



**COMMANDER'S
GUIDE**
to
Fire Safety



**ARMY SAFE
IS ARMY STRONG**

Army Civilian Corps Creed

I am an Army Civilian — a member of the Army Team

I am dedicated to our Army, our Soldiers and Civilians

I will always support the mission

I provide stability and continuity during war and peace

I support and defend the Constitution of the United States
and consider it an honor to serve our Nation and our Army

I live the Army values of Loyalty, Duty, Respect, Selfless Service,
Honor, Integrity, and Personal Courage

I am an Army Civilian

ARMY SAFE
IS ARMY STRONG



ARMY STRONG.



<https://safety.army.mil>

Table of Contents

Foreword.....	ii
I. Introduction to the Fire Protection and Prevention Professional	1
• What is their role?	
• Where do they work?	
II. Roles and Responsibilities	3
• Occupational Information	
• Key Assignments and Locations	
• Important Qualities	
III. Occupational/Functional Training Requirements	6
• Certifications	
• Specific Training Requirements for each Grade Level	
IV. Hiring Requirements	8
• Example Firefighter Position Description	
• Deployments	
V. Administrative Considerations	10
• Duty Hours	
• Clothing and Equipment	
• Budget	
• Performance Objectives	
• Rating Scale	
• Physical Fitness Test	
Appendix	
• Career Path	
• Terms and definitions	
• Military/Civilian Rank Equivalency	



Foreword

Readiness is at the forefront of accomplishing the Army mission, and accidental injury and death are devastating to overall readiness. The loss of a Soldier has a deep impact on unit morale, fellow Soldiers, Family members and the community and nation at large. Fire Prevention and Protection cannot be taken for granted; it must be what every member of the Army Team strives for on a daily basis. Fire prevention and protection begins with you!

Commanders have an invaluable and indispensable asset in the firefighter and fire prevention specialists. These dedicated men and women use professional engineering knowledge, skill, abilities and experience in identifying, analyzing and controlling occupational and operational fire hazards.

Fire protection and prevention personnel are highly trained and qualified to bring a firefighter perspective to the risk management process. In addition to meeting Office of Personnel Management professional firefighter qualifications, Army CP-12 fire personnel are required to complete core, functional, and continued training and education. They are an integral component of the Army safety and occupational health program and the Army's strategy for loss prevention. Their expertise increases safety in our Army's activities, reduces injuries and losses due to accidents, and enhances our readiness and warfighting capability.

A handwritten signature in black ink, appearing to read 'Jeffrey A. Farnsworth', written in a cursive style.

JEFFREY A. FARNSWORTH
Brigadier General, US Army
Director of Army Safety



Introduction to the Fire Protection and Prevention Professional

The Army employs more than 3,300 Fire Protection and Prevention (firefighter) personnel to support installation operations and deployments. These employees are classified in the GS-0081 job series and provide fire and emergency services to protect people and property and support the installation's mission. Civilian firefighters are an essential element of the military's installation emergency response and safety services system.

What is their Role?

Firefighters provide specialized emergency service mitigation and education support for Soldiers, Families and communities through a variety of resources, including structural fire response, aircraft rescue firefighting, specialized rescue services, hazardous materials response, wild land response, fire prevention, public education, code enforcement, emergency dispatch services, and administrative services and training. These professionals are fundamental to maintaining the Army's overall readiness.

The 0081 series has been identified as a mission critical occupation imperative to the Army's safety and health. Firefighters work with military bases and units and are responsible for defending the safety and integrity of the workforce and facilities, both CONUS and OCONUS. Their role in a deployed environment is to preserve the safety and sanitation of troops at war. Firefighters must be prepared to avoid unpredictable dangers and identify and mitigate hazardous situations.

Where do they work?

Army installations are small communities that require the same professional services as cities of comparable size, including medical assistance, law enforcement and fire protection. Personnel in the 0081 series work 24/7 and are located on every installation.



II. Roles and Responsibilities of the Fire Protection and Prevention Professional



The fire chief is the installation's senior incident commander and conducts all command and control functions in accordance with the National Incident Management System. Firefighters control and extinguish fires, rescue persons endangered by fire, and reduce and/or eliminate potential fire hazards.

