

The Chemical Corps and Domestic Decontamination Operations

By Captain Wendy Martin

In a speech to the Defense Science Board, Secretary of Defense William S. Cohen said, "As the new millennium approaches, the United States faces a heightened prospect that regional aggressors, third-rate armies, terrorist cells, and even religious cults will wield disproportionate power by using—even threatening to use—nuclear, biological, or chemical (NBC) weapons against our troops in the field and our people at home."¹ The likelihood of a terrorist using a weapon of mass destruction (WMD)—specifically chemical, biological, or nuclear—in the United States is growing.

With the possibility of an imminent attack, the United States must prepare to manage the consequences of such an event, and we—Chemical Corps soldiers, experts in the NBC-warfare arena—must be prepared to assist with the consequence management. This article discusses the WMD threat, current response teams, agent-detection methods, decontamination procedures, personal experiences with domestic preparedness for WMD attacks, and the effects of domestic-response missions on chemical units.

The 1995 nerve-agent subway attack in Tokyo set a precedent for future attacks. Experts on terrorist activities (Emergency Response and Research Institute) claim that an attack on the United States is imminent, and the Senate Subcommittee says, "It is not a matter of IF, but rather WHEN, such an event will occur."² A WMD attack has occurred on American soil; however, the power of the explosion set off in the World Trade Center in 1993 vaporized the cyanide that was packed in the explosive device, thus preventing the spread of a poison gas. The Federal Bureau of Investigation is currently tracking several groups that it suspects will use some type of WMD in the future.³ Chemical units have already been called on to support large events (such as the Atlanta Olympics and the National Boy Scout Jamboree) in the occurrence of a WMD terrorist attack.

The Threat

The NBC threat to the civilian population is much different than the battlefield threat facing today's military. There are five basic types of WMD: nuclear devices, radiological-dispersion devices (RDDs), biological agents, industrial agents, and chemical agents. Agents, quantity, delivery systems, motives, and targets are all different from military uses of NBC warfare.

Nuclear devices pose the least threat to the civilian community because of the high cost, technology, and availability of materials. On the other hand, RDDs have a higher probability of use by a terrorist as a WMD.

RDDs have a greater possibility of use in a WMD attack than nuclear devices. An RDD is defined as "any device, including weapon or equipment, other than a nuclear explosive device, specifically designed to employ radioactive material by disseminating it to cause destruction, damage, or injury by means of the radiation produced by the decay of such material."⁴ Although political consequences of an RDD attack outweigh the physical threat, we must still consider RDDs as potential vehicles for WMD attacks.

Biological agents are also a possibility for use in a WMD. These agents are not always stable and require more effort to weaponize, but the materials are inexpensive

... it is unacceptable to have innocent civilians die at the hands of a terrorist during peace. Civilian victims of a WMD terrorist attack will be in a state of panic—they will be unprotected and may try to flee the scene.

and accessible. Longer incubation times of biological agents cause the symptoms to be delayed where “a spread of deadly pathogens could take place without any immediate recognition on the part of the emergency or medical community,” thus creating several crises at many medical facilities that last days to weeks.⁵

The supply of *chemical agents* available to terrorists is endless. Many terrorists are college-educated extremists, and the Internet offers videos, books, and supplies for building chemical weapons. Industrial chemicals are also readily available.⁶ The vast types of agents are a greater risk to civilians than the battlefield threat agents; however, the amount of agent likely to be used is much less—“a quantity that easily can be produced and carried to a dispersal site by one man.”⁷ It will be very difficult for terrorists to produce hundreds of casualties.

Military versus Civilian

Chemical soldiers train to decontaminate fellow soldiers who have been contaminated by some military means. FM 3-5, *NBC Decontamination*, carefully outlines the decontamination procedures that all soldiers are trained on. These soldiers—victims of the attack—are protected with suits and masks and trained how to respond to WMD attack. The military takes risks by sending soldiers to war, but leaders accept that some soldiers will die in war. Trained and equipped soldiers are less likely to panic than the untrained, unprotected individual.

