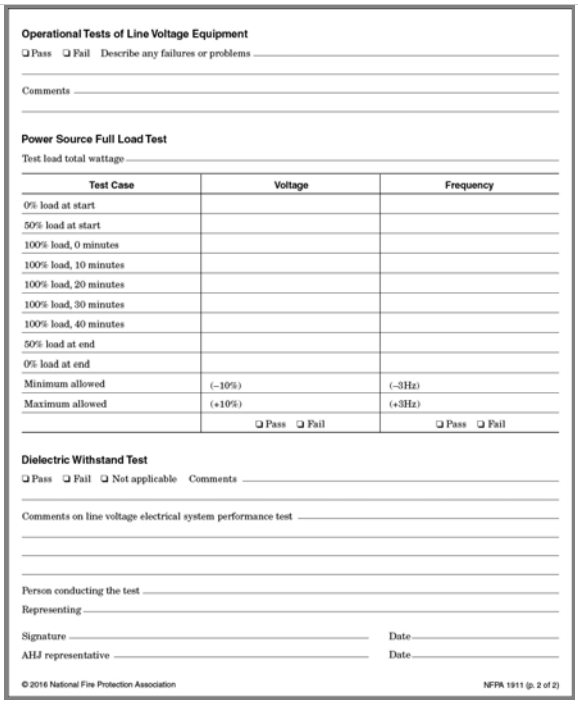
Identify any problem receptacles

Comments

Ground Fault Circuit Interrupters (GFCIs)

❑ Pass ❑ Fail Number of GFCIs tested

Comments



Operational Tests of Line Voltage Equipment

❑ Pass ❑ Fail Describe any failures or problems _____

Comments _____

Power Source Full Load Test

Test load total wattage _____

Test Case	Voltage	Frequency
0% load at start		
50% load at start		
100% load, 0 minutes		
100% load, 10 minutes		
100% load, 20 minutes		
100% load, 30 minutes		
100% load, 40 minutes		
50% load at end		
0% load at end		
Minimum allowed	(–10%)	(–3Hz)
Maximum allowed	(+10%)	(+3Hz)
	❑ Pass ❑ Fail	❑ Pass ❑ Fail

Dielectric Withstand Test

❑ Pass ❑ Fail ❑ Not applicable Comments _____

Comments on line voltage electrical system performance test _____

Person conducting the test _____

Representing _____

Signature _____ Date _____

AHJ representative _____ Date _____

 NFPA 1911 (p. 2 of 2)

Figure C.3(g) Foam Proportioning System Performance Test Form.

FOAM PROPORTIONING SYSTEM PERFORMANCE TEST

Apparatus no. or designation _____ Year manufactured _____

Manufacturer _____ Model _____

Serial no. _____ Vehicle identification no. _____

Foam proportioner make _____ Model _____

Foam proportioner type _____ Serial no. _____

Foam proportioner specifications:

Flow range Min _____ Max _____

Pressure range Min _____ Max _____

Percentage range Min _____ Max _____

Foam concentrate viscosity Min _____ Max _____

Power requirements Min _____ Max _____

Test conditions: Proportioning ratio _____ Waterflow _____ Water Pressure _____

Test method used:

❑ Substituting water for foam concentrate

❑ Measuring foam concentrate pump output directly

❑ Determining foam percentage by use of a refractometer

❑ Determining foam percentage by use of a conductivity meter

Calibration accuracy _____ Within minimum requirements? ❑ Yes ❑ No

Comments on foam proportioning system performance test _____

Tested by _____ Date _____

 NFPA 1911

FOAM PROPORTIONING SYSTEM PERFORMANCE TEST

Emergency vehicle no. or designation _____ Year manufactured _____
Manufacturer _____ Model _____
Serial no. _____ Vehicle identification no. _____
Foam proportioner make _____ Model _____
Foam proportioner type _____ Serial no. _____

Foam proportioner specifications:

Flow range	Min	_____	Max	_____
Pressure range	Min	_____	Max	_____
Percentage range	Min	_____	Max	_____
Foam concentrate viscosity	Min	_____	Max	_____
Power requirements	Min	_____	Max	_____

Test conditions: Proportioning ratio _____ Waterflow _____ Water Pressure _____

Test method used:
- ❑ Substituting water for foam concentrate
- ❑ Measuring foam concentrate pump output directly
- ❑ Determining foam percentage by use of a refractometer
- ❑ Determining foam percentage by use of a conductivity meter

Calibration accuracy _____ Within minimum requirements? ❑ Yes ❑ No

Comments on foam proportioning system performance test _____

Tested by _____ Date _____

 NFPA 1911

Figure C.3(h) CAFS Compressor Performance Test Form.

