

**Safety Officer's Role on the Incident Scene**

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## **Instructor Guide**

**Title:** Safety Officer's Role on the Incident Scene

**Time Required:** 3 hours

**Teaching/Learning Materials:** LCD projector, laptop computer, accompanying PowerPoint Slides

**Motivation:** Firefighters and emergency medical personnel are exposed to the most hazardous of situations and greatest risk activities during emergency scene operations. Regardless of the operation, to ensure that firefighters do not become victims, the health and safety officer must engage in the operations to recognize the hazards, address them in a proactive manner.

**Student Performance Objectives:** At the conclusion of this session, the firefighter, operating as a health and safety officer will be able to list the general duties of the incident scene safety officer, identify scene safety concerns, fire behavior considerations, special operations incidents, the role of the safety officer prior to an incident, during an incident and after the incident.

### **Enabling Objectives:**

- List the general duties of the incident safety officer
- Describe incident scene safety considerations
- Describe fire behavior effects fireground safety
- Identify when an incident involves special operations
- Describe the role of the safety officer prior to the incident
- Describe the role of the safety officer during the incident operations
- Describe the role of the safety officer following the incident

### **Overview:**

- Introduction
- Scene Safety considerations
- Special operations
- Role prior to the incident
- Role during the incident
- Challenges for the Safety Officer
- Role following the incident

## **I. Introduction.**

- A. During an incident, the incident commander has the ultimate responsibility and authority over operations, including safety of the personnel operating on the fireground.
- B. On larger more complex incidents, the responsibility of safety can be so broad that it prevents the incident commander from managing and commanding the remaining operations effectively. When this occurs the incident commander may delegate the safety officer responsibilities and authority to mid-level officer or firefighter. Regardless of the incident, the role of the safety officer should be define in your department's standard operating procedures.
- C. NFPA 1521, Standard for Fire Department Safety Officer, outlines the role of the incident safety officer and is a good reference to consider when preparing standard operating procedures for your department.
- D. NFPA 1521, separates the duties of the health and safety officer and the incident safety officer. This separation provides the opportunity to assign the latter responsibilities to any qualified individual available and present on the incident scene.
- E. Statistically, more firefighters are injured and killed while operating on the scene of emergency incidents than any other setting. Using an incident safety officer will significantly reduce the potential for injury and death.
- F. Other duties of the incident safety officer as outlined in NPFA 1521 include:
  - 1. Ensure that incident scene rehabilitation is established;
  - 2. Monitor the scene and report the status of conditions, hazards, and risks to the incident;
  - 3. Ensure that a personnel accountability system is being used;
  - 4. Ensure that all personnel understand the incident action plan;
  - 5. Provide the incident commander with a risk assessment of the incident action plan;
  - 6. Suggest safety zones, collapse zones, a hot zone, and other designated hazard areas;
  - 7. Evaluate motor vehicle traffic hazards
  - 8. Monitor radio transmissions to ensure proper and effective communications;
  - 9. Identify the need for additional assistant incident safety officers; and
  - 10. Evaluate hazards associated with helicopter landings
- G. For the safety officer to be effective, he must have the support and confidence of the incident commander. Equally important is the support of the fire department administration outside of the emergency scene.
- H. In addition to the incident commander's and the administration's support, the safety officer must have creditability, good interpersonal skills, and mutual respect from the fellow firefighters.
  - 1. Creditability – based upon the individual's knowledge of safety related issues, leadership, understanding of the incident management system, and a willingness to enforce the policies and practices of the fire department.
  - 2. Interpersonal skills – include the ability to remain clam during a crisis, to communicate information clearly and concisely, and to firmly introduce decisions without alienating personnel.

3. Mutual respect – attained when each party recognizes the duties and responsibilities of the other and agrees to work together as a team. The safety officer must support the decisions and direction of the incident commander. The incident commander must be willing to accept input from the safety officer and adjust his plan consistent with the information presented by the safety officer.

