Light Search and Rescue Operations

CERT Basic Training
Unit 5
Spring 2019
2019-03-05

Search and Rescue

- Consists of three separate operations
  - Sizeup: Using 9-step, continual model
  - Search: Locating victims and documenting
  - Rescue: Extricating victims

Deciding to Attempt Rescue

- Decision based on three factors
  - The risks involved for the rescuer
  - Greatest good for the greatest number
  - Resources and manpower available
Goals of Search and Rescue

- Rescue greatest number in shortest amount of time
- Get walking wounded out first
- Find & triage victims. Treat only the ‘3 killers’
- Rescue lightly trapped victims next, if not safe to leave in place
- Keep the rescuer safe

Effective Search and Rescue

- Depends on:
  - Effective sizeup
  - Rescuer safety
  - Victim safety

Unit Objectives

- Identify sizeup requirements
- Describe most common search techniques
- Use safe techniques for debris removal
- Use safe techniques for victim extrication
- Describe ways to protect rescuers
Unit Topics

- Safety During Search and Rescue Operations
- Conducting Interior and Exterior Searches
- Conducting Rescue Operations

CERT Sizeup

1. Gather Facts
2. Assess Damage
3. Consider Probabilities
4. Assess Your Situation
5. Establish Priorities
6. Make Decisions
7. Develop Plan of Action
8. Take Action
9. Evaluate Progress

Gather Facts

- Time of event and day of the week
- Construction type/terrain
- Occupancy
- Weather
- Hazards

REMEmber: CERT Sizeup is a continual process
Assess and Communicate Damage

The CERT mission changes if:
- Damage is light
- Damage is moderate
- Damage is heavy

Sizeup: Step 2

Light Damage

- Superficial
- Broken windows
- Superficial cracks or breaks in wall surface
- Minor damage to the interior contents
- Safe to enter and remain

Moderate Damage

- Visible signs of damage
- Decorative work damaged or fallen
- Many visible cracks or breaks in wall
- Major damage to interior contents
- Building still on foundation
- Enter only to save lives
**Heavy Damage**

- Partial or total collapse
- Tilting
- Obvious structural instability
- Building off foundation

Do not enter a building with heavy damage under any circumstances.

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**Collapse Zone: Be Aware In This Area**

- The collapse zone is one and a half times the height of the building (X), in all directions (Y)
- Example: 40’ tall building, collapse zone is 60’ out from building
- For buildings, chimneys and other tall things that can fall or crumble

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**Light, Medium, or Heavy?**

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Sizeup: Step 3

Consider Probabilities

- How stable is the situation?
- What else could go wrong?
- What does it mean for the search and rescue?

Sizeup: Step 4

Assess Your Situation

- Is the situation safe enough to continue?
- What risks will rescuers face?
- What resources are needed?
- What resources are available?

Rescue Resources

- Personnel
  - Firefighters
  - Police
  - Nurse, M.D.
  - Contractor
- Tools
  - Crowbars
  - Auto jacks
  - Chainsaws
- Equipment
Establish Priorities
- What should be done?
- In what order?
- How to rescue the greatest number in the shortest amount of time?

Make Decisions
- Keep in mind:
  - Safety of CERT members
  - Life safety for victims and others
  - Protection of the environment
  - Protection of property

Develop Plan of Action
- Focus operation on established priorities and decisions
- Provide for documentation to give to responding agencies
- Provide for documentation to become part of CERT records
**Sizeup: Step 8**

**Take Action**
- Based on plan developed during Step 7

**Hazards**
- Heat – test doors with back of your hand
- Broken glass
- Wire cords – live electrical wires
- Spills, chemicals

**Sizeup: Step 9**

**Evaluate Progress**
- Most critical step
- Monitor plan’s effectiveness and safety

**REMEMBER:** CERT SIZEUP IS A CONTINUAL PROCESS
CERT Unit 5- Search & Rescue

**Specific Safety Considerations**

- Make rescuer safety primary concern
- Use a buddy system
- Be alert for hazards
- Use safety equipment
- Rotate teams

**Electrical Safety Near Downed Power Lines**

- Step Potential is created when current from a downed line makes contact with ground, energizing the surrounding area.
- If near a downed line, avoid step potential by:
  1. Hopping away with ankles together
  2. Keep feet together and shuffle away (heels must not pass toes)

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If you smell gas

**DO NOT**
- Ring doorbell
- Enter building with cell phone “on”
- Throw any electrical switch on or off (including main breaker outside)
- Turn on flashlights, headlamps inside house unless devices specially sealed
- Use radio in house
- Enter if burglar alarm armed

If you see collapsed floors or walls, get out!