Public education, facility inspections, plan reviews

Emergency Mitigation

- Fire
- Aircraft Rescue, Firefighting
- HAZMAT/CBRNE/WMD Response
- Emergency Medical Response
- Specialized Rescue
 - High/Low/Angle
 - Confined Space
 - Trench
 - Structural Collapse

Professionals in the 0081 series must possess knowledge of firefighting and fire prevention theory and techniques, along with fixed and mobile firefighting equipment operations. Other skills include planning, directing and executing fire protection and prevention programs and operations. Firefighters also engage in practice fire drills and ongoing fire prevention and control training.

Firefighters mitigate and control HAZMAT/CBRNE/WMD incidents; provide emergency medical services; train personnel in fire protection and prevention; operate fire communications equipment; develop and implement fire protection and prevention plans, procedures and standards; and advise on structural improvements to enhance fire prevention.

Occupational Information

Fire professionals across the Army respond to more than 90,000 emergencies annually. Preparation and readiness are two crucial firefighting concepts, so firefighters are trained to react to a variety of circumstances that could occur at the installation or facility. They must quickly gauge a hazardous situation, make a variety of assessments, and choose from an assortment of actions, with responses matching the conditions encountered. Readiness requires firefighters to be trained in duties and responsibilities they do not regularly perform.

Key Assignments and Locations

There are four key assignments within the 0081 series: fire and emergency services dispatcher (alarm room operations), firefighter, garrison and region.

- Fire protection specialist (ACSIM/ACOM/ASCC/DRU)
- Fire chief (installation)
- Fire protection specialist (regional/installation)
- Supervisory/non-supervisory firefighter (deputy, assistant chief, battalion chief, station chief, district chief)
- Lead firefighter
- Firefighter (paramedic, intermediate life support, basic life support, HAZMAT technician, HAZMAT operations)
- Fire protection inspector

Important Qualities

Analytical skills: Firefighters must quickly evaluate emergency scenes and decide what to do.

Communication skills: Firefighters must clearly communicate conditions at an emergency scene to other firefighters and emergency response crews.

Courage: Firefighters will encounter dangerous situations frequently.

Physical Requirements: Firefighters are often required to stay at disaster scenes for extended periods of time, requiring both physical stamina and strength, as well as mental well being.

Physical strength: Firefighters must be strong enough to move equipment and debris at emergency sites and carry victims who cannot walk.

Teamwork: When working at dangerous emergency sites, firefighters must work as well-trained teams to react quickly and minimize injuries.



III. Occupational/Functional Training Requirements:



Firefighters must complete substantial training, education and certifications to respond to emergencies effectively. Initial training includes classroom and practical (hands-on) training in firefighting techniques, fire prevention, HAZMAT control, local building codes and emergency medical procedures. Additional training includes use of fire extinguishers, fire hoses, chain saws, ladders and other rescue equipment. Upon course completion, students undergo a “developmental” probationary period of on-the-job training.

Fire professionals must conduct 120 hours of proficiency training. However, it is not uncommon to reach 200-plus hours because of the substantial certification requirement. Training may include classes, seminars, practical exercises and professional development to further enhance and expand knowledge of fire hazards and emergency response protocols.

Certifications for GS employees

All 0081 series personnel must complete the Department of Defense Firefighter Certification Program in accordance with DoD 6055.06M. This program is nationally and internationally accredited through the International Fire Service Accreditation Congress and National Professional Qualifications Board.

Strike from Program

This is an option if they are not “qualified” by an equal governing body.

The Defense Firefighter Training includes Certifications in the Following Courses:

- * Fire Fighter I
- * Fire Fighter II
- * Hazardous Materials Train the Trainer
- * Airport Fire Fighter
- * Fire Inspection I



Specific Training Requirements for Grade Level

The 0081 career map, which includes additional training requirements, occupational development, leadership competencies, certifications and career resources, can be found at <https://actnow.army.mil>. Required occupational and functional training for each position/grade level is specified below.

