2nd Place

Facing the Future

—staying chemical trained and ready

By MAJ Robert C. Neumann

During the past four years, the US Army and the Chemical Corps have experienced profound changes. These changes are not the last ones that the Corps will see as the 20th century ends and the 21st century begins. The Chemical Corps must meet new challenges and adapt. Failure to adapt will signal the demise of the Corps and the relegation of NBC defense as just another part of force protection.

One of the primary threats facing the Corps is the non-threat. Many believe the threat of NBC warfare disappeared with the collapse of the Soviet Union and Warsaw Pact. Additionally, the myriad of treaties in force or soon to be in force will ensure these weapons will never be used again. But treaties will not deter the most determined nations from violating them. History is replete with examples of this. NBC weapons technology is more wide-spread today than at the height of the Cold War.

Throughout this paper I will refer to chemical in the sense of the Chemical Corps, not as a part of nuclear, biological, and *chemical*. The chemical mission area covers NBC defense, smoke, flame, and non-lethal operations.[1]

Today's Challenges

It's clear that today we are faced by a number of dangers as the 21st century approaches. The spread of NBC weaponry continues to grow. While many of these dangers are similar to ones we have faced in the past, many are new. MG Robert D. Orton, former Chief of the Chemical Corps, identified four challenges the Chemical Corps faces today during a speech at the 13th Worldwide Chemical Conference. They are:

- Staying trained and ready for any contingency.
- Battlefield asymmetry.
- Complex non-military hazards.
- Proliferation of sophisticated target acquisition and sighting systems.

Staying Trained and Ready For Any Contingency

A number of counter-proliferation efforts are reducing the number and size of NBC weapons stockpiles. These efforts include the Chemical Weapons Convention, Nuclear Non-Proliferation Treaty, Biological Weapons Convention of 1972, and others. It is a given that rogue nations will continue to develop these weapons in spite of counter-proliferation efforts. To avoid detection and world condemnation, these efforts will be well hidden. Additionally, the size of the stockpiles will be much smaller. A number of delivery options will be available to employ NBC weapons. More advanced nations will have theater ballistic missiles with ranges of 1,000 km, and less advanced nations will use rented trucks and small agricultural sprayers. Commanders, regardless of the contingency, must be prepared to face the threat or actual use of NBC weapons. Use against an early entry force could determine the outcome of the operation.

Battlefield Asymmetry

The United States will no longer respond to a chemical attack with an attack in kind. In the past, the ability to retaliate in kind with chemical weapons provided the first line of deterrence. A strong NBC defense capability, the ability to operate under NBC conditions, was our second line of deterrence. In simple words, "if you attack us with chemical weapons, we will then use them against you. Oh, and by the way. It won't bother us because we have the ability to operate under those conditions." We will no longer

retaliate in kind with chemical weapons and have totally renounced the use of biological weapons. Protection —NBC defense—is critical to our ability to deter the use of these weapons. We cannot assume that treaties alone will eliminate these weapons from future conflicts. "Today we must protect the force, absorb the attack, and drive on accepting the degradation that the attack has caused."[2]

Complex Non-Military Hazards

Technology hazards exist in all areas where the US Army could deploy. From south Florida in support of relief efforts after Hurricane Hugo to peacekeeping measures in Bosnia, the future battlefields and areas of operations are dotted with nuclear facilities, chemical production facilities, high technology industries, and numerous hazardous materials. British peacekeepers in Bosnia recently found themselves at risk from an abandoned chemical manufacturing plant. Fumes from leaking nitric acid, formaldehyde, and other hazardous materials were drifting into their position. Believing there was no NBC warfare threat, the unit had left their "NBC kit" behind, to include their respirators. The unit was not prepared for this situation. They lacked the proper protective equipment and the knowledge on how to deal with the situation. We must protect the force against all hazards (NBC-related weapons and technology). To achieve this goal, we must provide better avoidance, protection, and decontamination tools for our soldiers.

