



**OKLAHOMA ARMY NATIONAL GUARD**  
**STATE SAFETY & OCCUPATIONAL HEALTH OFFICE**

# OKARNG Annual Fire Extinguisher Training

1 September 2021



# OKLAHOMA ARMY NATIONAL GUARD

## STATE SAFETY & OCCUPATIONAL HEALTH OFFICE

### Outline

- Introduction and Definitions
- OSHA Requirements
- NFPA Inspection Requirements
- Safe Motor Vehicle Operations
- The Rules for Fighting Fires
- Keys to Success



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# Introduction and Definitions

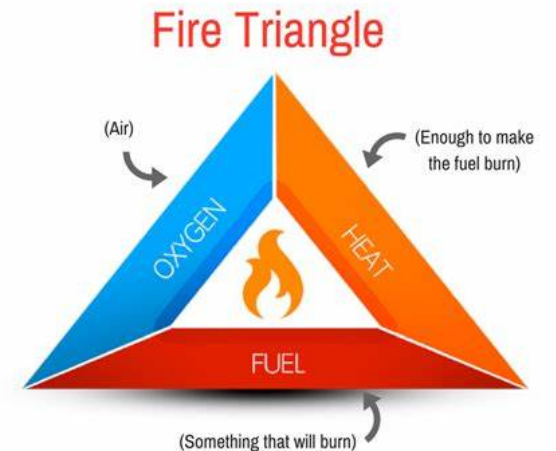


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### Introduction

- This is the Fire Triangle. Actually it's a tetrahedron, because there are four elements that must be present for a fire to exist.
  - There must be Oxygen to sustain combustion,
  - Heat to raise the material to its ignition temperature,
  - Fuel to support the combustion
  - Chemical Reaction between the other three elements
- The concept of Fire Prevention is based upon keeping the four elements separate.





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### Definitions

- **Class A Fire** - fires in ordinary combustible materials such as paper, wood, cloth, and some rubber and plastics.
- **Class B Fire** – fires in flammable or combustible liquids, petroleum greases, tars, oils, oil-based paints, solvents, lacquers, alcohols, and flammable gases.
- **Class C Fire** – fires that involve energized electrical equipment.
- **Class D Fire** – fires in combustible metals such as magnesium, titanium, zirconium, sodium, lithium, and potassium.
- **Class K Fire** – fires in cooking appliances that involve combustible cooking media (vegetable or animal oils and fats.)



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# OSHA Requirement

29 CFR 1910



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### OSHA Requirement - Portable Fire Extinguisher

**29 CFR 1910.157**

- 1910.157(c)(1) The employer shall provide portable fire extinguishers and shall mount, locate and identify them so that they are readily accessible to employees without subjecting the employees to possible injury
- 1910.157(c)(2) Only approved portable fire extinguishers shall be used to meet the requirements of this section.
- 1910.157(d)(2) The employer shall distribute portable fire extinguishers for use by employees on Class A fires so that the travel distance for employees to any extinguisher is 75 feet (22.9 m) or less.





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### OSHA Requirement - Portable Fire Extinguisher 29 CFR 1910.157

- 1910.157(d)(4)The employer shall distribute portable fire extinguishers for use by employees on Class B fires so that the travel distance from the Class B hazard area to any extinguisher is 50 feet (15.2 m) or less.
- 1910.157(d)(6)The employer shall distribute portable fire extinguishers or other containers of Class D extinguishing agent for use by employees so that the travel distance from the combustible metal working area to any extinguishing agent is 75 feet (22.9 m) or less. Portable fire extinguishers for Class D hazards are required in those combustible metal working areas where combustible metal powders, flakes, shavings, or similarly sized products are generated at least once every two weeks.





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### OSHA Requirement - Portable Fire Extinguisher

### 29 CFR 1910.157

- 1910.157(f)(3) In addition to an external visual examination, the employer shall assure that an internal examination of cylinders and shells to be tested is made prior to the hydrostatic tests.

Type of extinguishers	Test interval (years)
Soda acid (soldered brass shells) (until 1/1/82)	(1)
Soda acid (stainless steel shell)	5
Cartridge operated water and/or antifreeze	5
Stored pressure water and/or antifreeze	5
Wetting agent	5
Foam (soldered brass shells) (until 1/1/82)	(1)
Foam (stainless steel shell)	5
Aqueous Film Forming foam (AFFF)	5
Loaded stream	5
Dry chemical with stainless steel	5
Carbon Dioxide	5
Dry chemical, stored pressure, with mild steel, brazed brass or aluminum shells	12
Dry chemical, cartridge or cylinder operated, with mild steel shells	12
Halon 1211	12
Halon 1301	12
Dry powder, cartridge or cylinder operated with mild steel shells	12