## **II. Scene Safety Considerations.**

- A. To adequately advise the incident commander, the incident safety officer must be:
  1. Knowledgeable in emergency scene operations, and the
  2. Potential hazards that different types of incidents pose to firefighters.
- B. The incident management system must be employed to aid in the management of resources at emergency scenes. The safety officer functions within this system as part of the command staff and must have expert knowledge of his duties and authority as defined by the system.
- C. At a minimum, the safety officer must have special knowledge and training in the following areas.
  1. Firefighting strategies and tactics;
  2. Building construction;
  3. Fire behavior;
  4. Fire loads;
  5. Forcible entry;
  6. Ventilation;
  7. Evacuation procedures;
  8. SCBA and personal protective clothing equipment usage;
  9. Climatic conditions;
  10. Ladder operations' and
  11. Establishing control zones.
- D. Firefighting Strategies and tactics.
  1. The methods employed in the suppression of all types of fires – structural, vehicular, wildland, hazardous materials or aircraft.
  2. Strategies and tactics include: the placement of apparatus, the use of attack and support hoselines, ventilation procedures, rescue operations, and forcible entry operations.
  3. The safety office must understand the various types of tactics used by the department. This understanding enables him to spot potential hazards created by the tactics inconsistent with the incident commander's strategies or improper execution of tactics.
- E. Building construction.
  1. Safety officer must have a good understanding of building construction and the design of buildings as it is associated with fire risk evaluation.
  2. Building and construction knowledge allows the safety officer to recognize the hazards of various building construction methods, such as truss systems, balloon frame construction, light weight wood frame construction, etc.
  3. Of great importance to the safety officer and crews operating on the fireground is the ability to predict collapse scenarios and potential.
- F. Fire behavior.

1. Safety officer must understand the principals of heat transfer: conduction, convection and radiation, as well as the injury potential from each method.
  2. Backdraft and flashover potential must be recognizable to the safety officer.
  3. Safety officer must understand:
    - a. Forms of classifications of fuels,
    - b. Properties of fuels including flammable ranges, and
    - c. Physical science of fire.
- G. Fire loads.
1. Defined as the maximum heat production in a given area, including the building structure.
  2. Safety officer must have first-hand knowledge of target hazards and the fire load potential within.
  3. Understanding fire loading will aid the safety officer in recommending offensive or defensive operations to the incident commander.
- H. Forcible entry.
1. Safety officer must understand forcible entry techniques.
  2. He must also, understand the hazards associated with each technique of forcible entry as well as the injury types the firefighter could experience during forcible entry operations.
- I. Ventilation.
1. Safety officer must understand ventilation principals and effects of each method of ventilation.
  2. He must also understand the effects of improper ventilation operations and how those actions can spread the fire, injury and/or kill firefighters.
  3. Understanding of both negative and positive pressure ventilation is necessary.
- J. Evacuation procedures.
1. Knowledge of evacuation procedures is essential not only at structure fires but also at hazardous materials incidents, wildland fires and severe weather events.
  2. The safety officer must understand the policy for the following actions:
    - a. Ordering an evacuation;
    - b. Notifying the people involved;
    - c. Effectively using personnel; and
    - d. Establishing a relocation area with the necessary health and safety provisions.
- K. SCBA and personal protective clothing equipment usage.
1. The safety officer must understand the standards and policies that mandate the type of personal protective clothing appropriate for the incident operation.
  2. He must ensure that all personnel are using the appropriate PPE.
- L. Climatic conditions.
1. Weather conditions can have an adverse effect on the incident operations.
  2. The safety officer must continually be aware of the pending weather conditions and how those conditions can effect the firefighters operating on the scene of the incident.

