

“UCF 2001”: A JOINT MILITARY-CIVILIAN WMD EXERCISE¹

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Abstract

The very real threat of a weapons of mass destruction (WMD) attack in the US has heightened public awareness and has led to the demand for better emergency response that includes well-trained crisis teams who can respond to this type of large-scale emergency. The result has been a growing need to train emergency responder teams not only to perform their individual specialties, but also to coordinate and cooperate with multiple agencies to accomplish this training. Only a few joint military-civilian WMD field exercises have been conducted to test military-civilian coordination. This paper describes an exercise held on the University of Central Florida campus on February 10, 2001. Events were extensively recorded and analyzed. There were about 100 participants in addition to umpires/ controllers and observers: about half the participants were military personnel, including the entire 4th WMD Civil Support Team from Georgia and elements of the Florida and Louisiana teams; the other participants were personnel from local public safety agencies, principally the Orange County Fire Rescue Department (OCFRD). In addition to describing the exercise, we summarize after-action reviews conducted by the 4th WMD Civil Support Team and OCFRD and document lessons learned. This exercise proved both difficult for participants and extremely valuable in terms of improving the training value of future similar exercises.

¹ Opinions expressed in this paper are those of the authors and do not necessarily reflect policy of the US government.

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Introduction and Background

Heightened Awareness WMD Threat

The threat of additional weapons of mass destruction (WMD) attacks, following the September 11 2002 (9/11) attack in the US, has resulted in the need for well-managed crisis teams who can respond effectively. The result has been a growing need to train emergency responder teams to coordinate and cooperate with multiple agencies. The federal government (Department of Justice) has responded with a series of grants to local public safety agencies, including several grants to the Orange County Fire Rescue Department (OCFRD). Also, WMD Civil Support Teams (special National Guard units whose function is to aid local responders to WMD incidents) have been set up across the country. Only a few joint military-civilian WMD field exercises have been conducted to test military-civilian coordination; they are being held more regularly since the 9/11 but their full training value is not being realized. This paper describes one of the most realistic joint field exercise yet conducted.

The scope of emergency response services have expanded so rapidly since 9/11 that public safety agencies have been hard-pressed to handle their increased workloads. Greater demands, in the face of financial and manpower reductions, require more creative and cost-effective use of available training resources (Crissey, et al., 2001). Emergency situations encountered by military, law enforcement, fire-rescue, and other emergency management agencies and groups require significant tactical decision making skills to achieve effective and efficient resolutions to incidents. Improper or slow decision making can significantly increase loss of life, loss of property and damage to the environment. While many techniques are available to train physical skills, there are few effective training techniques and tools to teach critical decision making skills.

There is an urgent need for training of personnel from different agencies, with different professions and standard operating procedures, to understand each other's methods and procedures in order to coordinate rescue activities most efficiently. Training people for critical and dangerous incidents requires realism in the training situation without putting the participants at risk. It is also important that the participating trainees effectively learn from their performance during training to enhance their readiness and capabilities in real situations (Kincaid, 1992). The understanding by all participants of the overall task force goal and the importance of cooperation among different agencies and between sub-units motivates trainees and enhances learning effectiveness.

Simulation Tools to Support Field Exercises

Several simulation tools have been developed to support large scale field exercises. Among the most successful of these is the MIND system developed by the Swedish military (Jenvald, 2000, Crissey, et al., 2001).

UCF 2001: The WMD Exercise

On February 10, 2001, a large field exercise was held on the campus of the University of Central Florida campus involving both military and civilian responders.

Scenario Overview

The scenario was a fairly elaborate WMD incident involving both chemical and biological agents (a nerve gas and anthrax), which originated in a university chemistry lab. Response to events was mostly not pre-determined and appeared to unfold in a natural way from the viewpoint of the participants. For example, the first three fire-rescue responders were unaware that they were entering a space with deadly nerve gas, and were wearing only standard firefighting protective clothing and breathing apparatus; since some amount of skin was exposed, they "died" due to exposure to the nerve gas. Later responders were protected by "Level A" suits which provide

much greater protection. Actual precursor components of an organo-phosphate nerve gas (contained in separate containers and in low concentrations) were retrieved by military specialists and chemically analyzed to produce a realistic positive chemical analysis. Smoke generators visually depicted the “toxic agents” being carried downwind.

