



International
Association
of Fire Chiefs



National
Fire Protection
Association

Fire Officer

Principles and Practice
THIRD EDITION



Chapter 5 Safety and Risk Management (Fire Officer I)

Fire Officer I Objectives

- Discuss how to develop an incident action plan.
- Describe the initiatives that have been implemented to reduce fire fighter injuries and deaths.
- List the most common causes of personal injury and deaths to fire fighters.

Fire Officer I Objectives

- Describe methods for reducing the risk of personal injury and death to fire fighters.
- Discuss the role and requirements of an incident safety officer.
- Describe safety policies and procedures and basic workplace safety.

Fire Officer I Objectives

- Describe principles to prevent emergency incident injuries.
- Describe safety considerations for the fire station.
- Describe the components of an infectious disease control program.

Fire Officer I Objectives

- Describe procedures for conducting and documenting an accident investigation.
- List the elements of a postincident analysis.

Introduction

- Fire department operations often include high-risk situations.
- The fire officer is responsible for ensuring that every fire fighter completes every incident without serious injury, disability, or death.

Introduction

- The fire officer:
 - Identifies hazards and mitigates dangerous conditions
 - Identifies and corrects behaviors that could lead to injury or death
 - Sets a good example

Fire Fighter Death and Injury Trends

- The fire officer develops an incident action plan:
 - Addresses and minimizes chances of harm
 - Identifies and controls factors that might lead to injury or death
- Prevention depends on the ability to avoid the events leading to injury or death.

Everyone Goes Home

- Program developed by the NFFF to prevent line-of-duty deaths and injuries
- Safety Summit in 2004 resulted in 16 initiatives

Everyone Goes Home

- Fire fighters must work in teams.
- Fire officers must maintain accountability for all members working under their supervision.
- Reliable two-way communications must be maintained.

National Fire Fighter Near-Miss Reporting System

- The International Association of Fire Chiefs launched a Web-based system in 2005 to report near misses.
- The goal is to track incidents in which serious injury or death was avoided.

Reducing Deaths from Sudden Cardiac Arrest

- A disproportionate number of fire fighters older than age 49 die of cardiac arrest.
- Every fire fighter should undergo a medical examination.
- Fire officers should look for indications that a member is unfit for duty.

Reducing Deaths from Sudden Cardiac Arrest

- Changes in lifestyle can often reduce the risk of a fatal heart attack.
- Fitness should be a personal priority.



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Reducing Deaths from Motor Vehicle Collisions

- Collisions account for the largest percentage of traumatic deaths.
- Prevention:
 - Obeying traffic laws
 - Using seat belts
 - Driving sober
 - Controlling speed

Reducing Deaths from Motor Vehicle Collisions

- Only members who have completed a driver training program should operate apparatus.
- The fire officer is responsible for ensuring that drivers follow the rules of the road.

Reducing Deaths from Fire Suppression Operations

- Asphyxiation and burns are the prime factors in death in burning buildings.
- SOPs should be followed.
- The fire officer must be prepared for unanticipated hazards.

Reducing Deaths from Fire Suppression Operations

- Maintaining crew integrity
 - The fire officer must know the location and function of every crew member.
 - Many fatal fire suppression incidents involve a fire fighter who died before the fire officer was aware that he or she needed help.

Reducing Deaths from Fire Suppression Operations

- Operating in an IDLH environment
 - Can cause irreversible adverse health effects or interfere with an individual's ability to escape unaided
 - OSHA and NFPA establish requirements for fire fighters operating in an IDLH environment.

Reducing Deaths from Fire Suppression Operations

- “Two-in, two-out”:
 - Designated officer-in-charge
 - Two fire fighters who enter the area
 - Two fire fighters outside the area



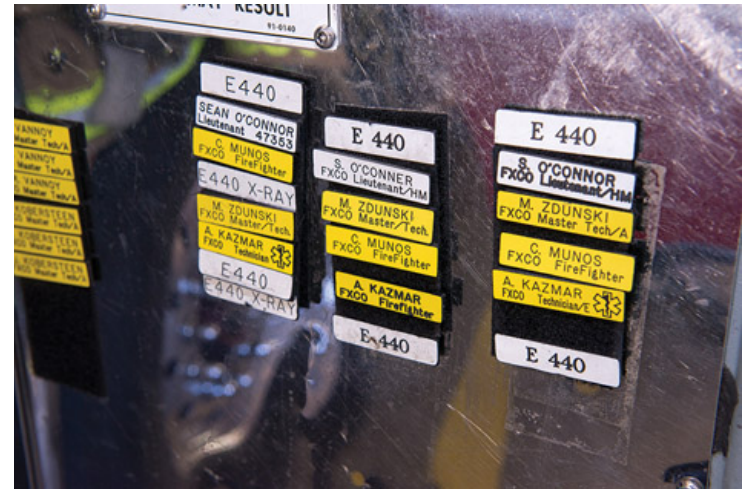
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Reducing Deaths from Fire Suppression Operations

- Rapid intervention crew (RIC)
 - Dedicated crew assigned for deployment to rescue lost or tapped members
 - An initial rapid intervention crew must assemble prior to operations within IDLH environments.

