

**Firefighter II, Mod A
Safety**

FIREFIGHTER II MOD A Safety

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2-3 SAFETY

- 2-3.1** Identify dangerous building conditions created by fire. *(3-3.9, 3-3.11)*
- 2-3.2** Identify the effects of the following items in a burning building: *(3-3.9, 3-3.10, 3-3.11)*
 - 2-3.2.1** Heat
 - 2-3.2.2** Smoke
 - 2-3.2.3** Water
- 2-3.3** Identify the term “building collapse”. *(3-3.9, 3-3.11)*
- 2-3.4** Identify hazards related to electrical emergencies. *(3-3.17)*
- 2-3.5** List the electrical emergencies that may be encountered. *(3-3.17)*
- 2-3.6** Identify the proper actions to take in the case of an electrical emergency. *(3-3.17)*
- 2-3.7** Identify the function of the following articles of protective equipment: *(3-1.1.2, 3-3.1, 3-3.2)*
 - 2-3.7.1** Helmet (with face shield)
 - 2-3.7.2** Hood
 - 2-3.7.3** Boots
 - 2-3.7.4** Gloves
 - 2-3.7.5** Protective coat
 - 2-3.7.6** Protective trousers
 - 2-3.7.7** PASS device
 - 2-3.7.8** Eye protection
 - 2-3.7.9** SCBA
 - 2-3.7.10** Hearing protection
- 2-3.8** Identify the care, inspection and maintenance of the protective clothing and equipment assigned or available for use. *(3-1.1.2, 3-3.1, 3-3.2)*
- 2-3.9** Identify the limitations of the protective clothing and equipment assigned or available for use.
- 2-3.10** Identify the types of accidents or injuries and their causes that occur in the following locations: *(3-1.1.1, 4-1.1.1)*
 - 2-3.10.1** Fireground
 - 2-3.10.2** Responding and returning
 - 2-3.10.3** Training
 - 2-3.10.4** Other on-duty locations *(3-3.4, 4-4.2)*
 - 2-3.10.5** Non-fire emergencies
- 2-3.11** Identify the safety procedures for ensuring a safe station/facility environment. *(3-1.1.1, 4-1.1.1)*
- 2-3.12** Identify the potential consequences of exposure to products of combustion. *(3-3.10, 3-3.11)*
- 2-3.13** Identify the elements of a personnel accountability system. *(3-3.4)*

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Objectives 2-3.14 through 2-3.21 shall be met by the individual department or authority having jurisdiction, in accordance with currently accepted standards and practices, and appropriate for local equipment and/or procedures.

- 2-3.14* Describe the responsibilities of a fire department as required by NFPA1500, Standard on Fire Department Occupational Safety and Health Program and adopted by the authority having jurisdiction. (3-1.1.1)
- 2-3.15* **Demonstrate the techniques for action when you are personally trapped or disoriented in a fire situation or in a hostile environment. (3-1.1.1)**
- 2-3.16* **Demonstrate the donning and doffing of the protective equipment specified in 2-3.7. (3-1.1.1)**
- 2-3.17* **Demonstrate the use of seat belts, noise barriers, and other safety equipment provided for protection while riding on apparatus.**
- 2-3.18* **Demonstrate safety procedures when mounting, dismounting, and operating around fire apparatus. (3-3.16)**
- 2-3.19* **Demonstrate shutting off the utility services to a building. (3-3.4)**
- 2-3.20* **Demonstrate safety procedures when using fire service lighting equipment given the following (3-3.4)**
 - 2-3.20.1* **Power supply (portable or mounted)**
 - 2-3.20.2* **Lights**
 - 2-3.20.3* **Cords**
 - 2-3.20.4* **Connectors**
 - 2-3.20.5* **Ground-fault interrupter (GFI)**
- 2-3.21* **Demonstrate the use of an accountability system at an incident. (3-1.1.1)**

REFERENCES:

IFSTA, Essentials, 4th ed., Chapter 4

Delmar, Firefighter's Handbook, copyright 2000, Chapter 5

Jones and Bartlett, Fundamentals of Fire Fighter Skills, Chapters 2, 10, 17, & 18

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- I. Identify dangerous building conditions created by fire. **2-3.1** (3-3.9, 3-3.11)
 - A. Fire spread
 - 1. Combustible furnishings
 - 2. Combustible finishes
 - B. Presence of a heavy fire load
 - C. Large, open spaces which are difficult to ventilate and/or to stop fire spread.
 - D. Weakened support members
 - E. Water build-up
 - F. Building collapse **2-3.3**
 - 1. Failure of building's support members
 - 2. Caused by effects of fire or actions of firefighters
 - 3. The longer the building burns, the more chance for collapse
- II. Identify the effects of the following items in a burning building: **2-3.2** (3-3.9, 3-3.10, 3-3.11)
 - A. Heat **2-3.2.1**
 - 1. Intense heat leads to further combustion
 - B. Smoke **2-3.2.2**
 - 1. Hinders firefighting efforts
 - C. Water **2-3.2.3**
 - 1. Moisture content in materials (ex: wood) determines combustibility of materials
 - 2. Adds weight to already fire weakened building materials
- III. Identify hazards related to electrical emergencies **2-3.4** (3-3.17)
 - A. Hazards
 - 1. Burns
 - 2. Electrical shocks

