CERTIFICATION CURRICULUM MANUAL

CHAPTER ONE

BASIC STRUCTURE FIREFIGHTER

NFPA 1010, 2024 edition

Effective January 1, 2027

Texas Commission on Fire Protection
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COURSE OVERVIEW

The Firefighter I & II candidate is required to meet the Job Performance Requirements (JPRs) of Chapter 6 & 7 (respectively) of National Fire Protection Association (NFPA) 1010, *Standard on Professional Qualifications for Firefighters*, 2024 edition.

The following items are included in Chapter 1 of this certification curriculum manual:

- Course Overview
- Course Outline (establishes the recommended hours for teaching this course)
- Reference List (textbooks and other recommended course materials)
- Equipment List
- Course Instructor Information
- Performance Skills List

This is a required certification; therefore, an expanded curriculum is provided as a guideline when creating your own course lesson plans.

Performance skills are available in Chapter 1 of the Performance Skills Manual.

Instructional skills are available in Chapter 1 of the Instructional Skills Manual.

All documents in this curriculum manual, and in the skills manual, are available free of charge to download, copy and distribute as necessary. TCFP does not provide printed copies.

Definition of a Basic Structure Firefighter
For certification as a Basic Structure Firefighter, the candidate shall meet the requirements defined in Chapters 4 (General Requirements), 6 (Firefighter I), and 7 (Firefighter II) of NFPA 1010; along with the hazardous materials requirements defined in Chapters 5 (Hazardous Materials Awareness) and 7 (Hazardous Materials Operations), as well as Sections 9.2 (Hazardous Materials Mission Specific Competencies – Personal Protective Equipment) and 9.6 (Hazardous Materials Mission Specific Competencies – Product Control) of NFPA 470.

A Basic Structure Firefighter is an individual who has the knowledge, skills, and abilities to:

- don and doff PPE
- perform field reduction of contaminants and prepare for reuse
- hoist tools and equipment using ropes and the correct knot
- locate information in departmental documents and standard or code materials
- determine the need for command
- organize and coordinate an incident management system until command is transferred
- function within an assigned role in an incident management system

- meet the minimum requirements defined in the Hazardous Materials Awareness and Operations level curriculum

As defined in TAC Chapter §421.3

- ability to communicate verbally, via telephone and radio equipment
- ability to lift, carry, drag, and balance weight equivalent to the average human weight
- ability to interpret in English, written and oral instructions
- ability to work effectively in high stress situations
- ability to work effectively in an environment with loud noises and flashing lights
- ability to function through an entire work shift
- ability to calculate weight and volume ratios
- ability to read and understand English language manuals including chemical, medical and technical terms, and road maps
- ability to accurately discern street signs and address numbers
- ability to document in English, all relevant information in prescribed format in light of legal ramifications of such
- ability to converse in English with coworkers and other emergency response personnel
- ability to perform all tasks related to the protection of life and property, with good manual dexterity
- ability to bend, stoop, and crawl on uneven surfaces; ability to withstand varied environmental conditions such as extreme heat, cold, and moisture
- ability to work in low or no light, confined spaces, elevated heights, and other dangerous environments

COURSE OUTLINE

FIREFIGHTER I		
SECTION	**SUBJECT**	**RECOMMENDED HOURS**
6.1	General	36
6.2	Communications	4
6.3	Fireground Operations	226
6.4	Rescue Operations (Reserved for future use)	NONE
6.5	Preparedness and Maintenance	28
	TOTAL RECOMMENDED HOURS*	**294**
FIREFIGHTER II		
SECTION	**SUBJECT**	**RECOMMENDED HOURS**
7.1	General	12
7.2	Communications	8
7.3	Fireground Operations	76
7.4	Rescue Operations	24
7.5	Fire and Life Safety Initiatives, Preparedness and Maintenance	28
	TOTAL RECOMMENDED HOURS*	**148**
	GRAND TOTAL – FFI + FFII**	**442**

* Actual hours required will depend on the number of students, the number of examiners, availability of equipment, and the student skill level. Time for performance skill testing is included in the recommended hours.

** Refer to Chapter 6 of the TCFP Curriculum Manual for Hazardous Materials requirements.

SUPPLEMENTAL OUTLINE

FIREFIGHTER I		
Section	**Subject**	**Recommended Hours**
6.1	**General**	
6.1.1	General Knowledge Requirements • Organization • History • General safety	36
6.1.2	General Skills Requirements • Donning and doffing personal protective clothing • Field reduction of contaminants • Hoisting equipment using ropes • Locate information in departmental documents and standard or code materials	
6.2	**Communications**	
6.2.1	Initiate a response to a reported emergency	4
6.2.2	Transmit and receive messages using fire department equipment and technology	
6.2.3	Activate an emergency call for assistance	
6.3	**Fireground Operations**	
6.3.1	SCBA use during emergency operations	32
6.3.2	Responding on apparatus to an emergency scene	2
6.3.3	Working at emergency scenes	4
6.3.4	Force entry into a structure	12
6.3.5	Exiting a hazardous area as a team	8
6.3.6	Ladders	32
6.3.7	Vehicle fires	8
6.3.8	Exterior Class A fires	8
6.3.9	Search and rescue in structures	16
6.3.10	Interior firefighting	32
6.3.11	Horizontal ventilation	10
6.3.12	Vertical ventilation	10
6.3.13	Overhaul a fire scene	6
6.3.14	Property conservation	8
6.3.15	Water supply- connect to a pumper	8
6.3.16	Portable fire extinguishers	8
6.3.17	Emergency scene lighting	4
6.3.18	Utility control	4
6.3.19	Wildland/ground cover fires	8
6.3.20	Knots for hoisting tools	4
6.3.21	Air monitoring	2
6.4	**Rescue Operations** This duty shall involve no requirements for Firefighter I.	NONE

6.5	**Preparedness and Maintenance**	
6.5.1	Equipment care and maintenance	4
6.5.2	Fire service hose	24
	TOTAL RECOMMENDED HOURS*	**294**

* Actual hours required will depend on the number of students, the number of examiners, availability of equipment, and the student skill level. Time for performance skill testing is included in the recommended hours.

** Refer to Chapter 6 of the TCFP Curriculum Manual for Hazardous Materials requirements.

FIREFIGHTER II		
Section	**Subject**	**Recommended Hours**
7.1	**General**	
7.1.1	General Knowledge Requirements • ICS/NIMS • Safety • Role of Firefighter II	8
7.1.2	General Skills Requirements • Utilizing ICS/NIMS • Determine need for command • Organize and coordinate in IMS until command is transferred • Function within an assigned role in IMS	4
7.2	**Communications**	
7.2.1	Incident reports	4
7.2.2	Communicate the need for team assistance	4
7.3	**Fireground Operations**	
7.3.1	Ignitable liquid fires	16
7.3.2	Interior fire attack	40
7.3.3	Operate a Thermal Imager (TI)	8
7.3.4	Flammable gas cylinder fires	8
7.3.5	Fire origin and cause determination	4
7.4	**Rescue Operations**	
7.4.1	Vehicle extrication	12
7.4.2	Assisting special rescue operations team	12
7.5	**Fire and Life Safety Initiatives, Preparedness and Maintenance**	
7.5.1	Fire safety surveys in occupied structures	4
7.5.2	Public fire safety education	4
7.5.3	Preincident survey	8
7.5.4	Maintaining power equipment	4
7.5.5	Hose testing	8
	TOTAL RECOMMENDED HOURS*	**148***
	GRAND TOTAL - FFI + FFII**	**442***

* Actual hours required will depend on the number of students, the number of examiners, availability of equipment, and the student skill level. Time for performance skill testing is included in the recommended hours.

** Refer to Chapter 6 of the TCFP Curriculum Manual for Hazardous Materials requirements.

REFERENCE LIST

This Reference List is provided as a general guide for both instructors and students to locate information pertaining to the specific objectives in the TCFP Curriculum. This list is not all inclusive and does not in any way limit TCFP development and use of questions to test the objectives of the curriculum:

Required References

Certified Training Facilities approved to teach this curriculum must have the following reference materials:

Essentials of Fire Fighting, Firefighter I (8th ed.) (2024). Stillwater, OK: Fire Protection Publications. International Fire Service Training Association.

Essentials of Fire Fighting, Firefighter II (8th ed.) (2024). Stillwater, OK: Fire Protection Publications. International Fire Service Training Association.

Fundamentals of Firefighter Skills and Hazardous Materials Response (5th ed.) (2025). Burlington, MA: Jones and Bartlett Publishers, Inc.

NFPA 1010: Standard on Professional Qualifications for Firefighters (2024 ed.). Quincy, MA: NFPA Publications. National Fire Protection Association.

Standards Manual for Fire Protection Personnel. Texas Administrative Code, Title 37, Part 13. Austin, TX: Texas Commission on Fire Protection.

Recommended References

NFPA 1850: Standard on Selection, Care, and Maintenance of Protective Ensembles for Structural and Proximity Firefighting and Open-Circuit Self-Contained Breathing Apparatus (SCBA) (2026 ed.). Quincy, MA: NFPA Publications. National Fire Protection Association.

NFPA 1550: Standard for Emergency Responder Health and Safety (2024 ed.). Quincy, MA: NFPA Publications. National Fire Protection Association.

Note to training providers:
The reference lists for Hazardous Materials Awareness and Operations are located in *TCFP Certification Curriculum Manual Chapter 6 – Hazardous Materials*.

EQUIPMENT LIST

Training providers should refer to individual skill sheets for specific quantities of equipment items needed.

Appliances and Tools

- 1½" fog nozzle
- 2½" - 1⅛" straight tip nozzle
- Other nozzle selection as determined by AHJ
- Cap
- Double female fittings 1½"
- Double female fittings 2½"
- Double male fittings 1½"
- Double male fittings 2½"
- Hose clamps
- Hose roller
- Hose strap, rope, or chain
- Hose test gate valve (¼" hole drilled in the gate) or applicable device
- Plug
- Reducers 2½" to 1½"
- Siamese
- Spanner wrenches
- Wye
- Gated Wye (2½" to 1½")
- Hydrant wrenches
- Rubber Mallets
- Assorted gaskets

Extinguishers and Supplies

- Dry chemical extinguisher (ordinary base or multi-purpose)
- CO_2 extinguisher
- Stored-pressure water extinguisher - 2½ gallons
- Class C source or electronic fire extinguisher simulation systems
- Class A fuel for live burns, such as hay
- Class B fuel for live burns, such as diesel fuel or propane
- Metal pan, minimum 9 square feet

Extrication/Rescue Equipment/Materials

- Blanket
- Cribbing and stabilization materials (e.g., tensioned buttress systems, struts, stabilizers, jacks, 4x4s, step chocks, wedges, etc.)
- Electrical connectors
- Electrical (extension) cords
- Electrical power supply (portable or mounted)

- Gas and water service cut-off (water meter, gas meter, breaker box with meter head)
- Vehicle for extrication evolution
- Victim carrying device(s) (e.g., chair, webbing, blanket, stretcher, litter, long spine board, short spine board, rescue basket, scoop stretcher, flexible rescue sled, etc.)
- Seatbelt cutter

Hose – NFPA 1961 Compliant

- 1½" or 1¾" fire hose (400' minimum)
- 2½" or 3" fire hose (500' minimum)
- Large diameter hose (LDH) (300' minimum)
- Two (2) 2½" hard suction (intake) hose or larger (20' total min.) and strainer
- Hose and nozzles capable of flowing a minimum of 95 gpm
- Soft suction hose (15' minimum)
- Safety hose lines

Hand Tools

- Pick-head axe
- Flat-head axe
- Bolt cutters
- Crowbar/pry bar
- Halligan tool
- Hand saw
- Hammers
- A-tool
- K-tool
- Pike poles (8' or greater)
- Roof hook
- Closet tool
- Sledgehammer
- Utility shutoff tools (e.g., water meter key, gas meter key, adjustable wrench, etc.)
- Binding devices (e.g., chains, straps, cable hoist, ratchet devices, etc.)
- Glass removal equipment (e.g., spring-loaded center punch, glass saw, windshield cutter, coarse blade hand saw, etc.)
- Miscellaneous tools and equipment as needed, per AHJ

Ladders – NFPA 1931 Compliant

- 10' folding ladder
- 14' combination ladder
- 14' ladder with folding hooks
- 24' extension ladder
- 35' extension ladder
- 12' minimum straight ladder

- Step ladder

Power Tools and Equipment

- Chainsaw, gasoline or battery-powered
- Rotary saw, gasoline or battery-powered
- Fan, gasoline, electric, or battery-powered (e.g., PPV, exhaust fan, etc.)
- Drill/driver, electric or battery-powered
- Other gasoline, electric, or battery-powered tools per AHJ
- Extrication tools, hydraulic or battery powered (spreaders, shears, ram, etc.)
- Battery chargers and spare batteries
- Reciprocating saw, electric or battery-powered
- Power supply, portable or mounted (e.g., generator or electric power supply)
- Lighting equipment, portable or mounted
- Electrical extension cords and connectors
- Ground-fault interrupter (GFI) device(s)
- Pneumatic devices and air supply (e.g., lifting bags, air chisel, air ratchet, air hammer, etc.)

