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The Professional Bulletin of the Chemical Corps
Winter 2015



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Army Chemical Review

The Professional Bulletin of the Chemical Corps

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Winter 2015

Chief of Chemical and Commandant, U.S. Army Chemical, Biological, Radiological, and Nuclear School



**Brigadier General
Maria R. Gervais**

Greetings Dragon Soldiers, civilians, and Families of the Regiment!

It is hard to believe that summer has come and gone already—and we are fast approaching 2016. Since our last issue of *Army Chemical Review*, a lot has taken place within the Chemical Regiment and the Army. This past summer, 20–27 June 2015, we executed our Regimental Week activities, which included a vendor exhibit and a “How We Support the Fight” seminar. A chemical, biological, radiological, nuclear, and explosives (CBRNE) task force was incorporated into Army Warfighting Assessment 16.1 and National Training Center rotation 16-01.¹ We conducted our first 16-week Chemical, Biological, Radiological, and Nuclear (CBRN) Warrant Officer Course, and our Regiment began implementing the Vice Chief of Staff, Army-approved CBRN Force Design Update on 1 October 2015. The Force Design Update implementation began with standardizing CBRN battalions and will be followed by converting maneuver support companies to hazard support companies in April 2016 for Component I and October 2016 for Components II and III.

As I visit Dragon Soldiers across the world, I am absolutely amazed at the professionalism, dedication, and ability of our Soldiers to operate in a constantly changing environment. No matter what the challenge, Dragon Soldiers are agile, adaptive, and up to whatever task or mission has been asked of them by our Army. And our Army needs

our CBRN expertise more than ever—especially now that the Army is focused on combined arms maneuver and decisive action. For the past 14 years, our Army has been focused on counterinsurgency operations in two theaters where the threat did not require a sustained focus on CBRN readiness. As you know, the No. 1 priority of the Chief of Staff of the Army is readiness; and today, our Army needs our CBRN expertise to “reset the Army” in terms of CBRN preparedness and readiness. Dragon Soldiers across the Army must assist in returning Soldiers and units to a higher level of CBRN readiness. The threats—chlorine barrel bombs in Syria, chemical weapons used by terrorists in Iraq, the emergence of Russian influence, and the continued North Korean threat—demand that our Army be prepared to conduct operations in a CBRN environment.

The U.S. Army Chemical, Biological, Radiological, and Nuclear School (USACBRNS) has implemented several initiatives that will improve the Army’s collective ability to protect itself from the full spectrum of CBRN threats and hazards. CBRN training requirements are being revised in Army Regulation (AR) 350-1, *Army Training and Leader Development*.² This revision will provide a more concise, simplified description of CBRN training requirements for the force.

We have completely revised the program of instruction for the CBRN Defense Course that is taught to non-CBRN specialists throughout the Army. This course covers the CBRN protection/detection equipment fielded to the Army and supports the simplified and improved tactics, techniques, and procedures needed to protect against the full range of CBRN hazards. Many thanks to Fort Dix, New Jersey; Fort Bliss, Texas; and Fort Stewart, Georgia, for volunteering to pilot this revised course.

The next project includes exposing more of our young lieutenants to the recent trends and observations at combat training centers. We have initiated a program to provide lieutenants who have recently graduated from the CBRN Basic Officer Leader’s Course with the opportunity to observe a combat training center rotation in order to better prepare them for future assignments. The focus is on brigade level operations in a decisive action or mission readiness exercise.

All of these initiatives are focused on reinforcing our traditional CBRN defense responsibilities and expertise. This expertise is at our roots and forms the foundation of the skills needed to function throughout the spectrum of countering weapons of mass destruction (WMD) mission sets.

We are beginning to refine how we look at countering WMD missions in a more comprehensive and combined arms approach. Look for these refinements in the *U.S. Army Functional Concept for Maneuver Support in 2020–2040*. This document, currently still in staffing, is nested with the Army Operating Concept and identifies the future capabilities required to enable commanders and forces to attain freedom of action while executing missions in complex environments across the range of military operations. The 20th CBRNE Command has done a phenomenal job of testing the basic WMD-elimination tactics, techniques, and procedures—incorporating the CBRNE task force concept into National Training Center rotations and the Army Warfighting Assessment 16.1. The information gleaned from these events is paving the way for how our Army and our Regiment will execute the WMD mission sets.

(Continued on page 5)



Regimental Command Sergeant Major



Dragon Soldiers: It has been an amazing first year in this position! First, let me publicly thank all of you! Through my travels, brown bag lunches with classes here at the Home of the Regiment, and key leader engagements, you have been open, pragmatic, and honest with your concerns and issues. Without transparent communication, we will stall and become too rigid to meet the demands of the future. Our No. 1 priority must remain leader development. The speed of instability in a number of nation states and failing states provides our adversaries with potential sanctuaries and allows them the ability to develop programs and weapons to harm Americans all over the world.

During conflicts that occurred more than 20 years ago, the United States had a robust industrial base, which allowed the Army to have a technological advantage. Today, we are at a strategic inflection point, where advanced technologies are finding their way into the hands of extremist groups and lone actors. The amount of information exchange and the sheer number of personal connections has created an environment of sudden, unpredictable, and potentially violent social and political uprisings.

To maintain a decisive edge, we must develop leaders who have a competitive advantage. This is where talent management and leader development must be intertwined. We need to select and develop Dragon warriors who are well rounded and possess talents not only from operational experiences, but also from demanding and broadening assignments. Leaders of tomorrow must be able to think critically and creatively to make informed, rational decisions in the midst of chaos. We must not forget the lessons learned from more than 14 years of persistent conflict or become complacent and ignore the need for ingenuity to build committed professionals and leaders of character. Future leaders must have a balance of agility, adaptability, and innovation that does not create a new standard.

I am routinely asked about the health of the Corps. In my opinion, we are healthy. But this health comes with a price that cannot be avoided. The Army continues to reduce the force structure; however, the Chemical Corps did not suffer as many losses as other career management fields. The total Army will reduce retention control points while adopting a new promotion model designed to promote NCOs sooner in their careers. This will take time, so expect promotions to remain steady for the next few years.

Broadening assignments will be key when competing for master sergeant to command sergeant major promotions. These assignments are meant to pull leaders from their comfort zones to determine if they can excel in a duty position for which they have little to no previous experience. Staying on the same installation affects promotion potential competitiveness. Leaders must embrace *selfless service*. This usually means accepting a dependent-restricted assignment or moving our Families every 2 years. This is hard on our Families, but it's a price we pay for wearing this uniform. We have the greatest all-volunteer army in the world. We are talented, courageous, and ethical. We accomplish any mission and meet any task—wherever and whenever our Nation asks us to. We raised our right hands and volunteered; we must also accept the sacrifice. Our wants and needs do not outweigh the needs of the Army. To meet the demands of the Army, my Family has moved every year for the past 3 years. If you cannot embrace this, I say, "Thank you for your service. I hope the next chapter is as successful as your last, but it may be time to move on." This is not to say that the Army won't be compassionate in extenuating circumstances, but some Soldiers simply do not want to leave their comfort zones.

Many leaders have more potential than they realize and will be very competitive at senior levels. Soldiers in these positions can, and will, make huge, positive impacts on the readiness of the Army and the Chemical Corps. We need you to fill these critical positions. Proper talent management is imperative. Each of you possesses skills that are desperately needed in places and positions that you may not imagine yourselves. Trust in the process that selected you for the rank and grade that you currently hold. The Army will send you where you are needed based on your talents—not on your desires.

Some senior NCO initiatives currently under development include an instructor position at the British Defense Chemical, Biological, Radiological, and Nuclear School at Winterbourne Gunner, Great Britain; a position at the Edgewood Chemical Biological Center, Aberdeen Proving Ground, Maryland; and training with industry positions, locations to be determined. We have also submitted a request to create three new personal development skill identifier codes—mass causality decontamination certification, hazmat operations, and hazmat technician. This will provide commanders with the ability to assign Soldiers with specific training to critical positions. It will also help identify Soldiers in need of training.

I look forward to interacting with many more of you in my last year in this position. My main goal is to make a difference in the quality of our Regiment and our Army.



**Command Sergeant Major
Kenneth J. Kraus Jr.**

Elementis regamus proelium!



Regimental Chief Warrant Officer



Greetings and Happy Holidays to America's Chemical, Biological, Radiological, and Nuclear counterforce!

Looking back on 2015, we take notice of the changes that the U.S. Army and the U.S. Army Chemical Corps are making to meet future challenges. The Chemical Corps initiated its approved Force Design Update, which will make CBRN battalions identical, providing a common support package to maneuver commanders. Also, the latest Chemical Corps equipment is being fielded to the force with the dismounted reconnaissance sets, kits, and outfits. Simultaneously, the CBRN Warrant Officer Program revision is underway and 10 new CBRN warrant officers graduated from the first Warrant Officer Basic Course (WOBC) taught by the U.S. Army Chemical, Biological, Radiological, and Nuclear School (USACBRNS). But these are just a few of the changes that the Regiment has undergone this year. As our Dragon Soldiers adapt to the progress made within our Regiment, our Regiment must also adapt to adjustments within the Army.

In keeping with the Army operating concept and the development of *Force 2025*,¹ the Army Senior Warrant Officer Council developed *The Army Warrant Officer 2025 Strategy*.² The purpose of this strategy is to outline how future warrant officers in the total force are accessed, developed, and utilized as they support the force in highly specialized roles as the Army's system operators, managers, integrators, and leaders. Future warrant officers will be developed through four strategy lines of effort:

- Accession.
- Development.
- Talent management/utilization.
- Professionalization.

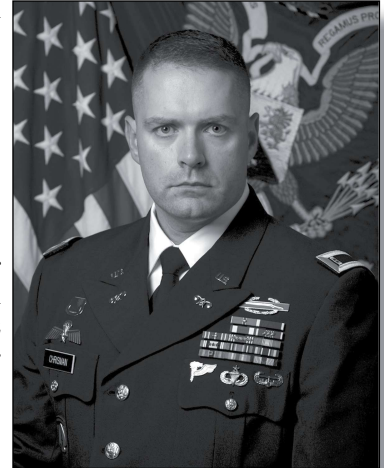
To ensure that warrant officer accessions meet the intent of the warrant officer strategy, warrant officer candidates who possess the skill sets and education criteria for compatibility with future requirements must be identified. By implementing tougher selection criteria (hazmat technical certification, a higher skilled technical score, Advanced Leadership Course completion as the minimum Noncommissioned Officer Professional Development System level, and rated leadership time), it is clear that the Chemical Corps expects its warrant officer candidates to be of the highest caliber.

Once selected to be a CBRN warrant officer, professional development takes on a new meaning. Branch schools and proponents are required to increase the value, rigor, and emphasis on education and training through Army University and other warrant officer initiatives. As mentioned, 10 warrant officers graduated from a newly developed CBRN WOBC at USACBRNS. The course is 90 percent technical and designed specifically to prepare new CBRN warrant officers for duty as hazard response company technicians and technical escort assistant team leaders. These new CBRN WOBC graduates represent the Chemical Corps dedication to leader development.

With a developing CBRN warrant officer cohort, it is vital that the Regiment employ talent management/utilization to optimally empower its expert technicians. To manage gaps across CBRN organizations, warrant officer positions are developed through force management to address and focus on utilization and leadership. Plainly put, with warrant officers in our formations serving as expert technicians, more junior officers are granted leadership opportunities. But our formations will only be as strong as the professionals serving in them.

So to get at the final line of effort (professionalization), the Chemical Corps—and the entire Army—needs to promote a fundamental change in warrant officer culture through stewardship and esprit de corps programs. The five warrant officer ranks are no longer lumped into one category. They are now professionalized by company grade, field grade, and senior field grade warrant officers. And by embodying the ideal that warrant officers are the premier land force technical experts and systems integrators, CBRN warrant officers will be capable, credible, trusted, and empowered professionals in every facet of this great Regiment.

In January 2016, five active duty noncommissioned officers will be selected to make the transition to become warrant officers. Selection has been, and will remain, competitive. So if you're a Dragon Soldier with unparalleled technical and tactical competence, an unmatched devotion and commitment to the Chemical Corps, and a leader of character who puts the needs of others before your own, then you have what it takes to try to become a CBRN warrant officer.



**Chief Warrant Officer Two
Matthew Chrisman**

Elementis regamus proelium!

Endnotes:

¹*Force 2025*, <<http://www.arcic.army.mil/Initiatives/force-2025-beyond.aspx>>, accessed on 2 October 2015.

²*The Army Warrant Officer 2025 Strategy* is currently at Headquarters, Department of the Army, pending final approval.

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Army Doctrine Reference Publication 1, *The Army Profession*, 14 June 2015.

U.S. Army Training and Doctrine Command Pamphlet 525-3-1, *The U.S. Army Operating Concept: Win in a Complex World*, 31 October 2014, <<http://www.tradoc.army.mil/tpubs/pams/tp525-3-1.pdf>>, accessed on 2 October 2015.



“Chief of Chemical and Commandant,” continued from page 2

As always, I am honored to serve as your 28th Chief of Chemical and I look forward to serving with you as we transform our Regiment. I, along with Regimental Command Sergeant Major Kenneth J. Kraus Jr. and Regimental Chief Warrant Officer Matthew D. Chrisman, look forward to visiting CBRN teams and Soldiers. We look forward to seeing all the great things you are doing and partnering with you to improve our Regiment. As we head into the holiday season, please be careful, take time to enjoy the holiday season, and always keep those who are deployed in your thoughts and prayers.

Endnotes:

¹For additional information on Army warfighting assessments, see <http://www.army.mil/standto/archive_2015-09-28/>, accessed on 12 November 2015.

²AR 350-1, *Army Training and Leader Development*, 19 August 2014.

Elementis regamus proelium!

OPERATIONALIZATION OF A CBRNE COUNTERFORCE

By Lieutenant Colonel W. Maria Bochat

“My vision is to have a Chemical Corps Regiment that can look at our enemy and say, ‘If you have a WMD [weapon of mass destruction], we will find it; if you employ a CBRN [chemical, biological, radiological, and nuclear] weapon on our forces, it will not have the effect you want.’ We are America’s CBRN counterforce.”¹

—Brigadier General Maria R. Gervais
Commandant, U.S. Army Chemical, Biological, Radiological,
and Nuclear School (USACBRNS)

What can we do to ensure that an enemy chemical, biological, radiological, nuclear, and explosives (CBRNE) weapon does not have the desired effect? One way to address the issue is by understanding and describing the substance, essence, and nature of the CBRNE threat and understanding how to address it. Using Samuel P. Huntington’s concept of a profession as our framework, we need expertise, responsibility, and corporateness.² To become professionals, we must—

- Educate ourselves on core competencies. While we may not be able to prepare for everything, the Chemical Corps must have a good baseline from which to draw to make intelligent and informed estimates.
- Articulate our capabilities to supported units and missions.
- Save lives by providing advice and training assistance to supported units so that they are better able to operate and support missions in a CBRNE environment.

Development of Existing Structures and Their Roles

The Army currently has the following CBRNE problem sets:

- **Wide area monitoring.** Army medical laboratories and medical communities execute wide area monitoring (instead of security) to look for patterns, indicators, and anomalies.
- **Special operations force (SOF) teams.** SOF teams execute deliberate CBRNE operations to look for equipment (specific weapons or parts of systems) to destroy, which might be enough to stop a production facility.
- **General-purpose forces (GPFs).** GPFs use the information gathered from wide area monitoring and SOF intelligence before conducting a response or site exploitation.

This article provides background on the current status of GPFs and explains what aspect of the CBRNE threat the Chemical Corps must address to mitigate hazards and provide timely assessments to ultimately save lives.

The three CBRNE problem sets have three distinct missions. For the wide area monitoring mission, anomalies or spikes in a baseline are noted. The SOF team, with reasonable amounts of intelligence and confidence in accuracy, has the mission of facilitating deliberate entry and exfiltration missions. Although, this team sometimes leaves the site without much information to transfer to follow-on forces. The GPFs mission encompasses the work to be done when SOF teams leave the site. GPFs arrive at an objective and try to develop it. Developing a site relies on experienced personnel and is extremely labor-intensive. GPFs must work to get off the site.