\* Extinguishers having shells constructed of copper or brass joined by soft solder or rivets shall not be hydrostatically tested and shall be removed from service by January 1, 1982. (Not permitted)



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### OSHA Requirement - Portable Fire Extinguisher 29 CFR 1910.157

#### 1910.157(g) Training and Education

- [1910.157\(g\)\(1\)](#) Where the employer has provided portable fire extinguishers for employee use in the workplace, the employer shall also provide an educational program to familiarize employees with the general principles of fire extinguisher use and the hazards involved with incipient stage fire fighting.
- 1910.157(g)(2) The employer shall provide the education required in paragraph (g)(1) of this section upon initial employment and ***at least annually thereafter.***



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### OSHA Requirement - Portable Fire Extinguisher

**29 CFR 1910.157**

- 1910.157(g)(3) The employer shall provide employees who have been designated to use fire fighting equipment as part of an emergency action plan with training in the use of the appropriate equipment.
- 1910.157(g)(4) The employer shall provide the training required in paragraph (g)(3) of this section upon initial assignment to the designated group of employees and at least annually thereafter.





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# NFPA Inspection Requirements

NFPA 10



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### NFPA Inspection Requirements

### NFPA 10

- 7.2. Inspection
- **7.2.1. Inspection Frequency.**
- 7.2.1.1. Fire extinguishers shall be manually inspected with initially placed in service
- 7.2.1.2. Fire extinguishers and Class D extinguishing agents shall be inspected either manually or by means of an electronic monitoring device/system at intervals not exceeding 31 days.
- 7.2.1.2.1. Fire extinguishers and Class D extinguishing agents shall be inspected at least once per calendar month.
- 7.2.1.3. Fire extinguishers and Class D extinguishing agents shall be inspected daily or weekly when conditions exist that indicate the need for more frequent inspections.



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### **NFPA Inspection Requirements**

### **NFPA 10**

- 7.2.1.4. Fire extinguishers that are electronically monitored for location only, such as those monitored by means of a switch to indicate when the extinguisher is removed from its bracket or cabinet, shall be manually inspected in accordance with 7.2.2.
- 7.2.2.1. The owner or the owner's agent shall determine the method of extinguisher inspection such as manual inspection, electronic monitoring, or any combination of the two.
- 7.2.2.2. Any method(s) of inspection other than manual inspection shall require the approval of the authority having jurisdiction.



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### **NFPA Inspection Requirements**

### **NFPA 10**

- 7.2.2 Inspection Procedures. Periodic inspection or electronic monitoring of fire extinguishers shall include a check of at least the following items:
  1. Location in the designated place.
  2. Visibility of the extinguisher or means of indicating the extinguisher location.
  3. Access to the extinguisher.
  4. Pressure gauge reading or indicator in the operable range or position.
  5. Fullness determined by weighing or hefting.
  6. Condition of tire, wheels, carriage, hose, and nozzle for wheeled extinguishers.
  7. Indicator for non-rechargeable extinguishers using push-to-test pressure indicators.



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### **NFPA Inspection Requirements**

### **NFPA 10**

- **7.2.4 Inspection Record Keeping.**
- 7.2.4.1. Manual Inspection Records.
- 7.2.4.1.1 Where manual inspections are conducted, records for manual inspections shall be kept on a tag or label attached to the fire extinguisher, on an inspection checklist maintained on file, or by an electronic method.
- 7.2.4.1.2 Where manual inspections are conducted, the month and year the manual inspection was performed and the initials of the person performing the inspection shall be recorded.
- 7.2.4.1.3 Personnel making manual inspections shall keep records of all fire extinguishers inspected, including those found to be require corrective action





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### NFPA Inspection Requirements

### NFPA 10

- 7.2.4.1.4 Records for manual inspection shall be kept to demonstrate that at least the last 12 monthly inspections have been performed.
- **7.2.4.2 Electronic Inspection Records.**
- 7.2.4.2.1 Where electronically monitored systems are employed for inspections, records shall be kept for fire extinguishers found to require corrective action.
- 7.2.4.2.2 Records for electronic monitoring shall be kept to demonstrate that at least the last 12 monthly inspections have been performed.
- 7.2.4.2.3 For electronically monitored fire extinguishers, where the extinguisher causes a signal at a control unit when a deficiency in any of the conditions listed in 7.2.2 occurs, record keeping shall be provided in the form of an electronic event log at the control panel.



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State Safety Office recommends that the visual inspection also include:

- No obstruction to access or visibility.
  - Operating instructions on name plate legible and facing outward.
  - Safety seals and/or tamper indicators not broken or missing.
  - No obvious physical damage, corrosion, leakage or clogged nozzle.
  - For wheeled units, the condition of the tires, wheels, carriage, hose and nozzle checked.
- 
- *Extinguishers with discrepancies shall be removed from service until repaired.*



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Any problem here?