Proliferation of Sophisticated Target Acquisition and Sighting Systems

During *Operation Desert Storm*, Abrams tanks engaged Iraqi tanks at distances of 3,000 meters with one round hit accuracy. The advanced fire control system of the Abrams provided us a technological advantage. However, high technology weapons are proliferating at an alarming rate worldwide. During *Operation Desert Storm* we clearly owned the night, but soon many potential enemies will also own the night. "This technology grows geometrically and is widely available throughout the world. The spread of these systems is uncontrollable."[3] The Chemical Corps plays an important role in protecting the force through the employment of smoke and obscurants. Current smoke systems defeat target acquisition and sighting systems in the visual spectrum. The newest generation of smoke generators, the XM56 and XM86, provide us with the capability to screen both the visual and infrared (IR) spectrums. In the near future millimeter wave obscurants will give us an even more expanded capability to defeat enemy reconnaissance, intelligence, surveillance, and target acquisition (RISTA) systems. Smoke is and will be a combat multiplier.

Tomorrow's Solutions

For each challenge, there exists a solution.

Chemical Trained and Ready

The future brings reduced budgets, smaller forces, and additional and varied missions. Commanders will face a myriad of challenges to maintain readiness. It is our responsibility to ensure chemical training is not put on the back burner. Chemical training is the foundation of being chemical trained and ready.

Chemical trained and ready covers all the chemical mission areas—

- NBC defense
- Smoke
- Flame
- Non-lethal operations

Chemical units as well as the chemical battle staffs must focus on readying their organizations for combat operations under NBC conditions and technological hazards. The Chemical Corps has been charged with a set of tough standards. We must prepare ourselves and the units we support to operate under these standards:

- No long-term health effects.
- No large numbers of immediate casualties.
- No uncontrolled environmental hazards.
- No environmental "trashers."[4]

Operations Desert Storm and *Restore Hope* have established that the American forces have a new center of gravity—casualties. It is clear that the American people will not accept high numbers of casualties from military operations. NBC weapons can generate a high number of casualties from a single attack, and that could signal the end of American operations.

Chemical situations must be an integral part of all training. No large-scale smoke operations were conducted during *Operation Desert Storm*. One reason for this was the fear on part of the commanders that their units had not trained under smoke conditions, and they could not predict how the units would operate under smoke if it was used. Fortunately smoke was not necessary to breach the Iraqi defensive positions. However, the National Guard units training at the National Training Center for deployment to Saudi Arabia found it impossible to breach the Iraqi style defensive position without smoke. At one point, two mechanized smoke platoons were placed in support of the task force executing the breach of the defensive position training lane.

We must understand how our operations, both in training and actual conflicts, affect the environment. Smoke training is becoming more difficult because of stricter environmental standards. We must learn how smoke affects the environment and discuss this with the local regulators. Not only is smoke training being restricted, but so is decontamination training and the use of chemical agent simulants. In all areas of chemical

training, we must understand how this training does or does not affect the environment. If we fail to determine whether our training does or does not affect the environment, our ability to train will be restricted and our readiness will suffer.

Overcoming Battlefield Asymmetry

The Chemical Weapons Convention (CWC) will restrict, but not eliminate NBC weapons availability. The CWC and existing treaties give us a real head start for eliminating most of the NBC weapon stockpiles throughout the world. We must recognize that some nations will never comply fully with any arms control treaty. In the past we primarily relied upon the ability to retaliate in kind, with force protection a secondary consideration. Today we must back the CWC with a strong force protection posture. We cannot afford to eliminate our protective posture because the CWC has eliminated the threat of chemical warfare. Chemical weapons exist today and will exist tomorrow. Chemical defensive training must be conducted today and into the 21st century as one of the keys to overcoming battlefield asymmetry created by the CWC.

Currently efforts are underway to build verification into the Biological Weapons Convention of 1972.[5] It is clear that the 1972 BW accord did not deter nations from developing an offensive biological weapons capability. As a result of the 1991 Gulf War, biological defense has become a priority program with the Department of Defense. This effort to increase the biological defensive posture of the US armed forces is clearly a catch-up effort because of years of neglect. The US blindly assumed that the 1972 BW accord had eliminated the threat and that biological defense was no longer needed.

We must understand that treaties will not eliminate the danger of NBC weapons. The threat will always be present, albeit in smaller quantities.

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For the present and the future, the only means of overcoming the battlefield asymmetry is through the maintenance of a strong defensive capability.

Dealing with Technological Non-Military Hazards

During combat operations and operations other than war, we will face complex hazards from commercial industries, lax environmental pollution controls, and other sources. We must be prepared to advise the units we support and deal with these hazards.

