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Training Outline for First Responders at Fire Scenes

Purpose:

The purpose of this outline is to provide general guidance in the preparation of training curriculum for the instruction of first responders in the awareness and their responsibilities at a fire scene. The actions of the first responder providing emergency services at a fire scene are critical not only to lifesaving and fire suppression efforts but also to any subsequent criminal investigation of an incendiary fire. This material is designed to enhance and expand the basic steps provided in the National Institute of Justice *Fire and Arson Scene Evidence: A Guide for Public Safety Personnel* as published in 2000.

Emergency Response to Fire Investigations: A Guide for First Responders

The Role of First Responders

(Note: the role of the first responder is not that of a fire investigator)

1. Observe the Fire and Scene Conditions

Principle: *First responders*¹ to a fire should observe conditions and activities en route to, near or at the scene so they can give investigators arriving later an accurate and complete description. They can gain information valuable to the fire investigation during their approach to and arrival at the scene.

1. The first public safety personnel to arrive on the scene, whether they are law enforcement professionals, firefighters, rescue, or emergency medical services (EMS) personnel.

Procedure: While responding to, approaching and arriving at a fire scene, first responders should observe and mentally note the following conditions and activities and, as soon as conditions permit, initiate documentation of the information:

- A. The presence, location, and condition of victims and witnesses.
 - Note unusual clothing (fully clothed at 3 am in morning)
 - Manner of behavior (excited, overly quite)
 - Unusual odors on victims and witnesses (ignitable liquids, alcohol)
 - Injuries (singed hair, redness of skin, soot around nose)

- B. Vehicles leaving the scene, bystanders, or unusual activities near the scene.
 - Vehicles leaving at high rate of speed
 - Number of occupants
 - Groups of individuals
 - Individuals leaving the scene
 - Inconsistent behavior of individuals at scene

- C. Flame and smoke conditions (e.g., the volume of flames and smoke; the color, height, and location of the flames; the direction in which the flames and smoke are moving).
 - Volume, color, and height
 - Location (single or multiple locations of flames/smoke)
 - Actions/ Observations made during fire suppression activities
 - Observation made during post suppression activities

- D. The type of occupancy and use of the structure (e.g., a residential occupancy being used as a business).
 - Single-family, multi-family, garden-style apartment
 - Occupied or unoccupied
 - Type of construction (wood-frame, steel, concrete)

- E. Conditions of the structure (e.g., lights turned on; fire through the roof; walls standing; open, closed, or broken windows and doors).
 - Structure under renovation
 - Property for sale, condemned, rezoning
 - Obstructions to entry ways e.g. windows, doors barricaded
 - Heat producing appliances in unusual locations
 - Condition and types of all utilities
 - Combustibles placed too close to heaters
 - Unusual or improper storage of flammable/ combustible liquid
 - Furniture or other combustibles stacked in one area of room

- F. Conditions surrounding the scene (e.g., blocked driveways, debris, damage to other structures).
 - Obstructed views
 - Vehicle placement
 - Unusual odors

- G. Weather conditions (e.g. Temperature, humidity, clear, stormy, lightning, wind, cloudy, rain, snow, sleet, etc.)

- H. Unusual characteristics of the scene
 - The presence of containers (gas cans and milk jugs full of flammable liquids)
 - Altered utilities (damaged lines and valves, cut phone lines)
 - Forced entry (broken windows, pried doors)
 - Exterior burning or charring on the building

- The absence of normal contents
- Unusual odors
- Graffiti and tagging
- Incendiary devices
- Physical trailers²

2. Physical trailers of fuel and the burn patterns caused by those trailers.

I. The fire suppression techniques used, including ventilation, forcible entry, and utility shutoff measures.

- Unusual reactions to fire extinguishment
- Flashover or backdraft

J. The status of fire alarms, smoke detectors, security alarms, and sprinklers.

- Condition (audible, visual) of alarms upon arrival
- Functioning of suppression systems
- Eyewitness accounts of alarms' status
- Water gong

Summary: First responders' initial observations may provide investigators with information pertinent to the investigation. As the investigation unfolds, these observations may provide the starting point for evidence collection and preservation efforts.