Firefighter/F&ES Dispatcher or Alarm Room Operators (GS-4/5/6)

- Hazardous Materials - Awareness
- Hazardous Materials - Operational
- Fire Fighter I
- Fire Fighter II
- Airport Fire Fighter (as required)
- Driver/Operator - Pumper (as required)
- Driver/Operator - ARFF (as required)
- Driver/Operator - MWS (as required)
- Driver/Operator - Aerial (as required)
- Wildland Fire Fighter (as required)
- Telecommunicator I & II (as required)

* Employees remain under close supervision during this time.

Firefighter/Firefighter (HAZMAT Technician/Basic Life Support/Driver Operator) (GS-7)

- All developmental courses
- Hazardous Materials Technical
- EMT - Basic
- Airport Fire Fighter (as required)
- Driver/Operator - Pumper (as required)
- Driver/Operator - ARFF (as required)
- Driver/Operator - MWS (as required)
- Driver/Operator - Aerial (as required)

* Employees remain under limited or no supervision during this time.

Fire Inspector (GS-6/7/8)

- Hazardous Materials Awareness
- Fire Instructor I
- Fire Inspector I
- Fire Inspector II

* Employees remain under limited or no supervision during this time.

Lead Firefighter/Crew Chief/Firefighter EMI Intermediate (GS-8)

- All full performance courses
- Fire Instructor I
- Fire Officer I
- Fire Inspector I
- Airport Fire Fighter (as required)
- EMT - Intermediate (as required)

* Employees remain under moderate supervision (i.e., only for direction and guidance) during this time.

Fire Chief/Deputy Fire Chief/Assistant Chief for Prevention Training/Fire Protection Specialist/Firefighter Paramedic/Battalion, Station or District Chief (GS-9/10/11)

- All lead firefighter courses
- Fire Officer II
- Fire Officer III
- Fire Instructor I
- Fire Instructor II (as required)
- Fire Instructor III (as required)
- Fire Inspector I
- Fire Inspector II (as required)
- Fire Inspector III (as required)
- Hazardous Materials Incident Commander
- Airport Fire Fighter (as required)

* Employees work independently or remain under moderate supervision during this time.

Fire Chief/Branch Chief, F&ES/Fire Protection Services/Deputy Fire Chief (GS-12/13/14)

- ALL
- Fire Officer III
- Fire Officer IV (as required)
- Fire Instructor II
- Fire Inspector II
- Hazardous Materials Incident Commander
- Airport Fire Fighter (as required)
- Functional competencies

* Employees work independently or remain under moderate supervision during this time.

IV. Hiring Requirements



0081 has two specific categories:

1. Primary (Max Entry Age of 37)
2. Secondary (Staff Positions not directly engaged in performance of Firefighting) (Generally admin positions & age "max" entry age does not apply).



Example position description

Firefighter (GS-7/8)

In this position, you will become a key member of a team of firefighters, inspectors and paramedics in a pivotal role from day one. You will provide first response capability for all fire rescue, confined space, hazardous materials, decontamination and emergency medical services for the Mount Weather Emergency Operations Center (MWEOC). This position is a developmental position with promotion potential to GS-08. Typical work assignments at the full performance level include:

- Taking immediate action to rescue any person trapped in a burning area, effectively bringing the fire under control and extinguishing it
- Using and maintaining firefighting equipment and vehicles, including hose lines, hand tools, pumps, nozzles and foam generators
- Participating in or directing onsite inspections of work sites to identify and evaluate conditions that may be causes of fire hazards or dangers, and/or conduct arson investigations
- Taking immediate action to render first aid to any sick or injured person(s), stabilize them and transport them to the nearest medical facility; rescuing any person(s) trapped in a confined space or any other hazardous situation or condition, providing monitoring and adequate ventilation, and safely removing the person(s) from the confined space
- Performing emergency medical technician duties to provide basic life support treatment to victims within the pre-hospital environment, including patient assessment and intervention

Other DoD 0081 employment opportunities can be found at www.usajobs.com.

Deployment

Deployment is not mandatory for the 0081 series, but personnel may volunteer for deployed assignments. Firefighters maintain a TDY status while deployed.