Participants

There were about 100 participants in addition to umpires/controllers and observers: about half the participants were military personnel, including the entire 4th WMD Civil Support Team from Georgia and elements of the Florida and Louisiana teams; the other participants were personnel from local public safety agencies, principally the Orange County Fire Rescue Department (OCFRD) as well as a few members of the UCF Police Department and other UCF safety officers. The incident commander was from the OCFRD.

Training Objectives

General Exercise Objectives

Training objectives of a general nature (for responding to known or unknown potential chemical threats and/or biological threats) included the following:

- Remove people from harm’s way.
- Assess situation.
- Be cognizant of secondary devices.
- Secure the perimeter, set up operation areas, and establish hazard control zones (i.e., hot, warm and cold zone).
- Rescue, consider decontamination, triage, treat and transport victims.
- Control and identify agents involved.
- Stabilize incident.
- Avoid additional contamination.
- Secure evidence and treat as a crime scene.

Individual Agency Objectives

4TH WMD Civil Support Team

- Establish and maintain a civil-military operations center and perform all liaison tasks (integrate into existing Incident Command System)
- Conduct Chemical/Biological Survey Operations (hot zone surveillance, sample collection and packaging)
- Conduct medical operations (medical surveillance, emergency medical care, medical advise regarding suspected agents)
- Provide for hazard determination (modeling)
- Conduct decontamination operations.
- Conduct communications operations.
- Collect samples and provide agent identification through analysis of samples employing MALS operations.

Orange County Fire Rescue Department

- Incident Command system will be established with prompt identification of the Incident Commander and placement of a Command Post.
- Communications will remain effective throughout all operations from initial response to stabilization of incident.
- Special Services Unit will respond to event and attempt to isolate, contain, and stabilize incident under direction of the Incident Commander.

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- Medical screening, decontamination set up and dress out with proper protective gear will occur within 32 minutes of arrival on scene.

University of Central Florida

- 911 protocol will be followed according to UCF's Emergency Management Plan 2000.
- UCF Campus Police will respond to event using appropriate caution.

Special Equipment

The exercise was supported by an elaborate array of special equipment and teams from both the military and civilian participants including: two sets of decontamination equipment; the OCFRD Hazmat (hazardous material) team and their specialized equipment; communications vans, including a military van with satellite up-link capability; a military vehicle with chemical and biological analysis equipment with a specially trained operator; and a medical aid unit staffed by paramedics and equipped with a sophisticated medical simulator.

Events of the Exercise

Major events of the exercise, which lasted about 2 ½ hours included:

1. Briefings to Civil Support Teams and local participating groups (Orange County Fire Rescue Department, UCF Police Department and other UCF units).
2. Release of toxic agent in university chemistry lab killing terrorist and several other in lab and injuring two bystanders just outside of lab.
3. 911 call by injured person.
4. UCF Police Lieutenant investigates but does not enter building because of noxious fumes.
5. OCFRD Battalion Chief arrives and assumes role of incident commander.
6. First team of responders from Station 65, OCFRD, enter lab in regular fire fighting gear and are declared "dead."
7. OCFRD sets up decontamination and communication equipment.
8. CST Team arrives with full equipment.
9. Search team recovers chemicals in lab for analysis.
10. Search team fails to identify presence of "anthrax" powder in lab's ventilation system.
11. One "victim" is treated but one is not.
12. Second (redundant) decontamination system set up by 4th WMD CST.
13. CST team takes samples of possible contamination in down wind area (marked by smoke generator).
14. Exercise concludes and After Action Reviews held.

