

NFPA 1071

Standard for Emergency Vehicle Technician Professional Qualifications

2006 Edition



NFPA, 1 Batterymarch Park, Quincy, MA 02169-7471
An International Codes and Standards Organization

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Standard for

Emergency Vehicle Technician Professional Qualifications

2006 Edition

This edition of NFPA 1071, *Standard for Emergency Vehicle Technician Professional Qualifications*, was prepared by the Technical Committee on Emergency Vehicle Mechanic Technicians Professional Qualifications, released by the Technical Correlating Committee on Professional Qualifications, and acted on by NFPA at its June Association Technical Meeting held June 6–10, 2005, in Las Vegas, NV. It was issued by the Standards Council on July 29, 2005, with an effective date of August 18, 2005, and supersedes all previous editions.

This edition of NFPA 1071 was approved as an American National Standard on August 18, 2005.

Origin and Development of NFPA 1071

In July 1995, the Standards Council, after receipt of a request from the Maintenance Section of the International Association of Fire Chiefs for the development of a standard for the professional qualifications of emergency vehicle technician, approved the establishment of a technical committee on Emergency Vehicle Technician Professional Qualifications under the Professional Qualifications project. The Committee developed this first edition of NFPA 1071, *Standard for Emergency Vehicle Technician Professional Qualifications*, which establishes the minimum job performance requirements for a person qualified as an emergency vehicle technician who is engaged in the inspection, diagnosis, maintenance, repair, and testing of an emergency response vehicle.

In the 2006 edition of the document, the Committee has added a new chapter for Emergency Vehicle Technician III. The Committee also has revised the document to comply with the new requirements of the *Manual of Style for NFPA Technical Committee Documents*.

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NOTE: Membership on a committee shall not in and of itself constitute an endorsement of the Association or any document developed by the committee on which the member serves.

Committee Scope: This Committee shall have primary responsibility for the management of the NFPA Professional Qualifications Project and documents related to professional qualifications for fire service, public safety, and related personnel.

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Committee Scope: This Committee shall have primary responsibility for documents on professional qualifications required of personnel engaged in the diagnosis, maintenance, and repair of systems and components that are unique to emergency response vehicles.

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NOTICE: An asterisk (*) following the number or letter designating a paragraph indicates that explanatory material on the paragraph can be found in Annex A.

A reference in brackets [] following a section or paragraph indicates material that has been extracted from another NFPA document. As an aid to the user, the complete title and edition of the source documents for extracts in mandatory sections of the document are given in Chapter 2 and those for extracts in informational sections are given in Annex D. Editorial changes to extracted material consist of revising references to an appropriate division in this document or the inclusion of the document number with the division number when the reference is to the original document. Requests for interpretations or revisions of extracted text shall be sent to the technical committee responsible for the source document.

Information on referenced publications can be found in Chapter 2 and Annex D.

Chapter 1 Administration

1.1* Scope. This standard shall identify and define the minimum job performance requirements (JPRs) for a person to be considered qualified as an emergency vehicle technician (EVT).

1.2 Purpose. The purpose of this standard shall be to ensure that persons meeting the requirements of this standard who are engaged in the inspection, diagnosis, maintenance, repair, and testing of emergency response vehicles are qualified.

1.3 Application.

1.3.1 This standard shall apply to personnel who are engaged in the inspection diagnosis, maintenance, repair, and testing of emergency response vehicles.

1.3.2 It is not the intent of this standard to restrict any jurisdiction from exceeding these requirements.

1.3.3 The job performance requirements shall be accomplished in accordance with the requirements of the authority having jurisdiction; NFPA 1500, *Standard on Fire Department Occupational Safety and Health Program*; and NFPA 1915, *Standard for Fire Apparatus Preventive Maintenance Program*.

1.3.4 It shall not be required that the job performance requirements be mastered in the order in which they appear.

1.3.5 The authority having jurisdiction shall establish instructional priority and the training program content to prepare individuals to meet the job performance requirements of this standard.

1.3.6 Performance of each requirement of this standard shall be evaluated by qualified individuals approved by the authority having jurisdiction.

1.3.7 Wherever the terms *rules, regulations, procedures, supplies, apparatus, and equipment* are referred to in this standard, it shall be implied that they are those of the authority having jurisdiction.

1.3.8 All inspection, diagnosis, maintenance, repair, and testing functions described in the job performance requirements shall be completed according to all applicable manufacturer specifications and department- or agency-recognized standard operating procedures (SOPs).