Protective Equipment/Clothing

- Full set of Protective Clothing for Structural Firefighting for each candidate, including:
  - Trousers, coat, boots, gloves, helmet, hood, and face piece
  - Self-Contained Breathing Apparatus with charged air cylinder
  - One extra fully charged air cylinder
- Personal alert safety system (PASS)
- Task appropriate protective clothing (Wildland)
- Hearing protection
- Protective eyewear
- Work gloves (e.g., leather, mechanic, etc.)
- Protective gloves (e.g., nitrile, latex, etc.)

Rope, Webbing, & Rope Equipment

- ½” diameter utility rope, or equivalent
- Safety line (NFPA 1983 compliant)
- Belay equipment, per AHJ
- Assorted lengths and diameters of natural fiber rope
- Assorted lengths and diameters of synthetic rope
- 1-person or 2-person life safety rope (NFPA 1983 compliant), assorted lengths
- 1” flat or tubular webbing, assorted lengths

Salvage Equipment/Materials

- Objects to cover, such as straight back chairs
- Salvage covers (2 – 12’x14’ minimum)

- Water removal tools (e.g., squeegees, brooms, buckets, tubs, mops, water vacuums, etc.)
- Nails, screws, plywood, heavy plastic, and roofing/tar paper
- Wood wedges or commercially made sprinkler stopper

Simulation Equipment/Materials

- Training tower, minimum of 2 stories in height
- Burn building as recommended in NFPA 1402: Standard on Facilities for Fire Training and Associated Props
- Occupied structure suitable for fire safety survey
- Building used for preincident survey
- Passenger vehicle for fires or vehicle fire prop (NFPA 1402 compliant)
- Liquified petroleum gas prop (NFPA 1402 compliant)
- Ventilation prop (e.g., simulated wood roof with replaceable 4’ x 8’ wood panels over 2’ x 8” roof joists on 24” centers)
- Building utility props
- Simulated traffic hazards
- Hot spots (simulated heat sources)
- Simulated electrical hazards (e.g., downed electrical wires, photovoltaic power systems, battery storage systems, etc.)
- Sprinkler system or mock-up with water source and main control valve
- Open sprinkler head capable of flowing water
- Replacement sprinkler head and sprinkler head wrench
- Standpipe connection or equivalent
- Restricted passage prop
- Forcible entry prop
- Rescue manikin
- Evidence of fire origin
- Item of evidence to be protected
- Equipment for noting and protecting evidence

Other Supplies/Equipment Needed

- First Aid supplies/kit
- Flashlight(s)
- Thermal imager (TI)
- Vision obscured conditions (e.g., blackout mask or smoke generator)
- Air monitoring instruments/equipment, e.g.:
    - Carbon monoxide monitor
    - Combustible gas indicator – Lower Explosive Limit (LEL Monitor)
    - Oxygen monitor
    - Gas specific monitor
    - Photoionization detector (PID)
- Hose testing device

- Equipment necessary for developing a foam stream – Foam eductors, foam nozzles or fog nozzles, and training foam
- Departmental documents and standard or code materials (e.g., TCFP standards; NFPA standards; AHJ policies, procedures, and departmental SOPs; etc.)
- Documentation materials (e.g., checklist, electronic tracking system, etc.)
- Reference material for incident-type codes (NERIS)
- Blank report forms, activity sheets, or other electronic equipment used by the AHJ
- Life safety presentation materials (e.g., Stop, Drop, Cover Your Face, and Roll; Crawl Low in Smoke; Home Escape Planning; Alerting Others to an Emergency; Calling the Fire Department; Fire Station Tour; Residential Smoke Detector Placement, Testing, and Maintenance; School Exit Plan; Close Before You Doze; Get Out, Stay Out; Electric Energy Systems (Solar, Lithium, etc.))
- Fire safety survey forms
- Preincident survey form, or equivalent documentation per AHJ
- Marking devices (e.g., permanent marker, pens, pencils, chalk, grease pencil, etc.)
- Preincident survey documentation materials (e.g., graph paper, colored pencils, straight edge, clipboard, legend of symbols per AHJ, etc.)
- Fire hydrant
- Pitot tube and gauge
- Communications equipment and technology (e.g., portable radios, telephone, MDT, etc.)
- Safety can with proper fuel mixture and funnel
- Materials for burning (NFPA 1403 compliant)
- Ignitable liquid fire of at least 100 ft^2 (must comply with NFPA 1403) or gas-fired training prop
- Storage container (exterior dumpster, trash bin, etc.)
- Tank with a liquid level
- Traffic and scene control devices, per AHJ (e.g., scene tape, traffic cones, barricades, flares, advanced warning devices, reflective devices, diamond-shaped fluorescent pink sign, etc.)
- Pumper apparatus equipped with pump (NFPA 1901 compliant) or pumping system
- Two portable tanks with water transfer equipment and appliances
- Water sources (Pressurized and/or Static; NFPA 1403 compliant)
- Secondary water source (Pressurized and/or Static; NFPA 1403 compliant)
- Manufacturer approved cleaning agent
- Manufacturer approved cleaning equipment
- Manufacturer approved sanitizing agent
- Soft bristled brush
- Waterproof grease
- Low pressure water stream device
- Rapid Intervention Pack or equivalent (e.g., spare SCBA and air cylinder with emergency escape breathing support system or emergency breathing safety system; or rapid intervention crew universal air connection)
- Cloths/rags for checking fluids

- Assorted rescue equipment used by AHJ (e.g., for these incidents: structural collapses, trench collapses, cave and tunnel emergencies, water and ice emergencies, elevator, and escalator emergencies, energized electrical line emergencies, and industrial accidents)

Note: If the program teaches Hazardous Materials Awareness and Operations as part of their course they must refer to the Hazard Materials Equipment List located in Chapter 6 of the TCFP Curriculum Manual.

INSTRUCTOR INFORMATION

Instructor Qualifications

Basic Structure Firefighter courses must be taught by a person meeting the requirements described in Chapter §427.307 of the TCFP Standards Manual.

Supplemental Information

Instructors are expected to provide supplemental information if the main reference text does not cover all of the knowledge requirements set forth in the NFPA standard.

Layout

The NFPA numbering sequence is mirrored to allow easy correlation between this document and the NFPA Standard. For example, 6.2.1 in the TCFP Firefighter I curriculum corresponds to NFPA 1010 section 6.2.1.

Certification Testing

Testing for certification in the state of Texas will be based on the knowledge and skills requirements of National Fire Protection Association (NFPA) 1010, *Standard on Professional Qualifications for Firefighters,* 2024 edition. Chapter 6 will be used for Firefighter I; Chapter 7 will be used for Firefighter II. All training programs must strictly adhere to the NFPA standard.

All test questions and performance skills evaluations will be based on the NFPA Job Performance Requirements (JPRs), requisite knowledge objectives, and requisite skills objectives found in the NFPA standard. Additionally, questions and performance skill evaluations may include information found in, or derived from, the NFPA standard annex, particularly Annex A, which includes explanatory material that may further clarify JPRs.

Components of the Expanded Curriculum

The NFPA numbering sequence is mirrored to allow easy correlation between this document and the NFPA Standard. For example, 6.2.1 identifies the section in this curriculum manual that corresponds to NFPA section 6.2.1. Each section of this curriculum identifies the NFPA Job Performance Requirement (JPR) and subdivides the requisite knowledge requirements into learning components. For example:

NFPA Standard/Curriculum		Explanation
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)	NFPA JPR number 6.2.1

NFPA Standard/Curriculum	Explanation
Requisite Knowledge: Procedures for reporting an emergency, departmental SOPs for taking and receiving alarms, and information needs of dispatch center.	Requisite knowledge objectives for 6.2.1 Written test questions and/or performance skills will be used to test these knowledge components on the state certification exam.
1) Procedures for reporting an emergency	First part of Requisite Knowledge
a. Communication equipment and technology b. Landline telephone c. Cellular phone d. Call box e. Telecommunication Devices for the Deaf (TDD) f. Still alarms or walk-ins g. Automatic alarms	Associated learning components
2) Departmental SOPs for taking and receiving alarms	Second part of Requisite Knowledge
a. Nature of the emergency b. Location of the emergency c. Caller information d. Responding units e. Call back number f. Clear speech - plain English g. Emergency communications i. Emergency communications, per AHJ ii. Mayday iii. Evacuation order	Associated learning components
3) Information needs of dispatch center	Third part of Requisite Knowledge
a. Nature of the emergency b. Location of the emergency c. Caller information d. Responding units e. Call back number	Associated learning components

NFPA Standard/Curriculum	Explanation
Requisite Skills: The ability to operate fire department communications equipment and technology, relay information, and record information.	Requisite skills objectives for 6.2.1 Only performance skills will be used to test these objectives on the state certification exam.
Instructor Note 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).	Annex A: Explanatory Material for 5.2.1

NFPA Annex B Information

Refer to Annex B: Explanation of the Professional Qualifications Standards and Concepts of JPRs in the NFPA Standard for an explanation of the NFPA Professional Qualifications Standards, the concepts of JPRs, and the process for converting JPRs into instructional objectives.

Requisite Skills

NFPA Requisite Skill requirements are addressed in the corresponding TCFP Performance Skill Sheets.

Instructional Skills – these training instruments are designed to be used during the instructional process to assist students in mastering requisite skills or elements of requisite skills.

TCFP Standards Manual

It is critical that the course instructor review the chapters in the TCFP Standards Manual that apply to this curriculum. Of primary importance are the following chapters:

Chapter 421, *Standards for Certification*
Chapter 423, *Fire Suppression*
Chapter 427, *Training Facility Certification*
Chapter 435, *Fire Fighter Safety*
Chapter 437, *Fees*
Chapter 439, *Examinations for Certification*

These chapters do not address every issue that could impact this curriculum; therefore, the course instructor is encouraged to become familiar with the TCFP Standards Manual.

Descriptions of Certification Levels

For additional information, see Chapter 423 of the Texas Commission on Fire Protection Standards Manual for Fire Protection Personnel.