Events of the three hour exercise were extensively recorded and analyzed. Sources of data included: video recorded by a professional team; approximately 400 digital still photographs; recordings of all voice traffic routed through the Orange County dispatch center; a series of hand-written event logs; and a series of reports of after-action reviews conducted by the 4th WMD Civil Support Team and OCFRD.

Figure 1: Terrorist's Letter Left at Crime Scene in Lab

TO WHOMSOEVER IT MAY CONCERN

Last week, I got a letter from the head of the department stating that I have to quit this job. Today, I'll not only kill myself but also my fellow students and I want this department to feel the tremors for the following years to come. This chemical is just a sample. In about 24-48 hours from now students and faculty members, in and around this building shall fall ill.

Figure 2: Orange County firefighter briefs 4th WMD CST team members.



Figure 3: WMD military specialists on the scene in the lab taking chemical samples



Figure 4: Decontamination



Results

This was one of the largest, most complex joint military-civilian WMD field exercises ever held and the results can be summed up as "mixed." The exercise produced a wealth of lessons learned, and many components of the response were well done. At the same time the exercise highlighted weaknesses in both standard operating procedures of the agencies involved and numerous issues related to interagency cooperation and communication.

Figure 5: "Victim" being treated using Human Patient Simulator at University Fire Station Simulation Lab



Table 1: Ratings of Exercise by 4th WMD CST in After Action Review

Were the Following Adequately Used/Addressed?	Yes	No	No Answer
Plans, Operating Guidelines, Resources	6	7	3
Exercise Objectives	9	3	4
Communication Systems	9	2	5
Intra- and Inter-Agency Information Exchange	3	8	5

Lessons Learned and Exercise Benefits

Comments offered during the after action reviews included the following.

Overall comments

- Lots to learn from this one.
- This was a very ambitious drill. The 4th proved to be a tremendous asset. Most objectives were addressed even if some were almost simulated.
- The shortfalls discovered during today's exercise can help you to focus on particular areas where objectives may not have been made.

Interagency Coordination

- Maybe there can be a standard developed between agencies. More pre-planning necessary, especially role definition, task assignments for team members.
- With the various different departments working together, it seemed to drag on but there was good interaction and most seemed to be learning from the exercise.
- Decon was redundant.

Communication

- More thorough commo, commo, commo!
- CST's need to ensure flow of information is complete from beginning to end.
- Very little information flow between agencies.

Scenario

- This scenario would tax most communities.
- The scenario provided an outstanding opportunity.
- Scenarios were very realistic and well developed.

Time Schedule

- Due to compressed time schedule, the following items were neglected: briefing, downwind hazard, safety briefing, and medical briefing.
- Exercise would have been excellent if time had not been so compressed.
- Time was too compressed, procedures were rushed. Would have gone much better with more time.

Conclusions

This exercises proved both difficult for participants and extremely valuable in terms of lessons learned. We are developing a multimedia depiction of important events in the exercise (which is

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the start of a courseware training module) as well as a summary of lessons learned and the impact of the exercise in organizing for future exercises and response to actual WMD events.

The area most in need of further attention is inter-agency collaboration and particularly communication. It is clear that more exercises involving civilian and military units are needed and that participants need to be better prepared to benefit from these expensive exercises. This means more training in preparation for the exercises and improved use of the information gathered during the exercises. The courseware package we are preparing should prove to be useful in this regard.

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Author Biography

J. Peter Kincaid is a Professor and director of the Modeling and Simulation Ph.D. program at the University of Central Florida. Much of his research and publishing for the past seven years has dealt with simulation and training techniques for disaster response. He holds a Ph.D. from Ohio State University in human factors. Major Patti Pettis is Chief Medical Officer of the 4th Weapons of Mass Destruction Civil Support Team located in Georgia. Chief Joseph Donovan is in charge of training activities for the Orange County (Florida) Fire Rescue Department (OCFRD) and is former Director of the National Fire Academy. Renea Moser is an environmental safety officer with the University of Central Florida. Lieutenant Michael Bass is a member of the OCFRD training department.