

Urban Search and Rescue in Schools: A Disaster Affecting the Future of the Nation

by Jan Smith

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When a disaster occurs affecting a populated area that calls for immediate response from the community, it is assumed the local emergency service agencies are initially overwhelmed. The reaction of people may vary, but studies show most people will attempt to assist those in need without regard to their own personal safety. Using the scenario of a moderate or major earthquake provides the ability for every type of hazard to occur simultaneously that will slow down the response time from emergency services personnel and not allow for the normal mutual aid channels to be utilized. If the event occurs during the week between 0800 and 1400 hours when schools are in session, the problems will be magnified.

There are many aspects to address regarding school planning and response, but the specific task of urban search and rescue in a school setting will be the focus of my comments. Breaking the task down into three levels can best address the needs of the staff, volunteers (trained and spontaneous) and students.

Before

Identify whether the need exists to develop a search and rescue team for any disaster. Recognize the possible hazards that may exist at and around the school site with a potential to cause fatalities and/or injuries. Obvious threats for structural collapse would be tornadoes, hurricanes, floods, building compromise, fire, terrorism and of course, earthquakes. Hazards in the community from natural and technological disasters (e.g., hazardous materials spills, fires, utility failure, gas line ruptures) could impact the safety of the staff and students. By doing a "hazard hunt," the need for a search and rescue team will be determined. Once the need is determined, take the next step, which is identifying who will be able to physically and mentally accomplish the goals of a search and rescue team member. Assignment of the team members will then produce the next challenge, which is receiving the necessary training.

The predominant problem of training is not so much the funding, but the time for school staff to receive quality training. In addition to First Aid training, each search and rescue team member should have an overview of emergency operations for the school district (Incident Command) and radio communications (if they don't know what is going on outside, how can they be expected to coordinate and transmit the information on what is going on inside the building?). Each team member should be able to evaluate the hazards prior to conducting a "sweep" of the building to document where victims are trapped. Training should include a combination of lecture and "hands on" exercises to increase the practical skills of each member. Limiting the scope of the training to urban search and rescue skills, the minimum information to be covered for staff members (and volunteers) can be conducted in a four hour course that includes the following:

- Structural Collapse Rescue Situations
- Survival Rate vs. Time of Extrication
- Rescuer Safety and Victim Safety
- Basic Structural Construction Awareness
- Four Stages of Urban Search and Rescue
- Search Methods, Markings and Post Search Critique
- Lifting Heavy Objects

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- "Hands on" Lifting Drill
- "Hands on" Utility Control Drill
- "Hands on" Search and Documentation Drill

Conducting drills using some of the above skills should be mandatory at least twice each school year. Doing a "duck, cover and hold" drill monthly is a good way to start, especially if during the first month of school the drill is conducted three times to give the staff and students the practice they need to perform it correctly. This will dramatically reduce the task of the search and rescue teams.

During

When an event occurs that affects the school population, such as an earthquake, each individual must realize they are responsible for their personal safety and should not try to assist others during the critical period, (i.e., the shaking during an earthquake). Spontaneous activation will increase the potential of injury to the rescuer as well as the victim. Even for a short period of time after the event, calm everyone down and begin to assess the hazards before jumping into action. If the event is strong enough to cause concern about the structure, the recommended procedure is to begin to evacuate the classrooms, and move the students to an open area outside. There has been much discussion with regard to how soon to evacuate and what the teacher's responsibility is to those students unable to evacuate. The only guidelines I can provide is to assess the hazards inside and outside the structure. If evacuation is necessary, proceed slowly and carefully, leaving those persons unable to evacuate immediately. Provide the "sweep" teams with information on the location of trapped persons. The rescue teams can then do the rest of the extrication for those victims they are trained to reach.

After

When those persons able to leave the building on their own have done so, the disaster plan should have been activated. The "sweep" teams should assess their safety in re-entering the building and begin to document their findings. They should be able to triage victims to see if they can safely extricate them. If their attempts are unsuccessful, the victims should be documented and the teams continue their search for trapped victims. Part of the above mentioned training will give instruction on how to conduct a search and mark each building and room. When all victims that can be safely removed have been, there still may be victims entombed inside. This information must be transmitted to emergency services personnel (probably the local Fire Department) and a request for assistance must be made. By waiting until you know what kind of skills are needed, if any, the possibility of increased resources is greater. Schools will naturally be a priority for community response and that of emergency services personnel. One of the key factors in the "after" phase of a disaster is to know the location of everyone. Under no circumstances should untrained people be allowed to enter a compromised structure. The threat of further collapse is very real, especially with aftershock potential from an earthquake. Search and rescue teams always work in teams of two members and those members do not ever separate from one another. Communication to the outside of the building is critical. Whenever anyone is inside, an observer on the outside should be in constant communication with each team. If there is any threat to the structure, the team should be instructed to exit immediately. The scene Incident Commander should be apprised constantly of the progress of each team.