Additional Training Recommendations

The Texas Commission on Fire Protection and other State and Federal agencies, require the adoption and use of an Incident Management/Command System. It is strongly recommended that students complete the following US Department of Homeland Security National Incident Management System training programs (or their equivalents):

- IS-100 Introduction to Incident Command System (ICS)
- IS-200 ICS for Single Resources and Initial Action Incidents
- IS-700 National Incident Management System (NIMS), An Introduction
- IS-800 National Response Framework, An Introduction

Additional information can be found at: https://training.fema.gov/nims/

Promoting firefighter safety is a fundamental component of any training program and one of the primary duties of the Texas Commission on Fire Protection. The following classes are required by TCFP within one year of appointment (TAC Chapters §435.25, §435.29, §435.31). It is strongly recommended that all students attending a Basic Structure Fire Protection Personnel training program also complete:

- National Fallen Firefighters Foundation's ***Courage to Be Safe: So Everyone Goes Home*** program as a component of their Firefighter Safety training
- Federal Highway Administration Traffic Incident Management Program (TIMP)
- Firefighter Cancer Support Network Cancer Awareness Training

Additional information can be found at: www.everyonegoeshome.com

PERFORMANCE SKILLS LIST

FIREFIGHTER I			
Subject	**Skill #**	**Skill Name**	**NFPA 1010 JPRs**
General	1	Documentation, Standards, and Codes	6.1.2
	2	Field Reduction of Contaminants	6.1.2
	3	Donning and Doffing of PPE	6.1.2
	4	Hoisting Tools Using Ropes	6.1.2, 6.3.20
Communications	5	Communications Equipment	6.2.1, 6.2.2
	6	Actions When Trapped or Disoriented	6.2.3, 6.3.5
Fireground Operations	7	SCBA Use During Operations	6.3.1
	8	Use of Safety Equipment	6.3.2, 6.3.3
	9	Force Entry into a Structure	6.3.4
	10	Ground Ladders	6.3.6
	11	Attack Vehicle Fires	6.3.7
	12	Storage Container Fires	6.3.8
	13	Search and Rescue	6.3.9
	14	Attack an Interior Structure Fire	6.3.10
	15	Horizontal and Vertical Ventilation	6.3.11, 6.3.12
	16	Overhaul a Scene	6.3.13
	17	Property Conservation	6.3.14
	18	Water Source	6.3.15
	19	Portable Fire Extinguishers	6.3.16
	20	Emergency Scene Lighting	6.3.17
	21	Terminating Utility Service	6.3.18
	22	Combat Ground Cover Fires	6.3.19
	23	Air Monitoring	6.3.21
Preparedness and Maintenance	24	Maintaining Tools and Equipment	6.5.1
	25	Return Hose to Service	6.5.2

FIREFIGHTER II			
Subject	**Skill #**	**Skill Name**	**NFPA 1010 JPRs**
General	1	Implementing an IMS	7.1.2, 7.2.2
Communications	2	Incident Report Form	7.2.1
Fireground Operations	3	Ignitable Liquid Fire	7.3.1
	4	Coordinate an Interior Attack	7.3.2
	5	Thermal Imager	7.3.3
	6	Flammable Gas Cylinder Fire	7.3.4
	7	Protecting Evidence	7.3.5
Rescue Operations	8	Vehicle Extrication	7.4.1
	9	Assist Rescue Operations Teams	7.4.2
Fire and Life Safety Initiatives, Preparedness, and Maintenance	10	Fire Safety Survey	7.5.1
	11	Present Fire Safety Information	7.5.2
	12	Preincident Survey	7.5.3
	13	Maintain Power Tools and Equipment	7.5.4
	14	Annual Fire Hose Test	7.5.5

Performance Skills (and the related Instructional Skills) are available in Chapter 1 of the TCFP Performance Skills Manual.

CERTIFICATION CURRICULUM MANUAL – CHAPTER ONE

FIREFIGHTER I

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CURRICULUM MANUAL
FIREFIGHTER I

The person, at the first level of progression as defined in Chapter 6 (of NFPA 1010), who has demonstrated the knowledge and skills to function as an integral member of a firefighting team under direct supervision in hazardous conditions. (NFPA 1010, 3.3.26)

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 (updated to 1550 in 2024).

Instructor Note - 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.

1) Organization of the fire department
   a. History
   b. Organization structure

2) The role of the Firefighter I
   a. Emergency duties
   b. Non-emergency duties

3) Mission of the fire service
   a. Authority having jurisdiction
   b. Save lives, protect property and the environment

4) 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

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a. The 16 firefighter life safety initiatives
b. Stand down for safety

5) Role of other agencies as they relate to the fire department
   a. OSHA
   b. EMS
   c. Law enforcement
   d. Emergency/Disaster Management
   e. Utility companies
   f. Public Works
   g. Media
   h. DOT

6) Firefighter safety, health, and wellness
   a. Injury, illness, and fatality prevention
   b. Occupational safety standards and policies
   c. NFPA standards
   d. Training and education
   e. Cancer awareness

7) Aspects of the fire department's member assistance program
   a. Suicide awareness and prevention
   b. Behavioral health programs
   c. Critical incident stress management
   d. Post-traumatic stress disorder (PTSD)

8) Importance of physical fitness and a healthy lifestyle to the performance of duties of a firefighter
   a. Cardiac health
   b. Injury reduction
   c. Behavioral health
   d. Stress management
   e. Most common illnesses
      i. Cardiovascular disease
      ii. Respiratory disease
      iii. Cancer
      iv. Obesity

9) The critical aspects of NFPA 1550, *Standard for Emergency Responder Health and Safety*
   a. Policies
   b. Training and education
   c. Apparatus operation
   d. PPE
   e. Emergency operations

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f. Station safety
g. Medical and physical requirements
h. Health and safety programs
i. Member assistance programs
j. Substance abuse and dependence

6.1.2 General Skill 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.

1) Types of personal protective equipment (PPE) ensembles
   a. Station/work uniforms
   b. Structural firefighting
   c. Wildland firefighting
   d. Emergency medical service (EMS)
   e. Specialized ensembles (i.e. ARFF, technical rescue, etc.)

2) Donning

3) Doffing

4) Field reduction of contaminants/preparing for re-use

5) Care and maintenance
   a. Basic inspection
   b. Advanced inspection
   c. Record keeping
   d. Familiarization with NFPA 1850

6) Hoisting tools and equipment using ropes
   a. Types of knots and hitches
      i. Overhand safety
      ii. Clove hitch
      iii. Half hitch
      iv. Figure-eight
      v. Figure-eight bend
      vi. Figure-eight on a bight
      vii. Figure-eight follow through
      viii. Water knot
   b. Department Standard Operating Procedures, AHJ

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6.2 Communications

This duty shall involve using fire department 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)

> **Instructor Note - 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).

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

1) Procedures for reporting an emergency
    a. Communication equipment and technology
    b. Landline telephone
    c. Cellular phone
    d. Call box
    e. Telecommunication Devices for the Deaf (TDD)
    f. Still alarms or walk-ins
    g. Automatic alarms

2) Departmental SOPs for taking and receiving alarms
    a. Nature of emergency
    b. Location of emergency
    c. Caller information
    d. Responding units
    e. Call back number
    f. Clear speech – plain English
    g. Emergency communications
        i. Emergency communications per AHJ
        ii. Mayday
        iii. Evacuation order

3) Information needs of dispatch center
    a. Nature of emergency

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b. Location of emergency
c. Caller information
d. Responding units
e. Call back number

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)

Instructor Note - 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).

Requisite Knowledge: Departmental communications procedures and etiquette for routine traffic, emergency traffic, and emergency evacuation signals.

1) Departmental communications procedures and etiquette for:
   a. Routine traffic
   b. Emergency traffic
      i. MAYDAY
      ii. Firefighter down
      iii. Other terminology determined by AHJ
   c. Evacuation signals
      i. Airhorns
      ii. Radios
      iii. SCBA telemetry systems
      iv. Other signals determined by AHJ

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.

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Instructor Note - 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 also include the terms *mayday, firefighter down*, or such other terminology as determined by the AHJ.

Requisite Knowledge: Personnel accountability systems, emergency communication procedures, and emergency evacuation methods.

1) Personnel accountability systems
    a. Passport
    b. SCBA Tag system
    c. Electronic system
    d. Personal Accountability Report (PAR)

2) Emergency communication procedures
    a. Radio
    b. Face-to-face
    c. Tagline
    d. Evacuation signal

3) Emergency evacuation methods
    a. Roof escape
    b. Balcony escape
    c. Self-rescue
    d. Ladder escape
    e. Room escape
    f. Safe haven/Areas of refuge

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.

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Instructor Note - A.6.3.1
The Firefighter I should already be wearing full protective clothing prior to the beginning of the 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.

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.

1) Conditions that require respiratory protection
    a. Oxygen deficiency
    b. Elevated temperatures
    c. Toxic environments
    d. Smoke (by-products of combustion)
    e. Gases
    f. Vapors
    g. Airborne pathogens

2) Uses and limitations of SCBA
    a. Wearer
        i. Facial and long hair
        ii. Protective clothing
        iii. Donning
            a) Properly donned
            b) SCBA correctly worn
        iv. Eyeglasses or contact lenses
        v. Use in high or low temperatures
        vi. Communication
        vii. Personal alert safety system (PASS)
        viii. Physical conditioning
    b. Equipment
    c. Air supply
    d. Types of SCBA
        i. Open circuit
        ii. Closed circuit
        iii. Supplied air respirators (SARs)

3) Components of SCBA
    a. Backpack and harness assembly

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b. Air cylinder assembly
c. Regulator assembly
d. Face piece assembly
e. PASS device
f. Remote pressure gauge
g. End-of-service-time indicator (EOSTI)
h. Rapid Intervention Crew/Universal Air Connection (RIC/UAC)

4) Donning procedures
   a. Over-the-head method
   b. Coat method
   c. Seat mounted
   d. Compartment mounted

5) Breathing techniques
   a. Controlled breathing
   b. Skip breathing
   c. Reilly Emergency Breathing Method
   d. Tactical Breathing Technique

6) Indications for and emergency procedures used with SCBA
   a. Use of emergency bypass or purge valve
   b. Rapid Intervention Crew/Universal Air Connection (RIC/UAC)
   c. Emergency Breathing Safety Systems (EBSS)
   d. Conservation of air

7) Physical requirements of the SCBA wearer
   a. Cardiovascular conditioning
   b. Respiratory conditioning
   c. Psychological/emotional stability

8) Maintenance and inspections
   a. Replacing a cylinder
   b. Refilling a cylinder
   c. Cleaning
   d. Inspections
      i. Daily
      ii. Monthly
      iii. Annually

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.

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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.

> **Instructor Note - 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.

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.

1) Mounting and dismounting procedures for riding fire apparatus
    a. Hand grip
    b. Footing
    c. Seatbelt

2) Hazards and ways to avoid hazards associated with riding apparatus
    a. Seated and utilizing safety restraints
    b. Secure loose objects in cab
    c. Close cab doors securely

3) Prohibited practices
    a. Seated and utilizing safety restraints
    b. Hearing protection, if required
    c. Secure loose objects in cab

4) Types of department PPE and the means for usage
    a. Hearing protection, if required
    b. Safety bars/gates for unenclosed apparatus

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,

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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.

Instructor Note - 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 are 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.

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.