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- IV. List the electrical emergencies that may be encountered. **2-3.5 (3-3.17)**
- A. Types
1. Downed power lines
 2. Contact with electric lines
 3. Energized equipment
- V. Identify the proper actions to take in the case of an electrical emergency. **2-3.6 (3-3.17)**
- A. Notify the power company.
- B. Do not use solid or straight hose streams when possible electrical hazards exists.
- C. Let pole top or cross-arm fires burn until power company arrives.
- D. Exercise caution when using ladders around electrical hazards.
- E. When possible, avoid parking apparatus under overhead wires.
- F. Keep aerial devices at least ten (10) feet from electric lines.
- G. Let only power company personnel cut lines.
- H. Treat all wires as “live”.
- I. Establish a danger zone of at least one span around downed power lines.
- J. Wear full protective clothing when an electrical hazard exists.
- VI. Identify the function of the following articles of protective clothing: **2-3.7 (3-1.1.2, 3-3.1, 3-3.2)**
- A. Helmet (with face shield) **2-3.7.1**
1. Helmet protects head from impact, puncture injuries, and water.
 2. Face shield provides limited protection from flying particles or liquids.
- B. Protective Hood **2-3.7.2**
1. Protects portions of the face, ears and neck not covered by helmet or coat from extreme heat
- C. Boots **2-3.7.3**
1. Protects the feet from burns, puncture injuries and crushing blows.
- D. Gloves **2-3.7.4**
1. Protects the hands from cuts, wounds, burns and heat and cold while providing dexterity.

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- E. Protective Coat and Trousers **2-3.7.5, 2-3.7.6**
 - 1. Protects the trunk and limbs from injuries, moisture and thermal barriers.

- F. Personal Alert Safety System (PASS) **2-3.7.7**
 - 1. Provides protection by emitting a loud shriek if the firefighter should collapse or remain motionless for a period of time.

- G. Eye Protection **2-3.7.8**
 - 1. Provides protection against flying particles and/or splashes.
 - 2. Eye protection, in the form of safety goggles or safety glasses, should be worn in addition to that provided by the part of the helmet, when the SCBA facepiece is not being worn.
 - 3. Face shields provided as part of a helmet provide secondary protection only and do not meet NFPA 1500 for eye protection.

- H. SCBA **2-3.7.9**
 - 1. Provides respiratory protection when in a toxic atmosphere

- I. Hearing Protection **2-3.7.10**
 - 1. To protect from hearing loss when exposed to loud working environments

- VII. Identify the care, inspection and maintenance of the protective clothing and equipment assigned or available for use. **2-3.8 (3-1.1.2, 3-3.1, 3-3.2)**

Must meet NFPA Standard when equipment was manufactured

- A. Helmets
 - 1. Inspection
 - a. Check for proper fit and repair or replace
 - b. Check for damage and repair or replace
 - c. Check for adequate separation between outer shell and suspension web.
 - d. Check suspension system for deterioration and replace.
 - e. Consult manufacturer if repainting is necessary

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- f. Remove polycarbonate helmets that have come in contact with hydraulic fluids until it can be determined no damage has occurred.
- 2. Care
 - a. Remove dirt from outer shell
 - b. Remove chemicals, oils and petroleum products as soon as possible.
 - c. Consult manufacturer for cleaners.
- B. Coats, Trousers, and Hoods
 - 1. Inspection
 - a. Check for tears
 - b. Check for debris and remove
 - 2. Care
 - a. Brush debris off
 - b. Hand wash with mild soap and water
 - c. Rinse
 - d. Air dry
- C. Boots
 - 1. Inspection
 - a. Proper fit
 - b. Deterioration (replace, if necessary)
 - c. Cuts, punctures and worn areas
 - 2. Care
 - a. Wash oil, grease, etc. from boot.
 - b. Store in cool, dry location
- D. Gloves
 - 1. Inspection
 - a. Tears, cuts
 - b. Deterioration

