

Summary of Chapters
NFPA 1911: Standard for the Inspection, Maintenance, Testing, and Retirement of In-Service Automotive Fire Apparatus

Applicable to any public or private organization that uses fire apparatus, NFPA 1911 helps ensure in-service fire apparatus are serviced and maintained to keep them in safe operating condition and ready for response at all times.

This standard defines the minimum requirements for establishing an inspection, maintenance, and testing program for in-service fire apparatus. This standard includes guidelines for fire apparatus refurbishment and retirement. This standard identifies the systems and items on a fire apparatus 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

Chapter 1: Administration

- a. The scope of work determines the requirements for establishing an inspection, maintenance and testing for in-service fire apparatus.
- b. This standard provides a guide for fire-apparatus refurbishment and retirement.
- c. The standard is applicable to both public and private organizations for using fire apparatus.

Chapter 2: Referenced Publications

- a. All listed portions of the NFPA codes under this chapter must be considered and referenced
- b. Other important publications to be considered and referenced include ASME, ASNT, ASTM, AWE, ISO, SAE, and US Government Publications and ULC.

Chapter 3: Definitions

- a. The Merriam-Webster Collegiate Dictionary (11th ed) shall serve as the source of definitions for ordinarily accepted meanings of some terms.
- b. NFPA official terms and general definitions must be defined for clarity of expression.

Chapter 4: General Requirements

- a. The standard requires all fire apparatus to be placed in service to be inspected, maintained, tested, and the ultimate decision to be retired.
- b. The standard requires the scope of work to be performed by qualified personnel
- c. The standard requires proper approval of equipment and personnel's adherence to safety precautions.

- d. Inspections and maintenance must be done in accordance with manufacturer's recommended procedures.
- e. Repairs must also be done in accordance with manufacturer's recommended procedures.
- f. Record of work detailing inspection, maintenance, testing and repairs must be kept.

Chapter 5: Retirement of Fire Apparatus

- a. Retired apparatus must not be used for emergency operations due to safety measures.

NOTE: Fire Underwriters Survey has published the document *Insurance Grading Recognition of Used and Rebuilt Fire Apparatus*. In summary:

- a. Apparatus are built to applicable ULC S515 or NFPA 1901 standards.
- b. Apparatus should respond to first alarms for the first 15 years. For the next 5 years, be in reserve status for use at major fires or as a temporary replacement for out-of-service first line apparatus.
- c. Be retired at 20 years of age, unless the apparatus meets the recommended annual, service and acceptance level tests and has been deemed in excellent mechanical condition
- d. Testing includes, weight, road and pump performance tests.
- e. Testing and maintenance only be completed by a qualified technician.

Chapter 6: Out-of-Service Criteria

- a. Apparatus affected with any deficiencies should be taken out-of-service.
- b. Defected apparatus needs to be re-tested and corrected to suit manufacturer's specifications before re-use.

Chapter 7: Daily/Weekly Visual and Operational Checks

- a. A visual or operational check of the apparatus shall be done within 24 hours of a run or at least weekly.
- b. A check sheet shall be used and deficiencies corrected or reported by qualified personnel.
- c. The unit shall be placed out-of-service if deficiencies require maintenance or repair by a qualified technician and the organization shall have a procedure to do so.
- d. A record of the checks shall be maintained.

Chapter 8: Inspection and Maintenance of the Chassis, Driving and Crew Compartment, and Body

- a. All components and systems found in the chassis, driving and crew compartment and body must be inspected and maintained in accordance with manufacturer's instructions.
- a. Compartments and systems needed to be inspected include axles, tires and wheels, engine fuel systems, engine cooling systems, steering systems, braking systems, transmission etc.
- b. All operational checks, tests, out-of-service, repairs and maintenance shall be documented.

Chapter 9: Inspection and Maintenance of Low-Voltage Electrical Systems

- a. All low voltage electrical equipment on the apparatus must be inspected and maintained.
- b. Low voltage electrical systems may include starting systems, charging system, automatic load management system, apparatus lighting etc.

Chapter 10: Inspection and Maintenance of Water Pumping Systems and Water Tanks

- a. Both water pumps and water tanks as part of fire apparatus must be inspected and maintained in accordance with manufacturer's recommendations.
- b. Other pumps such as auxiliary pumps, industrial pumps, transfer pumps, pumps priming systems must be inspected and maintained in accordance with manufacturer's recommendations.