1) Potential hazards involved in operating on emergency scenes including vehicle traffic, utilities, and environmental conditions
    a. Vehicle traffic
    b. Utilities
    c. Environmental conditions

2) Proper procedures for dismounting apparatus in traffic
    a. Look before you move
    b. Keep an eye on traffic
    c. Walk facing oncoming traffic

3) Procedures for safe operation at emergency scenes
    a. Follow departmental SOPs

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4) Protective equipment available for members' safety on emergency scenes and work zone designations
    a. Protective equipment
        i. High-visibility safety vest
        ii. Helmets
        iii. Gloves
        iv. Equipment specified by AHJ
    b. Work zone designations
        i. Vehicle placement
        ii. Traffic cones
        iii. Flares
        iv. Other warning devices

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.

Instructor Note - 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.

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.

1) Basic construction of typical doors, windows, and walls within the department's community or service area
    a. Doors
        i. Swinging doors
            1. Inward opening
            2. Outward opening
            3. Double swing
        ii. Wooden doors
        iii. Metal doors
        iv. Tempered plate glass doors
        v. Revolving doors
        vi. Sliding doors

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vii. Overhead doors
viii. Fire doors
ix. Other doors found in the community or service area

b. Windows
i. Single-Hung
ii. Double-Hung
iii. Casement windows (hinged)
iv. Projected windows (factory)
v. Awning and jalousie windows
vi. Plastic windows (high security)
vii. Screened or barred windows
viii. Fixed/storefront windows
ix. Other windows found in the community or service area

c. Walls
i. Masonry and veneered walls
ii. Metal walls
iii. Wood frame walls
iv. Partition walls

2) Operation of doors, windows, and locks

3) Dangers associated with forcing entry through doors, windows, and walls

4) Tools
a. Cutting tools
b. Prying tools
c. Pushing/pulling tools
d. Striking tools

5) Maintenance of tools
a. Axe heads and cutting edges
b. Wooden handles
c. Fiberglass handles
d. Unprotected metal surfaces
e. Power equipment

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.

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Instructor Note - 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.

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.

1) Personnel accountability systems
    a. Passport
    b. Tag system
    c. Electronic system

2) Communication procedures
    a. Radio
    b. Face-to-face
    c. Tagline
    d. Evacuation signal

3) Emergency evacuation methods
    a. Roof escape
    b. Balcony escape
    c. Self-rescue
    d. Ladder escape
    e. Room escape

4) What constitutes a safe haven
    a. Absence of immediately dangerous to life and health (IDLH) hazard
    b. Area outside of collapse zone

5) Elements that create or indicate a hazard

6) Emergency procedures for loss of air supply
    a. Stay calm/don’t panic
    b. Activate PASS device
    c. Declare MAYDAY

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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.

> **Instructor Note - 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.

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.

1) Parts of a ladder
    a. Beam
    b. Bed section
    c. Butt
    d. Butt spur
    e. Foot pads (shoes)
    f. Fly section
    g. Guides
    h. Halyard
    i. Heat sensor label
    j. Hooks
    k. Pawls (dogs)
    l. Protection plates
    m. Pulley
    n. Rail
    o. Rung
    p. Staypole
    q. Stops
    r. Tie rod
    s. Tip
    t. Truss blocks

2) Hazards associated with setting up ladders

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a. Overhead obstruction (energized power lines)
b. Lifting and moving
c. Uneven terrain
d. Soft spots/unstable surfaces
e. High traffic areas (doorways)
f. Exposure to flame or heat

3) What constitutes a stable foundation for ladder placement
   a. Flat, stable surface
   b. Non-skid surface

4) Different angles for various tasks
   a. Roof
   b. Window
      i. Entry
      ii. Ventilation or working
      iii. Rescue set

5) Climbing techniques

6) Safety limits to the degree of angulation

7) What constitutes a reliable structural component for top placement

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, dismount, and descend the ladder.

6.3.7 Attack a passenger vehicle fire operating as a member of a team, given PPE, 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.

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

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

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and how to avoid them; how to access locked passenger, trunk, and engine compartments; and methods for overhauling an automobile.

1) Principles of fire streams as they relate to fighting automobile fires
    a. Straight stream
    b. Fog

2) Precautions to be followed when advancing hose lines toward an automobile
    a. Uphill
    b. Upwind
    c. 45-degree angle approach

3) Observable results that a fire stream has been properly applied
    a. Flame reduction
    b. Smoke reduction
    c. Changes in smoke color (darker to lighter)
    d. Temperature reduction

4) Identifying alternative fuels and the hazards associated with them
    a. Blended Fuel (E85)
    b. Compressed Natural Gas (CNG)
    c. Liquified Petroleum/Natural Gas (LPG/LNG)
    d. High voltage electrical power
    e. Fuel cell
    f. Biofuels (ethanol/methanol and biodiesel/blended fuels)
    g. Hydrogen

5) Dangerous conditions created during an automobile fire
    a. Energy absorbing bumpers
    b. Hydraulic pistons (supports)
        i. Trunks
        ii. Tailgates
        iii. Hoods
    c. Shock absorbers/struts
    d. Toxic by-products of combustion
    e. Supplemental Restraint System (SRS)
    f. Side Impact Protection System (SIPS)
    g. Batteries
    h. Combustible metals

6) Common types of accidents or injuries related to fighting automobile fires and how to avoid them
    a. Traffic hazards
    b. Injuries

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c. Respiratory

7) How to access locked passenger, trunk, and engine compartments
   a. Prying tools
   b. Cutting tools
   c. Piercing nozzles

8) Methods for overhauling an automobile
   a. Chock wheels
   b. Disable battery
   c. Apply water thoroughly
   d. Confirm no leaking fluids or fuels

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 1 ½ 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, small unattached structures, 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.

Instructor Note - 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, or small unattached structures 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.

Requisite Knowledge: Types of attack lines and water streams appropriate for attacking stacked, piled materials and outdoor fires; dangers

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— 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.

1) Types of attack lines and water streams appropriate for attacking stacked piled materials and outdoor fires
    a. Types of attack lines
        i. ¾ or 1 inch (booster or reel line)
        ii. 1½ to 1¾ inches
        iii. 2 to 2½ inches
    b. Water streams
        i. Low volume (less than 40 gpm)
        ii. Handline (40 to 350 gpm)
        iii. Master (greater than 350 gpm)

2) Dangers — such as collapse — associated with stacked and piled materials
    a. Collapse
    b. Products of combustion
    c. Increased weight (absorption of water)
    d. Exposures

3) Various extinguishing agents and their effect on different material configurations
    a. Water
        i. Cooling
        ii. Increased surface tension
    b. Foam
        i. Blanketing or smothering
        ii. Cooling
        iii. Decreased surface tension

4) Tools and methods to use in breaking up various types of materials
    a. Tools
        i. Pike pole
        ii. Rake
    b. Heavy equipment
        i. Tractor
        ii. Dozer

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5) Difficulties related to complete extinguishment of stacked and piled materials
    a. Agent penetration
    b. Access
    c. Density of material
    d. Height and area of pile

6) Water application methods for exposure protection and fire extinguishment
    a. Direct application
    b. Indirect application

7) Dangers such as exposure to toxic or hazardous materials associated with storage building and container fires

8) Obvious signs of origin and cause; and techniques for the preservation of fire cause evidence
    a. Burn pattern
    b. Charring
    c. Evidence of accelerants
    d. Trailers
    e. Protect evidence
    f. Preserve area
    g. Limit access

9) Techniques for the preservation of fire cause evidence
    a. Protect evidence
    b. Preserve area
    c. Limit access

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.

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Instructor Note - 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.

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.

1) Use of forcible entry tools during rescue operations
    a. Striking
    b. Prying
    c. Cutting
    d. Pushing/Pulling

2) Ladder operations for rescue
    a. Conscious victim
    b. Unconscious victim
    c. Firefighter rescue

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3) Psychological effects of operating in obscured conditions and ways to manage them
    a. Effects
        i. Disorientation
        ii. Panic
        iii. Fear
        iv. Claustrophobia
    b. Management
        i. Remain calm
        ii. Control breathing
        iii. Maintain situational awareness
        iv. Stay in contact
        v. Rely on other senses
        vi. Focus on assigned task

4) Methods to determine if an area is tenable
    a. Level of heat
    b. Smoke
    c. Ventilation-limited fire conditions
    d. Creation of flow paths
    e. Structural stability
    f. Risk/benefit analysis

5) Primary and secondary search techniques
    a. Define the following
        i. Primary search
        ii. Secondary search
    b. Search techniques
        i. Right hand/left hand
        ii. Large area/small area considerations
        iii. Rope assisted, or hose line
        iv. Tools (used to extend reach during search)
        v. Vent-Enter-Isolate-Search (VEIS)

6) Team members' roles and goals
    a. Finding victims
    b. Obtaining information on the extent of the fire
    c. Search priorities
        i. Closest to fire area
        ii. Remainder of fire floor
        iii. Floor above
        iv. Floor below
    d. Rescue vs recovery

7) Methods to use and indicators of finding victims

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a. Probable victim locations
    i. Behind doors
    ii. Under windows
    iii. On/under beds
    iv. In closets
    v. In bathtubs
b. Additional considerations
    i. Type of occupancy
    ii. Time of day
    iii. Building size and arrangement
    iv. Information from neighbors
    v. Occupant indicators
        1. Vehicles in driveway
        2. Toys in yard

8) Victim removal methods
    a. Types of carries
        i. Extremity carry
        ii. Seat carry
        iii. Chair carry
        iv. Webbing drag
        v. Blanket drag
        vi. Ladder rescue
            1. Conscious
            2. Unconscious
    b. Securing of a victim
        i. Basket
        ii. Stretcher
        iii. Long spine board
        iv. Other devices

9) Considerations related to respiratory protection
    a. Personal use/work time
    b. Emergency procedures
    c. Rescue air/RIT pack
    d. Conditions for use
        i. Heat
        ii. Smoke
        iii. Oxygen deficiency
        iv. Toxic atmospheres

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

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functioning, rescue a person who has no respiratory protection, and assess areas to determine tenability.

Instructor Note - 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.

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.

Instructor Note - 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 demonstrates 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.

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.

