

Teaching Fire Prevention to Firefighters Instructor Guide

Session Reference: 1

Level of Instruction:

Time Required: Two Hours

Materials:

- Variety of Fire Prevention Literature

References:

- Essentials of Fire Fighting, Fourth Edition, Chapter 19

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PREPARATION:

Motivation:

Objective (SPO): (1-1)

The student will demonstrate a basic understanding of fire prevention, how to present a public fire safety education program, how to conduct a residential fire safety inspection, and how to present a fire survival program as part of a public fire safety education program.

Overview:

Teaching Fire Prevention to Firefighters

- Elements of a fire prevention program
- Public fire safety education
- Home fire safety survey
- Fire survival

Session 1

Teaching Fire Prevention to Firefighters

- SPO 1-1 The student will demonstrate a basic understanding of fire prevention, how to present a public fire safety education program, how to conduct a residential fire safety inspection, and how to present a fire survival program as part of a public fire safety education program.
- EO 1-1 Describe the need for a fire prevention program and the elements that make up a program.
- EO 1-2 Demonstrate the components of a public fire safety education program by developing and delivering a program to a non-fire department.
- EO 1-3 Demonstrate a knowledge of home fire safety by conducting a residential fire safety survey.
- EO 1-4 Demonstrate the components of a fire survival program by developing and delivering a fire survival education program to a non-fire department group.

NOTE: This drill is designed to review the points of a fire prevention program so that the members of a department can use then develop a program to meet the needs of the department and their community. During the course of firefighter training, too little time is spent on fire prevention, which is a responsibility and continuing duty of every member of the fire service. This drill is focused on provide residential fire safety utilizing firefighting personnel. It is intended that the personnel involved have only a general knowledge of fire codes and a better knowledge of good fire safety practices.

I. Elements of a Fire Prevention Program (1-1)

A. Definitions

1. Fire prevention - preventing a fire from starting through a program of public fire safety education and prevention measures. It can also include fire safety inspections, fire code inspections, and fire code enforcement
2. Fire survival - actions taken to survive a fire. This generally includes items such as smoke detectors and programs that include stop, drop, and roll; and exit drills in the home.

B. Determining need

1. Analyze fire and response data to ascertain the fire problem in the community
2. Analyze the population of the community and compare it with information on the likelihood of fire in various population segments, i.e., elderly, low-income, minority groups, young children, etc.
3. Identify unique problems with certain areas such as assisted-living or older structures
4. Assess information sources such as the National Fire Incident Reporting System to identify causes of fire

C. Developing a program

1. Based on data analysis and knowledge of the community
2. Target specific hazard areas
3. Enlist others to assist, i.e., civic groups, senior citizen groups, scouting organizations
4. Establish a goals, objectives, and milestones
5. Lay out the program
6. Identify means of measuring results
7. Take advantage of available resources such as the United States Fire Administration, the National Fire Protection Association, insurance companies, and marketing and advertising agencies
8. While targeting specific audiences, do not overlook general fire prevention needs

D. Implement the program

1. Press releases and media exposure to introduce the program and provide updates

2. Community visits (schools, meetings, etc.)
 3. Involve celebrities if possible
 4. Utilize people within the target audience to assist
 5. Be interactive with the audience
- E. Evaluate results
1. Measure results against program goals
 - a. Do not be discouraged when you do not see immediate results
 - b. Remember, a fire that has not started is difficult to know about--fire prevention is more difficult to measure than alarm response
 2. Utilize follow-up visits as a means to measure information retention
 3. Maintain a good public relationship with the community
 4. Some of the benefits such as good will and public support may be less obvious

II. Public Fire Safety Education (1-2)

- A. Review fire behavior in relation to fire prevention
1. Review the fire tetrahedron and the elements that are necessary to have a fire
 2. Discuss how an element can be eliminated to prevent a fire
 3. Review fuel hazards
 - a. Ordinary combustibles such as wood, cloth, and paper
 - b. Flammable and combustible gases such as natural gas and propane
 - c. Flammable and combustible liquids such as gasoline, oils, lacquers, or alcohol
 - d. Chemicals such as nitrates, oxides, or chlorates
 - e. Dusts such as grain, wood, metal, or coal
 - f. Metals such as magnesium, sodium, or potassium
 - g. Plastics, resins, and cellulose
 4. Review heat source hazards
 - a. Chemical heat energy
 - 1) Materials improperly stored
 - 2) Materials reacting with other materials
 - 3) Materials decomposing
 - b. Electrical heat energy
 - 1) Poorly maintained electrical appliances
 - 2) Exposed wiring
 - 3) Lighting
 - c. Mechanical heat energy - moving parts on machines
 - d. Nuclear heat energy - created by fission