3. Adverse weather conditions include: high humidity and temperatures, freezing rain, snow, extreme cold temperatures and high wind.
  4. Contact the communications center to obtain weather information.
- M. Ladder operations.
1. Safety officer must understand the operation of both ground and aerial ladders.
  2. Ensure that sufficient ground ladders are placed to provide egress for upper floors.
- N. Establishing control zones.
1. Control zones allow for accounting of personnel and victims.
  2. Collapse zones must be established based on the building height and construction type.
  3. Establishing control zones at an incident helps to organize the scene into three manageable areas:
    - a. Restricted area or hot zone.
    - b. Limited access area or warm zone.
    - c. Support area or cold zone.

### **III. Special Operations.**

- A. Special operation incidents where the safety officer may be called upon to support include:
1. Hazardous materials incidents.
  2. Emergency medical and mass casualty incidents.
  3. Specialty rescues: such as trench, confined space, structural collapse, high angle and extrication incidents.
- B. The safety officer must be familiar with the government regulations that apply to these special operation incidents. These include but may not be limited to: OSHA, NFPA and other state laws.

### **IV. Role of the Safety Officer Prior to the Incident Operation.**

- A. Coordinate and communicate with the department health and safety officer to identify high hazard and high risk targets such as:
1. Sites containing large fire loads and hazardous materials
  2. Potential sites for large loss of life
  3. Structures with security systems and barriers
  4. Doors that impede evacuation
- B. Review and develop pre-incident plans.
- C. Assist in the development and review of standard operating procedures.
- D. Ensure the adoption and implementation of an incident management system on all incidents.
- E. Conduct active research and development relating to firefighting strategy and tactics, safety best management practices and other technology used in the fire service.

### **V. Role of the Safety Officer at an Incident.**

- A. Coordinate with the incident commander and understand the incident action plan established by the incident commander.
- B. Conduct incident size up, determine any inconsistencies between the IC's action plan and the observations made as part of the safety officer's size-up.
- C. Report any size-up information to the incident commander.
- D. Establish control zones.

- E. Establish rapid intervention crews.
- F. Additional duties:
  - 1. Providing advice on challenging conditions to the incident commander and other officers operating on the fireground.
  - 2. Monitoring communication traffic.
  - 3. Evaluating vehicular traffic conditions around the incident.
  - 4. Monitor changing conditions.
  - 5. Continuing the risk assessment process.

**VI. Challenges for the Safety Officer.**

- A. The safety officer will be faced with many challenges during their assignment.
- B. As stated earlier, strategy and tactics is essential, but more important is being able to recognize how the changing conditions of the incident effects the incident commander's strategy so that you can advise the IC accordingly.
- C. Providing risk assessment. Risk assessment should be conducted periodically throughout the incident, especially when strategic objectives are reached.  
Examples of these benchmarks are:
  - 1. Primary search completed
  - 2. Fire knocked down
  - 3. Patient extrication completed
  - 4. Hazardous materials spill or leak contained
- D. Managing the risk. Determine the most appropriate action to manage the risk. Avoid, manage or eliminate the risk.
- E. Using interpersonal skills and effective communication style to be effective managing the safety aspects of the incident.
- F. Enforcing personnel accountability.
- G. Effectively supporting the operations as needed.
- H. Planning for the need of additional resources.

**VII. Role of the Safety Officer after the Incident**

- A. Post-incident analysis and reports.
- B. The safety officer may be responsible for submitting reports for injury or death that occurred while operating on the scene of an incident.
- C. The safety officer may also be asked to develop a post incident analysis. The post incident analysis report is an important aspect of the safety officer's duties. It allows the following safety problems to be corrected:
  - 1. Violations of department SOP's
  - 2. Poorly defined procedures
  - 3. Unforeseen situations
  - 4. Training deficiencies

**Summary:** The incident safety officer is an essential member of the incident management team. The safety officer provides the incident commander with information necessary to ensure safe operations and efficiently mitigate the emergency incident.

**Review:**

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- Scene Safety considerations
- Special operations

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- Role during the incident
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**Reference Material:**

IFSTA Fire Department Fire Department Safety Officer, first edition, Chapter 9 – Incident Scene Safety, pp. 183-204.