

Search and Rescue

Chapter Overview

One of the most vivid images people have of fire fighters is one of a fire fighter emerging from a house with flames through the roof, and in his hands he is carrying a small child to safety. This perception, although certainly the exceptional fire, can and does happen across the United States and Canada each year. Why is this possible? Because one of the fundamental skills a fire fighter must possess is the ability to search for and rescue the victims caught in a fire.

After students complete this chapter and the related course work, they will understand the types of searches, how searches are conducted, how to ensure fire fighter safety during a search and various rescue techniques. Students will also be able to conduct a variety of rescue assists, carries, and drags. Lastly, students will be able to utilize a long backboard for rescues.

NFPA Standards

NFPA 1001 Standard

Fire Fighter I

5.3.9 Conduct a search and rescue in a structure operating as a member of a team, given an assignment, obscured vision conditions, personal protective equipment, a flashlight, forcible entry tools, hose lines, and ladders when necessary, so that ladders are correctly placed when used, all assigned areas are searched, all victims are located and removed, team integrity is maintained, and team members' safety—including respiratory protection—is not compromised.

5.3.9 (A) *Requisite Knowledge.* Use of forcible entry tools during rescue operations, ladder operations for rescue, psychological effects of operating in obscured conditions and ways to manage them, methods to determine if an area is tenable, primary and secondary search techniques, team members' roles and goals, methods to use and indicators of finding victims, victim removal methods (including various carries), and considerations related to respiratory protection.

5.3.9 (B) *Requisite Skills.* The ability to use SCBA to exit through restricted passages, set up and use different types of ladders for various types of rescue operations, rescue a fire fighter with functioning respiratory protection, rescue a fire fighter whose respiratory protection is not functioning, rescue a person who has no respiratory protection, and assess areas to determine tenability.

Fire Fighter II

NFPA 1001 contains no Fire Fighter II Job Performance Requirements for this chapter.

Objectives and Resources

Knowledge Objectives

After studying this chapter, you will be able to:

- Define search and rescue.
- Describe the importance of scene size-up in search and rescue.
- Describe search techniques.
- Describe the primary search.
- Describe search patterns.
- Describe the secondary search.
- Describe how to ensure fire fighter safety during a search.
- Describe rescue techniques.

Skills Objectives

After studying this chapter, you will be able to:

- Demonstrate the one-person walking assist.
- Demonstrate the two-person walking assist.
- Demonstrate the two-person extremity carry.
- Demonstrate the two-person seat carry.
- Demonstrate the two-person chair carry.
- Demonstrate the cradle-in-arms carry.
- Demonstrate the clothes drag.
- Demonstrate the blanket drag.
- Demonstrate the webbing sling drag.
- Demonstrate the fire fighter drag.
- Demonstrate the one-person emergency drag from a vehicle.
- Demonstrate the long backboard rescue.
- Demonstrate rescuing a conscious person from a window.

- Demonstrate rescuing an unconscious person from a window.
- Demonstrate rescuing an unconscious child or small adult from a window.
- Demonstrate rescuing a large adult from a window.

Support Materials

- Dry erase board and markers or chalkboard and chalk
- LCD projector, slide projector, overhead projector, and projection screen
- PowerPoint® presentation, overhead transparencies, or slides
- Sturdy, non-folding chair
- Blanket
- Webbing sling
- Cervical collar, long backboard
- Ground ladder (optional)
- Hand tools (optional)
- Thermal imaging device (optional)
- Search rope (optional)

Enhancements

- Direct the students to visit the Internet at www.FireFighter.jbpub.com for online activities.
- Direct the students to relevant sections in the Student Workbook for application of the content introduced in this chapter.
- Direct the students to relevant sections in the Student Review Manual to prepare for examinations.
- Direct the students to the corresponding online FireLearn module to study the knowledge and critical thinking skills presented online.

Teaching Tips

- Locate areas that can be used to practice both searches and rescues. Some areas need to be fairly small while others will need to be large. Most any area will do with a bit of improvisation.
- Develop good habits from the start. When conducting practical search and rescue exercises, always have the students carry a tool such as an axe or a Halligan tool, and stress the importance of this at actual incidents. Also, ensure the students use full personal protective equipment while training. This increases the likelihood that it will be used on actual calls. Lastly, require the students to communicate with each other and with potential victims while conducting searches. This is a critical habit to develop to provide safety to fire fighters and increase the chance of a successful rescue.
- It is imperative for students to become comfortable in the methods of search and rescue. Build the skills one level at a time. Resist the temptation to initially give them a scenario that requires them to utilize all of the new skills (size-up, searching, victim removal) with live smoke conditions. Develop each skill individually where students know they are in a safe and controlled environment, then gradually add in other real world conditions.

Reading and Preparation

- Review all instructional materials, including *Fundamentals of Fire Fighting Skills*, Chapter 13, and all related presentation support materials.
- Review local firefighting protocols for Chapter 13.
- Review Chapter 4, Incident Management System; Chapter 5, Fire Behavior; Chapter 10, Response and Size-Up; and Chapter 12, Ladders.

Presentation Overview

Total time: 460 minutes

Pre-Lecture

I. You Are the Fire Fighter	Small Group Activity/Discussion	5 minutes
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Notes

Lecture

I. Introduction	Lecture/Discussion	5 minutes
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Notes

II. Search and Rescue	Lecture/Discussion	20 minutes
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III. Search Techniques	Lecture/Discussion/Demonstration	20 minutes
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IV. Search Safety	Lecture/Discussion	15 minutes
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V. Rescue Techniques	Lecture/Discussion/Demonstration	45 minutes
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Notes

VI. Summary	Lecture/Discussion	10 minutes
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Notes

VII. Skill Drills	Demonstration/Group Activity	255 minutes
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- A. One-Person Walking Assist (Skill Drill 13-1)
- B. Two-Person Walking Assist (Skill Drill 13-2)
- C. Two-Person Extremity Carry (Skill Drill 13-3)
- D. Two-Person Seat Carry (Skill Drill 13-4)
- E. Two-Person Chair Carry (Skill Drill 13-5)
- F. Cradle-in-Arms Carry (Skill Drill 13-6)
- G. Clothes Drag (Skill Drill 13-7)
- H. Blanket Drag (Skill Drill 13-8)
 - I. Standing Drag (Skill Drill 13-9)
 - J. Webbing Sling Drag (Skill Drill 13-10)
 - K. Fire Fighter Drag (Skill Drill 13-11)
 - L. One-Person Emergency Drag from a Vehicle (Skill Drill 13-12)
 - M. Long Backboard Rescue (Skill Drill 13-13)
 - N. Single Fire Fighter Ladder Rescue Technique (Skill Drill 13-14)
 - O. Rescuing an Unconscious Victim from a Window (Skill Drill 13-15)
 - P. Rescuing an Unconscious Child or Small Adult from a Window (Skill Drill 13-16)
 - Q. Rescuing a Large Adult (Skill Drill 13-17)

