NFPA® 1010

Standard on Professional Qualifications for Firefighters

2024 Edition

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NFPA® 1010

Standard on

Professional Qualifications for Firefighters

2024 Edition

This edition of NFPA 1010, *Standard on Professional Qualifications for Firefighters*, was prepared by the Technical Committee on Firefighter Professional Qualifications. It was issued by the Standards Council on December 21, 2023, with an effective date of January 10, 2024.

This edition of NFPA 1010 was approved as an American National Standard on January 10, 2024.

Origin and Development of NFPA 1010

This first edition of NFPA 1010, *Standard on Professional Qualifications for Firefighters*, has been developed as part of the consolidation plan for NFPA's Emergency Response and Responder Safety (ERRS) standards. At the April 2019 NFPA Standards Council meeting, all ERRS technical committees and NFPA staff were directed to consolidate and unify the ERRS standards with similar content areas. The goal of this effort is to increase usability, reduce errors and conflicts, and ultimately produce higher quality standards. For more information on the ERRS consolidation project, see nfpa.org/errs.

The 2024 edition of NFPA 1010 integrates NFPA 1001, NFPA 1002, NFPA 1003, and NFPA 1005 into a single standard that establishes a common set of criteria for fireground personnel.

In addition to the structural changes related to the consolidation project, this edition also contains several new technical changes.

Two new chapters have been added to this edition. The first new chapter, titled "General Requirements," has been added to hold the administrative requirements for each position identified in the standard. The second is titled "Support Person," and provides JPRs for personnel at an incident who perform fireground support operations in nonhazardous atmospheres.

Several new requirements have been added, including those for professional development and continuing education, incident management systems (IMS), traffic incident management, and thermal imagers (TIs).

For this edition, the technical committee ensured consistency and continuity throughout the entire document by developing a single set of terminology in Chapter 3. New definitions have been added to support the JPRs.

Terminology related to fire apparatus and driver/operator has been updated throughout the standard. This change includes the removal of the words "fire department" from terms such as *fire department pumper* and *fire department communications* to clarify that this standard is intended for use beyond municipal fire departments.

For more information about the ERRS consolidation project, see nfpa.org/errs.

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Committee Scope: This Committee shall have primary responsibility for documents on professional competence qualifications required of the firefighters and fire service support personnel.

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NFPA 1010

Standard on

Professional Qualifications for Firefighters

2024 Edition

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

Chapter 1 Administration

1.1 Scope. This standard identifies the minimum job performance requirements (JPRs) for support persons, firefighters, and apparatus driver/operators and the minimum performance capabilities for emergency medical services (EMS) personnel.

1.2 Purpose. The purpose of this standard is to specify the minimum JPRs for service as support persons, firefighters, and apparatus driver/operators and to specify the minimum performance capabilities for personnel providing EMS care.

1.3* Application. This standard can be applied as follows:

(1) Chapters 1 through 7, 10, and Annexes A, B, C, G, and H constitute NFPA 1001.
(2) Chapters 1 through 4, 11 through 17, and Annexes A, B, F, G, and H constitute NFPA 1002.
(3) Chapters 1 through 4, 8, and Annexes A, B, D, G, and H constitute NFPA 1003.
(4) Chapters 1 through 4, 9, and Annexes A, B, E, G, and H constitute NFPA 1005.

1.4 Units. Equivalent values in SI units, should not be considered as the requirement, as these values can be approximate. *(See Table 1.4.)*

Table 1.4 US-to-SI Conversions

Quantity	US Unit/Symbol	SI Unit/Symbol	Conversion Factor
Length	inch (in.)	millimeter (mm)	1 in. = 25.4 mm
	foot (ft)	meter (m)	1 ft = 0.305 m
Area	square foot (ft^2)	square meter (m^2)	1 ft^2 = 0.0929 m^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 13, *Standard for the Installation of Sprinkler Systems*, 2022 edition.

NFPA 13D, *Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes*, 2022 edition.

NFPA 13E, *Recommended Practice for Fire Department Operations in Properties Protected by Sprinkler and Standpipe Systems*, 2020 edition.

NFPA 13R, *Standard for the Installation of Sprinkler Systems in Low-Rise Residential Occupancies*, 2022 edition.

NFPA 14, *Standard for the Installation of Standpipe and Hose Systems*, 2019 edition.

NFPA 450, *Guide for Emergency Medical Services and Systems*, 2021 edition.

NFPA 470, *Hazardous Materials/Weapons of Mass Destruction (WMD) Standard for Responders*, 2022 edition.

NFPA 1081, *Standard for Facility Fire Brigade Member Professional Qualifications*, 2018 edition.

NFPA 1091, *Standard for Traffic Incident Management Personnel Professional Qualifications*, 2019 edition.

NFPA 1500™, *Standard on Fire Department Occupational Safety, Health, and Wellness Program*, 2021 edition.

NFPA 1581, *Standard on Fire Department Infection Control Program*, 2022 edition.

NFPA 1582, *Standard on Comprehensive Occupational Medical Program for Fire Departments*, 2022 edition.

NFPA 1710, *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments*, 2020 edition.

NFPA 1999, *Standard on Protective Clothing for Emergency Medical Operations*, 2018 edition.

2.3 Other Publications.

2.3.1 IATA Publications. International Air Transport Association, 800 Place Victoria, P.O. Box 113, Montreal, QC H4Z 1M1, Canada.

Dangerous Goods Regulations (DGR), 64th edition, 2023.

2.3.2 Other Publications.

Merriam-Webster's Collegiate Dictionary, 11th edition, Merriam-Webster, Inc., Springfield, MA, 2020.

2.4 References for Extracts in Mandatory Sections.

NFPA 440, *Guide for Aircraft Rescue and Firefighting Operations and Airport/Community Emergency Planning*, 2024 edition.

NFPA 460, *Standard for Aircraft Rescue and Firefighting Services at Airports*, 2024 edition.

NFPA 921, *Guide for Fire and Explosion Investigations*, 2021 edition.

NFPA 1000, *Standard for Fire Service Professional Qualifications Accreditation and Certification Systems*, 2022 edition.

NFPA 1030, *Standard for Professional Qualifications for Fire Prevention Program Positions*, 2024 edition.

NFPA 1081, *Standard for Facility Fire Brigade Member Professional Qualifications*, 2018 edition.

NFPA 1091, *Standard for Traffic Incident Management Personnel Professional Qualifications*, 2024 edition.

NFPA 1405, *Guide for Land-Based Fire Fighters Who Respond to Marine Vessel Fires*, 2020 edition.

NFPA 1500™, *Standard on Fire Department Occupational Safety, Health, and Wellness Program*, 2021 edition.

NFPA 1710, *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments*, 2020 edition.

NFPA 1801, *Standard on Thermal Imagers for the Fire Service*, 2021 edition.

NFPA 1900, *Standard for Aircraft Rescue and Firefighting Vehicles, Automotive Fire Apparatus, Wildland Fire Apparatus, and Automotive Ambulances*, 2024 edition.

NFPA 1910, *Standard for the Inspection, Maintenance, Refurbishment, Testing, and Retirement of In-Service Emergency Vehicles and Marine Firefighting Vessels*, 2024 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.

3.2.6 Standard. An NFPA standard, the main text of which contains only mandatory provisions using the word "shall" to indicate requirements and that is in a form generally suitable for mandatory reference by another standard or code or for adoption into law. Nonmandatory provisions are not to be considered a part of the requirements of a standard and shall be located in an appendix, annex, footnote, informational note, or other means as permitted in the NFPA manuals of style. When used in a generic sense, such as in the phrases "standards development process" or "standards development activities," the term "standards" includes all NFPA standards, including codes, standards, recommended practices, and guides.

3.3 General Definitions.

3.3.1 Aerial Apparatus. A vehicle equipped with an aerial ladder, elevating platform, or water tower that is designed and equipped to support firefighting and rescue operations by positioning personnel, handling materials, providing continuous egress, or discharging water at positions elevated from the ground. [**1900,** 2024]

3.3.2 Aerial Apparatus Operator. A person who has met the requirements defined in Chapter 13.

3.3.3 Aerial Device. An aerial ladder, elevating platform, or water tower that is designed to position personnel, handle materials, provide egress, and discharge water. [**1900,** 2024]

3.3.4 Aircraft Accident. An occurrence associated with the operation of an aircraft that takes place between the time any person boards the aircraft with the intention of flight and until all such persons have disembarked and in which any person suffers death or serious injury or in which the aircraft receives substantial damage. [**460,** 2024]

3.3.5 Aircraft Incident. An occurrence, other than an accident associated with the operation of an aircraft, that affects or could affect continued safe operation if not corrected. [**460,** 2024]

3.3.6 Aircraft Rescue and Firefighting (ARFF) Operator. A person who has met the requirements defined in Chapter 16.

3.3.7 Aircraft Rescue and Firefighting (ARFF) Vehicle. A vehicle intended to carry rescue and firefighting equipment for rescuing occupants and combating fires in aircraft at, or in the vicinity of, an airport.

3.3.8 Airport Firefighter. The Firefighter II who has demonstrated the skills and knowledge necessary to function as an integral member of an aircraft rescue and firefighting (ARFF) team.

3.3.9 Angle of Approach. The smallest angle made between the road surface and a line drawn from the front point of ground contact of the front tire to any projection of the apparatus in front of the front axle.

3.3.10 Angle of Departure. The smallest angle made between the road surface and the line drawn from the rear point of ground contact of the rear tire to any projection of the apparatus behind the rear axle.

3.3.11 Bow. The front end of a boat or vessel. [**1405,** 2020]

3.3.12 Compartment. A subdivision of space or room in a ship.

3.3.13 Control Zones. The areas at an incident that are designated based upon safety and the degree of hazard. [**1500,** 2021]

3.3.13.1 ***Cold Zone.*** The control zone of an incident that contains the command post and such other support functions as are deemed necessary to control the incident. [**1500,** 2021]

3.3.13.2 ***Hot Zone.*** The control zone immediately surrounding a hazardous area, which extends far enough to prevent adverse effects to personnel outside the zone. [**1500,** 2021]

3.3.13.3 ***Warm Zone.*** The control zone outside the hot zone where personnel and equipment decontamination and hot zone support takes place. [**1500,** 2021]

3.3.14 Critical Rescue and Firefighting Access Area. The rectangular area that surrounds a runway within which aircraft movements can be expected to occur on airports and whose width extends 500 ft (150 m) from each side of the runway centerline and whose length is 3300 ft (1000 m) beyond each runway threshold. [**460,** 2024]

3.3.15 Dangerous Goods. Articles or substances that are capable of posing a significant risk to health, safety, or property when transported by air and that are classified and outlined in the International Air Transport Association (IATA) *Dangerous Goods Regulations (DGR).*

3.3.16 Draft. (1) The vertical distance between the water surface and the lowest point of a vessel. (2) The depth of water a vessel needs to float.

3.3.17 Field Reduction of Contaminants. A nonmechanical process or method of reducing contamination in the field for firefighter personal protective clothing and equipment.

3.3.18 Fire and Life Safety Initiatives. Programs, actions, and services that prevent or reduce the loss of life and property associated with fire and other risks to the community.

3.3.19 Fire Apparatus. A vehicle designed to be used under emergency conditions to transport personnel and equipment or to support the suppression of fires and mitigation of other hazardous situations. [**1900,** 2024]

3.3.20 Fire Apparatus Driver. A person who has met the requirements defined in Chapter 11. *(See 3.3.21, Fire Apparatus Operator.)*

3.3.21 Fire Apparatus Operator. A person who has met the requirements defined in Chapter 11. *(See 3.3.20, Fire Apparatus Driver.)*

3.3.22* Fire Department. An organization providing rescue, fire suppression, and related activities, including any public, governmental, private, industrial, tribal, or military organization engaging in this type of activity.

3.3.23* Fire Department Vehicle. Any vehicle, including fire apparatus, operated by a fire department.

3.3.24* Fire Dynamics. The detailed study of how chemistry, fire science, and the engineering disciplines of fluid mechanics and heat transfer interact to influence fire behavior. [**921**, 2021]

3.3.25 Firefighter Candidate. The person who has fulfilled the entrance requirements identified in Chapter 6 but has not met the job performance requirements for Firefighter I.

3.3.26 Firefighter I. The person, at the first level of progression as defined in Chapter 6, who has demonstrated the knowledge and skills to function as an integral member of a firefighting team under direct supervision in hazardous conditions.

3.3.27* Firefighter II. The person, at the second level of progression as defined in Chapter 7, who has demonstrated the skills and depth of knowledge to function under general supervision.

3.3.28 Fire Pump. A water pump with a rated capacity of at least 250 gpm (1000 L/min) but less than 3000 gpm (12,000 L/min) at 150 psi (1000 kPa) net pump pressure, or a water pump with rated capacity over 3000 gpm (12,000 L/min) or greater at 100 psi (700 kPa) net pump pressure, that is mounted on a fire apparatus and intended for firefighting. [**1900,** 2024]

3.3.29 Fire Safety Survey. The process of observing and recording conditions of an occupied structure for basic fire and life safety hazards.

3.3.30 Foam System. A system provided on fire apparatus for the delivery of a proportioned foam and water mixture for use in fire extinguishment. The system includes a concentrate tank, a method for removing the concentrate from the tank, a foam-liquid proportioning system, and a method (e.g., hand lines or fixed turret nozzles) of delivering the proportioned foam to the fire.

3.3.31 Foreign Object Debris (FOD). FOD is any object, live or not, located in an inappropriate location in the airport environment that has the capacity to injure airport or air carrier personnel and damage aircraft.

3.3.32* Hazardous Area. For an aircraft, the area inside 75 ft (23 m) from any external surface of the aircraft.

3.3.33 Hazardous Atmosphere. An air environment that is not necessarily classified as immediately dangerous to life and health (IDLH), but still has the potential to harm an individual through an acute exposure, a short-term exposure, or any exposure that could reasonably pose a chronic, long-term health threat.

3.3.34 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,** 2022]

3.3.35* Land-Based Marine Firefighter. A firefighter, typically assigned to a land-based apparatus, who responds to a marine incident and operates within a marine environment either on, or in proximity to, a dock or marine vessel.

3.3.36 Liquid Surge. The force imposed upon a fire apparatus by the contents of a partially filled water or foam concentrate tank when the vehicle is accelerated, decelerated, or turned.

3.3.37 Marine Facility. Any land-based facility that incorporates buildings, personnel, equipment, docks, moorings, and other features to support the docking, loading, unloading, maintenance, and servicing of marine vessels.

3.3.38 Marine Incident. Any fire, explosion, hazardous material, utility, or other type of emergency incident on or in the vicinity of a marine vessel and/or facility to which a fire department can be expected to respond.

3.3.39 Master. The captain of a merchant ship. [**1405,** 2020]

3.3.40 Mate. A deck officer on a merchant ship ranking below the master. [**1405,** 2020]

3.3.41 Mobile Water Supply Apparatus (Tanker, Tender). A vehicle designed primarily for transporting (pickup, transporting, and delivering) water to fire emergency scenes to be applied by other vehicles or pumping equipment. [**1900,** 2024]

3.3.42 Mobile Water Supply Apparatus Operator. A person who has met the requirements defined in Chapter 17.

3.3.43 Mooring. (1) Permanent anchor equipment (attached by a chain to a buoy) to which a vessel can connect a line, wire, or chain, eliminating the need to use the vessel's anchor. (2) The act of securing a vessel. (3) The location where a vessel is berthed.

3.3.44* National Defense Area. An area established on nonfederal lands located in the United States, its territories, or its possessions for the purpose of safeguarding classified defense information or protecting Department of Defense (DOD) equipment, material, or both.

3.3.45 Off-Road Use. Use of fire department apparatus and vehicles in areas where there is a need to traverse off of a public way.

3.3.46 Operational Check. Observation of the operation of a component on an emergency vehicle to determine its operational readiness. [**1910,** 2024]

3.3.47 Personal Protective Equipment (PPE).

3.3.47.1 ***Personal Protective Equipment (PPE — Emergency Medical Services).*** Consists of full protective clothing and respiratory protection as described in NFPA 1999 that protects against potential exposure to bloodborne and airborne pathogens.

3.3.47.2* ***Personal Protective Equipment (PPE — Fire Operations).*** The full complement of garments firefighter are required to wear while on an emergency scene, including turnout coat, protective trousers, firefighting boots, firefighting gloves, a protective hood, self-contained breathing apparatus (SCBA), a personal alert safety system (PASS) device, and a helmet with eye protection.

3.3.48 Port. General area of a shore establishment having facilities for the landing, loading/unloading, and maintenance of vessels; harbor with piers.

3.3.49 Port Side. The left-hand side of a ship when facing forward. [**1405,** 2020]

3.3.50 Practical Critical Fire Area (PCA). This area is two-thirds of the theoretical critical fire area (TCA). [**440,** 2022] *(See also 3.3.69, Theoretical Critical Fire Area.)*

3.3.51 Procedure. The series of actions, conducted in an approved manner and sequence, designed to achieve an intended outcome.

3.3.52 Protected Work Area. The area at a roadway incident that is protected by any number of devices including, but not limited to, blocking apparatus or temporary traffic control devices, to protect personnel at an incident.

3.3.53 Protective Ensemble. Multiple elements of compliant protective clothing and equipment that when worn together provide protection from some risks, but not all risks, of emergency incident operations. [**1500**, 2021]

3.3.54 Pump Operator. The fire apparatus driver/operator who has met the requirements of Chapter 12 for the operation of apparatus equipped with an attack or fire pump.

3.3.55 Pumper. Fire apparatus with a permanently mounted fire pump of at least 750 gpm (3000 L/min) capacity, water tank, and hose body whose primary purpose is to combat structural and associated fires. [**1900,** 2024]

3.3.56 Pumping System. A pump, the piping, and associated devices permanently mounted on a piece of fire apparatus for the purpose of delivering a fire stream.

3.3.57 Requisite Knowledge. Fundamental knowledge one must have in order to perform a specific task. [**1030,** 2024]

3.3.58 Requisite Skills. The essential skills one must have in order to perform a specific task. [**1030,** 2024]

3.3.59 Secondary Line. A back-up hose line and crew that accompanies the primary attack line and crew into the hot zone at an incident.

3.3.60 Ship's Agent. A person or firm who transacts all business in a port on behalf of ship owners or charterers.

3.3.61 Ship's Engineer. Officer on a mechanically propelled vessel charged with maintenance and efficient operation of main engines and, usually, all powered machinery on board.

3.3.62 Starboard Side. The right-hand side of a ship as one faces forward. [**1405,** 2020]

3.3.63 Stern. The after end of boat or vessel. [**1405,** 2020]

3.3.64 Structural Firefighting. The activities of rescue, fire suppression, and property conservation in buildings or other structures, vehicles, railcars, marine vessels, aircraft, or like properties. [**1710,** 2020]

3.3.65* Support Person. The person meeting the requirements defined in Chapter 4 that assists the fire department with support operations in non-hazardous atmospheres or protected work zones.

3.3.66 Task. A specific job behavior or activity.

3.3.67 Team. Two or more individuals who have been assigned a common task and are in proximity to and in direct communications with each other, coordinate their activities as a work group, and support the safety of one another.

3.3.68* Temporary Traffic Control (TTC) Device. The primary functions at a traffic incident management area (TIMA) are to inform road users of the incident and to provide guidance information on the path to follow through the incident area. [**1091,** 2024]

3.3.69* Theoretical Critical Fire Area (TCA). The theoretical critical fire area (TCA) is a rectangular area, the longitudinal dimension of which is the overall length of the aircraft and the width includes the fuselage and extends beyond it by a predetermined set distance that is dependent on the overall width. Therefore, the aircraft length multiplied by the calculated width equals the size of the TCA. [**440,** 2024] *(See also 3.3.50, Practical Critical Fire Area.)*

3.3.70 Thermal Imager (TI). Special electronic equipment that creates a picture based on the heat produced by a person or object. [**1801**, 2021]

3.3.71 Tiller Aerial Apparatus. A tractor-trailer aerial apparatus with a steering wheel connected to the rear axle for maneuvering the rear portion of the apparatus.

3.3.72 Tiller Operator. The fire apparatus driver/operator who has met the requirements of Chapter 14.

3.3.73 Trim. (1) The longitudinal angle of a vessel. (2) The relation of the vessel's floating attitude to the water considered from front to back. (3) The difference between fore and aft draft readings. (4) To cause a vessel to assume a desirable position in the water by arrangement of ballast, cargo, or passengers.

3.3.74 Vessel. The general term for all craft capable of floating on water and larger than a rowboat.

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

3.3.76* Wildland Suppression Fire Apparatus. A fire apparatus designed for fighting wildland fires that is equipped with a pump, a water tank, limited hose and equipment, and pump-and-roll capability. [**1900,** 2024]

3.3.77 Wildland Suppression Fire Apparatus Operator. A person who has met the requirements defined in Chapter 15.

3.3.78 Zone. One of the sections of an area created for a particular purpose.

Chapter 4 General Requirements

4.1 Administration. The general scope, purpose, and application requirements in this chapter shall be applicable to the candidates for each position identified in this standard.

4.2 Scope.

4.2.1 Document Scope. This standard shall provide the minimum requirements for professional qualificationin the positions identified in Chapters 5 through 17.

4.2.2 Support Person. Chapter 5 shall identify the minimum job performance requirements (JPRs) for support person.

4.2.3 Firefighter I and II.

4.2.3.1 Firefighter I. Chapter 6 shall identify the minimum JPRs for Firefighter I.

4.2.3.2 Firefighter II. Chapter 7 shall identify the minimum JPRs for Firefighter II.

4.2.4 Airport Firefighter. Chapter 8 shall identify the minimum JPRs for airport firefighters.

4.2.5 Land-Based Marine Firefighter. Chapter 9 shall identify the minimum JPRs for land-based marine firefighters.

4.2.6 Emergency Medical Services. Chapter 10 shall identify the minimum emergency medical care performance capabilities for emergency medical services (EMS) personnel.

4.2.7 Fire Apparatus Driver/Operator. Chapters 11 through 17 shall identify the minimum JPRs for personnel who drive and operate fire apparatus.

4.3 Purpose.

4.3.1 Document Purpose.

4.3.1.1* This standard shall specify the minimum JPRs for the positions identified in Chapters 5 through 17.

4.3.1.1.1 This document shall ensure that personnel serving in the positions identified by this document are qualified.

4.3.1.1.2* This standard shall not address organization or management responsibility.

4.3.1.1.3 This standard shall not restrict any jurisdiction from exceeding or combining these minimum requirements.

4.3.1.1.4 JPRs for each level and position shall identify the tasks personnel must be able to perform to carry out the job duties.

4.3.2 Support Person.

4.3.2.1 Chapter 5 shall specify the minimum JPRs for service as a support person.

4.3.2.2 Chapter 5 shall define support person professional qualifications.

4.3.3 Firefighter I and II.

4.3.3.1 Firefighter I.

4.3.3.1.1 Chapter 6 shall specify the minimum JPRs for service as a Firefighter I.

4.3.3.1.2 Chapter 6 shall define Firefighter I professional qualifications.

4.3.3.2 Firefighter II.

4.3.3.2.1 Chapter 7 shall specify the minimum JPRs for service as a Firefighter II.

4.3.3.2.2 Chapter 7 shall define Firefighter II professional qualifications.

4.3.4 Airport Firefighter.

4.3.4.1 Chapter 8 shall specify the minimum JPRs for service as an airport firefighter.

4.3.4.2 Chapter 8 shall define airport firefighters.

4.3.5 Land-Based Marine Firefighter.

4.3.5.1* Chapter 9 shall specify the minimum JPRs for service as a land-based marine firefighter.

4.3.5.2 Chapter 9 shall define land-based marine firefighters.

4.3.6 Emergency Medical Services. Chapter 10 shall specify the minimum emergency medical care performance capabilities for entry-level personnel.

4.3.7 Fire Apparatus Driver/Operator.

4.3.7.1* Chapters 11 through 17 shall specify the minimum JPRs for service as a fire apparatus driver/operator.

4.3.7.2 Chapters 11 through 17 shall define personnel who drive and operate fire apparatus.

4.4 Application.

4.4.1 Document Application. The application of this document shall specify which requirements apply to each position identified in Chapters 5 through 17.

4.4.1.1 Wherever the terms *rules*, *regulations*, *policies*, *procedures*, *supplies*, *apparatus*, and *equipment* are referred to, it shall be implied that they are those of the AHJ.

4.4.1.2 The JPRs shall to be accomplished in accordance with the law, the requirements of the AHJ, and all applicable NFPA standards.

4.4.1.3 The JPRs shall not be required to be mastered in the order in which they appear.

4.4.1.4 The AHJ shall establish the instructional priority and the training program content to prepare personnel to meet the JPRs of this standard.

4.4.1.5* The performance of each requirement of this document shall be evaluated by personnel approved by the AHJ.

4.4.1.6 Prior to training to meet the requirements of this standard personnel shall meet the following requirements:

(1) Educational requirements established by the AHJ
(2) Age requirements established by the AHJ
(3) Medical requirements established by the AHJ
(4) Job-related physical performance requirements established by the AHJ
(5) Background investigation and character traits as reference established by the AHJ

4.4.1.7 Physical fitness requirements for entry-level personnel shall be developed and validated by the AHJ.

4.4.1.8 The AHJ shall provide the personal protective clothing (PPC) and equipment necessary to conduct assignments.

4.4.1.9 JPRs involving exposure to products of combustion shall be performed in approved personal protective equipment (PPE).

4.4.1.10 Personnel shall meet the requirements for traffic incident management in NFPA 1091 or an equivalent program as determined by the AHJ.