V. Administrative Considerations



Duty Hours

Firefighters are always on call, and work schedules can be unpredictable and include extended tours of duty. A typical workweek consists of three 24-hour shifts, for a total of 72 hours. Shifts include periods of actual work time and substantial periods of “standby” status, and may be extended if personnel are called to an emergency site. There are typically six shifts in a pay period, with one day of paid leave commonly referred to as a “Kelly day.” (Supervisors may have a regular 40-hour workweek consisting of five 8-hour days.)

Projected pay period schedules

144 hours PPP
120 hours PPP
112 hours PPP
90 hours PPP
80 hours PPP

NFPA 1975 Requirement

The primary duty uniform includes pants (dark blue slacks); shirt (depending on rank, dark blue [firefighter/lieutenant], light blue [captain] or white [chief]; and patch (indicates specific organization).

Critical personal protective equipment includes insulated/fire resistant suit, helmet, face mask, gloves and boots.

Common Levels of Support (SSP 68)

Areas to consider when making budget decisions include:

- Salary for a 40-hour workweek
- Full pay (annual salary not to exceed 42 percent fringe benefits)
- Unscheduled overtime costs to cover manpower shortages
- TDY for training, continuing education and certifications
- Program (SSP) sustainment funding
- Overtime hours and pay

Additional information on the 0081 series is available on the CP-12 Safety and Occupational Health website at <https://safety.army.mil/cp12>.

Example for a GS-0081-08 Lead Firefighter

- Lead firefighter completes assigned projects, firehouse reports, man-hour reports, training reports and all other relevant reports correctly and on time
- Knows, understands and complies with all department SOPs/SOGs, regulations and memorandums
- Complies with all department policies regarding wearing of PPE during emergency operations and ensures all subordinates are in compliance
- Maintains all PPE in clean, serviceable condition
- Leads crew through all assigned emergency response activities safely and effectively
- Provides on-scene response to Code 3 emergencies in response zones within six minutes of notification, 90 percent of the time
- Maintains all renewable certifications required for employment (EMT, state driver's license and military driver's license)

Rating scale

Fire and emergency service personnel are rated on the following employee performance evaluation scale: exceeds, meets, needs improvement, and fails. The evaluation form measures a variety of competencies to determine overall job performance.

Personnel are evaluated on task and projects, regulations and memorandums, PPE, emergency operations, certifications, physical fitness program, training, computer competencies and usage, relations with co-workers, public relations and customer service, station chief of operations fill-in, vehicle maintenance and station maintenance.

Example objective

Station maintenance (responsibility and dependability): Lead firefighter is responsible for ensuring assigned fire station provides a clean living environment free from preventable safety hazards.

- No deviations allowed for successful performance.
- An exceptional lead firefighter is involved in one or more activities to improve living or safety conditions within the station.

Example Rating Tool:

EMPLOYEE PERFORMANCE EVALUATION PERFORMANCE STANDARD FOR: Lead Firefighter	Employee Name: Current Position: Date:
---	--

1. TASK AND PROJECTS (Technical Competence): Lead Firefighter completes assigned projects correctly and on time. No deviations for successful performance. Lead Firefighter will provide one positive accomplishment or one positive announcement at the shift meeting each week for successful performance.

An exceptional lead firefighter will submit excellent work that is free of errors and participate willingly in projects that are work related and unassigned.

Based on the above standard this Lead Firefighter;			
<input type="checkbox"/> Exceeds	<input type="checkbox"/> Meets	<input type="checkbox"/> Needs improvements	<input type="checkbox"/> Fails
Explanation of Rating:			

CAPACITY AND AMBITION FOR ADVANCEMENT							
<input type="checkbox"/>	Outstanding; maximum performance in all areas	<input type="checkbox"/>	Superior performance in most areas	<input type="checkbox"/>	Satisfactory	<input type="checkbox"/>	Progressing
		<input type="checkbox"/>	Not Likely to Advance	<input type="checkbox"/>	Not Suited to the Job	<input type="checkbox"/>	Progressing

OVERALL DEMONSTRATED JOB PERFORMANCE							
<input type="checkbox"/>	Exceptional	<input type="checkbox"/>	Above Average	<input type="checkbox"/>	Average	<input type="checkbox"/>	Below Average