Critical Examination of GPFs and Their Limitations

GPFs are Regular Army units that are assigned a CBRNE hazards mission. This includes CBRNE technical forces from the 20th CBRNE Command; organic CBRN technical forces (such as brigade combat team reconnaissance platoons); the 23d CBRNE Battalion, 2d Infantry Division; and Component II and Component III units. While these units address WMD threats and CBRNE hazards with traditional CBRN and explosive ordnance disposal formations, they lack the ability to properly self-protect. They depend on battlespace owners to secure the outer and inner cordons and clear and conduct forward passage of lines with technical exploitation and decontamination.

A CBRNE task force has the expertise to task-organize and command CBRNE missions. In the case of WMD-elimination, the CBRNE task force mission commands technical operations related to exploitation and destruction. The

CBRNE task force uses a WMD master site list packet or target folder and sends the appropriate teams to accomplish the mission. Conventional forces secure outer and inner cordons and conduct forward passage of lines so that CBRNE forces can move to CBRNE site exploitation with the right equipment, which limits the amount of wasted energy.

However, a lack of hazard intelligence and a communications framework slows down the development of a shared understanding in the context of CBRNE hazards and the status of exploitations. The CBRNE element develops the situation and delivers estimates for appropriate equipment and levels of protection. The current communication package limits the ability of the CBRNE element to maximize reachback capabilities and creates delays when providing decisionmakers with actionable intelligence and disposition recommendations. Due to limited detection capabilities and communications, our actions currently focus on attribution (linking the chemicals found at the site to a specific individual, group, or country for prosecution) and chain of custody. We should have real-time interaction with subject matter experts instead of sampling, packaging, and waiting. Increasing detection and communication capabilities would develop CBRNE threat recognition and make connections for CBRNE systems in a timely manner.

CBRNE expertise is critical for staffs at all levels of the Army. While we have emphasized units that work technical, directed missions, CBRN officers and noncommissioned officers are important. They provide persistent advice to commanders at all levels. Their presence helps to solidify plans for properly operating in a CBRNE environment. The CBRNE staff must be familiar with the capabilities of the technical exploitation forces and the level of CBRNE training and readiness of the organization. Because there are not enough CBRNE technical forces to address all hazards, organic CBRNE experts are the best source of information for commanders; CBRNE experts are best able to assess unit CBRNE capabilities.

Considerations for Operationalizing a CBRNE Counterforce

“...the skill of the [military] officer is neither a craft (which is primarily mechanical) nor an art (which requires unique and nontransferable talent). It is instead an extraordinary, complex, intellectual skill requiring comprehensive study and training...”

—Samuel P. Huntington³

We need to build our expertise, responsibility, and “corporateness.” The Army uses the concepts of doctrine, organization, training, materiel, leadership and education, personnel, and facilities (DOTMLPF) as a way to look at how to improve attributes.

Our expertise starts with educational institutions. For CBRN officers, this begins with a college or university. The technical phase of professional education is covered by Army doctrine. We must—

- Read, understand, and communicate how CBRNE elements support combined arms and wide area security operations to fight and win decisively. We will never know everything, but we can be familiar with the substance of the CBRNE threat or hazard and its properties and qualities.

- Be familiar with, and be able to characterize, the threat. A good CBRN officer, whether on staff or in a mission command role, must apply the physical properties of the substance to the operational environment. This is extremely difficult, but valuable to the commander if the facts and intangibles (such as relationships that affect the threat or that the threat can affect) are included.

The CBRNE threat consists of three elements:

- **Substance.** The substance of the CBRNE threat has definable properties or qualities. Most agree on what CBRNE means and what CBRNE hazards entail.
- **Essence.** The essence of a CBRNE threat is the indispensable quality of something—especially something abstract. It is what characterizes the threat.
- **Nature.** The nature of the CBRNE threat causes responsibilities to become blurry. In this case, nature is the inherent feature of something—especially a characteristic of it. Army medical laboratories and SOF teams are not as concerned about the nature of a threat as they are about its substance and essence. They have very specific missions and portfolios, and they are usually appropriately equipped for their missions.

Responsibility is something that, as a regiment, we don’t clearly define, and it is the most difficult concept to teach. We are practicing experts; we gain the most experience and reputation when we are in an organization that practices CBRNE hazard missions. If we accept the definition of responsibility coined by Harold Lasswell—“the management of [ethical] violence,”⁴—we *enable* our commanders by advising and managing the educating, equipping, and training of formations to operate in a CBRNE environment in order to deny CBRNE weapon effects.

Corporateness may sound like a dirty word to those of us who wear the uniform, but we might reconsider if it is defined as “a profession that shares a sense of organic unity and consciousness of themselves as a group.”⁵ To the CBRN professional, corporateness emerges in the form of a regiment.

The current reality is that some units have a reputation of being CBRNE technical experts, while embedded organic CBRNE staffs and assets do not share that same reputation.

Cycling personnel through the 20th CBRNE Command into CBRNE staff positions would help revitalize lost reputations and allow all personnel to gain experience, preventing the stagnation of technical units and staff members.

Although a technical foundation is necessary for a CBRNE professional to be operational, CBRNE professionals must be trained to fight tactically. This training must be iterative and carried out in building blocks. A CBRNE leader should first attend formal training that provides detailed blocks of instruction, covering the essence and nature of the CBRN threat. This training should end with a capstone event in which the students demonstrate their foundational knowledge. The students should apply the elements to determine the nature of the threat; provide a recommendation in a tough, realistic Annex C brief; and present the commanders with a CBRNE common operating picture. This training should continue at the Soldier's unit and in any form of joint exercise that operates in a combined arms environment.

After becoming familiar with the CBRN craft, a CBRN professional must become familiar with unit operations. The additional duty of unit status report officer, often assigned to CBRN officers, provides a great opportunity to understand and gauge unit readiness, especially in the context of CBRNE readiness. It is important to understand the supported unit and the way the Army fights so that you can communicate with and understand each other. The commander expects a CBRNE officer to be able to articulate the capabilities of organic and attached CBRNE teams and equipment. The commander also expects CBRN advice and help with training units to operate and support missions in a CBRN environment. These abilities ultimately save lives.

It is dangerous to simply look at other organizations (Army medical laboratories, SOF teams) and assume that access to the same equipment would improve our lives. The major focus on materiel solutions is due to the current frustration of GPFs. Gaps have been identified—especially in the areas of detection and the ability to communicate findings. The focus must remain on the equipment that GPFs wear and use to accomplish the mission. This equipment makes it easier to work, breathe, detect, and communicate the CBRNE common operating picture.

The current equipment set focuses heavily on attribution. An attribution-focused exploitation detracts from the ability to communicate situations for force protection or mitigation purposes as they develop. Detection equipment is cumbersome and outdated; it interfaces with few of the current systems. The equipment that GPFs wear is cumbersome and adds additional stress to the body. GPFs are not able to follow proper protection or self-protection methods, and they are currently unable to communicate and reach back to the necessary expertise without significant assistance or

innovative leaders. GPFs also do not have a truly integrated method to digitally show the CBRNE common operating picture to the remainder of the Army without significant modifications.

The industrial base necessary to support an extended CBRNE mission appears to be lacking. This perception is due to our heavy reliance on commercial, off-the-shelf equip-

ment and the lack of available parts for currently used equipment. The demands are not there. This may be appropriate in the current financially constrained environment, but we need to communicate

the price of this inaction. We must plan for the occurrence of a catastrophic CBRNE event that pulls GPFs into action in the homeland or overseas.

Although gaps in expertise are closing, the Regiment will continue to struggle when balancing experience levels and technical expertise if some aspects are not institutionalized. CBRNE staffs must gain leadership time so that they have firsthand knowledge of equipment capabilities and the way that GPF CBRNE formations work. Many regimental leaders believe that increasing the percentage of personnel in our Regiment who have hard science degrees will increase proficiency. While personnel with hard science backgrounds have attributes that enhance their understanding of the essence and nature of CBRNE hazards, understanding is also present where desire and experience exist. Some of the best advocates for the CBRN mission are not CBRN Soldiers. While we should encourage CBRNE professionals to have hard science degrees, we should also welcome personnel with backgrounds in systems design and human domain. Education needs to include technical-based training, combined arms operations, systems design, and the cognitive way human beings process information and threats. Personnel with diversified education and experiences will help with problem solving.

Collective training venues (such as the Underground Training Facility, Fort Hood, Texas; combat training centers; CBRNE facilities and targets; and Blackhawk Village, Korea) are critical in organizations further developing doctrine and tactics, techniques, and procedures. Additionally, having continental U.S.-based, live-training facilities (such as a radiological live-agent facility) would help ensure that organizations executing training could truly operate in a contaminated environment. Currently, the CBRN Defense Training Facility, located at Fort Leonard Wood, Missouri, has a target audience of the Chemical Corps Regiment. Live-agent training accomplishes many things, including instilling confidence in CBRN equipment; most importantly, live-agent training ensures that all personnel executing the training have proper protective gear and detection and decontamination equipment and that they use tracking methods because their lives depend on it.

(Continued on page 11)

Impurity Profiling and Stable Isotope Analysis: An Exploration of Techniques Used to Trace the Origins of Chemical Warfare Agents

By Captain Spencer R. Roberts

The perpetrator of a crime always brings something to the crime scene and always leaves with something from it. This is known as Locard's exchange principle, and it is the basis of several forensic science subdisciplines (such as fingerprint, deoxyribonucleic acid [DNA], serology, hair and fiber, ballistics, and tool mark analyses).

How do we find the perpetrator when a chemical warfare agent is used as the murder weapon? Under Locard's principle, the chemicals or the delivery mechanism—two things that were brought to the crime scene—can point to the responsible party. In reality, the responsible party is likely an entire network of actors of concern. According to the *Department of Defense Strategy for Countering Weapons of Mass Destruction*, actors of concern are any state or nonstate actors that carry out activities that pose a clear and potential threat to the U.S. government.¹ In the context of weapons of mass destruction (WMD), actors of concern may be involved in developing, acquiring, proliferating, or employing WMD-related expertise, materials, technologies, or means of delivery. Through the field of chemical forensics, we are discovering that two well-established analytical methods (impurity profiling and stable isotope analysis) can lead investigators back through the network to the actors of concern who are responsible.

By tracing the components and impurities of a chemical warfare agent to the specific lot of precursors used to make it, investigators may be able to find answers to many important questions. Where did the precursors come from, and who paid for them? Where were the precursors delivered and by whom? What type of equipment was used during production? What methods or laboratory processes were used during production, and does this point to a group of well-educated scientists or a single self-taught terrorist? Where did the funding for the chemical agent production come from? And most importantly: Were additional chemical weapons produced—and, if so, where are the chemical weapons now?

The key to tracing and countering potential threats lies in identifying the impurity profile of a chemical agent and conducting a stable isotope analysis. A chemical impurity is any chemical substance that is present with another chemical substance and differs in chemical composition.² Impurities can occur naturally, or they can be introduced during the synthesis of a product. Depending on the desired product,

impurities can be intentionally or unintentionally added; but in the case of chemical warfare agents, the more pure the final product, the more lethal it is. In pharmaceutical research and forensic science, impurity profiles are typically obtained using high-performance liquid chromatography, gas chromatography, mass spectrometry, or nuclear magnetic resonance spectrometry.³

Impurity profiling has been a valuable tool for chemical forensics for many years. Crime scenes present a variety of conditions and environments in which impurities can be introduced into samples (drugs, body fluids, explosives, paint) recovered for forensic analysis. For instance, the process by which drugs (cocaine, heroin) are processed introduces many impurities from the various substances or methods used by the production line to increase the overall yield. These impurities add forensic value to the products because the impurities make the product more unique, thus improving the ability to match or trace the drugs in the future.

The Department of Homeland Security Chemical Forensics Program is leading the way in developing and maintaining expertise in collecting, preserving, and forensically analyzing chemical warfare agents. The Chemical Forensics Program is developing technology and analytical techniques specific to chemical warfare agent investigations to trace and possibly counter future threats. The key lies in identifying a chemical agent impurity profile and stable isotopes. The two features, when identified individually or in tandem, make up what is known as a chemical attribution signature. Chemical attribution signatures are identifiable features that are inherently valuable in associating various samples with each other and distinguishing how, where, or by whom the recovered samples were produced and subsequently handled.

The Chemical Forensics Program is focused on four main areas of research:

- Determining if high-priority chemical agents produced by various synthesis methods or procured from various commercial sources contain or retain specific chemical attribution signatures.
- Determining environmental factors or effects that can alter chemical attribution signatures and affect recoverability.

- Developing techniques and tools for sampling different types of chemical attribution signatures at chemical incident scenes, with emphasis on stabilizing the samples and minimizing degradation.
- Developing optimal methods and analytical techniques for conducting comprehensive forensic analyses of samples for source determination and association with other samples.

Building upon these focus areas, the Department of Homeland Security is increasing national preparedness when responding to incidents and providing investigators with a forensic means to locate perpetrators and prevent future attacks.

Many organizations are currently using impurity profiling to track illegal drugs. The U.S. Drug Enforcement Agency might use impurity profiling on drugs that have been seized before sending them back into circulation to determine dealer-user relationships, distribution networks, and drug sources. This technique can also be used to track counterfeit pharmaceuticals, banned pesticides, and homemade explosives.

In the context of forensics, stable isotope analysis refers to the comparison of the distinguishing combination of stable isotope abundances of different elements present in a given sample to a suspected source in an effort to determine the origin of the sample—possibly tying a sample to a specific person, location, or source material. The terms *isotope fingerprint* and *stable isotope signature* are used to describe the tangible combination of isotopes that have value in attribution to a source, but it is important to remember that stable isotope fingerprints and signatures can change over time.⁴ For instance, the isotopic composition of sarin or soman nerve agents can change as the more volatile components in the mixture evaporate and are lost to the atmosphere. However, if background information (such as a database of isotopic signatures for nerve agent precursors at the time of their manufacture) exists for the material in question, it may be possible to draw conclusions regarding the expected changes in isotopic composition based on known storage conditions or environmental exposures.

Dr. Carlos Fraga, a chemist from the Pacific Northwest National Laboratory, developed the impurity profiling technique for tracing residual contamination left by chemical attacks to the source where the precursors were obtained. The impurities in a chemical warfare agent can be matched to the impurities in the precursor chemicals, which point back to the likely source. The impurities are highly unique to the precursor batch, much in the same way that fingerprints are unique to individuals. Dr. Fraga's research also found that up to 88 percent of the impurities found in the precursors can still be identified in the final product even after a distillation and two solvent extracts.

Current methodologies limit the forensic application of impurity profiling and stable isotope analysis to laboratories with strict quality assurance/quality control measures and the necessary equipment to perform sample preparation and

analysis. Future research, however, must explore the development of a field-deployable instrument to provide real-time information to military chemical exploitation units.

Currently, specialized military units are able to sample and perform presumptive or field confirmatory analysis to help higher echelons of command make informed decisions on the battlefield. The current technology can be used to analyze samples of chemical warfare agents, precursors, and toxic industrial materials to provide the Soldier-operator with the chemical composition of the sampled material. Such information can help ground units identify the agents that are being produced based on the ingredients present at the site and other visible intelligence (documents, laboratory equipment). By knowing which agents are in production and the current stage of the process for the actors of concern, the military team can make informed decisions regarding the personal protective equipment necessary to continue the mission and the mitigation steps necessary to destroy or further exploit the site.

Current technology falls short of the ability to link synthesized chemical warfare agents or the precursors within the agent to the specific precursor batch and its origin. The addition of such a capability would allow exploitation teams to provide immediate information to intelligence assets that could begin the process of identifying more actors of concern within the WMD network. The quicker the intelligence picture grows, the faster ground units can undertake tactical missions to prevent the acquisition of the materials, contain WMD threats, interdict the transit of weapons or materials, safeguard the force, and conduct consequence management operations. These specific measures designed to counter the proliferation of WMD materials would decrease the time it would take to identify those responsible, thus preventing the potential loss of lives and ending conflicts more quickly.

Such technology, however, would rely on an immense, ever-growing database. It would not be possible to rely on an internal library because of the continuous manufacturing of chemicals. The equipment would require a secure satellite link to a database containing every chemical warfare agent threat precursor in global circulation—complete with its impurity profile and stable isotopic signature, which would need to be entered into the database at the time of its manufacture by the chemical production company. However, the database cannot account for environmental conditions, exposures, and storage conditions that the material goes through after leaving the factory. These conditions can alter the original impurity profile and isotope signature. For this reason, a field-deployable instrument, like many others in the gamut of military chemical detection equipment, may be plagued by false-positives, false-negatives, or inconclusive results.

