

Instructional Framework

Fire Service

43.0202.00

This Instructional Framework identifies, explains, and expands the content of the standards/measurement criteria, and, as well, guides the development of multiple-choice items for the Technical Skills Assessment. This document corresponds with the Technical Standards endorsed on July 16, 2023.



Domain 1: Fire Ground Operations

Instructional Time: 40 - 50%

STANDARD 3.0 DEMONSTRATE THE PROPER USE AND MAINTENANCE OF FIREFIGHTING PERSONAL PROTECTIVE EQUIPMENT (PPE)

3.1 Identify protective equipment that comprises the firefighter's ensemble	• Components of firefighters' Personal Protective Equipment (PPE) ◦ Helmet, hood, gloves, coat, pants, personal alerting safety system (PASS) device, boots ◦ Self-Contained Breathing Apparatus (SCBA)
3.2 Demonstrate the inspection and maintenance of personal protective equipment	• Inspection techniques and responsibilities of Personal Protective Equipment (PPE) • Care and maintenance of Personal Protective Equipment (PPE)
3.3 Demonstrate donning and doffing of PPE within 1 minute	• Proper donning and doffing techniques for turnout gear
3.4 Identify the components of a SCBA (Self-Contained Breathing Apparatus)	• Self-Contained Breathing Apparatus (SCBA) components
3.5 Describe respiratory hazards and when SCBA "shall be used" (i.e., carcinogens, cyanide, etc.)	• Respiratory hazards and when SCBA "shall be used" ◦ Carcinogens ◦ Cyanide • Hazardous environments requiring SCBA usage ◦ Immediately dangerous to life and health (IDLH)
3.6 Demonstrate donning and doffing SCBA	• Procedures and steps for donning and doffing SCBA
3.7 Explain the principles of air management consistent with NFPA 1404	• Air management techniques • NFPA 1404 air management procedure • Emergency procedures of SCBA

3.8 Demonstrate replacing SCBA air cylinders	• SCBA air cylinders characteristics • Inspection procedures for SCBA cylinders
STANDARD 6.0 EXAMINE FIRE SERVICE WATER SUPPLY AND DEMONSTRATE FIRE STREAMS	
6.1 Describe water supply sources, including alternate and rural delivery	• Sources of water supply • Types of water distribution systems • Components of water distribution system • Rural water supply operations
6.2 Identify types of fire hydrants, markings, locations, use, inspection, and maintenance	• Types of fire hydrants • Hydrant classifications and systems • Hydrant components • Hydrant operations, inspection, and maintenance procedures
6.3 Identify fire hose sizes, applications, couplings, and general care and maintenance	• Fire hose construction characteristics • Fire hose use classification • Fire hose coupling types • Inspection, care, and maintenance of fire hose • Fire hose service testing procedures
6.4 Recognize and demonstrate various hose loads, pre-connect hose lines, and hose rolls	• Hose rolls • Preconnected and other attack hose loads • Supply hose loads and lays • Hose line deployment and advancement methods
6.5 Demonstrate the operation of hose lines and associated appliances and hose tools	• Hose tools • Hose appliances • Supply hose lines • Attack hose lines
6.6 Explain the principles of fire streams (e.g., types, design, operation, and nozzle pressure effects, and flow capabilities) and precautions when advancing hose lines	• Principles of fire streams ○ Types ○ Design ○ Operation ○ Nozzle pressure effects ○ Flow capabilities • Characteristics and extinguishing properties of water • Fire stream nozzle types • Fire stream nozzle characteristics, uses, and effects • Classification of fire streams • Nozzle control and safety procedures

	• Water hammer
6.7 Demonstrate fire stream tactics (e.g., extinguishing properties of water, steam conversion, and friction loss; opening, closing, and adjusting nozzle flow and patterns; and indirect, combination, and direct fire attack with fire streams)	• Fire stream tactics ○ Extinguishing properties of water ○ Steam conversion ○ Friction loss ○ Opening, closing, and adjusting nozzle flow and patterns ○ Indirect, combination, and direct fire attack ○ Offensive ○ Defensive • Fire stream nozzle operation • Inspection and maintenance of fire stream nozzles • Fire stream nozzle application/attack methods • Nozzle control and safety procedures • Foam stream characteristics and application methods
STANDARD 7.0 EXAMINE FIRE GROUND FUNCTIONS	
7.1 Describe observational practices, strategies, and tactics, enroute and at the scene [i.e., SDM (Strategic Decision Making Model), fire ground safety, etc.]	• Observational practices, strategies, and tactics, enroute and at the scene ○ SDM (Strategic Decision Making Model) ○ Fire ground safety • Situational awareness • Incident size up and assessment • Characteristics of offensive and defensive fire attack strategies • Tactics associated with strategies • Hazards of emergencies enroute
7.2 Describe various firefighter tools and equipment and their uses	• Types of tools ○ Rotating tools ○ Prying tools ○ Pulling and pushing tools ○ Cutting tools ○ Striking tools
7.3 Identify types of ladders and their uses and safe practices on the fire ground	• Ground ladder use situations • Ground ladder construction and components • Types of ground ladders, uses, and functions • Inspection, care, maintenance, and service testing of ground ladders • Ground ladder carries, placement, and raises • Climbing and functions working on ground ladders • Ground ladder safety