4.4.1.11* Personnel shall meet the requirements for the incident management system (IMS) as determined by the AHJ.

4.4.2 Support Person. Personnel assigned the duties of support person shall meet all the requirements specified in Chapters 4 and 5 prior to being qualified.

4.4.3* Firefighter I and II. Prior to entering training to meet the requirements of Chapters 6 and 7, the candidate shall meet the medical requirements of NFPA 1582.

4.4.3.1 Firefighter I. Personnel assigned the duties of Firefighter I shall meet all the requirements defined in Chapters 4 and 6 prior to being qualified.

4.4.3.2 Firefighter II. Personnel assigned the duties of Firefighter II shall meet all the requirements defined in Chapters 4 and 7 prior to being qualified.

4.4.4 Airport Firefighter. Personnel assigned the duties of airport firefighter shall meet all the requirements defined in Chapters 4 and 8 prior to being qualified.

4.4.5 Land-Based Marine Firefighter. Personnel assigned the duties of land-based marine firefighter shall meet all the requirements defined in Chapters 4 and 9 prior to being qualified.

4.4.6* Emergency Medical Services.

4.4.6.1 Personnel assigned the duties of emergency medical services (EMS) shall meet the requirements of Chapters 4 and 10.

4.4.6.2 Minimum emergency medical care performance capabilities for entry-level personnel shall be developed and validated by the AHJ.

4.4.7 Fire Apparatus Driver/Operator.

4.4.7.1* General Requirements. Personnel who drive and operate fire apparatus shall meet the requirements of Chapters 4 and 11 through 17 for each type of apparatus prior to being qualified.

4.4.7.1.1 Personnel who drive and operate fire apparatus shall be licensed to drive all vehicles they are expected to drive and operate.

4.4.7.1.2 Personnel who drive and operate fire apparatus shall remain current with practices and applicable standards.

4.4.7.1.2.1 Personnel who drive and operate fire apparatus shall demonstrate competency on an annual basis.

4.4.7.1.3 Fire apparatus shall be driven and operated in accordance with the design criteria and manufacturer's specifications.

4.4.7.1.4 The JPRs of Chapters 11 through 17 shall be performed utilizing vehicles of similar weight, wheelbase, and function as those expected to be driven and operated in the performance of their duties.

4.4.7.2 Pumper. Personnel assigned the duties of apparatus equipped with a fire pump shall meet all the requirements defined in Chapters 4, 11, and 12 prior to being qualified.

4.4.7.3 Aerial Device. Personnel assigned the duties of apparatus equipped with an aerial device shall meet all the requirements defined in Chapters 4, 11, and 13 prior to being qualified.

4.4.7.4 Tiller. Personnel assigned the duties of apparatus equipped with a tiller shall meet all the requirements defined in Chapters 4, 11, and 14 prior to being qualified.

4.4.7.5 Wildland Suppression. Personnel assigned the duties of wildland fire suppression apparatus shall meet all the requirements defined in Chapters 4, 11, and 15 prior to being qualified.

4.4.7.6 Aircraft Rescue and Firefighting. Personnel assigned the duties of aircraft rescue and firefighting apparatus shall meet all the requirements defined in Chapters 4, 11, and 16 prior to being qualified.

4.4.7.7 Mobile Water Supply. Personnel assigned the duties of mobile water supply apparatus shall meet all the requirements defined in Chapters 4, 11, and 17 prior to being qualified.

4.5* Continuing Education. Personnel who perform or support the duties and responsibilities relating to the positions in this standard shall remain current with the requisite knowledge, requisite skills, and individual JPRs addressed for each level or position of qualification covered by this standard in order to maintain proficiency and competency, as determined by the AHJ.

Chapter 5 Support Person (NFPA 1001)

5.1 General. For qualification as support person, the candidate shall meet the requirements in Chapters 4 and 5 and in Chapter 5 of NFPA 470.

5.1.1* General Knowledge Requirements. The organization of the fire department; the role of the support person in the organization; the mission of fire service; the fire department's standard operating procedures (SOPs) and rules and regulations as they apply to the support person; how to identify the methods of heat transfer and understand the basic principles of fire dynamics; aspects of the fire department's member assistance program; and the importance of physical fitness and a healthy lifestyle to the performance of the duties of a support person.

5.1.2 General Skills Requirements. The ability to don and doff a protective ensemble; perform field reduction of contaminants; prepare the protective ensemble and equipment for reuse; and locate information in departmental documents, standards, and code materials.

5.2 Communications. This duty shall involve using communication equipment and technology in accordance with the policies and procedures of the AHJ and the JPRs in 5.2.1 through 5.2.2.

5.2.1* Initiate the response to a reported emergency, given the report of an emergency, fire department SOPs, and communications equipment and technology, so that all necessary information is obtained, communications equipment and technology are operated correctly, and the information is relayed promptly and accurately to the dispatch center.

(A) Requisite Knowledge. Procedures for reporting an emergency, departmental SOPs for taking and receiving alarms, and the information needs of the dispatch center.

(B) Requisite Skills. The ability to operate fire department communications equipment and technology, relay information, and record information.

5.2.2* Transmit and receive communications using fire department equipment and technology, given equipment and technology and operating procedures, so that the information is accurate, complete, clear, and relayed within the time established by the AHJ.

(A) Requisite Knowledge. Departmental communication procedures and etiquette for routine traffic, emergency traffic, and emergency evacuation signals.

(B) Requisite Skills. The ability to operate communications equipment and technology and discriminate between routine and emergency traffic.

5.3 Incident Support Operations. This duty shall involve performing support operations in non-hazardous atmospheres necessary to ensure life safety, incident stabilization, and property conservation, according to the JPRs in 5.3.1 through 5.3.8.

5.3.1 Identify situations that require respiratory protection, given an incident and department SOPs, so that hazardous atmospheres requiring respiratory protection are avoided.

(A) Requisite Knowledge. Conditions that require respiratory protection, levels of respiratory protection, and limitations of respiratory protection.

(B)* Requisite Skills. The ability to identify potentially hazardous atmospheres and avoid them.

5.3.2* Respond on apparatus to an emergency scene, given a protective ensemble and other necessary PPE, so that the apparatus is correctly mounted and dismounted, seat belts are used while the vehicle is in motion, and other PPE is correctly used.

(A) Requisite Knowledge. Mounting and dismounting procedures for riding fire apparatus, hazards and ways to avoid hazards associated with riding apparatus, prohibited practices, and types of department PPE and the means for usage.

(B) Requisite Skills. The ability to use each piece of provided safety equipment.

5.3.3* Establish and operate in protected work areas at emergency scenes, given an emergency scene, protective equipment, scene control devices, an assignment, and SOPs, so that procedures are followed, protective equipment and scene control devices are utilized appropriately, and protected work areas are established as directed.

(A) Requisite Knowledge. Potential hazards involved in operating on emergency scenes including vehicle traffic, utilities, and environmental conditions; proper procedures for dismounting apparatus; procedures for safe operation at emergency scenes; and the protective equipment available for members' safety on emergency scenes and work zone designations.

(B) Requisite Skills. The ability to wear a protective ensemble, deploy scene control devices, dismount apparatus, and establish and operate in the protected work areas as directed.

5.3.4* Connect a pumper to a water supply as a member of a team, given supply or intake hose, hose tools, and a fire hydrant or static water source, so that connections are tight and water flow is unobstructed.

(A) Requisite Knowledge. Loading and off-loading procedures for mobile water supply apparatus; fire hydrant opera-

tion; and suitable static water supply sources, procedures, and protocol for connecting to various water sources.

(B)* Requisite Skills. The ability to hand lay a supply hose, connect and place intake hose for drafting operations, deploy portable water tanks as well as the equipment necessary to transfer water between and draft from them, make hydrant-to-pumper hose connections for forward and reverse lays, connect supply hose to a hydrant, and fully open and close the hydrant.

5.3.5* Extinguish incipient Class A, Class B, and Class C fires, given a selection of portable fire extinguishers, so that the correct extinguisher is chosen, the fire is completely extinguished, and correct extinguisher-handling techniques are followed.

(A) Requisite Knowledge. The classifications of fire; the types of, rating systems for, and risks associated with each class of fire; and the operating methods of and limitations of portable extinguishers.

(B) Requisite Skills. The ability to operate portable fire extinguishers, approach fire with portable fire extinguishers, select an appropriate extinguisher based on the size and type of fire, and safely carry portable fire extinguishers.

5.3.6 Operate emergency scene lighting, given fire service lighting equipment, power supply, an assignment, and a non-hazardous atmosphere, so that emergency scene lighting equipment is operated within the manufacturer's listed safety precautions.

(A) Requisite Knowledge. Safety principles and practices, power supply capacity and limitations, and light deployment methods.

(B) Requisite Skills. The ability to operate department power supply and lighting equipment, deploy cords and connectors, reset ground-fault interrupter (GFI) devices, and locate lights for the best effect.

5.3.7 Turn off building utilities, given tools, an assignment, and a non-hazardous atmosphere, so that the assignment is safely completed.

(A) Requisite Knowledge. Properties, principles, and safety concerns for electrical, gas, and water systems; utility disconnect methods and the associated dangers; and use of required safety equipment.

(B) Requisite Skills. The ability to identify utility control devices, operate control valves or switches, and assess for related hazards.

5.3.8 Tie a knot appropriate for hoisting tools, given a protective ensemble, tools, ropes, and an assignment, so that the knots used are appropriate for hoisting tools securely and as directed.

(A) Requisite Knowledge. Knot types and usage; the difference between life safety and utility rope; reasons for placing rope out of service; the types of knots to use for given tools, ropes, or situations; hoisting methods for tools and equipment; and using rope to support response activities.

(B) Requisite Skills. The ability to tie a specific knot based on the type of tool to be hoisted.

5.4 Rescue Operations. This duty shall involve no requirements for the support person.

5.5 Preparedness and Maintenance. This duty shall involve performing activities to ensure life safety, incident stabilization, and property conservation through response readiness, according to the JPRs in 5.5.1 through 5.5.3.

5.5.1 Refill self-contained breathing apparatus (SCBA) cylinders, given SCBA cylinders and equipment, so that the SCBA cylinder is correctly filled, the pressure is within acceptable ranges, and the cylinder is ready to be connected to the SCBA.

(A) Requisite Knowledge. Conditions that require refilling of SCBA cylinders, components of SCBA cylinders, and procedures used for filling and returning a cylinder to service.

(B) Requisite Skills. The ability to operate SCBA air cylinder valves, use cylinder refilling equipment, replace SCBA cylinders, and complete filling procedures.

5.5.2* Clean and check ladders, ventilation equipment, ropes, salvage equipment, and hand tools, given cleaning tools, cleaning supplies, and an assignment, so that equipment is clean and maintained according to the manufacturer's or departmental guidelines, maintenance is recorded, and equipment is placed in a ready state or reported otherwise.

(A) Requisite Knowledge. Types of cleaning methods for various tools and equipment, correct use of cleaning solvents, and manufacturer's or departmental guidelines for cleaning equipment and tools.

(B) Requisite Skills. The ability to select correct tools for various parts and pieces of equipment, follow guidelines, and complete recording and reporting procedures.

5.5.3 Clean, inspect, and return the fire hose to service, given washing equipment, water, detergent, tools, and replacement gaskets, so that damage is noted and corrected, the hose is clean, and the equipment is placed in a ready state for service.

(A) Requisite Knowledge. Departmental procedures for noting a defective hose and removing it from service, cleaning methods, and hose rolls and loads.

(B) Requisite Skills. The ability to clean different types of hose; operate hose washing and drying equipment; mark defective hose; and replace coupling gaskets, roll hose, and reload hose.

Chapter 6 Firefighter I (NFPA 1001)

6.1 General. For qualification as Firefighter I, the candidate shall meet the requirements in Chapters 4 and 6, and the requirements defined in Chapter 7 and Sections 9.2 and 9.6 of NFPA 470.

6.1.1* General Knowledge Requirements. The organization of the fire department; the role of the Firefighter I in the organization; the mission of fire service; the fire department's standard operating procedures (SOPs) and rules and regulations as they apply to the Firefighter I; the value of fire and life safety initiatives in support of the fire department mission and to reduce firefighter line-of-duty injuries and fatalities; the role of other agencies as they relate to the fire department; the signs and symptoms of behavioral and emotional distress; aspects of the fire department's member assistance program; the importance of physical fitness and a healthy lifestyle to the performance of the duties of a firefighter; the critical aspects of NFPA 1500.

6.1.2 General Skills Requirements. The ability to don personal protective clothing, doff personal protective clothing, perform field reduction of contaminants and prepare for reuse, hoist tools and equipment using ropes and the correct knot, and locate information in departmental documents and standard or code materials.

6.2 Communications. This duty shall involve using communications equipment and technology in accordance with the policies and procedures of the AHJ and the JPRs in 6.2.1 through 6.2.3.

6.2.1 Initiate the response to a reported emergency, given the report of an emergency, fire department SOPs, and communications equipment and technology, so that all necessary information is obtained, communications equipment and technology are operated correctly, and the information is relayed promptly and accurately to the dispatch center. *(See A.5.2.1.)*

(A) Requisite Knowledge. Procedures for reporting an emergency, departmental SOPs for taking and receiving alarms, and information needs of the dispatch center.

(B) Requisite Skills. The ability to operate fire department communications equipment and technology, relay information, and record information.

6.2.2 Transmit and receive communications using fire department equipment and technology, given equipment and technology and operating procedures, so that the information is accurate, complete, clear, and relayed within the time established by the AHJ. *(See A.5.2.2.)*

(A) Requisite Knowledge. Departmental communications procedures and etiquette for routine traffic, emergency traffic, and emergency evacuation signals.

(B) Requisite Skills. The ability to operate communications equipment and technology and discriminate between routine and emergency traffic.

6.2.3* Activate an emergency call for assistance, given vision-obscured conditions, PPE, and department SOPs, so that the firefighter can be located and rescued.

(A) Requisite Knowledge. Personnel accountability systems, emergency communication procedures, and emergency evacuation methods.

(B) Requisite Skills. The ability to initiate an emergency call for assistance in accordance with the AHJ's procedures and the ability to use other methods of emergency calls for assistance.

6.3 Fireground Operations. This duty shall involve performing activities necessary to ensure life safety, fire control, and property conservation, according to the JPRs in 6.3.1 through 6.3.21.

6.3.1* Use self-contained breathing apparatus (SCBA) during emergency operations, given SCBA and other PPE, so that the SCBA is correctly donned, the SCBA is correctly worn, controlled breathing techniques are used, emergency procedures are enacted if the SCBA fails, all low-air warnings are recognized, respiratory protection is not intentionally compromised, and hazardous areas are exited prior to air depletion.

(A) Requisite Knowledge. Conditions that require respiratory protection, uses and limitations of SCBA, components of SCBA, donning procedures, breathing techniques, indications for and emergency procedures used with SCBA, and physical requirements of the SCBA wearer.

(B) Requisite Skills. The ability to control breathing, replace SCBA air cylinders, use SCBA to exit through restricted passages, initiate and complete emergency procedures in the event of SCBA failure or air depletion, and complete donning procedures.

6.3.2* Respond on apparatus to an emergency scene, given personal protective clothing and other necessary PPE, so that the apparatus is correctly mounted and dismounted, seat belts are used while the vehicle is in motion, and other PPE is correctly used.

(A) Requisite Knowledge. Mounting and dismounting procedures for riding fire apparatus, hazards and ways to avoid hazards associated with riding apparatus, prohibited practices, and types of department PPE and the means for usage.

(B) Requisite Skills. The ability to use each piece of provided safety equipment.

6.3.3* Establish and operate in work areas at emergency scenes, given protective equipment, traffic and scene control devices, structure fire and roadway emergency scenes, traffic hazards and downed electrical wires, photovoltaic power systems, battery storage systems, an assignment, and SOPs, so that procedures are followed, protective equipment is worn, protected work areas are established as directed using traffic and scene control devices, and the firefighter performs assigned tasks only in established, protected work areas.

(A) Requisite Knowledge. Potential hazards involved in operating on emergency scenes including vehicle traffic, utilities, and environmental conditions; proper procedures for dismounting apparatus in traffic; procedures for safe operation at emergency scenes; and the protective equipment available for members' safety on emergency scenes and work zone designations.

(B) Requisite Skills. The ability to use personal protective clothing, deploy traffic and scene control devices, dismount apparatus, and operate in the protected work areas as directed.

6.3.4* Force entry into a structure, given PPE, tools, and an assignment, so that the tools are used as designed, the barrier is removed, and the opening is in a safe condition and ready for entry.

(A) Requisite Knowledge. Basic construction of typical doors, windows, and walls within the department's community or service area; operation of doors, windows, and locks; and the dangers associated with forcing entry through doors, windows, and walls.

(B) Requisite Skills. The ability to transport and operate hand and power tools and to force entry through doors, windows, and walls using assorted methods and tools.

6.3.5* Exit a hazardous area as a team, given vision-obscured conditions, so that a safe haven is found before exhausting the air supply, others are not endangered, and the team integrity is maintained.

(A) Requisite Knowledge. Personnel accountability systems, communication procedures, emergency evacuation methods, what constitutes a safe haven, elements that create or indicate a hazard, and emergency procedures for loss of air supply.

(B) Requisite Skills. The ability to operate as a team member in vision-obscured conditions, locate and follow a guideline, conserve air supply, and evaluate areas for hazards and identify a safe haven.

6.3.6* Set up, mount, ascend, dismount, and descend ground ladders, given single and extension ladders, an assignment, and team members if needed, so that hazards are assessed, the ladder is stable, the angle is correct for climbing, extension ladders are extended to the necessary height with the fly locked, the top is placed against a reliable structural component, and the assignment is accomplished.

(A) Requisite Knowledge. Parts of a ladder, hazards associated with setting up ladders, what constitutes a stable foundation for ladder placement, different angles for various tasks, climbing techniques, safety limits to the degree of angulation, and what constitutes a reliable structural component for top placement.

(B) Requisite Skills. The ability to carry ladders, raise ladders, extend ladders and lock flies, determine that a wall and roof will support the ladder, judge extension ladder height requirements, and place the ladder to avoid obvious hazards, mount, ascend, dismount, and descend the ladder.

6.3.7* Attack a passenger vehicle fire operating as a member of a team, given PPE, an attack line, and hand tools, so that hazards are avoided, leaking flammable liquids are identified and controlled, protection from flash fires is maintained, all vehicle compartments are overhauled, and the fire is extinguished.

(A) Requisite Knowledge. Principles of fire streams as they relate to fighting automobile fires; precautions to be followed when advancing hose lines toward an automobile; observable results that a fire stream has been properly applied; identifying alternative fuels and the hazards associated with them; dangerous conditions created during an automobile fire; common types of accidents or injuries related to fighting automobile fires and how to avoid them; how to access locked passenger, trunk, and engine compartments; and methods for overhauling an automobile.

(B) Requisite Skills. The ability to identify automobile fuel type; assess and control fuel leaks; open, close, and adjust the flow and pattern on nozzles; apply water for maximum effectiveness while maintaining flash fire protection; advance 1½ in. (38 mm) or larger diameter attack lines; and expose hidden fires by opening all automobile compartments.

6.3.8* Extinguish fires in exterior Class A materials, given fires in stacked or piled materials, small unattached structures, and storage containers that can be fought from the exterior, attack lines, hand tools and master stream devices, and an assignment, so that exposures are protected, the spread of fire is stopped, collapse hazards are avoided, water application is effective, the fire is extinguished, and signs of the origin area(s) and arson are preserved.

(A) Requisite Knowledge. Types of attack lines and water streams appropriate for attacking stacked, piled materials and outdoor fires; dangers — such as collapse — associated with stacked and piled materials; various extinguishing agents and their effect on different material configurations; tools and methods to use in breaking up various types of materials; the difficulties related to complete extinguishment of stacked and piled materials; water application methods for exposure protection and fire extinguishment; dangers such as exposure to toxic or hazardous materials associated with storage building and container fires; obvious signs of origin and cause; and techniques for the preservation of fire cause evidence.

(B) Requisite Skills. The ability to recognize inherent hazards related to the material's configuration, operate handlines or master streams, break up material using hand tools and water streams, evaluate for complete extinguishment, operate hose lines and other water application devices, evaluate and modify water application for maximum penetration, search for and expose hidden fires, assess patterns for origin determination, and evaluate for complete extinguishment.

6.3.9* Conduct a search and rescue in a structure operating as a member of a team, given an assignment, obscured vision conditions, personal protective equipment, a flashlight, forcible entry tools, hose lines, and ladders when necessary, so that ladders are correctly placed when used, all assigned areas are searched, all victims are located and removed, team integrity is maintained, and team members' safety — including respiratory protection — is not compromised.

(A) Requisite Knowledge. Use of forcible entry tools during rescue operations, ladder operations for rescue, psychological effects of operating in obscured conditions and ways to manage them, methods to determine if an area is tenable, primary and secondary search techniques, team members' roles and goals, methods to use and indicators of finding victims, victim removal methods (including various carries), and considerations related to respiratory protection.

(B)* Requisite Skills. The ability to use SCBA to exit through restricted passages, set up and use different types of ladders for various types of rescue operations, rescue a firefighter with functioning respiratory protection, rescue a firefighter whose respiratory protection is not functioning, rescue a person who has no respiratory protection, and assess areas to determine tenability.

6.3.10* Attack an interior structure fire operating as a member of a team, given an attack line, ladders when needed, personal protective equipment, tools, and an assignment, so

that team integrity is maintained, the attack line is deployed for advancement, ladders are correctly placed when used, access is gained into the fire area, effective water application practices are used, the fire is approached correctly, attack techniques facilitate suppression given the level of the fire, hidden fires are located and controlled, the correct body posture is maintained, hazards are recognized and managed, and the fire is brought under control.

(A) Requisite Knowledge. Principles of fire streams; types, design, operation, nozzle pressure effects, and flow capabilities of nozzles; precautions to be followed when advancing hose lines to a fire; observable results that a fire stream has been properly applied; dangerous building conditions created by fire; principles of exposure protection; potential long-term consequences of exposure to products of combustion; physical states of matter in which fuels are found; common types of accidents or injuries and their causes; and the application of each size and type of attack line, the role of the backup team in fire attack situations, attack and control techniques for grade level and above and below grade levels, and exposing hidden fires.

(B) Requisite Skills. The ability to prevent a water hammer when shutting down nozzles; open, close, and adjust nozzle flow and patterns; apply water using direct, indirect, and combination attacks; advance charged and uncharged 1½ in. (38 mm) diameter or larger hose lines up ladders and up and down interior and exterior stairways; extend hose lines; replace burst hose sections; operate charged hose lines of 1½ in. (38 mm) diameter or larger while secured to a ground ladder; couple and uncouple various handline connections; carry hose; attack fires at grade level and above and below grade levels; and locate and suppress interior wall and subfloor fires.

6.3.11 Perform horizontal ventilation on a structure operating as part of a team, given an assignment, PPE, ventilation tools, equipment, and ladders, so that the ventilation openings are free of obstructions, tools are used as designed, ladders are correctly placed, ventilation devices are correctly placed, and the structure is cleared of smoke.

(A) Requisite Knowledge. The principles, advantages, limitations, and effects of horizontal, mechanical, and hydraulic ventilation; safety considerations when venting a structure; fire behavior in a structure; the products of combustion found in a structure fire; the signs, causes, effects, and prevention of backdrafts; and the relationship of oxygen concentration to life safety and fire growth.

(B) Requisite Skills. The ability to transport and operate ventilation tools and equipment and ladders, and to use safe procedures for breaking window and door glass and removing obstructions.

6.3.12 Perform vertical ventilation on a structure as part of a team, given an assignment, PPE, ground and roof ladders, and tools, so that ladders are positioned for ventilation, a specified opening is created, all ventilation barriers are removed, structural integrity is not compromised, products of combustion are released from the structure, and the team retreats from the area when ventilation is accomplished.

(A) Requisite Knowledge. The methods of heat transfer; the principles of thermal layering within a structure on fire; the techniques and safety precautions for venting flat roofs, pitched roofs, and basements; basic indicators of potential collapse or roof failure; the effects of construction type and elapsed time under fire conditions on structural integrity; and the advantages and disadvantages of vertical and trench/strip ventilation.

(B) Requisite Skills. The ability to transport and operate ventilation tools and equipment; hoist ventilation tools to a roof; cut roofing and flooring materials to vent flat roofs, pitched roofs, and basements; sound a roof for integrity; clear an opening with hand tools; select, carry, deploy, and secure ground ladders for ventilation activities; deploy roof ladders on pitched roofs while secured to a ground ladder; and carry ventilation-related tools and equipment while ascending and descending ladders.

6.3.13 Overhaul a fire scene, given PPE, an attack line, hand tools, a flashlight, and an assignment, so that structural integrity is not compromised, all hidden fires are discovered, fire cause evidence is preserved, and the fire is extinguished.

(A) Requisite Knowledge. Types of fire attack lines and water application devices most effective for overhaul, water application methods for extinguishment that limit water damage, types of tools and methods used to expose hidden fire, dangers associated with overhaul, obvious signs of area of origin or signs of arson, and reasons for protection of fire scene.

(B) Requisite Skills. The ability to deploy and operate an attack line; remove flooring, ceiling, and wall components to expose void spaces without compromising structural integrity; apply water for maximum effectiveness; expose and extinguish hidden fires in walls, ceilings, and subfloor spaces; recognize and preserve obvious signs of area of origin and arson; and evaluate for complete extinguishment.

6.3.14 Conserve property as a member of a team, given salvage tools and equipment and an assignment, so that the building and its contents are protected from further damage.