Conversely, it is unacceptable to have innocent civilians die at the hands of a terrorist during peace. Civilian victims of a WMD terrorist attack will be in a state of panic—they will be unprotected and may try to flee the scene. Psychological effects of a chemical attack will cause many to seek care in hospitals if they are not consolidated and controlled, thus spreading the contamination. There may be a few people in the attack area, or there may be hundreds; however, most will require some type of treatment. More WMD casualties are likely on a downtown street or in a football stadium than on a battlefield. Many of those casualties will be emergency-response teams, because of their limited protection and detection methods, thus reducing the number of emergency responders to assist with the consequence management.

Response Teams

The Army's Technical Escort Unit, consisting of chemical and biological response teams specializing in

technical expertise, serves as the cornerstone for other response forces.⁸ The Marine Corps has the nation's only Chemical-Biological Incident Response Force (CBIRF). CBIRF is the vision of Marine Corps Commandant, General Charles C. Krulak, in response to the 1995 Tokyo sarin-gas subway attack; its mission is to “turn contaminated victims into treatable patients.”⁹ CBIRF consists of marines trained to assist with WMD consequence management through reconnaissance, detection, decontamination, medical, security, and service-support elements.

In October 1999, the federal government announced the locations of ten National Guard rapid-assessment and initial-detection teams for consequence management under the direction of the Federal Emergency Management Agency. This is part of the Domestic Preparedness program to train first responders under the Department of Transportation, established by Congress and the Department of Defense, to assist local, state, and federal emergency-response teams.

The teams focus on enhancing the ability to respond to WMD terrorist attacks.¹⁰ Team members will be trained and provided the equipment necessary to respond to WMD attacks. Upon request from the local government, the teams will deploy to assist the emergency responders.

The government is preparing for WMD attacks by developing these specialized teams and creating training centers for emergency responders. These teams, although trained and equipped, will have limitations; thus, the Chemical Corps must be prepared to respond.

Agent Detection

Military units have equipment to detect various types of military chemical agents. Nerve agents can be detected with the M8A1 alarm, the chemical-agent monitor, and other means. The Chemical Corps weakness is trying to detect the industrial agents that are more likely to be used by a terrorist than a national enemy.

Most emergency responders have few resources to detect the presence of a chemical agent. They rely on symptoms; placards; and some detector papers, tubes, and instruments for detection and identification of hazardous materials. The inability to detect and identify chemical agents quickly increases the numbers of casualties and the number of emergency responders who also become casualties.¹¹

Decontamination Procedures

FM 3-5 addresses the steps for decontamination of troops and their equipment. Are these decontamination methods adequate for decontamination of hundreds of unprotected civilians? For military decontamination operations, the decontaminants are stored on the battlefield, water is available either naturally or in tankers, extra mission-oriented protective-posture gear is stored in logistics bases, military hospitals maintain nerve-agent antidote kits, command and control and radio frequencies are established, and the chemical company or platoon is already on the battlefield.¹²

In a terrorist attack, these necessary supplies are not prestocked for emergencies. Communities are just beginning to accept the probability of a chemical attack.¹³ State and local emergency-response teams have minimal amounts of protective equipment available and few trained workers. Also, a nerve-agent antidote is not a normal hospital treatment; thus, it is not kept on hand at most hospitals.¹⁴

Chemical units must consider these limitations when called for on large-scale, civilian-decontamination operations. Civilians are not trained in military decontamination procedures; they will panic and may look to federal responders (such as police, firemen, and soldiers) for guidance and care.

On the battlefield, chemical soldiers prepare to decontaminate platoons, companies, and occasionally a brigade support area or larger element. The process is time and resource-intensive. In a domestic decontamination operation involving hundreds of people, the chemical platoon will not have the resources necessary to establish a complex decontamination line. We must consider the effectiveness of simply collecting personal belongings, spraying a water-bleach mixture on the victims as they walk a designated path or decontamination line, and checking for remaining contamination.