	• Aerial ladders
7.4 Describe conventional forcible entry	• Forcible entry situations • Forcible entry method objectives and techniques • Safety considerations associated with conducting forcible entry activities
7.5 Describe salvage basics (e.g., covers and equipment, care, and maintenance)	• Salvage basics ◦ Covers and equipment, care, and maintenance • Philosophy of loss control as it relates to salvage operations and functions • Salvage considerations and situations • Salvage methods and techniques • Salvage tools and equipment types • Use of salvage tools and equipment including salvage covers, carryalls, catchalls, runners, dewatering devices and others. • Inspection, care, and maintenance of salvage tools and equipment
7.6 Describe the purpose and techniques of overhaul	• Philosophy of loss control as it pertains to overhaul operations and functions • Overhaul considerations and situations • Techniques for locating hidden fires • Thermal imaging cameras use during overhaul • Safety considerations during overhaul operations • Evidence recognition and preservation
7.7 Explain fire ground search and rescue techniques and safety considerations	• Considerations during search and rescue operations • Equipment and resources needed and used during rescue operations • Characteristics and methods for conducting primary and secondary searches • Safety procedures during rescue operations
7.8 Explain the purpose and functions of a RIC (Rapid Intervention Crew/Companies)	• Initial Rapid Intervention Crew (IRIC) and/or RIC components and requirements • IRIC and RIC activation in MAYDAY situation • Self-rescue/survival techniques
7.9 Describe reasons and considerations for fire ground ventilation	• Objectives for ventilation • Consideration for decision to ventilate • Effects of ventilation on fire behavior, structure, and life safety

	• Equipment and resources needed for ventilation
7.10 Demonstrate vertical, horizontal, and forced ventilation	• Types and methods of ventilating a structure • Equipment and resources needed for each type of ventilation

Domain 2: Fire Behavior, Safety, and Building Construction

Instructional Time: 20 - 25%

STANDARD 2.0 EXAMINE FIREFIGHTER HEALTH, WELLNESS, AND SAFETY

2.1 Research common firefighter injuries and fatalities	• Line of Duty Deaths (LODD) investigations • National Institute of Occupational Safety and Health (NIOSH) report
2.2 Describe safety standards related to fire service [e.g., NFPA (National Fire Protection Association) 1500 and OSHA]	• Safety standards ◦ National Fire Protection Association (NFPA) 1500 ◦ Occupational Safety and Health Administration (OSHA) • Components of a department safety and health plan ◦ Safety committees ◦ Safety officer ◦ Annual physical exams
2.3 Analyze sources of personal stress and fire service related crises (i.e., sleep deprivation, cancer awareness, etc.), and identify management strategies	• Sources of personal stress ◦ Coping mechanisms • Fire service related crises ◦ Sleep deprivation ◦ Cancer awareness • Component, functions and activities of Critical Incident Stress Management (CISM)
2.4 Practice personal safety in learning and training	• Personal responsibility • Avoid freelancing • Teamwork • Incident safety practices • Safety during the emergency response ◦ Seated and belted ◦ Mounting and dismounting
2.5 Evaluate health-compromising risk behaviors on the job and in personal life, and identify successful prevention and intervention techniques	• Substance abuse • Lifestyle choices • Prevention and intervention

2.6 Describe various fire service health and wellness programs and EAPs (Employee Assistance Programs) available to firefighters	• Fire department safety and health programs • Components, functions, and activities of an Employee Assistance Program (EAPs)
2.7 Identify functional exercises specific for firefighters (e.g., warm-up, flexibility, and core strength exercises; cardiovascular exercises; and functional training exercises)	• Functional exercises specific for firefighters ○ Warm-up ○ Flexibility ○ Core strength exercises ○ Cardiovascular exercises ○ Functional training exercises • Firefighter job requirement and functions for physical ability and fitness • Candidate Physical Ability Test (CPAT) components • Specific needs and impacts of each type of training
2.8 Exhibit physical well-being through good nutrition and a personal fitness plan including exercises appropriate to firefighters	• Components of a healthy diet and exercise
2.9 Identify components of a common physical fitness program (e.g., muscular strength, muscular endurance, cardiovascular endurance, flexibility, and body fat composition)	• Components of a common physical fitness program ○ Muscular strength ○ Muscular endurance ○ Cardiovascular endurance ○ Flexibility ○ Body fat composition • Components of exercise and training designed to target and improve each component of physical fitness
2.10 Complete a physical ability assessment (i.e., CPAT, etc.)	• Physical ability assessment ○ Candidate Physical Ability Test (CPAT) • Physical ability assessment ○ Components ○ Expectations ○ What results indicate areas of weakness and how to improve
2.11 Practice appropriate safety precautions in fire stations and facilities	• Safety procedures and precautions
STANDARD 4.0 EXPLAIN FIRE BEHAVIOR	
4.1 Describe the interaction of the fire triangle and fire tetrahedron (i.e., chemistry of fire)	• Interaction of the fire triangle and fire tetrahedron ○ Chemistry of fire • Components of the fire triangle and tetrahedron