(A) Requisite Knowledge. The purpose of property conservation and its value to the public, methods used to protect property, types of and uses for salvage covers, operations at properties protected with automatic sprinklers, how to stop the flow of water from an automatic sprinkler head, identification of the main control valve on an automatic sprinkler system, forcible entry issues related to salvage, and procedures for protecting possible areas of origin and potential evidence.

(B) Requisite Skills. The ability to cluster furniture; deploy covering materials; roll and fold salvage covers for reuse; construct water chutes and catchalls; remove water; cover building openings, including doors, windows, floor openings, and roof openings; separate, remove, and relocate charred material to a safe location while protecting the area of origin for cause determination; stop the flow of water from a sprinkler with sprinkler wedges or stoppers; and operate a main control valve on an automatic sprinkler system.

6.3.15* Connect a pumper to a water supply as a member of a team, given supply or intake hose, hose tools, and a fire hydrant or static water source, so that connections are tight and water flow is unobstructed.

(A) Requisite Knowledge. Loading and off-loading procedures for mobile water supply apparatus; fire hydrant operation; and suitable static water supply sources, procedures, and protocol for connecting to various water sources.

(B) Requisite Skills. The ability to hand lay a supply hose, connect and place hard suction hose for drafting operations,

deploy portable water tanks as well as the equipment necessary to transfer water between and draft from them, make hydrant-to-pumper hose connections for forward and reverse lays, connect supply hose to a hydrant, and fully open and close the hydrant.

6.3.16* Extinguish incipient Class A, Class B, and Class C fires, given a selection of portable fire extinguishers, so that the correct extinguisher is chosen, the fire is completely extinguished, and correct extinguisher-handling techniques are followed.

(A) Requisite Knowledge. The classifications of fire; the types of, rating systems for, and risks associated with each class of fire; and the operating methods of and limitations of portable extinguishers.

(B) Requisite Skills. The ability to operate portable fire extinguishers, approach fire with portable fire extinguishers, select an appropriate extinguisher based on the size and type of fire, and safely carry portable fire extinguishers.

6.3.17 Operate emergency scene lighting, given fire service lighting equipment, power supply, and an assignment, so that emergency scene lighting equipment is operated within the manufacturer's listed safety precautions.

(A) Requisite Knowledge. Safety principles and practices, power supply capacity and limitations, and light deployment methods.

(B) Requisite Skills. The ability to operate department power supply and lighting equipment, deploy cords and connectors, reset ground-fault interrupter (GFI) devices, and locate lights for best effect.

6.3.18 Turn off building utilities, given tools and an assignment, so that the assignment is safely completed.

(A) Requisite Knowledge. Properties, principles, and safety concerns for electrical, gas, and water systems; utility disconnect methods and associated dangers; and use of required safety equipment.

(B) Requisite Skills. The ability to identify utility control devices, operate control valves or switches, and assess for related hazards.

6.3.19* Combat a ground cover fire operating as a member of a team, given protective clothing, SCBA (if needed), hose lines, extinguishers or hand tools, and an assignment, so that threats to property are reported, threats to personal safety are recognized, retreat is quickly accomplished when warranted, and the assignment is completed.

(A) Requisite Knowledge. Types of ground cover fires, parts of ground cover fires, methods to contain or suppress, and safety principles and practices.

(B) Requisite Skills. The ability to determine exposure threats based on fire spread potential, protect exposures, construct a fire line or extinguish with hand tools, maintain integrity of established fire lines, and suppress ground cover fires using water.

6.3.20 Tie a knot appropriate for hoisting tools, given PPE, tools, ropes, and an assignment, so that the knots used are appropriate for hoisting tools securely and as directed.

(A) Requisite Knowledge. Knot types and usage; the difference between life safety and utility rope; reasons for placing rope out of service; the types of knots to use for given tools, ropes, or situations; hoisting methods for tools and equipment; and using rope to support response activities.

(B) Requisite Skills. The ability to hoist tools using specific knots based on the type of tool.

6.3.21 Air Monitoring. Operate an air-monitoring instrument, given an air monitor and an assignment or task, so that the device is operated and the firefighter recognizes the high- or low-level alarms of the air monitor and takes action to mitigate the hazard.

(A) Requisite Knowledge. Knowledge of the various uses for an air monitor, the basic operation of an air monitor, and recognition and emergency actions to be taken upon the activation of the high- or low-level alarms of the air monitor.

(B) Requisite Skills. The ability to operate the air monitor, recognize the alarms, and react to the alarms of the air monitor.

6.4 Rescue Operations. This duty shall involve no requirements for Firefighter I.

6.5 Preparedness and Maintenance. This duty shall involve performing activities that reduce the loss of life and property due to fire through response readiness, according to the JPRs in 6.5.1 and 6.5.2.

6.5.1* Clean and check ladders, ventilation equipment, SCBA, ropes, salvage equipment, and hand tools, given cleaning tools, cleaning supplies, and an assignment, so that equipment is clean and maintained according to manufacturer's or departmental guidelines, maintenance is recorded, and equipment is placed in a ready state or reported otherwise.

(A) Requisite Knowledge. Types of cleaning methods for various tools and equipment, correct use of cleaning solvents, and manufacturer's or departmental guidelines for cleaning equipment and tools.

(B) Requisite Skills. The ability to select correct tools for various parts and pieces of equipment, follow guidelines, and complete recording and reporting procedures.

6.5.2 Clean, inspect, and return fire hose to service, given washing equipment, water, detergent, tools, and replacement gaskets, so that damage is noted and corrected, the hose is clean, and the equipment is placed in a ready state for service.

(A) Requisite Knowledge. Departmental procedures for noting a defective hose and removing it from service, cleaning methods, and hose rolls and loads.

(B) Requisite Skills. The ability to clean different types of hose; operate hose washing and drying equipment; mark defective hose; and replace coupling gaskets, roll hose, and reload hose.

Chapter 7 Firefighter II (NFPA 1001)

7.1 General. For qualification as Firefighter II, the candidate shall meet the requirements in Chapters 4, 6, and 7.

7.1.1 General Knowledge Requirements. Responsibilities of the Firefighter II in assuming and transferring command within an incident management system, performing assigned duties in conformance with applicable NFPA and other safety regulations and AHJ procedures, and the role of a Firefighter II within the organization.

7.1.2 General Skills Requirements. The ability to determine the need for command, organize and coordinate an incident management system until command is transferred, and function within an assigned role in an incident management system.

7.2 Communications. This duty shall involve performing activities related to initiating and reporting responses, according to the JPRs in 7.2.1 and 7.2.2.

7.2.1 Complete a basic incident report, given the report forms, guidelines, and information, so that all pertinent information is recorded, the information is accurate, and the report is complete.

(A) Requisite Knowledge. Content requirements for basic incident reports, the purpose and usefulness of accurate reports, consequences of inaccurate reports, how to obtain necessary information, and required coding procedures.

(B) Requisite Skills. The ability to determine necessary codes, proof reports, and operate fire department computers or other equipment necessary to complete reports.

7.2.2* Communicate the need for team assistance, given fire department communications equipment, SOPs, and a team, so that the supervisor is consistently informed of team needs, departmental SOPs are followed, and the assignment is accomplished safely.

(A) Requisite Knowledge. SOPs for alarm assignments and fire department radio communication procedures.

(B) Requisite Skills. The ability to operate fire department communications equipment.

7.3 Fireground Operations. This duty shall involve performing activities necessary to ensure life safety, fire control, and property conservation, according to the JPRs in 7.3.1 through 7.3.5.

7.3.1* Extinguish an ignitible liquid fire, operating as a member of a team, given an assignment, an attack line, PPE, a foam proportioning device, a nozzle, foam concentrates, and a water supply, so that the correct type of foam concentrate is selected for the given fuel and conditions, a properly proportioned foam stream is applied to the surface of the fuel to create and maintain a foam blanket, fire is extinguished, reignition is prevented, team protection is maintained with a foam stream, and the hazard is faced until retreat to safe haven is reached.

(A) Requisite Knowledge. Methods by which foam prevents or controls a hazard; principles by which foam is generated; causes for poor foam generation and corrective measures; difference between hydrocarbon and polar solvent fuels and the concentrates that work on each; the characteristics, uses, and limitations of firefighting foams; the advantages and disadvantages of using fog nozzles versus foam nozzles for foam application; foam stream application techniques; hazards associated with foam usage; and methods to reduce or avoid hazards.

(B) Requisite Skills. The ability to prepare a foam concentrate supply for use, assemble foam stream components, master various foam application techniques, and approach and retreat from spills as part of a coordinated team.

7.3.2* Coordinate an interior attack line for a team's accomplishment of an assignment in a structure fire, given attack lines, personnel, PPE, and tools, so that crew integrity is established; attack techniques are selected for the given level of the fire (e.g., attic, grade level, upper levels, or basement); attack techniques are communicated to the attack teams; constant team coordination is maintained; fire growth and development is continuously evaluated; search, rescue, and ventilation requirements are communicated or managed; hazards are reported to the attack teams; and incident command is apprised of changing conditions.

(A) Requisite Knowledge. Selection of the nozzle and hose for fire attack, given different fire situations; selection of adapters and appliances to be used for specific fireground situations; dangerous building conditions created by fire and fire suppression activities; indicators of building collapse; the effects of fire and fire suppression activities on wood, masonry (brick, block, stone), cast iron, steel, reinforced concrete, gypsum wallboard, glass, and plaster on lath; search and rescue and ventilation procedures; indicators of structural instability; suppression approaches and practices for various types of structural fires; and the association between specific tools and special forcible entry needs.

(B) Requisite Skills. The ability to assemble a team, choose attack techniques for various levels of a fire (e.g., attic, grade level, upper levels, or basement), evaluate and forecast a fire's growth and development, select tools for forcible entry, incorporate search and rescue procedures and ventilation procedures in the completion of the attack team efforts, and determine developing hazardous building or fire conditions.

7.3.3 Operate a thermal imager (TI), given a TI, SOPs, PPE, and an assignment, so that victims are located in conditions of obscured visibility, hot spots are identified in a structure, overhaul is completed, and the liquid level in a container is determined.

(A) Requisite Knowledge. TI operating procedures and limitations of TIs.

(B) Requisite Skills. Demonstrate the use of a TI and accurately interpret TI data to locate victims, fire, hot spots, and liquid levels in containers.

7.3.4* Control a flammable gas cylinder fire, operating as a member of a team, given an assignment, a cylinder outside of a structure, an attack line, PPE, and tools, so that crew integrity is maintained, contents are identified, safe havens are identified prior to advancing, open valves are closed, flames are not extinguished unless the leaking gas is eliminated, the cylinder is cooled, cylinder integrity is evaluated, hazardous conditions are recognized and acted upon, and the cylinder is faced during approach and retreat.

(A) Requisite Knowledge. Characteristics of pressurized flammable gases, elements of a gas cylinder, effects of heat and pressure on closed cylinders, boiling liquid expanding vapor explosion (BLEVE) signs and effects, methods for identifying contents, how to identify safe havens before approaching flammable gas cylinder fires, water stream usage and demands for pressurized cylinder fires, what to do if the fire is prematurely extinguished, valve types and their operation, alternative actions related to various hazards, and when to retreat.

(B) Requisite Skills. The ability to execute effective advances and retreats, apply various techniques for water application, assess cylinder integrity and changing cylinder conditions, operate control valves, and choose effective procedures when conditions change.

7.3.5* Protect evidence of fire cause and origin, given a flashlight and overhaul tools, so that the evidence is noted and protected from further disturbance until investigators can arrive on the scene.

(A) Requisite Knowledge. Methods to assess origin and cause; types of evidence; means to protect various types of evidence; the role and relationship of Firefighter IIs, criminal investigators, and insurance investigators in fire investigations; and the effects and problems associated with removing property or evidence from the scene.

(B) Requisite Skills. The ability to locate the fire's origin area, recognize possible causes, and protect the evidence.

7.4 Rescue Operations. This duty shall involve performing activities related to accessing and disentangling victims from motor vehicle accidents and helping special rescue teams, according to the JPRs in 7.4.1 and 7.4.2.

7.4.1* Extricate a victim entrapped in a motor vehicle as part of a team, given stabilization and extrication tools, so that the vehicle is stabilized, the victim is disentangled without further injury, and hazards are managed.

(A) Requisite Knowledge. The fire department's role at a vehicle accident, points of strength and weakness in auto body construction, dangers associated with vehicle components and systems, the uses and limitations of hand and power extrication equipment, and safety procedures when using various types of extrication equipment.

(B) Requisite Skills. The ability to operate hand and power tools used for forcible entry and rescue as designed; use cribbing and shoring material; and choose and apply appropriate techniques for moving or removing vehicle roofs, doors, windshields, windows, steering wheels or columns, and the dashboard.

7.4.2* Assist rescue operation teams, given standard operating procedures, necessary rescue equipment, and an assignment, so that procedures are followed, rescue items are recognized and retrieved in the time as prescribed by the AHJ, and the assignment is completed.

(A) Requisite Knowledge. The firefighter's role at a technical rescue operation, the hazards associated with technical rescue operations, types and uses for rescue tools, and rescue practices and goals.

(B) Requisite Skills. The ability to identify and retrieve various types of rescue tools, establish public barriers, and assist rescue teams as a member of the team when assigned.

7.5 Fire and Life Safety Initiatives, Preparedness, and Maintenance. This duty shall involve performing activities related to reducing the loss of life and property due to fire through hazard identification, inspection, and response readiness, according to the JPRs in 7.5.1 through 7.5.5.

7.5.1* Perform a fire safety survey in an occupied structure, given survey forms and procedures, so that fire and life safety hazards are identified, recommendations for their correction are made to the occupant, and unresolved issues are referred to the proper authority.

(A) Requisite Knowledge. Organizational policy and procedures, common causes of fire and their prevention, the importance of a fire safety survey and public fire education programs to fire department public relations and the community, and referral procedures.

(B) Requisite Skills. The ability to complete forms, recognize hazards, match findings to preapproved recommendations, and effectively communicate findings to occupants or referrals.

7.5.2* Present fire safety information to station visitors or small groups, given prepared materials, so that all information is presented, the information is accurate, and questions are answered or referred.

(A) Requisite Knowledge. Parts of informational materials and how to use them, basic presentation skills, and departmental standard operating procedures for giving fire station tours.

(B) Requisite Skills. The ability to document presentations and to use prepared materials.

7.5.3* Prepare a preincident survey, given forms, necessary tools, and an assignment, so that all required occupancy information is recorded, items of concern are noted, and accurate sketches or diagrams are prepared.

(A) Requisite Knowledge. The sources of water supply for fire protection; the fundamentals of fire suppression and detection systems; common symbols used in diagramming construction features, utilities, hazards, and fire protection systems; departmental requirements for a preincident survey and form completion; and the importance of accurate diagrams.

(B) Requisite Skills. The ability to identify the components of fire suppression and detection systems; sketch the site, buildings, and special features; detect hazards and special considerations to include in the preincident sketch; and complete all related departmental forms.

7.5.4 Maintain power plants, power tools, and lighting equipment, given tools and manufacturers' instructions, so that equipment is clean and maintained according to manufacturer and departmental guidelines, maintenance is recorded, and equipment is placed in a ready state or reported otherwise.

(A) Requisite Knowledge. Types of cleaning methods, correct use of cleaning solvents, manufacturer and departmental guidelines for maintaining equipment and its documentation, and problem-reporting practices.

(B) Requisite Skills. The ability to select correct tools; follow guidelines; complete recording and reporting procedures; and operate power plants, power tools, and lighting equipment.

7.5.5 Perform an annual service test on fire hose, given a pump, a marking device, pressure gauges, a timer, record sheets, and related equipment, so that procedures are followed,

the condition of the hose is evaluated, any damaged hose is removed from service, and the results are recorded.

(A)* Requisite Knowledge. Procedures for safely conducting hose service testing, indicators that dictate any hose be removed from service, and recording procedures for hose test results.

(B) Requisite Skills. The ability to operate hose testing equipment and nozzles and to record results.

Chapter 8 Airport Firefighter (NFPA 1003)

8.1 General. For qualification as airport firefighter, the candidate shall meet the requirements defined in Chapters 4, 7, and 8.

8.1.1* General Knowledge Requirements. Fundamental aircraft firefighting techniques, including the approach, positioning, initial attack, and selection, application, and management of the extinguishing agents; limitations of various sized hand lines; use of personal protective equipment (PPE); fire behavior; firefighting techniques in oxygen-enriched atmospheres; reaction of aircraft materials to heat and flame; critical components and hazards of civil aircraft construction and systems related to ARFF operations; special hazards associated with military aircraft systems; a national defense area and limitations within that area; characteristics of different aircraft fuels; hazardous areas in and around aircraft; aircraft fueling systems (hydrant/vehicle); aircraft egress/ingress (hatches, doors, and evacuation chutes); hazards associated with aircraft cargo, including dangerous goods; hazardous areas, including entry control points, crash scene perimeters, and requirements for operations within the hot, warm, and cold zones; and critical stress management policies and procedures.

8.1.2 General Skills Requirements. Don PPE; operate hatches, doors, and evacuation chutes; approach, position, and initially attack an aircraft fire; select, apply, and manage extinguishing agents; shut down aircraft systems, including engine, electrical, hydraulic, and fuel systems; operate aircraft extinguishing systems, including cargo area extinguishing systems.

8.2 Response. This duty involves the timely arrival at an incident or accident and the capability to perform emergency functions. The duty also includes responding to hazardous conditions and performing standby operations.

8.2.1 Respond to day and night incidents on and adjacent to the airport, given an assignment, operating conditions, a location, a grid map, a vehicle, and a prescribed response time, so that the route selected and taken provides access to the site within the allotted time.

(A) Requisite Knowledge. Airport familiarization, including runway and taxiway designations, frangible gate locations, airport markings, lights, instrument landing system (ILS) critical areas, and critical rescue and firefighting access areas, recognize the impact of low-visibility conditions on movement areas and areas of response in and close to the airport; designated isolation areas; vehicular traffic controls on airfield; bridge load limits; controlled access points; aircraft traffic patterns and taxi routes; fuel storage and distribution locations; airport and immediate local area topographic layout, drainage systems, water supplies, airport facilities, and security.

(B) Requisite Skills. Read, interpret, and take correct action related to grid maps, water distribution maps, airport markings, and lights.

8.2.2 Communicate critical incident information regarding an incident on or adjacent to an airport, given an assignment involving an incident and an incident management system (IMS) protocol, so that the information provided is accurate for the incident commander.

(A) Requisite Knowledge. Incident management system (IMS) protocol, the airport emergency plan, airport and aircraft familiarization, communications equipment and procedures, and incident communications procedures.

(B) Requisite Skills. Operate communications systems, communicate an accurate situation report, implement incident management system (IMS) protocol and airport emergency plan, and recognize aircraft types.

8.2.3 Communicate with applicable air traffic control facilities, given a response destination on or adjacent to an airport and radio equipment, so that all required clearances are obtained.

(A) Requisite Knowledge. Airfield familiarization, airport operational procedures, avoiding runway/aircraft movement area incursion, communications equipment and frequencies, tower light signals, aviation terminology, and phonetic alphabet.

(B) Requisite Skills. Operate communications equipment and use aviation terminology and phonetic alphabet.

8.2.4* Perform an airport operation, given an assignment, a hazardous condition, and the airport policies and procedures, so that unsafe conditions are detected and reduced in accordance with the airport policies and procedures.

(A) Requisite Knowledge. Airport and aircraft policies and procedures for hazardous conditions.

(B) Requisite Skills. Recognize hazardous conditions and initiate corrective action.

8.3 Fire Suppression. This duty involves the attack, control, and extinguishment of fires involving aircraft, aircraft cargo, airport facilities, and other equipment related to airport operations and property conservation. The primary purpose of this duty is to protect lives and property.

8.3.1* Extinguish an aircraft fuel spill fire, given approved PPE, an assignment, agent application procedures, a firefighting vehicle hand line flowing a minimum of 95 gpm (359 L/min) of approved foam extinguishing agent, and a fire sized to the flow rate used, so that the agent is applied using the prescribed techniques and the fire is extinguished as required by the AHJ.

(A) Requisite Knowledge. The fire behavior of aircraft fuels in pools, physical properties and characteristics of aircraft fuel, and agent application rates and densities.

(B) Requisite Skills. Operate fire streams and apply agent.

8.3.2* Extinguish an aircraft fuel spill fire, given an assignment, approved PPE, an ARFF vehicle turret flowing the approved minimum required flow, a fire sized to the approved flow rate used, and the procedures for agent application, so

that the agent is applied according to procedures and the fire is extinguished as required by the AHJ.

(A) Requisite Knowledge. Operation of ARFF vehicle agent delivery systems, the fire behavior of aircraft fuels in pools, physical properties and characteristics of aircraft fuel, the procedures for agent application, and agent application rates and densities.

(B) Requisite Skills. Apply firefighting agents and streams using ARFF vehicle turrets.

8.3.3* Extinguish a three-dimensional aircraft fuel fire as a member of a team, given a team, approved PPE, an assignment, firefighting vehicle hand line(s) using primary and secondary agents, and agent application procedures, so that a dual-agent attack is used, the agent is applied according to procedures, the fire is extinguished, and the fuel source is secured.

(A) Requisite Knowledge. The fire behavior of aircraft fuels in solid, pressurized, and atomized states; physical properties and characteristics of aircraft fuel; advantages and limitations of agents; agent application rates and densities; agent application procedures; and methods of controlling fuel sources.

(B) Requisite Skills. Operate fire streams and apply agents, and secure fuel sources.

8.3.4* Attack a fire on the interior of an aircraft while operating as a member of a team, given a team, approved PPE, an assignment, a firefighting vehicle hand line, an extinguishing agent, and a ladder or other means of accessing the aircraft, so that team integrity is maintained, the attack line is deployed for advancement, ladders or other means are used, access is gained into the fire area, effective agent application practices are used, the fire is approached, attack techniques facilitate suppression given the level of the fire, hidden fires are located and controlled, hazards are avoided or managed, and the fire is brought under control.

(A) Requisite Knowledge. Techniques for accessing the aircraft interior according to the aircraft type, methods for advancing hand lines from a firefighting vehicle, precautions to be followed when advancing hose lines to a fire, observable results that a fire stream has been applied, dangerous structural conditions created by fire, principles of exposure protection, potential long-term consequences of exposure to products of combustion, physical states of matter in which fuels are found, common types of accidents or injuries and their causes, the role of the backup team in fire attack situations, attack and control techniques, and techniques for exposing hidden fires.

(B) Requisite Skills. Deploy firefighting vehicle hand line on an interior aircraft fire; gain access to aircraft interior; open, close, and adjust nozzle flow and patterns; apply agent using direct, indirect, and combination attacks; advance charged and uncharged hose lines up ladders and up and down interior and exterior stairways; and locate and suppress interior fires.

8.3.5* Attack an engine or auxiliary power unit/emergency power unit (APU/EPU) fire on an aircraft while operating as a member of a team, given approved PPE, an assignment, firefighting vehicle hand line or turret, a correct agent, and agent application procedures, so that agent application procedures are followed, the fire is extinguished, and the engine or APU/EPU is shut down.

(A) Requisite Knowledge. Techniques for accessing the aircraft engines and APU/EPUs, operation of on-board aircraft firefighting systems and potential hazards, safety procedures, methods for advancing hand line from a firefighting vehicle, methods for operating turrets, and methods for shutting down engine and APU/EPU operation.

(B) Requisite Skills. Deploy and operate firefighting vehicle hand line, operate turrets, gain access to aircraft engine and APU/EPU, and shut down engine and APU.

8.3.6 Attack a wheel assembly fire, as a member of a team, given PPE, a team, an assignment, an ARFF vehicle hand line, and correct agent, so that the fire is extinguished.

(A) Requisite Knowledge. Agent selection and application procedure, special safety considerations, and the characteristics of combustible metals.

(B) Requisite Skills. Approach the fire in accordance with safety procedures, and select and apply agent.

8.3.7* Ventilate an aircraft through available doors and hatches while operating as a member of a team, given PPE, an assignment, tools, and mechanical ventilation devices, so that openings are created, all ventilation barriers are removed, and the heat and other products of combustion are released.

(A) Requisite Knowledge. Aircraft access points; principles, advantages, limitations, and effects of mechanical ventilation; the methods of heat transfer; the principles of thermal layering within an aircraft on fire; and the techniques and safety precautions for venting aircraft.

(B) Requisite Skills. Operate doors, hatches, and forcible entry tools; operate mechanical ventilation devices; and remove barriers.

8.3.8* Replenish extinguishing agents while operating as a member of a team, given an assignment, a firefighting vehicle, a fixed or mobile water source, a supply of agent, and supply lines and fittings, so that agents are available for application by the firefighting vehicle within the time established by the authority having jurisdiction (AHJ).

(A) Requisite Knowledge. Resupply procedures during an incident and operation procedures for firefighting vehicle replenishment.

(B) Requisite Skills. Connect hose lines and operate valves.

8.3.9 Preserve the aircraft accident scene, given an assignment and procedures, so that evidence is identified, protected, and reported according to procedures.

(A) Requisite Knowledge. Airport emergency plan requirements for preservation of the scene, evidence identification, evidence protection, and evidence reporting procedures.

(B) Requisite Skills. Preserve the scene for investigators, and identify, protect, and report evidence.

8.3.10* Overhaul the accident scene, given PPE, an assignment, hand lines, and property conservation equipment, so that all fires are located, exposed, and extinguished and all property is protected from further damage.

(A) Requisite Knowledge. Methods of complete extinguishment and prevention of re-ignition, reasons for conservation, operating procedures for property conservation equipment, overhaul procedures, signs of a hidden fire, methods of detecting hidden fires, and tools and equipment used for overhaul.

