

**Maryland Fire and Rescue Institute
Drill of the Month - November 2001**

**Firefighter Survival Awareness
Instructor Guide**

Session Reference: 1

Level of Instruction:

Time Required: 3 Hours

Materials:

- Rope
- Video Tape Player And Monitor
- Tape Segments of Fires with Firefighter Fatalities

References:

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PREPARATION:

Motivation:

Instructor should make students aware of the importance of being able to take simple measures to survive in a fire situation.

Objective (SPO):

The student will demonstrate an understanding of the importance for knowing personal survival techniques if trapped in a fire situation.

Overview:

Firefighter Survival Awareness

- Risk management
- Activities to minimize risk
- Personal survival/evacuation
- Firefighter rescue

Firefighter Survival And Rescue

- SPO The student will demonstrate an understanding of the importance for knowing personal survival techniques if trapped in a fire situation.
- EO 1-1 Identify incidents where firefighter lives have been lost and measures that could be taken to better manage the risk.
- EO 1-2 Identify certain systems or activities which are in place to reduce or minimize risk at the fire scene.
- EO 1-3 Identify techniques which could be used to escape a fire situation in an emergency.
- EO 1-4 Identify techniques which could be used to remove a firefighter who needs assistance.

NOTE: In order to generate additional interest in the program, it is suggested that local policies, procedures, and case studies be utilized, where and when appropriate.

I. Risk Management (1-1)

A. Firefighter Death and Injury Statistics

1. Approximately 100 firefighters lose their lives in the line of duty each year.
2. The leading cause of death is heart attacks.
3. Of the firefighters killed from other than heart attacks, how many could have been prevented?
4. What are some of the common threads involving deaths from other than heart attacks?

B. Recent Incidents Involving Firefighter Deaths

At this point, the instructor should present two or three case studies involving firefighter deaths. If possible, utilize ones that the audience can relate to. Video tape segments from American Heat or Working Fire as well as technical reports from the United States Fire Administration may be helpful in the presentation. Among the suggested fires that could be considered for discussion are:

1. 750 Adams Avenue, High Rise Apartment House (Memphis TN)
2. Hackensack Ford, Auto Dealership (Hackensack NJ)
3. Brycelyn Street, Single Family Residence (Pittsburgh PA)
4. Cold Storage Warehouse, Commercial Building (Worcester MA)

C. OSHA Regulation 29 CFR 1910.134

1. Federal regulation involving respiratory protection
2. Requires physical evaluation and annual facepiece fitness testing

3. Minimum of two personnel available whenever firefighting team is operating in IDLH environment
 4. Rescue team must be ready to rescue firefighting team; should not be performing any other duties
 5. Firefighting team may begin search and rescue for known rescue without rescue team being in place
- D. NFPA Standard 1500, Chapter 6
1. Minimum of two personnel available whenever firefighting team is operating in IDLH environment
 2. Rescue team must be ready to rescue firefighting crew; should not be performing any other duties
 3. Firefighting team may begin search and rescue for known rescue without rescue team being in place
- E. Concept of Rescue Teams
1. Minimum of two personnel with sufficient training and equipment to perform rescue of other firefighters
 2. Team should be positioned to be readily available when needed
 3. Team should not be performing any other functions such as pump operations or position in ICS
- F. Rescue Team Equipment Requirements
1. Portable radio or radios
 2. Charged hoseline
 3. Forcible entry tools (hand and power)
 4. Ladder to reach upper levels
 5. Handlights
 6. Rope bag
 7. Spare SCBA for quick-fill or SCBA swap out
 8. Other equipment such as a thermal imager as needed and available
- G. Risk Management Philosophy (Alan Brunacini)
1. Risk a lot to save a life

2. Risk a little to save property
3. Risk nothing to save nothing
(property already lost)

II. Activities To Minimize Risk (1-2)

- A. Incident Command System
 1. Five functional positions
 - a. Command
 - b. Operations
 - c. Planning
 - d. Logistics
 - e. Finance
 2. Three staff positions
 - a. Safety
 - b. Public Information Officer
 - c. Liaison
 3. Bring organization and command structure to emergency scene
 4. Established on all working incidents
- B. Personnel Accountability System
 1. Level 1 accountability - tags placed on collection ring in cab of apparatus
 2. Level 2 accountability - collection ring taken to command post
 3. Level 3 accountability - tags collect at designated control points such as entrance to structure (may require the use of multiple tags for multiple control points)

NOTE: Each firefighter should have a minimum of two personal accountability tags--one for the collection ring and the second for the entry control point.

- C. Personal Items
 1. Personal protective equipment (PPE)
 2. Personal alert safety systems (PASS)
 - a. Should be checked periodically to make sure it is working
 - b. Operator should know how to operate it in manual mode
 - c. Battery should be replaced periodically)

- d. Should be activated when entering a structure or work area
- 3. Self-contained breathing apparatus (SCBA)
- D. Buddy System
 - 1. Always work in pairs
 - 2. Stay in voice and visual contact with each other
 - 3. Share senses, e.g., hearing, seeing, feeling (not smelling)
- E. Back-up Teams/Rescue Teams
 - 1. Should more experienced personnel
 - 2. Must exercise restraint and not get involved in operations unless needed
 - 3. May want to consider rotating team members
- F. Scene Safety Zones
 - 1. Hot zone - area of immediate danger; may be defined by presence of toxic gases or explosion hazard, potential structural collapse, or area of vehicular instability; full protective clothing required
 - 2. Warm zone - area adjacent to hot zone; may be decon area on hazmat incident; buffer zone between hot and cold zones; protective clothing may be required
 - 3. Cold zone - staging area; no protective clothing required
- G. Evacuation Signals
 - 1. Air horn blasts - 5 seconds at 15-second intervals
 - 2. Radio announcement - 5 consecutive alert tones 2 seconds in duration
 - 3. Pager activation (maybe)

NOTE: Once the evacuation signal has been activated, a personnel accountability report (PAR) should be conducted as quickly as possible to determine who might be missing. Information should be gathered to determine where the

missing personnel were last seen or operating. This information will assist the rescue team.