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 1500, *Standard on Fire Department Occupational Safety and Health Program*, 2002 edition.

NFPA 1911, *Standard for Service Tests of Fire Pump Systems on Fire Apparatus*, 2002 edition.

NFPA 1914, *Standard for Testing Fire Department Aerial Devices*, 2002 edition.

NFPA 1915, *Standard for Fire Apparatus Preventive Maintenance Program*, 2000 edition.

2.3 Other Publication.

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

2.4 References for Extracts in Mandatory Sections.

NFPA 10, *Standard for Portable Fire Extinguishers*, 2002 edition.

NFPA 1000, *Standard for Fire Service Professional Qualifications Accreditation and Certification Systems*, 2006 edition.

NFPA 1002, *Standard for Fire Apparatus Driver/Operator Professional Qualifications*, 2003 edition.

NFPA 1031, *Standard for Professional Qualifications for Fire Inspector and Plan Examiner*, 2003 edition.

NFPA 1404, *Standard for Fire Service Respiratory Protection Training*, 2002 edition.

NFPA 1451, *Standard for a Fire Service Vehicle Operations Training Program*, 2002 edition.

NFPA 1561, *Standard on Emergency Services Incident Management System*, 2005 edition.

NFPA 1901, *Standard for Automotive Fire Apparatus*, 2003 edition.

NFPA 1915, *Standard for Fire Apparatus Preventive Maintenance Program*, 2000 edition.

NFPA 5000®, *Building Construction and Safety Code*®, 2006 edition.

Chapter 3 Definitions

3.1 General. The definitions contained in this chapter shall apply to the terms used in this standard. Where terms are not defined in this chapter or within another chapter, they shall be defined using their ordinarily accepted meanings within the context in which they are used. *Merriam-Webster's Collegiate Dictionary*, 11th edition, shall be the source for the ordinarily accepted meaning.

3.2 NFPA Official Definitions.

3.2.1* Approved. Acceptable to the authority having jurisdiction.

3.2.2* Authority Having Jurisdiction (AHJ). An organization, office, or individual responsible for enforcing the requirements of a code or standard, or for approving equipment, materials, an installation, or a procedure.

3.2.3* Listed. Equipment, materials, or services included in a list published by an organization that is acceptable to the authority having jurisdiction and concerned with evaluation of products or services, that maintains periodic inspection of production of listed equipment or materials or periodic evaluation of services, and whose listing states that either the equipment, material, or service meets appropriate designated standards or has been tested and found suitable for a specified purpose.

3.2.4 Shall. Indicates a mandatory requirement.

3.2.5 Should. Indicates a recommendation or that which is advised but not required.

3.3 General Definitions.

3.3.1 Aerial Device. An aerial ladder, elevating platform, or water tower that is designed to position personnel, handle materials, provide continuous egress, or discharge water. [1901, 2003]

3.3.2 Breathing Air System. The complete assembly of equipment such as compressors, purification system, pressure regulators, safety devices, manifolds, air tanks or receivers, and interconnected piping required to deliver air for breathing. [1901, 2003]

3.3.3 Defect. A discontinuity in a part or a failure to function that interferes with the service or reliability for which the part was intended. [1901, 2003]

3.3.4 Deficiency. A condition in which the application of a component is not within its designed limits or specifications.

3.3.5 Deformation. Abnormal wear, defects, cracks or fractures, warpage, and deviations from the original condition that would affect safe and correct operation. [1915, 2000]

3.3.6 Diagnosis. The determination of the cause of a problem.

3.3.7 Documentation. The process of gathering, classifying, and storing information. [1915, 2000]

3.3.8 Duty. A fire-related service, function, or task identified in the fire brigade organizational statement and assigned to a member to perform.

3.3.9 Emergency Response Vehicle. A motorized vehicle designated by an organization or agency to respond to emergency incidents where provisions have been made to include warning systems and specialized components such as pumps, aerial devices, and rescue equipment and are capable of transporting emergency response personnel.

3.3.10 Emergency Vehicle Technician (EVT).

3.3.10.1 Emergency Vehicle Technician (EVT) I. An individual who performs inspection, maintenance, and operational testing activities on emergency response vehicles and who, by possession of a recognized certificate, professional standing, or skill, has acquired the knowledge, training, and experience and has demonstrated the ability to deal with issues related to the subject matter, the work, or the project.