2. Exercise Scene Safety

Principle: Safety overrides all other concerns: Ensuring the safety of victims, bystanders, and public safety personnel is the first responders' foremost concern at a fire scene. First responders must take steps to identify and remove or mitigate safety hazards that may further threaten victims, bystanders, and public safety personnel. They must exercise due caution to avoid injuries to themselves and others.

NOTE: reference 921 for safety issues

Procedure: Upon arrival at the scene, first responders should:

A. Evaluate the scene for safety hazards (e.g., structural collapse of the building; smoke; electrical, chemical, or biological hazards; other health risks).

- Assignment of Safety Officer
- Ascertain if building is occupied or vacant
- Determine active/live utilities
- Pre-plan showing hazards list for address location

B. Establish safety/hazard zones.

- Clearly mark hazards with barrier tape or cones

C. Communicate hazards to other personnel arriving at the scene.

D. Use tools and personal protective equipment appropriate to the task during all operations.

- Use of respirators, safety shoes/boots, and disposable outer garments

Summary: Safety is the overriding concern during emergency operations and the subsequent investigation. To ensure the safety of civilians and public safety personnel, first responders should take steps to identify, evaluate, and mitigate scene hazards, and they should communicate those hazards to other public safety personnel arriving at the scene. Necessary safety zones should be established to receive victims as they are evacuated. Personal protective equipment and other measures should be used to ensure the safety of all persons at the scene. The scene should continually be reassessed to evaluate safety hazards that may change due to fire conditions or suppression efforts.

DANGER:

Beware of incendiary or explosive devices!

The scene may contain devices specifically designed to kill or maim public safety responders. Do not touch any suspected incendiary or explosive device. Evacuate the area, and request the services of personnel trained in the removal of such items.

3. Preserve the Fire Scene

Principle: Evidence at a fire scene takes many different forms, some of which are transient (i.e., they are not permanent and may disappear quickly, such as impressions in snow or evaporating liquids). First responders must understand how rescue, medical, fire suppression, overhaul³, and salvage⁴ efforts can adversely affect different forms of evidence and take steps to preserve evidence accordingly. First responders should assess the fire scene to identify potential evidence, take preliminary steps to preserve it, and notify appropriate authorities about its existence.

3. The process of opening concealed spaces to find pockets of fire and removing smoldering materials.

4. The process of protecting, moving, or removing items.

Note: When evidence is discovered, do not touch or move except if fire or fire suppression activities might destroy the evidence.

Procedure: To preserve evidence, first responders should:

A. Observe and mentally note evidence that may be present at the scene, such as:

- Fire patterns (including multiple fire locations).
- Burn injuries to victims and fire patterns on clothing.
- Trailers, ignitable liquids, odd containers or other unusual fuel distribution (e.g., piles of newspapers, furniture pushed together).
- Incendiary/ignition/explosive devices (e.g., lighters, matches, timing devices).
- Shoe prints and tire impressions.
- Broken windows and doors.
- Distribution of broken glass and debris.
- Indications of forced entry (tools and tool marks).
- Containers.
- Discarded clothing.
- Trace evidence (e.g., hairs, fibers, fingerprints, blood, other body fluids).
- Evidence of crimes in addition to the possible arson (e.g., weapons, bodies, drugs, clandestine drug laboratory equipment).
- Witnesses, bystanders, and victims.

- Any other unusual items or the absence of normal contents or structural components.

B. Recognize threats to evidence (i.e., its movement, removal, contamination, or destruction) from any of the following sources:

- Fire suppression activities, such as a straight stream applied at the point of origin or deluge applications that may wash away or dilute potential evidence.
- Overhaul activities that destroy fire patterns.
- Salvage activities that involve moving or removing potential physical evidence.
- Use of a tool in any manner that causes destruction of evidence.
- Movement of knobs, switches, and controls on appliances and utilities.
- Weather conditions that affect transient evidence (i.e., wind, precipitation, or temperature changes).
- Personnel walking through the scene.
- Witnesses and victims leaving the scene.
- Medical intervention and treatment of victims (e.g., by damaging evidence at the scene or destroying victims' clothing).
- Premature removal or movement of bodies.
- Vehicles at the scene (e.g., that introduce fluid to the scene through vehicle leaks or destroy other evidence, including shoe prints and tire impressions).
- Contamination from external sources, such as fuel-powered tools or equipment.
- Cross contamination from tools, equipment, and clothing

