Chapter 13

Search and Rescue
Objectives (1 of 2)

- Define search and rescue.
- Describe the importance of scene size-up in search and rescue.
- Describe risk-benefit analysis.
- Describe search techniques.
- Describe the primary search.
Objectives (2 of 2)

• Describe search patterns.
• Describe the purpose of a thermal imaging device.
• Describe the secondary search.
• Describe how to ensure fire fighter safety during a search.
• Describe ladder rescue techniques.
Introduction

• Saving lives is the fire department’s highest priority.
• Search:
  – Looking for victims who need assistance
• Rescue:
  – Physical removal from confinement or danger
Coordinating Search and Rescue

- Fire fighters must plan and coordinate all activities to support search and rescue.  
- The fire may need to be controlled before search and rescue can begin.
Search and Rescue Size-Up
(1 of 4)

• Evaluate the critical factors.
• Develop search and rescue plan based on conclusions.
Search and Rescue Size-Up

(2 of 4)

- Risk-benefit analysis
  - Consider the risks and benefits of the operation.
Search and Rescue Size-Up
(3 of 4)

• Occupancy factors
  – Rescue occupants who are in most immediate danger.
  – Consider where occupants are likely to be located.

• Observations
  – Look for clues that indicate whether or not a building is occupied.
Search and Rescue Size-Up
(4 of 4)

- Occupant information
  - Obtain accurate information from occupants who have escaped.

- Building size and arrangement
  - A floor plan can be very helpful when planning and assigning teams.
  - Preincident plans contain valuable layout information.
Search Coordination

• Notify the IC:
  – When search is complete
  – If a victim is found

• Consider those who have escaped but still need assistance.
Search Priorities

• First: Immediate fire area, then the rest of the fire floor
• Second: Area directly above the fire
• Third: Top floor, then down to the floor above the fire
• Last: Areas below the fire
Search Techniques

- Search in teams of two.
- Remain in contact.
- At least one team member must have a radio.
- Notify the IC when search of each area is complete.
Types of Searches

- **Primary**
  - Quick attempt to locate any potential victims who are in danger

- **Secondary**
  - Thorough search conducted after the situation is under control
Primary Search

- Time is critical.
- Check all areas where victims might be.
- Rely on sight, sound, and touch.
- Use hand tools to extend your reach.
Search Patterns (1 of 3)

- Clockwise search (left-handed search)
  - Turn left at entry point.
  - Keep left hand in contact with wall.
  - Turn right at each corner until at entry point.
Search Patterns (2 of 3)

- Counterclockwise search (right-handed search)
  - Reverse of clockwise search
• Check the door temperature to determine.
• Enter and exit through the same door.
• Mark rooms to show they have been searched.
Thermal Imaging Devices

- Used to show heat images
- Can “see” image of a person and room contents through smoke
- May be used to determine if a door is hot
Search Ropes

• Used to search large areas
• Used to search interconnected rooms
• Used to search areas with multiple aisles
• Provide a reliable return path
• Should be anchored at the entry point
Secondary Search

- Locates victims missed in primary search
- Completed when conditions improve
- Slow and methodical
- Include all areas of the building
Search Safety

- Fire fighters are exposed to the same risks that endanger the lives of victims.
- Despite protective clothing and equipment, fire fighters can still be injured.
Risk Management

• Balance the risks involved with potential benefits.
  – High risk to fire fighters to save lives
  – Limited risk to fire fighters to save valuable property
  – No risk to fire fighters for no chance to save lives or property
IC Considerations

• The IC must consider the stage of the fire, the condition of the building, and the presence of other hazards.

• The IC may decide not to conduct a primary search if:
  – Risk to fire fighters is too great
  – Successful rescue is very unlikely.
Search and Rescue Equipment (1 of 2)

- Personal protective equipment
- Portable radio
- Hand light or flashlight
- Forcible entry tools
- Hose lines
- Thermal imaging devices
Search and Rescue Equipment (2 of 2)

- Ladders
- Long rope(s)
- Tubular webbing or short rope
- Fire fighters must also have adequate air to make a safe exit.
Determining if an Area is Tenable (safe)

- Evaluate structural stability.
- Evaluate for backdraft or flashover conditions.
- Determine life safety risk.
- Continue to reevaluate the operation’s safety.
Rescue Techniques

• Rescue techniques include:
  – Assists
  – Carries
  – Drags

• Always use the safest and most practical means of egress.
Methods of Rescue (1 of 4)

- Shelter-in-place
  - Consider when occupants are conscious and in an area that is protected.

- Exit assist
  - Used when victim is responsive and able to walk with little or no assistance
Methods of Rescue (2 of 4)

• Simple victim carries
  – Used to move a victim who is conscious and responsive, but unable to stand or walk
Methods of Rescue (3 of 4)

- Emergency drags
  - Most efficient method of removing an unconscious or unresponsive victim
Methods of Rescue (4 of 4)

- Ladder rescues
  - Considerable risk
  - Proper technique and physical strength and stamina
  - Should be used only when it is not possible to use interior stairways or fire escapes
Summary (1 of 3)

• Search and rescue is the highest priority.
• Search and rescue must be integrated with other firefighting activities.
• A search size-up is critical.
Summary (2 of 3)

- **Primary search**
  - Locate occupants in the greatest danger.
- **Secondary search**
  - Ensure that all occupants are accounted for.
Summary (3 of 3)

- Risks and benefits need to be evaluated.
- Methods of rescue include:
  - Shelter-in-place
  - Exit assists
  - Simple victim carries
  - Emergency drags
  - Ladder rescues