As the platoon leader of the dual-purpose platoon that provided support to the National Boy Scout Jamboree in August 1997, the chemical platoon learned a unique method for crowd decontamination. The stations consisted of the personal-item collection point, an intensive water and bleach or detergent spray down, a rinse station, and a chemical-agent-monitoring station (see figure).

The first step was command and control. Someone had to take control of the situation and direct contaminated personnel to the decontamination site. After control was established, the decontamination could proceed. The platoon leaders met with the local police and other emergency responders and determined that the local authorities would establish overall control of the situation and secure the area. To assist with command and control, we used hand-held radios provided by the local police department to maintain communication with the emergency responders.

Our first operational concern was the water source. Fire hydrants lined every street; however, the chemical platoon hoses did not fit fire hydrants. The unit had two options—purchase special attachments or let the city provide them. We borrowed attachments from the fire department, and we purchased a large quantity of household bleach from a bulk supplier to solve the water and decontaminant logistical problem.

We decided to operate one gender-irrelevant decontamination line; however, we were prepared to construct two gender-specific lines. The gender-specific configuration consisted of two columns of PVC pipe frames lined with dark, plastic shower curtains. Before the event, we coordinated with a military hospital for several hundred disposable hospital gowns and foam shoes, which we planned to issue at the final monitoring station. We tried to minimize the environmental damage caused by runoff by purchasing plastic wading pools for casualties to stand in while we sprayed them with the decontaminant. The wastewater would be dealt with in the site cleanup phase of the operation.

After developing a method to quickly accomplish the mission, we developed a method to decontaminate litter patients. Litter patients require special treatment. They must be triaged; they may require immediate first aid, such as administration of an antidote; and they require soldiers or other emergency personnel to carry them through the decontamination line.

Through the Army supply system, we ordered several sets of litter stands and placed them inside the wading pools. The source of the nonabsorbent litters was a problem. We borrowed some litters from various medical units; however, this was the most difficult item to obtain. Medics from our home station taught all soldiers proper movement and handling of casualties to eliminate further injuries. Instead of spraying these casualties, soldiers used a 0.5 percent solution of bleach and water and decontaminated the casualties with sponges. The end of the decontamination was marked as an ambulance collection point, where uncontaminated casualties were transferred to local authorities for medical attention.

This lengthy process requires nearly all the soldiers from the platoon. Consequently, it is important for the platoon leaders to monitor the soldiers' physical status and implement an alternating shift. The chemical soldiers cannot successfully accomplish the mission if they become casualties.

After all the casualties are decontaminated, the chemical platoon's job is still not complete. Even though the emergency responders know the decontamination techniques, they also must be decontaminated. After the civilians are decontaminated, and the initial shock of the crisis has subsided, it may be necessary to establish a standard detailed troop-decontamination line to accommodate the protected emergency workers. Chemical soldiers must be

trained to deal with civilians and must be prepared to decontaminate the emergency-response teams.¹⁵

Chemical Platoon Readiness

Emergency-response agencies—local, state, and federal, to include military troops—must work together to form an integrated response force to assist with consequence management of WMD attacks. Chemical leaders must not forget their primary mission—to prepare for combat. They always must consider the effects of concentrating on domestic preparedness versus preparing troops for combat. Leaders must balance training schedules appropriately.

Conclusion

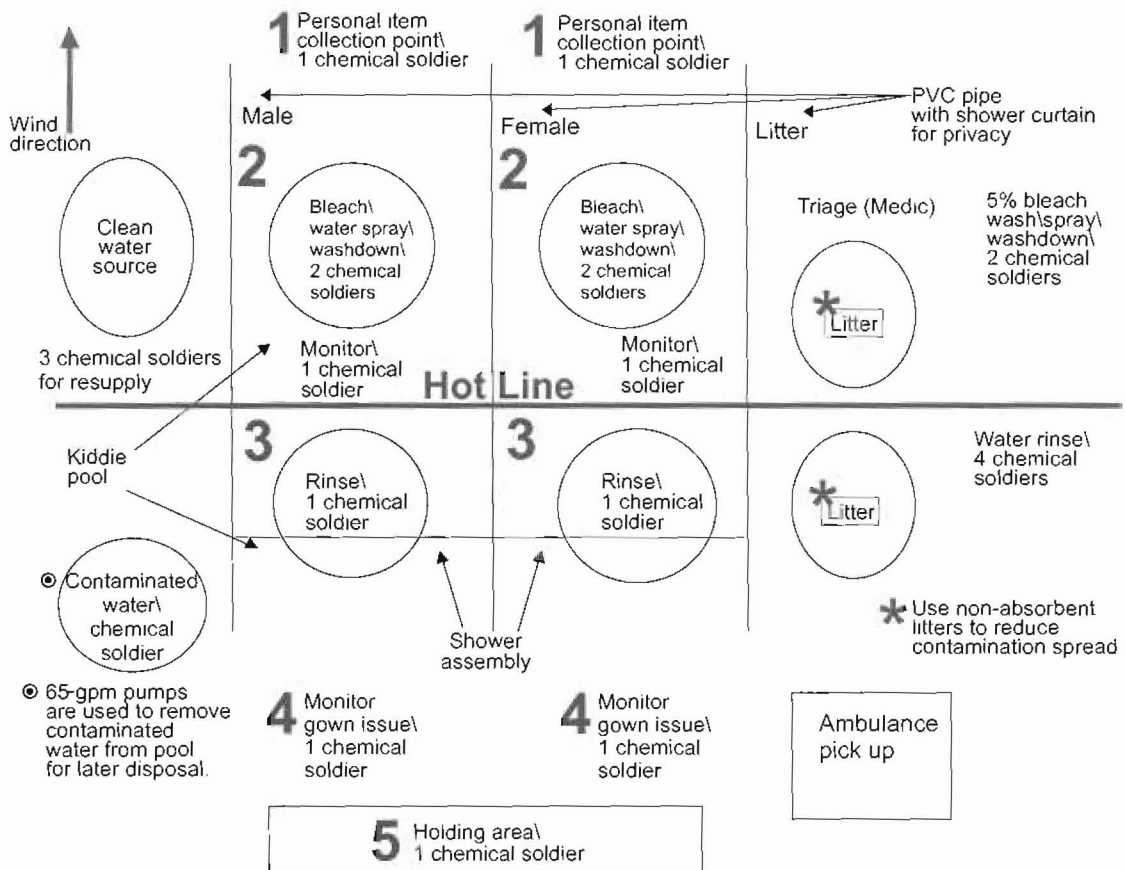
A WMD attack on the civilian population may, in some ways, be similar to a chemical attack on a battlefield. Many of the responses and treatments are similar; however, chemical units must look at this problem from a new

perspective—an urban environment and contaminated civilians. We must prepare for this new mission without sacrificing current mission readiness, training, and deployability. State and local governments are looking to members of the Army's Chemical Corps for training, guidance, and assistance with this consequence management of this relatively new threat to the American people.

Captain Wendy Martin is currently the Chemical Instructor at the Infantry School, Fort Benning, Georgia. Prior to this assignment, she attended the Chemical Officer Advanced Course at Fort McClellan, Alabama. She is a 1994 West Point graduate. Her previous assignments include Battalion Chemical Officer, 3-229 Aviation (Attack), Platoon Leader, 101st Chemical Company, and Chemical Staff Officer, 82d Airborne Division, Fort Bragg, North Carolina. Her platoon provided decontamination support for the National Boy Scout Jamboree, Fort A.P. Hill, Virginia, in August 1997.

