

Unit 4

FIREFIGHTER SAFETY

OUTLINE

Objectives

Introduction

Safety Issues (NFPA 1001: 3-1.1.1)

The Safety Triad

Firefighter Safety Responsibilities

Lessons Learned

Key Terms

Review Questions

OBJECTIVES

After completing this lesson, students should be able to:

- Define risk management.
- List the leading causes of death and injury in the fire service.
- List the NFPA standards that affect and pertain to firefighter occupational safety.
- List the five components that make up the accident chain.
- List the three components of the safety triad.
- Discuss the difference between formal and informal procedures.
- Name the three factors that influence the equipment portion of the safety triad.
- Name the three factors that influence the personnel portion of the safety triad.
- Name the three partners that work together to achieve firefighter safety.

INTRODUCTION

Key Points

- A profession of significant risk, firefighting is filled with the potential for serious injury or death.
- Today's firefighter understands that certain risks have no tangible benefit.
- The firefighter needs to look at the common causes of injuries and deaths associated with firefighting.

SAFETY ISSUES

Key Points

- It is important to understand what events and circumstances typically lead to injury.
- A study of injury causes has inspired fire and safety professionals to create standards and

regulations to help prevent injuries.

- Standards and regulations directly affect some of the training and tactics the fire service employs today.
- The firefighter needs to understand that simple accident prevention steps are actually helping the fire service address safety issues.

Firefighter Injury and Death Causes

- Approximately one-half of all duty deaths and injuries occur at the incident site.
- The other half occurs during training, response to and from an incident, and other duties.
- Heart attacks are the leading type of death-producing injury.
- Trauma, crushing injuries, and asphyxiation follow heart attacks in number of deaths caused.
- Deaths are slowly decreasing.

Safety Standards and Regulations

- In 1970, the Occupational Safety and Health Administration (OSHA) was created as part of the Department of Labor.
- OSHA is responsible for the enforcement of safety-related regulations in the workplace.
- These regulations are part of the Code of Federal Regulations (CFR).
- Initially most fire departments and public agencies were exempted from complying with OSHA CFRs.
- In the 1980s, states began creating OSHA plans that included public agencies.
- Firefighting did not fit well into the existing OSHA procedures and processes.
- Fire service representatives came together and wrote an occupational safety and health standard for the fire service.
- NFPA 1500, Standard on Fire Department Occupational Safety and Health Program, was developed.
- NFPA 1500 was written to help fire departments address a whole host of safety issues.
- NFPA has also created other standards that address safety.
- While other NFPA standards address safety, NFPA 1500 focuses on safety issues.

Accident Prevention

- An accident results from a series of events and conditions that lead to an unsafe situation, resulting in injury and/or property damage. These events and conditions are referred to as the accident chain:
 - The environment--This includes physical surroundings.
 - Human factors--This includes human and social behavior.
 - Equipment--This includes apparatus, PPE, maintenance, proper application, and equipment limitations.
 - The event--The intersection of the previous components.
 - The injury--The last part deals with the actual injury associated with the accident.
- Any action designed to break the accident chain is known as an intervention.
- Intervention is typically a reactive action.
- A strategy designed to reduce the potential of creating an accident chain is known as mitigation.
- Mitigation is a proactive action.

THE SAFETY TRIAD

Key Points

- Most fire service operational environments are made up of three key components: procedures, equipment, and personnel.
- In order to mitigate injuries, each component must be addressed.
- Since they are all related, this effort is called the safety triad.

Procedures

- Procedures or processes are the structures from which all activity at an incident begins.
- Formal procedures such as Standard Operating Procedures (SOPs) or Standard Operating Guidelines (SOGs) are in writing.
- Many departments have standard operating guidelines instead of operating procedures.
- Informal procedures are those processes and operations that are part of the routine of a given department, but they are not in writing.

Equipment

- Over the years there has been a great amount of new equipment introduced into the fire service designed to improve on safety.
- Most critical equipment is designed and built to meet NFPA standards.
- For equipment to be safe, it must be inspected and maintained regularly.
- A complete set of guidelines is often developed for essential equipment. These guidelines include:
 - Selection.
 - Use.
 - Cleaning and decontamination.
 - Storage.
 - Inspection.
 - Repairs.
 - Criteria for retirement.
- Choosing the right tool for a given job is paramount for safety.