Post-Lecture

I. Wrap-Up

A. Fire Fighter in Action	Small Group Activity/Individual Activity/Discussion	20 minutes
B. Technology Resources (www.FireFighter.jpublish.com)	Small Group Activity/Discussion	20 minutes
II. Lesson Review	Discussion	20 minutes
III. Assignments	Lecture	5 minutes
IV. Chapter 13 Instructor Keyed Quiz	Individual Activity	20 minutes

Notes

Lesson Plan

Pre-Lecture

You Are the Fire Fighter



Time: 5 minutes



Small Group Activity/Discussion

Use this activity to motivate students to learn the knowledge and skills needed to effectively size-up and conduct a search and rescue operation.

Purpose

To allow students an opportunity to explore the significance and concerns associated with search and rescue.

Instructor Directions

1. Direct students to read the “You Are the Fire Fighter” scenario found in the beginning of Chapter 13.
2. You may assign students to a partner or a group. Direct them to review the discussion questions at the end of the scenario and prepare a response to each question. Facilitate a class dialogue centered on the discussion questions.
3. You may also assign this as an individual activity and ask students to turn in their comments on a separate piece of paper.

Lesson Plan

Lecture

SLIDE TEXT

LECTURE NOTES

I. Introduction



Time: 5 minutes



Slides: 1-5



Lecture/Discussion

Slides 1-3

Chapter Objectives

Slide 4

Introduction

(1 of 2)

- Saving lives is our highest priority
- Search:
 - Looking for victims who need assistance
- Rescue:
 - Physical removal of a person from danger

A. Saving lives is the fire department’s highest priority.

B. Search:

1. Looking for victims that need assistance to leave a dangerous area

C. Rescue:

1. Physical removal to a position of safety
2. Normally done in tandem with search

Slide 5

Introduction

(2 of 2)

- Many departments assign search-and-rescue to ladder and rescue companies.
- Fire fighters must plan and coordinate all activities to support search-and-rescue.

D. Many departments assign search-and-rescue operations to ladder (or truck) companies and rescue companies.

E. Search-and-rescue must be quick and efficient.

F. Every building should be searched for potential victims.

G. Fire fighters must plan and coordinate all activities to support the search-and-rescue priority.

II. Search and Rescue

Time: 20 minutes



Slides: 6-11



Lecture/Discussion

Slide 6

Search-and-Rescue Size-Up

(1 of 4)

- Evaluate the critical factors.
- Develop search-and-rescue plan based on conclusions.

A. Search-and-Rescue Size-Up

1. Evaluate the critical factors for search and rescue.
2. Actions will be based on a combination of observations and expectations.
3. Develop a search-and-rescue plan based on conclusions.
4. Conduct a risk-benefit analysis.
 - a. Consider the risks and benefits of the operation.
 - b. In some situations, operations must be limited or cannot be performed because they pose a high risk to fire fighters.
5. Evaluate the occupancy factors.
 - a. Fire fighters should first rescue occupants who are in the most immediate danger, followed by those who are in less danger.
 - b. Risk to occupants is determined by:
 - i. Location of the fire
 - ii. Direction of spread
 - iii. Volume and intensity of the fire
 - iv. Smoke conditions in different areas
 - c. Occupants at greater risk include those who are:
 - i. Close to the fire
 - ii. Above the fire
 - iii. In the path of the fire
 - iv. Asleep, unconscious, incapacitated, or trapped
 - v. Children and elderly
 - vi. Those confined to bed or wheelchairs
 - vii. In residences at night
 - viii. In offices on weekdays
 - ix. In nightclubs on Friday and Saturday nights
 - d. In unprotected, wood-frame buildings

Slide 7

Search-and-Rescue Size-Up

(2 of 4)

- Risk-Benefit Analysis
 - Consider the risks and benefits of the operation.

Slide 8

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.

Slide 9**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.

Slide 10**Search Coordination**

- Notify the IC:
 - When search is complete
 - If a victim is found
- Consider those who have escaped but still need assistance.

Slide 11**Search Priorities**

1. Immediate fire area, then the rest of the fire floor
2. Area directly above the fire
3. Top floor, then down to the floor above the fire
4. Areas below the fire

Slide 12**Search Techniques**

- Search in teams of two.
- Remain in visual, voice, or physical contact.
- At least one team member must have a radio and be in contact with the IC.
- Notify the IC when search area is complete.

6. Make observations.

- a. Look for clues that indicate whether or not a building is occupied and how many people are likely to be present.
 - i. Are there cars in the driveway?
 - ii. Are there toys in the front yard?
 - iii. Is the mailbox full?
 - iv. Is the parking lot empty?
 - v. Are the windows boarded up?

7. Consider occupant information.

- a. Obtain accurate information from occupants who have escaped.
 - i. Can those outside verify everyone is out?
 - ii. Ask specific questions.
- iii. Be sure you know who you are looking for and where you should look.

8. Consider the building size and arrangement.

- a. Larger buildings may require more teams.
- b. Knowing the floor plan is useful.
- c. Preincident plans include valuable layout information such as:
 - i. Corridor layouts
 - ii. Stairway locations
 - iii. Special function rooms or areas
- d. Note the floor numbering system.

B. Search Coordination

1. The Incident Commander (IC) makes assignments and serves as the search coordinator.
2. Notify the IC when the search is complete.
3. Notify the IC if a victim is located while performing other tasks.
4. Keep track of those victims who may have already escaped but still need assistance.

C. Search priorities

1. The search begins where victims are at the greatest risk.
2. Search assignments should be based on a system of priorities:
 - a. First, search the immediate fire area, then the rest of the fire floor.
 - b. Second, search the area directly above the fire.
 - c. Next, search the top floor, then work your way down to the floor above the fire.
 - d. Areas below the fire are a lower priority.

III. Search Techniques

Time: 20 minutes



Slides: 12-20



Lecture/Discussion/Demonstration

A. Introduction to Search Techniques

1. Searchers should always operate in teams of two.
2. Partners must remain in visual, voice, or physical contact.
3. At least one team member must have a radio and maintain contact with the IC.
4. Teams must notify IC when each search area is complete.

Slide 13**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

Slide 14**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.
- Follow walls and note turns.

Slide 15**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.