(B) Requisite Skills. Use property conservation equipment, detect hidden fires, and use tools and equipment to expose hidden fires.

8.4* Rescue. This duty involves gaining access to an aircraft and assisting in the evacuation process, performing disentanglement, and initial triage.

8.4.1* Gain access into and out of an aircraft through normal entry points and emergency hatches, secure and shut down the aircraft, and assist in the evacuation process while operating as a member of a team, given approved PPE and an assignment, so that passenger evacuation and rescue can be accomplished.

(A) Requisite Knowledge. Aircraft familiarization, including materials used in construction, aircraft terminology, automatic explosive devices, hazardous areas in and around aircraft, aircraft egress/ingress (hatches, doors, and evacuation chutes), military aircraft systems and associated hazards; capabilities and limitations of manual and power rescue tools and specialized high-reach devices, aircraft shutdown and safetying procedures.

(B) Requisite Skills. Operate power saws and cutting tools, hydraulic devices, pneumatic devices, and pulling devices; operate specialized ladders and high-reach devices; secure aircraft safety and shutdown.

8.4.2* Locate and disentangle an entrapped person from an aircraft as a member of a team, given approved PPE, a team, an assignment, and rescue tools, so that the person is freed from entrapment without undue further injury and hazards are managed.

(A) Requisite Knowledge. Capabilities and limitations of rescue tools, search procedures, hazard identification, and control methods.

(B) Requisite Skills. Perform search procedures, control hazards, remove victims, and operate rescue tools.

8.4.3 Implement initial triage of the victims of an aircraft accident, given PPE, an assignment, and the triage protocol of the AHJ, so that each victim is evaluated and correctly categorized according to protocol.

(A) Requisite Knowledge. Categories of triage according to the triage protocol of the AHJ, and methods of assessment.

(B) Requisite Skills. Triage patients per protocol.

Chapter 9 Land-Based Marine Firefighter (NFPA 1005)

9.1 General. For qualification as a land-based marine firefighter, the candidate shall meet the requirements defined in Chapter 4, Chapter 7 (or Chapters 1 and 6 of NFPA 1081), and Chapter 9.

9.2 Communications. This duty involves using marine facility and vessel communications equipment to receive and relay verbal information at an incident.

9.2.1 Transmit and receive messages via marine facility and vessel communications equipment, given marine facility and vessel communications equipment and standard operating procedures, so that the information is accurate, complete, clear, and relayed within the time established by the authority having jurisdiction (AHJ).

(A) Requisite Knowledge. Marine communications terminology and procedures; proper marine radio frequencies to be used; types and capabilities of vessel communications systems; methods for overcoming language barriers.

(B) Requisite Skills. Operating marine facility and vessel communications systems; operating marine radios.

9.2.2 Locate a marine facility or vessel representative, given a marine facility or vessel and an assignment, so that a line of communication is established between the fire department and the facility or vessel representatives.

(A)* Requisite Knowledge. Locations on a vessel where the ship's master, mate, engineer, or ship's agent can be located; marine frequencies monitored by the vessel master; locations where facility representatives are normally located; methods for contacting representatives after normal working hours.

(B) Requisite Skills. Operating marine facility and vessel communications equipment; boarding the vessel; negotiating or traveling through the facility or vessel.

9.2.3 Transmit and receive messages to vessel personnel and other agencies responding to an incident, given an incident, a list of the other agencies responding to the incident, communications equipment, and standard operating procedures, so that the information is accurate, complete, clear, and relayed within the time established by the AHJ.

(A) Requisite Knowledge. Marine communications terminology and procedures; proper marine radio frequencies to be used; land-based frequencies used in mutual aid situations; other agencies that respond to marine incidents.

(B) Requisite Skills. Operating vessel and mobile communications systems, marine radios, and fire department communications equipment.

9.2.4 Control access to a vessel, given a vessel, an incident, an accountability system, an incident management system, and response personnel, so that all emergency responders boarding the vessel are noted and accounted for.

(A) Requisite Knowledge. The accountability systems used by the AHJ; knowledge of personnel who are authorized to operate at a marine incident.

(B) Requisite Skills. Using accountability tactical worksheets.

9.2.5 Evacuate a vessel or exposure, given an occupied vessel or exposure, an incident, an accountability system, an incident management system, and response personnel, so that all personnel are removed from the hazard area to an area of refuge.

(A) Requisite Knowledge. Vessel evacuation and accountability procedures used by the AHJ.

(B) Requisite Skills. Controlling, directing, and moving passengers and crew.

9.3 Planning.

9.3.1 Identify marine vessel types and potential products transported given general information on the vessel types in the local response jurisdiction, awareness level information on products transported by marine vessels, AHJ policies and procedures, and overall scene safety considerations at marine incidents so that the scene of the incident and the hazards are recognized.

(A) Requisite Knowledge. Generalized marine vessel types; awareness level hazardous product information; general hazard classes of product and structural firefighting PPE compatibilities; policies and procedures associated with marine incident response.

(B) Requisite Skills. Reading comprehension and oral communication skills.

9.3.2 Define common marine vessel construction and terminology given vessel construction terminology, marine vessel terminology and general structural hazards associated with marine vessels so that the land-based marine firefighter has a working knowledge of general terms when communicating with marine vessel personnel.

(A) Requisite Knowledge. General knowledge of marine vessel construction, marine vessel terminology, structural hazards with marine vessels.

(B) Requisite Skills. Reading comprehension and oral communication skills.

9.3.3* Board a marine vessel, given a vessel, gangway, approved PPE, water survival techniques, approved hand tools and suppression equipment, and AHJ policies and procedures, so that the land-based marine firefighter is transferred to the vessel in a safe manner.

(A) Requisite Knowledge. Effect of vessel movement due to tide, wakes, currents, or other factors; effect of water depth; water survival techniques; and draft for gangways.

(B) Requisite Skills. Donning approved PPE; carrying tools and equipment in a proper and safe manner, climbing techniques for gangways.

9.3.4* Retrieve a vessel fire control plan and other specified documents from a cold zone on the vessel, given a vessel, an assignment, a vessel fire control plan and other documents, and any necessary equipment, so that the vessel fire control plan and documents are located and brought to the Incident Commander within the time specified by the AHJ.

(A) Requisite Knowledge. Location(s) on the vessel where the vessel fire control plan and other documents, such as dangerous cargo manifests, trim and stability documents, cargo-loading manuals where applicable, and crew and passenger lists are stored; vessel compartmentalization and associated marking; primary and alternative routes to reach the location(s) where the vessel fire control plan and other documents are stored; understanding of response personnel utilization of the vessel fire control plan; location of the command post.

(B) Requisite Skills. Boarding and negotiating or traveling through the vessel; recognition of the vessel fire control plan and other types of documents.

9.4 Access. This duty involves making safe access to the vessel and safe egress from the vessel.

9.4.1 Identify a specified location on a vessel, given a vessel fire control plan and an assignment, so that the assignment is completed and reported.

(A) Requisite Knowledge. Vessel construction, including maritime terminology (e.g., bow, stern, port, starboard); unique hazards associated with various locations in a vessel; terminology and symbols used on a vessel fire control plan.

(B) Requisite Skills. Negotiating vessel ladders, decks, and corridors; operating vessel doors and hatches.

9.4.2 Identify onboard vessel fixed fire suppression systems as a member of a team, given an incident, an assignment, standard operating procedures, and communications equipment, so that the system is activated or shut down when information is requested by the Incident Commander.

(A) Requisite Knowledge. Types of fixed suppression systems found on vessels; appropriate times to activate fixed suppression systems on vessels; hazards associated with operating fixed suppression systems and agents.

(B) Requisite Skills. Recognizing fire suppression system controls; operating communications equipment located at the fire suppression system control room; understanding vital precautions to be taken as a fire team member after fire suppression systems have been activated.

9.5 Response. This duty involves connecting to the water supply for firefighting operations, establishing effective incident communications, and protecting exposures.

9.5.1 Establish connections for the water supply at an incident, given international shore connections, so that an uninterrupted supply of water is established and all hoses are connected and positioned according to procedures and in coordination with the ship's crew.

(A) Requisite Knowledge. International shore connection.

(B) Requisite Skills. Ability to recognize and use an international shore connection.

9.5.2 Protect an exposure on a vessel as a member of a team, given an assignment, an exposure, a water supply source, approved PPE, fire hose, nozzles, and equipment, so that the exposure is protected.

(A) Requisite Knowledge. Environment, vessel construction, and fire behavior aboard vessel.

(B) Requisite Skills. Participating as part of a team to protect exposures, operating hand lines, and master streams.

9.5.3 Access a fire compartment as a member of a team, given a vessel, an incident, and an assignment, so that vessel integrity is maintained, doors and hatches are opened, tools are used, barriers are removed, and the opening is made ready for entry.

(A) Requisite Knowledge. Construction and normal operation of vessel doors and hatches; safety procedures for securing vessel doors and hatches to prevent them from closing behind firefighters; desired entry methods for various tactical operations, including ventilation, observation, dewatering, and agent application.

(B) Requisite Skills. Identifying and operating vessel doors and hatches.

9.5.4 Collect and report vessel stability information, given a vessel, an incident, an assignment, measuring devices, and standard operating procedures, so that any current or potential hazards to stability are recognized and reported according to procedures.

(A) Requisite Knowledge. Effect of tide, wakes/waves, currents, firefighting operations, vessel stability; procedures for reporting the information; vessel draft marking systems.

(B) Requisite Skills. Visualizing the position of a vessel; using internal and external measuring devices or procedures.

9.6 Fire Control. This duty involves the control and extinguishment of fires on vessels, including fire attack, ventilation, reconnaissance operations, dewatering operations, and rescue of vessel occupants.

9.6.1 Ventilate smoke from a vessel as a member of a team, given a vessel, an incident, an assignment, approved PPE, ventilation equipment, and standard operating procedures, so that equipment is positioned for ventilation, vessel integrity is maintained, a specified ventilation opening is created and left unobstructed, and ventilation barriers are removed.

(A) Requisite Knowledge. Construction principles of a vessel that affect ventilation operations; principles, advantages, limitations, and effects of horizontal, vertical, natural, and forced ventilation; safety considerations when venting a vessel; signs, causes, effects, and prevention of backdrafts; methods of heat transfer and principles of thermal layering on vessels; effects of vessel construction on fire behavior and heat transfer.

(B) Requisite Skills. Transporting, deploying, and operating ventilation equipment on a vessel.

9.6.2 Monitor fire conditions on a vessel as a member of a team, given a vessel, an assignment, an incident, approved PPE, a hose or safety line, a thermal imaging camera, and communications equipment, so that vessel integrity is maintained and changes to fire conditions are reported to the Incident Commander.

(A) Requisite Knowledge. Fire behavior on vessels; procedures for operating a thermal imaging camera; safety procedures for operating in or near fire compartments on vessels.

(B) Requisite Skills. Negotiating vessel ladders, stairs, corridors, and decks; operating in high heat and vision-obscured areas utilizing a thermal imaging camera.

9.6.3 Remove water from a vessel as a member of a team, given a vessel containing water, an assignment, dewatering equipment, and approved PPE, so that hazards are identified, water is removed, and vessel stability is maintained.

(A) Requisite Knowledge. Safety precautions to be taken when working in water; hazards associated with water collecting in various areas of a vessel; hazards associated with water removal in a vessel.

(B) Requisite Skills. Deploying and operating dewatering equipment.

9.6.4* Attack a fire on a vessel as a member of a team, given a vessel, an incident, an assignment, an attack line, a secondary line, approved PPE, and tools and equipment, so that vessel integrity is maintained, attack line is deployed, access is gained to the fire compartment, effective water application practices are used, and fire is extinguished and overhauled.

(A) Requisite Knowledge. Precautions to be followed when advancing hose lines to a fire on a vessel; principles of exposure protection; types of fuels found on a vessel; types and application of attack lines used on vessels; effective application of fire streams.

(B) Requisite Skills. Advancing charged and uncharged hose lines up and down vessel ladders and stairs, through corridors, and across decks; operating fire streams; and advancing multiple hose lines for fire attack.

9.6.5 Conduct a search and rescue operation for a missing person on a vessel as a member of a team, given a vessel, an incident, an assignment, a vessel fire control plan or other documents, a person, approved PPE, forcible entry tools, and other equipment, so that areas where the person could be located are searched, the person is located and removed, and vessel integrity is maintained.

(A) Requisite Knowledge. Psychological effects of operating in obscured-vision conditions; methods to determine if the area is tenable; primary and secondary search techniques; victim removal methods; likely locations of passengers, crew members, shipyard workers, and contractors; location and use of emergency escape breathing devices (EEBDs).

(B) Requisite Skills. Using forcible entry tools; using self-contained breathing apparatus (SCBA); accessing remote or enclosed compartments; advancing charged and uncharged hose lines up and down vessel ladders and stairs, through corridors, and across decks; and removing victims.

9.6.6 Assist in deploying extinguishing agents other than water, given a vessel, an incident, an assignment, approved PPE, select extinguishing agents, and agent application equipment, so that the need is identified and communicated to the Incident Commander and agent is applied.

(A) Requisite Knowledge. Appropriate extinguishing agents; effects of various extinguishing agents; hazards associated with various extinguishing agents, including onboard systems; sources of bulk extinguishing agents.

(B) Requisite Skills. Reading cargo manifests and technical information on extinguishing agents, deploying and operating extinguishing equipment and agents.

Chapter 10 Emergency Medical Services (NFPA 1001)

10.1 General. The level of training and level of service for emergency medical services shall be in accordance with Chapters 4 and 10 and the requirements of the AHJ.

10.2* Levels of Training and Service. Emergency medical services shall include at least one of the following:

(1) First aid provider
(2) Emergency medical responder (also known as medical first responder)
(3) Emergency medical technician
(4) Advanced emergency medical technician
(5) Paramedic

10.2.1 First Aid Provider. Performs minimum emergency medical care performance capabilities for entry-level personnel that are developed and validated by the AHJ to include infection control, CPR/AED, bleeding control, and shock management.

10.2.2 Emergency Medical Responder (also known as Medical First Responder). With a limited amount of equipment, answers emergency calls to provide efficient and immediate care to ill and injured patients focused on lifesaving interventions.

10.2.2.1 Requisite knowledge and skills shall be determined by the designated governing body under which the AHJ operates.

10.2.2.2 The possession of a certificate or license from the governing body shall indicate compliance with the appropriate requisite knowledge and skills.

10.2.3 Emergency Medical Technician. Performs scene size up, evaluates scene safety, and recognizes the need for higher levels of medical care as it relates to patient assessment, airway management, breathing and circulation, bleeding, shock management, and immobilizing potential spinal or other bone fractures as approved by AHJ.

10.2.3.1 Requisite knowledge and skills shall be determined by the designated governing body under which the AHJ operates.

10.2.3.2 The possession of a certificate or license from the governing body shall indicate compliance with the appropriate requisite knowledge and skills.

10.2.4 Advanced Emergency Medical Technician. Performs scene size up, evaluates scene safety, and recognizes the need for higher levels of medical care while providing a scope of practice focused on the acute management and transportation of critical and emergent patients.

10.2.4.1 Requisite knowledge and skills are determined by the designated governing body under which the AHJ operates.

10.2.4.2 The possession of a certificate or license from the governing body indicates compliance with the appropriate requisite knowledge and skills.

10.2.5 Paramedic. Emergency medical treatment beyond basic life support that provides advanced life saving techniques to the critically ill or injured.

10.2.5.1 Requisite knowledge and skills are determined by the designated governing body under which the AHJ operates.

10.2.5.2 The possession of a certificate or license from the governing body indicates compliance with the appropriate requisite knowledge and skills.

Chapter 11 Apparatus — General Requirements for Driver/Operator (NFPA 1002)

11.1 General. For qualification as fire apparatus driver/operator, the candidate shall meet the requirements in Chapters 4 and 11.

11.2 Preventive Maintenance.

11.2.1* Perform visual and operational checks on the systems and components specified in the following list, given a fire department vehicle, its manufacturer's specifications, and policies and procedures of the jurisdiction, so that the operational status of the vehicle is verified:

(1) Battery(ies)
(2)* Braking system
(3) Coolant system
(4) Electrical system
(5) Fuel
(6) Hydraulic fluids
(7) Oil
(8) Tires
(9) Steering system
(10) Belts
(11) Tools, appliances, and equipment
(12) Built-in safety features

(A) Requisite Knowledge. Manufacturer specifications and requirements, policies, and procedures of the jurisdiction.

(B) Requisite Skills. The ability to use hand tools, recognize system problems, and correct any deficiency noted according to policies and procedures.

11.2.2 Document the visual and operational checks, given maintenance and inspection forms, so that all items are checked for operation and deficiencies are reported.

(A) Requisite Knowledge. Departmental requirements for documenting maintenance performed and the importance of keeping accurate records.

(B) Requisite Skills. The ability to use tools and equipment and complete all related departmental forms.

11.3 Driving.

11.3.1* Operate a fire apparatus, given a vehicle and a predetermined route on a public way that incorporates the maneuvers and features that the driver/operator is expected to encounter during normal operations, so that the vehicle is operated in compliance with all applicable state and local laws and departmental rules and regulations.

(A) Requisite Knowledge. The importance of donning passenger restraint devices and ensuring crew safety; the common causes of fire apparatus accidents and the recognition that drivers of fire apparatus are responsible for the safe and prudent operation of the vehicle under all conditions; the effects on vehicle control of liquid surge, braking reaction time, and load factors; effects of high center of gravity on rollover potential, general steering reactions, speed, and centrifugal force; applicable laws and regulations; principles of skid avoidance, night driving, shifting, and gear patterns; negotiating intersections, railroad crossings, and bridges; weight and height limitations for both roads and bridges; identification and operation of automotive gauges; and operational limits.

(B) Requisite Skills. The ability to operate passenger restraint devices; maintain safe following distances; maintain control of the vehicle while accelerating, decelerating, and turning, given road, weather, and traffic conditions; operate under adverse environmental or driving surface conditions; and use automotive gauges and controls.

11.3.2* Back a vehicle from a roadway into an area with restricted spaces on both the right and left sides of the vehicle, given a fire apparatus; a spotter to assist the driver in performing the maneuver; and restricted spaces of 12 ft (3.7 m) in width, requiring 90-degree right-hand and left-hand turns from the roadway, so that the vehicle is parked within the restricted areas without needing to stop and pull forward and without striking obstructions.

(A) Requisite Knowledge. Vehicle dimensions, turning characteristics, spotter signaling, and principles of safe vehicle operation.

(B) Requisite Skills. The ability to use mirrors and judge vehicle clearance.

11.3.3* Maneuver a vehicle around obstructions on a roadway while moving forward and in reverse, given a fire apparatus; a spotter where the spotter assists the driver in performing the maneuver; and a roadway with obstructions, so that the vehicle is maneuvered through the obstructions without stopping to

change the direction of travel and without striking the obstructions.

(A) Requisite Knowledge. Vehicle dimensions, turning characteristics, the effects of liquid surge, spotter signaling, and principles of safe vehicle operation.

(B) Requisite Skills. The ability to use mirrors and judge vehicle clearance.

11.3.4* Turn a fire apparatus 180 degrees within a confined space, given a fire apparatus, a spotter for backing up, and an area in which the vehicle cannot perform a U-turn without stopping and backing up, so that the vehicle is turned 180 degrees without striking obstructions within the given space.

(A) Requisite Knowledge. Vehicle dimensions, turning characteristics, the effects of liquid surge, spotter signaling, and principles of safe vehicle operation.

(B) Requisite Skills. The ability to use mirrors and judge vehicle clearance.

11.3.5* Maneuver a fire apparatus in areas with restricted horizontal and vertical clearances, given a fire apparatus and a course that requires the operator to move through areas of restricted horizontal and vertical clearances, so that the operator judges the ability of the vehicle to pass through the openings and so that no obstructions are struck.

(A) Requisite Knowledge. Vehicle dimensions, turning characteristics, the effects of liquid surge, and principles of safe vehicle operation.

(B) Requisite Skills. The ability to use mirrors and judge vehicle clearance.

11.3.6* Operate a vehicle using defensive driving techniques, given an assignment and a fire apparatus, so that control of the vehicle is maintained.

(A) Requisite Knowledge. The importance of donning passenger restraint devices and ensuring crew safety; the common causes of fire apparatus accidents and the recognition that drivers of fire apparatus are responsible for the safe and prudent operation of the vehicle under all conditions; the effects of liquid surge on vehicle control; factors that make up total stopping distance; load factors; the effects of a high center of gravity on rollover potential, laws of inertia, general steering reactions, and speed; applicable laws and regulations; principles of skid avoidance, night driving, shifting, gear patterns, and automatic braking systems in wet and dry conditions; negotiation of intersections, railroad crossings, and bridges; weight and height limitations for both roads and bridges; identification and operation of automotive gauges; and operational limits.

(B) Requisite Skills. The ability to operate passenger restraint devices; maintain safe following distances; maintain control of the vehicle while accelerating, decelerating, and turning, given road, weather, and traffic conditions; operate under adverse environmental or driving surface conditions; and use automotive gauges and controls.

11.3.7* Operate all fixed systems and equipment on the vehicle not addressed elsewhere in Chapters 11 through 17, given systems and equipment, manufacturer's specifications and instructions, and departmental policies and procedures for the systems and equipment, so that each system or piece of equipment is operated in accordance with the applicable instructions and policies.

(A) Requisite Knowledge. Manufacturer's specifications and operating procedures, and policies and procedures of the jurisdiction.

(B) Requisite Skills. The ability to deploy, energize, and monitor the system or equipment and to recognize and correct system problems.

Chapter 12 Apparatus — Pumper (NFPA 1002)

12.1 General. For qualification as fire apparatus driver/operator — pumper, the candidate shall meet the requirements defined in Chapters 4, 11, and 12.

12.1.1 General Knowledge Requirements. The organization of the fire department; the role of the driver/operator in the organization; the mission of fire service; the fire department's standard operating procedures (SOPs) and rules and regulations as they apply to the driver/operator; the value of fire and life safety initiatives in support of the fire department mission and to reduce firefighter line-of-duty injuries and fatalities; the role of other agencies as they relate to the fire department; aspects of the fire department's member assistance program; the importance of physical fitness and a healthy lifestyle to the performance of the duties of a firefighter; the critical aspects of NFPA 1500.

12.2 Communications. This duty shall involve using communications equipment and technology in accordance with the policies and procedures of the authority having jurisdiction (AHJ) and the job performance requirements (JPRs) in 12.2.1 through 12.2.2.

12.2.1 Initiate the response to a reported emergency, given the report of an emergency, fire department standard operating procedures (SOPs), and communications equipment and technology, so that all necessary information is obtained, communications equipment and technology are operated correctly, and the information is relayed promptly and accurately to the dispatch center. *(See A.5.2.1.)*

(A) Requisite Knowledge. Procedures for reporting an emergency; departmental SOPs for taking and receiving alarms, and the information needs of the dispatch center.

(B) Requisite Skills. The ability to operate fire department communications equipment and technology, relay information, and record information.

12.2.2 Transmit and receive communications using fire department equipment and technology, given equipment and technology and operating procedures, so that the information is accurate, complete, clear, and relayed within the timeframe established by the AHJ. *(See A.5.2.2.)*

(A) Requisite Knowledge. Departmental communication procedures and etiquette for routine traffic, emergency traffic, and emergency evacuation signals.

(B) Requisite Skills. The ability to operate communications equipment and technology and discriminate between routine and emergency traffic.

12.3 Preventative Maintenance.

12.3.1 Perform the visual and operational checks on the systems and components specified in the following list in addition to those in 11.2.1, given a pumper, its manufacturer's specifications, and policies and procedures of the AHJ, so that the operational status of the pumper is verified:

(1) Water tank and other extinguishing agent levels (if applicable)
(2) Pumping systems
(3) Foam systems

(A) Requisite Knowledge. Manufacturer's specifications and requirements, and policies and procedures of the AHJ.

(B) Requisite Skills. The ability to use hand tools, recognize system problems, and correct any deficiency noted according to policies and procedures.

12.4 Operations.

12.4.1 Respond on apparatus to an emergency scene, given safety equipment as provided by the AHJ, so that the apparatus is correctly mounted and dismounted and seat belts are used while the vehicle is in motion.

(A) Requisite Knowledge. Mounting and dismounting procedures for riding fire apparatus, hazards and ways to avoid hazards associated with riding apparatus, prohibited practices, and types of department safety equipment and the means for usage.

(B) Requisite Skills. The ability to use each piece of provided safety equipment.

12.4.2 Establish and operate in work areas at emergency and nonemergency scenes, given safety equipment, traffic and scene control devices, emergency and nonemergency scenes, traffic and other hazards, an assignment, and SOPs, so that procedures are followed, safety equipment is utilized, protected work areas are established as directed using traffic and scene control devices, and the driver/operator performs assigned tasks only in established, protected work areas.

(A) Requisite Knowledge. Potential hazards involved in operating on emergency and nonemergency scenes including vehicle traffic, utilities, and environmental conditions; proper procedures for dismounting apparatus in traffic; procedures for safe operation at emergency and nonemergency scenes; and the safety equipment available for members on emergency and nonemergency scenes.

(B) Requisite Skills. The ability to use safety equipment, deploy traffic and scene control devices, dismount apparatus, establish and operate in the protected work areas as directed.

12.4.3 Connect a pumper to a water supply as a member of a team, given supply or intake hose, hose tools, and a fire hydrant or static water source, so that connections are tight and water flow is unobstructed.