Due to the ongoing risk of chemical attacks, a forensic technique to quickly identify the presence of chemical warfare agents and trace their origin is of great interest when countering the proliferation of WMD. On a national strategic level, these forensic advances help fulfill two priority ob-

jectives outlined in the Department of Defense Strategy for Countering Weapons of Mass Destruction:⁵

- Reduce incentives to pursue, possess, and employ WMD.
- Increase barriers to the acquisition, proliferation, and use of WMD.

The ability to effectively trace chemical weapon origins serves as a deterrent to the use of chemical weapons due to the possibility of targeting perpetrators and defeating their network. Decreasing the appeal of WMD has caused actors of concern to be less likely to pursue, possess, or employ WMD; and defeating the network has caused barriers to the acquisition, proliferation, and use of WMD to be increased.

Endnotes:

¹Department of Defense Strategy for Countering Weapons of Mass Destruction, June 2014, <http://www.defense.gov/Portals/1/Documents/pubs/DoD_Strategy_for_Countering_Weapons_of_Mass_Destruction_dated_June_2014.pdf>, accessed on 6 October 2015.

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³Nikolaos Grekas, *Organic Impurities in Chemical Drug Substances*, Pharmaceutical Technology Europe, October 2005, <<http://www.pharmtech.com/organic-impurities-chemical-drug-substances>>, accessed on 21 October 2015.

⁴W. Meier-Augenstein and H. F. Kemp, "Wiley Encyclopedia of Forensic Science," *Stable Isotope Analysis: General Principles and Limitations*, 2012, pp. 7–8, <http://www.academia.edu/1500626/Stable_Isotope_Analysis_General_Principles_and_Limitations>, accessed on 21 October 2015.

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("Operationalization . . .," continued from page 8)

In conclusion, CBRNE professionals should understand the substance, essence, and nature of the CBRNE threat and know how to address these elements. To achieve this, education on core competencies is required. While preparing for anything that can happen may not be possible, the Chemical Corps will have a good baseline to make intelligent, informed estimates. We must be able to articulate our capabilities to units and missions that we support. Ultimately, the ability to advise commanders and train units to operate in a CBRNE environment will give commanders the freedom of maneuver and will ensure that enemy employment of CBRNE does not have the intended effect.

Endnotes:

¹Brigadier General Maria R. Gervais, Commandant, USACBRNS, CBRN Regimental Week opening remarks, 23 June 2015.

²Samuel P. Huntington, *The Soldier and the State: The Theory and Politics of Civil-Military Relations*, Belknap Press, 1957.

³Ibid.

⁴Harold Dwight Lasswell was a leading American political scientist and communications theorist. He obtained a Ph.D. from the University of Chicago, Chicago, Illinois. He was a professor of law at Yale University. He worked many research projects for the post-World War II development of behaviorism.

⁵Huntington, 1957.

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92D CBRN BATTALION PARTICIPATES IN OPERATION GUARDIAN




By Sergeant Major Phillip D. Pennington

From 19 June to 2 July 2015, the 92d Chemical, Biological, Radiological, and Nuclear (CBRN) Battalion participated in Operation Guardian—a Level III emergency deployment readiness exercise sponsored by the U.S. Army Reserve Command. This exercise provided an opportunity for Army Reserve technical support forces assigned to the CBRN Response Enterprise to train and demonstrate their ability to respond to a CBRN incident or accident in the homeland. The Army Reserve Homeland Operations Division hosted this exercise in Ocala, Florida, and Perry, Georgia. The participants, 540 Soldiers from a wide variety of organizations, came from many states (Arkansas, Florida, Georgia, Minnesota, Mississippi, Texas, Washington, and Wisconsin) across the country.

The 92d CBRN Battalion led Task Force—Critical Response Forces (the technical arm of the CBRN Response Enterprise) in performing CBRN reconnaissance, urban search and rescue operations, and mass casualty decontamination. One major area of focus during this exercise was on conducting a relief-in-place while performing mass-casualty decontamination operations. The ability of units to relieve one another is essential in a real-world scenario where thousands of casualties are expected. The U.S. Army North conducted the external evaluations on each technical support force unit.

“The reason we came here was to ensure that the unit is prepared and trained to respond to America’s worst day, should that day ever come. We absolutely met our mission,” said the 92d Battalion operations sergeant during a recent interview. “Operation Guardian exceeded our expectations not only by expanding on the Soldier’s technical abilities, but also the employment of the units in a rapid emergency response posture to achieve mission success. The reconnaissance, decontamination, and search-and-rescue operations were flawless. The 143 vehicles convoying 7 hours for 270 miles with zero issues was a feat in itself,” said the Homeland Operations Division noncommissioned officer in charge.

During the Ocala, Florida, portion of the exercise, leaders were able to conduct a successful battle hand-off as the CBRN Response Enterprise relieved local firefighters on-site. Operation Guardian enhanced the sustainment of technical proficiency and equipment readiness of each unit during a challenging collective training event. 



A simulated disaster area that was used for Operation Guardian

Sergeant Major Pennington currently serves as the Army Reserve sergeant major for the U.S. Army Chemical, Biological, Radiological, and Nuclear School (USACBRNS). He holds a bachelor’s degree in technical management from DeVry University, Atlanta, Georgia.

773D CIVIL SUPPORT TEAM



By Sergeant Major Phillip D. Pennington


The 773d Civil Support Team (CST), Kaiserslautern, Germany, is the only CST in the U.S. Army Reserve (USAR). Its mission is to deploy in support of the U.S. European Command (EUCOM) and the U.S. Africa Command (AFRICOM) in response to chemical, biological, radiological, and nuclear (CBRN) incidents or accidents. This team identifies CBRN agents or substances; assesses current and projected consequences before, during, and after incidents; advises incident commanders on response measures; and assists with appropriate requests for support. The 773d CST has nine Active Guard/Reserve (AGR) positions in the 74D military occupational specialty (CBRN specialists) with the rank of sergeant first class, staff sergeant, or sergeant. They are Title 10, U.S. Code, *Armed Forces*, Soldiers on active duty status.¹ The 773d CST commander and first sergeant maintain unit readiness by participation in many exercises.

The 773d CST commander stated, “The 773d CST has made significant gains and progress since its inception 9 years ago. We have had some of the best Service members that the USAR has to offer. Every exercise the unit participates in shows the strength of our Nation and our Chemical Corps. The training exercises we participate in show that our NATO [North Atlantic Treaty Organization] partners in Europe matter to our international team. The 773d CST will continue to set the standard for conducting professional military response operations in both garrison and the operational environments of EUCOM and AFRICOM.”

The German Bundeswehr CBRN Defense Command, the German Maritime Command, and the 773d CST participated in Exercise Toxic Fish, held in Rostock, Germany, 6–13 July 2015. Exercise Toxic Fish supported the U.S. Army Europe effort to seek training opportunities that enhance the ability to support NATO partners, build partner capacities, and work jointly. The exercise was designed to be conducted in a high-risk, high-stress environment where attention to detail is paramount to team success and survival. Safety is of the utmost importance during CST operations because one minor mistake could cause team casualties and further spread CBRN hazards. Overall, the exercise assisted in CBRN marine and land decontamination techniques and practices. The 773d CST leaders were able to integrate their

Soldiers while training, thus building a good rapport with the German Bundeswehr CBRN Defense Command and German Maritime Command soldiers during decontamination operations.

From 24 to 28 March 2014, 773d CST partnered with the Zaventem Fire Department, Zaventem, Belgium, for the 5th annual CBRN training exercise known as CBRN Week. During the 5-day joint training exercise, the firefighters and 773d CST Soldiers tested their joint CBRN response techniques in a variety of scenarios. The participants trained and tested with different host nation departments, worked together, and managed a hazmat incident. During this exercise, a joint response team responded to a possible radiological/chemical spill that was caused by a simulated, multiple-vehicle accident that involved a van carrying possible hazmat, with victims trapped in the wreckage.

On 11 February 2014, the 773d CST participated in the U.S. Army Europe Emergency Deployment Readiness Exercise at McCauley Barracks, Wiesbaden, Germany. The exercise evaluated unit response readiness efforts and capabilities in support of NATO partners. The concept of this operation was to evaluate mission readiness during an all-hazard response in a realistic environment. The training proficiency evaluation team evaluated every facet of the CST mission, from response time to an analysis of unit tactics, techniques, and procedures; equipment; capabilities; and communications. This “no-notice” alert demonstrated unit-focused aims of preparation and response that were very beneficial to NATO, its allies, and its partners. 

Endnote:

¹Title 10, U.S. Code, *Armed Forces*, 10 August 1956.

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Sergeant Major Pennington currently serves as the USAR sergeant major for the U.S. Army Chemical, Biological, Radiological, and Nuclear School (USACBRNS). He holds a bachelor's degree in technical management from DeVry University, Atlanta, Georgia.

ARMY RESERVE INSTRUCTORS: “Teach One, Lead One!”

By Master Sergeant Larry D. Foreman

Instructors play a vital role in the development of future leaders by providing the necessary coaching, teaching, and mentoring required for a successful career. With the implementation of the One Army School System, Regular Army and U.S. Army Reserve instructors teach students attending the Noncommissioned Officer Professional Development System (NCOPDS) at the U.S. Army Maneuver Support Center of Excellence Noncommissioned Officer (NCO) Academy the skills necessary to become effective NCOs in any environment. These Army Reserve instructors are assigned to battalions that comprise the 3d Brigade (Chemical), 102d Division (Maneuver Support), West Hartford, Connecticut. The five battalions under the brigade are—

- 4th Battalion, 80th Regiment, Farrell, Pennsylvania.
- 4th Battalion, 108th Regiment, Huntsville, Alabama.
- 4th Battalion, 100th Regiment, Harvey, Illinois.
- 4th Battalion, 95th Regiment, Little Rock, Arkansas.
- 3d Battalion, 104th Regiment, Joint Base Lewis-McChord, Washington.


Located in small communities, the instructors assigned to the battalions bring a wealth of experience that helps enhance the Chemical Corps. Master Sergeant Yamil Rodriguez, brigade program of instruction reviewer, stated, “We prepare students from multiple Army components...to serve in the various and diverse duty positions to which Dragon Soldiers may be assigned, whether it be as a unit CBRN [Chemical, Biological, Radiological, and Nuclear] NCO at company level or as a member of a CBRN cell at a higher echelon. 3d Brigade (Chemical) sets CBRN Soldiers up for success by providing them the fundamental knowledge required to serve as advisors to their commanders and train their peers in order to increase survivability in the event of a CBRN incident.”

As the only CBRN training brigade within the Army Reserve, the brigade also trains the annual reclassification mission for Army Reserve and Army National Guard Soldiers transitioning into the Chemical Corps. The training each Soldier receives is the equivalent to the training received by Soldiers attending advanced individual training. The brigade prides itself in its ability to provide the best education for Soldiers, and it is evident in the brigade motto of “Teach One, Lead One!”

Each battalion is assigned a mission to train at Fort Leonard Wood, Missouri, throughout the fiscal year. While some

instructors are assigned to instruct the CBRN Advanced Leader Course (ALC) or Senior Leader Course (SLC), many of the instructors teach the Military Occupational Specialty Training Course, designed for staff sergeants and below who have not completed ALC, or the CBRN 2/3/4 Transition Course, designed for sergeants and above who have completed ALC. All courses are taught in 2-week phases, with instructors rotating in and out by phase. The training required to provide quality education begins during unit battle assemblies that occur monthly.

A typical training day for battalion level instructors during a battle assembly begins with physical readiness training, followed by instructor-led courses and battalion level certification boards. The certification boards assist in mentoring instructors by providing them with useful feedback before they step up to the podium to teach. Master Sergeant Matthew Fries, brigade school readiness coordination manager, has taught numerous NCOPDS classes and adds, “Instructors are evaluated during a certification board conducted by the battalion chief instructor and battalion senior instructors. Instructors are required to be a graduate of the course taught, possess all technical certifications conducted during the course (Hazmat Awareness and Operations for 10 level, technician for ALC), and be [Small-Group Instructor Training Course] graduates to teach ALC and SLC.”

There are approximately 19,000 members of the Chemical Corps in the U.S. Army, spread mostly between the Army Reserve and Army National Guard. The Army Reserve instructor plays a vital role in the success of developing CBRN Soldiers with the most current and relevant training materials regardless of component. The 3d Brigade (Chemical) and its battalions play a vital role in providing ready and relevant instructors to ensure that Chemical Corps personnel are properly trained to remain a viable asset to the Army and the Nation. 

Master Sergeant Foreman is the Army Reserve training developer for the U.S. Army Chemical, Biological, Radiological, and Nuclear School (USACBRNS). He holds a bachelor's degree in business administration from Trident University, Cypress, California, and a master's degree in organizational leadership from Brandman University, Irvine, California.

Cadet Summer Training: Recruiting the Next Generation of CBRN Officers

By Master Sergeant Charles E. Hall

Each year, the U.S. Army hosts thousands of Army Reserve Officer Training Corps cadets from colleges across the continental United States during an annual Cadet Summer Training (CST) event. For many cadets, this is their first opportunity to conduct military training in a field-training environment. The cadets spend 22 to 27 days at Fort Knox, Kentucky, training on basic Soldier skills. There, they learn about the different Army branches in which they could be commissioned as an officer. The cadets select five Army orientation branch briefs to attend based on the branches in which they would most like to be commissioned. The officer of the prospective branch briefs the cadets on the background skills and abilities needed for that branch and on the benefits and opportunities available. At the conclusion of these briefs, the cadets are allotted time to ask questions in order to better educate themselves about the branches and to help them make a better branch choice.

The Chemical Branch is the only Army branch with its own lane training that cadets must attend during CST. The chemical, biological, radiological, and nuclear (CBRN) lane training is provided to initial-entry training cadets who have completed their freshman year of college and are preparing for their sophomore year. The CBRN lane training teaches and certifies these cadets on skill level 1 CBRN tasks, from donning protective masks to identifying CBRN markers on the battlefield. The cadets also get their first exposure to the gas chamber and 0-chlorobenzalmalononitrile (CS) gas. The Chemical Branch also uses this unique opportunity to introduce and educate the cadets on other CBRN opportunities by integrating a senior CBRN noncommissioned officer into the lane training and by having the latest and most relevant Chemical Corps vehicle, the Nuclear, Biological, and Chemical Reconnaissance Vehicle, available on site.

During branch orientation, cadets are informed that the Chemical Branch wants individuals who can lead from the front, are confident and independent, and can multitask. The Chemical Branch is especially interested in cadets who are pursuing degrees in science, technology, engineering, or mathematics (STEM); however, that is not required. The Chemical Branch is also on the lookout for cadets who seek responsibility, want to be challenged, and want to develop



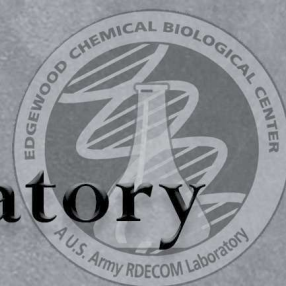
Cadets are briefed on the features of the Nuclear, Biological, and Chemical Reconnaissance Vehicle at CST.

professionally. Cadets are informed of the Regiment's mission to protect the force and the Nation from weapons of mass destruction and CBRN threats and hazards. Branch representatives explain the Regiment's motto: Dragon Soldiers—America's CBRN Counterforce. The orientation brief also informs cadets of the unique training opportunities afforded to CBRN officers. This includes the opportunity to become airborne-, air assault-, ranger-, and special forces-qualified, with a wide variety of assignments all over the world. The branch orientation briefs are given by a first lieutenant who recently graduated from the CBRN Basic Officer Leader's Course. This gives cadets the chance to gain the insight and perspective of a new CBRN officer and to ask questions about being a CBRN officer.

As the Chemical Branch prepares for its next wave of leaders, CST is and will be a great venue for the Chemical Corps to inform potential future leaders of the many opportunities that the Chemical Branch provides and the important mission it has in the defense of our Nation. ●●

Master Sergeant Hall is the senior career management noncommissioned officer for the U.S. Army Chemical, Biological, Radiological, and Nuclear School (USACBRNS), Fort Leonard Wood, Missouri. He holds an associate's degree in general studies from Central Texas College, Killeen, Texas.