- B. Discuss common fire hazards
 - 1. Children playing with matches or other ignition sources
 - 2. Smoking when not fully alert mentally
 - 3. Food left on stove unattended
 - 4. Poor housekeeping and improper storage of packing materials and other combustibles
 - 5. Defective or improperly used heating, lighting, or power equipment
 - 6. Improper disposal of floor cleaning compounds
 - 7. Misuse of fumigation substances and flammable or combustible liquids

- C. Home safety
 - 1. Keep doors to bedrooms closed during sleeping hours
 - 2. Have two or more escape exits from every room
 - 3. Ensure that windows can be easily opened by anyone to indicate his location to someone outside, to get fresh air, or for purposes of secondary escape
 - 4. Train children properly if they are expected to use fire escape ladders
 - 5. Alert other family members of possible danger if awakened by the smell of smoke
 - 6. Roll out of bed onto the floor
 - 7. Stay low because dangerous heated gases may be at the top of the room
 - 8. Crawl to the door, feel the door, if it is warm, use the window for escape
 - 9. Establish a meeting place outside the home so that all members can be accounted for after escaping. Never go back inside the house once outside
 - 10. Call the fire department from a cellular telephone or a neighbor's house

- D. Fire station tours
 - 1. Opportunity for public to meet and greet firefighters and see apparatus
 - 2. Consider having tour guides to assist with groups and answer questions
 - 3. Have displays, especially ones involving guest participation
 - 4. Conduct demonstrations
 - 5. Explain station operations, alarm response procedures, and apparatus use

III. Home Fire Safety Survey (1-3)

- A. Introduction
 - 1. Most fires involving a loss of life occur in the home

2. Fire departments can provide home fire safety surveys as a public relations tool
 3. Home fire safety surveys provide visibility to the fire department
 4. Home fire safety surveys are not code compliance inspections
- B. Firefighter responsibilities
1. Provide proper identification
 2. Introduce yourself and the purpose of your visit
 3. Maintain a courteous attitude at all times
 4. Request permission to conduct the survey
 5. Remember that the primary interest is to prevent a fire
 6. Compliment when favorable conditions are found
 7. Do not order that corrections must be made when hazards are found
 8. Make constructive comments regarding the elimination of hazardous conditions
 9. Survey the basement, attic, utility room, storage rooms, kitchen, and garage
 10. Keep the survey confidential
 11. Thank the owners or occupants for the invitation into their home
- C. Conducting the survey
1. Be alert for signs of the most common causes of fires
 - a. Heating appliances
 - b. Cooking procedures
 - c. Smoking materials
 - d. Electrical distribution
 - e. Electrical appliances
 - f. Combustible or flammable liquids
 2. Interior survey concerns
 - a. Combustible materials
 - 1) Stored properly
 - 2) Proximity to registers or heating appliances
 - b. Appliances
 - 1) Proper operation
 - 2) Maintenance
 - 3) Condition
 - c. Electrical wiring and equipment
 - 1) Old, frayed, or exposed wiring
 - 2) Improperly installed electrical conductors
 - 3) Unprotected light bulbs
 - 4) Improperly maintained equipment
 - d. Portable heating units
 - 1) Listed with testing laboratory
 - 2) Adequately spaced from combustible furniture

- e. Woodstoves or fireplaces
 - 1) Properly installed
 - 2) Clear of combustibles
 - 3) Vent pipe in good condition
 - 4) Chimney cleaned and maintained
- f. Heating fuel
 - 1) Where stored
 - 2) Proper ash disposal procedure
- g. General housekeeping practices
 - 1) Ash trays for smoking materials
 - 2) Matches and lighters out of reach of children
 - 3) Open flame used safely
 - 4) Exhaust vents and dryer vents cleaned regularly
- h. Smoke detectors
 - 1) Installed
 - 2) Tested on regular basis for responsive to smoke and battery operation
- i. Electrical distribution panels
 - 1) Circuit protection
 - 2) Clearance
- j. Gas appliances
 - 1) Improper clearance to combustible materials
 - 2) Automatic gas control safety devices
 - 3) Condition of vents
 - 4) Possible gas leaks
- k. Oil burning installations
 - 1) Annual service records
 - 2) Condition of oil burners, chimney pipes, supply tanks, and piping
- l. Furnaces, hot water heaters, and vent pipes
 - 1) Properly installed
 - 2) Clear of combustibles
 - 3) Vent pipe in good condition
 - 4) Hot water temperature set to prevent injury
- m. Shop or work rooms
 - 1) Good housekeeping
 - 2) Safe and orderly storage of materials
- n. Accumulated waste - note stacks of paper, discarded furniture, old rags, and improperly stored items
- o. Flammable liquids
 - 1) Flammable sprays, chemicals, and other dangerous solutions properly
 - 2) Out of reach of children
- 3. Outside survey concerns
 - a. Roof
 - 1) Condition
 - 2) Composition material instead of wood shingles or shakes