Slide 16**Search Patterns**

(2 of 3)

- Counterclockwise search (right-handed search)
 - Reverse of clockwise search

B. Types of searches

1. Primary search:
 - a. A quick attempt to locate any potential victims who are in danger
2. Secondary search:
 - a. A thorough search conducted after the situation is under control
 - b. Should be conducted by a second team, if possible

C. Primary Search

1. The objective is to find any potential victims as quickly as possible and remove them from danger.
2. The phrase “primary all clear” is used to report that the primary search is complete.
3. Time is critical.
4. Check all areas where victims might be, such as:
 - a. Beds, cribs, chairs, and sofas
 - b. Near doors and windows
 - c. In closets, bathtubs or showers, and under beds
5. Fire fighters must rely on their senses.
 - a. Sight—Can you see anything?
 - b. Sound—Can you hear someone calling for help, moaning, or groaning?
 - c. Touch—Do you feel a victim’s body?
6. Use a hand tool to extend your reach.
7. Follow walls, noting turns and doorways.
8. Once the search is complete, the search team should retrace its path to the entry point.
9. Identify secondary escape routes for emergencies.
10. Note locations of stairways, doors, and windows.
11. Remain in contact with someone on the outside at all times and make sure you know your location.

D. Search Patterns

1. In small rooms, searchers should follow walls around the perimeter and reach toward the middle to feel for victims.
2. In large rooms, one member should be in contact with the wall while the other remains in contact with the first member.
3. Clockwise search (left-handed search)
 - a. Turn left at the entry point.
 - b. Keep the left hand in contact with the wall.
 - c. Use the right arm to sweep the room.
 - d. Turn right at each corner until you return to the entry point.
4. Counterclockwise search
 - a. Moves around the room in the opposite direction of the clockwise search.
5. Practice and use the standard system pattern adopted by the department.

Slide 17**Search Patterns**

(3 of 3)

- Check the door temperature to determine if there is active fire on the other side.
- Enter and exit through the same door.
- Mark rooms to show they have been searched.

Slide 18**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

Slide 19**Search Ropes**

- Used to search large areas
- Used to search interconnected rooms
- Used to search areas with multiple isles
- Provides a reliable return path
- Should be anchored at the entry point

Slide 20**Secondary Search**

- Locates victims missed in primary search
- Completed when conditions improve but may still present hazards
- Slow and methodical
- Use different fire fighters
- Include all areas of the building

Slide 21**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.

6. Check the temperature of closed doors before opening them to determine if there is active fire on the other side.
 - a. Do not open a hot door unless there is a hose line ready to douse the fire.
7. Keep track of your position relative to the entry door.
 - a. Always enter and exit through the same door.
8. Mark rooms to show whether or not they have been searched.

E. Thermal Imaging Devices

1. Like a television camera, but used to show heat images rather than visible light images
2. Can “see” an image of the room contents or a person through smoke and darkness
3. May be used to determine if fire is on other side of a door

F. Search Ropes

1. Used to search large, open areas when it is impossible to cover the interior by following the walls
2. Used to search interconnected rooms or spaces
3. Used to search areas with multiple aisles
4. Provide a reliable return path to the entry point

G. Secondary Search

1. Used to locate victims that might have been missed during the primary search
2. Completed when building conditions have improved, but can still present hazards to search teams
 - a. Levels of carbon monoxide and other gases may still be high.
 - b. The fire may rekindle.
 - c. The structure may be unstable.
3. The secondary search is conducted slowly and methodically.
4. If possible, different fire fighters should be used.
5. The secondary search must include all areas of the building.

IV. Search Safety

Time: 15 minutes



Slides: 21-26



Lecture/Discussion

A. Introduction to Search Safety

1. Search-and-rescue operations expose fire fighters to the same risks that endanger the lives of potential victims.
2. Protective clothing, protective equipment, training, teamwork, and standard operating procedures do not preclude serious injury.

Slide 22**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

Slide 23**Two-in/Two-out Rule**

- NFPA 1500
 - Two fire fighters must remain outside danger area to rescue the team of fire fighters in danger area
 - Exception is made when immediate action can prevent loss of life or serious injury

Slide 24**Search-and-Rescue Equipment**

(1 of 2)

- Personal protective equipment
- Portable radio
- Handlight or flashlight
- Forcible entry tools
- Hose lines
- Thermal imaging devices

Slide 25**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.

Slide 26**Determining if an Area is Tenable**

- Evaluate structural stability.
- Evaluate for backdraft or flashover conditions.
- Continue to reevaluate the operation's safety.
- Determine structure type, possibility of collapse, and life safety risk.

B. Risk Management

1. The IC must balance the risks involved in the operations with the potential benefits.
 - a. A high risk to fire fighters is only acceptable to save lives.
 - b. A limited risk to fire fighters is acceptable to save valuable property.
 - c. If there is no chance to save lives or property, no risk is acceptable.
2. The IC must consider the stage of the fire, the condition of the building, and the presence of other hazards.
3. NFPA 1500 Requirements
 - a. Two fire fighters must remain outside danger area, ready to rescue the fire fighters inside the building.
 - i. Sometimes called the two-in/two-out rule
 - ii. Exception is made when immediate action can prevent loss of life or serious injury.

C. Search-and-Rescue Equipment

1. Appropriate equipment includes:
 - a. Full personal protective equipment
 - b. Portable radio
 - c. Hand light or flashlight
 - d. Forcible entry tools
 - e. Hose lines
 - f. Thermal imaging devices
 - g. Ladders
 - h. Long rope(s)
 - i. A piece of tubular webbing or short rope (16' to 24')
2. Personal protective equipment includes helmet, protective hood, bunker coat, turnout pants, boots, gloves, SCBA, and flashlight or hand light.
3. At least one team member must have a portable radio.
4. Forcible entry tools can be used to open areas for a search or open emergency exit paths.
5. Hose lines enable fire fighters to knock down fire, protect a means of egress, and protect victims as they are escaping.
6. Fire fighters must pay attention to their air supplies; they must have adequate air to make a safe exit.

D. Methods to Determine if an Area is Tenable

1. Make rapid, accurate, and on-going assessments about the safety of the building.
 - a. Evaluate the structural stability.
 - b. Evaluate the potential for backdraft or flashover conditions.

V. Rescue Techniques



Time: 45 minutes



Slides: 27-30



Lecture/Discussion/Demonstration

Slide 27

Rescue Techniques

- Rescue techniques include:
 - Assists
 - Carries
 - Drags
- Always use the safest and most practical means of egress.