Reducing Deaths from Fire Suppression Operations

- Personnel accountability system:
 - Identifies personnel on the scene and personnel in the hazard area
 - Accounts for all personnel



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Reducing Deaths from Fire Suppression Operations

- Air management
 - SCBA provides a reliable air supply.
 - The length of time that supply will last varies.
 - Low-pressure warning devices provide an indication when the air supply reaches a set point.

Reducing Deaths from Fire Suppression Operations

- Teams and tools
 - Every work team must include at least two people.
 - Every team member must have full PPE.
 - Additional tools include a radio and thermal imaging device.



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Reducing Deaths from Fire Suppression Operations

- Situational awareness
 - Stay oriented.
 - Make observations.
 - Provide and receive regular updates.
 - Listen to the fire-ground radio.
 - Assess the risk–benefit model.
 - Do not lose track of the larger situation.

Reducing Deaths from Fire Suppression Operations

- Risk–benefit analysis
 - The only situation that justifies exposure to a high level of risk is one where there is a realistic chance that a life can be saved.
 - NIMS provides the framework for commanding high-risk tasks.

Reducing Deaths from Fire Suppression Operations

- Risk–benefit analysis (cont'd)
 - The fire officer starts the analysis by preparing a preincident plan.
 - At an incident, the officer reviews the plan and makes observations about conditions.
 - The preincident plan and the officer's observations are combined to produce an incident action plan.

Incident Safety Officer

- Designated individual at the emergency scene who performs a set of duties and responsibilities specified in NFPA 1521
- Functions as a member of the incident command staff
- Reports directly to the incident commander

Incident Safety Officer and Incident Management

- Requirements include:
 - Monitoring the scene
 - Identifying and reporting hazards
 - Taking steps to stop unsafe actions
- Often acts as an observer

Qualifications to Operate as an Incident Safety Officer

- Must be a fire department officer
- Must meet the requirements for Fire Officer I
- Must be qualified to function in a sector officer position

Qualifications to Operate as an Incident Safety Officer

- General knowledge requirements:
 - Safety and health hazards involved
 - Building construction
 - Personnel accountability system
 - Incident scene rehabilitation

Typical Incident Safety Officer Tasks

- Ensure hazard areas are established and communicated to members.
- Ensure zones are marked and communicated to members.
- Ensure an RIC is ready for deployment.
- Ensure the accountability system is used.

Typical Incident Safety Officer Tasks

- Evaluate traffic hazards and apparatus placement at roadway incidents.
- Monitor radio transmissions.
- Communicate the need for assistant incident safety officers.
- Communicate any injury, illness, or exposure of personnel.

Typical Incident Safety Officer Tasks

- Initiate investigation procedures.
- Evaluate hazards associated with a landing zone.
- Ensure compliance with the infection control plan.
- Ensure that rehabilitation and stress management are provided.

Typical Incident Safety Officer Tasks

- Ensure fire fighters' needs are met at long-duration operations.
- Attend strategic and tactical planning sessions and provide input.
- Ensure a safety briefing is developed and made available on the scene.

Typical Incident Safety Officer Tasks

- Additional duties when a fire involves one or more buildings:
 - Advise the incident commander of hazards.
 - Evaluate smoke and fire conditions.
 - Monitor accessibility of entry and egress of structures.

Assistant Incident Safety Officers

- Some incidents require more than one safety officer.
- The incident safety officer should inform the incident commander of the need to establish a safety unit.

Incident Scene Rehabilitation

- Rehabilitation: process of providing rest, rehydration, nourishment, and medical evaluation to members involved in strenuous operations



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Creating and Maintaining a Safe Work Environment

- For every fighter death, there are nearly 1000 fire fighter injuries.
- Safety programs must address preventing injuries AND fatalities.

Safety Policies and Procedures

- The fire officer needs to:
 - Understand each policy.
 - Follow all policies and procedures.
 - Ensure that subordinates follow them.

Safety Policies and Procedures

- Methods of ensuring fire fighters understand policies and procedures:
 - Require members to sign a document acknowledging an understanding.
 - Read and explain each policy.
 - Have members read the policy and lead a discussion.
 - Watch videos of incidents.