The situation in the former Republic of Yugoslavia brings this point home. Leaking chemicals from industrial complex, warring factions threatening to use commercial chemicals as weapons, and hazards from improper disposal of hazardous materials all threaten the safety of the troops deployed. Yugoslavia is not atypical.

US forces will face these hazards worldwide. Chemical troops, both units and battle staffs, must prepare to meet this challenge. There is much to learn in this area from the civilian hazardous materials (HAZMAT) teams that operate throughout the country. Additional training and equipment must be identified and procured. We must identify the soldiers who have received specialized training in dealing with non-military hazards with skill identifiers. Specific chemical units must be equipped with the specialized equipment to enter and operate in hazardous environments created by technological non-military hazards. Training must focus on identifying potential hazards, selecting the proper protective posture, and mitigating or eliminating hazardous situations.

Technology Hazards

These include a range of hazards emanating from the manufacture, transportation, and use of such substances as radioactive materials, chemicals, explosives, flammables, agricultural pesticides, herbicides, and disease agents; oil spills on land, coastal or inland water systems; debris from space.[6]

No matter where US troops are deployed, chemical specialists and protective equipment must also be deployed. It is our mission to protect the force against all NBC threats, military or non-military, released intentionally or by accident.

Countering Proliferation of Sophisticated Target Acquisition and Sighting Systems

The proliferation of sophisticated target acquisition and sighting systems will continue. Only draconian measures will slow their proliferation. We must counter their use by active and passive measures. Multispectral smokes and obscurants will provide us means to actively counter high technology weapons systems. Care must be taken that these active measures do not degrade or defeat our own weapons. "We must push smoke forward with better obscurants. Our future force cannot be bound by the limitations of fog oil."[7]

Leveraging of information age technology will allow us to see the battlefield as we have never seen it before. By keeping our knowledge of the battlefield high, we will passively

assist in the defeat of high technology weapons and sighting systems. As the Army develops new information age systems, the Chemical Corps must be a part of this development. IVIS—inter-vehicle information system—is not just a combat vehicle system, but should be an integral part of smoke and NBC reconnaissance platoons. IVIS allows the passing of information, vehicle locations, combat instructions between vehicles and echelons of command. The system displays friendly and enemy vehicle locations on a digital map. NBC reconnaissance vehicle crews could rapidly enter the locations of contamination into IVIS, allowing the entire combat force to see where the contamination lies in relation to their own vehicle. Smoke platoons could see where enemy and friendly vehicles are located and adjust their smoke screens accordingly. The challenge the Chemical Corps faces is to ensure we understand the value of these systems to our own mission areas.

Conclusion

The Army of today is different from the Army of the 1980's; and the Army of the 21st Century is being built today. It is clear that the Army will have an expanded role in domestic support and humanitarian operations throughout the world. Operations other than war will take a lion's share of the Army's resources. But, we must remain warfighting focused. It was clear that while the Army in Somalia was there to support humanitarian relief efforts, "gun-fighting" skills were needed and used.

The key to the future is a wider recognition of the Chemical Corps' value. We must believe in the value of our Corps and sell it at every opportunity. Our strength lies in our versatility. The Chemical Corps provides a vital service in protecting our forces whether through NBC defense, defeat of RISTA, or by the use of non-lethal systems. "We can respond to nuclear plant accidents, decon after flood, pump water, react to chemical spills, handle hazardous materials, and assist FEMA."[8] Chemical units can decontaminate, provide showers, clean vehicles for redeployment, provide limited fire fighting, and water transport. Chemical units and personnel have, are, and will deploy in support of our forces throughout the world.

It is clear that we must remain chemical trained and ready now and for the 21st century.

Notes

1. The term non-lethal is used here, however it may no longer be in vogue. Less than lethal, temporarily disabling, and others have been used to refer to these type of weapons and systems.
2. MG Orton, *CML, Army Chemical Review*, July 1994.
3. MG Orton, *CML, Army Chemical Review*, July 1994.
4. MG Orton, *CML, Army Chemical Review*, July 1994.
5. Roberts, Brad, editor, *Chemical Disarmament and U.S. Security*, Westview Press, Boulder, CO, 1992.
6. US Government, The Federal Response Plan (for Public Law 93-288, as amended), April 1992.
7. MG Orton, *CML, Army Chemical Review*, July 1994.
8. MG Orton, speech to the 13th Worldwide Chemical Conference, 20-23 April 1994 Fort McClellan, AL.

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