CAFS COMPRESSOR PERFORMANCE TEST

Apparatus no. or designation _____ Year manufactured _____
Manufacturer _____ Model _____
Serial no. _____ Vehicle identification no. _____
Compressor make _____ Model _____
Compressor rate capacity at 125 psi (862 kPa) _____ SCFM
Compressor drive ❑ Belt ❑ Engine ❑ PTO ❑ Hydraulic
If engine, make _____ Model _____
Test device _____ Airflow meter _____ Fixed orifice _____ (size)

Compressor Run Test

Time	Air Pressure	Airflow (SCFM)	Compressor Temperature
Start			
5 minutes			
10 minutes			
15 minutes			
20 minutes			

Maximum air pressure: psi _____

Pressure Balance Test

Time	Water Pressure	Air Pressure	Percent Difference
At test start			
With air flowing			
After 5 minutes			

Comments on CAFS compressor performance test _____

Tested by _____ Date _____

 NFPA 1911

CAFS COMPRESSOR PERFORMANCE TEST

Emergency vehicle no. or designation _____ Year manufactured _____
Manufacturer _____ Model _____
Serial no. _____ Vehicle identification no. _____
Compressor make _____ Model _____
Compressor rate capacity at 125 psi (862 kPa) _____ SCFM
Compressor drive ❑ Belt ❑ Engine ❑ PTO ❑ Hydraulic
If engine, make _____ Model _____
Test device _____ Airflow meter _____ Fixed orifice _____ (size)

Compressor Run Test

Time	Air Pressure	Airflow (SCFM)	Compressor Temperature
Start			
5 minutes			
10 minutes			
15 minutes			
20 minutes			

Maximum air pressure: psi _____

Pressure Balance Test

Time	Water Pressure	Air Pressure	Percent Difference
At test start			
With air flowing			
After 5 minutes			

Comments on CAFS compressor performance test _____

Tested by _____ Date _____

 NFPA 1911

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Committee Statement

Committee Statement: The committee has made this change for document consistency. In the forms "apparatus" needs to be changed to "emergency vehicle" as well.
Response Message:

First Revision No. 131-NFPA 1911-2015 [Section No. C.4]

C.4 Establishing the Program.

The preventive maintenance program for any specific ~~piece of apparatus~~ emergency vehicle , or for a department, needs to include requirements from several sources.

The first place to look is in the manufacturer's manuals. If the manuals that should have been delivered with the ~~apparatus~~ emergency vehicle when it was new are not available, contact the original manufacturer to determine if duplicates are available. Even if the full vehicle manuals are not available, maintenance recommendations for specific components, such as engines, transmissions, axles, pumps, and generators, can be obtained from their manufacturers. The documentation should be carefully reviewed for recommendations for inspections, lubrication, replacing parts, testing, or other periodic maintenance tasks. These manuals also might be the source for specifications needed for confirming proper operation in the performance testing.

The second place to look is in the requirements of this standard. In many cases, there will be significant overlap with the recommendations in the manufacturer's manuals. There will be some requirements in this standard that do not apply to a specific ~~piece of apparatus~~ emergency vehicle . All applicable requirements from this standard should be included in the program as it is established.

As the various maintenance tasks that need to be performed are identified, each should be assigned to a schedule based on months, years, hours, or some other time frame that will determine when it is to be performed. Those who will perform the maintenance task should also be identified. In the case of a large fire department or city public works shops, this is simple. In other cases, different providers might perform different types of tasks. A department might have several providers that can perform the same type of work, with the decision of which provider to use being made based on any of several criteria.