Safety Policies and Procedures

- Sources to review safety policies:
 - “Report of the Week”
 - “The Secret List”
 - Information posted by the ERSI
 - Incident videos collected by STATter911.com
 - NIOSH case studies

Emergency Incident Injury Prevention

- Physical fitness
 - Fire fighters in good physical condition are less prone to injury and risk of heart attack.
- Personal protective equipment
 - Monitor proper use.
 - The need for PPE does not end when the fire has been extinguished.

Fire Station Safety

- Clothing
 - Protective clothing should never be worn in the living quarters of the fire station.
 - Clothing should be inspected regularly.

Fire Station Safety

- Housekeeping
 - Remove standing water.
 - Clear walking traffic flow areas.
 - Maintain fire extinguishers.
 - Regularly wash hands.
 - Do not leave vehicles running inside the building.

Fire Station Safety

- Lifting techniques
 - Never bend at the waist.
 - Bend at the knees and lift by standing straight up.
 - Seek additional help when needed.

Infection Control Program

- Components:
 - Policy identifying and limiting exposures
 - Risk management plan
 - Annual training and education
 - Designated infection control officer
 - Access to appropriate immunizations
 - Plan for handling exposure incidents

Infectious Disease Exposure

- After exposure, wash the affected area with soap and running water.
- Notify the infection control officer.
- Inform the exposed individual about counseling and testing services.

Infectious Disease Exposure

- Document exposures using a standardized reporting form:
 - Description of how exposure occurred
 - Mode of transmission
 - Entry point
 - Use of personal protective equipment
 - Medical follow-up and treatment

Infectious Disease Exposure

Exposure Event Number _____

Sample Blood and Body Fluid Exposure Report Form

Facility name: _____

Name of exposed worker: Last _____ First : _____ ID #: _____

Date of exposure: ____/____/____ Time of exposure: ____:____ AM PM (Circle)

Job title/occupation: _____ Department/work unit: _____

Location where exposure occurred: _____

Name of person completing form: _____

Section I. Type of Exposure *(Check all that apply.)*

Percutaneous (Needle or sharp object that was in contact with blood or body fluids)
(Complete Sections II, III, IV, and V.)

Mucocutaneous (Check below and complete Sections III, IV, and VI.)
 Mucous Membrane Skin

Bite *(Complete Sections III, IV, and VI.)*

Section II. Needle/Sharp Device Information
(If exposure was percutaneous, provide the following information about the device involved.)

Name of device: _____ Unknown/Unable to determine

Brand/manufacturer: _____ Unknown/Unable to determine

Did the device have a sharps injury prevention feature, i.e., a "safety device"?

Yes No Unknown/Unable to determine

If yes, when did the injury occur?

Before activation of safety feature was appropriate Safety feature failed after activation

During activation of the safety feature Safety feature not activated

Safety feature improperly activated Other: _____

Describe what happened with the safety feature, e.g., why it failed or why it was not activated: _____

Section III. Employee Narrative *(Optional)*

Describe how the exposure occurred and how it might have been prevented:

NOTE: This is not a CDC or OSHA form. This form was developed by CDC to help healthcare facilities collect detailed exposure information that is specifically useful for the facilities' prevention planning. Information on this page (if I) may meet OSHA sharps injury documentation requirements and can be copied and filed for purposes of maintaining a separate sharps injury log. Procedures for maintaining employee confidentiality must be followed.

Courtesy of CDC

Accident Investigation

- The health and safety officer is charged with investigation of accidents.
- An accident investigation should:
 - Determine the cause and circumstances
 - Identify corrective actions needed
- Ensure all required documentation is complete and accurate.

Accident Investigation and Documentation

- Investigation consists of three phases:
 - Identification and collection of evidence
 - Interviews with witnesses
 - Written documentation
- The fire officer has a duty to be fair and unbiased during the investigation.

Postincident Analysis

- Based on the written report of the incident safety officer
- Includes information relating to safety and health issues involved with the incident

Summary

- The fire officer is responsible for ensuring every fire fighter completes every incident without serious injury, disability, or death.
- The fire officer must develop an IAP.
- Heart attacks are the leading cause of death for fire fighters.
- Vehicle collisions account for the largest percentage of traumatic fire fighter deaths.

Summary

- Asphyxia and burns are prime factors in the deaths of fire fighters operating in burning buildings.
- An incident safety officer is a member of the incident command staff.
- Some incidents require more than one safety officer.

Summary

- The fire officer needs to fully understand each policy and ensure that subordinates fully understand and follow all policies and procedures.
- Principles to prevent injuries and deaths include physical fitness and use of PPE.
- Every fire department should establish an infection control program.

Summary

- The fire department health and safety officer ensures that all hazardous conditions and accidents are investigated.
- The incident safety officer provides a postincident analysis for the department.