Pancake Void

Lean-to Void

\[ X = \text{Voids} \]

Structural Voids

Individual Voids

- Spaces where victims may seek protection
  - Bathtubs
  - Underneath desks
  - Inside cabinets
  - Under/next to beds
  - Inside closets
- Toys = children
- Food bowls or pet toys on floor = pets
Upon entering search area:
- Make a slash
- Enter info

Upon leaving search area:
- Complete 'X'
- Enter info

What information do you mark?
- Date, Time In
- Time Out
- CERT Team I.D.
- Areas Searched & Hazards
- Victims
- Pets

Example:
- BV South 1
- 2/15/08
- in: 1430
- out: 1515
- FL 1-2 searched
- Stairs to FL-3 unsafe
- Moved to Larkey Med Ops
- Moved to Larkey Med Ops
Let's Practice Search Markings

5/17/16
in: 1920

BV South 1

Let's Practice Search Markings

5/17/16
in: 1920
out: 1930

BV South 1
Let's Practice Search Markings

5/17/16
in: 1920
out: 1930

BV South 1

FL 1,2 searched
Chimney unsafe

Let's Practice Search Markings

5/17/16
in: 1920
out: 1930

BV South 1

FL 1,2 searched
Chimney unsafe

BV South 1

1L

Search Markings After Transport Team Transports Victim

5/17/16
in: 1920
out: 1930
in: 2110
out: 2125

BV South 1

BV Transport 2

FL 1,2 searched
Chimney unsafe
What if unsafe but hear victims inside?

- All the rules for SAR team safety still apply
  - Stay safe distance away from heavily damaged buildings – stay outside the collapse zone
  - Write search marking in a safe area – do not write markings on building
- Follow standard search protocols
  - Note hazards and victims on search marking
  - Report SAR team findings to Command Post

Search Methodology

- Call out to victims, “Search & Rescue: Come to the sound of my voice.”
- Ask any victims who do respond for more information about the building or others who may be trapped
- Victims might be in shock or confused
- Keep a count of victims found

Search Methodology

- Always know where your nearest exit is
- Bottom-up/top-down for a multi-story building
- Right wall/left wall for a single floor
- Stop frequently to listen for
  - Tapping
  - Movement
  - Voices
Search Methodology

- Stop frequently to listen for:
  - Tapping
  - Movement
  - Voices

Search Methodology in the DARK

- Triangulation allows rescuers to view a location from several perspectives

  - Keep one hand on the wall & your buddy keeps hand on your shoulder to stay together

Search Methodology

- Keep records of rescued victims and of those who remain trapped or are dead
- Report information to emergency services personnel
Exterior Search

- Set up a grid search
  - Set distance between searchers according to visibility and debris
  - Overlap patterns for full coverage
  - Search in as straight a line as possible
  - Mark areas that have been searched

Rescue Operations

- Remove objects and debris to free victims and create safe rescue environment
- Triage victims
- Remove victims
- Remove debris
Creating a Safe Environment

- Maintain rescuer safety
- Triage in lightly and moderately damaged buildings
- Evacuate victims as quickly as possible from moderately damaged structures

Precautions to Minimize Risk

- Know your limitations
- Follow safety procedures
- Remove debris by:
  - Leveraging
  - Cribbing

Proper Lifting Procedures

- Back straight
- Bend knees
- Keep load close to body
- Push up with legs
Leveraging and Cribbing Requires Frequent Practice to Do It Safely

- Walnut Creek CERTs are not authorized to do cribbing
- For heavy lifting
- Performed in tandem
- Helps extricate victims
- Various materials and objects may be used

Two Types of Removal

- Self removal or assist
- Lifts and drags

Which Extrication Method?

- General stability of the immediate environment
- Number of rescuers available
- Strength and ability of the rescuers
- Condition of victim
Use Proper Lifting Procedures!

Be careful not to injure yourself when performing lifts

- Team lead reminds team members about proper lifting procedure and directs each step of the procedure
- If you doubt your ability to lift, DON'T LIFT - there are lots of other ways to help

One-Person Arm Carry

- Lift around victim’s back and under knees
- Lift victim by keeping your own back straight and lifting with legs

Pack-Strap Carry

https://www.youtube.com/watch?v=kDY6FNk28ts
Two-Person Carry

Chair Carry

Blanket Carry

https://www.youtube.com/watch?v=66qCkgqVhal
Log Rolling

https://www.youtube.com/watch?v=66qCkgqVhal

Blanket Drag

https://www.youtube.com/watch?v=ZHzXFgKYii0
Rescuing Victims With Their Pets

- In the next two CERT basic training classes, you will learn to rescue the non-aggressive pets of human victims.
- Processes and procedures have been established to follow that allow CERTs to safely encounter, handle, transport, communicate information and care for animals.
- Transporting pets along with victims is required by Federal law and by FEMA for the safety of all disaster survivors and rescuers.
- CERTs report the pets transported and those left behind.
- Every Walnut Creek CERT Command Post (CP) includes an Animals Staging area to care for the pets of victims transported to the Medical Operations area at the CP.

Unit Summary

- You should know:
  - How to decide whether to attempt rescue
  - The objectives of interior and exterior search and rescue
  - How to perform search and rescue sizeup
  - Building markings
  - Rescue functions
  - How to remove debris
  - How to extricate victims

Homework Assignment

1. Wear appropriate clothes to next session
2. Watch videos – Electrical safety & Searching
3. Practice Search markings
4. Practice FTMF
5. Unit 6, ICS