Mikulski Visits ECBC Rapid Technologies Laboratory



By Mr. Richard M. Arndt

U.S. Senator Barbara Mikulski visited the U.S. Army Edgewood Chemical Biological Center (ECBC) on 2 July 2015 to reaffirm her support for ECBC as a regional and national leader in additive manufacturing technology and to emphasize the need for collaboration with industry and academia.

Senator Mikulski visited the ECBC Advanced Design and Manufacturing Rapid Technologies Laboratory, a state-of-the-art facility equipped with a wide selection of high-end additive manufacturing and 3-D data capture capabilities. "Part of the reason I'm here today is to explore jobs for the 21st century," Mikulski said. "This type of innovation is exactly what we need."

The Rapid Technologies Laboratory is staffed by an experienced, award-winning workforce supported by more than \$25 million in equipment, including 10 additive printers. The result is the ability to produce functional parts within hours of design concept, to scan items for rapid replication, and to scan equipment users to produce custom-fitted pieces of equipment. The Rapid Technologies Laboratory is a one-stop shop where industry-leading experts can apply additive manufacturing technology to provide solutions for customers.

The senator viewed a suite of additive manufacturing capabilities with applications across military, commercial, and



ECBC engineer Ms. Dominique McClain explains the use of 3-D printing in the development of unmanned aerial vehicles to Senator Mikulski.

academic fields. One display in particular struck a chord. On 15 October 2001, several suites of the Hart Senate Office Building in Washington, D.C., became contaminated by the release of anthrax powder from an envelope mailed to Senate Majority Leader Tom Daschle. The ECBC used additive manufacturing to assemble eight mobile laboratories equipped with biological threat detectors that were deployed around key facilities within 26 days.



ECBC senior engineer technician Mr. Richard Moore explains recent developments in additive manufacturing to Senator Mikulski.

"My office was on the same airflow system as Tom Daschle's," Mikulski recalled. "We evacuated on October 15th and didn't get back to our office until March 15th. It was a terrifying experience. So we know about new threats and appreciate the need for quick response."

According to Mr. Mark Schlein, ECBC associate director of engineering for product development, additive manufacturing is a new technology in some arenas, but is a mature technology at ECBC. "We've been working with additive manufacturing for decades," Schlein said. "It's a powerful tool that is incredibly useful in producing prototypes and one-of-a-kind things. If we can share our experience with industry and academia, we not only gain additional experience from that, but also help build our future workforce."

(Continued on page 18)

Common Core Restructure

*By Captain John Kluesner and
Captain Glen Wayne McInnis II*

The common-core curriculum is now a requirement for graduation from all Army branch captain's career courses. The curriculum is structured to provide "a series of critical skills grounded in leadership, communication, composite risk management, critical reasoning/thinking and for developing a positive command climate."¹ The curriculum supports the preparation of company grade officers for company command and battalion and brigade level staff positions in combined, joint, and multinational environments. In addition, it provides captains with a common foundation of operational and leadership instruction tied to the officer's specific career field, branch, and functional-area needs. In June 2007, common-core was delivered via a Web-based interactive multimedia format that facilitated self-paced development. Currently, the common-core curriculum consists of 2 months of classroom instruction, which is provided to all branches at the respective installation of professional development. By understanding the past and present common-core curriculum formats, we must consider the current state and the needs of the Army during force reduction and forecasted budget constraints. A new proposal, the Installation Common-Core Seminars (ICCS), accompanied by a structured self-development program, would not only satisfy Army reduction and constraints, but also meet Soldiers' and Families' needs. The ICCS would broaden integrated branch instruction and allow a shorter, more elaborate and specific educational format for branch comprehensive institutional training.

To understand the proposed instructional method, it is important to address similar programs within the armed forces and the Army. The U.S. Marine Corps program known as the Expeditionary Warfare School educates and trains company grade officers to serve in the expeditionary environment. The Marine Corps emphasizes course format over content and maintains installation seminars that educate officers throughout a 40-week resident course. The course provides career level, professional military education and training to company grade Marine Corps officers. Once the course is completed, Marines attend their military occupational specialty-specific comprehensive institutional training. This concept can be easily adopted by the Army so that each installation or duty station can maintain their own common-core seminar for all officers' knowledge regardless of branch. In addition, the course allows a collaborative approach that broadens all officers by providing them with


insight into what their partnered branch offers on different subjects, such as the military decisionmaking process.

In the U.S. Army program, the Noncommissioned Officer (NCO) Corps offers a common-core phase during the Advanced Leader Course structured self-development phase. This phase is part of the NCO leader development strategy, which aims to strengthen the linkage between military education and promotions and introduces new methods for selecting and preparing Soldiers for promotion and positions of increased responsibility. The intent of the structured self-development phase is to bridge the operational and institutional domains and set conditions for continuous noncommissioned officer growth. The increases in self-development strategy are designed to provide additional time for military education, in-unit training, operational experiences, and other professional development activities needed to prepare Soldiers for duty at the next higher grade. Under a directive issued by former Army Secretary John McHugh, "A key feature of the evolving system requires Soldiers to complete the appropriate level of structured self-development before being recommended for promotion and before attending the appropriate level of resident [Noncommissioned Officer Professional Development System]."² Across the Army, distance learning is the way of the future as more emphasis is being placed on the program as a viable tool for self-development.

There are several benefits for the Army, officers, and their Families. By implementing the ICCS, the Army can reduce costs by replacing permanent changes of station (PCSs) with temporary duty assignments, which eliminates the need to move the officer's entire household. The ICCS would potentially reduce the amount of time each officer would attend military occupational specialty-specific training and reduce the separation time from Family, thereby also reducing the adverse impact on the Family. All active duty officers attending branch-specific captain's career courses are required to complete a PCS. A PCS is not only stressful for the Soldier, but also for the Family. In a time in which many officers have returned from multiple lengthy deployments, a PCS to a captain's career course for 5 months adds additional unnecessary strain. For many Families, with spouses who are gainfully employed and children who are enrolled in school, a 5-month PCS is not feasible. The benefits of the ICCS include minimal separation time for the Soldier and his or her Family. In addition, ICCS would reduce the number of

moves within a year, the related expense to the Army during force reductions and budget cuts, and the related stress placed on the officers and their Families.

The implementation of the new common-core structure would rely heavily on each installation beginning their own ICCS program. Pilot programs should be initiated at select installations in order to conduct a cost-benefit analysis. The intended progression begins with first lieutenants in promotable status beginning their Web-based structured self-development before attending an ICCS program at their losing installation. This would give them a conceptual understanding of what is expected before attending the ICCS program and moving on to a temporary duty assignment for their branch-specific comprehensive institutional training, where more intensive technical training could take place for a shorter period of time.

In closing, adopting this structure of instruction would reinstitute the Web-based self-development program that our NCOs and our Marine Corps brethren experience today. This type of self-development promotes a more in-depth understanding for every officer, regardless of branch, before attending their losing ICCS. The ICCS would then broaden the officer's conceptual understanding of branch operation in a joint scenario, much like the current warfighting exercise is intended to—only to a higher degree. Implementing this new ICCS proposal, accompanied by a structured self-development program, would satisfy Army reduction and constraints and meet the needs of Soldiers and their Families, allowing for stronger and more diverse officers within all branches, especially the Chemical Regiment. 

Endnotes:

¹*Common Core Course to be Requirement for Captains' Career Courses*, Army News Service, 19 March 2007, <<http://www.army.mil/article/2312/common-core-course-to-be-requirement-for-captains-career-courses/>>, accessed on 21 October 2015.

²*Rules Updated for Mandatory NCO Courses*, *Army Times*, 18 May 2014, <<http://archive.armytimes.com/article/20140518/CAREERS02/305180013/Rules-updated-mandatory-NCO-courses/>>, accessed on 21 October 2015.

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(“Mikulski Visits ESBC . . .,” continued from page 16)

Senator Mikulski has been a long-time advocate of science and technology defense efforts at Aberdeen Proving Ground, Maryland. She has been a part of the Team Maryland congressional effort to modernize facilities at ECBC since the late 1990s. Recently, she has been an active supporter of the Regional Additive Manufacturing Partnership of Maryland, a consortium of private businesses, educational institutions, governmental agencies, and U.S. Army representatives from Aberdeen Proving Ground who are working together to expand Maryland's capabilities in additive manufacturing.

ECBC has worked in additive manufacturing (3-D printing, computer-aided design, and rapid prototyping) for military application for 25 years. Through its relationship with the Regional Additive Manufacturing Partnership of Maryland, ECBC can make these capabilities available to Maryland industry, generating business for the center and avoiding huge equipment outlay costs for Maryland companies.


Senator Mikulski was impressed to learn that ECBC has 35 cooperative research and development agreements with Maryland industries, 11 of which are tied to the Regional Additive Manufacturing Partnership of Maryland. “These agreements provide industry access to ECBC technology, infrastructure, and people, while allowing ECBC to be involved in the development of a high-tech[ology] industrial base,” said ECBC director Joseph L. Corriveau, Ph.D.

“This is the future,” Mikulski said as she examined a lunch-box-sized 3-D printer. “This is where the jobs of the future are going to be. Manufacturing as we know it is gone. We need to be able to bring the next wave in manufacturing to our region and our Nation.”

Senator Mikulski's visit was coordinated by the Army Alliance, a nonprofit civic organization dedicated to the well-being of programs and organizations at Aberdeen Proving Ground.

“Senator Mikulski's visit highlights the importance of collaboration,” said Michael Abaie, ECBC director of engineering. “By working with local industry and academia, we can achieve a win-win by bringing technology within their reach, which in turn enables them to better support our programs.”

Mikulski last visited the ECBC on 5 August 2014, when she cut the ribbon for the Advanced Chemistry Laboratory and toured a showcase featuring chemical, biological, radiological, and nuclear detection, protection, and elimination capabilities.

ECBC is the Army's principal research and development center for chemical and biological defense technology, engineering, and field operations. ECBC has achieved major technological advances for the warfighter and for our national defense, with a long and distinguished history of providing the armed forces with quality systems and outstanding customer service. ECBC is a U.S. Army Research, Development, and Engineering Command laboratory located at the Edgewood Area of Aberdeen Proving Ground, Maryland. For more information about ECBC, please visit its Web site at <<http://www.ecbc.army.mil>> or call (410) 436-7118. 

Mr. Arndt serves as a public affairs officer at the ECBC, Aberdeen Proving Ground, Maryland.

What it Takes to Be a Successful CBRN Officer

By Major Jacy A. Park, Captain Matthew S. Giffen,
and Captain Jon K. Phillips

After 14 years of operations in Afghanistan and Iraq, chemical, biological, radiological, and nuclear (CBRN) company grade officers have lost their ability to be the go-to staff officers while maintaining technical competence within their military occupational specialty. For the past 30 years, successful chemical officers had one common characteristic—they were excellent staff officers who were seen as valued members of the team. Chemical officers carried the reputation as some of the most competent operations officers in the Army, in part because most of their time was spent in operations centers from battalion to division. While we spend many hours in the classroom developing an understanding of what is required technically of a CBRN officer, we have forgotten how to *be* a CBRN officer. The skills required are technical competence; noncommissioned officer (NCO) mentorship; multifunctional, artistic excellence; initiative; guts; and old-fashioned hard work. This article is designed to reboot our institutional memory of what it means to be a CBRN officer.

Within a battalion or brigade formation, CBRN officers need to understand the CBRN officer role. The main role of the CBRN officer is to be the conduit between the unit commander and CBRN units. The CBRN officer synchronizes the unit with the unit mission requirements to ensure mission success. Understanding the unit mission includes—

- Assessing the threat and vulnerability of the unit based on current and future operations.
- Providing a relevant CBRN defensive posture and actions to enable the unit core mission.

CBRN officers provide the commander with tactical and technical advice to protect the force and employ CBRN defense capabilities in the area of operations. The CBRN officer's duty is to show the need for CBRN training and to demonstrate its importance to the commander. A useful tool for this is the monthly unit status report (USR).

Completing the USR is one of a long list of potential duties we perform, and it is usually a task that others on staff dread. Completing the USR provides an opportunity to display competence and communication skills to senior

leaders, and it is a stepping-stone for greater responsibility. How many other staff officers brief the commander monthly? This task can set you apart from your peers or mire you in the doldrums of mediocrity. Because CBRN readiness is a reportable item on the USR, the USR is a useful tool for illustrating the importance of CBRN training.

Completing the USR forces you to establish networks and build relationships vertically and horizontally so that you can influence CBRN operations and mission effectiveness. Effective CBRN officers develop open communication and build a good rapport with superior and subordinate leaders and key staff officers. Furthermore, effective CBRN officers develop relationships with CBRN leaders and staff within and outside of their hierarchy. This allows the CBRN officer to stay updated; receive and facilitate valuable, low-density training; and stay connected with the CBRN community for professional and personal growth. Maintaining connections with the Chemical Corps will also help maintain technical competence as new equipment, training, and initiatives become available.

Technical competence in the field of CBRN operations encompasses numerous missions required for the survivability of the force. According to Department of the Army (DA) Pamphlet (Pam) 600-3, *Commissioned Officer Professional Development and Career Management*, CBRN operations include protection, interdiction, offensive operations, active and passive defense, elimination, and consequence management.¹ CBRN officers attend the CBRN Basic Officer Leader's Course and the CBRN Captain's Career Course, where they learn how to best support their units in the execution of unified land operations, filling the roles that are outlined in DA Pam 600-3. CBRN officers further develop and hone these skills while training with their units and, most importantly, receive training from our tremendous CBRN NCOs.

The first technical experts that newly graduated CBRN officers encounter are CBRN NCOs; they form a keystone to the success of the CBRN program. Aside from providing on-the-job training for their officer counterparts, their experience and technical expertise provide the foundation for

a solid program that ensures proper employment, maintenance, and training of all things CBRN. The challenge can be the availability of these highly competent NCOs whose skill set is in equal demand elsewhere in the unit. Many CBRN NCOs have additional duties that cause CBRN operations to be relegated to their secondary duty. Articulating the importance and relevance of the CBRN operation to the unit mission is a team effort. It is the officer's job to ensure that the NCO is given the time and resources necessary to fulfill the CBRN obligations to the unit.


CBRN officers can also be requested to do jobs outside of their normal duties. The Chemical Corps maintains some of the most intelligent officers in the Army, a fact that is often reinforced by many of our maneuver brethren. However, some might lack the sense or feel of combined arms operations and decisive action as members of a combined arms team. The ability to understand the operating environment and integrate and manage capabilities in the chaotic and complex operations of today and the future cannot be trained. It must be experienced in training environments at home station or training centers. There is a direct correlation between the CBRN officer's ability to successfully master staff officer operations and to integrate CBRN defense operations into their respective combined arms teams and formations. Bluntly stated, if CBRN officers cannot perform the basic skills required of a general staff officer, they will not be allowed to be CBRN officers. Their duties will focus on the USR and other tasks that are not popular among the staff. This can be prevented.

The U.S. Army Chemical, Biological, Radiological, and Nuclear School (USACBRNS) programs of instruction for the CBRN Basic Officer Leader's Course and the CBRN Captain's Career Course currently far exceed any other CBRN training conducted in the past 30 years. This training provides the requisite depth and breadth of CBRN technical instruction to prepare an officer to meet the CBRN defense mission requirements of any formation in the force. Regardless of technical competence, the challenge since the 1980s has been having the opportunity to train and exercise units in the execution of CBRN defense skills. But by first being good staff officers and assistant operations staff officers, we can overcome the challenge.

Our Army is undergoing a transition from forward operating base operations to combined arms operations in a decisive action environment. Successful operations will

require that operations centers manage information for the commander and maintain the ability to generate options to take advantage of success. CBRN officers have a unique opportunity to play a large role in this process by integrating themselves as key players into operations centers if they choose to take the initiative. While the future is unclear, we are focused on combined arms operations and decisive action

to develop flexibility to meet any adversary. Our responsibility in that effort is to ensure the protection of our formations and ensure freedom of action in a weapons of mass destruction environment. We need to regain our senior leaders' confidence that we can and will do this job with expertise and competence. However, to earn this role, CBRN officers must step up and accept a little professional risk, be willing to learn from their mistakes, and constantly strive to improve. Current and

future CBRN officers must take the initiative, dig deep, and selflessly serve for the opportunity to excel. 

Endnote:

¹DA Pam 600-3, *Commissioned Officer Professional Development and Career Management*, 3 December 2014.

