Essentials of Firefighting

Chapter 7

Rescue and Extrication

Part 1 - Search and Rescue

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Introduction

- **Definitions** - Page 175

  - **Rescue** - these are incidents that involve the removal and treatment of victims from situations involving natural elements, structural collapse, elevation differences, or any other situation not considered to be an extrication incident.

  - **Extrication** - these are incidents that involve the removal and treatment of victims who are trapped by some type of man made machinery or equipment.
Fire Departments were originally organized to protect life and property from fire.

The mission of most fire departments has been expanded to include rescuing people from a wide range of hazardous environments.

Even though thousands of people die in fires each year in North America, many more are successfully rescued by firefighters.
• The fire department must always do a thorough search of the building

• Not locating a victim until after a “minor” fire is extinguished, or worse yet, not finding a missing victim, is unacceptable

• SIZE-UP is the responsibility of the first arriving officer

• All firefighters should do their own size up on every call they attend. Look at the entire scene
The initial size up should help maintain orientation once you are inside the building

Identify escape routes and alternates before entering

While inside, location can be confirmed by looking out of windows, doors, etc

For information, question occupants that have escaped the fire. Try to verify this information

Do not assume all occupants are out until the fire department had thoroughly searched the building
Conducting a Search

Two objectives of a building search:
- Search for life
- Obtain information about the extent of the fire

Two types of searches
- Primary Search: Rapid but thorough search that is performed either before or during fire suppression operations. Carried out under adverse conditions, but must be done quickly.
- Secondary Search: Conducted after the fire is under control. Should be done by team other than primary search team. Very thorough search to be sure all is clear.
• WARNING - Neither interior nor exterior fire attacks should be attempted unless firefighters are wearing appropriate personal protective equipment
  – Figure 7.2 - Search / Rescue personnel should always carry forcible entry tools with them

• Primary Search - Always use the buddy system
  – Work in teams of two or more {2-In / 2-Out}
  – A team can search more quickly and maintain safety
  – Carry forcible entry {exit} tools with you
  – Search may be done walking if conditions permit, or crawling may be necessary
• Primary Search - Continued
  – Crawling beneath the smoke can increase visibility in smoke filled environments. - You will be cooler the closer you are to the floor
  – Crawling reduces chances of tripping or falling into stairways or holes in floors.
  – Move up and down stairs on hands and knees:
    • Head first when going up stairs {ascending}
    • Feet first when going down stairs {descending}
  – While searching, stop occasionally, call out for victims, then hold breath and listen for their answer
Primary Search - Continued

- Move systematically from room to room {right or left search}
- On the fire floor - start the search as close to the fire as possible and search back toward the entrance so that you reach those most in danger first
- Search ALL AREAS. This includes bathrooms, bathtubs, shower stalls, closets, under beds, behind furniture, attics, basements, and anywhere else someone could hide or fall
- Search the perimeter and use a tool, your arms or legs, or a rope to extend the search
- Visibility will be limited, learn to use touch for identification of objects
• Primary Search - Continued
  – Negative information is as important as positive.
    • No fire in this room - No victims found - Aborting search

• Secondary Search
  – After suppression and ventilation are complete, a different team needs to do a secondary search
  – Speed is not as critical, thoroughness is the main rule
  – Use same techniques as primary, just do so more slowly and more thoroughly
Multi Story Buildings - {Figure 7.8}

- Most critical areas to search in a high rise are {in order}:
  - The Fire Floor
  - The Floor Above the Fire
  - The Top Floor
  - All floors in between the top floor and the floor above the fire

- During your primary search, doors to rooms not involved with fire should be closed to prevent the spread of fire into these areas

- Exits, Hallways, and Stairs should be kept as clear as possible of unused hose lines and other equipment to reduce hazards and allow their use
Search Methods

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- If rooms, offices, or apartments extend from a center hallway, teams should be assigned to both sides.
- If you just have one team, do one side then the other.
- Always start and maintain a direction (right or left search).
- Reverse this to exit the building.
- For small rooms, one person can stay at the door while the other person searches the room.
- Close and mark doors when search in complete.
There are many ways to mark searched areas.