Once the tasks to be performed, their required frequency, and who will perform the work have been identified, the preventive maintenance program can be organized into a series of schedules, check sheets, record sheets, and other documentation that will ensure that the program will be implemented correctly. If the entire program is being developed from scratch, it might be necessary to develop the program and then revise it as experience demonstrates which elements work smoothly and which do not.

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C.5 Record Maintenance.

The check sheets and other maintenance records should be kept for the life of the ~~apparatus~~ emergency vehicle . Part of setting up a preventive maintenance program is creating a filing system or other mechanism for retaining records. All records should be maintained by vehicle so that they can be delivered with the ~~apparatus~~ emergency vehicle when it is sold. In many cases, problems can only be detected by comparing current test results with previous test results. For these problems to be detected, it is important that the records be well organized and available for future review. In the event of an accident, the accident investigation will include a review of all maintenance records.

There are many different types of forms for reporting inspections, maintenance, and tests that could be used in connection with ~~a fire apparatus~~ an emergency vehicle preventive maintenance program. Resources for forms other than those shown in this annex are the local or state fire apparatus mechanics association, ~~apparatus~~ emergency vehicle manufacturers, or the ~~Apparatus Maintenance~~ Emergency Vehicle Management Section of the International Association of Fire Chiefs.

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Annex E Informational References

E.1 Referenced Publications.

The documents or portions thereof listed in this annex are referenced within the informational sections of this standard and are not part of the requirements of this document unless also listed in Chapter 2 for other reasons.

E.1.1 NFPA Publications.

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

NFPA 11, *Standard for Low-, Medium-, and High-Expansion Foam*, ~~2010~~ 2015 edition.

~~NFPA 1002 , *Standard for Fire Apparatus Driver/Operator Professional Qualifications* , 2009 edition.~~

NFPA 1150, *Standard on Foam Chemicals for Fires in Class A Fuels*, 2010 edition.

NFPA 1901, *Standard for Automotive Fire Apparatus*, ~~2009~~ 2016 edition.

NFPA 1906 , *Standard for Wildland Fire Apparatus* , 2016 edition.

NFPA 1912, *Standard for Fire Apparatus Refurbishing*, ~~2011~~ 2016 edition.

NFPA 1917 , *Standard for Automotive Ambulances* , 2016 edition.

NFPA 1961, *Standard on Fire Hose*, ~~2007~~ 2013 edition.

NFPA 1962, *Standard for the Inspection, Care, and Use of Fire Hose, Couplings, and Nozzles and the Service Testing of Fire Hose Appliances* , ~~2008~~ 2013 edition.

E.1.2 Other Publications.

E.1.2.1 ~~American Association of Motor Vehicle Administrators~~ AAMVA/CCMTA Publications.

American Association of Motor Vehicle Administrators, ~~P.O. Box 79702, Baltimore, MD 21279-0702.~~ 4301 Wilson Boulevard, Suite 400, Arlington, VA 22302.

Canadian Council of Motor Transport Administrators, 2323 Saint-Laurent Blvd., Ottawa, ON, K1G 4J8, Canada.

Passenger Vehicles & Light Trucks *Vehicle Inspection Handbook, ~~Passenger Vehicles & Light Trucks~~* , 1999.

Trucks, Buses, & Trailers *Vehicle Inspection Handbook, ~~Trucks, Buses, & Trailers~~* , 1999.

E.1.2.2 ASME Publications.

American Society of Mechanical Engineers, ~~Three Park Avenue~~ Two Park Avenue , New York, NY 10016-5990.

ASME B40.100, *Pressure Gauges and Gauge Attachments,*~~2005~~ 2013 .

E.1.2.3 U.S. Government Publications.

U.S. Government Printing Office, Washington, DC 20402.

Title 29, Code of Federal Regulations, Section 1910.177, “Servicing ~~m~~ M ulti-~~p~~ P iece and ~~s~~ S ingle ~~p~~ P iece ~~r~~ R im ~~w~~ W heels, ” ~~Mar. 7, 1996~~ 2011 .

Title 49, Code of Federal Regulations, Part 301, "Motor Vehicle Safety," 2009.

E.2 Informational References. (Reserved)

E.3 References for Extracts in Informational Sections.

NFPA 1901, *Standard for Automotive Fire Apparatus*, ~~2009~~ 2016 edition.

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Committee Statement

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