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BRIDGING THE CHEMICAL AND MEDICAL GAPS FOR MASS CASUALTY DECONTAMINATION

By First Lieutenant Christopher C. Piasecki

The threat of chemical, biological, radiological, nuclear, and explosives (CBRNE) incidents perpetrated by rogue states or terrorist organizations presents a clear and present danger to the security of the United States and allied nations around the world. CBRNE materials are inherently hazardous, and they have the potential to produce significant injuries and a large number of casualties in a short timeframe. This operational environment can stretch standard rescue and health care providers beyond their capacity to provide effective care and treatment. A mass casualty scenario often requires the assistance of Army consequence mitigation response units to surge military personnel and supplies to the incident area. However, due to the inherent nature and complexity of these scenarios, friction points may develop. This can slow down the response, generate confusion among response assets, and reduce the overall effect of the response strategy.

To ensure the effectiveness and efficiency of CBRNE consequence management response strategies, innovative Army leaders design realistic and challenging training plans that ensure unit proficiency in CBRNE consequence management techniques and procedures. One unit engaged in such efforts is the 71st Chemical Company, 8th Military Police Brigade, 8th Theater Sustainment Command, Schofield Barracks, Hawaii. The 71st Chemical Company forward-deployed to Camp Arifjan, Kuwait, and conducted a joint mass casualty decontamination (MCD) exercise with the 581st Area Support Medical Company, 61st Multifunctional Medical Battalion, 1st Medical Brigade, 13th Sustainment Command, Fort Hood, Texas. Chemical units often cross-train with military police and explosive ordnance disposal units to execute an all-hazards approach to consequence management operations. However, medical units are not normally included in training partnerships beyond basic medical support.

Both companies dedicated a week to exchanging information and conducting demonstrations of tactics, techniques, and procedures for responding to an MCD event. During the first 3 days of execution, the companies conducted



A treatment platoon leader from the 581st Medical Company delivers a mission briefing to the joint unit response team before the MCD exercise.

chemical- and medical-specific training, the 71st Chemical Company demonstrated CBRNE decontamination procedures, and the 581st Medical Company demonstrated medical triage and evaluation procedures. Teams from both

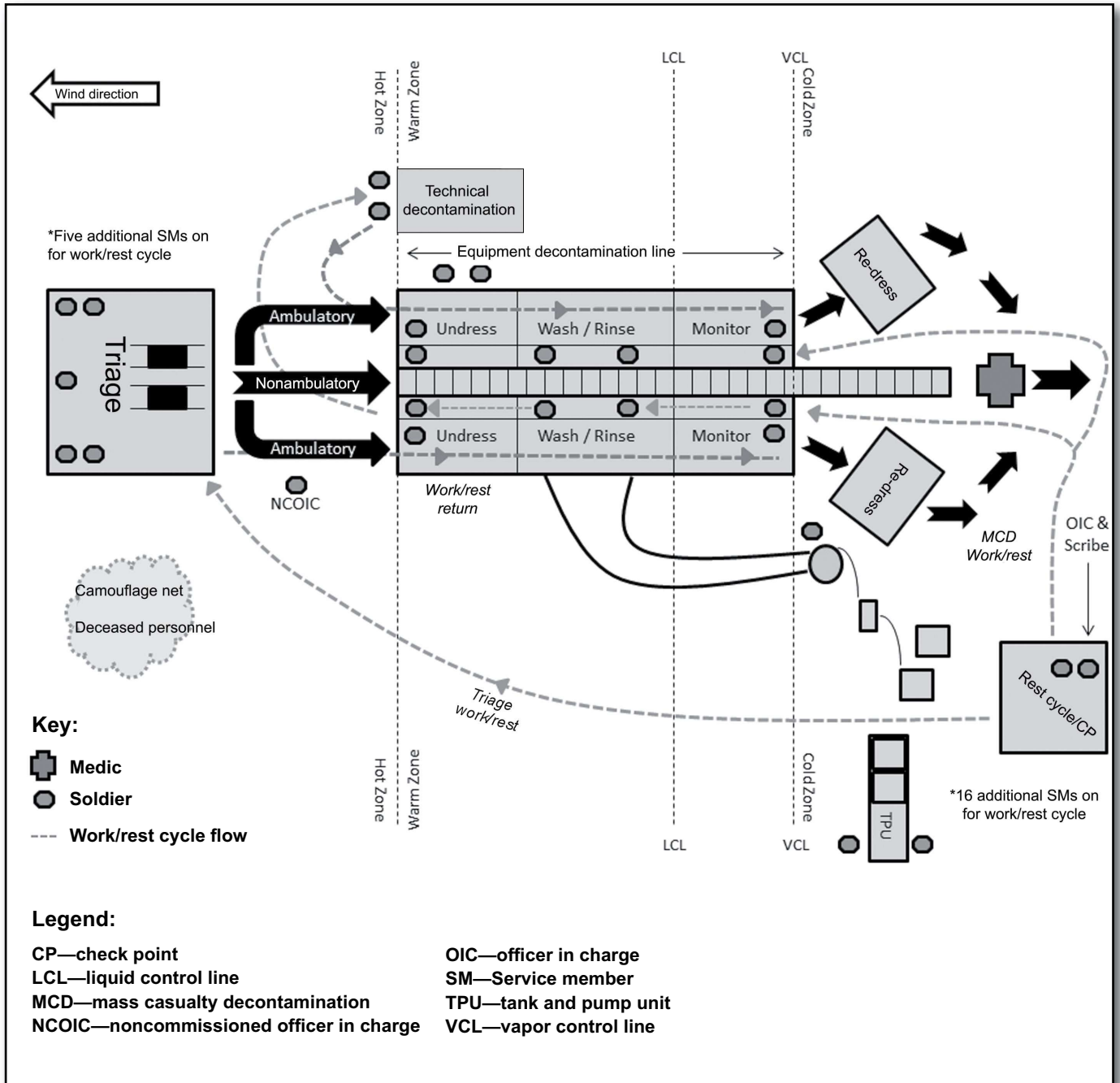


Figure 1: Layout of the MCD operation line

companies executed tasks at their respective stations to further improve their training methods. The week-long event culminated in a situational training scenario derived from recent reports of chemical agents employed in the Middle East. The units were challenged with 75 simulated ambulatory and nonambulatory casualties who presented with a variety of medical issues and symptoms induced by exposure to a simulated, unknown, persistent, CBRNE agent during a 3-hour timeframe. The MCD exercise was executed with 145 Soldiers contributing to mission accomplishment from the joint company effort. The 71st Chemical Company leadership briefed Area Support Group–Kuwait and U.S. Army Central Command senior leaders, including Brigadier

General Timothy M. McKeithen, to provide a comprehensive overview of U.S. Army Central Command MCD capabilities. The exercise was fast-paced and specifically designed to challenge the units to determine the limits of their respective and synergistic capabilities. The commander's intent for the training exercise was met, and the units incorporated lessons learned into a comprehensive standard operating procedure to enhance the U.S. Army Central Command theater all-hazards consequence response plan.

A mass casualty incident is defined as any incident that exceeds the emergency disaster response capabilities of an area. Due to the abrupt, immediate nature of a CBRNE

incident, initial responders are commonly composed of local emergency responders (police, fire department officials). Effective mass casualty response is founded on the principle of triage—the system of sorting and prioritizing casualties based on the tactical situation, mission, and available resources. The goal is to provide the highest level of assistance to the greatest number of casualties within the limitations of time, distance, and capability. Contaminated casualty management is complicated; casualties must be evaluated and possibly treated and evacuated while contaminated with a deadly CBRNE agent. Decontamination must be conducted quickly to save lives. Chemical, biological, radiological, and nuclear (CBRN) units should use resources that are immediately available to facilitate a rapid response.

Following triage operations, the rapid physical removal of the CBRNE agent from the victim is the most important action associated with effective decontamination. Physical removal includes wiping or blotting visible agents from the victim's skin, disrobing the victim, using adsorbents to soak up the agent, and showering or flushing with large quantities of water. After a CBRNE agent attack, vapor or aerosol hazards may still be present—especially if the agent was disseminated within an enclosed structure. After casualties are moved through the wash and rinse stations of the decontamination line, they are monitored with detection equipment, which varies based on the type of CBRNE agent present. This ensures thorough decontamination by reducing contamination to levels as low as reasonably achievable. The casualties then proceed to medical personnel for thorough diagnosis and treatment of medical issues and injuries.

A successful mass casualty response heavily depends on many factors, including—

- The size of the incident in terms of the physical area and the number of casualties.
- The level of care provided by the first responders.
- The type of CBRNE agent employed.
- The proximity of the response assets to the incident area.
- The number of personnel available for the response.

Unit leaders specifically designed the training event to determine which of these operational factors were integral to the successful execution of a consequence management response strategy. In addition, they investigated whether the time required to move a response unit into position, set up, and become fully capable of executing a specific mission would allow achievement of the overall desired response.

Several important discoveries were made through this joint training exercise. It was determined that the time needed to execute a CBRNE mass casualty response may be too great to be effective against most CBRNE agents. When the lethality rate of certain chemical warfare agents (G and V series nerve agents, chlorine gas) is taken into account, the life-saving benefit from an MCD response may be extremely low. Due to significant time and logistics requirements for moving response assets into position, setting up decontamination and medical stations, and achieving a ready status to begin treating casualties, many of the casualties requiring decontamination may be deceased. The MCD capability may be more useful when agents with a slower mechanism of action (persistent blister agents) are employed. To achieve the desired level of theater response capability, senior leaders

must assess the likelihood of a particular event and position CBRNE assets accordingly.

The results of this exercise called the effects of the CBRNE MCD response into question in terms of execution time. The perception of, and expectation for, an MCD operation involves a large number of ambulatory casualties with low to moderate degrees of injury, and many MCD training exercises are developed for this scenario. For nonambulatory casualties, a litter must be processed through the decontamination line. This requires more time, personnel, and space. The decontamination of nonambulatory casualties is labor-intensive, and it requires significant numbers of augmentation personnel and



Soldiers from the 71st Chemical Company begin to set up the main tent structure for the decontamination component of the operation.



A CBRN Soldier attaches a casualty information card to a simulated victim of the CBRNE incident.

additional equipment. Nonambulatory casualty decontamination slows the process of casualty evaluation and treatment, and it is physically demanding for response personnel. These factors must be taken into account when determining the number of Soldiers assigned to support an MCD operation.

Asymmetric warfare may further complicate the mass casualty event if combatant, noncombatant, or third-world country nationals are included among the injured. A CBRNE incident demands a rapid transition from routine to contingency operations, triggered by the earliest recognition of this threat within a unit area of responsibility. This transition can be made more efficiently and effectively by a thoroughly developed MCD response plan that is routinely rehearsed, assessed, and validated.

Decontamination by removing clothing and/or showering or flushing with water is the most expedient and practical method for MCD. Showering is recommended when liquid transfer from clothing to skin is suspected. Disrobing should occur before showering for CBRNE agents; however, the decision to disrobe should be made by the incident commander based on the situation. When large numbers of potential casualties are involved and queued for decontamination or when a limited volume of water is available, it may be

necessary to significantly reduce shower times. Water alone is an excellent means of decontamination; showering or flushing with water physically removes the CBRNE agent from skin by dilution. By adding soap, a marginal improvement can be achieved by ionic degradation of the chemical agent. Soap aids in dissolving oily substances such as mustard or other blister agents. The most important reason for decontaminating exposed victims is to remove the agent from the victim's skin and clothing, reducing further possible agent exposure and further effects among victims. Protecting emergency responders and medical personnel from secondary transfer exposures is also a concern.

Several opportunities currently exist for CBRN leaders to improve their unit level of readiness for performing a successful MCD operation. The U.S. Army Chemical, Biological, Radiological, and Nuclear School, Fort Leonard Wood, Missouri, offers the CBRN Mass Casualty Decontamination Course. The course focuses on providing the skills and knowledge required to prepare for, and respond to, a CBRNE incident as part of the state and federal emergency management response system. The course is specifically designed to provide CBRN Soldiers with comprehensive training in CBRNE decontamination operations techniques and procedures through a combination of academic curricula and hands-on practical exercises.

Commanders at all levels should consider the lessons learned from joint training exercises when determining which CBRNE incidents would benefit from an MCD response. It is critical for leaders to understand the limits of the MCD capability so that CBRN units can be used most effectively. The partnership between medical and CBRN assets is critical for effectively and efficiently treating large numbers of CBRNE incident casualties. Opportunities that exercise interoperability between these skill sets serve not only to greatly enhance the Chemical and Medical Corps, but also the Army's posture to successfully engage in an all-hazards consequence management operational environment.

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First Lieutenant Piasecki is the platoon leader for a dismounted reconnaissance platoon with the 71st Chemical Company. He holds bachelor's degrees in physiology and psychology from Michigan State University, East Lansing, Michigan. He is currently pursuing a master's degree in emergency disaster management from the American Military University.

2015 Honorees of the U.S. Army Chemical Corps

Compiled by Ms. Christy Lindberg

Hall of Fame Inductees

The U.S. Army Chemical Corps Hall of Fame award is the highest form of recognition offered by the Regiment. This coveted award honors those who have made landmark contributions to the overall history and traditions of the Chemical Corps. These individuals have distinguished themselves through advances in science and technology, a lifetime of service and devotion to the Corps, or gallantry in battle. Two individuals were inducted to the Hall of Fame on 23 June 2015.

Major General John C. Doesburg (Retired)

John C. Doesburg had a long and illustrious military career. Born into an Army family in Milwaukee, Wisconsin, he moved repeatedly and attended schools in Pennsylvania, Texas, Germany, and Oklahoma before graduating from high school in Little Rock, Arkansas. After receiving a bachelor of science degree in chemistry from the University of Oklahoma, Doesburg entered the Army in 1970 through the Reserve Officers' Training Corps. He later received a master of military arts and science degree from the U.S. Army Command and General Staff College, Fort Leavenworth, Kansas, and graduated from the Army War College, Carlisle Barracks, Pennsylvania. Throughout his 34 years of Army service, he has prestigiously represented the Chemical Corps around the world in a number of command and staff positions.

Major General Doesburg's last active duty assignment was as Commanding General, U.S. Army Research, Development, and Engineering Command, Aberdeen Proving Ground, Maryland. His previous assignment was Commanding General, U.S. Army Soldier and Biological Chemical Command, Aberdeen Proving Ground. In 2002, he was tasked to establish and stand up the U.S. Army Research, Development, and Engineering Command using resources from the U.S. Army Soldier and Biological Chemical Command and the Research, Development, and Engineering Center that were assigned to the other Army material command elements. During the course of his career, Doesburg directed the formation of three new organizations: the U.S. Army Research, Development, and Engineering Command; the Chemical Materials Agency (including the demilitarization and chemical weapons storage missions); and the Guardian Brigade (which later became the 20th Chemical, Biological, Radiological, Nuclear, and Explosives [CBRNE] Command).

Doesburg's significant duties included Joint Program Manager, Biological Defense; Chief, Nuclear, Biological, and Chemical Defense Division, Office of the Deputy Chief of Staff for Operations and Plans, Department of the Army; director of the Joint Program Office for Biological Defense, Washington, D.C.; and the senior technical advisor to the commanding general of the 20th CBRNE Command. In 2010, Doesburg was named the Honorary Colonel of the Regiment, and he continues to serve in that capacity today.

After retiring from the Army, Doesburg continued his work in chemical and biological defense at Oak Ridge National Laboratory, focusing on the detection of the next generation of threats. He then became part of the new management team at Lawrence Livermore National Laboratory, becoming its principal associate director for global security. Furthermore, he was responsible for more than 900 programs and 1,000 scientists, engineers, and support staff. He returned to Oak Ridge National Laboratory in 2009 and served as the director of International Security and Analysis Programs.



Major General Doesburg's awards and decorations include the Distinguished Service Medal, Defense Superior Service Medal, Legion of Merit with one bronze oak-leaf cluster, Defense Meritorious Service Medal, Meritorious Service Medal (7th Award), Army Commendation Medal with one bronze oak-leaf cluster, Global War on Terrorism Service Medal, Army Superior Unit Award, and National Defense Service Medal with two bronze oak-leaf clusters. In 2007, Doesburg was inducted as a Distinguished Member of the Chemical Corps.

