



CHARLOTTESVILLE - ALBEMARLE RESCUE SQUAD



STANDARD OPERATING GUIDELINE

TOPIC: Structural Collapse Rescues	S.O.P. # 4.2d
Approved by: Lair D. Haugh, Chief	Revised: 2/9/2003 Approved:

I. PURPOSE

- a. To provide guidance during "Technical Rescue Operation" that require search and rescue operations to occur in any form or type of collapsed structure or damaged structure.

II. RESPONSE

- a. Any incident involving structural collapse or damage where the possibility exists of victims being trapped or buried will require the response of the CARS TRT.
- b. No personnel shall enter a collapsed or damage building to render patient care or extrication until a general survey and size up of damage is done.
- c. Upon notification of a Structural Collapse situation, EOC will immediately dispatch the following:
 - i. A trauma level ambulance.
 - ii. Squad 135.
 - iii. The Collapse Rescue Trailer.
 - iv. The Duty Officer.
 - v. The Technical Rescue Team.
 - vi. The Fire Department.
 - vii. The Police Department.

III. SEARCH AND RESCUE STAGES

- a. Reconnaissance. Provide for a general survey of the area and size up of the damage. Find out the following information:
 - i. Building's use.
 - ii. Number of occupants.
 - iii. Number of victims trapped and their probable location.
 - iv. Presence of hazards:
 1. Gas & utilities.
 2. Flammables.
 3. Electrical.
 4. Flooding from burst mains.
 5. Plumbing and sewer disruption.
 6. Structural stability of adjoining buildings.
 - v. Rescue efforts already underway by untrained personnel and/or citizens. Stop such efforts immediately.
- b. Immediate rescue of surface casualties.
 - i. Victims found on top of the debris or lightly buried should be removed first.
 - ii. All rescue efforts should be directed to the victims who can be seen or heard.
 - iii. Rescue efforts should be also directed to reach those victims whose location is known even if you cannot see or hear them.
- c. Scene organization and management.

- i. Working within the Integrated Incident Management System is essential to a successful operation.
 - ii. The following checklist is to be followed:
 - 1. Shut down all utilities.
 - 2. Evaluate structural integrity, assign a safety officer.
 - 3. Request an engineer or architect.
 - 4. Direct rescue operations from a safety stand point.
 - 5. Assign team leaders for each designated rescue team.
 - 6. Divide the collapse area into manageable areas.
 - 7. Draw up a contingency plan and place on standby.
- d. Exploration and Rescue from Likely Survival Places.
 - i. Seek out casualties by looking in places that could have afforded a reasonable chance for survival. Typical areas that should be searched are:
 - 1. Spaces under stairways.
 - 2. Basement and cellar locations.
 - 3. Locations near chimneys or fireplaces.
 - 4. Voids under floors that are not entirely collapsed.
 - 5. Undemolished rooms whose egress is barred.
 - 6. Voids created by furniture or heavy machinery.
- e. Locate casualties using the "hailing system."
 - i. Place rescuers in "call" and "listen" positions.
 - ii. Have the operations officer call for silence.
 - iii. Going "around the clock" each rescuer calls out or taps on something. A period of silence should follow each call.
 - iv. All members should attempt to determine a "fix" on any sound return.
 - v. After a sound has been picked up, at least one additional "fix" should be attempted from another angle.
 - vi. Once communications with the victim have been established, it should be constantly maintained.
- f. Breaching and Shoring.
 - i. In some instances, victims may be reached by breaching and shoring.
 - ii. Initially try to avoid the breaching of walls. This may undermine the structural integrity of the rest of the building.
 - iii. It is safer to cut holes in floors and use the shaft approach.
 - iv. If you must breach a wall or cut a floor, cut a small hole first to assure that you are not entering a hazardous area.
 - v. Shoring may be used to support weakening walls or floors.
 - vi. Shores should not be used to restore the structural elements to their original positions.
 - vii. An attempt to force beams or walls into place may cause collapse.
 - viii. If you decide to shore, keep the following in mind:
 - 1. The maximum length of a shore should be no more than 50 times it's width.
 - 2. The strength of a shore is dependent on where it is anchored. If anchored to a floor, it will be dependent on the strength of the floor.
 - 3. Shoring should be attempted only by qualified personnel or under the supervision of technical rescue personnel.
 - 4. Air-shores may be used in place of timbers and will provide a stronger shoring system.
 - ix. Shoring should NEVER be removed once in place.
- g. Selected Debris Removal.
 - i. This stage of the rescue process will consist of reducing the size of the rubble.

- ii. This must be accomplished based on a pre-determined plan.
- iii. Cranes and heavy equipment may be needed to accomplish this portion of the rescue. Consult the fire department's resource log to obtain these.
- iv. Remove debris from the top down.
- v. Remove debris from selected areas where information suggests that victims might be.
- h. General Debris Removal.
 - i. This should be employed after all other methods have been used.
 - ii. This should be used only after the decision has been made by the incident commander that no other victims may be found alive.
 - iii. This basically amounts to the demolition phase.

IV. GENERAL CONSIDERATIONS

- a. It is safer to reach entrapped victims from above.
- b. Diagram the building on the command board.
- c. Ensure control of all accesses to the site.
- d. Beware of "at will" response by volunteers or citizens.