3.3.10.2 Emergency Vehicle Technician (EVT) II. An individual who performs inspection, diagnosis, maintenance, repair, and testing activities on emergency response vehicles and who, by possession of a recognized certificate, professional standing, or skill, has acquired the knowledge, training, and experience and has demonstrated the ability to deal with issues related to the subject matter, the work, or the project.

3.3.10.3 Emergency Vehicle Technician (EVT) III. An individual who is the first level supervisor "leadman" responsible for Emergency Vehicle Technician I and II personnel performance, scheduling, quality control of repairs and maintenance work, and the compiling and reviewing of initial documentation. This individual can also perform inspection, diagnosis, maintenance, repair, and testing activities on emergency response vehicles and has, by possession of a recognized certificate, professional standing, or skill, acquired the knowledge, training, and experience and demonstrated the ability to deal with issues related to the subject matter, the work, or the project.

3.3.11 Fire Department. An organization providing rescue, fire suppression, and related activities, including any public, governmental, private, industrial, or military organization engaging in this type of activity. [1002, 2003]

3.3.12 Incident Management System (IMS). A system that defines the roles and responsibilities to be assumed by responders and the standard operating procedures to be used in the management and direction of emergency incidents and other functions. [1561, 2005]

3.3.13 Inspect. To determine the condition or operation of a component(s) by comparing its physical, mechanical, and/or electrical characteristics with established standards, recommendations, and requirements through examination by sight, sound, or feel. [1915, 2000]

3.3.14 Job. An organized segment of instruction designed to develop sensory motor skills or technical knowledge.

3.3.15 Job Performance Requirement (JPR). A written statement that describes a specific job task, lists the items necessary to complete the task, and defines measurable or observable outcomes and evaluation areas for the specific task. [1000, 2006]

3.3.16 Line Voltage Circuit, Equipment, or System. An ac or dc electrical circuit, equipment, or system where the voltage to ground or from line to line is 30 volts (V) rms (ac) or 42.4 V peak (dc) or greater. [1901, 2003]

3.3.17 Low-Voltage Circuit, Equipment, or System. An electrical circuit, equipment, or system where the voltage does not exceed 30 volts (V) rms (ac) or 42.4 V peak (dc), usually 12 V dc in fire apparatus. [1901, 2003]

3.3.18 Maintenance. Work performed to ensure that equipment operates as directed by the manufacturer. [10, 2002]

3.3.19 Manufacturer's Specifications. Any requirement or service bulletin an emergency response vehicle builder or component producer provides with regard to the use, care, and maintenance of its product(s).

3.3.20 Qualified Person. A person who, by possession of a recognized degree, certificate, professional standing, or skill, and who, by knowledge, training, and experience, has demonstrated the ability to deal with problems relating to a particular subject matter, work, or project. [1451, 2002]

3.3.21 Rebuild. To make extensive repairs in order to restore a component to like-new condition in accordance with the original manufacturer's specifications.

3.3.22 Repair. The patching, restoration, or painting of materials, elements, equipment, or fixtures for the purposes of maintaining such materials, elements, equipment, or fixtures in good or sound condition. [5000, 2006]

3.3.23 Requisite Knowledge. Fundamental knowledge one must have in order to perform a specific task. [1031, 2003]

3.3.24 Requisite Skills. The essential skills one must have in order to perform a specific task. [1031, 2003]

3.3.25 Standard Operating Procedures (SOPs). Written instructions that document and define the manner in which activities should be conducted. [1404, 2002]

3.3.26 Structural Integrity. An unimpaired condition of any component.

3.3.27 Task. A specific job behavior or activity. [1002, 2003]

3.3.28 Test. To verify serviceability by measuring the mechanical, pneumatic, hydraulic, or electrical characteristics of an item and comparing those characteristics with prescribed standards. [1915, 2000]

Chapter 4 Emergency Vehicle Technician I

4.1 General. To be considered qualified as an Emergency Vehicle Technician I, the individual shall have the general knowledge defined in 4.1.1 and the general skills defined in 4.1.2 and shall meet the job performance requirements of Sections 4.2 through 4.5 and at least one specialty area as defined in Section 4.6, Section 4.7, or Section 4.8. (*See Annex B.*)

4.1.1* General Knowledge Requirements. The organization of the fire department and the maintenance facility; the role of the EVT in the organization; the mission of the fire service; the fire department's standard operating procedures (SOPs) and rules and regulations as they apply to the EVT; the critical aspects of NFPA 1500, *Standard on Fire Department Occupational Safety and Health Program*, as they apply to the EVT; federal motor carrier safety regulations; applicable federal, state, and local regulations; interpretation and use of manufacturer's specifications, inspection checklists, maintenance schedules, maintenance checklists, and department SOPs; selection of tools; fastener types and their usage; maintenance equipment and its usage; workplace safety practices; selection and use of cleaning products and procedures; housekeeping; and identification and handling of hazardous materials.