	Understanding of how the removal of components of the triangle and tetrahedron cause fire extinguishment
4.2 Describe transmission of heat	- Mechanism of heat transfer - Convection - Conduction - Radiation
4.3 Explain various states of fuel	Physical states of fuels and their characteristics
4.4 Describe the classifications of fire (e.g., A, B, C, D, and K)	- Classifications of fire - A, B, C, D, and K
4.5 Explain the stages of fire growth (e.g., incipient, growth, fully developed, and decay)	- Stages of fire growth - Incipient - Growth - Fully developed - Decay - Stages of fire development and characteristic associated with each step - Flashover - Backdraft
STANDARD 5.0 EVALUATE BUILDING CONSTRUCTION RELATIVE TO FIRE BEHAVIOR AND STRUCTURAL PERFORMANCE	
5.1 Define and use construction terminology	- Building construction component terminology - Common terminology in fire service
5.2 Identify common building materials and construction features	- Building material component and construction methods - Building opening materials, components and security devices
5.3 Identify the types of building construction (e.g., I, II, III, IV, and V)	- Types of building construction/classification - I, II, III, IV, V, etc.
5.4 Contrast strengths and weaknesses of different types of construction	- Expected fire behavior and impacts of fire on each type of building construction - Ability to breach and gain access into or out of each type of building construction
5.5 Identify fire conditions within building constructions that contribute to firefighter injuries/fatalities (i.e., wood vs. steel, lightweight construction, traditional onsite framing, etc.)	- Fire conditions within building constructions that contribute to firefighter injuries/fatalities - Wood vs. steel - Lightweight construction

	○ Traditional onsite framing, etc.
5.6 Research a firefighter fatality NIOSH (National Institute for Occupational Safety and Health) report where building construction was a factor	● Building construction factors leading to line of duty deaths and injuries

Domain 3: Structure of the Fire Service

Instructional Time: 15 - 20%

STANDARD 1 .0 EXAMINE THE ORGANIZATION AND STRUCTURE OF FIRE SERVICE

1.1 Explain fire service (e.g., history, mission, culture, and organizational structure)	● History ● Mission ● Culture ● Organizational structure
1.2 Diagram an organizational chart for a fire department (i.e., chain of command, etc.)	● Chain of command ● Organizational structure for fire service organizations ● Chain of command, unity of command, span of control philosophy
1.3 Explain the importance of standard operating procedures and policies for the fire department	● Definitions and concepts for policies and procedures of the fire service
1.4 Describe the fire agency's interactions with other community agencies	● Need and examples of other agency interactions ● Relationships with the community partners
1.5 Describe the responsibility of the risk manager/manager of public safety in a fire department	● Responsibility of the department safety officer and an Incident Safety Officer (ISO)
1.6 Research occupational trends, career tracks, and employment opportunities in fire service	● Different career paths ● Trending paths
1.7 Research training and education opportunities for firefighters (e.g., fire service resources, fire department or unit demands, State Fire Academy, and Arizona Center for Fire Service Excellence)	● Fire service resources ● Fire department or unit demands ● State Fire Academy ● Arizona Center for Fire Service Excellence ● Functions of pathways in public education, fire inspection and other risk reduction roles in and out of fire service