Realizing the complexities of response issues under this scenario, the fact of the matter is that parents, community residents and other well meaning citizens will respond to the school for a variety of reasons. This alone will affect the coordination of information and resources. Students can be utilized under limited conditions. Allowing them to perform little or no risk tasks is not only beneficial to the effort, it allows them to feel needed and reduces their psychological trauma. The tasks they may be helpful with are security; basic first aid, if they are trained; assisting with younger students; setting up the shelter areas; communications and documentation of the event. Because of the dangerous nature of the search and rescue tasks, it may be unwise to expect students to be able to effectively deal

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with this task. In some cases, students with special training, such as Boy Scouts, may be of some limited assistance. However, concern for the psychological recovery of students should limit their involvement with search and rescue.

Search and rescue appears to be the greatest concern for school personnel. Quality training will make a difference to the safety of the students and staff, as well as allow local emergency services personnel to prioritize the needed equipment and personnel to address specific problems in the area. Hopefully, this type of training will never be needed. However, history tells us that with the average life expectancy, a major earthquake will possibly occur in the United States during the lifetime of today's adult and probably occur during the lifetime of today's child.

COMMUNITY

BASIC URBAN SEARCH AND RESCUE AWARENESS

FOUR HOUR COURSE OUTLINE

SESSION I: Structure Collapse Rescue Situations

- A. Injured, Not Trapped
- B. Non-Structural Entrapment
- C. Lightly Trapped
- D. Entombed

Survival Rate vs Time of Extrication

- A. Need for Speed

Rescuer Safety and Victim Safety

- A. Personal Safety Equipment
- B. Safety Hazards Around Disaster Sites
- C. Medical Considerations
- D. Victim Movement Over Debris Piles

Break: 10 min.

SESSION II: Basic Structural Construction Awareness

- A. Light Construction
- B. Heavy Wall Construction
- C. Heavy Floor Construction

Four Stages of Urban Search and Rescue

- A. Size-up, Surface Victims, and Scene Management
- B. Search Likely Survival Places
- C. Selected Debris Removal
- D. General Debris Removal

Break: 10 min.

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SESSION III: Search Methods, Markings, and Post Search Critique

- A. Systematic Search
- B. Search Markings
- C. Post Search Critique

Lifting Heavy Objects

- A. Lifting by Hand
- B. Lifting with Hand Tools
- C. Crib and Shim

Break: 10 min.

SESSION IV: 1. Lifting Drill Squad Rotation (1-2-3)

- A. Lift Heavy Objects by Hand
- B. Lift Heavy Objects with Hand Tools

2. Utility Control Drill Squad Rotation (2-3-1)

- A. Shut Off and Turn On Common Utility Controls

3. Search & Documentation Drill Squad Rotation (3-1-2)

- A. Search and Site Survey
- B. Documentation of Search and Site Survey

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EQUIPMENT LIST FOR SEARCH AND RESCUE COURSE

GIVEN: 36 Students, 3 Assistant Instructors, Slide Projector, Overhead Projector, Screen, Slides, Overhead Transparencies, and Drill Session Equipment

Note: If student number is doubled, the assistant instructors and drill session equipment must also be doubled. The drill session is designed for three squads of students in equal numbers to rotate through each station every 15 minutes.

Drill Session Equipment

Lifting Drill	Utility Control Drill	Search and Documentation Drill
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4 Drawer File Cabinet - 2 ea or 6'-8' Folding Table- 2 ea	Gas Meter Prop - 1 ea Water Bib Prop- 1 ea Water Main Prop- 1 ea Circuit Breaker Panel- 1 ea Electrical Box with a Knife Switch- 1 ea 12" Crescent Wrench- 2 ea Channel Lock Pliers- 1 ea	6'-8' Folding Table- 2 ea Mannequin- 2 ea
Sand bags, bundles of newspaper, or exercise weights- 200 lbs		
Mannequin- 2 ea Crow bar- 2 ea 4' x 2" x 4"-2 ea Phone Books- 8 ea 24" x 4" x 4"- 24 ea 18" x 4" x 4" Wedges- 8 ea		

**Santa Monica Fire Department
&
Urban Search and Rescue, Inc.**

**DISASTER ASSISTANCE RESPONSE TEAM
(D.A.R.T)**

18 HOUR COURSE OUTLINE

CLASS 1

SESSION A: ADMINISTRATION & TEAM ORGANIZATION

1. Introductions and Registration
2. Course Overview
3. Disaster Assistance Response Team (DART) Organization

SESSION B: STRUCTURAL COLLAPSE DISASTER AWARENESS

1. Events Causing Structural Collapse Disasters
2. Basic Structural Collapse Rescue Situations
3. Need For Disaster Assistance Response Teams

SESSION C: STRUCTURAL COLLAPSE DISASTER PREPAREDNESS

1. Introduction to Disaster Psychology
2. Introduction to Self Preparedness
3. Introduction to Non-Structural Hazard Mitigation