C. Protect evidence by:

- Limiting excessive fire suppression, overhaul, and salvage.
 - Salvage and overhaul activities should be limited to necessary extinguishment upon suspicion or discovery of an incendiary cause
- Avoiding needless destruction of property.
- Leaving bodies undisturbed.
- Flagging items of evidence with cones or markers.
- Isolating items or areas containing evidence with rope, barrier tape, barricades, or sentries.
- Retaining and securing clothing items removed from victims and suspects.
- Obtaining information about victims and witnesses (i.e., their names, addresses, and telephone numbers).
- Preserving transient evidence (e.g., trace evidence⁵, shoe prints, tire impressions).
- Removing evidence at risk of imminent destruction by the fire or the structural collapse of the damaged building.
- Ensuring that later arriving investigators are fully apprised of the evidence discovered.
- Do not tamper with items that may become evidence.
- Do not move controls, change the position of switches, etc.
- Do not remove items that may be critical to the investigation.

5. trace evidence includes hairs, fibers, biological fluids, etc)

Summary: First responders should recognize items that may have evidentiary value in a subsequent investigation and take steps to protect them from damage that could result from the fire, fire suppression, or rescue efforts.

4. Establish Security and Control

Principle: Fire suppression and rescue efforts can be performed more efficiently and effectively if only essential authorized personnel are permitted access to the area. Restricting access also ensures the safety of civilians and helps to preserve the scene for subsequent investigation. First responders should immediately establish control of the scene.

Procedure: To establish security and control, first responders should:

- A. Set up a security perimeter (e.g., using barrier tape, fire line, sentry).
 - Secure access and egress areas if possible.
 - If firefighters are at the scene to assist the fire investigator, keep them on standby at a staging area until needed.
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- B. Control access into the scene through the security perimeter.
 - The only people who should be allowed to enter a fire scene prior to its release are firefighters who have a need to be in the structure, the fire investigator(s), or evidence technician(s).
 - Any other entry into the structure could be construed as scene contamination.
 - Verify that the person(s) has a right of access to the building or fire area

Summary: The actions of first responders at a fire scene are not only critical to saving lives and suppressing fires; they also set the stage for the investigators arriving to process the scene by establishing a controlled security perimeter and maintaining the integrity of suspected evidence.

5. Coordinate Activities

Principle: Emergency operations at the fire scene may involve many different agencies and organizations, each having a different focus and performing different activities. These activities must be well coordinated to accomplish emergency operations efficiently and to preserve the integrity of the scene. Upon arrival at the scene, first responders must establish an incident command system, which allows for a systematic flow and transfer of critical scene information.

Procedure: To coordinate activities at the scene, first responders should:

- A. Establish a command post and implement an incident command system (i.e., a point of contact and line of communication and authority for public safety personnel).
 - Larger scenes may later transition to a Unified Command involving multiple agencies
 - Incorporate National Incident Management System (NIMS) and National Response Framework (NRF)
- B. Establish staging areas to ensure that emergency and support vehicles have access into the area.
- C. Request additional personnel resources, such as firefighters, EMS personnel, law enforcement officers, investigators, and representatives of utility companies.
- D. Inform authorities about the status of the incident, hazards, injuries, witnesses, the location of evidence, and other pertinent facts.

Summary: First responders must establish an incident command system to coordinate activities at the scene and communicate information to responsible authorities.

The first responder should recognize limitations of his or her own expertise and knowledge and determine what personnel may be required to process the scene according to local protocols, *NFPA 921* and other recognized national guidelines. Except in the most obvious cases, the determination of a fire's origin and cause may be a complex and difficult undertaking that requires specialized training and experience as well as knowledge of generally accepted scientific methods of fire investigation. The first responder must either have appropriate expertise or call upon the assistance of someone with that knowledge. This is especially true in cases involving deaths, major injuries, or large property losses.

The guide from here down will not be addressed for the training curriculum as it is outside the scope of responsibilities of the 1st responder.