Personnel

- Human factors are often linked as the cause of injuries and deaths.
- A firefighter's training, health and fitness, and attitude all factor into the safety equation.
- Unfortunately, many firefighters become comfortable in their knowledge or position and let the basics slip away.
- Proper training and drills will prevent many injuries on the fireground.
- Many departments utilize company drills on a twice-monthly basis in order to ensure that the "basics" are practiced.
- Some strategies to help retain essential skills and information, and thereby improve safety, include:
 - Always take notes and keep handouts.
 - Envision the application of all training.
 - Acknowledge that skills will diminish over time if they are not used.

Instructor's note: Take this opportunity to indicate the importance of the training your students are taking now and how they must practice and review their skills in order to maintain proficiency.

- The safety and well-being of any firefighter increases with the health of the individual firefighter.
- A firefighter's body must be accustomed to, and capable of handling, stress to handle the inherent stress of firefighting.
- Firefighters need to protect themselves from, and prevent the spread of, infectious diseases.
- Annual health screening, ongoing fitness programs, and proper nutrition are important in maintaining a firefighter's physical condition.
- Mental health is also a very important aspect of the firefighter's overall well-being.
- Firefighters should receive training and understand the concept of critical incident stress management.
- Many departments have an Employee Assistance Program (EAP) available.
- A firefighter's attitude is also very important when it comes to safety and injury prevention.
- There are various factors that may affect safety attitudes, including:
 - The fire department's safety "culture." The culture of an organization is reflected in the ideas, skills, and customs that are passed through generations.
 - The fire department's history. A department that has experienced a firefighter duty-related death or serious injury is more likely to have increased safety awareness.
 - The example set by others. Firefighters and line officers display their safety attitudes in what they do rather than what they say.
- It is important to create a positive safety attitude through actions such as:
 - Practicing good safety habits.
 - Learning from others.
 - Being vigilant.

FIREFIGHTER SAFETY RESPONSIBILITIES

Key Points

- Firefighter safety is dependent on the effort of everyone.

The Department

- The responsibility for firefighter safety ultimately rests with the department's leadership.
- NFPA 1500 outlines which firefighter safety components are needed as part of an occupational safety and health program.
- It is important to define a proper and expected level of procedure or behavior in addressing operations that can cause injury.
- SOPs or SOGs may be developed for many areas in order to address safety issues.
- NFPA 1500 requires departments to develop, implement, and train all firefighters on a risk management plan.
- This plan is based on local needs and includes expectations from the community.
- Proper research and the purchase of appropriate apparatus and equipment are important safety considerations.
- Firefighting requires rugged, specially designed equipment that ensures a certain level of reliability and safety.
- NFPA also has standards addressing equipment safety.
- The department also needs to develop and deliver hazard awareness training.
- Virtually all training is designed to help the firefighters operate in a safe manner.
- Training is the best means to inform firefighters of the hazards they may face on any incident.

The Team

- The department as a whole cannot be effective in ensuring safety without the support of a team approach.
- The team depends on each individual firefighter. A team should follow certain procedures to ensure safety. These include:
 - Using the Incident Management System (IMS).
 - Working together and remaining intact as a team.
 - Looking after each other.
 - Working as a team and looking out for each other can greatly help reduce the chances of injury.

The Individual Firefighter

- The individual firefighter holds the final key to making the safety partnership work.
- A firefighter reporting to duty or an incident with a physical limitation will increase everyone's danger. Do not approach an incident if you are injured or not able to function properly.
- For an incident management system to work, all firefighters must fill their roles and not operate outside of them.
- Incident task needs may place a firefighter in a position to perform a skill or task that the firefighter may not have been trained for.
- An incident is not the time to be training. Therefore, training needs to be done on a regular basis.
- Firefighting and rescue require a team effort to be successful.
- Working alone or outside the plan endangers individuals and the team.

WRAP-UP

Key Points

- One-half of all duty deaths and injuries occur at the incident scene.
- OSHA and NFPA regulations are designed to help minimize injury and illness.
- Using proper procedures, equipment, and trained personnel is important.
- The department, team, and individual must work together.