Slide 28

Methods of Rescue

(1 of 3)

- Shelter-in-place
 - Consider when occupants are conscious and in an area that is protected from the fire.
- Exit assist
 - Used when victim is responsive and able to walk with little or no assistance

Slide 29

Methods of Rescue

(2 of 3)

- Simple victim carries
 - Used to move a victim who is conscious and responsive, but unable to stand or walk
- Emergency drags
 - Most efficient method of removing an unconscious or unresponsive victim

A. Introduction to Rescue Techniques

1. Rescue is the removal of a person who is unable to escape from a dangerous situation.
2. Rescue techniques include:
 - a. Assists
 - b. Drags
 - c. Carries
3. Types of rescues range from very basic techniques, such as directing occupants toward an exit, to very demanding, complex operations, such as extricating a trapped, unconscious victim.
4. Always use the safest and most practical means of egress.

B. Shelter-in-Place

1. Consider this option when occupants are conscious and in a part of the building that is protected from the fire.
2. Occupants may be exposed to more risk if they attempt to exit.
3. The IC must make this decision.

C. Exit Assist

1. Simplest type of rescue
2. Used when the victim is responsive and able to walk with little or no assistance
3. Fire fighters should take the victim's arm or use a walking assist to ensure the victim does not fall or become lost.
4. The one- and two-person walking assists will be practiced in Skill Drills 13-1 and 13-2.

D. Simple Victim Carries

1. Used to move a victim who is conscious and responsive, but unable to stand or walk.
2. Four simple carries can be used:
 - a. Two-person extremity carry
 - b. Two-person seat carry
 - c. Two-person chair carry
 - d. Cradle-in-arms carry
3. Simple victim carries will be practiced in Skill Drills 13-3, 13-4, 13-5, and 13-6.

E. Emergency Drags

1. The most efficient method to remove an unconscious or unresponsive victim
2. Five emergency drags can be used:
 - a. Clothes drag
 - i. Used to remove a victim who is on the floor and is too heavy for one rescuer to lift and carry
 - b. Blanket drag
 - i. Used to move a victim who is not dressed or is dressed in flimsy clothing

- c. Webbing sling drag
 - i. Provides a secure grip around the upper part of a victim's body for a faster removal
- d. Fire fighter drag
 - i. Can be used if the victim is heavier than the rescuer
- e. Emergency drag from a vehicle
 - i. Performed when the victim must be quickly removed from a vehicle to save his or her life
 - ii. Emergency drags will be practiced in Skill Drills 13-7, 13-8, 13-9, 13-10, 13-11, and 13-12.

Slide 30

Methods of Rescue

(3 of 3)

- Ladder rescues
 - Involve considerable risk of injury
 - Require proper technique and physical strength and stamina
 - Should be used only when it is not possible to use interior stairways or fire escapes

F. Removal of Victims by Ladders

1. Ladder rescues involve a considerable risk of injury to fire fighters and occupants.
2. Ladder rescues require proper technique and physical strength and stamina.
3. Proper placement ensures that the occupant can easily mount the ladder.
4. Ladders used for rescue must be heeled or tied in.
5. Ladders should be used only when it is not possible to use interior stairways or fire escapes.
6. Aerial ladders have several advantages over ground ladders:
 - a. Stronger
 - b. Have a longer reach
 - c. Wider and more stable
 - d. Reduce the risk of slipping and falling
 - e. Ladder rescues will be practiced in Skill Drills 13-14, 13-15, 13-16, and 13-17.

VI. Summary



Time: 10 minutes



Slides: 31-33



Lecture/Discussion

Slide 31

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.

Slide 32

Summary

(2 of 3)

- Primary search
 - Locate occupants in the greatest danger.
- Secondary search
 - Ensure that no victims are still trapped inside.

A. Search and rescue is the highest priority in emergency scene operations.

B. Search and rescue must be integrated with other firefighting activities.

C. A search-and-rescue size-up is critical.

D. The purpose of a primary search is to locate occupants in the greatest danger.

E. The purpose of a secondary search is to ensure that all occupants are accounted for.

Slide 33

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

F. The risks and benefits of search-and-rescue operations need to be evaluated.**G. Methods of rescue include:**

1. Shelter-in-place
2. Exit assists
3. Simple victim carries
4. Emergency drags
5. Ladder rescues

VII. Skill Drills

Time: 255 minutes



Slides: Skill Drills PowerPoint® Presentation



Demonstration/Group Activity

Remember to maintain an adequate instructor to student ratio.

Purpose

Following instructor-facilitated demonstrations, this activity allows students to observe and demonstrate competency in search-and-rescue techniques.

Materials Needed

1. Sturdy, non-folding chairs
2. Large sheets, blankets, curtains, or rugs
3. Webbing slings
4. Cervical collars
5. Long backboards
6. Ladders
7. Adult rescue manikin or a hose dummy (optional)
8. Baby manikin or child size hose dummy

Instructor Directions

1. Demonstrate each skill, placing emphasis on describing to the students any critical points or procedures.
2. On the basis of the specific skill, assign each student to a partner or team. Provide each partner/team with equipment or materials as needed.
3. Direct students to practice each skill. Closely monitor the practice sessions and provide constructive comments and redirecting.
4. As individual students achieve success, track their skills and conduct skill proficiency exams using the Skill Drill Evaluation Sheets that follow. Students failing the exam should be given redirection and an opportunity to practice before being retested.

Candidate: _____ Date: _____

ID#: _____

Skill Drill 13-2 Two Person Walking Assist

Evaluator Instructions: The candidate shall be provided with a victim to assist and a partner.

Task: Two-person walking assist.

Performance Outcome: The candidate shall demonstrate the ability to safely assist a victim with walking.

Candidate Directive: "Provide walking assistance with a partner to a victim."

No.	Task Steps	First Test		Retest	
		P	F	P	F
1.	Stands facing victim.				
2.	Assists victim with standing.				
3.	Has victim place his/her arms around candidate's neck, holds onto victim's wrist which is draped over the candidate's shoulder.				
4.	Puts free arm around victim's waist to assist with walking.				
Retest Approved By: _____		Retest Evaluator: _____			

Evaluator Comments: _____ Candidate Comments: _____

_____ Evaluator	_____ Date	_____ Candidate	_____ Date
_____ Retest Evaluator	_____ Date	_____ Retest Candidate	_____ Date

Candidate: _____ Date: _____

ID#: _____

Skill Drill 13-3 Two-Person Extremity Carry

Evaluator Instructions: The candidate shall be provided with a victim to assist and a partner.

Task: Two-person extremity carry.

Performance Outcome: The candidate shall demonstrate the ability to safely carry a victim.