Some of the more common are:

- Chalk, Grease Pens, or Crayon Markers
- Masking tape
- Specially designed door markers
- Latch straps over the door knobs (figure 7.12)

- Do not use methods that may contribute to fire spread
  - Do not block doors open with furniture
  - Do not use systems that require other searchers to enter the room to find the marker

- Follow departmental SOP’s that everyone knows
• REMEMBER - Our safety comes first
  – Safety is the primary concern of the rescuers because hurried, unsafe rescue attempts may have serious consequences for rescuers as well as victims
  – A typical tool for rescuer safety is a rope. It can be used as a guideline in the dark
  – Other tools include marking devices and forcible entry / exit tools
  – Some departments require search teams to carry a charged hose line - Hot debate - follow SOP’s
Safety During Building Searches

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• Every time we respond to a fire, a human life may be jeopardy. Change may to will, we are in danger from alarm on

• We must work quickly, but we must also work safely and with sound judgement

• Be alert for weakened or hazardous structural conditions, especially the floors

• Feel the floor in front of your search with your hands or a tool to make sure the floor is intact

• This also keeps you from falling into an elevator shaft, stairway, or trap
• If you are working below the fire, keep a close check on the ceiling assembly above you
• Be cautious when opening doors, feel the door for heat before you open it
• Do not remain in front of the door while opening
• Stay to one side and stay low

• NOTE: Some departments insist that firefighters keep their gloves on all the time. Others allow them to be removed to check doors. Follow local SOP’s
• Even will all the best ICS, accountability, etc. Firefighters become trapped or disoriented.
  – Unexpected collapse, doors closing, straying from hose lines or search ropes, etc. are all ways this can happen.

• If you become disoriented: REMAIN CALM
  – Becoming excited reduces your ability to think and react quickly
  – It also causes rapid breathing, depleting your air supply
  – Try to retrace your steps to the exit, shouting for help
  – If not working - sit still and activate your PASS device
Try to find a hose line, use it to find your way out
  – Female coupling is toward the nozzle, is a two piece coupling with a smooth section and a swivel with lugs
  – Male coupling is toward the water source, is a one piece coupling with lugs on it, without a swivel or smooth end

If you find a window, turn on your PASS and call for assistance, use your flashlight, wave your arms, or throw objects.

NEVER throw your helmet or any other part of you personal protective equipment
• If you are trapped by a collapse or get injured and can not move around, you will not have the options that a disoriented firefighter has

• IMMEDIATELY activate your PASS device

• Try to conserve air by controlling your breathing

• If you have a radio, issue a MAYDAY by SOP’s

• Stay calm and describe your last know position

• If possible: lay on the floor next to an exterior wall, hallway, or doorway. This maximizes the sound of the PASS. Shine your light to the ceiling
Trapped or Disoriented Firefighters

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• If you are searching for one of your own -
  – Try to quickly obtain a last known location
  – Stop every minute or two and listen for the PASS
  – If you have to move an injured / down firefighter
    • Use any safe means possible
    • The need to exit the hostile environment overrides the need to stabilize injuries
    • If their SCBA is working, be careful not to dislodge the mask
    • If it is not working, use a quick connect or get them out

• WARNING: At no time should rescuers remove their face pieces or in any way compromise the proper operation of their SCBA in an attempt to share them with another firefighter or victim.
The following list of safety guidelines should be used by search and rescue personnel in any type search operation within a building:

- Do not enter a building in which the fire has progressed to the point where viable victims are not likely to be found.
- Attempt entry only after ventilation is accomplished when back draft conditions exist.
- Work from a single operational plan. Crews should not be allowed to freelance.
- Maintain contact with command, which has control over search and rescue teams.
- Monitor constantly fire conditions that might affect search teams and individual firefighters.
– Have a rapid intervention team constantly available to help firefighters or teams in need of assistance
– Use the established personnel accountability system without exception
– Be aware of the secondary means of egress established for personnel involved in the search
– Wear full personal protective equipment, including SCBA and PASS device
– Work in teams of two or more and stay in constant contact with each other. Rescuers are responsible for themselves and each other
Safety Guidelines - Continued