Major General Doesburg (Retired) now serves as a member of the Strategic Advisory Group for the Global Security Directorate, with a focus on chemical and biological defense. Currently, he is an adjunct faculty member of the Howard Baker Center for Public Policy at the University of Tennessee, where he continues to foster the next generation of chemical and biological defense leaders.

Lieutenant Colonel Edgar D. Stark (Killed in Action)



Edgar D. Stark was born in Milwaukee, Wisconsin. He graduated from the U.S. Military Academy in 1927, and he was commissioned as a second lieutenant of infantry. He transferred to the Chemical Warfare Service in 1939 and, with America's entry into World War II, took command of the newly activated 3d Chemical Battalion in 1942. In less than a year, Stark and his staff oversaw the monumental task of organizing, equipping, and training the 3d Chemical Battalion, Fort Benning, Georgia. This was no simple task, especially considering the lack of sufficient chemical mortars and training materials; furthermore, the urgency to dispatch chemical mortar battalions to the theaters of war intensified this mission. In February 1943, the battalion underwent amphibious training in Florida; and within 2 months, shipped out for duty in North Africa in support of the 3d Infantry Division. The battalion soon made a name for itself, receiving accolades from the divisions it supported through their on-call, supporting mortar fire. With the invasion of mainland Italy, the 3d Battalion received a new mission: to provide close-fire support for the 2d Division of Moroccan Infantry, part of the French Expeditionary Corps attached to the American 5th Army. The high-angle fire of the 4.2-inch mortars was very effective in the mountainous terrain of Italy.

Near Cerasuolo, Italy, on the 59th consecutive day in combat, 12 January 1944, Lieutenant Colonel Stark met with his five company commanders to coordinate efforts of fire support for a Moroccan attack on a vital enemy position. While conducting this meeting, the position was bombed by German aircraft and Lieutenant Colonel Stark was killed. The citation for his posthumous award of the Silver Star Medal reads:

"[Lieutenant Colonel] Stark left his command post to direct his troops, who were supporting a constant shell fire. He remained with his units to assist his company commanders in supporting the attack and in coordinating the mortar fire of the platoons committed. [Lieutenant Colonel] Stark was killed during an enemy aerial bombardment, but his excellent directing, his timely advice, and excellent coordination of fires enabled his units to complete their mission successfully."

In addition to the Silver Star, Lieutenant Colonel Stark was awarded the French Croix de Guerre with Vermeil Star and the Purple Heart. These awards were presented to his widow and two children.

The importance of Lieutenant Colonel Stark's leadership and service to present-day Soldiers of the 3d Chemical Brigade, who carry on the lineage of the 3d Chemical Battalion, cannot be overstated. Stark's dedication to the training and well-being of his Soldiers and his personal courage in combat are sterling examples of the types of values the 3d Chemical Brigade instills through training every day.

Distinguished Members of the Chemical Corps Inductees

The award of the Distinguished Member of the Chemical Corps title signifies that an individual has not only contributed a lifetime of service in the Corps, but also supported the Chief of Chemical in implementing the Corps vision. One individual was inducted into the 2015 Distinguished Members of the Chemical Corps on 23 June 2015.

Sergeant Major Joseph Edward Brauch Jr. (Retired)

Joseph Edward Brauch Jr. was born at Fort Dix, New Jersey. After completing basic training, combat engineer advanced individual training, and Airborne School, Brauch joined the U.S. Army Special Operations Command, where he collectively served 7 years in the 7th Special Forces Group (Airborne) and the 10th Special Forces Group (Airborne). He then qualified for the prestigious 1st Special Forces Operational Detachment-Delta organization, where he served for more than

16 years, as a team member, team sergeant, master breacher, instructor/trainer, operator training course noncommissioned officer in charge and sergeant major, and unit breaching sergeant major. After retiring from active duty, Brauch served as a security consultant at Los Alamos National Laboratory; a counter-surveillance consultant for U.S. embassies worldwide; the program manager for the Center for National Response; and the deputy chief of the Joint Special Operations Command, Chemical, Biological, Radiological, and Nuclear (CBRN) Branch.

Brauch's capstone effort consisted of managing the Joint Service Operations Command CBRN training program, Jefferson Gold. Designed to prepare unit members to conduct tactical operations against chemical or biological targets, the program focuses on a series of technical and complex objectives involving live-agent training to locate, render-safe, seize, recover, neutralize, interdict, sample, and destroy chemical or biological weapons, production facilities, agents, and materials.

Brauch contributed greatly to the research, development, testing, and evaluation effort of numerous cutting-edge technologies, which were transformed into equipment capabilities. His contributions were largely due to his direct input toward requirements, his industry relationship-building abilities, and his dedicated follow-through with actions. Most of these technologies—including the M53 protective mask, the All-Purpose Protective Ensemble Emergency Personnel Decontamination System, and several classified libraries of emerging threat agents for detection equipment—were transitioned jointly across all Department of Defense Services. Brauch was also heavily involved in the refinement of the U.S. Special Operations Command Counter-Proliferation Analysis and Planning System (CAPS), which has evolved to become one of the Nation's premier leading CBRN planning tools. CAPS is an encyclopedia for weapons of mass destruction resources, containing more than a thousand engineering- and intelligence-derived, detailed analyses concerning CBRN facilities. Brauch also worked hand in hand with Lawrence Livermore National Laboratory to develop this tool to meet the needs of combating weapons of mass destruction planners and CBRN defense personnel from the tactical, operational, and strategic levels.

Additionally, as the senior training program manager and site facility manager for the Center of National Response in West Virginia, Brauch was responsible for the scenario development, event execution, and overall safety of CBRN training conducted from 2000 to 2002. He personally developed and supervised training events at the world-class tunnel complex for a multitude of CBRN elements, including state civil support teams, CBRNE response teams, nuclear disablement teams, and various chemical company and chemical battalion level exercises for Regular Army, U.S. Army Reserve, and Army National Guard personnel.

Sergeant Major Brauch was awarded the Honorable Order of the Dragon Award in April 2012, and he was inducted into the U.S. Special Operations Command Commando Hall of Honor in April 2014. Sergeant Major Brauch (Retired) passed away on 11 April 2012.



Ms. Lindberg is the historian at the U.S. Army Chemical, Biological, Radiological, and Nuclear School (USACBRNS) History Office, Fort Leonard Wood, Missouri.



FROM OUR CBRN FOXHOLES: HOW DO WE SUPPORT THE FIGHT?

By Major Glen A. Wright

Since the beginning of the Global War on Terrorism in 2001, the chemical, biological, radiological, and nuclear (CBRN) skill set of non-CBRN Soldiers has diminished. With the country fighting multiple wars for an extended period, CBRN training has taken a backseat to other mission-essential tasks in most warfighting units. As a result, the Chemical Regiment will face significant challenges to “re-blue” Army CBRN readiness in the immediate future to ensure preparedness for the next conflict, national disaster, or emergency.

At the “How We Support the Fight” Seminar, held 24–25 June 2015 during CBRN Regimental Week at Fort Leonard Wood, Missouri, key leaders within the Chemical Branch assembled to address specific challenges and propose solutions. The group discussed how CBRN assets should support the fight and how the Army CBRN skill set could be returned to a higher level of readiness.

CBRN commanders and leaders from around the world were invited to the seminar by Brigadier General Maria Gervais, the commandant of the U.S. Army Chemical, Biological, Radiological, and Nuclear School (USACBRNS). The assembled group included Major General Lucas Polakowski, deputy director for the Center for Combating Weapons of Mass Destruction, U.S. Strategic Command; Brigadier General William King, commander of the 20th Chemical, Biological, Radiological, Nuclear, and Explosives (CBRNE) Support Command; Brigadier General James Blankenhorn, deputy commander of the 335th Signal Command; and Mr. Daniel Klippstein, deputy director for the Headquarters, Department of the Army, Deputy Chief of Staff, Operations, Plans, and Training (G-3/5/7).

Colonel Casey Scott, director of the USACBRNS Department of Training and Leader Development, noted that it had been many years since so many senior CBRN personnel had gathered to discuss the future of the Chemical Corps. The group identified problems that need to be solved to improve CBRN readiness. After considerable debate, the group generated a set of due-outs that must be achieved to reach the regimental mission of protecting the force and the Nation from weapons of mass destruction and CBRN threats and hazards.

One of the more imposing tasks identified by the group was that of educating and influencing maneuver commanders. CBRN personnel must educate maneuver commanders

on their organic CBRN capabilities (and other CBRN units and resources) within their task organization and operational environment that are available to assist during their training or mission set. CBRN personnel must also influence maneuver commanders to train CBRN tasks throughout the year and during validation training at combat training centers. For most seasoned CBRN professionals, the lack of CBRN emphasis among non-CBRN commanders is an old problem that has been alleviated, only to return many times throughout the years. Now, this problem must be solved during an era of no growth and reduced personnel and funding—a considerable challenge.

Determining the long-term future of the remaining Biological Integrated Detection System units is another significant task that was identified during the seminar. There are Biological Integrated Detection System platoons and companies in the Army National Guard and U.S. Army Reserve. The Chemical Regiment must determine if it should maintain the M31A2 Biological Integrated Detection System platform (since the Nuclear, Biological, and Chemical Reconnaissance Vehicle now has the same biodetection capabilities) or discontinue the equipment and repurpose the units to more relevant or probable mission sets.

Also, Army reductions have systemically affected the ability of the Chemical Regiment to provide decontamination to the overall force. Since the Cold War, Army maneuver units have been manned, equipped, and trained to conduct operational decontamination for their own elements, as needed. This intrinsic capability enhances freedom of maneuver by enabling a contaminated unit to decontaminate itself and get back into the fight faster than if it needs to coordinate with outside assets for decontamination. This was primarily accomplished by assigning one CBRN sergeant to each maneuver company. Within the last 6 years, the CBRN sergeant position was downgraded to an entry-level position; then shortly thereafter, the CBRN position was eliminated and replaced with a Soldier from another military occupational specialty.

Consequently, maneuver units have lost the ability to decontaminate themselves. Lieutenant Colonel Jeffrey Lovell, 1st Infantry Division CBRN chief, explains, “Tactical commanders do not understand the scope of responsibility maneuver units are now incurring while conducting decontamination operations. Downsizing and limited resources have

forced CBRN subject matter experts out of our formations in lieu of technical reachback capabilities. Tactical commanders have been convinced that a school-trained 11B or 19K has the ability to conduct and organize decontamination operations as proficient as a 74D. Unit decontamination teams are minimally trained and exist more on paper than actual practice. Additionally, tactical units are now expected to perform decontamination operations previously conducted by CBRN decontamination platoons. We must maintain this critical capability to conduct decontamination operations because the CBRN threat has not decreased or diminished.”

The issues that Lieutenant Colonel Lovell mentions are compounded by the need for maneuver units to include CBRN tasks during combat training center rotations and on their training calendars. USACBRNS is working on one course of action to improve the situation. The program of instruction for the 2-week CBRN Defense Course (offered to non-CBRN Soldiers at most installations to prepare them for CBRN duties) is being rewritten to include more detail. However, regardless of how much the CBRN course is improved, it is highly unlikely that a non-CBRN Soldier would ever be able to provide a company of warfighters with the level of expertise needed to improve CBRN readiness.

With the changing force structure and the fielding of the dismounted reconnaissance sets, kits, and outfits, the Chemical Regiment needs to clearly identify the roles and capability differences between the hazard response (HR) platoons and the chemical, biological, radiological, nuclear, and explosives response teams (CRTs). Colonel Thamar Main, the division chief of the Requirements Determination Division, Capabilities Development Integration Directorate, USACBRNS, stated, “TEU [technical escort unit] and HR units need to know what’s expected of them. HR equals site assessment; CRT equals site exploitation. HR platoons have not been trained to be CRTs without EOD [explosive ordnance disposal], [but] that’s not the major difference. If [it was the only major difference], the EOD community could argue that they don’t need to be organic to a CRT and could opt to provide any HR platoon with an EOD slice for a specific mission. That would be a huge mistake based on my observations commanding a TEU battalion. It took a lot of effort to get the EOD teams within CRTs functioning as part of the CRT, especially in exploitation tasks. Once we decide what tasks belong solely to CRTs, we can think about more fully institutionalizing what has previously been contractor-provided training for CRTs.”

This clear delineation between the two CBRN elements would help alleviate the confusion of maneuver commanders who have these assets assigned to their task organization for specific missions. For example, a non-CBRN commander who previously had a CRT assigned for a mission may expect an HR platoon to be able to destroy munitions discovered during reconnaissance or provide site analysis and chain of custody for exploitation. Unlike a CRT, the HR platoon is not equipped to handle munitions or to conduct exploitation operations.

Although the ability to provide smoke (obscuration) is an Army capability, given the history of the Chemical Regiment as the primary provider of smoke on the battlefield, the future of obscuration was a key discussion at the seminar. The need for a smoke capability has been voiced at our combat training centers. We need a holistic obscuration strategy to cover the requirements of the entire scope of Army missions. Driven by an operational needs statement from the XVIII Airborne Corps, the 82d Airborne Division is currently fielding smoke vehicles and it has requested training on the use, tactics, and employment of smoke. The 82d Airborne Division used CBRN reconnaissance platoons within the brigade support battalions to conduct a three-tiered M56E2 Coyote Smoke Generator System training program that included new equipment training, training and licensing of the Driver’s Vision Enhancement System, and training on doctrine and tactics (provided by the Capabilities Development Integration Directorate, Fort Leonard Wood, Missouri).

Major Robert Heffner, the 82d Airborne Division CBRN officer, believes that this equipment fielding and training will be a combat multiplier for the division. He stated, “The capability that the M56E2 Coyote Smoke Generator will bring to the 82d Airborne Division and their global response force unique mission set will help achieve positive effects for protection of both forward operating base operations and tactical maneuver when properly synchronized with intelligence data. I believe that, based on the constraints and nature of the operational needs statement, which was fulfilled with the M56E2 fielding, the brigade engineer battalions are best suited to possess the obscuration capability. The brigade engineer battalions are organic units to each of the 82d Airborne Division brigade combat teams that will be tasked with the global response force mission and will conduct the majority of the operations that will require obscuration. I also believe that, given the talent and ingenuity of the paratroopers within the division, there will be many new uses and standard operating procedures developed over the course of the next few years.”

The successful “How We Support the Fight” Seminar mostly exposed what we already knew: Difficult challenges lie ahead for the Chemical Regiment. The Chemical Regiment needs to ensure that the Army has an expeditionary CBRN capability covering all aspects of detection, defense, mitigation, exploitation, and elimination across the force. Bringing these challenges to the attention of senior leaders and commanders across the Regiment will assist in codifying solutions for the current CBRN readiness capabilities gaps across the Army. If visibility remains on the due-outs that were generated from the discussions and if resources are committed to the solutions, this seminar could prove to be a monumental success for the Chemical Regiment and a turning point for CBRN readiness across the Army. ●●●

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RECOMMENDATIONS FOR CBRN LIEUTENANTS REPORTING TO NON-CBRN UNITS

By Captain Ryan J. Bridley

Many chemical, biological, radiological, and nuclear (CBRN) lieutenants are sent to non-CBRN units, where they are assigned staff positions, rather than platoon leader positions. These lieutenants may have their officer evaluation reports (OERs) sacrificed in order to inflate the OERs of the officers who are in the branch represented by the unit. This article offers a series of recommendations—through personal experience—to ensure that CBRN lieutenants have a greater chance of taking the leadership opportunities and receiving the OERs that they deserve.

After completing the CBRN Basic Officer Leader's Course (CBOLC) in 2008, I reported to my first unit, the 3d U.S. Infantry Regiment (The Old Guard), where my battalion commander assigned me as the platoon leader of a rifle platoon. We soon deployed in support of Operation Iraqi Freedom 09-10.

After redeploying, I was reassigned as the battalion CBRN officer for a relentless group of chest-pounding infantry officers. As the CBRN officer, I was expected to serve only as the unit status report (USR) officer in charge (OIC), but I established myself as a key player on staff.

Significance of the USR

While attending the CBRN Captain's Career Course, my class and a CBOLC class attended a briefing presented by a senior CBRN officer. The first question posed during the question-and-answer portion of the briefing came from a second lieutenant in the CBOLC class. He asked, "How do I get out of submitting USRs?" The question made me angry, and I stared at the floor so that the senior officer would not see my frustration. I wanted to stand up and ask if the lieutenant was too good to complete the USR. The truth is, nobody (including me) likes submitting a USR. However, the USR is important and the duty is usually assigned to the CBRN officer. If you can master and explain the USR, you are no longer just the "USR person"; you are an untapped resource.