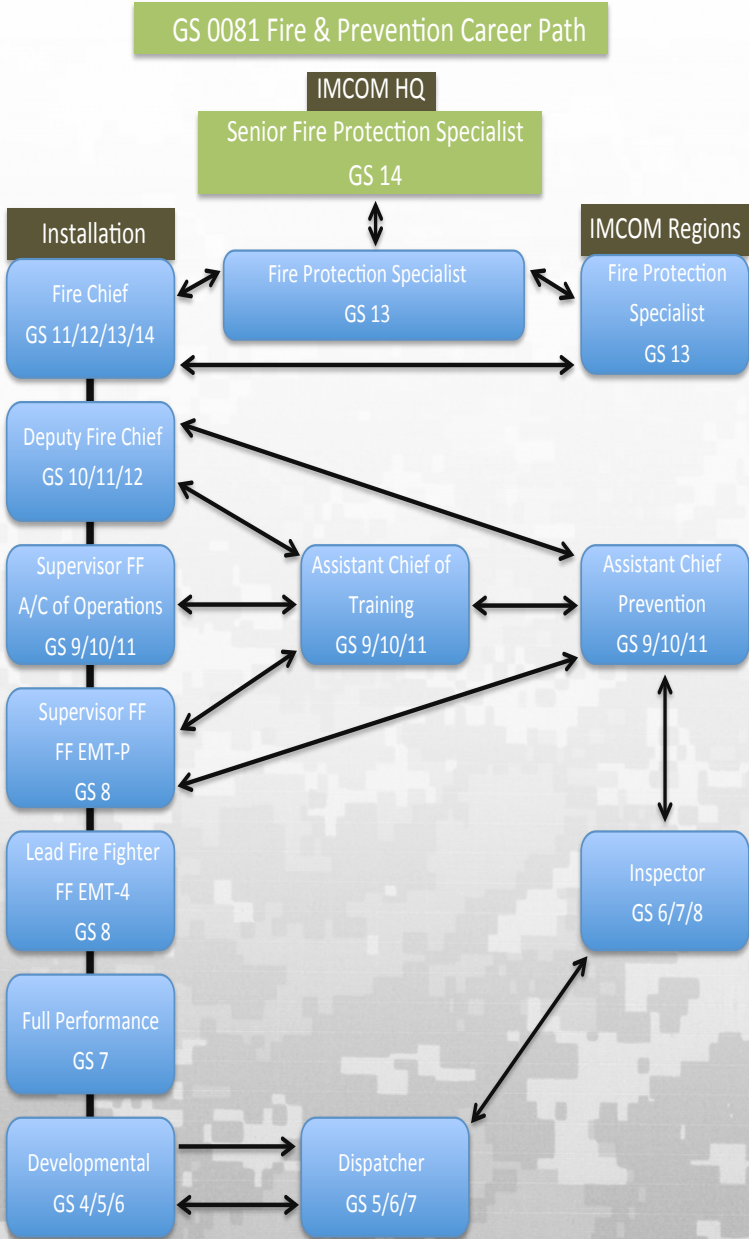
Physical Fitness Program

Firefighters will support and participate in a health and fitness program. Lead firefighters will also ensure crew members have sufficient time to complete physical training. "Successful performance" is achieved by completing physical training 70 percent of duty days. "Exceptional performance" is achieved by completing physical training 85 percent of duty days.



Appendix A

Below is a detailed career path for 0081 personnel. For more information, visit <https://safety.army.mil/cp12/Whoarewe/0081FireProtectionandPrevention/tabid/2234/Default.aspx>.





APPENDIX B

Definitions of Terms

Air moves: includes aircraft takeoff, landing and touch-and-go

Advanced life support: see paramedic definition under emergency service personnel

Automatic transport ventilator: a time-cycled, constant-flow, gas-powered device used to provide positive pressure ventilation to patients during cardiopulmonary resuscitation and other instances where extended ventilation of a patient is required; devices typically provide a fixed 100-percent oxygen concentration and have adjustable controls

Capnometry: the measurement and display of carbon dioxide on an electronic or printable monitor; provides a waveform that indicates levels of inspiratory and expiratory carbon dioxide during the respiratory cycle; included on certain advanced patient monitors and used to evaluate respiratory function for patients on ventilators and continuous positive airway pressure