- Search systematically to increase efficiency and to reduce the possibility of becoming disoriented
- Stay low and move cautiously while searching
- Stay alert - USE ALL OF YOUR SENSES
- Continually monitor the structure’s integrity
- Feel doors for excessive heat before opening them
- Mark entry doors into rooms and remember the direction turned when entering the room. To exit the building, turn in the opposite direction when exiting the room.
- Maintain contact with a wall when visibility is obscured. Working together, search team members can extend their reach by using ropes or straps
Safety Guidelines - Continued

– Have a charged hose line at hand when possible when working on the fire floor or the floor immediately below or above the fire because it may be used as a guide for egress as well as for firefighting

– Coordinate with ventilation teams before opening windows to relieve heat and smoke during search

– Close the door, report the condition, and be guided by the group / sector supervisor’s orders if fire is encountered during a search

– Inform the group/sector supervisor immediately of any room(s) that could not be searched

– Report promptly to the supervisor once search is complete. Give all clear, report progress of the fire and the condition of the building
Ambulatory or semi-ambulatory victim may only require help to walk to safety. One or two rescuers may be needed depending on how much help is needed.

We should not move victims before treating their injuries unless there is an immediate life safety issue.

Emergency moves may be required in these situations:

- Fire or the danger of fire in the immediate area
- Explosives or other hazardous materials are present
- It is impossible to protect an accident scene
- It is impossible to gain access to other victims who need immediate life-saving care
- The victim is in cardiac arrest and must be moved to a different area to administer CPR
The chief danger in moving a victim quickly is the possibility of aggravating a spinal injury.

In an extreme emergency, the injury is secondary to the goal of preserving life.

If you must perform an emergency move, the victim should be pulled in the direction of the long axis of the body, not sideways.

DO NOT jackknife the victim.

Pull on the clothing in the neck or shoulder area {7.21}

Best to have two or more rescuers when attempting to lift or carry an adult.
One rescuer can usually carry a small child
2, 3, or 4 rescuers may be needed for a large adult
Unconscious victims are more difficult to lift
  • The victim is unable to assist in any way
  • Relaxed body becomes dead weight
Inexperienced people will have difficulty lifting and carrying a victim correctly
Lift as a team with proper technique
Use your legs to lift, keeping your back straight
Support fractures / injuries during the move
• Lifts and Carries
  – Cradle-in-Arms Lift / Carry
    • Effective for carrying children or small adults
    • Not practical for unconscious adults {Skill sheet 7-1}
  – Seat Lift / Carry
    • Used with conscious or unconscious victims
    • Normally performed by two rescuers {Skill sheet 7-2}
  – Two or Three Person Lift / Carry
    • Effective way to lift a victim who is lying down
    • Often used to move a victim from a bed to a stretcher
    • Use proper # of rescuers for the size of the patient
Victim Removal

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– Moving onto Long Backboard
  • Could be an army litter, scoop stretcher, basket, or backboard
  • Usually need at least four rescuers
  • Remember your first responder training {Skill sheet 7-4}

– Extremities Lift / Carry
  • Used on conscious or unconscious victims
  • Requires two rescuers {Skill sheet 7-5}

– Chair Lift / Carry
  • Used on conscious or unconscious victims
  • Make sure you have a strong, sturdy chair
  • Do NOT attempt this carry with a folding chair {7-6, 7-7}
– Incline Drag
  • used by one rescuer to move a victim down a stairway or incline
  • Very useful with an unconscious victim {7-8}
– Blanket Drag
  • Drag used by one rescuer using a blanket, rug, or sheet {7-9}
– Gear / Air Pack Drag
  • NOT IN YOUR BOOK
  • When an unconscious or injured firefighter is down, you can use their gear collar or the straps on their air pack as a grip point to pull them out of harm’s way.

THE END OF PART ONE
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