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2. Care
 - a. Check for tears
 - b. Check for debris and remove.
- VIII. Identify the limitations of the protective clothing and equipment assigned or available for use. **2-3.9**
- A. Varies, based on material and construction
 - B. General
 1. Direct flame contact
 2. Chemicals
 3. Comfort
- IX. Identify the types of accidents or injuries, and their causes that occur in the following locations: **2-3.10** (3-1.1.1, 4-1.1.1)
- A. Fireground **2-3.10.1**
 1. Types
 - a. Trauma (cuts, broken bones, burns)
 - b. Heat exhaustion
 - c. Chemical exposure
 - d. Cardiovascular
 2. Causes
 - a. Limited information and knowledge
 - b. Underestimating fire potential
 - c. Miscalculating structural integrity of the building
 - d. Disorder
 - e. Confusion
 - f. Chaos at the emergency scene
 - g. Poor physical condition
 - h. Lack of proper training

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B. Responding and returning 2-3.10.2

1. Types

- a. Hearing
- b. Falls
- c. Slipping
- d. Being run over by the apparatus
- e. Being thrown from the apparatus

2. Causes

- a. Hearing protection not worn when noise is above 90 decibels
- b. Seat belts not worn
- c. Not riding in enclosed area
- d. Attempting to don protective clothing
- e. Not using handrails and steps

C. Training 2-3.10.3

1. Types

- a. Same as fire ground
- b. Physical discomfort or illness

2. Causes

- a. Not wearing protective equipment
- b. Not having an adequate fitness level
- c. Horseplay
- d. Equipment

E. Other on-duty locations 2-3.10.4 (3-3.4, 4-4.2)

1. Types

- a. Cuts
- b. Eye
- c. Falls and slipping

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- 2. Causes
 - a. Horseplay
 - b. Not using safety equipment
 - c. Equipment failure

- D. Non-fire emergencies **2-3.10.5**
 - 1. Types
 - a. Trauma
 - b. Chemical exposure
 - c. Electrical contact
 - d. Blood borne pathogens

 - 2. Causes
 - a. Inappropriate or lack of protective clothing
 - b. Not concentrating on task

- X. Identify the safety procedures for ensuring a safe station/facility environment. **2-3.11** (3-1.1.1, 4-1.1.1)
 - A. Redesign tasks to eliminate lifting if possible
 - B. Use proper lifting techniques
 - C. Be aware of unsafe conditions and seek corrective action.
 - D. Eliminate “horseplay”
 - E. Request assistance in performing tasks when necessary
 - F. Strive for good physical fitness
 - G. Be aware of proper disinfecting techniques

- XI. Identify the potential consequences of exposure to products of combustion. **2-3.12** (3-3.10, 3-3.11)
 - A. Carbon monoxide poisoning
 - B. Cardiovascular problems

- XII. Identify the elements of a personnel accountability system. **2-3.13** (3-3.4)
 - A. Use
 - 1. Use permit identification of firefighters working on the scene. If something happens, all can be accounted for.

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- B. Components
 - 1. Means of identifying individual firefighters
 - a. Tags
 - b. Badges
 - 2. Specified location of person whose identification is collected and compiled
 - 3. List of who is on the fire ground and what he/she is doing.
 - 4. Procedures for personnel to follow when they arrive on the scene, depart the scene, or complete an assignment.

- C. Techniques for action when you are trapped or disoriented in a fire or hostile environment. **2-3.15***
 - 1. Remain calm
 - 2. Retrace steps
 - 3. Activate PASS device
 - 4. Locate hoseline or safety line
 - 5. Use radio

Objectives 2-3.14 through 2-3.21 shall be met by the individual department or authority having jurisdiction, in accordance with currently accepted standards and practices, and appropriate for local equipment and/or procedures.

- XIII. Describe the responsibilities of a fire department as required by NFPA 1500, Standard for Fire Department Occupational Safety and Health, program and adopted by the authority having jurisdiction. **2-3.14*(3-1.1.1)**

- XIV. Demonstrate the techniques for action when you are personally trapped or disoriented in a fire situation or in a hostile environment. 2-3.15*(3-1.1.1)**

- XV. Demonstrate the donning and doffing of the protective equipment specified in 2-3.7. 2-3.16*(3-1.1.1)**

- XVI. Demonstrate the use of seat belts, noise barriers, and other safety equipment provided for protection while riding on apparatus. 2-3.17***

- XVII. Demonstrate safety procedures when mounting, dismounting, and operating around fire apparatus. 2-3.18*(3-3.16)**

- XVIII. Demonstrate shutting off the utility services to a building. 2-3.19*(3-3.4)**

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- XIX. Demonstrate safety procedures when using fire service lighting equipment given the following 2-3.20*(3-3.4)**
- A. Power supply (portable or mounted) 2-3.20.1***
 - B. Lights 2-3.20.2***
 - C. Cords 2-3.20.3***
 - D. Connectors 2-3.20.4***
 - E. Ground-fault interrupter (GFI) 2-3.20.5***
- XX. Demonstrate the use of an accountability system at an incident. 2-3.21*(3-1.1.1)**