4.1.2 General Skill Requirements. The ability to use tools safely; operate emergency response vehicles in compliance with applicable federal, state, and local regulations; and locate information in departmental documents as well as in standards and reference materials.

4.2 Chassis. This duty involves the inspection and preventive maintenance practices involved with an emergency response vehicle chassis, including the vehicle systems such as engines, transmissions, drivelines, brakes, steering and suspension, fuel, electrical, exhaust, and climate control.

4.2.1 Inspect the chassis systems, given an emergency response vehicle, SOPs, manufacturer's specifications, tools and test equipment, an assignment, and an inspection checklist, so that the structural integrity, the operation, and the condition of the engine, transmission, driveline, brakes, steering and suspension system, fuel system, electrical system, exhaust system, and climate control system are verified to be within manufacturer's specifications; the mounting security is verified; the chassis components are operational and within manufacturer's specifications; all checklist items are inspected; defects and deficiencies, including broken, loose, worn, or missing parts, are identified and reported; and inspections and tests are documented.

(A) Requisite Knowledge. Function, operation, and construction of chassis and vehicle systems; type of defects, deficiencies, and potential problems associated with chassis systems; use of a checklist; record-keeping requirements; and inspection procedures of the authority having jurisdiction and the manufacturer.

(B) Requisite Skills. Recognize and identify symptoms and conditions of the chassis and vehicle systems; determine defects, deficiencies, and potential problems; perform operational tests; and complete checklist and inspection documentation.

4.2.2 Perform maintenance on the chassis system, given an emergency response vehicle, manufacturer's specifications, a maintenance schedule or an assignment, a maintenance checklist, SOPs, test and calibration equipment, and tools, so that deformed, broken, loose, worn, or missing parts are repaired or replaced; components are lubricated; fluid levels are maintained; calibrations and adjustment are performed; the system's operational condition is preserved or restored; activities are documented; and additional repair needs are reported.

(A) Requisite Knowledge. Function, construction, and operation of chassis and vehicle systems; types of defects, deficiencies, and potential problems associated with chassis and vehicle systems; troubleshooting procedures; adjustment methods and procedures; selection of test and calibration equipment; role of a maintenance schedule and a maintenance checklist; record-keeping requirements; and inspection and maintenance procedures of the authority having jurisdiction and the manufacturer.

(B) Requisite Skills. Perform operational verification tests; evaluate reported conditions; recognize and correct deficiencies; use test and calibration equipment; perform all required maintenance, including all items on a maintenance checklist; and complete required documentation.

4.2.3 Inspect chassis systems and components unique to emergency response vehicles, given an emergency response vehicle, SOPs, manufacturer's specifications, tools, test and calibration equipment, an assignment, and an inspection checklist, so that the structural integrity of the frame is verified; the operation and condition of independent suspension systems, all-wheel steering systems, secondary braking systems, and auxiliary cooling systems are verified to be within manufacturer's specifications; multiplexing, interface electronics, and load management systems are operationally tested; all

checklist items are inspected; defects and deficiencies, including broken, loose, worn, or missing parts, are identified and reported; and inspection and tests are documented.

(A) Requisite Knowledge. Function, operation, construction, and interface of frames, independent suspension systems, all-wheel steering systems, secondary braking systems, and auxiliary cooling systems; the principles of electricity and operational theory of electronics; selection of test and calibration equipment; types of defects, deficiencies, and potential problems associated with chassis systems and components unique to emergency response vehicles; use of checklists; record-keeping requirements; and inspection procedures of the authority having jurisdiction and the manufacturer.

(B) Requisite Skills. Recognize and identify symptoms and conditions; use test and calibration equipment; determine defects, deficiencies, and potential problems; perform operational tests; and complete checklist and inspection documentation.

4.2.4 Perform maintenance on chassis systems and components unique to emergency response vehicles, given an emergency response vehicle, manufacturer's specifications, a maintenance schedule or an assignment, a maintenance checklist, SOPs, test and calibration equipment, and tools and diagnostic equipment, so that deformed, broken, loose, worn, or missing parts are repaired or replaced; components are lubricated; fluid levels are maintained; calibrations and adjustment are performed; the system's operational condition is preserved or restored; activities are documented; and additional repair needs are reported.