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1) Principles of fire streams
    a. Definitions
        i. Pressure
        ii. Friction loss
        iii. Elevation loss/gain
        iv. Fire stream
        v. Vaporization
        vi. Latent heat vaporization
        vii. British Thermal Unit (BTU)
        viii. Water hammer
    b. Fire streams
        i. Low-volume stream
        ii. Handline stream
        iii. Master stream
        iv. Cooling/extinguishing properties

2) Types, design, operation, nozzle pressure effects, and flow capabilities of nozzles
    a. Solid stream
        i. Types
        ii. Advantages
        iii. Disadvantages
        iv. Flow rate
    b. Fog stream
        i. Types
        ii. Advantages
        iii. Disadvantages
        iv. Flow rate
        v. Water flow adjustment
            1. Manually adjustable
            2. Automatic (constant-pressure)
        vi. Stream patterns
            1. Straight stream
            2. Narrow fog
            3. Wide fog
        vii. Broken stream
            1. Types
            2. Advantages
            3. Flow rate
    c. Specialty nozzles
        i. Types
        ii. Advantages
        iii. Disadvantages
    d. Solid stream nozzle

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i. Components/parts
ii. Operating pressure
1. 50 psi hand line
2. 80 psi master stream

e. Fog stream nozzle
i. Components/parts
ii. Operating pressure
1. 100 psi hand line
2. 50-75 psi low pressure hand line
3. 100 psi master stream

f. Broken stream nozzle
i. Components/parts
ii. Operating pressure varies by design

g. Operating valves
i. Ball valve
ii. Slide valve
iii. Rotary control valve

h. Flow selection
i. Automatic
ii. Adjustable
iii. Fixed

i. Reach
i. Solid stream
ii. Fog stream
iii. Broken stream

j. Nozzle reaction
i. Solid stream
ii. Fog stream
iii. Broken stream

k. Water pattern
i. Solid stream
ii. Straight stream
iii. Narrow fog
iv. Wide fog
v. Broken stream

l. Flow paths caused by air entrainment
i. Solid or straight streams
ii. Fog streams

m. Low volume nozzles – less than 40 gpm
n. Hand line nozzles – 40-350 gpm
o. Master stream nozzles – greater than 350 gpm

3) Precautions to be followed when advancing hose lines to a fire
a. Into a structure
b. Up a stairway

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c. Down a stairway
d. From a standpipe
e. Up a ladder

4) Observable results that a fire stream has been properly applied
   a. Direct attack
      i. Smoke
      ii. Heat
      iii. Flame
   b. Indirect attack
      i. Smoke
      ii. Heat
      iii. Flame
      iv. Patterns
         1. T pattern
         2. Z pattern
         3. O pattern
   c. Combination attack
      i. Smoke
      ii. Heat
      iii. Flame
      iv. Patterns
         1. T pattern
         2. Z pattern
         3. O pattern

5) Dangerous building conditions created by fire
   a. Flashover
   b. Rollover
   c. Ventilation-limited
   d. Backdraft
   e. Smoke explosion
   f. Imminent building collapse
   g. Fire behind, below, or above attack team
   h. Kinks or obstructions to the hose line
   i. Holes, weak stairs, or other fall hazards
   j. Suspended loads on fire-weakened supports
   k. Hazardous or highly flammable commodities likely to spill
   l. Electrical shock hazards

6) Principles of exposure protection
   a. Conduction
   b. Convection
   c. Radiation

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7) Potential long-term consequences of exposure to products of combustion
    a. Respiratory diseases
    b. Cardiovascular diseases
    c. Stroke
    d. Cancer
    e. Death

8) Physical states of matter in which fuels are found
    a. Solid
    b. Liquid
    c. Gaseous

9) Common types of accidents or injuries and their causes
    a. Common injuries
    b. Common activities
    c. Common causes
        i. Slips, trips, falls
        ii. Failure to wear proper PPE
        iii. Failure to follow safety procedures

10) 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
    a. 95-350 gpm
    b. 1½” to 3” hose lines
    c. AHJ
    d. “Two-in/two-out” rule
    e. Firefighter rescue
    f. AHJ
    g. Grade level
        i. Single-story structures
        ii. Large single-story structures
    h. Above grade level
        i. Multi-story structures
        ii. Low-rise
        iii. Mid-rise
        iv. High-rise
    i. Below grade level
        i. Basements
        ii. Vaults
    j. Coordinating fire attack with ventilation
    k. Exterior offensive attack
        i. Blitz attack
        ii. Transitional attack

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iii. Softening the target

11) Exposing hidden fires
    a. Overhaul techniques
        i. Opening walls
        ii. Opening floors
        iii. Opening ceilings
    b. Other concealed spaces – special considerations

Requisite Skills: The ability to prevent water hammers when shutting down nozzles; open, close, and adjust nozzle flow and patterns; apply water using direct, indirect, and combination attacks; advance charged and uncharged 1 ½ 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 1 ½ 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.

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.

1) Principles, advantages, limitations, and effects of horizontal, mechanical, and hydraulic ventilation
    a. Purposes
        i. Life safety
        ii. Fire attack and extinguishment
        iii. Fire spread control
        iv. Reduce flashover potential
        v. Reduce backdraft potential
        vi. Property conservation
    b. Types of horizontal ventilation
        i. Natural
        ii. Mechanical
            1. Positive pressure

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2. Negative pressure
3. Hydraulic

c. Advantages
   i. Natural
   ii. Mechanical
      1. Positive pressure
      2. Negative pressure
      3. Hydraulic

d. Limitations
   i. Natural
   ii. Mechanical
      1. Positive pressure
      2. Negative pressure
      3. Hydraulic

e. Effects
   i. Natural
   ii. Mechanical
      1. Positive pressure
      2. Negative pressure
      3. Hydraulic

2) Safety considerations when venting a structure
   a. Life safety hazards
   b. Determining the location and extent of the fire
   c. Identifying building construction features
   d. Flow paths
   e. Predicting fire travel and growth

3) Fire behavior in a structure
   a. Products of combustion
   b. Behavior of heat, smoke and fire gases
   c. Airflow characteristics

4) The products of combustion found in a structure fire
   a. Heat
   b. Smoke
   c. Gases and irritants

5) The signs, causes, effects, and prevention of backdrafts
   a. Signs
   b. Causes
   c. Effects
   d. Prevention

6) The relationship of oxygen concentration to life safety and fire growth

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a. Firefighter safety
b. Victim safety

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.

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.

1) The methods of heat transfer
    a. Conduction
    b. Convection
    c. Radiation

2) The principles of thermal layering within a structure on fire
    a. Definition of thermal layering (i.e. heat stratification, thermal balance)
    b. Thermal layering as it relates to ventilation
    c. Thermal layering in relation to life safety/rescue
    d. Roof styles
        i. Flat
        ii. Pitched
            1. Hip
            2. Gable
            3. Mansard
            4. Shed
            5. Gambrel
        iii. Other roof types in the community or service area

3) The techniques and safety precautions for venting flat roofs, pitched roofs, and basements
    a. Weather conditions
    b. Determining need

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c. Exposures
d. Obstructions/weight on roof
e. Maintain structural support integrity during cut
f. PPE
g. Tools
h. Ladder placement
i. Sounding roof
j. Slips, trips, and falls
k. Reduced visibility
l. Equipment safety
m. Location of vent cut
n. Secondary means of escape
o. Personnel
p. Types of cuts
q. Angle of pitch
r. Obstructions/weight on floor above
s. Location of ventilation openings

4) Basic indicators of potential collapse or roof failure
    a. Construction
        i. Solid beam
        ii. Light weight trusses
    b. Size up
        i. Sagging roof
        ii. Spongy roof
        iii. Melting tar
        iv. Smoke seepage
        v. Visible fire
    c. Elapsed time of fire

5) The effects of construction type and elapsed time under fire conditions on structural integrity
    a. Fire spread

6) The advantages and disadvantages of vertical and trench/strip ventilation

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.

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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.

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.

1) Types of fire attack lines and water application devices most effective for overhaul
    a. Attack lines
    b. Fire extinguishers
    c. Buckets and basins
    d. SOPs per AHJ

2) Water application methods for extinguishment that limit water damage
    a. Water conservation
    b. Soaking in buckets and basins

3) Types of tools and methods used to expose hidden fire
    a. Prying and pulling tools
    b. Cutting tools
    c. Striking tools
    d. Power tools
    e. Thermal imaging camera
    f. Sight
    g. Touch
    h. Sound
    i. Electronic instruments

4) Dangers associated with overhaul
    a. Toxic atmospheric conditions
    b. Weakened floors and structural members
    c. Sharp objects and debris
    d. Utilities
    e. Slippery surfaces

5) Obvious signs of area of origin or signs of arson
    a. Burn patterns
    b. Smoke markings
    c. Physical evidence

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6) Reasons for protection of fire scene
    a. Securing the scene
    b. Preservation of evidence

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.

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.

1) The purpose of property conservation and its value to the public

2) Methods used to protect property
    a. Removal of property
    b. Protection of property in place

3) Types of and uses for salvage covers
    a. Types
        i. Waterproof canvas
        ii. Lightweight vinyl
        iii. Heavy-duty plastic
    b. Uses
        i. Cover property
        ii. Construct basins, chutes and catchalls
        iii. Floor runners
        iv. Debris removal

4) Operations at properties protected with automatic sprinklers
    a. Fire department water supplies
    b. Fire department connections (FDC)
    c. Standpipe systems

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5) How to stop the flow of water from an automatic sprinkler head
    a. Sprinkler stops and wedges
    b. Operate main control valves

6) Identification of the main control valve on an automatic sprinkler system
    a. Sprinkler riser
    b. Indication valves
        i. Outside stem and yoke (OS&Y)
        ii. Butterfly valve
        iii. Wall post indicator valve (WPIV)
        iv. Post indicator valve (PIV)
        v. Post indicator valve assembly (PIVA)

7) Forcible entry issues related to salvage
    a. Utilize forcible entry when necessary
    b. Try before you pry

8) Procedures for protecting possible areas of origin and potential evidence
    a. Secure the scene
    b. Cover/protect evidence
    c. Limit entry
    d. Minimize fire suppression and overhaul activities

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.

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

Requisite Knowledge: Loading and off-loading procedures for mobile water supply apparatus; fire hydrant operation; and suitable static water

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supply sources, procedures, and protocol for connecting to various water sources.

1) Loading and off-loading procedures for mobile water supply apparatus
    a. Portable water tanks
    b. Drafting and siphoning appliances
    c. Relay pumping apparatus
    d. Fill apparatus and drafting appliances
    e. Portable pumps
    f. Fire hydrant appliances
    g. Dry hydrants or suction supply points

2) Fire hydrant operation
    a. Types
        i. Dry barrel hydrant
        ii. Wet barrel hydrant

3) Suitable static water supply sources, procedures, and protocol for connecting to various water sources
    a. Lakes
    b. Rivers
    c. Streams
    d. Ponds
    e. Pools
    f. Hydrant to pumper connection
        i. Forward hose lay
        ii. Reverse hose lay
    g. Drafting

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.

Instructor Note - 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

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approximately 9 ft² (0.84 m²); and Class C fires where the electrical equipment is energized. If the Fire Department has Class D or K type extinguishers, the firefighter should be knowledgeable on the devices and their use.

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.

1) Classifications of fire
    a. Class A – ordinary combustible materials
    b. Class B – flammable and/or combustible liquids and gases
    c. Class C – energized electrical equipment
    d. Class D – combustible metals
    e. Class K – combustible cooking oils

2) Types of, rating systems for, and risks associated with each class of fire
    a. Types of each class of fire
    b. Rating systems for each class of fire
    c. Risks associated with each class of fire

3) Operating methods of portable extinguishers
    a. Acronym PASS
        i. Pull
        ii. Aim
        iii. Squeeze
        iv. Sweep
    b. Distance from the fire

4) Limitations of portable extinguishers
    a. Type of agent for fire
    b. Size of extinguisher for fire

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.

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Requisite Knowledge: Safety principles and practices, power supply capacity and limitations, and light deployment methods.

1) Safety principles and practices
    a. Safely lifts equipment during set up
    b. Locates the power plant in a remote and well-ventilated position
    c. Arranges power cords neatly to minimize tripping hazards
    d. Ground Fault Interrupter (GFI) operations

2) Power supply capacity and limitations
    a. Power supply (portable or mounted)
    b. Lights
    c. Auxiliary equipment
    d. Cords
    e. Connectors

3) Light deployment methods
    a. Safely lifts equipment during set up
    b. Locates the power plant in a remote and well-ventilated position
    c. Arranges power cords neatly to minimize tripping hazards
    d. Ground Fault Interrupter (GFI) operations

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.

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.

1) Properties, principles, and safety concerns for electricity, gas, and water systems
    a. Properties
        i. Electricity service
        ii. Gas service
        iii. Water service
    b. Principles
        i. Electricity service
        ii. Gas service
        iii. Water service
    c. Safety concerns
        i. Electricity safety

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ii. Gas safety
iii. Water safety

2) Utility disconnect methods and associated dangers
   a. Electrical
      i. Electric meter
      ii. Main circuit breaker/disconnect box
   b. Natural gas meter
   c. Water meter
   d. Electrocution
   e. Fire/explosion

3) Use of required safety equipment
   a. As specified by AHJ

Requisite Skills: The ability to identify utility control devices, operate control valves or switches, and assess 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.