(A) Requisite Knowledge. Loading and off-loading procedures for mobile water supply apparatus; fire hydrant operation; and suitable static water supply sources, procedures, and protocol for connecting to various water sources.

(B) Requisite Skills. The ability to hand lay a supply hose, connect and place hard suction hose for drafting operations, deploy portable water tanks as well as the equipment necessary to transfer water between and draft from them, make hydrant-to-pumper hose connections for forward and reverse lays, connect supply hose to a hydrant, and fully open and close the hydrant.

12.4.4 Produce effective hand or master streams, given the sources specified in the following list, so that the pump is engaged, all pressure control and vehicle safety devices are set, the rated flow of the nozzle is achieved and maintained, and the apparatus is monitored for potential problems:

(1) Internal tank
(2)* Pressurized source
(3) Static source
(4) Transfer from internal tank to external source

(A) Requisite Knowledge. Hydraulic calculations for friction loss and flow using both written formulas and estimation methods, safe operation of the pump, problems related to small-diameter or dead-end mains, low-pressure and private water supply systems, hydrant coding systems, and reliability of static sources.

(B) Requisite Skills. The ability to position a pumper to operate at a fire hydrant and at a static water source, power transfer from vehicle engine to pump, draft, operate pumper pressure control systems, operate the volume/pressure transfer valve (multistage pumps only), operate auxiliary cooling systems, make the transition between internal and external water sources, and assemble hose lines, nozzles, valves, and appliances.

12.4.5 Pump a supply line of 2½ in. (65 mm) or larger, given a relay pumping evolution the length and size of the line and the desired flow and intake pressure, so that the correct pressure and flow are provided to the next pumper in the relay.

(A) Requisite Knowledge. Hydraulic calculations for friction loss and flow using both written formulas and estimation methods, safe operation of the pump, problems related to small-diameter or dead-end mains, low-pressure and private water supply systems, hydrant coding systems, and reliability of static sources.

(B) Requisite Skills. The ability to position a pumper to operate at a fire hydrant and at a static water source, power transfer from vehicle engine to pump, draft, operate pumper pressure control systems, operate the volume/pressure transfer valve (multistage pumps only), operate auxiliary cooling systems, make the transition between internal and external water sources, and assemble hose lines, nozzles, valves, and appliances.

12.4.6 Produce a foam fire stream, given foam-producing equipment, so that proportioned foam is provided.

(A) Requisite Knowledge. Proportioning rates and concentrations, equipment assembly procedures, foam system limitations, and manufacturer's specifications.

(B) Requisite Skills. The ability to operate foam proportioning equipment and connect foam stream equipment.

12.4.7 Supply water to fire sprinkler and standpipe systems, given specific system information and a pumper, so that water is supplied to the system at the correct volume and pressure.

(A) Requisite Knowledge. Calculation of pump discharge pressure; hose layouts; location of fire department connection; alternative supply procedures if fire department connection is not usable; operating principles of sprinkler systems as defined in NFPA 13, NFPA 13D, and NFPA 13R; fire department opera-

tions in sprinklered properties as defined in NFPA 13E; and operating principles of standpipe systems as defined in NFPA 14.

(B) Requisite Skills. The ability to position a pumper to operate at a fire hydrant and at a static water source, power transfer from vehicle engine to pump, draft, operate pumper pressure control systems, operate the volume/pressure transfer valve (multistage pumps only), operate auxiliary cooling systems, make the transition between internal and external water sources, and assemble hose lines, nozzles, valves, and appliances.

Chapter 13 Apparatus — Aerial Device (NFPA 1002)

13.1* General. For qualification as fire apparatus driver/operator — aerial, the candidate shall meet the requirements defined in Chapters 4, 6 (or Chapters 5 or 6 in NFPA 1081), 11, and 13.

13.2 Preventative Maintenance.

13.2.1 Perform the visual and operation checks on the systems and components specified in the following list in addition to those specified in 11.2.1, given an aerial apparatus, and policies and procedures of the jurisdiction, so that the operational readiness of the aerial apparatus is verified:

(1) Cable systems (if applicable)
(2) Aerial device hydraulic systems
(3) Slides and rollers
(4) Stabilizing systems
(5) Aerial device safety systems
(6) Breathing air systems
(7) Communication systems

(A) Requisite Knowledge. Manufacturer's specifications and requirements, and policies and procedures of the jurisdiction.

(B) Requisite Skills. The ability to use hand tools, recognize system problems, and correct any deficiency noted according to policies and procedures.

13.3 Operations.

13.3.1 Maneuver and position an aerial apparatus, given an aerial apparatus, an incident location, a situation description, and an assignment, so that the apparatus is positioned for correct aerial device deployment.

(A) Requisite Knowledge. Capabilities and limitations of aerial devices related to reach, tip load, angle of inclination, and angle from chassis axis; effects of topography, ground, and weather conditions on deployment; and use of the aerial device.

(B) Requisite Skills. The ability to determine a correct position for the apparatus, maneuver apparatus into that position, and avoid obstacles to operations.

13.3.2 Stabilize an aerial apparatus, given a positioned vehicle and the manufacturer's recommendations, so that power can be transferred to the aerial device hydraulic system and the device can be deployed.

(A) Requisite Knowledge. Aerial apparatus hydraulic systems, manufacturer's specifications for stabilization, stabilization requirements, and effects of topography and ground conditions on stabilization.

(B) Requisite Skills. The ability to transfer power from the vehicle's engine to the hydraulic system and operate vehicle stabilization devices.

13.3.3 Maneuver and position the aerial device from each control station, given an incident location, a situation description, and an assignment, so that the aerial device is positioned to accomplish the assignment.

(A) Requisite Knowledge. Aerial device hydraulic systems, hydraulic pressure relief systems, gauges and controls, cable systems, communications systems, electrical systems, emergency operating systems, locking systems, manual rotation and lowering systems, stabilizing systems, aerial device safety systems, system overrides and the hazards of using overrides, safe operational limitations of the given aerial device, safety procedures specific to the device, and operations near electrical hazards and overhead obstructions.

(B) Requisite Skills. The ability to raise, rotate, extend, and position to a specified location, as well as lock, unlock, retract, lower, and bed the aerial device.

13.3.4 Lower an aerial device using the emergency operating system, given an aerial device, so that the aerial device is lowered to its bedded position.

(A) Requisite Knowledge. Aerial device hydraulic systems, hydraulic pressure relief systems, gauges and controls, cable systems, communications systems, electrical systems, emergency operating systems, locking systems, manual rotation and lowering systems, stabilizing systems, aerial device safety systems, system overrides and the hazards of using overrides, safe operational limitations of the given aerial device, safety procedures specific to the device, and operations near electrical hazards and overhead obstructions.

(B) Requisite Skills. The ability to rotate and position to center, unlock, retract, lower, and bed the aerial device using the emergency operating system.

13.3.5 Deploy and operate an elevated master stream, given an aerial device, a master stream device, and a desired flow, so that the stream is effective.

(A) Requisite Knowledge. Nozzle reaction, range of operation, and weight limitations.

(B) Requisite Skills. The ability to connect a water supply to a master stream device and control an elevated nozzle.

Chapter 14 Apparatus — Tiller (NFPA 1002)

14.1* General. For qualification as fire apparatus driver/operator — tiller, the candidate shall meet the requirements defined in Chapters 4, 6, 11, 13, and 14.

14.2 Operations.

14.2.1* Perform the practical driving exercises specified in 11.3.2 through 11.3.5 from the tiller position, given a qualified driver, an aerial apparatus equipped with a tiller, and a spotter for backing up, so that each exercise is performed without striking the vehicle or obstructions.

(A) Requisite Knowledge. Capabilities and limitations of tiller aerial devices related to reach, tip load, angle of inclination, and angle from chassis axis; effects of topography, ground, and weather conditions on safe deployment; and use of a tiller aerial device.

(B) Requisite Skills. The ability to determine a correct position for the tiller, maneuver the tiller into that position, and avoid obstacles to operations.

14.2.2 Operate an aerial apparatus equipped with a tiller from the tiller position over a predetermined route on a public way, using the maneuvers specified in 11.3.1, given a qualified driver, an aerial apparatus equipped with a tiller, and a spotter for backing up, so that the vehicle is operated in compliance with all applicable state and local laws, departmental rules and regulations, and the requirements of NFPA 1500, Section 4.2.

(A) Requisite Knowledge. Principles of tiller operation, methods of communication with the driver, the effects on vehicle control of general steering reactions, night driving, negotiating intersections, and manufacturer operation limitations.

(B) Requisite Skills. The ability to operate the communication system between the tiller operator's position and the driver's compartment; operate passenger restraint devices; maintain control of the tiller while accelerating, decelerating, and turning; operate the vehicle during nonemergency conditions; and operate under adverse environmental or driving surface conditions.

14.2.3 Position an aerial apparatus equipped with a tiller from the tiller position, given the apparatus operating instructions, an incident location, a situation description, and an assignment, so that the aerial device is positioned and stabilized to accomplish the assignment.

(A) Requisite Knowledge. Principles of positioning and stabilizing the aerial apparatus from the tiller position.

(B) Requisite Skills. The ability to determine a correct position for the tiller, maneuver the tiller into that position, and avoid obstacles to operations.

Chapter 15 Apparatus — Wildland Fire Suppression (NFPA 1002)

15.1 General. For qualification as fire apparatus driver/operator — wildland fire suppression, the candidate shall meet the requirements defined in Chapters 4, 11, and 15.

15.2 Communications. This duty shall involve using communications equipment and technology in accordance with the policies and procedures of the AHJ and the JPRs in 15.2.1 through 15.2.2.

15.2.1 Initiate the response to a reported emergency, given the report of an emergency, fire department SOPs, and communications equipment and technology, so that all necessary information is obtained, communications equipment and technology are operated correctly, and the information is relayed promptly and accurately to the dispatch center. *(See A.5.2.1.)*

(A) Requisite Knowledge. Procedures for reporting an emergency, departmental SOPs for taking and receiving alarms, and the information needs of the dispatch center.

(B) Requisite Skills. The ability to operate fire department communications equipment and technology, relay information, and record information.

15.2.2 Transmit and receive communications using fire department equipment and technology, given equipment and technology and operating procedures, so that the information is accurate, complete, clear, and relayed within the timeframe established by the AHJ. *(See A.5.2.1.)*

(A) Requisite Knowledge. Departmental communication procedures and etiquette for routine traffic, emergency traffic, and emergency evacuation signals.

(B) Requisite Skills. The ability to operate communications equipment and technology and discriminate between routine and emergency traffic.

15.3 Preventative Maintenance.

15.3.1 Perform the visual and operational checks on the systems and components specified in the following list, in addition to those in 11.2.1, given a wildland fire apparatus, its manufacturer's specifications, and policies and procedures of the jurisdiction, so that the operational status is verified:

(1) Water tank or other extinguishing agent levels (if applicable)
(2) Pumping systems
(3) Foam systems

(A) Requisite Knowledge. Manufacturer's specifications and requirements, and policies and procedures of the jurisdiction.

(B) Requisite Skills. The ability to use hand tools, recognize system problems, and correct any deficiency noted according to policies and procedures.

15.4 Driving.

15.4.1* Operate a wildland fire apparatus, given a predetermined route off of a public way that incorporates the maneuvers and features that the driver/operator is expected to encounter during normal operations, so that the vehicle is operated in compliance with all applicable departmental rules and regulations and the design limitations of the vehicle.

(A) Requisite Knowledge. The effects on vehicle control of braking reaction time and load factors; effects of high center of gravity on rollover potential, general steering reactions, speed, and centrifugal force; applicable laws and regulations; principles of skid avoidance, night driving, shifting, and gear patterns; negotiating intersections, railroad crossings, and bridges; weight and height limitations for both roads and

bridges; identification and operation of automotive gauges; and operational limits.

(B) Requisite Skills. The ability to operate passenger restraint devices; maintain safe following distances; maintain control of the vehicle while accelerating, decelerating, and turning, given road, weather, and traffic conditions; operate during nonemergency conditions; operate under adverse environmental or driving surface conditions; and use automotive gauges and controls.

15.5 Operations.

15.5.1 Produce effective fire streams, given the sources specified in the following list, so that the pump is engaged, all pressure-control and vehicle safety devices are set, the rated flow of the nozzle is achieved, and the apparatus is monitored for potential problems:

(1) Water tank
(2)* Pressurized source
(3) Static source

(A) Requisite Knowledge. Hydraulic calculations for friction loss and flow using both written formulas and estimation methods, safe operation of the pump, correct apparatus placement, personal safety considerations, problems related to small-diameter or dead-end mains and low-pressure and private water supply systems, hydrant coding systems, and reliability of static sources.

(B) Requisite Skills. The ability to position a wildland fire apparatus to operate at a fire hydrant and at a static water source, place apparatus for fire attack, transfer power from vehicle engine to pump, draft, operate pumper pressure control systems, operate the volume/pressure transfer valve (multistage pumps only), operate auxiliary cooling systems, make the transition between internal and external water sources, and assemble hose lines, nozzles, valves, and appliances.

15.5.2 Pump a supply line, given a relay pumping evolution the length and size of the line and pumping flow and desired intake pressure, so that correct intake pressures and flow are provided to the next pumper in the relay.

(A) Requisite Knowledge. Hydraulic calculations for friction loss and flow using both written formulas and estimation methods, safe operation of the pump, problems related to small-diameter or dead-end main and low-pressure and private water supply systems, hydrant coding systems, and reliability of static sources.

(B) Requisite Skills. The ability to position a wildland apparatus to operate at a fire hydrant and at a static water source, transfer power from vehicle engine to pump, draft, operate pumper pressure control systems, operate the volume/pressure transfer valve (multistage pumps only), operate auxiliary cooling systems, make the transition between internal and external water sources, and assemble hose lines, nozzles, valves, and appliances.

15.5.3 Produce a foam fire stream, given foam-producing equipment, so that the correct proportion of foam is provided.

(A) Requisite Knowledge. Proportioning rates and concentrations, equipment assembly procedures, foam systems limitations, and manufacturer's specifications.

(B) Requisite Skills. The ability to operate foam proportioning equipment and connect foam stream equipment.

Chapter 16 Apparatus — Aircraft Rescue and Firefighting (NFPA 1002)

16.1* General. For qualification as fire apparatus driver/operator — aircraft rescue and firefighting (ARFF) apparatus, the candidate shall meet the requirements defined in Chapters 4, 7, 8, 11, 16.

16.2 Preventative Maintenance.

16.2.1 Perform the visual and operational checks on the systems and components specified in the following list, in addition to those in 11.2.1, given an ARFF vehicle and the manufacturer's servicing, testing, and inspection criteria; and policies and procedures of the authority having jurisdiction (AHJ), so that the operational status of the vehicle is verified:

(1)* Agent dispensing systems
(2)* Secondary extinguishing systems
(3) Vehicle-mounted breathing air systems

(A) Requisite Knowledge. Manufacturer's specifications and requirements, and policies and procedures of the AHJ.

(B) Requisite Skills. The ability to use hand tools, recognize system problems, and correct any deficiency noted according to policies and procedures.

16.3 Driving.

16.3.1 Operate an ARFF vehicle, given a predetermined route on an airport that includes the maneuvers listed in 11.3.1, and operation in all aircraft movement areas, so that the vehicle is operated in compliance with all applicable federal, state/provincial, and local laws and departmental rules and regulations.

(A) Requisite Knowledge. The effects on vehicle control of liquid surge, braking reaction time, and load factors; effects of high center of gravity on rollover potential, general steering reactions, speed, and centrifugal force; applicable laws and regulations; principles of skid avoidance, night driving, shifting, and gear patterns; negotiating intersections, railroad crossings, and bridges; weight and height limitations for both roads and bridges; identification and operation of automotive gauges; operational limits; hazards of driving through smoke; control tower light signals; airfield markings; runway and taxiway designations; air and vehicle traffic patterns; and all aircraft movements areas.

(B) Requisite Skills. The ability to operate passenger restraint devices; maintain safe following distances; maintain control of the vehicle while accelerating, decelerating, and turning, given road, weather, and traffic conditions; operate under adverse environmental or driving surface conditions; and use automotive gauges and controls.

16.3.2 Operate an ARFF apparatus, given a predetermined route, off of an improved surface that incorporates the maneuvers and features that the driver/operator is expected to encounter during normal operations, so that the vehicle is operated in compliance with all applicable departmental rules and regulations and the design limitations of the vehicle. *(See A.15.4.1.)*

(A) Requisite Knowledge. The effects on vehicle control of braking reaction time and load factors; effects of high center of gravity on rollover potential, general steering reactions, speed, and centrifugal force; applicable laws and regulations; princi-

ples of skid avoidance, night driving, shifting, and gear patterns; negotiating intersections, railroad crossings, and bridges; weight and height limitations for both roads and bridges; identification and operation of automotive gauges; and operational limits.

(B) Requisite Skills. The ability to operate passenger restraint devices; maintain safe following distances; maintain control of the vehicle while accelerating, decelerating, and turning, given road, weather, and traffic conditions; operate during nonemergency conditions; operate under adverse environmental or driving surface conditions; and use automotive gauges and controls.

16.4 Operations.

16.4.1 Maneuver and position an ARFF vehicle, given an incident location and description that involves the largest aircraft that uses the airport, so that the vehicle is positioned for correct operation at each operational position for the aircraft.

(A) Requisite Knowledge. Vehicle positioning for firefighting and rescue operations; tower light signals, aircraft recognition, airport markings, and capabilities and limitations of turret devices; and effects of topography, ground, and weather conditions on agent application, distribution rates, and density.

(B) Requisite Skills. The ability to determine a correct position for the apparatus, maneuver apparatus into that position, and avoid obstacles to operations.

16.4.2 Produce a fire stream while the vehicle is in both forward and reverse power modulation, given a discharge rate and intended target, so that the pump is engaged, the turrets are deployed, the agent is delivered to the intended target at the correct rate, and the apparatus is moved and monitored for potential problems.

(A) Requisite Knowledge. Principles of agent management and application, effects of terrain and wind on agent application, turret capabilities and limitations, aircraft danger areas, theoretical critical fire area and practical critical fire area, aircraft entry and egress points, and correct apparatus placement.

(B) Requisite Skills. The ability to provide power to the pump, determine a correct position for the apparatus, maneuver apparatus into that position, avoid obstacles to operations, apply agent, and determine the length of time an extinguishing agent will be available.

16.4.3 Produce a fire stream, given a rate of discharge and water supplied from the sources specified in the following list, so that the pump is engaged, the turrets are deployed, the agent is delivered to the intended target at the correct rate, and the apparatus is monitored for potential problems:

(1) The internal tank
(2)* Pressurized source
(3) Static source in fire apparatus equipped with drafting capabilities

(A) Requisite Knowledge. Principles of agent management and application, effects of terrain and wind on agent application, turret capabilities and limitations, tower light signals, airport markings, aircraft recognition, aircraft danger areas, theoretical critical fire area and practical critical fire area, aircraft entry and egress points, and correct apparatus placement.

(B) Requisite Skills. The ability to provide power to the pump, determine a correct position for the apparatus, maneuver apparatus into that position, avoid obstacles to operations, apply agent, and determine the length of time an extinguishing agent will be available.

Chapter 17 Apparatus — Mobile Water Supply (NFPA 1002)

17.1 General. For qualification as fire apparatus driver/operator — mobile water supply, the candidate shall meet the requirements defined in Chapters 4, 11, and 17.

17.2 Communications. This duty shall involve using communications equipment and technology in accordance with the policies and procedures of the authority having jurisdiction (AHJ) and the job performance requirements (JPRs) in 17.2.1 through 17.2.2.

17.2.1 Initiate the response to a reported emergency, given the report of an emergency, fire department standard operating procedures (SOPs), and communications equipment and technology, so that all necessary information is obtained, communications equipment and technology are operated correctly, and the information is relayed promptly and accurately to the dispatch center. *(See A.5.2.2.)*

(A) Requisite Knowledge. Procedures for reporting an emergency, departmental SOPs for taking and receiving alarms, and the information needs of the dispatch center.

(B) Requisite Skills. The ability to operate fire department communications equipment and technology, relay information, and record information.

17.2.2 Transmit and receive communications using fire department equipment and technology, given equipment and technology and operating procedures, so that the information is accurate, complete, clear, and relayed within the timeframe established by the AHJ. *(See A.5.2.2.)*

(A) Requisite Knowledge. Departmental communication procedures and etiquette for routine traffic, emergency traffic, and emergency evacuation signals.

(B) Requisite Skills. The ability to operate communications equipment and technology and discriminate between routine and emergency traffic.

17.3 Preventative Maintenance.

17.3.1 Perform visual and operational checks on the systems and components specified in the following list, in addition to those specified in 11.2.1, given a mobile water supply apparatus, and policies and procedures of the AHJ, so that the operational readiness of the mobile water supply apparatus is verified:

(1) Water tank and other extinguishing agent levels (if applicable)
(2) Pumping system (if applicable)
(3) Rapid dump system (if applicable)
(4) Foam system (if applicable)

(A) Requisite Knowledge. Manufacturer's specifications and requirements, and policies and procedures of the AHJ.

(B) Requisite Skills. The ability to use hand tools, recognize system problems, and correct any deficiency noted according to policies and procedures.

17.4 Operations.

17.4.1* Maneuver and position a mobile water supply apparatus at a water shuttle fill site, given a fill site location and one or more supply hose, so that the apparatus is positioned, supply hose are attached to the intake connections without having to stretch additional hose, and no objects are struck at the fill site.

(A) Requisite Knowledge. Local procedures for establishing a water shuttle fill site, method for marking the stopping position of the apparatus, and location of the water tank intakes on the apparatus.

(B) Requisite Skills. The ability to determine a correct position for the apparatus, maneuver apparatus into that position, and avoid obstacles to operations.

17.4.2* Maneuver and position a mobile water supply apparatus at a water shuttle dump site, given a dump site and a portable water tank, so that all of the water being discharged from the apparatus enters the portable tank and no objects are struck at the dump site.

(A) Requisite Knowledge. Local procedures for operating a water shuttle dump site and location of the water tank discharges on the apparatus.

(B) Requisite Skills. The ability to determine a correct position for the apparatus, maneuver apparatus into that position, avoid obstacles to operations, and operate the fire pump or rapid water dump system.

17.4.3* Establish a water shuttle dump site, given two or more portable water tanks, low-level strainers, water transfer equipment, fire hose, and a fire apparatus equipped with a fire pump, so that the tank being drafted from is kept full at all times, the tank being dumped into is emptied first, and the water is transferred from one tank to the next.

(A) Requisite Knowledge. Local procedures for establishing a water shuttle dump site and principles of water transfer between multiple portable water tanks.

(B) Requisite Skills. The ability to deploy portable water tanks, connect and operate water transfer equipment, and connect a strainer and suction hose to the fire pump.

Annex A Explanatory Material

Annex A is not a part of the requirements of this NFPA document but is included for informational purposes only. This annex contains explanatory material, numbered to correspond with the applicable text paragraphs.

A.1.3 Beginning with the publication of NFPA 1010, new editions of NFPA 1001, NFPA 1002, NFPA 1003, and NFPA 1005 will not be published as separate, standalone standards. Where an authority having jurisdiction (AHJ) wants to reference the latest edition of one or more of the previous standards, the referencing language should refer to NFPA 1010 or the specific chapters of NFPA 1010, as identified in Section 1.3. The numbers found in parentheses at the end of each chapter title refer to the former standalone documents and are intended to help users navigate between this standard and the former standalone documents.

A.3.2.1 Approved. The National Fire Protection Association does not approve, inspect, or certify any installations, procedures, equipment, or materials nor does it approve or evaluate testing laboratories. In determining the acceptability of installations or procedures, equipment, or materials, the "authority having jurisdiction" may base acceptance on compliance with NFPA or other appropriate standards. In the absence of such standards, said authority may require evidence of proper installation, procedure, or use. The "authority having jurisdiction" may also refer to the listings or labeling practices of an organization that is concerned with product evaluations and is thus in a position to determine compliance with appropriate standards for the current production of listed items.

A.3.2.2 Authority Having Jurisdiction (AHJ). The phrase "authority having jurisdiction," or its acronym AHJ, is used in NFPA standards in a broad manner because jurisdictions and approval agencies vary, as do their responsibilities. Where public safety is primary, the authority having jurisdiction may be a federal, state, local, or other regional department or individual such as a fire chief; fire marshal; chief of a fire prevention bureau, labor department, or health department; building official; electrical inspector; or others having statutory authority. For insurance purposes, an insurance inspection department, rating bureau, or other insurance company representative may be the authority having jurisdiction. In many circumstances, the property owner or his or her designated agent assumes the role of the authority having jurisdiction; at government installations, the commanding officer or departmental official may be the authority having jurisdiction.

A.3.2.3 Listed. The means for identifying listed equipment may vary for each organization concerned with product evaluation; some organizations do not recognize equipment as listed unless it is also labeled. The authority having jurisdiction should utilize the system employed by the listing organization to identify a listed product.

A.3.3.22 Fire Department. The term *fire department* includes private fire apparatus driver/operators, employed by private, facility/industrial fire response organizations.

A.3.3.23 Fire Department Vehicle. The term *fire vehicle* might be used by entities and personnel that are not municipal fire departments (e.g., facility fire brigades).

A.3.3.24 Fire Dynamics. Additional resources on fire dynamics include the following:

(1) Drysdale, D., *An Introduction to Fire Dynamics*
(2) Friedman, R., *Principles of Fire Protection Chemistry and Physics*

A.3.3.27 Firefighter II. This person will function as an integral member of a team of equally or less experienced firefighters to accomplish a series of tasks. When engaged in hazardous activities, the Firefighter II maintains direct communications with a supervisor.