(A) Requisite Knowledge. Function, construction, and operation of chassis and vehicle systems; types of defects, deficiencies, and potential problems associated with chassis and vehicle systems; the theory of electronics; selection of test, calibration, and diagnostic equipment; role of a maintenance schedule and a maintenance checklist; troubleshooting procedures; adjustment methods and procedures; record-keeping requirements; and inspection and maintenance procedures of the authority having jurisdiction and the manufacturer.

(B) Requisite Skills. Perform operational verification tests; evaluate reported conditions; recognize and correct deficiencies; use test, calibration, and diagnostic equipment; perform all required maintenance, including all items on a maintenance checklist; and complete required documentation.

4.3 Cab and Body Components. This duty involves the inspection and maintenance of cabs (fixed and tilt) and the vehicle body, including compartments, warning systems, mounting racks, brackets, latches, and steps and ladders.

4.3.1 Inspect the cab, given an emergency response vehicle, appropriate SOPs, manufacturer's specifications, tools and test equipment, an assignment, and an inspection checklist, so that the operation of the cab and components is verified; the condition of finishes, signs, labels, and paint is determined; the operation and condition of the doors, latches, trays, glass, and associated hardware are verified to be within manufacturer's specifications; climate control systems are operationally tested; all checklist items are inspected; defects and deficiencies, including broken, loose, worn, or missing parts, are identified and reported; and inspection and tests are documented.

(A) Requisite Knowledge. Function, construction, and operation of doors and latches, seats, self-contained breathing apparatus (SCBA) mounting, safety restraints, instrumentation, window glass and mirrors, steps, handrails, and skid-resistant walking surfaces; types of defects, deficiencies, and potential

problems associated with cabs; types of lubricants; failures of finishes, signs, labels, and paint; use of checklists; record-keeping requirements; and inspection procedures of the authority having jurisdiction and the manufacturer.

(B) Requisite Skills. Perform operational verification tests; recognize and identify symptoms and conditions; determine defects, deficiencies, and potential problems; perform operational tests; and complete checklist and inspection documentation.

4.3.2 Perform maintenance on the cab, given an emergency response vehicle, manufacturer's specifications, a maintenance schedule or an assignment, a maintenance checklist, SOPs, and tools and test equipment, so that the operational condition is preserved or restored; deformed, broken, loose, worn, or missing parts are repaired or replaced; components are lubricated; skid-resistant walking surfaces are intact; finishes and surfaces are clean and preserved; activities are documented; and additional repair needs are reported.

(A) Requisite Knowledge. Function and construction of cab and components, including steps, handrails, skid-resistant walking surfaces, and storage areas; types of defects or deficiencies associated with cabs; role of a maintenance schedule and a maintenance checklist; troubleshooting procedures; adjustment methods and procedures; types of lubricants; operation of doors; common problems and failures of finishes, paint, signs, and labels; record-keeping requirements; and inspection and maintenance procedures of the authority having jurisdiction and the manufacturer.

(B) Requisite Skills. Perform operational verification tests; evaluate reported conditions; perform all required maintenance, including all items on a maintenance checklist; and complete required documentation.

4.3.3 Inspect equipment mounting systems and mounting racks, brackets, and latches, given an emergency response vehicle and its assigned equipment, SOPs, manufacturer's specifications, tools and test equipment, an assignment, and an inspection checklist, so that the operation and condition of the mounting system and mounting racks are verified to be within manufacturer's specifications; all checklist items are inspected; defects and deficiencies, including broken, loose, worn, or missing parts, are identified and reported; and inspection and tests are documented.

(A) Requisite Knowledge. Function, operation, and construction of assigned equipment mounting systems, warning systems, and mounting racks, brackets, and latches; types of defects, deficiencies, and potential problems associated with equipment mounting systems, warning systems, and mounting racks, brackets, and latches; use of checklists; selection of test and calibration equipment; record-keeping requirements; and inspection procedures of the authority having jurisdiction and the manufacturer.

(B) Requisite Skills. Recognize and identify symptoms and conditions of equipment mounting systems and mounting racks, brackets, and locks; use test and calibration equipment; perform operational tests; determine defects, deficiencies, and potential problems; and complete checklist and inspection documentation.

4.3.4 Perform maintenance on equipment mounting systems and mounting racks, brackets, and latches, given an emergency response vehicle, manufacturer's specifications, a maintenance schedule or an assignment, a maintenance checklist, SOPs, and tools and test equipment, so that warning system components