Candidate Directive: "Safely carry a victim with a partner."

No.	Task Steps	First Test		Retest	
		P	F	P	F
1.	Helps the victim sit up.				
2.	One fire fighter kneels behind victim, reaches under victim's arms and grasps victim's wrists.				
3.	Other fire fighter backs in-between victim's legs, reaches around, and grasps the victim behind knees.				
4.	Fire fighter in back gives command to stand and carry victim away. Coordinates movements with his/her partner.				

Retest Approved By: _____ Retest Evaluator: _____

Evaluator Comments: _____ Candidate Comments: _____

_____ Evaluator	_____ Date	_____ Candidate	_____ Date
_____ Retest Evaluator	_____ Date	_____ Retest Candidate	_____ Date

Candidate: _____ Date: _____

ID#: _____

Skill Drill 13-4 Two-Person Seat Carry

Evaluator Instructions: The candidate shall be provided with a victim to assist and a partner.

Task: Two-person seat carry.

Performance Outcome: The candidate shall demonstrate the ability to safely seat carry a victim.

Candidate Directive: "Safely seat carry a victim with a partner."

No.	Task Steps	First Test		Retest	
		P	F	P	F
1.	Kneels beside victim, near hips.				
2.	Raises victim to sitting position, links arms with partner behind victim's back.				
3.	Places his/her free arms under victim's knees and links arms with partner.				
4.	If possible, has victim put his/her arms around the candidate's neck for additional support.				
Retest Approved By: _____			Retest Evaluator: _____		

Evaluator Comments: _____ Candidate Comments: _____

_____ Evaluator	_____ Date	_____ Candidate	_____ Date
_____ Retest Evaluator	_____ Date	_____ Retest Candidate	_____ Date

Candidate: _____ Date: _____

ID#: _____

Skill Drill 13-5 Two-Person Chair Carry

Evaluator Instructions: The candidate shall be provided with a victim to assist, a chair, and a partner.

Task: Two-person chair carry.

Performance Outcome: The candidate shall demonstrate the ability to safely chair carry a victim.

Candidate Directive: "Safely chair carry a victim with a partner."

No.	Task Steps	First Test		Retest	
		P	F	P	F
1.	One fire fighter stands behind seated victim, places arms over victim's shoulders, reaches down, grasps back of chair.				
2.	Fire fighter tilts chair back on rear legs. Second fire fighter grasps tips of chair's front legs. Victim's legs should be between legs of chair.				
3.	When fire fighters are in position, fire fighter at back gives command to lift and walk.				
4.	Watches victim for airway complications.				

Retest Approved By: _____ Retest Evaluator: _____

Evaluator Comments: _____

Candidate Comments: _____

Evaluator

Date

Candidate

Date

Retest Evaluator

Date

Retest Candidate

Date

Candidate: _____ Date: _____

ID#: _____

Skill Drill 13-6 Cradle-in-Arms Carry

Evaluator Instructions: The candidate shall be provided with a victim to assist.

Task: Cradle-in-arms carry.

Performance Outcome: The candidate shall demonstrate the ability to safely carry a victim in arms.

Candidate Directive: "Safely carry a victim while cradling in arms."

No.	Task Steps	First Test		Retest	
		P	F	P	F
1.	Kneels beside victim placing one arm behind victim's back and other arm under victim's thighs.				
2.	Lifts slightly, rolls victim into hollow formed by arms and chest.				
3.	Uses leg muscles to stand.				
Retest Approved By: _____			Retest Evaluator: _____		

Evaluator Comments: _____ Candidate Comments: _____

_____ Evaluator	_____ Date	_____ Candidate	_____ Date
_____ Retest Evaluator	_____ Date	_____ Retest Candidate	_____ Date

Candidate: _____ Date: _____

ID#: _____

Skill Drill 13-7 Clothes Drag

Evaluator Instructions: The candidate shall be provided with a victim to assist.

Task: Clothes drag.

Performance Outcome: The candidate shall demonstrate the ability to safely drag a victim by using victim's clothing.

Candidate Directive: "Safely drag a victim using victim's clothing."

No.	Task Steps	First Test		Retest	
		P	F	P	F
1.	Crouches behind victim's head, grabs clothing around collar and shoulder area.				
2.	Lifts with legs until you are fully upright. Walks backwards, dragging victim to safety.				

Retest Approved By: _____	Retest Evaluator: _____
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Evaluator Comments: _____

Candidate Comments: _____

Evaluator

Date

Candidate

Date

Retest Evaluator

Date

Retest Candidate

Date

Candidate: _____ Date: _____

ID#: _____

Skill Drill 13-8 Blanket Drag

Evaluator Instructions: The candidate shall be provided with a victim to assist and a blanket.

Task: Blanket drag.

Performance Outcome: The candidate shall demonstrate the ability to safely drag a victim by using a blanket.

Candidate Directive: "Safely drag a victim on a blanket."

No.	Task Steps	First Test		Retest	
		P	F	P	F
1.	Stretches material being used. If victim's torso cannot be lifted, leaves extra material at head.				
2.	Rolls victim onto side. Bunches 1/3 of material next to victim's body.				
3.	Lays victim down (supine). Pulls bunched material from underneath and wraps around victim.				
4.	Grabs material at head and drags victim to safety.				
Retest Approved By: _____			Retest Evaluator: _____		

Evaluator Comments: _____ Candidate Comments: _____

 Evaluator Date Candidate Date

 Retest Evaluator Date Retest Candidate Date

Candidate: _____ Date: _____

ID#: _____

Skill Drill 13-9 Standing Drag

Evaluator Instructions: The candidate shall be provided with a victim to assist.

Task: Standing drag.

Performance Outcome: The candidate shall demonstrate the ability to safely perform a standing drag.

Candidate Directive: "Safely drag a victim using the standing drag."

No.	Task Steps	First Test		Retest	
		P	F	P	F
1.	Stands at the head of the supine victim. Then kneels at the victim's head.				
2.	Raises the victim's head and torso 90°. The victim is leaning against the candidate.				
3.	Reaches under the victim's arms, wraps his/her arms around the victim's chest, and locks his/her arms.				
4.	Stands straight up using his/her legs.				
5.	Drags the victim out.				

Retest Approved By: _____ Retest Evaluator: _____

Evaluator Comments: _____ Candidate Comments: _____

_____ Evaluator	_____ Date	_____ Candidate	_____ Date
_____ Retest Evaluator	_____ Date	_____ Retest Candidate	_____ Date

Candidate: _____ Date: _____

ID#: _____

Skill Drill 13-10 Webbing Sling Drag

Evaluator Instructions: The candidate shall be provided with a victim to assist and webbing (hose strap).