A.3.3.32 Hazardous Area. The hazardous area can be adjusted by the incident commander, based on site conditions and risk analysis.

A.3.3.35 Land-Based Marine Firefighter. This definition does not imply accreditation or training for Safety of Life at Sea (SOLAS) or US Coast Guard (USCG) firefighting requirements.

A.3.3.44 National Defense Area. Establishment of a national defense area temporarily places such nonfederal lands under the effective control of the Department of Defense and results only from an emergency event. The senior DOD representative

at the scene will define the boundary, mark it with a physical barrier, and post warning signs. The landlord's consent and cooperation will be obtained whenever possible; however, military necessity will dictate the final decision regarding location, shape, and size of the national defense area.

A.3.3.47.2 Personal Protective Equipment (PPE — Fire Operations). For firefighters, approved personal protective equipment should meet the most recent edition of NFPA 1971, with self-contained breathing apparatus (SCBA) meeting NFPA 1981, and personal alert safety systems (PASS) meeting NFPA 1982.

A.3.3.65 Support Person. A non-hazardous atmosphere does not require the use of respiratory protection. Support operations can include communications, water supply connections, incident scene lighting, hoisting, and equipment care and maintenance.

A.3.3.68 Temporary Traffic Control (TTC) Device. Alerting road users and establishing a well-defined path to guide road users through the incident area will serve to protect the incident responders and those involved in working at the incident scene and will aid in moving road users expeditiously past or around the traffic incident, will reduce the likelihood of secondary traffic crashes, and will preclude unnecessary use of the surrounding local road system. Examples include a stalled vehicle blocking a lane, a traffic crash blocking the traveled way, a hazardous material spill along a highway, and natural disasters such as floods and severe storm damage. [**1091,** 2024]

A.3.3.69 Theoretical Critical Fire Area (TCA). The theoretical area adjacent to an aircraft in which fire must be controlled for the purpose of ensuring temporary fuselage integrity and providing an escape area for its occupants. [**460:**B.2.1]

The "Report of the Second Meeting of the ICAO Rescue and Fire Fighting Panel" (RFFP-II) had the benefit of large test fire experiments conducted by a member country aimed at estimating the size of the TCA (Geyer 1972). This study paid particular attention to the width on each side of the fuselage that would have to be secured to protect the aircraft's skin from melting under severe fire conditions. On the basis of the data presented in this report, the Panel agreed that the TCA should be a rectangle having as one dimension the overall length of the aircraft, and the other dimension determined by the following:

(1) For aircraft with an overall length of less than 65 ft (20 m): 40 ft (12 m) plus the width of the fuselage
(2) For aircraft with an overall length of 65 ft (20 m) or more: 100 ft (30 m) plus the width of the fuselage (Harley 1972, p. 3-1f)

[**460:**B.2.1]

The TCA serves only as a means for categorizing aircraft in terms of the magnitude of the potential fire hazard in which they might become involved. It is not intended to represent the average, maximum, or minimum spill fire size associated with a particular aircraft. The original formula for the maximum TCA, as presented in the RFFP-II report, was given as follows:

[A.3.3.69a]

$$A_T = L \times (30 + w) \text{ where } L > 20 \text{ m}$$

or

[A.3.3.69b]

$$A_T = L \times (100 + w) \text{ where } L > 65 \text{ ft, and}$$
$$A_T = L \times (12 + w) \text{ where } L < 20 \text{ m}$$

or

[A.3.3.69c]

$$A_T = L \times (40 + w) \text{ where } L < 65 \text{ ft}$$

where:
L = overall length of the aircraft
w = width of the aircraft fuselage
A_T = theoretical critical area (TCA)

[**460:**B.2.1]

The data analyzed by RFFP-II in its effort to respond to the issue of TCA versus practical critical area (PCA) appeared to indicate that the PCA was approximately two-thirds of the TCA. This had been verified by a study conducted by one of the member countries of actual spill fire sizes and aircraft accidents (Ansart 1970). Another analysis of aircraft rescue and firefighting (ARFF) operations had not included the study of the PCA as compared to the TCA (Harley 1972, p. 1-1). However, that study did compare the actual amount of water used for foam at those accidents with the amounts recommended by RFFP-I. It was found that out of 106 accidents for which this information was available, in 99 cases, or 93 percent, the amounts recommended by the Panel were in excess of those required in the actual aircraft accident. In light of the findings, the Panel decided to use two-thirds of the TCA as the PCA (Harley 1972, p. 3-3). *(See Figure A.3.3.69 for a graphic display of this concept.)* The formula for the PCA developed by RFFP-II for fixed-wing aircraft can be expressed as follows:

[A.3.3.64d]

$$A_T = L \times (100 + w) \text{ where } L > 65 \text{ ft, and}$$
$$A_T = L \times (12 + w) \text{ where } L < 20 \text{ m}$$

[**460:**B.2.1]

A.3.3.76 Wildland Suppression Fire Apparatus. These vehicles are expected to operate on a wide variety of surfaces, including off-road. They are equipped with fixed or portable pumps used to supply attack lines; however, these pumps are of a capacity that does not put the vehicle into the classification of attack or fire pump.

A.4.3.1.1 This document specifies the minimum JPRs for the positions identified in Chapters 5 through 17. The committee recognizes that emergency services organizations might have to invest considerable resources to provide the equipment and training needed to perform safely and efficiently. The committee does not mean to imply that organizations with limited resources cannot provide response services, only that the individuals charged with performing responsibilities are qualified to specific levels according to Chapters 5 through 17.

A.4.3.1.1.2 Organization or management responsibilities should be addressed by the agency that personnel represent. The AHJ should define the agency requirements for progression to positions of management responsibility.

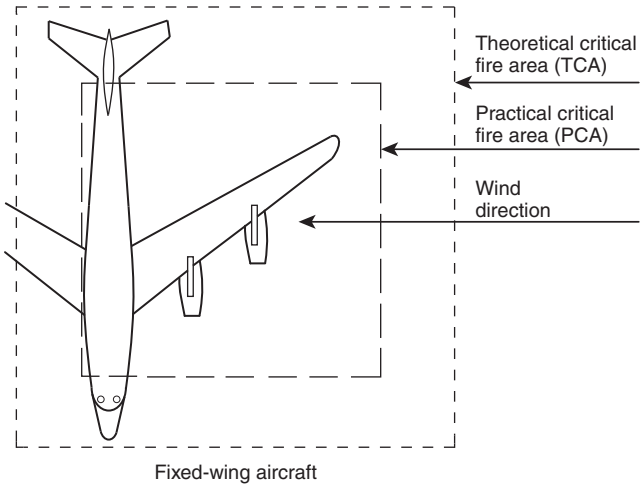


FIGURE A.3.3.69 Theoretical Critical Fire Area (TCA) Relative to Practical Critical Fire Area (PCA). [460:Figure B.2.1]

A.4.3.5.1 This document specifies the minimum JPRs for land-based marine firefighters. It is recognized that emergency services organizations might have to invest considerable resources to provide the equipment and training needed to perform safely and efficiently. It should not be implied that organizations with limited resources cannot provide response services, only that the individuals charged with performing responsibilities are qualified to specific levels according to Chapter 9.

A.4.3.7.1 The purpose of Chapters 11 through 17 is not to mandate that personnel who drive and operate fire apparatus meet the requirements of Chapters 11 through 17. Personnel should meet only those provisions that pertain to the types of apparatus they will be expected to drive and operate.

A.4.4.1.5 It is recommended, where practical, that evaluators be individuals who were not directly involved as instructors for the requirement being evaluated.

A.4.4.1.11 For example, in the United States, personnel should meet the requirements defined in the National Incident Management System (NIMS) and the Incident Command System (ICS), as mandated by HSPD-5 and PPD-8 and directed by the NIMS Integration Center.

A.4.4.3 The candidate should meet this requirement within a reasonable period of time prior to entering into training or testing to ensure his or her ability to safely perform the required tasks.

A.4.4.6 Programs such as the US Department of Transportation First Responder and American Red Cross curricula offer models that can be followed.

A.4.4.7.1 Chapters 4 and 11 through 17 apply to all fire apparatus and vehicles. Drivers of vehicles not specifically addressed in Chapters 12 through 17 (e.g., buses and staff, command, rescue, and utility vehicles) are expected to meet the requirements of Chapter 11. Agencies operating unique or special vehicles (e.g., tractors, bulldozers, cranes, and graders) should develop JPRs and training programs for those vehicles.

A.4.5 Remaining professionally competent is important for every practitioner in any field. In the rapidly changing and developing field of the fire service this is particularly important. The AHJ should consider establishing a path by which members can demonstrate continued JPR compliance and competency through continuing education or practice within the field consistent with current duties. It is recommended that any such program consider the following factors:

(1) Demonstrated and documented knowledge of, competence of additions, and revisions to the latest edition of the standards
(2) Documented training and education (including online) related to the standards since the last certification
(3) Documented experience in the field
(4) Demonstrated and documented successful performance of duties, which might include skills assessment
(5) Annual performance appraisals
(6) Documented teaching and instruction related to the field
(7) Commendations, awards, and recognition for the performance of related duties
(8) Memberships in professional organizations, including any positions held or special activities involved in the organization membership
(9) Published articles in trade journals, web-based publications, and other information distribution avenues
(10) Research and development activities related to the field
(11) Documented attendance at relevant conferences and training events
(12) Other factors specific to the field

A.5.1.1 A support person should be able to identify the signs and symptoms associated with behavioral and emotional distress, as well as create strategies and policies to address those stressors.

A.5.2.1 Personnel should be able to receive and accurately process information received at the station. Personnel used as telecommunicators (i.e., dispatchers) should meet the requirements of NFPA 1061 (as incorporated in NFPA 1225).

A.5.2.2 There are many scenarios where personnel might be required to activate an emergency call for assistance. These could include, but are not limited to, apparatus accidents, medical emergencies that occur away from the hot zone, or injuries that occur during training exercises. An emergency call for assistance should also include the terminology established by the AHJ (e.g., *mayday, firefighter down*).

A.5.3.1(B) A potentially hazardous atmosphere should be avoided altogether by the support person. If the initial conditions change, the support person should identify that change and escape the potentially hazardous atmosphere.

A.5.3.2 Other PPE might include hearing protection in cabs that have a noise level in excess of 90 dBa and eye protection for the support person riding in jump seats that are not fully enclosed.

A.5.3.3 The safety of responders operating at an emergency scene is a key concern and one of the primary skills that the support person must develop. Operations on roads and highways, on scenes where visibility is restricted, or where utilities can be unstable present a significant risk to the support person as they dismount from apparatus and initiate emergency operations. Special protective equipment and constant attention to potential hazards is essential.

The support person can be assigned to direct the movement of traffic at the scene or set up flare or cone lines either independently or in conjunction with law/traffic enforcement officers. The support person assigned to this duty (either briefly or until the incident is under control) should understand the proper techniques to control traffic and the appropriate use of protective clothing and signaling equipment.

Federal law requires that fire department SOPs when operating on the roadway be in compliance with the US Department of Transportation publication *Manual on Uniform Traffic Control Devices*.

A.5.3.4 Static water sources can include portable water tanks, ponds, creeks, and so forth.

A.5.3.4(B) A *hard suction* or *flexible intake* hose is used for drafting operations.

A.5.3.5 The support person should be able to extinguish incipient Class A fires such as wastebaskets, small piles of pallets, wood, or hay; Class B fires of approximately 9 ft^2 (0.84 m^2); and Class C fires where the electrical equipment is energized. The support person should have knowledge of Class D and K fires and their extinguishing agents. If the fire department has Class D or K type extinguishers, the support person should be knowledgeable about the devices and their uses.

A.5.5.2 Caution should be used when assigning the support person cleaning duties which might result in toxic exposure to hazardous byproducts of combustion.

A.6.1.1 A firefighter should be able to identify the signs and symptoms associated with behavioral and emotional distress, as well as strategies and policies to address those stressors.

A.6.2.3 An emergency call for assistance can be initiated by the use of a radio, pass device, or other means to alert others to a firefighter's need of emergency assistance. This should include the terms *mayday*, *firefighter down*, or such other terminology as determined by the AHJ.

A.6.3.1 The Firefighter I should already be wearing full protective clothing prior to the beginning of this SCBA-donning procedure. In addition to fully donning and activating the SCBA, the Firefighter I should also replace any personal protective clothing (i.e., gloves, protective hood, helmet, etc.) displaced during the donning procedure and activate the personal alert safety system (PASS) device.

A.6.3.2 Other personal protective equipment might include hearing protection in cabs that have a noise level in excess of 90 dBa, eye protection for firefighters riding in jump seats that are not fully enclosed, and SCBAs for those departments that require firefighters to don SCBAs while en route to the emergency.

A.6.3.3 The safety of responders operating at an emergency scene is a key concern and one of the primary skills that the firefighter must develop. Operations on roads and highways, on scenes where visibility is restricted, or where utilities can be unstable present a significant risk to the firefighter as they dismount from apparatus and initiate emergency operations. Special protective equipment and constant attention to potential hazards is essential.

Firefighters can be assigned to direct the movement of traffic at the scene or set up flare or cone lines either independently or in conjunction with law/traffic enforcement officers. A firefighter assigned to this duty (either briefly or until the incident is under control) should understand the proper techniques to control traffic and the appropriate use of protective clothing and signaling equipment.

Federal law requires that fire department SOPs when operating on the roadway be in compliance with the US Department of Transportation publication *Manual on Uniform Traffic Control Devices*.

A.6.3.4 The Firefighter I should be able to force entry through wood, glass, and metal doors that open in and out, overhead doors, and windows common to the community or service area.

A.6.3.5 When training exercises are intended to simulate emergency conditions, smoke-generating devices that do not create a hazard are required. Several accidents have occurred when smoke bombs or other smoke-generating devices that produce a toxic atmosphere have been used for training exercises. All exercises should be conducted in accordance with the requirements of NFPA 1404.

A.6.3.6 The firefighter should be able to accomplish this task with each type and length of ground ladder carried by the department.

A.6.3.7 Passenger vehicles include automobiles, light trucks, and vans.

A.6.3.8 The Firefighter I should be able to extinguish fires in stacked or piled materials such as hay bales, pallets, lumber, piles of mulch, sawdust, other bulk Class A materials, small unattached structures, and storage containers that are attacked from the exterior. The tactics for extinguishing each of these types of fires are similar enough to be included in one JPR.

Live fire evolutions should be conducted in accordance with the requirements of NFPA 1403. It is further recommended that prior to involvement in live fire evolutions, the firefighter demonstrate the use of SCBA in smoke and elevated temperature conditions.

In areas where environmental or other concerns restrict the use of Class A fuels for training evolutions, properly installed and monitored gas-fueled fire simulators might be substituted.

A.6.3.9 Fire departments and training organizations must use reason and good judgment when training firefighters to perform firefighter rescue (rapid intervention) and self-survival evolutions. Training programs should put more emphasis on avoiding being trapped or disoriented in severe fire conditions than they should on getting out of them. While learning practical firefighter rescue and self-survival skills is important, the particular skills that are taught should not require firefighters to use tools beyond the limits of their intended use, should not place the firefighters in an inordinate amount of danger during the training evolutions, and should be techniques that could realistically be required on the fireground. Fire departments and training organizations should balance the risk of injury or death to the firefighter during training on these evolutions with the actual chance that they would ever need to apply them in real life. There are numerous accounts of firefighters being injured or killed during rapid intervention and self-survival training of skills that will never, or should never, be performed on the fireground. One example of these questionable techniques is sliding down ground

ladders. In the rare event that more than one firefighter will need to exit the same window in an expedient manner, once the first firefighter steps down two or three rungs, they are not obstructing the next firefighter from exiting the window. Yet, numerous firefighters have been seriously injured or died attempting to perform this task in training.

A.6.3.9(B) It is not the intent of the Technical Committee on Firefighter Professional Qualifications to prohibit a firefighter from partially or completely removing the backpack assembly, as an emergency procedure only, to exit through a restricted passage, without removing the face piece or compromising the air supply in any manner.

A.6.3.10 The Firefighter I should be proficient in the various attack approaches for room and contents fires at three different levels (at grade, above grade, and below grade). Maintenance of body posture in the standard refers to staying low during initial attack, protecting oneself from falling objects, and otherwise using common sense given the state of the fire's growth or suppression. Live fire evolutions should be conducted in accordance with the requirements of NFPA 1403. It is further recommended that prior to involvement in live fire evolutions, the firefighter demonstrate the use of SCBA in smoke and elevated temperature conditions. In areas where environmental or other concerns restrict the use of Class A fuels for training evolutions, properly installed and monitored gas-fueled fire simulators might be substituted.

A.6.3.15 Static water sources can include portable water tanks, ponds, creeks, and so forth.

A.6.3.16 The Firefighter I should be able to extinguish incipient Class A fires such as wastebaskets, small piles of pallets, wood, or hay; Class B fires of approximately 9 ft^2 (0.84 m^2); and Class C fires where the electrical equipment is energized. The Firefighter I should have knowledge of Class D and K fires and their extinguishing agents. If the Fire Department has Class D or K type extinguishers, the firefighter should be knowledgeable on the devices and their use.

A.6.3.19 Protective clothing is not personal protective clothing as used throughout the rest of this document. Some jurisdictions provide firefighters with different clothing for ground cover fires than is worn for structural fires. This clothing can be substituted for structural protective clothing in order to meet the intent of this JPR.

A.6.5.1 It is known that during overhaul, many firefighters remove their respiratory protective equipment and, as a result, expose themselves to probable contamination by carcinogens, toxic substances, and so forth. Respiratory protective equipment should be worn during overhaul, and all PPE should be washed down after any incident involving fire prior to leaving the scene.

A.7.2.2 The Firefighter II could be assigned to accomplish or coordinate tasks away from direct supervision. Many of these tasks could result in the need for additional or replacement personnel due to the ever-changing conditions on the scene of an emergency. The Firefighter II is expected to identify these needs and effectively communicate this information within an incident management system. Use of radio communication equipment necessitates that these communications be accurate and efficient.

A.7.3.1 The Firefighter II should be able to accomplish this task with each type of foam concentrate used by the jurisdiction. This could include the use of both Class A and B foam concentrates on appropriate fires. When using Class B foams to attack flammable or combustible liquid fires, the Firefighter II should extinguish a fire of at least 100 ft^2 (9 m^2). The Firefighter II is not expected to calculate application rates and densities. The intent of this JPR can be met in training through the use of training foam concentrates or gas-fired training props.

A.7.3.2 The Firefighter II should be able to coordinate the actions of the interior attack line team at common residential fires and small business fires in the fire department's district. Complex or large interior fire management should be left to the officers; however, this JPR will facilitate the development of the Firefighter II toward effectively handling specific assignments within large fires.

Jurisdictions that use Firefighter IIs as acting company officers should comply with the requirements of NFPA 1021.

A.7.3.4 Controlling flammable gas cylinder fires can be a very dangerous operation. The Firefighter II should act as a team member, under the direct supervision of an officer, during these operations.

A.7.3.5 The Firefighter II should be able to recognize important evidence as to a fire's cause and maintain the evidence so that further testing can be done without contamination or chain-of-custody problems. Evidence should be left in place (when possible; otherwise, chain of custody must be established), not altered by improper handling, walking, and so forth, and not destroyed. Possible means to protect evidence is to avoid touching, protect with salvage covers during overhaul, or rope off the area where the evidence lies. The Firefighter II is not intended to be highly proficient at origin and cause determination.

Jurisdictions that use Firefighter IIs to determine origin and cause should comply with the requirements of NFPA 1021.

A.7.4.1 In the context of this standard, the term *extricate* refers to those activities required to allow emergency medical personnel access to the victim, stabilization of the vehicle, the displacement or removal of vehicle components obstructing victim removal, and the protection of the victim and response personnel from hazards associated with motor vehicle accidents and the use of hand and power tools on a motor vehicle.

As persons performing extrication can be different from those performing medical functions, this standard does not address medical care of the victim. An awareness of the needs and responsibilities of emergency medical functions is recommended to allow for efficient coordination between the "extrication" team and the "medical" team.

A.7.4.2 The Firefighter II is not expected to be proficient in technical rescue skills. The Firefighter II should be able to help technical rescue teams in their efforts to safely manage structural collapses, trench collapses, cave and tunnel emergencies, water and ice emergencies, elevator and escalator emergencies, energized electrical line emergencies, and industrial accidents.

A.7.5.1 It is the intent of the committee to recognize that there are response areas that do not have private dwellings. The term *occupied structure* allows for greater flexibility and for the AHJ to determine which structures could be used for performing a fire safety survey. A fire safety survey is intended to be a basic survey of the property to identify major hazards

such as locked exits, nonoperational fire protection and detection systems, a lack of smoke alarms in residential occupancies, nonoperational water supplies, hazardous interior finishes, hazardous storage, and other items identified on the survey form. It is not intended to be a fire inspection conducted to the job performance requirements of a Fire Inspector as identified in NFPA 1031 (as incorporated in NFPA 1030).

A.7.5.2 The Firefighter II should be able to present basic information on how to do the following:

(1) Stop, drop, and roll when one's clothes are on fire
(2) Crawl low under smoke
(3) Plan and practice a home escape plan with two ways out of each room (especially sleeping rooms), a meeting place, and how to call the fire department (from the neighbor's house)
(4) Alert others to an emergency
(5) Call the fire department
(6) Test and maintain residential smoke alarms according to manufacturer's instructions

The Firefighter II is not expected to be an accomplished speaker or instructor.

A.7.5.3 The Firefighter II should be able to compile information related to potential emergency incidents within their community for use by officers in the development of preincident plans. Jurisdictions that use Firefighter IIs to develop preincident plans should comply with the requirements of NFPA 1021.

A.7.5.5(A) Procedures for conducting hose testing can be found in NFPA 1962.

A.8.1.1 Airport firefighters should possess knowledge of military aircraft at those airports that accept military aircraft or at those airports that are co-located with a military installation with either separate or shared runways. This knowledge should include the following:

(1) Military cargo/passenger aircraft
(2) Military tanker aircraft
(3) Military fighter/attack aircraft
(4) Military helicopter aircraft

USAF Technical Order 00-105E-9 contains specific information concerning aircraft rescue and firefighting procedures and should be consulted prior to any attempt to perform rescue operations if trained military specialists are not available for immediate assistance. USN/USMC aircraft information is located in NAVAIR 00-80R-14 and 00-80R-14-1. These documents contain specific information concerning firefighting and rescue operations for aircraft in the military inventory. They specifically address the following:

(1) *Entry.* If the emergency controls are activated, an explosive charge will explosively separate the canopy from the aircraft.
(2) *Ejection systems.* All fighter, bomber, and attack aircraft are equipped with ejection seats. Once access has been gained to the cockpit, caution is extremely important, because these ejection seats, when activated, are propelled out of the aircraft by an explosive charge. Airport Firefighters should not touch or activate any controls. Note that if a canopy or hatch has been separated from an aircraft, the ejection seat is automatically armed. Extreme caution must be exercised in crew removal.
(3) *Extrication.* The aircrew member is secured to the seat by a series of straps, harnesses, and restraint belts. These restraints can be released by cutting if the release procedure is unknown.
(4) *Ordnance.* Fighter and attack aircraft will have forward firing ordnance located in the forward part of the fuselage or wings.
(5) *Engine shutdown.* Engine shutdown usually can be accomplished by pulling T-handles, as on a commercial jet.

A.8.2.4 Hazardous conditions include foreign object debris (FOD), special fuels, fueling operations (grounding and bonding), welding operations, hazardous materials operations, corrosion control, fuel cell maintenance, and military operations.

A.8.3.1 The use of pressurized flammable gas or flammable liquid is acceptable for this simulation. Depending on the square footage of the local training simulators and the flow rate of the assigned application device, the specified time of extinguishment might need to be modified. When using simulators with lower square footage or different flow rates of agent application, the specified time of extinguishment will need to be proportional.

For example, a hand line flowing 95 gpm (359 L/min) would be required to extinguish a fire of 750 ft^2 in 90 seconds. The formula is 95 gpm/0.13 = 730 fire square footage for 750 ft^2 (69.7 m^2) fire with a flow rate at 359 L/min (95 gpm).

A.8.3.2 See A.8.3.1. For example, a candidate using a turret flowing 250 gpm (946 L/min) is required to extinguish a fire of 2067 ft^2 in 90 seconds for 2067 ft^2 (192 m^2) fire with a flow rate at 250 gpm (946 L/min).

A.8.3.3 Three-dimensional or running fuel fires involve a fuel leak from an elevated or pressurized source. The fuel burns as it falls through the air, and, once on the ground, the burning fuel can pool or run across the ground surface. These fuel fires are extremely difficult to extinguish. They must be recognized and action must be taken to extinguish them early in the incident or accident for successful firefighting operations. Typically, these fires cannot be extinguished by smothering agents such as AFFF, because those agents cannot seal the surface and exclude oxygen. Such fires are more successfully extinguished by shutting off the fuel flow or by using agents, such as dry chemicals, that interfere with the chemical or chain reaction.

A.8.3.4 This requirement can be met by using a structural burn facility that is configured to simulate the interior layout and dimensions of an aircraft fuselage and that contains mannequins to simulate victims. The mock-up should include at least three metal seats and training dummies to simulate victims. It is intended that the size of the aircraft be the largest type that normally uses the airport and that the hand line be appropriate to the size of the aircraft.

A.8.3.5 Shutting down the aircraft includes turning off engines/power units, electrical, and oxygen systems. Training and evaluation of engine/APU shut down and activation of onboard aircraft firefighting systems can be accomplished using simulation on actual aircraft or mock-ups.