**“Never Block a Fire Extinguisher”**





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# Safe Motor Vehicle Operations

AR 385-10



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### **Safe Motor Vehicle Operations**

**AR 385-10**

#### **11-4(j) Fire prevention.**

- (1) AMVs will be entirely free of gasoline, Jet-propellant 8, and Class III diesel leaks before vehicles are allowed to operate.
- (2) Smoking is prohibited within 50 feet of vehicles loaded with flammable or combustible liquids, flammable gases, or explosives and in the presence of flammable vapors such as those present when fueling vehicles or examining or repairing vehicle engines or fuel systems.
- (3) During fueling, drivers will turn off the engine, put the transmission in low gear or park position if automatic, and use the parking brakes. When low temperatures prevent setting the parking brakes, wheels will be chocked. For refuel-on-the-move operations, follow safety precautions provided in FM 10-67-1.



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### Safe Motor Vehicle Operations

**AR 385-10**

- (4) Using cellular phones is prohibited during fueling operations or when flammable vapors are present.
- (5) Fuel cans must be offloaded from the vehicle and placed on the ground for filling to avoid static electricity buildup or discharge.
- (6) Fire extinguishers will be provided for off-road Army vehicles per applicable system TM or TB.
- (7) Fire extinguishers will be mounted in vehicles responding to calls for assistance (such as fire, police, and security protection) and vehicles carrying valuable equipment or materials on a mission requiring special protection.



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### Safe Motor Vehicle Operations

**AR 385-10**

- (8) To minimize the danger of fire or an explosion caused by static sparks, positive bonding connections are required between fuel tank trucks and the source from which the tank truck is being filled or offloaded. Grounding of tank trucks is required before approaching the fuel tank.

#### **11-10. Army combat vehicle safety guidelines**

- 11-10(b)(1) Operators will not start ACVs unless the portable and fixed fire extinguishers are present and in operating condition.

#### **14-4. Ammunition and explosives transport requirement excerpts for continental United States transport.**

- Army vehicles transporting ammunition or explosives will be equipped with at least two Class 2-A 10BC or equivalent fire extinguishers.



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# The Rules of Fighting Fires





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### The Rules for Fighting Fires

- Just remember the three A's
- **Activate** the building alarm system or notify the fire department by calling 911. Or, have someone else do this for you.
- **Assist** any persons in immediate danger, or those incapable on their own, to exit the building, without risk to yourself.
- Only after these two are completed, should you **Attempt** to extinguish the fire.
- (Never risk giving up your escape path away from the fire, in order to attempt to extinguish the fire...Facilities are replaceable, but YOU are not)



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### Most Common Portable Fire Extinguisher: Class ABC





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Only attempt to fight a fire if all of the below are true:

- **A. If the fire is small.**
- **B. If you are safe from toxic smoke.**
- **C. If you have a means of escape.**





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- The PASS Fire Extinguisher technique should be common knowledge to EVERYONE!
  - **PASS** is the acronym used to describe the four *essential steps* of operating a fire extinguisher.
- 1. Pull** - The first step is to **pull** the pin at the top of the extinguisher. The pin is in place to prevent the handle from being accidentally pressed. Immediately test the extinguisher before approaching the fire to ensure it is working correctly.
  - 2. Aim** - Stand at a safe distance from the fire and **aim** the nozzle of the extinguisher at the base of the fire.
  - 3. Squeeze** - **Squeeze** the handles to release the fire extinguishing agent. To stop, release handles. Make sure you are at a safe distance before releasing the handles as the fire could flare up again.
  - 4. Sweep** - **Sweep** the nozzle of the fire extinguisher from side to side maintaining your aim at the base of the fire.



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### How To Use Fire Extinguisher

Remember the **PASS** word (Pull - Aim - Squeeze - Sweep)

<b>P</b>	<b>A</b>	<b>S</b>	<b>S</b>
<b>Pull</b>	<b>Aim</b>	<b>Squeeze</b>	<b>Sweep</b>
Pull The Pin	Aim at the Base of Fire	Squeeze the Operating Handle	Sweep From Side to Side
			
Break seal and test Extinguisher	Ensure you have a means of escape	To Operate Extinguisher and discharge the agent	Completely Extinguish the Fire
			



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### Fire Extinguishers

- Always know where they are located.
- PASS is the acronym used to describe the four essential steps of operating a fire extinguisher.





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# Keys to Success



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- **Keys to success:**

- Clear plan
  - Employee education and practice.
  - Awareness of fire exits and use/location of fire extinguishers.
  - Awareness and abatement of potential fire hazards.
- 
- Contact your local fire department or your OKARNG State Safety Office with any questions or concerns (405-228-5003)





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**Too Many People Believe That  
It Can't Happen To Them, Until It Does...  
The Safe Way Has To Be The Only Way.  
Your Life Matters!**