Task: Webbing sling drag.

Performance Outcome: The candidate shall demonstrate the ability to safely drag a victim by using a webbing sling.

Candidate Directive: "Safely drag a victim using a webbing sling."

No.	Task Steps	First Test		Retest	
		P	F	P	F
1.	Places victim in center of loop so webbing is behind victim's back.				
2.	Takes large loop over victim, places above victim's head. Reaches through, grabs webbing behind victim's back, pulls excess webbing through.				
3.	Adjusts hand placement to protect victim's head while dragging.				
Retest Approved By:			Retest Evaluator:		

Evaluator Comments: _____ Candidate Comments: _____

 Evaluator Date Candidate Date

 Retest Evaluator Date Retest Candidate Date

Candidate: _____ Date: _____

ID#: _____

Skill Drill 13-12 One-Person Emergency Drag from a Vehicle

Evaluator Instructions: The candidate shall be provided with a victim to assist from a vehicle.

Task: One-person emergency drag from a vehicle.

Performance Outcome: The candidate shall demonstrate the ability to safely drag a victim from a vehicle.

Candidate Directive: "Safely drag a victim from a vehicle."

No.	Task Steps	First Test		Retest	
		P	F	P	F
1.	Grasps victim under arms and cradles head between your arms.				
2.	Gently pulls victim out of vehicle.				
3.	Lowers victim down into horizontal position next to vehicle.				
Retest Approved By: _____		Retest Evaluator: _____			

Evaluator Comments: _____ Candidate Comments: _____

Evaluator	Date	Candidate	Date
Retest Evaluator	Date	Retest Candidate	Date

Candidate: _____ Date: _____

ID#: _____

Skill Drill 13-13 Long Backboard Rescue

Evaluator Instructions: The candidate shall be provided with a victim to assist, a long backboard, cervical collar, three partners, and a vehicle.

Task: Long backboard rescue.

Performance Outcome: The candidate shall demonstrate the ability to safely backboard a victim from a vehicle.

Candidate Directive: "Safely backboard a victim from a vehicle."

No.	Task Steps	First Test		Retest	
		P	F	P	F
1.	First fire fighter stands to back of victim, outside of vehicle. Holds victim's head in neutral position.				
2.	Second fire fighter applies cervical collar.				
3.	Second fire fighter supports victim's torso. Third fire fighter frees victim's legs from pedals.				
4.	Second and third fire fighter rotates victim in several short coordinated moves. First fire fighter supports head and neck during rotation.				
5.	Fourth fire fighter places backboard on seat against victim's buttocks. Second and third fire fighters lower victim onto backboard.				
6.	Third fire fighter moves to an effective position for sliding victim. Second and third fire fighters slide victim along backboard in coordinated moves of 8" to 12" until hips rest on backboard.				
7.	Third fire fighter exits vehicle, moves to backboard opposite of second fire fighter, together they continue to slide victim onto backboard.				
8.	First fire fighter continues to stabilize victim's head and neck while other fire fighters carry victim on backboard.				

Retest Approved By: _____ Retest Evaluator: _____

Evaluator Comments: _____ Candidate Comments: _____

Evaluator	Date	Candidate	Date
Retest Evaluator	Date	Retest Candidate	Date

Candidate: _____ Date: _____

ID#: _____

Skill Drill 13-15 Rescuing an Unconscious Victim from a Window

Evaluator Instructions: The candidate shall be provided with a victim, partner, ladder, and full personal protective equipment.

Task: Rescuing an unconscious victim from a window.

Performance Outcome: The candidate shall demonstrate the ability to safely rescue a victim from a window and down a ladder.

Candidate Directive: "Safely rescue a victim from a window and down a ladder"

No.	Task Steps	First Test		Retest	
		P	F	P	F
1.	Places ladder into position, with the tip below the windowsill.				
2.	First fire fighter climbs up ladder and in window to help with victim.				
3.	Second fire fighter climbs up to window.				
4.	Fire fighter on ladder has one leg higher than the other with higher leg bent so thigh is parallel with ground.				
5.	Interior fire fighter passes victim to fire fighter on ladder. Victim's back is towards ladder.				
6.	Victim is rested on leg of fire fighter. Fire fighter places arms under victim's arms and grasps ladder.				
7.	Slowly proceeds down ladder.				

Retest Approved By: _____ Retest Evaluator: _____

Evaluator Comments: _____ Candidate Comments: _____

Evaluator	Date	Candidate	Date
Retest Evaluator	Date	Retest Candidate	Date

Candidate: _____ Date: _____

ID#: _____

Skill Drill 13-16 Rescuing an Unconscious Child or Small Adult from a Window

Evaluator Instructions: The candidate shall be provided with a child, partner, ladder, and full personal protective equipment.

Task: Rescuing an unconscious child from a window.

Performance Outcome: The candidate shall demonstrate the ability to safely rescue an unconscious child from a window and down a ladder.

Candidate Directive: "Safely rescue an unconscious child from a window and down a ladder."

No.	Task Steps	First Test		Retest	
		P	F	P	F
1.	Places ladder into position, with the tip below the windowsill.				
2.	First fire fighter climbs ladder and goes into structure through window.				
3.	Second fire fighter climbs ladder to windowsill.				
4.	First fire fighter hands victim to second fire fighter on ladder.				
5.	Second fire fighter holds victim in arms and proceeds down ladder.				
Retest Approved By: _____			Retest Evaluator: _____		

Evaluator Comments: _____ Candidate Comments: _____

Evaluator	Date	Candidate	Date
Retest Evaluator	Date	Retest Candidate	Date

Candidate: _____ Date: _____

ID#: _____

Skill Drill 13-17 Rescuing a Large Adult

Evaluator Instructions: The candidate shall be provided with a victim, two ladders, full personal protective equipment and manpower needed.

Task: Rescuing a large adult.

Performance Outcome: The candidate shall demonstrate the ability to safely rescue a large victim and bring down a ladder.

Candidate Directive: "Safely rescue victim and bring down a ladder."

No.	Task Steps	First Test		Retest	
		P	F	P	F
1.	Places two-ladders side by side with tips below windowsill.				
2.	Multiple fire fighters enter structure and assist with rescuing victim.				
3.	Two fire fighters climb to tip of ladders and wait at windowsill for victim.				
4.	Victim is lowered down across fire fighters arms. Once victim is in place fire fighters slowly descend ladder.				