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

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

1) Types of ground cover fires
   a. Aerial/Crown fuel
   b. Surface fuel
   c. Subsurface fuel
2) Parts of ground cover fires
   a. Head
   b. Origin
   c. Heel
   d. Left and Right Flanks
   e. Fingers

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f. Spot fires
g. Island
h. Pocket
i. Green
j. Black
k. Perimeter

3) Methods to contain or suppress
   a. Direct attack
   b. Indirect attack
   c. Parallel attack

4) Safety principles and practices
   a. Proper use of PPE
   b. Proper use of tools
   c. Scene hazard awareness
   d. Ten Standard Firefighting Orders
   e. The Eighteen Watch Out Situations
   f. Lookouts, Communications, Escape Routes, and Safety Zones (LCES)

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.

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.

1) Knot types and usage
   a. Safety knot or overhand knot
   b. Half hitch
   c. Clove hitch
   d. Figure-eight
   e. Figure-eight on a bight
   f. Figure-eight with a follow through
   g. Figure-eight bend
   h. Water knot

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2) The difference between life safety and utility rope
    a. Natural
    b. Synthetic

3) Reasons for placing rope out of service
    a. Inspection
        i. Routine
        ii. After use
    b. Storage
    c. Maintenance

4) Types of knots to use for given tools, ropes, or situations
    a. Hoisting an axe
    b. Pike pole
    c. Hose
    d. Ladder
    e. Power tools or fans

5) Hoisting methods for tools and equipment
    a. Clear area below hoisting operation
    b. Proper knot/hitch plus safety
    c. Tag line if necessary

6) Using rope to support response activities
    a. Utility
    b. Life safety/rescue

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

6.3.21 Operate 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.

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.

1) Knowledge of the various uses for an air monitor
    a. Monitor atmospheres
    b. Measure oxygen levels
    c. Detect toxic gases

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2) Basic operation of an air monitor
    a. Uses
        i. Air sampling
        ii. Measure oxygen levels
        iii. Detect presence of toxic/flammable gases
        iv. Monitor atmospheres
    b. Types
        i. Carbon monoxide monitor
        ii. Combustible gas indicator – Lower Explosive Limit (LEL Monitor)
        iii. Oxygen monitor
        iv. Gas specific monitor
        v. Photoionization detector (PID)

3) Recognition and emergency actions to be taken upon the activation of the high- or low-level alarms of the air monitor
    a. Established emergency actions per AHJ
    b. PPE
    c. SCBA
    d. Ventilation
    e. Evacuation

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.

Instructor Note - A.6.5.1
It is known that during an 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

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PPE should be washed down after any incident involving fire prior to leaving the scene.

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.

1) Types of cleaning methods for various tools and equipment
    a. Ladders
    b. Ventilation equipment
    c. SCBA
    d. Ropes
    e. Salvage equipment
    f. Hand tools

2) Correct use of cleaning solvents
    a. Mild diluted detergent
    b. Safety solvent
    c. Water
    d. Manufacturer's recommendations

3) Manufacturers or departmental guidelines for cleaning equipment and tools.

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.

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

1) Departmental procedures for noting a defective hose and removing it from service

2) Cleaning methods
    a. Rinse
    b. Gently scrub with mild detergent
    c. Final rinse

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3) Hose rolls and loads
    a. Rolls
        i. Straight roll
        ii. Donut roll
        iii. Twin donut roll
        iv. Self-locking twin donut roll
    b. Deployment methods
        i. Forward lay
        ii. Reverse lay
    c. Supply hose loads
        i. Accordion load
        ii. Horseshoe load
        iii. Flat load
    d. Attack hose loads
        i. Preconnected triple layer load
        ii. Preconnected minuteman load
        iii. Preconnected flat load

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.

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CERTIFICATION CURRICULUM MANUAL – CHAPTER ONE

FIREFIGHTER II

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CURRICULUM MANUAL
FIREFIGHTER II

The person, at the second level of progression as defined in Chapter 7 (of NFPA 1010), who has demonstrated the skills and depth of knowledge to function under general supervision. (NFPA 1010, 3.3.27) 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. (NFPA 1010, A.3.3.27)

7.1 General

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.

1) Identify and describe the purpose of an Incident Management System
    a. Common terminology
    b. Modular organization
    c. Integrated communications
    d. Unified command structure
    e. Incident Action Plan (IAP)
    f. Manageable span of control
    g. Predesignated incident facilities
    h. Comprehensive resource management
    i. Personnel Accountability

2) Procedure for implementing the Incident Management System
    a. Hazard and risk analysis
        i. What has occurred?
        ii. What is the current status of the emergency?
        iii. Is anyone trapped or injured?
        iv. Can the emergency be handled with the resources on scene or enroute?
        v. Does the emergency fall within the scope of the individual's training?
    b. Risk vs. benefit

3) Establishing command and the transfer of command
    a. First on scene
        i. Investigation
        ii. Command
        iii. Pass command for fast attack/rescue

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b. Considerations for transfer of command
   i. Arrival of senior staff
   ii. Specialized incident
   iii. Resource requirements
   iv. Time restraints
   v. Demobilization
c. Methods of transferring command
   i. Face-to-face
   ii. Via radio

4) Transferring command
   a. Name of Incident
   b. Incident Status
   c. Safety Considerations
   d. Goals and Objectives Listed in the IAP
   e. Progress Toward Completion of Tactical Objectives
   f. Deployment of Assigned Resources
   g. Assessment of the Need for Additional Resources

7.1.2 General Skill 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.

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.

1) Content requirements for basic incident reports
   a. Fire department name, district name/number, and shift number
   b. Incident number
   c. Number of alarms
   d. Names and addresses of the occupant(s) and/or owner(s)
   e. Type of structure, primary use, construction type, and number of stories
   f. How the emergency was reported (9-1-1, walk-in, radio)

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g. Type of incident (fire, rescue, medical)
h. Action that was taken (investigation, extinguishment, rescue)
i. Property use information (single-family dwelling, commercial occupancy)
j. Number of injuries and/or fatalities
k. Number of personnel who responded and type of apparatus that responded
l. How and where the fire started
m. Method used to extinguish the fire
n. Estimated cost of damage
o. Remarks/comments (usually a narrative of the incident is written by the officer in charge)
p. Any additional information required by AHJ

2) The purpose and usefulness of accurate reports
   a. A legal record of an incident
   b. Provides information to officials for evaluation performance and making changes
   c. Aids in determining departmental needs

3) Consequences of inaccurate reports

4) How to obtain necessary information
   a. Owner and/or occupant
   b. Property records
   c. Manufacturer data plates

5) Required coding procedures
   a. Current reporting system (NERIS)
   b. Previous reporting system (NFIRS)

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.

Instructor Note - 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

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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.

Requisite Knowledge: SOPs for alarm assignments and fire department radio communication procedures.

1) SOPs for alarm assignments

2) Fire department radio communication procedures

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 7.3.4.

7.3.1 Extinguish an ignitable 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.

Instructor Note - 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 ft² (9 m²). 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.

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

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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.

1) Methods by which foam prevents or controls a hazard
    a. Separating
    b. Cooling
    c. Smothering/exclusion of air
    d. Penetrating (Class A fuels)

2) Principles by which foam is generated
    a. Proportioners
        i. Injection
        ii. Eduction
        iii. Premixing/batch mixing
    b. Concentrate
    c. Solution
    d. Aeration and expansion
    e. Finished foam

3) Causes for poor foam generation and corrective measures
    a. gpmgpmEductor and nozzle flow ratings do not match
    b. Air leaks at the proportioning device
    c. Improper cleaning of proportioning equipment
    d. Nozzle is not fully open
    e. Hose lay on the discharge side of the eductor is too long
    f. Hose is kinked
    g. Nozzle is too far above the eductor
    h. Mixing different types of foam concentrate in the same tank
    i. Pressure at pump is improper for the rated device

4) Difference between hydrocarbon and polar solvent fuels and the concentrates that work on each
    a. Differences
        i. Hydrocarbon fuels
        ii. Polar solvent fuels
    b. Concentrate types
        i. Protein foam
        ii. Fluoroprotein foam
        iii. Film-forming fluoroprotein foam (FFFP)
        iv. Aqueous film-forming foam (AFFF)
        v. Alcohol-resistant foam
        vi. Fluorine-free foam (F3)

5) The characteristics, uses, and limitations of firefighting foams

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a. Class A foams
    i. Fires involving Class A fuels
    ii. Proportion ratios
    iii. Limitations
b. Class B foams
    i. Fires involving Class B fuels
        1. Hydrocarbon fuels
        2. Polar solvent fuels
    ii. Proportion ratios
    iii. Limitations

6) The advantages and disadvantages of using fog nozzles versus foam nozzles for foam application
    a. Fog nozzles
        i. Advantages
        ii. Disadvantages
    b. Foam nozzles
        i. Advantages
        ii. Disadvantages

7) Foam stream application techniques
    a. Roll-on
    b. Bank-down (bounce-off)
    c. Rain-down

8) Hazards associated with foam usage
    a. Environmental and health hazards of fluorinated foams
    b. Other foam hazards

9) Methods to reduce or avoid hazards
    a. Control or limit run-off into bodies of water
    b. Field reduction of contaminants
    c. Advanced decontamination
        i. Personnel
        ii. PPE
    d. Proper flushing of equipment

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

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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.

Instructor Note - 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, Standard for Fire Officer Professional Qualifications.

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.

1) Selection of the nozzle and hose for fire attack, given different situations
    a. Handlines
        i. Fog nozzles
        ii. Solid stream nozzles
        iii. Broken stream nozzles
    b. Master streams
        i. Fog nozzles
        ii. Solid stream nozzles
    c. Small diameter (¾", 1", 1½", 1¾", 2") handlines
    d. Medium diameter (2½", 3") handlines
    e. Large diameter hose (3½", 4", 5", 6") supply lines for master stream support

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2) Selection of adapters and appliances to be used for specific fireground situations
    a. Wyes – gated and non-gated
    b. Siamese – clapper and non-clapper
    c. Water thief
    d. Large diameter hose appliance
    e. Hydrant valve
        i. Gated
        ii. Four-way
    f. Couplings
        i. Male
        ii. Female
        iii. Sexless
    g. Reducers
    h. Adapters
        i. Adapts one thread type to another
        ii. Adapts threaded couplings to sexless couplings
        iii. Double male
        iv. Double female

3) Dangerous building conditions created by fire and fire suppression activities
    a. Dangerous fire conditions in a building
        i. Ventilation-limited
        ii. Flashover
        iii. Backdraft
    b. Conditions that contribute to the spread and intensity of the fire
        i. Fire loading
        ii. Combustible furnishings and finishes
        iii. Roof coverings
        iv. Wooden floors and ceilings
        v. Large, open spaces
    c. Conditions that make the building susceptible to collapse
        i. Damage to structural system of the building from fire or firefighting activities
        ii. Age of the building
        iii. Lightweight or truss construction
        iv. Older buildings exposed to weather
    d. Firefighting operations
        i. Improper ventilation
        ii. Added weight of water used for fire extinguishment
        iii. Collapse considerations after extinguishment

4) Indicators of building collapse
    a. Deterioration of mortar joints

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b. Overall age and condition of the building
c. Cracks in walls, floors, ceilings, and roofs
d. Signs of building repair (tie rods and stars)
e. Bulges, bowing and leaning of walls
f. Noises associated with structural movement/failure (moaning, groaning, cracking)
g. Lack of water run-off from firefighting operations
h. Sagging or spongy floors and/or roofs
i. Large volume of fire
j. Extended firefighting operations
k. Smoke coming from cracks in walls
l. Dark smoke from truss roof or floor spaces
m. Multiple fires in same building or damage from previous fires

