

**Exposure issues in responders to disasters-offering some ideas and lessons learned from the response to the World Trade Center 911 tragedy.**

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Home Disaster News Exposure Issues in Responders It is universally accepted that efforts must be directed toward minimizing risk to responders. A risk to responders can result in compounding the loss of trained personnel and the inability to respond further. For example, a secondary explosive device aimed at responders has been attempted in the past. However, there may be other more subtle secondary threats—one such threat to the response force is environmental. We must attempt to weave the capability to accurately gauge the environmental threat as well as other threats to responders.

An example of the importance of these concepts is the response to the world trade center on September 11, 2001. Much has been learned from the response to the World Trade Center tragedy in terms of environmental hazards for responders to disasters. This very tragic event has taught many lessons to responders and may point to the need for an interdisciplinary response even at the scene in an attempt to mitigate possible injury to responders.

A recent book written by Dr. Paul Lioy, a WTC responder from the academic environmental community, responded and witnessed first-hand many of the environmental challenges and injuries sustained by responders. This experience stimulated Dr. Lioy to offer an analytical approach for responding to disasters from an environmental viewpoint and ideas that could very much benefit the responder community in general. Many could never have imagined that dust generated by collapsing structures could, in itself, prove hazardous.

Certainly, much work remains left to be done in an attempt to quantify the entire spectrum of hazards at the scene of this event. However, the WTC aerosol hazards have taken the responder community into a new era of environmental science. With all this in mind, let's consider a new responder paradigm suggested by Dr Lioy. Let's consider the five R's for responders that can be applied universally not only to aerosol threats but other response hazards as well: Rescue, Recovery, Reentry, Restoration and Rehabilitation. These five R's suggest an interval approach.

Without a doubt, the EMT system is the master of rescue but we realize that for rescue, unfortunately, time is of the essence. In addition to triage and all the challenges for the responders, we must also consider which acute exposures might lead to injury to responders both short-term and long-term. This is a prime concern for responders - again emphasizing both short term and long-term injury that entails risk even though responders who may be exposed for a relatively short interval. Obviously, this must be balanced with the need to save lives. This may present us with a real challenge for future events, but the first step is to attempt to recognize the hazards whether they are environmental, structural or other. Our instinct as responders is to attempt to scoop and run in a potentially hazardous area — of course if the threat is easily recognized such as a chemical hazard, we have the capability to protect

# C4SEM Exclusive Article



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responders. In terms of environmental threats, we should consider augmenting the risk capability, which leads to the next concept - re-entry. Re-entry poses many challenges. In addition, there are few re-entry standards on which to base safe return, and the standards we have may be called into question.

Let's consider two aspects of progress for responders gained from all that was learned from the WTC response. First there is the work of our government's attempts to offer solutions. One is an advance called ASPECT (Airborne Spectral Imaging of Environmental Contamination Technology) — a result of a partnership between the Dept. of Defense and the Environmental Protection Agency. Apparently this aircraft can obtain information about a chemical event from a safe distance and provides first responders with information on possible chemical releases. In addition, simple spectral monitors can be useful if employed in strategic locations to be available for quick response around areas of high population or other vulnerable areas. The goal would be to have flexible chemical, biological and radiological monitors providing real time measurement. Unfortunately, there may not be enough aircrafts like the ASPECT model available but creating the model, paradigm or template can offer the ability to replicate more of a robust matrix for responder protection. For example in the nuclear scenario, it is certain that there will be a need for remotely piloted drone type aircrafts around ground zero. Recovery does indeed incur a longer exposure, dealing with the grim consequences of deceased victims. Also recovery is a prime concern since there is a need to certify areas as being safe for the public to return. This could take many years in the case of radiation or perhaps for some chemical events. Rehabilitation deals with how clean is clean issues - a very challenging that could potentially take many years. In conclusion, let's not throw in the towel. Consider how the US Postal Service rehabilitated a building from top to bottom and resumed operations after a significant anthrax contamination. New York



and Washington, DC recovered quickly — due to the tireless work of the entire response community. But, perhaps we do need more academic analysis before we can approach something of the magnitude of a nuclear attack or other large chemical or biological event. We will need the resources of all sectors: Government, academic and the defense department, as the issue is simply too big to be the sole responsibility of the present system. We may have incurred preventable injury to the response community in the past that we must prevent in the future. Reference: "Dust" by Dr. Paul Liroy Rowman & Littelfield Publishers 2010

Related Article: Emergency Response Plans: Part I

The Occupational Safety & Health Administration (OSHA) requires facilities with over 10 employees to have a written emergency plan; in facilities that are smaller, there does not need to be a written plan however it does need to be communicated orally. Involvement and support in all levels of management is a must.

Related Article: TAK-Response Conference and Exhibition: America's Answer to Critical Incident Preparedness

Every community has as its primary responsibility the duty to protect and defend its citizens, and accomplishing this responsibility falls to a wide variety of dedicated professionals. Critical incidents occur daily. Depending on the size of the community, the nature of the event, and most significantly the preparedness of the community, a critical incident can be devastating or disruptive.

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The federal Disaster Medical Assistance Team DMAT CA-6 - of which I am a proud member - is returning from Haiti tomorrow. This deployment was unique because it was their first international mission. Although the team is set up to be completely self-sufficient for 72 hours, they arrived to find the most austere conditions they had ever experienced -- no water, electricity or food other than MREs (meals ready to eat).

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Disaster-related events that involve mass fatalities are in some ways easier to manage because they tend not to be time-sensitive in terms of life and safety objectives; however, overall emergency management processes can be much more complex as mass fatality events exist at the intersection of competing jurisdictions and authorities. This paper will explore the emergency management issues and potential conflicts that can occur at a mass fatality incident.

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### **About C4SEM**

The Center for Security and Emergency Management (C4SEM) was established to enhance the capabilities of military security forces, law enforcement officers, emergency responders and local officials to prepare for, respond to, and recover from catastrophic events resulting from natural events, man-made accidents, or terrorist attacks. Since its inception, C4SEM has provided military, federal, state and local departments and agencies with high-quality, hands-on, scenario-driven training, exercises, technical assistance, and strategy development.

### **Mission:**

The Center's mission is to study the goals, tactics and strategies of terrorism and develop responses to:

- Educate, Train and Certify First Responders
- Advance Emergency Response Strategies
- Advance Counter Terrorism Strategies
- Develop Risk Assessment and Management Standards
- Identify Terrorists Communications and Operations Capabilities
- Identify Indicators Pertaining to Terrorist Actions
- Develop Security and Emergency Management Strategies

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