Capnography: a graphic display of instantaneous (real time) carbon dioxide concentration; includes single-use, disposable colorimetric devices and electronic monitors; provides an estimate of expiratory carbon dioxide to verify correct endotracheal tube placement and detect endotracheal tube displacement

Cardiopulmonary resuscitation: an emergency technique used to assist someone whose heart and/or breathing has stopped; by administering a combination of artificial or “mouth-to-mouth” respiration and manual cardiac compression, the rescuer can breathe for the victim and help circulate blood throughout his or her body; does not restart the heart but can keep a victim alive until more aggressive treatment can be administered

Clean-up operation: an operation where hazardous substances are removed, incinerated, neutralized, stabilized, cleaned up, or in any other manner processed or handled with the ultimate goal of making the site safe for people and the environment

Containment: neutralization, recovery and decontamination of hazardous waste accomplished by trained experts in related fields; disposal of hazardous materials is not typically a function of federal hazardous materials emergency response teams

Continuous positive airway pressure: respiratory therapy that utilizes a mechanical device to force air into the small air passages of a patient suffering from adult respiratory distress syndrome and other forms of acute pulmonary edema; may be applied using a mask or via an endotracheal tube, but in the emergency medical field it is normally administered by mask to avoid endotracheal intubation in a patient with severe respiratory distress

Crash truck: vehicle primarily designed for aviation crash/rescue operations that is also used to fight wild land and structural fires; typically capable of quickly delivering large amounts of foam, water or dry chemicals through articulating or telescoping water towers or turrets while still in motion

Cricothyrotomy: a surgical procedure used in emergency situations to establish a patient airway by making an incision through the skin and cricothyroid membrane of the neck to permit the introduction of an endotracheal tube; used when noninvasive techniques for removing an object from an airway are not effective

Decontamination: the physical or chemical removal of hazardous substances from employees and/or their equipment to the extent necessary to preclude the occurrence of foreseeable adverse health effects

Defibrillation: a device or treatment that stops chaotic electrical heart activity and allows the heart to repace itself to a normal rhythm; main methods of defibrillation are automatic external defibrillation (involves a portable device that determines the patient's rhythm, judges whether defibrillation is appropriate, and delivers a shock through pads placed on the chest wall to stop a life-threatening disturbance of cardiac rhythm), and manual defibrillation, the traditional form of defibrillation performed by health care providers that requires the ability to interpret electrocardiogram rhythms and recognize which ECG abnormalities require defibrillation and which do not (for example, a person with no electrical activity in the heart or a "flat line" ECG would not require or benefit from defibrillation), plus knowledge of how to manually operate the available defibrillator

Dual lumen airway device: an emergency airway device that can deliver ventilations when placed in the trachea or esophagus, typically by "blind" insertion with no laryngoscopy or other special equipment

Electrocardiogram: a test that records the electrical activity of the heart through several small electrode patches placed on the skin of the chest, arms and legs

Emergency service personnel: pre-hospital medical providers trained at the emergency medical technician-basic life support level or higher to care for patients at accident scenes and in transport by ambulance to a hospital; pre-hospital providers are trained and certified in basic life support (provided by an individual who continues patient care initiated by the first responder to provide the first level of field care based on assessment findings and treat conditions based on the specific symptoms observed or described by the patient), intermediate life support (provided by an individual who provides all basic life support measures plus invasive medical procedures including starting intravenous fluids or administering certain medications and solutions; scope of support can vary based on differing medical controls and may include some specializations such as cardiac or shock trauma; these individuals supplement paramedic or advanced life support staff), and paramedic (an individual who provides all basic and intermediate life support measures in addition to using invasive medical procedures including intravenous therapy, cardiac defibrillation, administering medications and solutions, and using ventilation devices as dictated by state law and performed under medical control)

Intubation: used for patients who cannot control or protect their own airways, whether unconscious or in an altered mental state; involves insertion of a tube into the larynx to introduce air; types of intubation include digital intubation (a “blind” technique where the EMS technician palpates and physically moves the epiglottis with his or her finger(s) to facilitate introduction of the endotracheal tube); endotracheal intubation (inserting a tube into the trachea for airway isolation and positive pressure ventilation); facilitated/rapid sequence induction (a procedure that facilitates the introduction of an endotracheal tube into a seizing, combative or responsive patient; requires various combinations of sedating and paralysis-inducing medications); nasal intubation (insertion of an endotracheal tube through the nostril and nasopharynx that requires the patient have some respiratory effort); and oral intubation (insertion of an endotracheal tube through the mouth and larynx while watching the vocal cords using a laryngoscope)