As soon as I became the battalion CBRN officer, I was appointed as the USR OIC. I had no USR training, and the previous USR representative had just left and could not teach me how to consolidate the monthly report. Furthermore, when I approached my battalion executive officer (an infantryman who was proud to be *old school*) for guidance, I was told to get out of his office and figure it out. Thankfully, I found a noncommissioned officer who taught me how to consolidate the report and translate the information for

the monthly briefings to higher headquarters. It took a few months; but after some trial and error, I became competent in completing the monthly reports and, more importantly, explaining the numbers to the executive officer and commander.

The USR may not be exciting, but it is important for the following reasons:

- The USR sustains the force. The commander uses the USR to keep the unit going and to support subordinate units. By providing USR expertise, you are providing a significant service that no one else in the unit can provide.
- Leaders brief the USR to higher headquarters every month. If the data and slides provided are incorrect, the leadership looks bad and you will feel the wrath. However, if the information provided is relevant and the reports and slides are completed to standard, you will be held in higher regard.
- The USR can lead to other responsibilities and opportunities. If you are a junior officer with USR responsibilities and you only put forth the minimum effort, leaders may hesitate to give you additional responsibilities—let alone consider you for a position of greater responsibility. But, if you aggressively tackle the job and make the effort to determine why and how the numbers are calculated, you will gain respect. Everyone knows USRs are not fun, but that's okay. Embrace your inner nerd!

Pursuit of Responsibility

Once you gain a strong understanding of your role as a CBRN officer and USR OIC, you can start branching out. My roles on staff included OIC for performing initial and subsequent command inspections, creating 28 new initial and subsequent command inspection checklists, compiling the weekly roll-up, compiling the biweekly training meetings, writing the daily fragmentary orders, writing countless warning and operation orders, and organizing weekly officer physical training. If you gain a firm grasp on the battle rhythm jobs, do not stop there. For me, this meant—

- Volunteering to serve as the battalion OIC for the Army 10-mile run. (Our battalion provided 400 people to man all the water points in Washington, D.C.)
- Serving as the battalion OIC for the regimental holiday party.
- Serving as the adjutant (the most significant ceremonial staff position) for monthly Department of the Army retirement ceremonies.

- Qualifying as the only back-up OIC for the battalion presidential salute battery (the mortar men with howitzers who conduct the 15- to 21-gun salute for the President or any foreign dignitary who conducts a wreath ceremony at the Tomb of the Unknown Soldier).

These roles may seem somewhat overwhelming, but this is precisely the point. Get involved. If you are involved in all of the events and training for the unit, you are capable of serving as the subject matter expert to the staff for everything. If the responsibilities to be gained are limited, do not hesitate to create responsibilities, by—

- Coordinating a mask confidence course for the companies in the field.
- Organizing a team of Soldiers to train for and run a half-marathon/spartan race. (Take pictures, and send them to participating Soldiers and their leadership.)
- Creating a cheat sheet to share with the unit after attending a school. After graduating from Ranger School, I shared six pages of notes with battalion staff and the companies.

Ask your battalion commander or S-3 for recommendations for developmental reading, and pay attention to the interests that they believe are important. (My S-3 kept up with Israeli military and political affairs.) Research and discuss the material with them. They will greatly appreciate your effort because you are showing that you value their opinions and want to develop yourself.

By doing these things, your chain-of-command will take you seriously if you request new responsibilities or a new position or you ask to attend a school. (Just make sure that you find someone willing to cover down on your responsibilities.) I was offered the choice between serving as an executive officer or attending a leadership school. This can happen to you. After being on staff and proving that you are competent, make it known that you desire more responsibility—to be a platoon leader, to serve as an executive officer, or to attend a school. Nobody will scoff because it will be understood that you are actively trying to better yourself as a leader.

When it comes time for your OER counseling, you should have done so much that your rater and senior rater have difficulty capturing all of your accomplishments within their allotted space.

A Strong First Impression

Although this section falls first in the time sequence of this article, I have chosen to place it last. If you do not make a good first impression, it will be much harder to advance.

Look the part, show up in shape, and strive to maximize the physical training test. Take pride in your appearance. When reporting to a unit, you will likely be immediately introduced to the battalion commander. Wear the new operational camouflage pattern uniform (with the patches and nametapes sewn on the jacket and the patrol cap), carry a notebook and pen, sport a regulation haircut, wipe the sleep

from your eyes, and trim the hair between your eyebrows and in your nose. Also, unless you are at a duty location where you could get hypothermia by being exposed to the elements for an hour (Fort Wainwright, Alaska; Fort Drum, New York; Korea), avoid wearing fleece in garrison during the winter. By wearing fleece in garrison, you are communicating the idea that you do not mind looking like a shapeless ball of fluff as long as you are warm when walking from your car to the office. (Wearing fleece in the field or at the motor pool for command maintenance is usually acceptable.) While this may seem harsh, many members of the combat arms branches may perceive that you have a low threshold for pain when you wear fleece. Instead, to ensure that you stay warm while possessing the physique of a Soldier, wear thick gloves and layers under your jacket.

When leaders hear that they have an incoming CBRN officer, they expect a bookworm. If you can outrun and out-do everyone during physical training, you will leave everyone in shock. It is likely that your new commander will want to take you on a run during physical training as a way to get to know you while working out. This can be a make-or-break scenario because if you fall behind or have trouble catching your breath to talk, you may be viewed as lacking dedication to your own fitness.

When talking to higher-ranking personnel, do not dominate the conversation. Refrain from complaining unless you have a solution. Most captains and above expect a second lieutenant to be seen more than heard. Be a sponge. This does not mean that you should be silent. It simply means that you should give the impression that you are eager to learn and willing to listen. When you speak, speak louder and announce more clearly than normal. Do not be afraid to laugh, but show that you are serious about your job. As an OIC or commander, I do not want a friend; I want someone who takes charge and gets the job done.

Conclusion

As a lieutenant CBRN officer in a non-CBRN unit, you will be working on staff. It is inevitable, but it does not mean you have to quietly sit in a cubicle. Make a good first impression—show up with a professional appearance and in great shape. Learn how to properly input and brief the USR; then take on additional projects to show that you are aggressive, competent, and capable of doing more. This will grab the attention of leaders and, in doing so, will provide greater opportunities to further develop your leadership skills. 🗨️

Captain Bridley is the logistics staff officer (S-4) for the 110th Chemical Battalion (Technical Escort), Joint Base Lewis-McChord, Washington. He has served as a platoon leader, assistant S-3, and company commander. He holds a bachelor's degree in leadership studies from the U.S. Military Academy at West Point, New York, and a master's degree in environmental management from Webster University.

UPDATING THE MANEUVER SUPPORT COMPANY FOR FUTURE OPERATIONS

By Captain Michael A. Counihan

The conventional Army is facing new missions in new environments, and the Chemical Corps will be taking a lead role in some of these new areas. Joint Publication (JP) 3-40, *Countering Weapons of Mass Destruction*, tasks conventional forces with most tasks in counter-weapons of mass destruction (CWMD) Activity 3, for which they will need light, flexible maneuver support chemical, biological, radiological, and nuclear (CBRN) companies.¹ Maneuver support formations are tailored to support a large-scale conventional war with a near-peer enemy, with equipment and personnel driven by the requirements for providing CBRN protection against chemical artillery strikes.

The addition of dismounted reconnaissance and surveillance (R&S) platoons has increased the ability of the maneuver support company to provide value to CWMD operations, but there is room for improvement. Specifically, we should focus on—

- Adding new communications technology to speed information dissemination.
- Having decontamination platoons assume responsibility for emergency personnel decontamination stations and mass casualty decontamination.
- Improving the ability of formations to conduct specialized insertions.

The maneuver support company traditionally consists of a reconnaissance platoon and decontamination platoons. One company could be attached to an armored brigade combat team (ABCT), allowing the brigade commander to attach a chemical reconnaissance platoon to the armored reconnaissance squadron and a decontamination platoon to each of the combined arms battalions. Alternatively, the company could support a division, with the reconnaissance platoon pushed down to the brigades to find bypass routes and the decontamination platoons held in the brigade rear areas to provide on-order decontamination.

This design nested well with plans such as the Desert Storm invasion, where we expected the enemy to use

chemical weapons against our forces to impede our advance. In such a fight, rapid decontamination would preserve the force and the mounted CBRN reconnaissance team would allow the fight to continue along a clean axis of advance. The CWMD mission, though, does not assume massive de-

contamination requirements, but instead creates the need to rapidly assess, characterize, and exploit a multitude of suspected weapons of mass destruction facilities.

“The rapid communication of intelligence from the suspected weapons of mass destruction facility to higher headquarters can drive the operation by allowing the commander to disengage forces from a site that has limited value or to send forces to a new site suggested by intelligence on the ground.”

Digital Communications Systems

The rapid communication of intelligence from the suspected weapons of mass destruction facility to higher headquarters can drive the operation by allowing the commander to disengage forces from a site that has limited value or to send forces to a new site suggested by intelligence on the ground. The Army is currently testing products that would provide near-instant communication capabilities to dismounted Soldiers. The Nett Warrior System uses a smart phone that runs a common operating system, which has been encrypted to transmit secure data via a tactical radio.² An initial assessment team could quickly scan documents and send the documents to technical translators at corps headquarters, who would then be better able to advise the commander. The system also acts as a dismounted blue force tracker, showing icons for each Soldier wearing a tracker. This system would allow a dismounted force to quickly map even a large facility simply by tracing the walls of each room and hallway. Nett Warrior is currently undergoing testing with maneuver units, and it has great potential utility in a CWMD environment.

Expansion of Decontamination Capability

The maneuver support company is capable of preserving combat power by decontaminating armored battalions and getting them back into the fight. However, in CWMD operations, there's only a small chance that vehicles would be contaminated in such numbers that a thorough decontamination line would need to be established. R&S platoons and CBRN

response teams currently provide their own decontamination. If the decontamination platoon provided personnel and sample decontamination, the R&S platoon would gain teams to be used for assessment or sampling. This added capability would allow the platoon to more rapidly exploit suspected sites that, in turn, would allow the maneuver commander to keep the momentum. One decontamination platoon could be provided with multiple sets of emergency personnel decontamination station (EPDS) equipment, allowing support to multiple locations. This would increase the flexibility of the organization, allowing it to simultaneously decontaminate relatively close sites by freeing R&S personnel and providing for independent emergency decontamination stations.

All maneuver support companies should be provided with a modified mass casualty decontamination set, which can be quickly set up using the M26 shower system as the primary means of decontamination. One risk of CWMD operations is an accidental release, which might contaminate a large number of workers and civilians who live close to the site. Having equipment on-hand to conduct the mass casualty decontamination of civilians would be a force multiplier for the ground commander by reducing the troops and supplies required to deal with contaminated civilians and allowing the operation to maintain tempo. This change would not require modified table of organization and equipment changes. While one decontamination platoon could assume the mission of EPDS support, the second platoon could become the mass casualty decontamination platoon. The platoons would maintain their direct-action equipment; they would simply be expanding their capabilities.

Expanded Insertion Capability

Finally, maneuver support companies need to train on airmobile, air assault, and airborne operations, depending on the company divisional support relationship. The ability to attack by helicopter alongside maneuver forces would enhance maneuver support company flexibility. The Chemical Corps has maneuver support companies attached to the XVIII Airborne Corps, yet these companies are not air assault- or airborne-designated. If the maneuver force must commit troops to holding a site until technical forces arrive, operational tempo is reduced. The EPDS equipment is small enough to be taken by helicopter, and specialized equipment for an initial-entry team or a sampling team can be carried by rucksack. Maneuver support companies must develop the capacity to move with the unit types they are most likely to support to allow for a rapid tempo that maintains the initiative.


Hypothetical Illustration

The following hypothetical example (units are notional) shows how a maneuver support CBRN company that adopted these changes would fit into the theater-wide CWMD fight. The United States has invaded Country A after it used sarin, a nerve agent, on U.S. forces stationed in a neighboring allied state. The combatant commander has assigned the 4th Cavalry Division to conduct the exploitation of Site 1, a pesticide factory suspected of producing nerve agent. The

1st ABCT, 4th Cavalry Division, has the 190th CBRN Company (Maneuver Support) and the 3d CBRN Response Team, 293d CBRN Company, attached. The 1st ABCT commander attaches a decontamination platoon and an R&S team to 3d Battalion, 21st Cavalry, which sends the enablers with their two infantry companies by helicopter to Site 1. After the infantry secures the site, the R&S team begins assessment and characterization. The team takes pictures of the manufacturing process and sends them to an Edgewood Chemical Biological Center representative at the combatant command headquarters. The representative is able to confirm that only pesticide, and not nerve agent, is being produced. However, the R&S team also sends pictures of shipping documents, which show large quantities of precursors going to Site 2.

The 1st ABCT commander assigns 5th Battalion, 9th Cavalry Regiment, with another decontamination and R&S team, to move into and exploit Site 2. Because the technical forces can also move by helicopter, the 1st ABCT commander maintains the initiative. A similar exploitation process unfolds, but the R&S team discovers evidence of the industrial-scale production of sarin. During clearing operations, Company A returns fire in a filling room, which punctures holding tanks and releases sarin precursors into the air. The wind blows the toxic chemicals into the holding area, where factory workers are being secured. The 1st ABCT commander has the mass casualty decontamination kit airlifted by helicopter to Site 2, where the decontamination teams not engaged in the EPDS set up and process the factory workers through the mass casualty decontamination line.

Conclusion

As the conventional CWMD mission set becomes more mature, the Chemical Corps should update its maneuver support companies to better support these vital operations. Adopting new communications systems, revamping the decontamination platoons, and adding specialized insertion operations to our repertoire will provide greater flexibility to the combatant commander and ensure that CWMD operations maintain the initiative against the enemy. 

Endnotes:

¹JP 3-40, *Countering Weapons of Mass Destruction*, 31 October 2014, pp. 80–84.

²*Program Executive Office Soldier Equipment Portfolio*, pp. 183–184, <<http://www.peosoldier.army.mil/portfolio/#1>>, accessed on 8 March 2015.

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USANCA Hosts the AFRRI MEIR Course

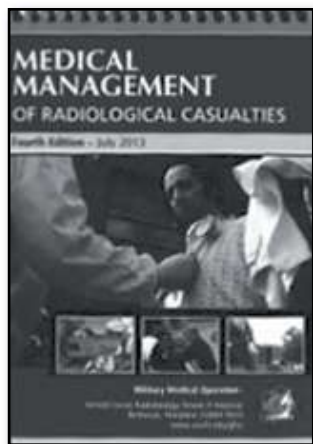
By Lieutenant Colonel John Leahy

From 14 to 16 April 2015, U.S. Army Nuclear and Combating Weapons of Mass Destruction Agency (USANCA) representatives hosted the Armed Forces Radiobiology Research Institute (AFRRI) Medical Effects of Ionizing Radiation (MEIR) Course at the Lieutenant General Leslie Groves Building, Fort Belvoir, Virginia. AFRRI is part of the Uniformed Services University of the Health Sciences located in Bethesda, Maryland. The primary mission of the AFRRI is to conduct research on the medical effects of ionizing radiation and develop countermeasures to mitigate and reduce the effects.

The course is designed to improve the operational capabilities of the military Services by providing medical and operational personnel with up-to-date information on the biomedical consequences of radiation exposure, ways in which the effects can be reduced, and methods for medically managing casualties. The training was recently updated to include information and lessons learned from the Fukushima Daiichi incident in Japan.

The course is beneficial for military physicians; nurses; chemical, biological, radiological, nuclear, and explosives (CBRNE) specialists; health physicists; medical planners; and first responders. Course topics include—

- Physical principles of ionizing radiation.
- Ionizing radiation interactions with cells and organs.
- Management of internal contamination.
- Late effects.
- Diagnosis and treatment of acute radiation syndrome and combined injury.



Course materials include the *Medical Management of Radiological Casualties* handbook.

Students received training on the effects of radiological and nuclear weapons, radiological terrorism, radiation accidents, psychological effects, and the logistics of radiation incident response. The instructors demonstrated the use of radiation detection, indication and computation equipment; Biodosimetry Assessment Tool software; and First Responder Radiological



A MEIR instructor points to a list of personnel who respond immediately to radiation emergencies.