A.8.3.7 Training and evaluation of this task can be accomplished using actual aircraft or mock-ups and smoke-generation devices used for training.

A.8.3.8 The replenishment task is time critical. Evaluating the proficiency of potential ARFF personnel to replenish the extinguishing agents on an ARFF vehicle requires that the AHJ evaluate several factors related to its own airport emergency plan in order to establish a fair benchmark for personnel. The following factors influence this time constraint:

(1) Size of the ARFF vehicles' agent reservoirs
(2) Available replenishment methods and their agent flow capacities
(3) Proximity of replenishment means to the potential ARFF emergency locations in and around the airport

In making these evaluations, the AHJ must keep in mind that its overall objective is to ensure an adequate agent flow at the scene during an emergency. The following is an example of determining the replenishment time variable:

If the typical ARFF vehicle on the airport runway holds 1500 gal (5677 L) of water and 150 gal (568 L) of aqueous film-forming foam (AFFF), the replenishment means is a fixed water hydrant located at the midway point of the runways. If a hydrant flow capacity is 250 gal (946 L/min) and if the average time to drive from the approach and departure end of any runway to the midpoint is 2 minutes, then a reasonable time to replenish a vehicle and return it to operation from the end of the runway is 18 minutes. This allows 2 minutes to drive to the hydrant, 4 minutes to connect to the hydrant, 7 minutes to fill the water tank, 3 minutes to disconnect from the hydrant, and 2 minutes to drive back to the end of the runway.

This might be considered a reasonable amount of time to replenish the vehicle at this particular airport, if additional vehicles are available to continue support at the emergency scene, but it might be entirely too slow for an airport where this ARFF vehicle is the only vehicle available to support an aircraft scene. In this case, the replenishment plan should be re-evaluated and adjusted to reduce the time required.

A.8.3.10 It is known that during overhaul, many Firefighters remove their respiratory protective equipment and as a result, expose themselves to probable contamination by carcinogens, toxic substances, and so forth. Respiratory protective equipment should be worn during overhaul and all PPE should be washed down after exposure in any incident involving fire.

A.8.4 One of the primary tasks of rescue operations is for the airport firefighter to maintain a habitable environment around the fuselage and to assist with aircraft evacuation by stabilizing slide chutes and assisting and controlling the evacuees.

A.8.4.1 Securing the aircraft can include chocking/pinning the landing gear, safety ejection/ballistic chute systems, canopies, and safety weapons systems. Shutting down the aircraft includes turning off engines/power units, electrical, and oxygen systems. Training and evaluation of these tasks can be accomplished using simulation on actual aircraft or mock-ups.

A.8.4.2 Training and evaluation of this task can be accomplished using actual aircraft or mock-ups.

A.9.2.2(A) The importance of having crew members present, especially the captain or first officer and chief engineer, cannot be overemphasized. These professionals and the other crew members know the layout of the vessel, the critical points of stability, and how to secure/activate ships' systems. They are an excellent resource for the IC and not to be ignored.

A.9.3.3 Water survival is defined as the ability to survive in the water in approved PPE.

A.9.3.4 The vessel's captain or their designated representative should be tasked with ensuring these documents are provided to fire officials on the pier or wharf. Marine vessels will have a prepared package already at the entry control point with the sentry or quarterdeck watch to make this a simplified process.

A.9.6.4 It is known that during overhaul, many firefighters remove their respiratory protective equipment and as a result, expose themselves to probable contamination by carcinogens, toxic substances, etc. Respiratory protective equipment should be worn during overhaul and all PPE should be washed down after exposures in any incident involving fire.

A.10.2 First aid provider, emergency medical responder (also known as medical first responder), emergency medical technician, advanced emergency medical technician, and paramedic are based on the USA National Scope of Practice Model or equivalent.

A.11.2.1 Routine tests, inspections, and servicing functions should be performed on a daily, weekly, monthly, or other periodic basis as determined by departmental policy. The specifications provided by the manufacturer for these functions should be followed.

A.11.2.1(2) For vehicles equipped with air brakes, the driver/operator should be capable of performing a full air-brake service test that includes the following:

(1) Test air leakage rate
(2) Test low-pressure warning signal
(3) Check that spring brakes come on automatically
(4) Check air rate of air pressure buildup
(5) Check air compressor governor cut-in and cut-out pressures
(6) Test parking brakes
(7) Test service brakes

A.11.3.1 The committee's intent is to have the following maneuvers and features accomplished by the driver/operator. The committee recognizes that each of these situations might not exist within the authority having jurisdiction. The committee considers the following driving situations essential to driver/operator skills:

(1) Four left turns and four right turns
(2) A straight section of urban business street or a two-lane rural road at least 1 mi (1.6 km) in length
(3) One through-intersection and two intersections where a stop has to be made
(4) One railroad crossing
(5) One curve, either left or right
(6) A section of limited-access highway that includes a conventional ramp entrance and exit and a section of road long enough to allow two lane changes
(7) A downgrade steep enough and long enough to require down-shifting and braking
(8) An upgrade steep enough and long enough to require gear changing to maintain speed
(9) One underpass or a low clearance or bridge

A.11.3.2 The alley dock exercise can be used as practice for meeting or in the evaluation of this requirement. This exercise measures a driver's ability to drive past a simulated dock or stall, back the apparatus into the space provided, and make a controlled stop. A dock or stall can be simulated by arranging barricades 40 ft (12.2 m) from a boundary line. These barricades should be 12 ft (3.7 m) apart, and the depth should be the length of the vehicle. The driver should pass the barricades with the dock on the left and then back the apparatus, using a left turn, into the stall. The exercise should then be repeated with the dock on the right side, using a right turn. *[See Figure A.11.3.2(a).]*

The apparatus station parking maneuver can also be used as practice for meeting or in the evaluation of this requirement. This exercise measures the driver's ability to back the apparatus into a fire station to park or to back the apparatus down a street to reverse the direction of travel. An engine bay can be simulated by allowing for a 20 ft (6.1 m) minimum setback from a street 30 ft (9 m) wide, with a set of barricades at the end of the setback, spaced 12 ft (3.7 m) apart to simulate the garage door. The setback from the street should be determined by the testing agency to ensure that the distances reflect those encountered by the apparatus driver during the normal course of duties. A marker placed on the ground should indicate to the operator the proper position of the left front tire of the vehicle once stopped and parked. A straight line can be provided to assist the operator while backing the apparatus, facilitating the use of vehicle mirrors. The minimum depth distance is determined by the total length of the vehicle. *[See Figure A.11.3.2(b).]*

Note that for large vehicles, such as ARFF apparatus, this course might need to be modified.

A.11.3.3 The serpentine exercise can be used as practice for meeting or in the evaluation of this requirement. This exercise measures a driver's ability to steer the apparatus in close limits without stopping. The exercise should be conducted with the apparatus moving first backward, then forward. The course or path of travel for this exercise can be established by placing a minimum of three markers, each spaced between 30 ft (9 m) and 38 ft (12 m) apart, in a line. The spacing of the markers should be based on the wheel base of the vehicle used. Adequate space must be provided on each side of the markers for the apparatus to move without impediment. The driver should drive the apparatus along the left side of the markers in a straight line and stop just beyond the last marker. The driver then should begin the exercise by backing the apparatus between the markers by passing to the left of marker No. 1, to the right of marker No. 2, and to the left of marker No. 3. At this point, the driver should stop the vehicle and then drive it forward between the markers by passing to the right of marker No. 3, to the left of marker No. 2, and to the right of marker No. 1. *(See Figure A.11.3.3.)*

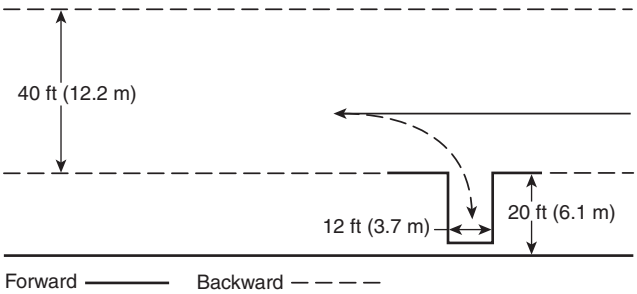


FIGURE A.11.3.2(a) Alley Dock Exercise.

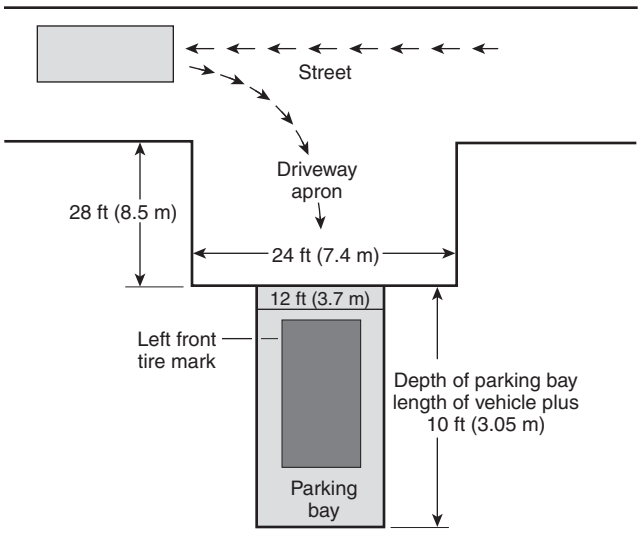


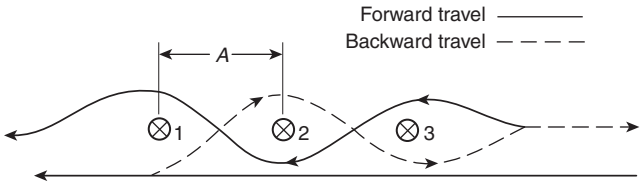
FIGURE A.11.3.2(b) Station Parking Procedure Drill.

Note that for large vehicles, such as ARFF apparatus, this course might need to be modified.

A.11.3.4 The confined space turnaround can be used as practice for meeting or in the evaluation of this requirement. This exercise measures the driver's ability to turn the vehicle around in a confined space without striking obstacles. The turn is accomplished within an area 50 ft × 100 ft (15.24 m × 30.5 m). The driver moves into the area from a 12 ft (3.7 m) opening in the center of one of the 50 ft (15.24 m) legs, turns the vehicle 180 degrees, and returns through the opening. There is no limitation on the number of times the driver has to maneuver the vehicle to accomplish this exercise, but no portion of the vehicle should extend over the boundary lines of the space. *(See Figure A.11.3.4.)*

Note that for large vehicles, such as ARFF apparatus, this course might need to be modified.

A.11.3.5 The diminishing clearance exercise can be used as practice for meeting or in the evaluation of this requirement. This exercise measures a driver's ability to steer the apparatus in a straight line, to judge distances from wheel to object, and to stop at a finish line. The speed at which a driver should operate the apparatus is optional, but it should be great enough to necessitate quick judgment. The course for this exercise is created by arranging two rows of markers to form a lane 75 ft (22.9 m) long. The lane varies in width from the vehi-



A: 30 ft to 38 ft (9 m to 12 m) based on vehicle wheel base

FIGURE A.11.3.3 Serpentine Exercise.

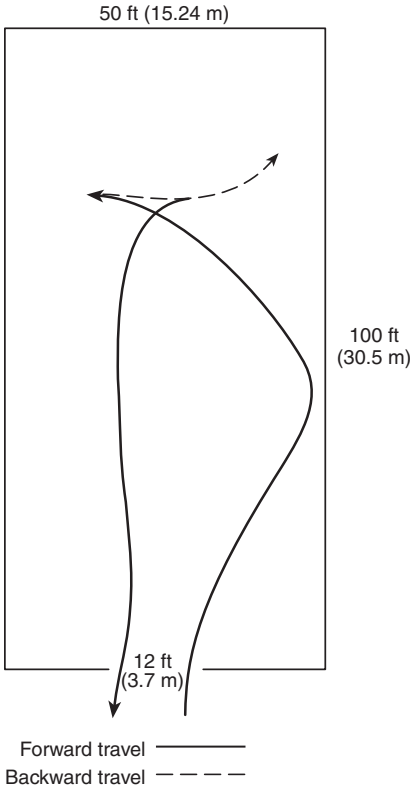


FIGURE A.11.3.4 Confined Space Turnaround.

cle width plus 16 in. (41 cm) to a diminishing clearance of the vehicle width plus 4 in. (10.2 cm). The driver should maneuver the apparatus through this lane without touching the markers. The vehicle should be stopped at a finish line 50 ft (15.24 m) beyond the last marker. No portion of the vehicle should protrude beyond this line. Vertical clearance judgment should be evaluated using a prop with a crossbar that is adjustable, based on the vehicle height. During the evaluation, the driver should drive forward and back through the prop with the crossbar at several differing heights, including one that is lower than the top of the vehicle. The prop should not be struck. The intent of the vertical clearance judgment is for proper identification of the furthermost point in the form of the apparatus. In situations where the apparatus is gaining entry to roadways or limited-height areas, the driver/operator must allow appropriate space ahead of the apparatus in order to avoid striking objects or to avoid extending apparatus into traffic lanes. *(See Figure A.11.3.5.)*

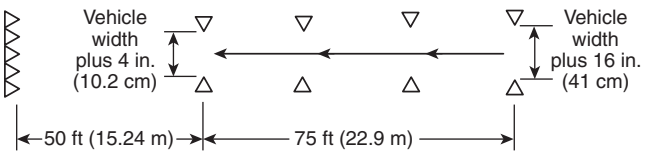


FIGURE A.11.3.5 Diminishing Clearance Exercise.

A.11.3.6 Simulated emergency driving conditions should be restricted to a controlled area. Public ways should not be used for these activities.

A.11.3.7 The committee's intent for this job performance requirement is for the driver/operator to be able to operate all major equipment and mechanical systems that are attached to the apparatus, other than those covered in Chapters 12 through 17. These types of equipment and systems include, but are not limited to, electric generation equipment, floodlighting systems, air compressors, air cascade systems, hydraulic rescue tool systems, power reels for air or hydraulic hose, cranes and stabilizers, and A-frames or other lifting equipment.

A.12.4.4(2) Pressurized sources include the following:

(1) Connection to a hydrant
(2) Supply line from another pumping source

A.13.1 The requirements of Chapter 13 specify that the candidate shall meet the requirements of Firefighter I as specified in Chapter 6 before qualification as a fire apparatus driver/operator. This means that the individual applying for qualification as a fire apparatus driver/operator has met all of the objectives in Chapter 6. These objectives include further requirements in areas such as fire hose, nozzles, and appliances; fire streams; water supplies; and sprinklers. These requirements are in addition to the requirements of Chapter 13. Any firefighter who has already been qualified as a Firefighter I should review the requirements of Chapter 6, as the candidate can be tested on the requirements included therein.

A.14.1 The requirements of Chapter 14 specify that the candidate shall meet the requirements of Firefighter I as specified in Chapter 6 before qualification as a fire apparatus driver/operator. This means that the individual applying for qualification as a fire apparatus driver/operator has met all of the objectives in Chapter 6. These objectives include further requirements in areas such as fire hose, nozzles, and appliances; fire streams; water supplies; and sprinklers. These requirements are in addition to the requirements of Chapter 6. Any firefighter who has already been qualified as a Firefighter I should review the requirements of Chapter 6, as the candidate can be tested on the requirements included therein.

Some fire departments operate fire apparatus that are equipped with a tiller (i.e., tillered rescue apparatus), but not an aerial device. The applicable portions of this chapter should be used as the basis for training personnel to drive those types of apparatus.

A.14.2.1 See A.11.3.3 through A.11.3.5.

A.15.4.1 Each of the following maneuvers and features is considered essential to driver/operator skills and should be accomplished by the driver/operator candidate:

(1) Loose or wet soil
(2) Steep grades (30 percent fore and aft)
(3) Limited sight distance
(4) Blind curve
(5) Vehicle clearance obstacles (height, width, undercarriage, angle of approach, angle of departure)
(6) Limited space for turnaround
(7) Side slopes (20 percent side to side)

A.15.5.1(2) Pressurized sources include the following:

(1) Connection to a hydrant
(2) Supply line from another pumping source

A.16.1 The requirements of Chapter 16 specify that the candidate shall meet the requirements of Firefighter II as specified in Chapter 7 before qualification as a fire apparatus driver/operator. This means that the individual applying for qualification as a fire apparatus driver/operator has met all of the objectives in Chapters 6 and 7. These objectives include further requirements in areas such as fire hose, nozzles, and appliances; fire streams; water supplies; and sprinklers. These requirements are in addition to the requirements of Chapter 16. Any firefighter who has already been qualified as a Firefighter II should review the requirements of Chapters 6 and 7, as the candidate can be tested on the requirements included therein.

A.16.2.1(1) An agent dispensing system is the primary fire suppression agent carried on ARFF vehicles.

A.16.2.1(2) A secondary extinguishing system is a separate system, independent of the primary system. It includes Halon 1211 (its future replacement), dry chemical, and other such systems used for specific types of aircraft-associated fires.

A.16.4.3(2) Pressurized sources include the following:

(1) Connection to a hydrant
(2) Supply line from another pumping source

A.17.4.1 The intent of this requirement is for the driver/operator to be able to position the vehicle at a water shuttle fill site that has been established prior to the vehicle's arrival. A fire department pumper will connect to a water supply source and lay hose out that can be attached to the mobile water supply apparatus once it arrives at the fill site. If the jurisdiction operates its fill site operations in a different manner, this requirement might need to be adjusted.

A.17.4.2 The intent of this requirement is for the driver/operator to be able to position the vehicle at a water shuttle dump site that has been established prior to the vehicle's arrival. The dump site will consist of one or more portable tanks that have been deployed on the ground. A fire department pumper drafts water from the portable tanks for use on the incident. The mobile water supply apparatus' function is to dump their load into the portable tank and return to the fill site for another load. Depending on the design of the mobile water supply apparatus, one of three methods can be used to discharge water into the portable water tank. These methods include pumping the water off, using a gravity dump, or using a jet-assisted gravity dump. Depending on the design of the apparatus, water can be discharged from the front, rear, or either side of the vehicle.

A.17.4.3 A proper dump site involves the use of two or more portable tanks that are connected by a series of water transfer equipment. The water transfer equipment can be supplied by hoselines from the pumper that is supplying the fire scene or a second pumper placed at the drafting tank for the sole purpose of transferring water between the tanks. The goal is to keep the tank from which water is being drafted full at all times and the tank from which water is being dumped empty. This will ensure that mobile water supply apparatus that arrive at the dump site can unload their water and return for more in the shortest time possible.

Annex B Explanation of the Professional Qualifications Standards and Concepts of JPRs

This annex is not a part of the requirements of this NFPA document but is included for informational purposes only.

B.1 Explanation of the Professional Qualifications Standards and Concepts of Job Performance Requirements (JPRs). The primary benefit of establishing national professional qualifications standards is to provide both public and private sectors with a framework of the job requirements for emergency services personnel. Other benefits include enhancement of the profession, individual as well as organizational growth and development, and standardization of practices.

NFPA professional qualifications standards identify the minimum job performance requirements (JPRs) for specific emergency services levels and positions. The standards can be used for training design and evaluation, certification, measuring and critiquing on-the-job performance, defining hiring practices, job descriptions, and setting organizational policies, procedures, and goals.

Professional qualifications standards for specific jobs are organized by major areas of responsibility defined as duties. For example, the firefighter's duties might include fire department communications, fireground operations, and preparedness and maintenance, whereas the fire and life safety educator's duties might include education and implementation, planning and development, and evaluation. Duties are major functional areas of responsibility within a specific job.

The professional qualifications standards are written as JPRs. JPRs describe the performance required for a specific job and are grouped according to the duties of the job. The complete list of JPRs for each duty defines what an individual must be able to do in order to perform and achieve that duty.

B.2 The Parts of a JPR.

B.2.1 Critical Components. The JPR comprises three critical components, which are as follows:

(1) Task to be performed, partial description using an action verb *(See Figure B.2.1 for examples of action verbs used in the creation of JPRs.)*
(2) Tools, equipment, or materials that are to be provided to complete the task
(3) Evaluation parameters and performance outcomes

Table B.2.1 gives an example of the critical components of a JPR.

Table B.2.1 Example of a JPR

(1) Task to be performed	(1) Overhaul a fire scene,
(2) Tools, equipment, or materials	(2) given PPE, attack line, hand tools, flashlight, and an assignment,
(3) Evaluation parameters and performance outcomes	(3) so that structural integrity is not compromised, all hidden fires are discovered, fire cause evidence is preserved, and the fire is extinguished.

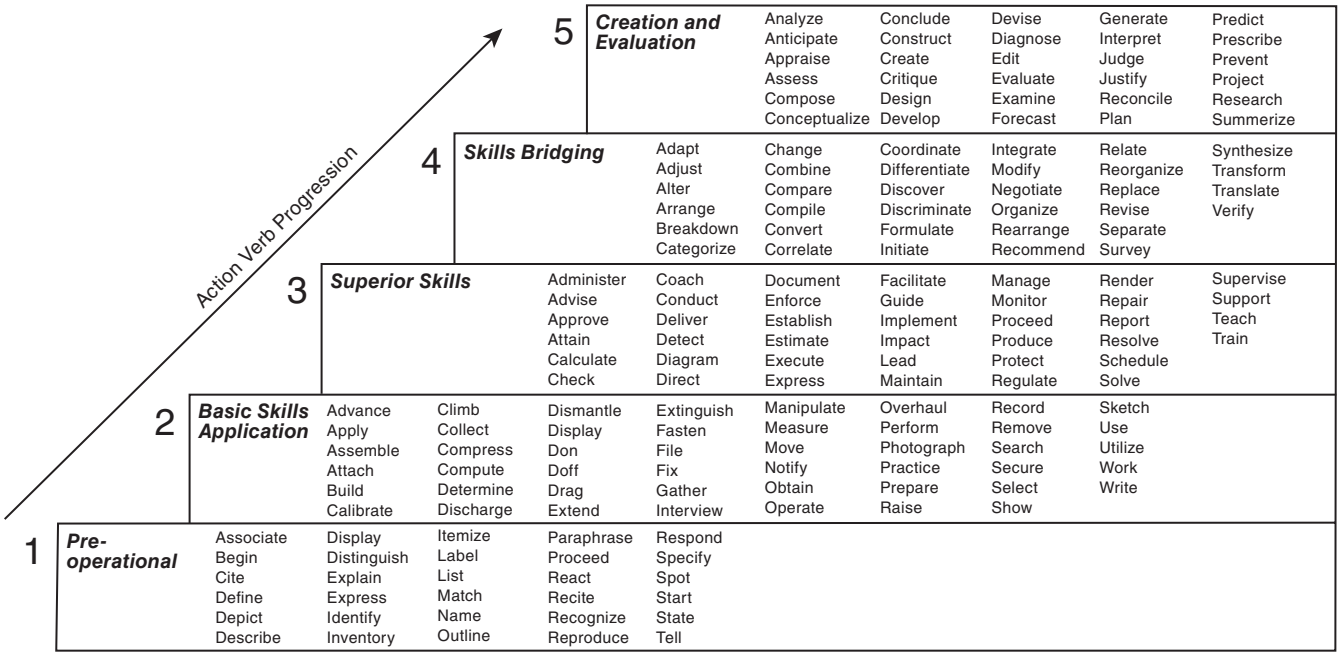


FIGURE B.2.1 Examples of Action Verbs.

B.2.1.1 The Task to Be Performed. The first component is a concise statement of what the person is required to do. A significant aspect of that phrase is the use of an action verb, which sets the expectation for what is to be accomplished.

B.2.1.2 Tools, Equipment, or Materials That Should Be Provided for Successful Completion of the Task. This component ensures that all the individuals completing the task are given the same tools, equipment, or materials when they are being evaluated. Both the individual and the evaluator will know what should be provided in order for the individual to complete the task.

B.2.1.3 Evaluation Parameters and Performance Outcomes. This component defines — for both the performer and the evaluator — how well the individual should perform each task. The JPR guides performance toward successful completion by identifying evaluation parameters and performance outcomes. This portion of the JPR promotes consistency in evaluation by reducing the variables used to gauge performance.

B.2.2 Requisite Knowledge and Skills. In addition to these three components, a JPR describes requisite knowledge and skills. As the term *requisite* suggests, these are the necessary knowledge and skills the individual should have prior to being able to perform the task. Requisite knowledge and skills are the foundation for task performance.

B.2.3 Examples. With the components and requisites combined, a JPR might be similar to the two examples in B.2.3.1 and B.2.3.2.

B.2.3.1 Example: Firefighter I. Overhaul a fire scene, given PPE, attack line, hand tools, flashlight, and an assignment, so that structural integrity is not compromised, all hidden fires are discovered, fire cause evidence is preserved, and the fire is extinguished.

(A) Requisite Knowledge. Types of fire attack lines and water application devices for overhaul, water application methods for extinguishment that limit water damage, types of tools and methods used to expose hidden fire, dangers associated with overhaul, signs of area of origin or signs of arson, and reasons for protection of fire scene.

(B) Requisite Skills. The ability to deploy and operate an attack line; remove flooring, ceiling, and wall components to expose void spaces without compromising structural integrity; apply water for maximum effectiveness; expose and extinguish hidden fires in walls, ceilings, and subfloor spaces; recognize and preserve signs of area of origin and arson; and evaluate for complete extinguishment.

B.2.3.2 Example: Fire and Life Safety Educator II. Prepare a written budget proposal for a specific program or activity, given budgetary guidelines, program needs, and delivery expense projections, so that all guidelines are followed and the budget identifies all program needs.

(A) Requisite Knowledge. Budgetary process; governmental accounting procedures; federal, state, and local laws; organizational bidding process; and organization purchase requests.