- H. Rehab Areas and Procedures
 - 1. Have areas designated for rehab and make them known
 - 2. Have procedures in place to establish rehab on working incidents
 - 3. Stress importance of rehab
 - 4. Identify rehab requirements
- I. Fireground Communications
 - 1. Adequate radios
 - 2. Direct communications through Command Post
 - 3. Determine channel for rescue team (if separate from fireground operations)
 - 4. Avoid unnecessary radio traffic during firefighter rescue
- J. Negative Activities
 - 1. Complacency
 - 2. Overconfidence
 - 3. Tunnel vision
 - 4. Freelancing
 - 5. Disregard for basic skills and knowledge

III. Personal Survival/Evacuation (1-3)

Some of the practical material in Sections III and IV of this Instructor Guide is based on a training program delivered in Frederick, Maryland, on March 27-28, 1999, by members of the training staffs of the Anne Arundel County (MD) Fire Department and the Howard County (MD) Department of Fire and Rescue Services.

NOTE: The instructor should review each of these items in the classroom before moving to the practical area for demonstration and student practice.

- A. Personal Survival Tips
 - 1. Communicate "mayday"
 - 2. Activate emergency button on radio

3. Shine light on ceiling
4. Turn PASS device on manual
5. Consider personal survival techniques

B. Interior Wall Breaching

NOTE: This activity involves making an opening in a wall constructed of drywall and wood studding so that the firefighting can crawl into an adjoining room.

1. Locate wall studding
2. Locate space between studs
3. Remove panel with heel of foot or entry tool
4. Enlarge area as needed (may be able to kick out stud at base)

C. Low Profile Wall Passage

NOTE: This activity involves being able to go through the normal framing in a structure by maneuvering the body and the SCBA to fit between the studs while standing. Every effort should be made to complete this activity without removing the SCBA backpack.

1. Size up area to pass through
2. May require removal of airpack from back (must be done without dislodging facepiece)
3. Once pass-through is completed, return airpack to back
4. Remember wires and other obstructions in walls

NOTE: There are some additional techniques such as the ladder slide, hose slide, and personal rope slide that can be utilized to evacuate a fire area in an emergency. These techniques should only be taught and practiced under the guidance of instructors qualified in those areas.

IV. Firefighter Rescue (1-4)

A. Stair Drag

1. One rescuer grabs victim's SCBA shoulder straps

2. Second rescuer slides hands up victim's turnout pants and makes fist
3. One rescuer pulls while other rescuer pushes victim up or down stairs

B. Drag Drill

1. One person drag using SCBA straps
 - a. Place victim face up with dummy SCBA (old SCBA no longer in use; may want to use pieces of carpet on concrete surfaces to protect SCBA)
 - b. Rescuer grabs both of victim's SCBA shoulder straps
 - c. Rescuer walks backwards dragging victim
2. Two person drag using SCBA straps
 - a. Place victim face up with dummy SCBA
 - b. Each rescuer grabs one of victim's SCBA shoulder straps
 - c. Rescuers walk backwards dragging victim
3. One person handcuff drag
 - a. Demonstrate tying handcuff knot
 - 1) Form a clove hitch
 - 2) Pull the outer loop on the left side back through the middle
 - 3) Pull the inner loop on the right side out through the middle
 - 4) Pull on the two loops that were moved
 - 5) A loop should have been formed for each hand which are adjustable by pulling on the ends
 - b. Demonstrate placement of handcuff knot on forearms just below elbow
 - c. Place victim face up with dummy SCBA
 - d. Tie handcuff knot and place

- on victim's arms
 - e. Rescuer drags victim with rope
- 4. Two person push pull drag
 - a. Place victim face up with dummy SCBA
 - b. One rescuer grabs victim's SCBA shoulder straps
 - c. Other rescuer slides hands up victim's turnout pants legs as far as possible and makes a fist
 - d. Rescuers move victim in coordinated fashion

NOTE: There are some additional techniques such as the tight space rescue (Denver Drill), below floor rescue (Nance Drill), and the ladder rescue that can be utilized to remove a trapped firefighter from a fire area in an emergency. These techniques should only be taught and practiced under the guidance of instructors qualified in those areas.

SUMMARY:

Review:

Firefighter Survival Awareness

- Risk management
- Activities to minimize risk
- Personal survival/evacuation
- Firefighter rescue

Remotivation:

Stress the importance of being able to think clearly and remain calm so that the techniques practiced can be performed in an emergency situation. Part of the process of surviving is the ability to perform under stress.

Assignment:

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EVALUATION:

Student performance should be evaluated by visual performance of practical skills during the practical activities and evolutions.