5) 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
   a. Wood
   b. Masonry (brick, block, stone)
   c. Cast iron
   d. Steel
   e. Reinforce concrete
   f. Gypsum wallboard
   g. Glass
   h. Plaster on lath

6) Search and rescue and ventilation procedures
   a. Search and rescue procedures
      i. Search types
         1. Primary search
         2. Secondary search
      ii. Search techniques
         1. Right hand/left hand orientation
         2. Large area/small area considerations
         3. Rope or hose line assisted (team search method)
         4. Use of tools
            a) To extend reach
            b) Door chocks or door latch straps
            c) Thermal imaging cameras
         5. Vent-Enter-Isolate-Search (VEIS)
         6. Communication during search
         7. Search marking systems
   b. Ventilation procedures
      i. Door control
      ii. Types

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1. Natural
2. Mechanical
    a) Positive pressure
    b) Negative pressure
3. Hydraulic

iii. Techniques
1. Horizontal
2. Vertical

iv. Coordinate with fire attack

v. Special ventilation considerations
1. Concrete roofs
2. Metal roofs
3. Basements
4. High-rise buildings
5. Windowless buildings
6. Large buildings

vi. Flow paths
1. Improving flow
2. Interrupting flow

7) Indicators of structural instability
    a. Truss construction
    b. Lightweight construction
    c. Cracks or separations in walls, floors, ceilings and roof structures
    d. Presence of tie rods and stars
    e. Loose bricks, blocks, or stones falling from buildings
    f. Deteriorated mortar joints
    g. Walls that appear to be leaning
    h. Structural members that appear to be distorted

8) Suppression approaches and practices for various types of structural fires
    a. Offensive attack
    b. Transitional attack
    c. Defensive attack
    d. Occupancy
        i. Single-family dwellings
        ii. Multi-family dwellings
        iii. Commercial occupancies
        iv. High-rise buildings
    e. Residential fires
        i. Attic
        ii. Grade-level
        iii. Above grade-level

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iv. Below grade-level
v. Concealed spaces

f. Small business fires
i. Attic
ii. Grade-level
iii. Above grade-level
iv. Below grade-level
v. Concealed spaces

9) The association between specific tools and special forcible entry needs
a. Hand tools, for example:
i. Pry axe
ii. Flathead axe and Halligan (set of irons)
b. Power tools, for example:
i. Chainsaw
ii. Rotary saw
iii. Reciprocating saw
iv. Drill
c. Lock tools, for example:
i. A tool
ii. K tool
iii. J tool
iv. Shove knife
v. Duck bill padlock breaker
vi. Locking pliers and chain
d. Hydraulic/pneumatic tools, for example:
i. Rabbit tool
ii. Hydraulic spreaders
iii. Hydraulic rams
iv. Hydraulic cutters
v. Pneumatic spreaders
vi. Pneumatic cutters
vii. Pneumatic drills and saws

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

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identified in a structure, overhaul is completed, and the liquid level in a container is determined.

Requisite Knowledge: TI operating procedures and limitations of TIs.

1) TI operating procedures
    a. Warm-up cycle
    b. Battery status
    c. Modes/temperature ranges
        i. Fire mode
            1. Low temperature/high sensitivity
            2. High temperature/low sensitivity
            3. Mixed gain
        ii. Survey mode/overhaul mode
        iii. Spot temperature mode
        iv. Other modes per AHJ
    d. Fire 360-degree size-up/entry
        i. Heat signatures
        ii. Flow paths/convective currents
        iii. 6-sided view
            1. Floor
            2. Ceiling
            3. All four sides of the room
            4. Reassess with senses
        iv. Potential Victims
        v. Overhaul
        vi. Safe Exit
    e. Victim location
        i. Wilderness/outdoor environments
        ii. Vehicle incident
    f. Liquid level in a container
    g. Care and Maintenance
        i. Manufacturer recommendations
        ii. AHJ SOPs

2) TI Limitations
    a. Modes of operation
    b. Field of view
    c. Emissivity
    d. Tunnel vision

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

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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.

Instructor Note - 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.

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.

1) Characteristics of pressurized flammable gases
    a. Pressure
    b. Vapor pressure
    c. Vapor density
    d. Expansion ratio

2) Elements of a gas cylinder
    a. Cylinder design
    b. Cylinder valves
    c. Pressure relief valves

3) Effects of heat and pressure on closed cylinders
    a. Expansion of cylinder
    b. Pressure relief valves
    c. Container failure

4) Boiling liquid expanding vapor explosion (BLEVE) signs and effects
    a. Pinging sound of pressure-stretched metal
    b. Discoloration of metal shell
    c. Bulge or bubble in metal shell
    d. Activation of pressure relief valve
    e. Failure of pressure relief valve

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f. Increase in intensity of pressure relief valve (torch)
g. Container failure
h. Violent explosion with fragmentation
i. Rapid expansion of gases
j. Huge fireball
k. Radiant heat
l. Flying container fragments

5) Methods for identifying contents
   a. Placards
   b. Labels
   c. Shipping papers
   d. Facility documents

6) How to identify safe havens before approaching flammable gas cylinder fires
   a. Perform scene size-up
      i. Note position and condition of container
      ii. Analyze terrain
      iii. Identify possible safe havens

7) Water stream usage and demands for pressurized cylinder fires
   a. Volume of water
      i. Vapor space
      ii. Point of impingement
      iii. 500 gpm minimum
   b. Placement of streamers
   c. Manned vs. unmanned fire streams
   d. Secured, uninterrupted source
   e. Adequate stream application

8) What to do if the fire is prematurely extinguished
   a. Vapor dispersion
   b. Vapor control (close valve)
   c. Secure or eliminate ignition sources

9) Valve types and their operation
   a. Shut-off valves
   b. Pressure relief valves

10) Alternative actions related to various hazards
   a. Evacuate
   b. Isolate
   c. Allow self-extinguishment
   d. Retreat

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11) When to retreat
    a. Failure of relief valve
    b. Significant container damage
    c. Loss of water

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.

Instructor Note - 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, a 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 1020: Standard for Fire and Emergency Services Instructor, Fire Officer, and Emergency Medical Services Officer Professional Qualifications* (2025).

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.

1) Methods to assess origin and cause
    a. Smoke conditions
    b. Unusual odors
    c. Abnormal behavior of fire when water is applied
    d. Obstacles hindering firefighting
    e. Incendiary devices, trailers and accelerants
    f. Effects of ventilation

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g. Structural modifications
h. Charring and fire patterns
i. Fire behavior
j. Availability of documents
k. Fire detection and protection systems
l. Intrusion alarms
m. Description of fire
n. Contents
o. Business records
p. Time of day
q. Weather conditions
r. Vehicles and people on scene

2) Types of evidence
   a. Physical evidence
   b. Direct evidence
   c. Circumstantial evidence

3) Means to protect various types of evidence
   a. Securing the fire scene
   b. Chain of custody
   c. Do not gather or handle evidence
   d. Avoid trampling over evidence
   e. Avoid excess use of water
   f. Protect human footprints and tire marks
   g. Protect partially burned papers found in a furnace, stove or fireplace
   h. Leave charred documents found in containers

4) The role and relationship of Firefighter IIs, law enforcement authority, and private investigation entities in fire investigations
   a. The importance of writing a chronological account of important circumstances personally observed
   b. Identify the importance of reporting hearsay to the investigator
   c. Identify the importance of performing salvage and overhaul carefully
   d. Fire Marshal
   e. Arson Investigator
   f. Fire Investigator
   g. Police
   h. Insurance Investigator
   i. Private Investigator

5) The effects and problems associated with removing property or evidence from the scene

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a. Exigent circumstances rule
b. Chain of custody
c. Spoliation
d. Statements
e. Miranda warning
f. Search and seizure

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.

Instructor Note - 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.

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.

1) The fire department's role at a vehicle accident
   a. Response
   b. Arrival and size-up
   c. Stabilization of the scene
   d. Gaining access and disentangling victims

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e. Removing and treating the victim

2) Points of strength and weakness in auto body construction
   a. Vehicle door and door posts
   b. Vehicle roof
   c. Steering wheel
   d. Vehicle floor
   e. Vehicle pedals
   f. Vehicle seats
   g. Reinforced dashboard
   h. Vehicle windshield and windows
   i. Dashboard

3) Dangers associated with vehicle components and systems
   a. Vehicle stabilization
   b. Airbag systems (SRS and SIPS)
   c. Roll over protection systems (ROPS)
   d. Hybrid and electrical systems
      i. Shock hazard
   e. Fuels

4) The uses and limitations of hand and power extrication equipment
   a. Hydraulic devices
      i. Upright
      ii. Upside down
      iii. On its side
      iv. On an inclined surface
   b. Pneumatic devices
      i. Air impact wrenches
      ii. Air shores
      iii. Rescue air-lift bags
      iv. Air chisels
   c. Block and tackle
   d. Cribbing and shoring materials
      i. Struts/tensioned buttress system
      ii. Wheel chocks
      iii. Wooden or plastic/composite blocks
   e. Ratchet device
   f. Hydraulic and/or electric extrication spreaders
   g. Hydraulic and/or electric extrication shears
   h. Hydraulic and/or electric extrication ram
   i. Cutting tools

5) Safety procedures when using various types of extrication equipment
   a. PPE

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i. High-visibility safety vest
b. Flammable hazards
c. Electrical hazards
d. Pinch hazards
e. Crush hazards
f. Vehicle safety device deployment hazards
g. Proper tool use
h. Crowd control
i. Traffic hazards
j. Other hazards

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.

Instructor Note - 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.

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.

1) The firefighter's role at a technical rescue operation
   a. Safety
   b. Receive direction from technical rescue personnel
   c. Work as a team
   d. Basic components of rescue operations
      i. Preparation
      ii. Response
      iii. Arrival and size-up
      iv. Stabilization
      v. Access

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vi. Disentanglement
vii. Removal
viii. Transport
ix. Security of the scene and preparation for next call
x. Post incident analysis

2) The hazards associated with technical rescue operations
   a. Machinery
   b. Confined space
   c. Rope rescue (vertical rescue)
   d. Trench
   e. Structural collapse
   f. Water and ice
   g. Energized electrical line
   h. Elevator and escalator emergencies
   i. Wilderness
   j. Mine, tunnel and cave
   k. Industrial/hazardous materials

3) Types and uses for rescue tools
   a. Machinery (e.g., hydraulic spreaders/cutters/rams)
   b. Confined space (e.g., taglines, harnesses, supplied air respirators, air monitoring devices, tripod, winch)
   c. Rope rescue (vertical rescue, e.g., rope, carabiners, anchor plates, pulleys)
   d. Trench (e.g., shoring, cribbing, stringers, rakers, air monitoring devices)
   e. Structural collapse (e.g., jacks, shoring, cribbing)
   f. Water and ice (e.g., PFDs, throw bag of rope)
   g. Elevator and escalator emergencies (e.g., elevator keys)
   h. Wilderness (e.g., compass, GPS, stokes basket)
   i. Mine, tunnel and cave (e.g., shoring, ropes, flashlights)

4) Rescue practices and goals
   a. Machinery
   b. Confined space
   c. Rope rescue (vertical rescue)
   d. Trench
   e. Structural collapse
   f. Water and ice
   g. Elevator and escalator emergencies
   h. Wilderness
   i. Mine, tunnel and cave

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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.