(B) Requisite Skills. Estimate project costs; complete budget forms; requisition/purchase orders; collect, organize, and format budgetary information; complete program budget proposal; and complete purchase requests.

B.3 Potential Uses for JPRs.

B.3.1 Certification. JPRs can be used to establish the evaluation criteria for certification at a specific job level. When used for certification, evaluation should be based on the successful completion of JPRs.

The evaluator would verify the attainment of requisite knowledge and skills prior to JPRs evaluation. Verification could be through documentation review or testing.

The individual seeking certification should be evaluated on the completion of the JPRs. The individual should perform the task and be evaluated based on the evaluation parameters and performance outcomes. This performance-based evaluation is based on practical exercises for psychomotor skills and written examinations for cognitive skills.

Psychomotor skills are those physical skills that can be demonstrated or observed. Cognitive skills cannot be observed but rather are evaluated on how an individual completes a task (process-oriented) or a task's outcome (product-oriented).

Performance evaluation requires that individuals be given the tools, equipment, or materials listed in the JPRs in order to complete the task.

Table B.3.1 provides examples of how assessment methodologies can be utilized by a certifying body.

Table B.3.1 Assessment Methodology Sample Utilization

Assessment of…	How Assessed?	How Scored?	Methodology is Likely…
Knowledge/facts *Action verb examples:* identify, define, list, cite, state, choose, name	A written test in which the candidate is required to provide specific answers to specific questions related to the JPRs *Examples:* multiple choice, sequencing, true/false, fill-in-the-blank	Responses are scored in relation to the answer that has been determined to be correct.	Cognitive
A manipulative skill in real time *Action verb examples*: climb, build, perform, raise, haul, don	A skills test to evaluate a candidate's ability to perform physical tasks in real time *Examples:* donning SCBA, raising ladders, tying rescue knots	The directly observed performance with the correct performance outcome of the skill is normally indicated as part of the yes/no or pass/fail scoring checklist.	Psychomotor (skills)
A cognitive skill that cannot be directly observed; the application of knowledge to yield a product *Action verb examples:* develop, create, write	A work product created by the candidate usually outside of the classroom setting *Examples*: creating a budget, report, proposal, lesson plan, incident action plan	Scoring rubric for expected responses evaluating how a candidate completes the task outcome after submission. Used to differentiate consistently between different degrees of candidate performance.	Product
A mental activity to perform a cognitive skill in real time that cannot be directly observed *Action verb examples:* inspect, investigate	Candidate performs the activity in the presence of the evaluator; the verbalization of mental thought "First, I…, then I…," etc. *Examples:* performing an inspection, conducting an investigation	Scoring rubric with questions and expected verbal responses. Used to differentiate consistently between different degrees of candidate performance.	Process
Documentation of the candidate's experience, training, and education against all JPRs *Action verb examples*: attend, participate, testify	A list of acceptable documents or items for each and every JPR *Examples:* coursework at training or college, participation in a certain number of investigations, testifying at court	This portfolio is evaluated using criteria that have been identified by the agency.	Portfolio

B.3.2 Curriculum Development and Training Design and Evaluation. The statements contained in this document that refer to job performance were designed and written as JPRs. Although a resemblance to instructional objectives might be present, these statements should not be used in a teaching situation until after they have been modified for instructional use.

JPRs state the behaviors required to perform specific skills on the job, as opposed to a learning situation. These statements should be converted into instructional objectives with behaviors, conditions, and the degree to be measured within the educational environment.

While the differences between JPRs and instructional objectives are subtle in appearance, their purposes differ. JPRs state what is necessary to perform the job in practical and actual experience. Instructional objectives, on the other hand, are used to identify what students should do at the end of a training session and are stated in behavioral terms that are measurable in the training environment.

By converting JPRs into instructional objectives, instructors would be able to clarify performance expectations and avoid confusion caused by using statements designed for purposes other than teaching. Instructors would also be able to add jurisdictional elements of performance into the learning objectives as intended by the developers.

Requisite skills and knowledge could be converted into enabling objectives, which would help to define the course content. The course content would include each item of the requisite knowledge and skills ensuring that the course content supports the terminal objective.

B.3.2.1 Example: Converting a Firefighter I JPR into an Instructional Objective. The instructional objectives are just two of several instructional objectives that would be written to support the terminal objective based on the JPR.

JPR: Perform overhaul at a fire scene, given PPE, attack line, hand tools, flashlight, and an assignment, so that structural integrity is not compromised, all hidden fires are discovered, fire cause evidence is preserved, and the fire is extinguished.

Instructional Objective (Cognitive): The Firefighter I will identify and describe five safety considerations associated with structural integrity compromise during overhaul as part of a written examination.

Instructional Objective (Psychomotor): The Firefighter I will demonstrate the designed use of tools and equipment during overhaul to locate and extinguish hidden fires without compromising structural integrity.

B.3.2.2 Example: Converting a Fire and Life Safety Educator II JPR into an Instructional Objective. This instructional objective is just one of several instructional objectives that could be written to support the terminal objective based on the JPR.

JPR: Prepare a written budget proposal for a specific program or activity, given budgetary guidelines, program needs, and delivery expense projections, so that all guidelines are followed and the budget identifies all program needs.

Instructional Objective (Cognitive): The Fire and Life Safety Educator II will list and describe the bidding process for the purchase of a published program using budgetary guidelines, program needs, and the guidelines established by local organizational procedures as part of a written examination.

Instructional Objective (Psychomotor): The Fire and Life Safety Educator II will lead in the purchase of a specific fire and life safety educational program by following the bidding process to completion, using local organizational guidelines, including budgetary procedures, program needs, and delivery expense projections.

B.4 Other Uses for JPRs. While the professional qualifications standards are used to establish minimum JPRs for qualification, they have been recognized as guides for the development of training and certification programs, as well as a number of other potential uses.

These areas might include the following:

(1) *Employee Evaluation/Performance Critiquing*. The professional qualifications standards can be used as a guide by both the supervisor and the employee during an evaluation. The JPRs for a specific job define tasks that are essential to perform on the job as well as the evaluation criteria to measure completion of the tasks.

(2) *Establishing Hiring Criteria*. The professional qualifications standards can be helpful in a number of ways to further the establishment of hiring criteria. The authority having jurisdiction (AHJ) could simply require certification at a specific level — for example, Firefighter I. The JPRs could also be used as the basis for pre-employment screening to establish essential minimal tasks and the related evaluation criteria. An added benefit is that individuals interested in employment can work toward the minimal hiring criteria at local colleges.

(3) *Employee Development*. The professional qualifications standards can be practical for both the employee and the employer in developing a plan for the employee's growth within the organization. The JPRs and the associated requisite knowledge and skills can be used as a guide to determine the additional training and education required for the employee to master the job or profession.

(4) *Succession Planning*. Succession planning addresses the efficient placement of individuals into jobs in response to current needs and anticipated future needs. A career development path can be established for targeted employees to prepare them for growth within the organization. The JPRs and requisite knowledge and skills could then be used to develop an educational path to aid in the employee's advancement within the organization or profession.

(5) *Establishing Organizational Policies, Procedures, and Goals*. The professional qualifications standards can be functional for incorporating policies, procedures, and goals into the organization or agency.

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Annex C Overview of JPRs for Support Person and Firefighter (NFPA 1001)

This annex is not a part of the requirements of this NFPA document but is included for informational purposes only.

C.1 Support Person and Firefighter. The matrices shown in Table C.1 are included to provide the user of the standard with an overview of the job performance requirements (JPRs) and the progression of the various levels found in the document. They are intended to assist the user of the document with the implementation of the requirements and the development of training programs using the JPRs.

Table C.1 Overview of JPRs for Support Person and Firefighter

Support Person	Firefighter I	Firefighter II
	General Requirements	
5.1 For qualification as support person, the candidate shall meet the requirements in Chapters 4 and 5 and in Chapter 5 of NFPA 470.	**6.1** For qualification as Firefighter I, the candidate shall meet the requirements in Chapters 4 and 6 and the requirements defined in Chapter 7 and Sections 9.2 and 9.6 of NFPA 470.	**7.1** For qualification as Firefighter II, the candidate shall meet the requirements in Chapters 4 through 7.
	General Knowledge Requirements	
5.1.1 The organization of the fire department; the role of the support person in the organization; the mission of fire service; the fire department's standard operating procedures (SOPs) and rules and regulations as they apply to the support person; how to identify the methods of heat transfer and understand the basic principles of fire dynamics; aspects of the fire department's member assistance program; and the importance of physical fitness and a healthy lifestyle to the performance of the duties of a support person.	**6.1.1** The organization of the fire department; the role of the Firefighter I in the organization; the mission of fire service; the fire department's standard operating procedures (SOPs) and rules and regulations as they apply to the Firefighter I; the value of fire and life safety initiatives in support of the fire department mission and to reduce firefighter line-of-duty injuries and fatalities; the role of other agencies as they relate to the fire department; the signs and symptoms of behavioral and emotional distress; aspects of the fire department's member assistance program; the importance of physical fitness and a healthy lifestyle to the performance of the duties of a firefighter; the critical aspects of NFPA 1500.	**7.1.1** Responsibilities of the Firefighter II in assuming and transferring command within an incident management system, performing assigned duties in conformance with applicable NFPA and other safety regulations and AHJ procedures, and the role of a Firefighter II within the organization.
5.1.2 The ability to don and doff a protective ensemble; perform a field reduction of contaminants; prepare the protective ensemble and equipment for reuse; and locate information in departmental documents, standards, and code materials.	**6.1.2** The ability to don personal protective clothing, doff personal protective clothing, perform field reduction of contaminants and prepare for reuse, hoist tools and equipment using ropes and the correct knot, and locate information in departmental documents and standard or code materials.	**7.1.2** The ability to determine the need for command, organize and coordinate an incident management system until command is transferred, and function within an assigned role in an incident management system.
	Communications	
5.2.1 Initiate the response to a reported emergency, given the report of an emergency, fire department SOPs, and communications equipment and technology, so that all necessary information is obtained, communications equipment and technology are operated correctly, and the information is relayed promptly and accurately to the dispatch center.	**6.2.1** Initiate the response to a reported emergency, given the report of an emergency, fire department SOPs, and communications equipment and technology, so that all necessary information is obtained, communications equipment and technology are operated correctly, and the information is relayed promptly and accurately to the dispatch center. *(See A.5.2.1.)*	**7.2.1** Complete a basic incident report, given the report forms, guidelines, and information, so that all pertinent information is recorded, the information is accurate, and the report is complete.
5.2.2 Transmit and receive communications using fire department equipment and technology, given equipment and technology and operating procedures, so that the information is accurate, complete, clear, and relayed within the time established by the AHJ.	**6.2.2** Transmit and receive communications using fire department equipment and technology, given equipment and technology and operating procedures, so that the information is accurate, complete, clear, and relayed within the time established by the AHJ. *(See A.5.2.2.)*	**7.2.2** Communicate the need for team assistance, given fire department communications equipment, SOPs, and a team, so that the supervisor is consistently informed of team needs, departmental SOPs are followed, and the assignment is accomplished safely.

(continues)

Table C.1 *Continued*

Support Person	Firefighter I	Firefighter II
	6.2.3 Activate an emergency call for assistance, given vision-obscured conditions, PPE, and department SOPs, so that the firefighter can be located and rescued.	
	Incident Operations	
5.3.1 Identify situations that require respiratory protection, given an incident and department SOPs, so that hazardous atmospheres requiring respiratory protection are avoided.	**6.3.1** Use self-contained breathing apparatus (SCBA) during emergency operations, given SCBA and other PPE, so that the SCBA is correctly donned, the SCBA is correctly worn, controlled breathing techniques are used, emergency procedures are enacted if the SCBA fails, all low-air warnings are recognized, respiratory protection is not intentionally compromised, and hazardous areas are exited prior to air depletion.	**7.3.1** Extinguish an ignitible liquid fire, operating as a member of a team, given an assignment, an attack line, PPE, a foam proportioning device, a nozzle, foam concentrates, and a water supply, so that the correct type of foam concentrate is selected for the given fuel and conditions, a properly proportioned foam stream is applied to the surface of the fuel to create and maintain a foam blanket, fire is extinguished, reignition is prevented, team protection is maintained with a foam stream, and the hazard is faced until retreat to safe haven is reached.
5.3.2 Respond on apparatus to an emergency scene, given a protective ensemble and other necessary PPE, so that the apparatus is correctly mounted and dismounted, seat belts are used while the vehicle is in motion, and other PPE is correctly used.	**6.3.2** Respond on apparatus to an emergency scene, given personal protective clothing and other necessary PPE, so that the apparatus is correctly mounted and dismounted, seat belts are used while the vehicle is in motion, and other PPE is correctly used.	**7.3.2** Coordinate an interior attack line for a team's accomplishment of an assignment in a structure fire, given attack lines, personnel, PPE, and tools, so that crew integrity is established; attack techniques are selected for the given level of the fire (e.g., attic, grade level, upper levels, or basement); attack techniques are communicated to the attack teams; constant team coordination is maintained; fire growth and development is continuously evaluated; search, rescue, and ventilation requirements are communicated or managed; hazards are reported to the attack teams; and incident command is apprised of changing conditions.
5.3.3 Establish and operate in protected work areas at emergency scenes, given an emergency scene, protective equipment, scene control devices, an assignment, and SOPs, so that procedures are followed, protective equipment and scene control devices are utilized appropriately, and protected work areas are established as directed.	**6.3.3** Establish and operate in work areas at emergency scenes, given protective equipment, traffic and scene control devices, structure fire and roadway emergency scenes, traffic hazards and downed electrical wires, photovoltaic power systems, battery storage systems, an assignment, and SOPs, so that procedures are followed, protective equipment is worn, protected work areas are established as directed using traffic and scene control devices, and the firefighter performs assigned tasks only in established, protected work areas.	**7.3.3** Operate a thermal imager (TI), given a TI, SOPs, PPE, and an assignment, so that victims are located in conditions of obscured visibility, hot spots are identified in a structure, overhaul is completed, and the liquid level in a container is determined.

(continues)

Table C.1 *Continued*

Support Person	Firefighter I	Firefighter II
	6.3.4 Force entry into a structure, given PPE, tools, and an assignment, so that the tools are used as designed, the barrier is removed, and the opening is in a safe condition and ready for entry.	**7.3.4** Control a flammable gas cylinder fire operating as a member of a team, given an assignment, a cylinder outside of a structure, an attack line, PPE, and tools, so that crew integrity is maintained, contents are identified, safe havens are identified prior to advancing, open valves are closed, flames are not extinguished unless the leaking gas is eliminated, the cylinder is cooled, cylinder integrity is evaluated, hazardous conditions are recognized and acted upon, and the cylinder is faced during approach and retreat.
	6.3.5 Exit a hazardous area as a team, given vision-obscured conditions, so that a safe haven is found before exhausting the air supply, others are not endangered, and the team integrity is maintained.	**7.3.5** Protect evidence of fire cause and origin, given a flashlight and overhaul tools, so that the evidence is noted and protected from further disturbance until investigators can arrive on the scene.
	6.3.6 Set up, mount, ascend, dismount, and descend ground ladders, given single and extension ladders, an assignment, and team members if needed, so that hazards are assessed, the ladder is stable, the angle is correct for climbing, extension ladders are extended to the necessary height with the fly locked, the top is placed against a reliable structural component, and the assignment is accomplished.	
	6.3.7 Attack a passenger vehicle fire operating as a member of a team, given PPE, an attack line, and hand tools, so that hazards are avoided, leaking flammable liquids are identified and controlled, protection from flash fires is maintained, all vehicle compartments are overhauled, and the fire is extinguished.	
	6.3.8 Extinguish fires in exterior Class A materials, given fires in stacked or piled materials, small unattached structures, and storage containers that can be fought from the exterior, attack lines, hand tools and master stream devices, and an assignment, so that exposures are protected, the spread of fire is stopped, collapse hazards are avoided, water application is effective, the fire is extinguished, and signs of the origin area(s) and arson are preserved.	

(continues)

Table C.1 *Continued*

Support Person	Firefighter I	Firefighter II
	6.3.9 Conduct a search and rescue in a structure operating as a member of a team, given an assignment, obscured vision conditions, PPE, a flashlight, forcible entry tools, hose lines, and ladders when necessary, so that ladders are correctly placed when used, all assigned areas are searched, all victims are located and removed, team integrity is maintained, and team members' safety — including respiratory protection — is not compromised. **6.3.10** Attack an interior structure fire operating as a member of a team, given an attack line, ladders when needed, PPE, tools, and an assignment, so that team integrity is maintained, the attack line is deployed for advancement, ladders are correctly placed when used, access is gained into the fire area, effective water application practices are used, the fire is approached correctly, attack techniques facilitate suppression given the level of the fire, hidden fires are located and controlled, the correct body posture is maintained, hazards are recognized and managed, and the fire is brought under control. **6.3.11** Perform horizontal ventilation on a structure operating as part of a team, given an assignment, PPE, ventilation tools, equipment, and ladders, so that the ventilation openings are free of obstructions, tools are used as designed, ladders are correctly placed, ventilation devices are correctly placed, and the structure is cleared of smoke. **6.3.12** Perform vertical ventilation on a structure as part of a team, given an assignment, PPE, ground and roof ladders, and tools, so that ladders are positioned for ventilation, a specified opening is created, all ventilation barriers are removed, structural integrity is not compromised, products of combustion are released from the structure, and the team retreats from the area when ventilation is accomplished. **6.3.13** Overhaul a fire scene, given PPE, an attack line, hand tools, a flashlight, and an assignment, so that structural integrity is not compromised, all hidden fires are discovered, fire cause evidence is preserved, and the fire is extinguished.	

(continues)

Table C.1 *Continued*

Support Person	Firefighter I	Firefighter II
	6.3.14 Conserve property as a member of a team, given salvage tools and equipment and an assignment, so that the building and its contents are protected from further damage.	
5.3.4 Connect a pumper to a water supply as a member of a team, given supply or intake hose, hose tools, and a fire hydrant or static water source, so that connections are tight and water flow is unobstructed.	**6.3.15** Connect a pumper to a water supply as a member of a team, given supply or intake hose, hose tools, and a fire hydrant or static water source, so that connections are tight and water flow is unobstructed.	
5.3.5 Extinguish incipient Class A, Class B, and Class C fires, given a selection of portable fire extinguishers, so that the correct extinguisher is chosen, the fire is completely extinguished, and correct extinguisher-handling techniques are followed.	**6.3.16** Extinguish incipient Class A, Class B, and Class C fires, given a selection of portable fire extinguishers, so that the correct extinguisher is chosen, the fire is completely extinguished, and correct extinguisher-handling techniques are followed.	
5.3.6 Operate emergency scene lighting, given fire service lighting equipment, power supply, an assignment, and a non-hazardous atmosphere, so that emergency scene lighting equipment is operated within the manufacturer's listed safety precautions.	**6.3.17** Operate emergency scene lighting, given fire service lighting equipment, power supply, and an assignment, so that emergency scene lighting equipment is operated within the manufacturer's listed safety precautions.	
5.3.7 Turn off building utilities, given tools, an assignment, and a non-hazardous atmosphere, so that the assignment is safely completed.	**6.3.18** Turn off building utilities, given tools and an assignment, so that the assignment is safely completed.	
	6.3.19 Combat a ground cover fire operating as a member of a team, given protective clothing, SCBA (if needed), hose lines, extinguishers or hand tools, and an assignment, so that threats to property are reported, threats to personal safety are recognized, retreat is quickly accomplished when warranted, and the assignment is completed.	
5.3.8 Tie a knot appropriate for hoisting tools, given a protective ensemble, tools, ropes, and an assignment, so that the knots used are appropriate for hoisting tools securely and as directed.	**6.3.20** Tie a knot appropriate for hoisting tools, given PPE, tools, ropes, and an assignment, so that the knots used are appropriate for hoisting tools securely and as directed.	
	6.3.21 Operate an air-monitoring instrument, given an air monitor and an assignment or task, so that the device is operated and the firefighter recognizes the high- or low-level alarms of the air monitor and takes action to mitigate the hazard.	
Rescue Operations		
5.4 This duty shall involve no requirements for the support person.	**6.4** This duty shall involve no requirements for Firefighter I.	**7.4.1** Extricate a victim entrapped in a motor vehicle as part of a team, given stabilization and extrication tools, so that the vehicle is stabilized, the victim is disentangled without further injury, and hazards are managed.

(continues)

Table C.1 *Continued*

Support Person	Firefighter I	Firefighter II
		7.4.2 Assist rescue operation teams, given standard operating procedures, necessary rescue equipment, and an assignment, so that procedures are followed, rescue items are recognized and retrieved in the time as prescribed by the AHJ, and the assignment is completed.
Fire and Life Safety Initiatives, Preparedness, and Maintenance		
5.5.1 Refill self-contained breathing apparatus (SCBA) cylinders, given SCBA cylinders and equipment, so that the SCBA cylinder is correctly filled, the pressure is within acceptable ranges, and the cylinder is ready to be connected to the SCBA.	**6.5.1** Clean and check ladders, ventilation equipment, SCBA, ropes, salvage equipment, and hand tools, given cleaning tools, cleaning supplies, and an assignment, so that equipment is clean and maintained according to manufacturer's or departmental guidelines, maintenance is recorded, and equipment is placed in a ready state or reported otherwise.	**7.5.1** Perform a fire safety survey in an occupied structure, given survey forms and procedures, so that fire and life safety hazards are identified, recommendations for their correction are made to the occupant, and unresolved issues are referred to the proper authority.
5.5.2 Clean and check ladders, ventilation equipment, ropes, salvage equipment, and hand tools, given cleaning tools, cleaning supplies, and an assignment, so that equipment is clean and maintained according to the manufacturer's or departmental guidelines, maintenance is recorded, and equipment is placed in a ready state or reported otherwise.		**7.5.2** Present fire safety information to station visitors or small groups, given prepared materials, so that all information is presented, the information is accurate, and questions are answered or referred.
5.5.3 Clean, inspect, and return the fire hose to service, given washing equipment, water, detergent, tools, and replacement gaskets, so that damage is noted and corrected, the hose is clean, and the equipment is placed in a ready state for service.	**6.5.2** Clean, inspect, and return fire hose to service, given washing equipment, water, detergent, tools, and replacement gaskets, so that damage is noted and corrected, the hose is clean, and the equipment is placed in a ready state for service.	**7.5.3** Prepare a preincident survey, given forms, necessary tools, and an assignment, so that all required occupancy information is recorded, items of concern are noted, and accurate sketches or diagrams are prepared. **7.5.4** Maintain power plants, power tools, and lighting equipment, given tools and manufacturers' instructions, so that equipment is clean and maintained according to manufacturer and departmental guidelines, maintenance is recorded, and equipment is placed in a ready state or reported otherwise. **7.5.5** Perform an annual service test on fire hose, given a pump, a marking device, pressure gauges, a timer, record sheets, and related equipment, so that procedures are followed, the condition of the hose is evaluated, any damaged hose is removed from service, and the results are recorded.

Annex D Overview of JPRs for Airport Firefighter (NFPA 1003)

This annex is not a part of the requirements of this NFPA document but is included for informational purposes only.

D.1 Airport Firefighter. The matrices shown in Table D.1 are included to provide the user of the standard with an overview of the job performance requirements (JPRs) and the progression of the various levels found in this document. They are intended to assist the user of the document with the implementation of the requirements and the development of training programs using the JPRs.

Table D.1 Overview of JPRs for Airport Firefighter

8.1 General. For qualification as airport firefighter, the candidate shall meet the requirements defined in Chapters 4, 7, and 8.	**8.1.1 General Knowledge Requirements.** Fundamental aircraft firefighting techniques, including the approach, positioning, initial attack, and selection, application, and management of the extinguishing agents; limitations of various sized hand lines; use of personal protective equipment (PPE); fire behavior; firefighting techniques in oxygen-enriched atmospheres; reaction of aircraft materials to heat and flame; critical components and hazards of civil aircraft construction and systems related to ARFF operations; special hazards associated with military aircraft systems; a national defense area and limitations within that area; characteristics of different aircraft fuels; hazardous areas in and around aircraft; aircraft fueling systems (hydrant/vehicle); aircraft egress/ingress (hatches, doors, and evacuation chutes); hazards associated with aircraft cargo, including dangerous goods; hazardous areas, including entry control points, crash scene perimeters, and requirements for operations within the hot, warm, and cold zones; and critical stress management policies and procedures. **8.1.2 General Skills Requirements.** Don PPE; operate hatches, doors, and evacuation chutes; approach, position, and initially attack an aircraft fire; select, apply, and manage extinguishing agents; shut down aircraft systems, including engine, electrical, hydraulic, and fuel systems; operate aircraft extinguishing systems, including cargo area extinguishing systems.
8.2 Response. This duty involves the timely arrival at an incident or accident and the capability to perform emergency functions. The duty also includes responding to hazardous conditions and performing standby operations.	**8.2.1** Respond to day and night incidents on and adjacent to the airport, given an assignment, operating conditions, a location, a grid map, a vehicle, and a prescribed response time, so that the route selected and taken provides access to the site within the allotted time. **8.2.2** Communicate critical incident information regarding an incident on or adjacent to an airport, given an assignment involving an incident and an incident management system (IMS) protocol, so that the information provided is accurate for the incident commander. **8.2.3** Communicate with applicable air traffic control facilities, given a response destination on or adjacent to an airport and radio equipment, so that all required clearances are obtained. **8.2.4** Perform an airport operation, given an assignment, a hazardous condition, and the airport policies and procedures, so that unsafe conditions are detected and reduced in accordance with the airport policies and procedures.

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