- b. Chimneys and spark arrestors
 - 1) Condition of chimneys
 - 2) Condition of spark arrestors
- c. Yard and porch areas
 - 1) Unkempt vegetation
 - 2) Items stored under porches
- d. Barbecues and fuel
 - 1) How used
 - 2) Fuel stored properly
- e. Outside waste burners
 - 1) Discourage use
 - 2) Conform to local restrictions
- f. Garages, sheds, barns, and outbuildings
 - 1) Storage of dangerous chemicals and other substances
 - 2) Old paint cans, turpentine, and similar liquids stored properly
- g. Flammable liquids and gases
 - 1) Flammable liquids stored in safety-type cans and in outside storage areas
 - 2) Flammable liquids not used for cleaning or other purposes
- h. Lightning protection- system components tested periodically
- i. Security devices - may hamper ingress and egress

IV. Fire Survival (1-4)

- A. Stop, drop, and roll
 - 1. Why
 - a. If clothes are fire, best way to put fire out
 - b. Keep person from getting burned
 - c. Can save victim's life
 - 2. How
 - a. Stop in place
 - 1) Running fans fire and can make it bigger
 - 2) Longer in contact with fire, more damage done
 - b. Cover face with hands and drop to ground
 - c. Roll over until fire out
 - 1) Roll in each direction several times
 - 2) Keep face covered with hands
 - 3) Keep rolling until fire out
- B. Exit drill in the home
 - 1. Planning
 - a. Have two ways out of every room
 - 1) Doors
 - 2) Windows
 - 3) Escape ladder for upper levels
 - 4) Porch roofs or balconies
 - 5) Make arrangements for those needing assistance (small children and elderly)

- b. Have a meeting place and make sure that everyone knows it
 - c. Practice
 - 1) Everyone should practice
 - 2) Concentrate on rooms most used
 - 3) Practice more than one way out
 - 4) Assisting others
 - 2. Crawl low and go
 - a. Why
 - 1) Hot smoke and gases rise to upper levels, cleaner and cooler air down low
 - 2) Better visibility below smoke layering
 - b. How
 - 1) Roll or slide out of bed and onto floor
 - 2) Crawl on hands and knees to stay low
 - 3) Don't hide in closets or bathrooms, under furniture, or behind furniture
 - 4) Escape using planned escape route and assemble at planned meeting place
 - 3. Check door before opening
 - a. Use back of hand to check for heat
 - b. Start at bottom of door and move upward
 - c. If door is warm and gets hotter as hand is moved higher, don't open door
 - d. Use secondary escape route
 - 4. Signal for help
 - a. Use blanket, sheet, or towel
 - b. Open window, hang half of blanket, sheet, or towel out window, and close window
 - c. Stay near window
- C. Smoke detectors
- 1. Why purchase - early warning device to alert occupants in case of fire
 - 2. Types of smoke detectors
 - a. Ionization
 - 1) Smoke particles block electrical current
 - 2) Responds faster to open flame
 - 3) Radiation source not a hazard
 - b. Photoelectric
 - 1) Light shines into sensing chamber
 - 2) Smoke enters chamber and deflects light
 - 3) Responds faster to smoldering fires
 - 3. Power sources
 - a. Battery
 - 1) Easy to install
 - 2) Batteries must be changed regularly
 - b. Electric (hard wire)
 - 1) No battery change required
 - 2) Will not work when power out
 - 3) Installed by electrician
 - c. Electric with battery backup
 - 1) Most reliable
 - 2) Batteries must be changed regularly

- 3) Installed by electrician
- 4) Can be interconnected so that all detectors alarm when one detects smoke
4. Installation
 - a. At least one every level of house
 - 1) Mounted on ceiling near center of room
 - 2) Mounted on wall, 6 to 12 inches from ceiling
 - b. In or near every sleeping area
 - 1) Optimal is one in every sleeping area
 - 2) At least one outside each sleeping area
 - c. One detector on every floor outside each sleeping area and inside each bedroom ideally
5. Maintenance
 - a. Vacuum or dust weekly
 - b. Test power supply monthly by pressing test button
 - c. Change battery when changing clock for daylight saving time
 - d. Be cognizant of manufacturer's smoke test procedures
 - e. Replace
 - 1) At least once every 10 years
 - 2) If detector beeps intermittently after cleaning and battery replacement

SUMMARY:

Review:

Teaching Fire Prevention to Firefighters

- Elements of a fire prevention program
- Public fire safety education
- Home fire safety survey
- Fire survival

Remotivation:

Assignment:

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EVALUATION: