

# The Warrior Scientist: Preparing Today for Victory on Tomorrow's Battlefield

*By Mr. Gene Weinreis*

The chemical personnel—the new chemical, biological, radiological, and nuclear (CBRN) Warrior Scientists—of today are influenced by the Chemical warriors of the past. These Chemical Soldiers, Airmen, Marines, Sailors, and Department of Defense (DOD) civilians and contractors will step forward, as never before, to play a key role in defending our freedom. All will play a part as we fight the War on Terrorism (WOT) against very resourceful and dedicated enemies that use all means at their disposal to hurt the free world. They have attacked many times in the past and will continue to do so until they exhaust their resources or we stop their followers.

The threat changes daily. And Warrior Scientists are constantly changing to counter these threats on the modern battlefield. With the use of chlorine (and even the recent finding of nitric acid) on the battlefield, the free world is faced with new and changing situations. But the desired end result of our enemies remains constant: Kill people and cause destruction and chaos. With changing and emerging tactics, U.S. forces will come to the battlefield well prepared and trained to fight resourcefully. With the use of technology, we possess a fighting edge. But we must keep in mind that our enemies also know how to use technology. We must be prepared for the unexpected, know what to do in each situation, and defeat the enemy (preferably on their home front) before they strike.

Our Warrior Scientists are a self-contained, sustainable, lethal force organized with full-spectrum capabilities to combat a range of missions. The U.S. Army Chemical Corps Vision—“A Corps and Army capable now of countering the entire range of CBRN threats and effects to protect our Nation, operating seamlessly with military and civilian partners, while conducting simultaneous operations from civil support to war”—could not be more fitting. Each Chemical warrior is more adaptive, competent, confident, and technically and tactically proficient. We adapt quickly and may soon see the “E” for “high-yield explosives” added to CBRN because many agents are precursors to weapons of mass destruction

(WMD) or can be transitioned to include explosive properties.

The threat of toxic industrial chemicals (TICs) and toxic industrial material (TIM) on the battlefield or in the CBRN operational environment is a reality. All personnel must be aware of and be able to survive in a potential CBRNE environment. Commanders, as never before, must deal with this growing and menacing threat. Maneuver commanders must know information about areas suspected or confirmed to be contaminated. Some of these potential contaminated areas may include—

- Clandestine, illegal drug-manufacturing sites.
- Lakes with runoff from industrial complexes.
- Bodies of water or land suspected of sabotage.
- Debris from cargo aircraft, truck, car, or railroad accidents.
- Illegal toxic-waste sites found on battlefields.
- Large industrial spills found along avenues of commerce transportation.

TICs and TIM are everywhere. The automotive and cleaning aisles in department and grocery stores have changed forever because of the chemical properties in these products. The list of products includes—

- Antifreeze.
- Brake fluid.
- Chlorine bleach.
- Lawn chemicals.
- Kerosene.
- Old propane tanks.
- Paints.
- Pesticides.
- Prescription drugs.
- Solvents of all types.
- Spot removers.
- Toilet bowl, drain, and oven cleaners.

How many of these items are in your home—perhaps in your garage or under your kitchen or bathroom sink?

The improper use or mixing of common household cleaning products can cause serious injuries. For example, several years ago, a janitor at a grocery store showed how his hands were peeling large amounts of skin daily. He had not worn protective gloves while using an industrial-type cleaner on shelves and floors. The threat from these products is real! When comparing the hazards of TICs and TIM versus chemical-weapon agents, the threats are the same: ingestion, inhalation, and skin contact hazards.

Another area of great concern is the use of chemicals in illegal methamphetamine labs. Methamphetamine is very easy to make; the ingredients used are available in local stores in any neighborhood. The chemical products and substances used to make methamphetamine number in the hundreds, including combinations of volatile organic compounds, acids, bases, metals, salts, and solvents. In addition to the obvious risks associated with methamphetamine, mixing these chemicals can produce chemical fires, explosions, and toxic gases. There is a constant danger to the skin and respiratory tract of everyone who comes in contact with the materials in these clandestine labs. Today's Warrior Scientist dons personal protective equipment and safely enters these sites to conduct sampling, detection, and decontamination operations (to name just a few). Warrior Scientists must know the general characteristics of methamphetamine and the dangers associated with illegally manufacturing the substance. The correct handling and reporting of suspected lab locations and the use of sensitive-site assessment functions are critical to the missions.

In the WOT, the Army is faced with developing policy to establish shorter training periods for our troops. Analyses, planning, and preparations must center on the risks posed by many threats, including—

- Industrial manufacturing complexes (such as those that manufacture fertilizers, herbicides, insecticides, and petrochemicals).
- Nuclear facilities (laboratories, medical research, and power plants).
- Chemical and biological research laboratories.

Many of these facilities are situated near populated urban areas. The overall goal of the Warrior Scientist is to protect and defend the population in all communities. Warrior Scientists are responding to many of these emergencies as members of local first-responder units.

By remaining adaptable, Warrior Scientists are constantly using technology to their advantage. Defense tactics can be changed as quickly as the enemy develops

new tactics. The Internet makes that knowledge readily available, but the Warrior Scientist must be prepared to act immediately to save lives and end the threat. The Chemical Corps provides that joint, interdependent, and well-trained force in the contemporary operational environment of today!

One critical tactic that is developing into a finer art of preparedness in the United States is the emergency response to CBRN incidents. During any form of emergency response that involves a large land or water area, first responders must inform the public of the necessary safety responses. From the start, commanders at CBRN incidents must look at the full range of response possibilities. Proper evaluation by incident commanders and first responders determines the effectiveness of evacuation or in-place protection operations. These incidents could occur because of natural disasters (as we experienced in New Orleans during Hurricane Katrina) or terrorist attacks (such as the events of 11 September 2001). Potential attacks or natural disasters must be viewed from a global, strategic mantle to prepare for future operations; the safety of U.S. citizens rests on well-planned response operations in **all** situations. Incident commanders must isolate identified hazard areas and deny entry to personnel who are not part of emergency response operations. Unprotected personnel should not be allowed to enter the contaminated areas (hot zones). This restriction is vital to gain control over the areas of operation. The initial missions of the first responders require isolation in all directions of the contaminated areas, protection of the areas, and measurement of wind speeds and directions. The graphic on page 22 is just one possible solution for countering terrorist incidents or industrial accidents.

The First Lieutenant Terry CBRN WMD Responder Training Facility was dedicated at Fort Leonard Wood, Missouri, on 26 June 2007. This facility serves as a CBRN individual-response certification and training center for Chemical Soldiers, other service members, and DOD civilians. The facility parallels numerous capabilities found at the Combat Training Centers by using state-of-the-art classrooms, instantaneous feedback from video surveillance systems located in the decontamination bays, realistic urban training areas, a cave complex designed to simulate confined-space operations, and an emergency response area that includes an overturned tanker and railroad cars. The training at the Terry Facility simulates what hazardous material (HAZMAT) technicians, incident commanders, branch and local officers, safety officers, and other response specialists will face in future missions.

It is important that all training (officer and enlisted) at the U.S. Army Chemical School mirrors the contemporary

operational environment of the future. The CBRN training we provide our Soldiers today will affect the future of our Nation. A good example is the Chemical Captain's Career Course, where not only chemical and biological defense is stressed but also nuclear, radiological, and HAZMAT defense. The rules and regulations associated with incident response information are vital to the incident commander. He must know how to address each incident.

All career management field (CMF) 74 personnel are now CBRN Soldiers. CMF training prepares personnel to face CBRN hazards in the contemporary operational environment of tomorrow. Currently, all upper-level courses at the Chemical School end in some form of practical exercise (such as field training exercises or command post exercises). Many of these exercises open the eyes of the participants, in many ways, for years to come by presenting Soldiers with a what-if scenario—a glimpse into possible future threats. More direct multibranch, multiechelon, joint-service training scenarios are in the works to fight the WOT. In fact, a multinational scenario is not out of the question but, rather, may become a part of the solution. Time will tell if these multilevel exercises will extend from the military to local and state civilian organizations.

Former President Calvin Coolidge stated that “The meaning of America is not to be found in a life without



**First Lieutenant Terry CBRN WMD Responder Training Facility**

toil. Freedom is not without a great price; it is maintained by unrelenting effort.”<sup>2</sup> Freedom has never been free! The Chemical Corps’ motto—*Elementis Regamus Proelium*—means “We Rule the Battle by Means of the Elements.” This is a fitting definition of the Warrior Scientist—the mission yesterday, the mission today, and the mission in the future! The Chemical Corps’ motto is a testament to the character, determination, drive, heart, and will of the Warrior Scientist! 🇺🇸

**Endnotes:**

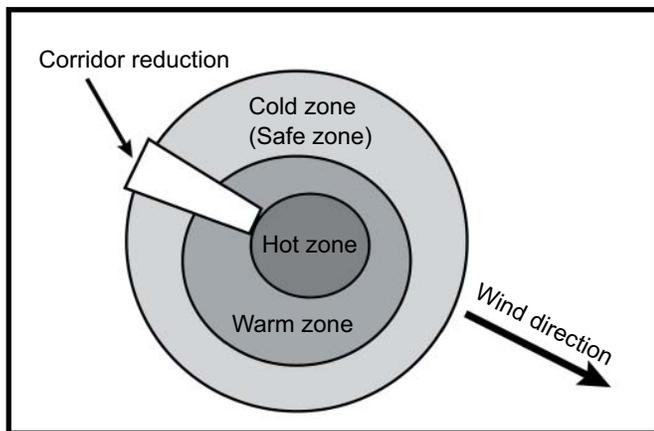
- <sup>1</sup>When a TIC or TIM incident is suspected, the minimum safety requirements must be established by the incident commander.
- <sup>2</sup> President Calvin Coolidge, 22 February 1922.

**References:**

- Army Training and Evaluation Program (ARTEP) 3-219-D60-MTP, *CBRN Reconnaissance Platoon (With Digital)*, 11 April 2006.
- FM 3-11.19, *Multiservice Tactics, Techniques, and Procedures for Nuclear, Biological, and Chemical Reconnaissance*, 30 July 2004.
- FM 3-11.86, *Multiservice Tactics, Techniques, and Procedures for Biological Surveillance*, 4 October 2004.

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**Countering terrorist incidents or industrial accidents<sup>1</sup>**



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