Boy Scout Jamboree Decontamination Program

Casualties enter at Station 1 and exit at Station 5. Each station is labeled by action and number of chemical soldiers required. The platoon leader monitors the hot side, and the platoon sergeant monitors the clean side.



Endnotes

¹ James L. Ford, "Assessing the Transnational Threat," Strategic Forum of the National Defense University Institute for National Strategic Studies, p.1. http://www.massdecon.com/news_current.htm.

² Clark Staten, "Emergency Response to Chemical/Biological Terrorist Incidents," Emergency Response and Research Institute, Chicago, Illinois, August 7, 1997, p.1. <http://www.emergency.com/cbwlesn1.html>.

³ Chris Seiple, "Consequence Management: Domestic Response to Weapons of Mass Destruction," *Parameters. US Army War College Quarterly*, Carlisle, Pennsylvania, Autumn, 1997, p.1.

⁴ Ford, p.1.

⁵ Staten, "Emergency Response...", p.7.

⁶ David E. Kaplan, "Terrorism's Next Wave: Nerve Gas and Germs are the New Weapons of Choice," *U.S. News and World Report*, November 17, 1997, p.2. <http://www.usnews.com/usnews/issue/971117/17weap.htm>.

⁷ Gary Eifried, "Chemical and Biological Terrorism: Not Just Another Battlefield, 6th International Symposium on Protection Against Chemical and Biological Warfare Agents," Stockholm, Sweden, May 10, 1998, p.2. <http://www.eaicorp.com/pnbs/stockholmpaper.html>.

⁸ Soldiers Biological Chemical Command, "Domestic Preparedness Fact Sheets Program Overview" Aberdeen Proving Ground and Edgewood Arsenal, Maryland, p.2. http://www.sbccom.apgea.army.mil/ops/dp/dp_overview.html.

⁹ Seiple, p.4.

¹⁰ Office of the Assistant Secretary of Defense (Public Affairs), "Weapons of Mass Destruction Response Team Locations Announced," News Release Number 512-98, Washington, D.C., October 1, 1998, p.1.

<http://www.cbiac.apgea.army.mil/WMDNR.htm>.

¹¹ Eifried, p.5.

¹² Headquarters, Department of the Army, "Field Manual 3-5: NBC Decontamination," Department of the Army, Washington, D.C., November 17, 1993, pp. 1-5.

¹³ Clark Staten, "Chemical Attack—Are We Prepared?" EmergencyNet News Service and Emergency Response and Research Institute, Chicago, Illinois, 1995. p.1. <http://www.emergency.com/chemattk.htm>.

¹⁴ Ibid.

¹⁵ Eifried, p.4.

Other Sources

Department of Defense Report to Congress, "Volume I. Domestic Preparedness Program in the Defense Against Weapons of Mass Destruction," Washington, D.C., June 16, 1998. <http://www.defenselink.mil/pubs/domestic/toc.html>.

ICA Division, OPCW. "Protection Against Chemical Weapons: An Introduction." *A FOA Briefing Book on Chemical Weapons*, April 29, 1997. <http://www.opcw.nl/chemhaz/protect.htm>.

Steve Macko, "Senate Hearings Say Local Fire and Emergency Services Not Prepared...", EmergencyNet News Service, Vol.2-090, March 30, 1996.

<http://www.emergency.com/chembio2.htm>.

Congratulations!

The 4th Chemical Company, 2d Infantry Division, Camp Casey, Korea, had three Audie Murphy inductees. The three Silent Death Warfighters NCOs inducted were—

SSG Ryszard Sahli

SSG Roberto La Fontant

SSG Patrick Jolivette

SGT Mahogany Brown of the 4th Chemical Company won the Brigade NCO of the Quarter and was the division's runnerup.

The Noncommissioned Officer Academy at the Maneuver Support Center, Fort Leonard Wood, Missouri, had an Audie Murphy inductee—SFC Miguel Flores-Acevedo.