Fire detection system: an automatic system that identifies a developing fire by detecting smoke, flame or heat and alerts building occupants and others to the presence of a fire condition; systems vary in complexity and are selected based on hazards being monitored; range from a simple smoke detector unit in an administrative building to a complex computer-driven system that monitors several maintenance buildings; some are also linked to fire suppression systems

Firefighting apparatus: specialized equipment such as pumper trucks, crash trucks, aerial ladder trucks, brush trucks, fireboats or other firefighting equipment equivalent in terms of difficulty of operation

Fire suppression systems: automatic systems that shut down electrical equipment such as computers or air handling fans to prevent smoke migration; may also activate sprinkler systems or fans to extract smoke or discharge gaseous fire extinguishing systems

First responder: the first individual to provide basic emergency care (first aid) or hazardous material response at an emergency scene; may also refer to a specific level of emergency medical service certification, which covers limited basic life support procedures

Fuel: any compound used for propulsion or heating, or that supports combustion

Hazardous material: any substance (solid, liquid or gas) to which exposure results or may result in adverse effects on the health or safety of persons, property and/or the environment

Hazardous material personnel: first responders trained and certified at three primary levels to respond to hazardous material incidents (see terms below)

Hazardous material awareness level: first responders who, in the course of normal duties, may be the first on the scene of an emergency involving hazardous material, and are trained to initiate an emergency response by protecting themselves and others, calling for trained personnel and securing the area

Hazardous material operations level: persons who respond to releases or potential releases of hazardous material as part of the initial response to protect nearby persons, the environment or property from harmful effects, and are trained to assess the magnitude of the incident, plan an initial response using available resources, and implement and evaluate the response

Hazardous material technician level: persons who respond to releases or potential releases of hazardous material to control release, and are trained to use specialized chemical protective clothing and control equipment to approach the point of release

Hazardous materials response team (HAZMAT team): an organized group of employees, designated by the employer, expected to handle and control actual or potential leaks or spills of hazardous substances requiring possible close approach; team members respond to releases or potential releases of hazardous substances to control or stabilize the incident

Incident: an occurrence or event, either human or natural, that requires action by emergency service personnel to prevent or minimize loss of life or damage to property and/or natural resources

Incident management system: an organized system of roles, responsibilities and standard operating procedures used to manage and direct emergency operations; also referred to as incident command system

Invasive procedures: procedures in which the integrity of the skin, mucous membranes or tissues is interrupted by needles, instruments or other devices and where potential for bleeding exists

Laryngoscopy: the use of a lighted laryngoscope to move the tongue and other soft oral tissues to view the glottic opening and vocal cords so an endotracheal tube can be inserted into the trachea

Material safety data sheet: a form provided by chemical manufacturers that contains information about chemical composition, physical and chemical properties, health and safety hazards, emergency response and waste disposal

Personal protective equipment: specialized equipment provided to shield or isolate a person from chemical, physical and thermal hazards that may be encountered at a fire or hazardous materials incident; various types provide different levels of protection to the respiratory system, skin, face, head, body, extremities and hearing

Pleural decompression: use of a large bore needle or chest tube with a surgical incision to evacuate air from the pleural (chest) cavity in a patient suffering from tension pneumothorax (collapsed lung)

Pulse oximeter: monitors the percentage of hemoglobin saturated with oxygen; consists of a noninvasive probe attached to the patient's finger or ear lobe, which is linked to a computerized unit that displays percentage and calculated heart rate, and also features an audible signal for pulse

Transcutaneous external pacing: an emergency external pacemaker used for patients with symptomatic bradycardia (slowing of the heartbeat) and severe heart attacks

United Nations/North American identification number: a four-digit number assigned to hazardous materials and used to identify and cross-reference products in transport



NOTES

NOTES