Retest Approved By: _____	Retest Evaluator: _____
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Evaluator Comments: _____ Candidate Comments: _____

Evaluator	Date	Candidate	Date
Retest Evaluator	Date	Retest Candidate	Date

Lesson Plan

Post-Lecture

I. Wrap-Up Activities



Time: 40 minutes



Small Group Activity/Individual Activity/Discussion

A. Fire Fighter in Action

This activity is designed to assist the student in gaining a further understanding of search and rescue. The activity incorporates both critical thinking and the application of fire fighter knowledge.

Purpose

This activity allows students an opportunity to analyze a firefighting scenario and develop responses to critical thinking questions.

Instructor Directions

1. Direct students to read the “Fire Fighter in Action” scenario located in the Wrap-Up section at the end of Chapter 13.
2. Direct students to read and individually answer the quiz questions at the end of the scenario. Allow approximately 10 minutes for this part of the activity. Facilitate a class review and dialogue of the answers, allowing students to correct responses as needed. Use the answers noted below to assist in building this review. Allow approximately 10 minutes for this part of the activity.
3. You may also assign these as individual activities and ask students to turn in their comments on a separate piece of paper.

Answers to Multiple Choice Questions

1. Answer B: The incident commander must always balance the risks involved in an emergency operation with the potential benefits. Actions that present a high level of risk to the safety of fire fighters are justified only if there is a potential to save lives. Only a limited level of risk is acceptable to save valuable property. It is not acceptable to risk the safety of fire fighters when there is no possibility of saving lives or property. Although pets are an important part of the family, fire fighters should not take a higher level of risk to prevent a loss of life or serious injury.
2. Answer C: A thermal imaging device is a valuable tool for conducting a primary search in a smoke-filled building. A thermal imaging device is similar to a television camera, except that it captures heat images instead of visible light images. The images appear on a display screen and show the relative temperatures of different objects. The device can be set to distinguish small temperature differences, enabling fire fighters to conduct a search quickly and thoroughly.
3. Answer: A. A two-person walking assist and an exit assist would not be an option because the victim is unconscious. A cradle-in-arms carry would not be appropriate because the victim is an adult. The most appropriate rescue technique is a webbing sling drag.
4. Answer D: Always use the safest and most practical means of egress when removing a victim from a dangerous area. A building's normal exit system, such as interior corridors and stairways, should be used if it is open and safe. Ladder rescues can be both difficult and dangerous, whether the victim is conscious and physically fit or unconscious and injured.

B. Technology Resources

This activity requires students to have access to the Internet. This may be accomplished through personal access, employer access, or through a local educational institution. Some community colleges, universities, or adult education centers may have classrooms with Internet capability that will allow for this activity to be completed in class. Check out local access points and encourage students to complete this activity as part of their ongoing reinforcement of firefighting knowledge and skills.

Purpose

To provide students an opportunity to reinforce chapter material through use of online Internet activities.

Instructor Directions

1. Use the Internet and go to www.FireFighter.jobpub.com. Follow the directions on the web site to access the exercises for Chapter 13.
2. Review the chapter activities and take note of desired or correct student responses.
3. As time allows, conduct an in-class review of the Internet activities and provide feedback to students as needed.
4. Be sure to check the web site before assigning these activities, as specific chapter-related activities may change from time to time.

II. Lesson Review

	Time: 20 minutes
	Discussion Note: Facilitate the review of this lesson's major topics using the review questions as direct questions or overhead transparencies. Answers are found throughout this lesson plan.

- A. What is the difference between a search and a rescue?
- B. How does scene size-up relate to search and rescue?
- C. What are the first, second, and third search priorities?
- D. How does a primary search differ from a secondary search?
- E. What is a counterclockwise search pattern?
- F. How does a thermal imaging device assist in a search?
- G. Why are search ropes used?
- H. What safety considerations must fire fighters consider during a secondary search?
 - I. What is risk management?
 - J. What equipment might be needed for search and rescue?
 - K. When would fire fighters shelter victims in place?
 - L. How is an exit assist conducted?
- M. What are the four methods of simple victim carries?
- N. What are the five methods of emergency drags?
- O. When should ladders be used for rescue?
- P. What is the minimum number of fire fighters required to safely perform a ladder rescue of an unconscious victim?
- Q. How can a child or small adult be brought down a ladder?

III. Assignments

	Time: 5 minutes
	Lecture

- A. Advise students to review the materials for a quiz (determine date/time)
- B. Direct students to read the next chapter in *Fundamentals of Fire Fighter Skills* as listed in your syllabus (or reading assignment sheet to prepare for the next class session.

IV. Instructor Keyed Quiz



Time: 20 minutes



Individual Activity

1. A search is:

Answer: b

- a. the physical removal of a person from confinement or danger.
- b. done to look for victims who need assistance to leave a dangerous area.
- c. done to look for victims who are unconscious.
- d. always done in tandem with rescue.

2. The only way to know that everyone is safely evacuated is:

Answer: c

- a. to find out from one of the neighbors.
- b. to find out from one of the residents.
- c. to conduct a thorough search.
- d. to verify that there is no electricity to the residence.

3. Why is it important to coordinate search and rescue with fire suppression?

Answer: d

- a. The best way to save a life might be to extinguish the fire.
- b. Ventilation may make search and rescue quicker.
- c. Fire suppression is always the best way to rescue victims.
- d. Only a and b

4. Which of the following is not a critical occupancy factor in search-and-rescue size-up?

Answer: a

- a. Corridor layouts
- b. Number of occupants
- c. Degree of risk to the occupants presented by the fire
- d. Ability of occupants to exit on their own

5. Which of the following occupants are in the greatest danger?

Answer: d

- a. Occupants on the balconies
- b. Occupants farthest from the fire
- c. Occupants on floors below the fire
- d. Occupants who are asleep

6. True or False: There is no need to perform a primary search of a residence where the cars are gone, the mailbox is full, and the doors are locked.

Answer: b

- a. True
- b. False

7. What is the correct priority of the following search areas?

Answer: a

- a. Fire floor; floor directly above the fire; top floor working down; floors below the fire
- b. Fire floor; top floor working down; floor directly above the fire; floors below the fire
- c. Floors below the fire; fire floor; floor directly above the fire; top floor working down
- d. Top floor working down; floor directly above the fire; fire floor; floors below the fire

8. Which of the following is an acceptable method of communication between search partners?

Answer: d

- a. Direct visual contact
- b. Direct voice contact
- c. Direct physical contact
- d. All of the above

9. Which of the following statements is true concerning the use of tools during a search?

Answer: a

- a. Tools should be used to feel for victims.
- b. Tools should be used, but only to block doors open.
- c. Tools should not be used because of the risk of injury to victims.
- d. Tools should not be used because they are not usually available.