Chapter 11: Inspection and Maintenance of Aerial Devices

- a. Fire apparatus equipped with aerial devices must be inspected and tested in accordance with aerial device manufacturer's recommendations.
- b. Aerial devices equipped with air storage must be inspected for hydrostatic test dates specified by manufacturer or appropriate government agency.

Chapter 12: Inspection and Maintenance of Foam Proportioning Systems

- a. Fire apparatus equipped with foam proportioning systems must be inspected and maintained in accordance with manufacturer's recommendations.
- b. Inspection and maintenance must include cleaning of systems components, instrumentation and controls for security checks.

Chapter 13: Inspection and Maintenance of Compressed Air-Force Systems (CAFS)

- a. Fire apparatus equipped with compressed air-foam systems must be inspected and maintained.

- b. Air-compressors such as air-cooled engine-driven, water-cooled engine driven, power takeoff-driven compressors must be inspected for leaks, deformation and security of mounting.

Chapter 14: Inspection and Maintenance of Line Voltage Electrical Systems

- a. Apparatus line voltage electrical system must be inspected and maintained in accordance with manufacturer's recommendations.
- b. All line voltage appliances, circuit breakers; engine-driven generators etc must be checked for conditions, diagnostics, leaks, deformation and security of mounting.

Chapter 15: Inspection and Maintenance of Utility Air and Breathing Air Systems

- a. Fire apparatus with compressed breathing air systems or utility air must be inspected and maintained.
- b. System components such as piping, air compressors, purification systems, air storage tanks etc must be checked for leaks, deformation, security of mounting etc.
- c. Records must be kept on all air compressed systems for inspection and maintenance.

Chapter 16: Inspection and Maintenance of Trailers

- a. Trailers must be inspected and maintained.
- b. System components such as frame, hitch, axle, suspension, brakes systems, electrical and lighting, etc.
- c. Records must be kept on all trailer components and systems for inspection and maintenance.

Chapter 17: Inspection and Maintenance of Patient Compartment

- a. The patient compartment shall be inspected and maintained.
- b. System components such as doors, locks and latches, seatbelts, HVAC, fire extinguishers, handrails and mounts, etc.
- c. Records must be kept on all patient compartment systems for inspection and maintenance.

Chapter 18: Inspection and Maintenance of Winch Systems

- a. Any winch on fire apparatus must be inspected and maintained.
- b. Winch assembly must be cleaned; wires unwound and power and supply controls must be checked for wear, cracking, abrasion etc

Chapter 19: Road Tests and Annual Weight Verification

- a. All chassis components must be annually checked and tested.
- b. Braking systems and parking brake systems must also be tested at least annually.

- c. Road test of the fire apparatus must be conducted at required intervals to check parts for maintenance purposes.

Chapter 20: Performance Testing of Low-Voltage Electrical Systems

- a. Major components of low-voltage electrical systems must all be tested.
- b. Inspection and testing must be done on batteries, load testing, starter wiring, alternator, regulator, battery charger etc. following testing procedures.

Chapter 21: Performance Testing of Fire Pumps and Industrial Supply Pumps

- a. Fire apparatus equipped with fire pumps and supply pumps must be inspected and tested.
- b. Test site must be inspected.
- c. Area for stationing apparatus must be provided and meet the required distance from a hydrant
- d. Environmental conditions must be checked and tested.

Chapter 22: Performance Testing of Aerial Devices

- a. Fire apparatus equipped with aerial devices must be inspected and tested.
- b. Inspection and testing must be done at least annually visual, weld, bolt and pin, aerial ladders, rotation gear and bearing etc.

Chapter 23: Performance Testing of Foam Proportioning System

- a. Fire apparatus equipped with foam proportioning systems must be inspected and tested.
- b. Testing of foam proportioning system must be done annually.

Chapter 24: Performance Testing of Compressed Air Foam Systems (CAFS)

- a. Fire apparatus equipped with a compressed air foam systems must be tested.
- b. Testing must be done annually and follow the required testing procedure.

Chapter 25: Performance Testing of Line Voltage Electrical Systems

- a. Fire apparatus equipped with line voltage electrical systems must be checked.
- b. Performance testing must be done annually and follow the required procedure on electrical systems, power source, receptacle wiring, line voltage equipment etc.

Chapter 26: Performance Testing of Breathing Air Compressor Systems

- a. Fire apparatus supplied with a breathing air compressor system must be tested annually in accordance with manufacturer's requirements.
- b. The quality of the air produced by the compressor must be tested in compliance of NFPA requirement
- c. Records must be kept on all annual testing of the breathing air compressor.