Instructor Note - 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).

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.

1) Organizational policy and procedures
    a. Scheduling considerations
    b. Approach and introduction
    c. Conducting the survey
    d. Formulate recommendations

2) Common causes of fire and their prevention
    a. Housekeeping practices
    b. Smoking
    c. Open burning
    d. Electrical sources of ignition
    e. Common hazards by location

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i. Kitchen
ii. Living area
iii. Bedroom
iv. Garage/storage
v. Bathroom
vi. Laundry
vii. Attics and basements
viii. Exterior

f. Improperly storing, charging, and disposing of batteries for battery-powered devices
g. Special hazards

3) The importance of a fire safety survey and public fire education programs to fire department public relations and the community
   a. Enhances community life safety
   b. Prevents loss
   c. Promotes community support

4) Referral procedures

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.

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

(1) Stop, drop, cover your face, 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.

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

1) Parts of informational materials and how to use them
    a. Pamphlets
    b. Coloring books
    c. Public service announcements (PSAs)
    d. Public presentations
        i. Learn Not to Burn
        ii. EDITH (Exit Drill In The Home)/Home Escape Planning
        iii. Installation and maintenance of smoke alarms
        iv. Change your clock – change your battery
        v. Stop, drop, cover your face, and roll
        vi. Fire safety for babysitters
        vii. Fire safety for seniors
        viii. Fire safety for college students
        ix. Close Before You Doze
        x. Wildland prevention program
            1. Firewise
            2. Other programs

2) Basic presentation skills
    a. Age and audience appropriateness
    b. Knowledge of subject – prepare the message
    c. Use of props
    d. Professional attire
    e. Positive attitude
    f. Practice the presentation

3) Departmental standard operating procedures (SOPs) for giving fire station tours

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.

Instructor Note - 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

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development of preincident plans. Jurisdictions that use Firefighter IIs to develop preincident plans should comply with the requirements of *NFPA 1020: Standard for Fire and Emergency Services Instructor, Fire Officer, and Emergency Medical Services Officer Professional Qualifications (2025).*

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.

1) The sources of water supply for fire protection
    a. Pressurized system
    b. Static water source
    c. Mobile water supply

2) The fundamentals of fire suppression and detection systems
    a. Automatic sprinkler systems
        i. Types
            1. Wet pipe
            2. Dry pipe
            3. Deluge
            4. Pre-action
            5. Special Extinguishing Systems
            6. Residential
        ii. Sprinkler heads
            1. Mounting position/orientation
                a) Upright
                b) Pendant
                c) Side wall
                d) Recessed
                e) Flush
                f) In-rack
            2. Release mechanisms
                a) Fusible link
                b) Frangible bulb
                c) Chemical pellet
                d) Early-Suppression Fast-Response (ESFR)
                e) Deluge/open-head
        iii. Control valves
            1. Outside stem and yoke (OS&Y)
            2. Butterfly valve
            3. Post indicator valve (PIV)

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4. Wall post indicator valve (WPIV)
5. Post indicator valve assembly (PIVA)

iv. Valves
1. Check valve
2. Main drain
3. Alarm test connection
4. Inspector test

v. Fire Department Connection (FDC)
1. Two 2½" inlets
2. One large diameter hose (LDH)

b. Standpipe systems
i. Class I
1. Fire department use only
2. 2½" connection with a valve

ii. Class II
1. Occupant use
2. 1½" single jacket hose preconnected

iii. Class III
1. Occupant or fire department use
2. 2½" connection with 1½" reducer and hose preconnected

c. Specialized extinguishment systems
i. Dry chemical systems
ii. Wet chemical systems
iii. Foam systems
iv. Clean agent systems
v. Carbon dioxide systems
vi. Water mist and hybrid systems

d. Fire department notification systems
i. Remote station systems
ii. Proprietary systems
iii. Central station systems

e. Fire alarm system components
i. Initiating devices
1. Heat detectors
a) Fixed-temperature detectors
b) Rate-of-rise detectors
c) Combination rate-of-rise fixed temperature detectors

2. Smoke detectors
a) Ionization
b) Photoelectric

3. Flame detectors
a) Ultraviolet (UV)
b) Infrared (IR)

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4. Gas/Air sampling detectors
    a) Fire-Gases/products of combustion
    b) Carbon monoxide
5. Manual pull station

ii. Notification Appliances
1. Audible
    a) Bells
    b) Horns
    c) Sirens
    d) NFPA 72 temporal-3 pattern/T-3 signal
    e) Recorded announcement
2. Visual
    a) Strobes
    b) Flashing lights
3. Textual – visual text or symbol indicating a fire or emergency condition
4. Tactile – for the hearing impaired
5. Fire Alarm Control Panel (FACP)/Fire Alarm Control Unit (FACU)
    a) Power supply

3) Common symbols used in diagramming construction features, utilities, hazards, and fire protection systems

(Note: the examples below are not a comprehensive list. Additional symbols may be used and determined by the AHJ).

a. Construction features
    i. Fire escape
    ii. Skylight
    iii. Stairs
    iv. Elevator
    v. Fire wall
b. Utilities
    i. Gas
        1. Natural gas
        2. Propane
    ii. Electric/Solar
    iii. Water
c. Fire protection
    i. Hydrant/alternative water supplies
    ii. Sprinkler riser
    iii. Fire department connection
    iv. Automatic sprinklers
    v. Not sprinklered
    vi. Standpipe

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vii. Fire alarm
viii. Fire pump

d. Hazards
i. Collapse potential
ii. Energy Storage Systems (ESS)/Lithium battery stored electricity systems
iii. Flammable/combustible liquid tank
iv. Compressed, liquified, cryogenic gas
v. Corrosive materials

4) Departmental requirements for a preincident survey and form completion
a. Tactical information – considerations/planning for:
i. Water supply, FDCs, Sprinkler/Standpipe Connections
ii. Construction type
iii. Floor plan or building layout
iv. Height and overall dimensions
v. Utility shut-off locations
vi. Search and rescue
vii. Forcible entry
viii. Ladder placement
ix. Ventilation
x. Contents/fuel load
xi. Potential access and egress issues
xii. Special needs populations
b. Occupancy type
i. High rise
ii. Assembly
iii. Healthcare facilities
iv. Detention and correctional facilities
v. Residential occupancies
c. Locations requiring special considerations
i. Gas or liquid fuel pipelines
ii. Electrical transmission lines
iii. Ships and waterways
iv. Subways
v. Railroads
vi. Airports
vii. Industrial facilities
viii. Hazardous materials processes and/or bulk storage locations
ix. Other target hazards

5) The importance of accurate diagrams
a. Accurate diagrams promote better decision making

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b. Enhances civilian and firefighter safety
c. Search and rescue operations are conducted efficiently

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.

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.

1) Types of cleaning methods
   a. Metal parts
   b. Wood parts
   c. Fiberglass/synthetic parts
   d. Cutting edges
   e. Power tools
   f. Electrical/electronic devices

2) Correct use of cleaning solvents
   a. Associated hazards
   b. Application
   c. Safety considerations

3) Manufacturer and departmental guidelines for maintaining equipment and its documentation
   a. Per the manufacturer's instructions/service manual(s)
   b. Inspection frequency and procedures per AHJ

4) Problem-reporting practices
   a. Personnel safety
   b. Per department SOPs
      i. Tag problem item
      ii. Remove from service
      iii. Report problem per AHJ

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

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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.

Instructor Note - A.7.5.5(A)
Procedures for conducting hose testing can be found in Chapter 4 of NFPA 1962.

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.

1) Procedures for safely conducting hose service testing
    a. Routine inspection
        i. Lay clean hose out on flat surface
        ii. Inspect hose for defects
        iii. Mark defects as found
        iv. Tag hose with description of defects found
    b. Annual service test
        i. Don protective gear – wear helmet, gloves, and eye protection at a minimum
        ii. Connect up to 300 feet maximum of hose to a discharge outlet with hose test gate valve
        iii. Attach a nozzle or valve to the end of the hose
        iv. Fill hose to 50 psi, remove air, twists and kinks in hose
        v. Mark hose at the base of the coupling
        vi. Check couplings and hose for leaks
        vii. If couplings leak at the gasket, replace the gasket
        viii. After gaskets are replaced or if no leaks are present, increase pressure following NFPA 1962 and maintain for 5 minutes
        ix. Monitor hose and couplings for leaks or failure
        x. Reduce pressure, depressurize hose, and drain
        xi. Inspect marks at couplings for separation or slippage
        xii. Tag failures or defects
        xiii. Distinctly mark hose that passed
        xiv. Log test results for departmental record
    c. Safety notes:
        i. Always wear a helmet, gloves, and eye protection while working around pressurized hose
        ii. Never walk over, straddle, or stand over hose being pressure tested

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iii. Stand or walk near pressurized hose only as necessary

2) Indicators that dictate any hose be removed from service
   a. Mechanical damage
      i. Bent or damaged couplings
      ii. Hose separating from couplings
      iii. Cuts or holes
      iv. Crushed suction hose
   b. Chemical damage
      i. Chemical degradation
      ii. Contamination
   c. Heat damage
      i. Burn holes
      ii. Delamination
   d. Mildew/rot
   e. Service test pressure failure (i.e. burst hose, leak)

3) Recording procedures for hose test results
   a. Hose records should contain:
      i. Hose size/length, type, and diameter
      ii. Name of manufacturer
      iii. Date of manufacture
      iv. Date of purchase
      v. Testing dates
      vi. Any repairs made
      vii. Cause(s) of failures
   b. Other information per AHJ

Requisite Skills: The ability to operate hose testing equipment and nozzles and to record results.

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** REQUEST FOR INSTRUCTORS **

PLEASE PROVIDE YOUR STUDENTS WITH THE INFORMATIONAL PAGE/CHECKLIST ON THE FOLLOWING PAGE TO ENSURE THEY UNDERSTAND THE COMPLETE PROCESS TO BECOME TCFP CERTIFIED

PRINT AND DISTRIBUTE, SHARE THE PDF, AND/OR DISPLAY THE QR CODE

TO BECOME CERTIFIED BY TCFP

Students do not become “certified” just by taking this class and passing any exams conducted by the training provider

YOU MUST

- ☐ Qualify for and pass all sections or the combined Basic Structure Firefighter exam(s). You must have unexpired exam scores in FIDO to qualify for certification. View testing information.
- ☐ Document completion of medical training equal to EMR, ECA, EMT or Paramedic certification in you FIDO account – see DSHS link. This can be completed before, during, or after your training.
- ☐ Create your TCFP FIDO account.
- ☐ Complete a fingerprint-based background check via IdentoGo – FAST-Pass (PDF).
- ☐ Apply and pay for certification – the quickest option is to pay with a credit card through your TCFP FIDO account.
- ☐ Should you fail your first attempt on the TCFP exam, you have 180 days to retake the exam. After 180 days you will be required to repeat the training before testing again.

YOU must verify whether your employer is doing some of this for you, or if it is your responsibility

For more information, please visit

Seven Steps to Becoming a Certified Texas Firefighter

To ensure you receive important communications from TCFP, be sure to:

- Verify your phone number and email are correct in your FIDO account
  - It is recommended that you use a personal email address to avoid losing access to your email should you ever change employers
- Add @tcfp.texas.gov to your **allowed senders list** (sometimes called “whitelist”) to prevent TCFP emails being flagged as SPAM.
  - Because we use automated email responses and announcements, our messages often end up buried in Spam or Junk folders.
  - Instructions for whitelisting is different for each email provider; you can usually find simple instructions for your configuration with an internet search.

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END OF CURRICULUM MANUAL

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