10. During a clockwise search, you should:

Answer: d

- a. keep your right hand in contact with the wall.
- b. use your left arm to sweep the room.
- c. make left turns.
- d. exit through the point of entry.

11. Which of the following is true concerning thermal imaging devices?

Answer: c

- a. They have great value in rescue operations.
- b. Victims can be seen through the exterior walls.
- c. They can “see” through smoke that totally obscures normal vision.
- d. Victims will always appear lighter than the background.

12. Which of the following statements is true concerning search ropes?

Answer: d

- a. They should be used when the interior cannot be covered by following the walls.
- b. They should be used when teams might not be able to find their way out.
- c. They should be used in all search operations.
- d. Both a and b

13. When is a secondary search not needed?

Answer: d

- a. When the structure is a complete loss
- b. When the primary search found all of the occupants
- c. When the primary search found no occupants
- d. A secondary search is always needed

14. When is it acceptable to take a high level of risk to fire fighters?

Answer: c

- a. In a house that is fully involved in fire
- b. In an art gallery with irreplaceable art
- c. In a large high-rise fire with people calling that they are trapped
- d. It is never acceptable for fire fighters to take high risks

15. True or False: If a victim can walk without assistance, there is no need for the fire fighter to use the one-person walking assist method to help the victim to exit.

Answer: b

- a. True
- b. False

16. What is a disadvantage of the two-person seat carry?

Answer: c

- a. It cannot be used on disabled or paralyzed victims.
- b. It requires a sturdy chair.
- c. It is difficult moving through doors and down stairs.
- d. It requires three fire fighters.

17. A clothes drag works best for:

Answer: a

- a. victims on the floor who are too heavy for one rescuer to lift.
- b. victims who have their feet pointing toward the exit of a narrow passage.
- c. maneuvering down stairs.
- d. victims with flimsy clothing.

18. The long backboard rescue can be made with a minimum of ___ fire fighter(s).

Answer: d

- a. one
- b. two
- c. three
- d. four or more

19. Which of the following is true concerning rescues with ladders?

Answer: c

- a. Ladders should never be used.
- b. Ladders are the best method for removing large numbers of victims.
- c. Ladders should only be used when other methods are impractical.
- d. Ground ladders are better suited for rescues than aerial ladders.

20. True or False: A conscious victim should face the fire fighter on the ladder while descending.

Answer: b

- a. True
- b. False

Student Quiz

Name: _____

Date: _____

- _____ 1. A search is:
- the physical removal of a person from confinement or danger.
 - done to look for victims who need assistance to leave a dangerous area.
 - done to look for victims who are unconscious.
 - always done in tandem with rescue.
- _____ 2. The only way to know that everyone is safely evacuated is:
- to find out from one of the neighbors.
 - to find out from one of the residents.
 - to conduct a thorough search.
 - to verify that there is no electricity to the residence.
- _____ 3. Why is it important to coordinate search and rescue with fire suppression?
- the best way to save a life might be to extinguish the fire.
 - ventilation may make search and rescue quicker.
 - fire suppression is always the best way to rescue victims.
 - a and b only
- _____ 4. Which of the following is not a critical occupancy factor in search-and-rescue size-up?
- Corridor layouts
 - Number of occupants
 - Degree of risk to the occupants presented by the fire
 - Ability of occupants to exit on their own
- _____ 5. Which of the following occupants are in the greatest danger?
- Occupants on the balconies
 - Occupants farthest from the fire
 - Occupants on floors below the fire
 - Occupants who are asleep
- _____ 6. True or False: There is no need to perform a primary search of a residence where the cars are gone, the mailbox is full, and the doors are locked.
- True
 - False
- _____ 7. What is the correct priority of the following search areas?
- Fire floor; floor directly above the fire; top floor working down; floors below the fire
 - Fire floor; top floor working down; floor directly above the fire; floors below the fire
 - Floors below the fire; fire floor; floor directly above the fire; top floor working down
 - Top floor working down; floor directly above the fire; fire floor; floors below the fire
- _____ 8. Which of the following is an acceptable method of communication between search partners?
- Direct visual contact
 - Direct voice contact
 - Direct physical contact
 - All of the above
- _____ 9. Which of the following statements is true concerning the use of tools during a search?
- Tools should be used to feel for victims.
 - Tools should be used, but only to block doors open.
 - Tools should not be used because of the risk of injury to victims.
 - Tools should not be used because they are not usually available.
- _____ 10. During a clockwise search, you should:
- keep your right hand in contact with the wall.
 - use your left arm to sweep the room.
 - make left turns.
 - exit though the point of entry.

- _____ 11. Which of the following is true concerning thermal imaging devices?
- They have great value in rescue operations.
 - Victims can be seen through the exterior walls.
 - They can “see” through smoke that totally obscures normal vision.
 - Victims will always appear lighter than the background.
- _____ 12. Which of the following statements is true concerning search ropes?
- They should be used when the interior cannot be covered by following the walls.
 - They should be used when teams might not be able to find their way out.
 - They should be used in all search operations.
 - Both a and b
- _____ 13. When is a secondary search not needed?
- When the structure is a complete loss
 - When the primary search found all of the occupants
 - When the primary search found no occupants
 - A secondary search is always needed.
- _____ 14. When is it acceptable to take a high level of risk to fire fighters?
- In a house that is fully involved in fire
 - In an art gallery with irreplaceable art
 - In a large high-rise fire with people calling that they are trapped
 - It is never acceptable for fire fighters to take high risks
- _____ 15. True or False: If a victim can walk without assistance, there is no need for the fire fighter to use the one-person walking assist method to help the victim to exit.
- True
 - False
- _____ 16. What is a disadvantage of the two-person seat carry?
- It cannot be used on disabled or paralyzed victims.
 - It requires a sturdy chair.
 - It is difficult moving through doors and down stairs.
 - It requires three fire fighters.
- _____ 17. A clothes drag works best for:
- victims on the floor who are too heavy for one rescuer to lift.
 - victims who have their feet pointing toward the exit of a narrow passage.
 - maneuvering down stairs.
 - victims with flimsy clothing.
- _____ 18. The long backboard rescue can be made with a minimum of ___ fire fighter(s).
- one
 - two
 - three
 - four or more
- _____ 19. Which of the following is true concerning rescues with ladders?
- Ladders should never be used.
 - Ladders are the best method for removing large numbers of victims.
 - Ladders should only be used when other methods are impractical.
 - Ground ladders are better suited for rescues than aerial ladders.
- _____ 20. True or False: A conscious victim should face the fire fighter on the ladder while descending.
- True
 - False