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CLASS 2

SESSION A: RESCUER SAFETY

1. Introduction to Rescuer Safety
2. Introduction to Safety Equipment and Tools

SESSION B: DART FIRE SUPPRESSION UNIT

1. Introduction to Utility Control
2. Introduction to Hazardous Materials
3. Introduction to Basic Firefighting

SESSION C: FIRE SUPPRESSION WORK STATION

1. Utility Control Work Station
2. Firefighting with a Fire Extinguisher Work Station
3. Firefighting with a Fire Hose Work Station

CLASS 3

SESSION A: DART MEDICAL (I)

1. Introduction to Disaster First Aid
2. Introduction to Airway Management
3. Airway Management Work Station

SESSION B: BLEEDING AND SHOCK

1. Introduction to Bleeding Control
2. Bleeding Control Work Station
3. Introduction to Shock Management
4. Shock Management Work Station

SESSION C: TRIAGE

1. Introduction to Triage
2. Triage Work Station
3. Introduction to Triage Documentation
4. Triage Multiple Victims Work Station

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CLASS 4

SESSION A: DART MEDICAL (II)

1. Review of Disaster First Aid
2. Introduction to Head to Toe Assessment
3. Head to Toe Assessment Work Station

SESSION B: FRACTURES AND SPLINTING

1. Introduction to Fractures and Splinting
2. Fracture Splinting Work Station

SESSION C: LIFTING AND MOVING VICTIMS

1. Introduction to Lifting and Moving Victims
2. Lifting and Moving Victims Work Station
3. Introduction to Casualty Collection Points (CCP)
4. Introduction to Burn Care
5. Introduction to Wound Care

CLASS 5

SESSION A: DART SEARCH AND RESCUE

1. Basic Structural Construction Awareness
2. Four Stages of Urban Search and Rescue
3. Introduction to Search Methods and Markings

SESSION B: LIFTING AND CRIBBING

1. Introduction to Lifting and Cribbing
2. Lifting and Cribbing Work Station

SESSION C: DART MANAGEMENT AND DOCUMENTATION

1. Introduction to DART Management
2. Introduction to DART Documentation
3. DART Management and Documentation Work Station

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CLASS 6

SESSION A: DART COURSE REVIEW and DRILL PREP

1. Review Key Points of Course
2. Drill Prep and Rules

SESSION B: DART DRILL

1. Conduct DART Field Exercise

SESSION C: DART CRITIQUE AND CERTIFICATIONS

1. Drill Critique
2. Course Critique
3. Issue Certificates

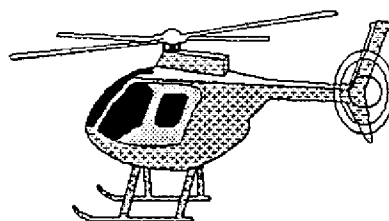
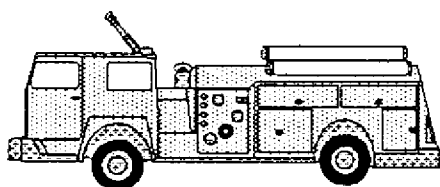
D.A.R.T.

DISASTER ASSISTANCE RESPONSE TEAM

A Disaster Assistance Response Team (DART), is a group of trained citizen volunteers that assist local government and emergency response agencies such as law enforcement and fire service in non-emergency and emergency situations. In Ventura County the program is administered and maintained by the cities. In the unincorporated areas, the instructors are provided through liaison with the Sheriff's Office of Emergency Services.

DART is comprised of community members trained in light search and rescue, first aid, field sheltering, damage assessment, traffic and crowd control, fire safety and suppression, emergency radio communications and critical incident stress components. Training in these areas is conducted by certified instructors provided by local agencies.

DART relies on community funding and donations to purchase equipment and supplies necessary to carry out its emergency service assistance functions. DART needs community support to serve its vital function to the citizens of the community. If you are interested in setting up a DART team in your community, please phone or write to:
Ventura County Sheriff's Department,
Office of Emergency Services
800 SO. VICTORIA AVENUE
VENTURA, CALIFORNIA 93009--(805) 654-2551



Sponsored by the Ventura County Sheriff's OES

VENTURA COUNTY EMPLOYEE PROGRAM

As a result of presentations made to the Board of Supervisors and the County's Executive Committee on the Loma Prieta earthquake in northern California on October 17, 1989, a joint decision was made that Ventura County employees should receive emergency preparedness training.

A recommendation was made by Sheriff John V. Gillespie, and supported by current County Fire Chief, Rand-Scott Coggan that a train-the-trainer program be developed jointly by the Sheriff's department and County Fire. This program would provide training at a ratio of 1 trainer for every 20 employees in each county department. The Fire department and Sheriff's department committed a minimum of 3 employees each to receive training for the employee program. The initial base of information was received by Sheriff and Fire department representatives by their attendance of training sessions held in Camarillo for the community Disaster Assistance Response Teams. Development of lesson plans for the 4 hour employee training program has taken place since that time.