1.8 Describe various roles and responsibilities of emergency apparatus types on emergency incidents	• Emergency incidents types • Emergency apparatus types and company functions of each
STANDARD 8.0 EXAMINE INCIDENT COMMAND	
8.1 Describe the NIMS (National Incident Management System) (i.e., ICS 100, etc.)	• NIMS (National Incident Management System) ◦ Introduction to the Incident Command System (ICS 100) • NIMS concept and components • NIMS application to incident management on a fire scene
8.2 Describe a fire department's risk management profile	• Risk analysis profile for incidents and situations
8.3 Explain the three fire ground strategies	• Life safety • Incident stabilization • Property conservation
8.4 Describe tactical priorities	• RECEO-VS components as they contribute to incident ◦ Rescue ◦ Exposures ◦ Confinement ◦ Extinguishment ◦ Overhaul ◦ Ventilation ◦ Salvage
8.5 Discuss critical fire ground factors (i.e., rescue profiles, etc.)	• Critical fire ground factors ◦ Rescue profiles ◦ Building construction ◦ Weather conditions ◦ Occupancy ◦ Resources ◦ Water supply
8.6 Demonstrate proper radio procedures	• Procedures to be followed during emergency and non-emergency operations • Operation procedures of portable radios • Common terminology
8.7 Describe the importance of documentation and incident reporting	• National Fire Incident Reporting System (NFIRS) reporting system components and requirement

STANDARD 12.0 ANALYZE COMMUNITY RISK REDUCTION	
12.1 Identify the roles and responsibilities of fire inspectors, fire investigators, public fire educators, and community education specialists [e.g., NFPA 1033 and 5 Es (Education, Engineering, Enforcement, Economic Incentives, and Emergency Response of CRR (Community Risk Reduction))]	• Roles and responsibilities of fire inspectors, fire investigators, public fire educators, and community education specialists ◦ NFPA 1033 and 5 Es (Education, Engineering, Enforcement, Economic Incentives, and Emergency Response of CRR (Community Risk Reduction)) • Pre-incident planning
12.2 Describe fire detection, suppression, and smoke control systems	• Fire alarm system types, components and method of operation • Automatic sprinkler systems types, actuation mechanisms, and characteristics • Smoke management systems
12.3 Demonstrate proper use of portable fire extinguishers	• Portable fire extinguisher classifications • Ratings in a portable fire extinguisher • Procedures for using a portable fire extinguisher • Procedures for inspecting a portable fire extinguisher
12.4 Explain steps taken to protect evidence, determine the cause and origin, stop property loss, and secure incident scene	• Causes of fire • Reasons and need for preserving evidence • Evidence preservation methods • Fire cause and determination techniques

Domain 4: Special Operations

Instructional Time: 10 - 15%

STANDARD 9.0 EXAMINE VEHICLE EXTRICATION	
9.1 Explain and demonstrate the operation of hydraulic, pneumatic, battery-powered, and hand extrication tools and techniques	• Extrication tools • Hydraulic • Pneumatic • Hand • Safety considerations
9.2 Demonstrate vehicle stabilization techniques (e.g., stabilizing the scene, stabilizing the vehicle, and stabilizing the patient)	• Vehicle stabilization techniques ◦ Stabilizing the scene ◦ Stabilizing the vehicle ◦ Stabilizing the patient • Safety concerns

9.3 Explain and demonstrate disentanglement and patient management procedures	• Disentanglement of firefighters and patients • Management procedures for patients
STANDARD 10.0 EXAMINE SPECIAL OPERATIONS	
10.1 Complete IS-5.A: An Introduction to Hazardous Materials - FEMA Training	• IS-5.A: An Introduction to Hazardous Materials - FEMA Training ◦ HazMat Awareness Level Personnel meeting NFPA 472
10.2 Complete the Introduction to Wildland and Ground Cover Fire	• Introduction to Wildland and Ground Cover Fire
10.3 Describe types of ropes and knots (i.e., figure 8, bowline, etc.), their uses, construction, care, and maintenance	• Types of ropes and knots ◦ Figure 8 ◦ Bowline, etc. • Rope type, construction, uses • Care and maintenance
10.4 Define types of special rescues encountered by firefighters (i.e., water, trench, mountain, confined space, rope, use of drones, etc.)	• Types of special rescues encountered by firefighters ◦ Water ◦ Trench ◦ Mountain ◦ Confined space ◦ Rope ◦ Use of drones

Domain 5: Emergency Medical Services

Instructional Time: 5 - 10%

STANDARD 11.0 EXAMINE EMS MANAGEMENT

11.1 Demonstrate the proper use of infection control precautions (e.g., BSI/PPE standards and regulations)	• Proper use of infection control precautions ◦ BSI/PPE standards and regulations
11.2 Describe common infectious diseases	• Bloodborne pathogens • HIV/AIDS • Airborne pathogens • Tuberculosis • Hepatitis B/C
11.3 Describe the body systems (e.g., muscular, nervous, cardiovascular, respiratory, and digestive)	• Body systems ◦ Muscular ◦ Nervous

	○ Cardiovascular ○ Respiratory ○ Digestive
11.4 Complete (obtain) a basic CPR certification	● Basic CPR certification
11.5 Complete (obtain) a basic First Aid certification	● First Aid certification
11.6 Complete (obtain) Stop the Bleed certification	● Stop the Bleed certification