Assessment Triage software. The instructors also shared online radiation resources.

The course, which is also offered online, serves as accredited continuing medical education and continuing nursing education. Visit the AFRRI Web site at <<https://www.usuhs.edu/afri>>.

USANCA participants commented favorably on the course. Captain Scott Julich stated, “The MEIR course provided me with that critical connection between the scientific and technical aspects of ionizing radiation and their corresponding health effects and treatment requirements. I now feel completely equipped to explain, advise, and act appropriately in a radiation event.” Mr. Mark Diglio said, “I wanted to learn about radiation threat, detection, protection, medical treatment, response, equipment, and decontamination. The MEIR course and its interesting instructor vignettes exceeded my expectations. I recommend it for those involved with countering weapons of mass destruction analysis, planning, policy, and requirements.”

Lieutenant Colonel Leahy is a nuclear weapons effects analyst with USANCA, Fort Belvoir, Virginia. He holds a bachelor's degree in civil engineering from Iowa State University.

LEADERSHIP AS DEFINED BY THE ARMY: LOGICAL FALLACY

By Second Lieutenant Ryan A. Paplaczyk

The U.S. Army values leadership with the highest regard. Army Doctrine Publication (ADP) 6-22, *Army Leadership*, is the Army reference publication for individuals who possess or are aspiring to hold the title of leader. The Army defines leadership as “the process of influencing people by providing purpose, direction, and motivation to accomplish the mission and improve the organization.”¹ This definition of leadership is insufficient and flawed, and it consists of fallacies. The Army can and should do better when defining leadership.

When analyzing the flawed definition of leadership, the areas of interest should be the what, how, and why. The *what* is over-simplified by the phrase “the process of influencing people.” The *how* is empty because the phrase “by providing purpose, direction, and motivation” is subjective. The *why*, perhaps the strongest portion of the definition, is clearly and concisely addressed with the phrase “to accomplish the mission and improve the organization.” The Army definition sounds great, briefs nicely, and markets well; but, it falls short of what it should be.

When further analyzed, the Army definition of leadership contains some obvious fallacies that reinforce the claim that it is flawed. First, the definition is overly generalized. Second, clues or signs associated with parts or all of the definition mislead and deceive people into thinking that leadership may or may not be demonstrated at times. Just because someone accomplishes a mission does not mean that he or she accomplished it through leadership. Third, the accomplishment (the effects of the mission or improvement to the organization) did not necessarily come from “the process of influencing people by providing purpose, direction, and motivation.” Finally, the argument of authority further exposes fallacies of the definition. Just because an individual is perceived, identified, or titled a leader, does not mean he or she demonstrates leadership. It is not always leadership, as defined by the Army, that accomplishes the mission or improves the organization—or vice versa.

The Army may claim that it has a good, or even great, understanding of what leadership is or needs to be, but it cannot claim that it has found the perfect definition for leadership. Presently, the Army claims that adaptive leaders and leadership are the answer. Does this mean that previous leaders and leadership were not adaptive? If previous leaders and leadership were adaptive, does this suggest that the definition has been wrong all along? Why would the Army constrain itself to claiming that it needs adaptive leaders,


rather than saying adaptability is part of leadership? Or should the Army reevaluate how it defines leadership and what it entails? The Army definition of leadership is not right; therefore, it is wrong and requires further examination.

The Army record of success in military and nonmilitary operations does provide a legitimate and strong foundation on which to stand—so concrete that to challenge what the Army considers leadership is, perhaps, a wasted effort. After all, the Army has its own culture, its own hierarchy, and its own unique way of conducting business compared to anything else in the world. To construe or convey that the Army is not doing anything other than what is equal to or greater than what the Army defines as leadership is entering uncontested and unfamiliar territory. Often, the Army recognizes its many successes to be a reflection of its leadership, ill-defined or not.

The Army should want to ensure that its leaders comprehend the best, enhanced, optimized version of the definition of leadership. Army leaders are getting results, winning, and accomplishing the mission, but can they do better? If the Army improves its definition of leadership, it will improve the organization. I propose the following definition of leadership:

The adaptive pursuit of completing essential tasks for an organization in a timely manner within a changing environment, through influencing people, managing resources, and synchronizing all entailed in order to be perceived victorious by the popular majority over any obstacle, obstruction, or adversary.

This definition is complex and complicated, but so is leadership.

The current Army definition of leadership may be applicable, at best; but it is obsolete. The definition must be improved. Failing to improve the definition of leadership translates to failing to improve the organization. The definition of leadership must be adapted, improved upon, and conducive to change to be sufficient and suitable. 

Endnote:

¹ADP 6-22, *Army Leadership*, 1 August 2012.

Second Lieutenant Paplaczyk is currently a student in the Basic Officer Leader's Course, Fort Leonard Wood, Missouri. He holds a bachelor's degree in business administration from Campbell University, Buies Creek, North Carolina.

DOCTRINE UPDATE

U.S. Army Maneuver Support Center of Excellence Capabilities Development Integration Directorate Concepts, Organization, and Doctrine Development Division

Number	Title	Date	Status
Joint Publications			
<p>The U.S. Army Chemical, Biological, Radiological, and Nuclear School (USACBRNS) is not the proponent for joint publications (JPs). However, the Chemical, Biological, Radiological, and Nuclear (CBRN) Doctrine Branch; Concepts, Organization, and Doctrine Development Division; Capabilities Development Integration Directorate; U.S. Army Maneuver Support Center of Excellence, is often a key stakeholder and sometimes the lead agent for a JP. Five JPs affect the development or revision of tactical-level CBRN publications.</p>			
JP 3-11	<i>Operations in Chemical, Biological, Radiological, and Nuclear (CBRN) Environments</i>	4 Oct 13	Current.
<p>JP 3-11 is no longer focused purely on passive defense, which is based on a new definition of the CBRN environment as “an operational environment that includes CBRN threats and hazards and their potential resulting effects.” Rather than dwelling on postevent hazards that require reactions, the focus is on prevent threats and hazards that allow proactive measures. JP 3-11 also includes information about the new, validated, approved concepts of hazard awareness and understanding and contamination mitigation.</p>			
JP 3-27	<i>Homeland Defense</i>	29 Jul 13	Current. A request for feedback was initiated to assess JP 3-27 for any necessary changes. Suspense is November 2015.
<p>JP 3-27 provides information across the range of military operations (including interorganizational coordination, planning, and mission command) that is required to defeat external threats to, and aggression against, the homeland—or other threats, as directed by the President. The scope of the current revision has been narrowed by replacing the phrase <i>defense of the U.S. homeland</i> with <i>homeland defense</i>. Presidential and Secretary of Defense guidance has evolved significantly since 2007, thereby affecting relationships between the federal government and state and local jurisdictions with regard to unified action. JP 3-27 covers the federal and state interagency coordination of roles that are unique to homeland defense and then refers to JP 3-08, <i>Interorganizational Coordination During Joint Operations</i>, for more detailed guidance. JP 3-27 also addresses the dual roles of the Army National Guard in federal and state chains of command and explains how those roles affect homeland defense.</p>			
JP 3-28	<i>Civil Support</i>	31 Jul 13	Current.
<p>JP 3-28 provides overarching guidelines and principles to assist commanders and staffs in planning, conducting, and assessing defense support of civil authorities (DSCA). It introduces the principle of civilian agencies being in charge of the domestic operations that receive military support. It also discusses the unique command relationships and coordinating processes to be used when operating in DSCA capacity. Finally, JP 3-28 discusses selected aspects of supporting and sustaining the joint force during these specific types of operations. Major changes from the previous version include replacing the term <i>civil support</i> with the term <i>DSCA</i> and replacing the term <i>National Response Plan</i> with the term <i>National Response Framework</i>.</p>			
JP 3-40	<i>Countering Weapons of Mass Destruction</i>	31 Oct 14	Current.
<p>The JP 3-40 revision effort was synchronized with that of the <i>Department of Defense Strategy for Countering Weapons of Mass Destruction</i>.¹ Major changes include replacing the term <i>combating weapons of mass destruction (WMD)</i> (struggling with or fighting) with the term <i>countering WMD</i> (embarking on efforts to counterproliferate the development, use, and means of delivery, including efforts to minimize or negate the effects of an event). This is important, as the CBRN community has struggled to acquire a common lexicon since combating/countering WMD rose to the forefront of national concern. The focus of the framework is no longer on the eight military mission areas, but rather on a series of strategic approaches.² Sections describing the Countering Terrorism Campaign and explaining how countering WMD relates to DSCA have also been added. This is a significant addition since combating/countering WMD considerations for the continental United States have not previously been incorporated. JP 3-40 continues to focus on “left of boom” (dissuade, deter, disrupt) proactive measures.</p>			
JP 3-41	<i>Chemical, Biological, Radiological, and Nuclear Consequence Management</i>	21 Jun 12	Current. Will be updated in the near future according to a formal assessment report that recommends a change rather than a full revision.
<p>JP 3-41 now focuses only on CBRN. It includes a new framework for CBRN response, elevates consequence management to a federal government level of effort, and aligns joint doctrine with the Department of Defense (DOD) contribution to consequence management. This publication introduces three subsets of consequence management (domestic CBRN, foreign, and DOD-led) and discusses the roles and responsibilities of the subsets and the differences between them. JP 3-41 also introduces the DOD chemical, biological, radiological, and nuclear response enterprise (CRE), an integrated Regular Army and Reserve Component approach to CBRN response. When directed by the Secretary of Defense and the state governor, the DOD CRE conducts CBRN response operations in support of civil authorities responding to CBRN incidents within the United States and its territories to save lives and minimize human suffering.^{3,4}</p>			
Multi-Service Publications			
<p>The USACBRNS is the U.S. Army proponent and lead agent for eight tactical-level, multi-Service publications. Seven of the publications are sponsored by the Joint Requirements Office for CBRN Defense (J-8), Joint Chiefs of Staff.</p>			
FM 3-11 MCWP 3-37.1 NWP 3-11 AFTTP 3-2.42	<i>Multi-Service Doctrine for Chemical, Biological, Radiological, and Nuclear Operations</i>	1 Jul 11	Current. Will be revised in the near future due to the publishing of the <i>Department of Defense Strategy for Countering Weapons of Mass Destruction</i> and the Army’s white paper on “Countering Weapons of Mass Destruction.” The revision timeline will be based on guidance from the Joint Requirements Office and a decision from all four Services.
<p>Field Manual (FM) 3-11 is the only field manual for which the USACBRNS is the lead agent. It focuses on combating WMD, discusses the strategic pillars and tactical objectives, and translates the military mission areas into eight tactical tasks. This represents a huge paradigm shift for the CBRN community. Our focus moves toward the more proactive role of conducting or supporting active defense, interdiction operations, offensive operations, and elimination operations and away from the reactive role of passive defense (including avoidance, protection, and decontamination).</p>			

Number	Title	Date	Status
ATP 3-11.23 MCWP 3-37.7 NTTP 3-11.35 AFTTP 3-2.71	<i>Multi-Service Tactics, Techniques, and Procedures for Weapons of Mass Destruction Elimination Operations</i>	1 Nov 13	Current.
<p>Army Techniques Publication (ATP) 3-11.23 is "Part 2" of ATP 3-11.37. The WMD–elimination isolation activity is the seam that links the battle handover from a conventional CBRN force conducting the assessment task to the technical CBRN force conducting exploitation and destruction tasks. ATP 3-11.23 educates the reader on performing the entire process from cradle (reconnoitering) to grave (monitoring and redirecting) and on planning, preparing, executing, performing, and assessing considerations throughout. This tactical-level publication truly focuses on "left of boom" actions.</p>			
ATP 3-11.32 MCWP 3-37.2 NTTP 3-11.37 AFTTP 3-2.46	<i>Multi-Service Tactics, Techniques, and Procedures for Chemical, Biological, Radiological, and Nuclear Passive Defense</i>	TBD	Under development. Will combine, revise, and supersede FM 3-11.3, FM 3-11.4, and FM 3-11.5. Will be published 2d quarter, fiscal year (FY) 2016.
<p>ATP 3-11.32 will contain information for conducting operations; performing tactics, techniques, and procedures (TTP); and understanding how to carry out CBRN passive defense. A complimentary technical manual (TM) (TM 3-11.42/MCWP 3-37.2A/NTRP 3-11.25/AFTTP 3-2.56) will be published in 2016. It will contain reference material for CBRN warning, reporting, and hazard prediction procedures.</p>			
ATP 3-11.36 MCRP 3-37B NTTP 3-11.34 AFTTP 3-2.70	<i>Multi-Service Tactics, Techniques, and Procedures for Chemical, Biological, Radiological, and Nuclear Aspects of Command and Control</i>	1 Nov 13	Current.
<p>ATP 3-11.36 includes the doctrinal employment of CBRN capabilities (organizations, personnel, technology, and information) to characterize CBRN threats and hazards, including toxic industrial material, for the commander and the force. This manual also incorporates the joint doctrine elements for combating WMD. It is designed to provide operational- and tactical-level commanders and staffs with capability employment planning data and considerations to shape military operations involving CBRN threats and hazards and operations in CBRN environments.</p>			
ATP 3-11.37 MCWP 3-37.4 NTTP 3-11.29 AFTTP 3-2.44	<i>Multi-Service Tactics, Techniques, and Procedures for Chemical, Biological, Radiological, and Nuclear Reconnaissance and Surveillance</i>	25 Mar 13	Current.
<p>ATP 3-11.37 is designed for the conventional force. It establishes forms, modes, and methods of (and tasks for) CBRN reconnaissance and surveillance. It also establishes four new CBRN hazard identification levels that have been accepted by combatant commanders and the medical community for environmental samples and clinical specimens. These new hazard identification levels allow the conventional force to provide the commander with sample identification at higher levels of confidence. This, in turn, allows the commander to make more timely, higher-level decisions that enhance force protection, improve mission accomplishment, and result in resource savings. It establishes a sample management process and educates Soldiers on the protocols of the process, from sample collection through transfer. Finally, it instructs Soldiers on dismounted reconnaissance operations in urban environments.</p>			
FM 3-11.41 MCRP 3-37.2C NTTP 3-11.24 AFTTP(I) 3-2.37	<i>Multi-Service Tactics, Techniques, and Procedures for Chemical, Biological, Radiological, and Nuclear Consequence Management Operations</i>	30 Jul 15	Current.
<p>ATP 3-11.41 provides commanders, staffs, key agencies, and military members with a key reference for planning and conducting CBRN consequence management. This publication provides a reference for planning, resourcing, and executing CBRN consequence management in support of domestic or foreign agencies responding to a CBRN incident. The principal audience for this multi-Service publication is CBRN responders who plan and conduct CBRN consequence management operations in domestic, foreign, or theater operational environments, to include military installations.</p>			
ATP 3-11.46 AFTTP 3-2.81	<i>Weapons of Mass Destruction–Civil Support Team Operations</i>	20 May 14	Current.
<p>ATP 3-11.46 serves as the foundation for WMD–civil support team (CST) doctrine. It focuses on the organization, mission, mission command and operations of WMD-CSTs, which are full-time Army National Guard units designed to provide the specialized capability necessary to respond to intentional and unintentional incidents and natural and man-made disasters. The WMD-CST, a component of the CRE, provides direct support to local, tribal, state, and federal emergency responders, including fire, police, and emergency medical service personnel. Unless federalized under Title 10, U.S. Code (10 USC), <i>Armed Forces</i>, WMD-CSTs operate in 32 USC, <i>National Guard</i>, status within the United States and its territories and possessions. Responding under the authority of the state governor, WMD-CSTs assist agencies that may be overwhelmed or may require specific technical capabilities which are not otherwise readily available.</p>			
ATP 3-11.47 AFTTP 3-2.79	<i>Chemical, Biological, Radiological, Nuclear, and High-Yield Explosives Enhanced Response Force Package (CERFP) and Homeland Response Force (HRF) Operations</i>	26 Apr 13	Current.

Number	Title	Date	Status
<p>ATP 3-11.47 is a new manual. It contains detailed tactical doctrine and TTP and sets the foundation for the tactical employment of the chemical, biological, radiological, nuclear, and explosives enhanced response force package (CERFP) and homeland response force (HRF). The CERFP and HRF can be pre-positioned, or they can respond to an incident using existing organic transportation and Army National Guard/Air National Guard units that are in 32 USC status. These units are trained and equipped to integrate under the National Incident Management System in support of an incident commander. The CERFP supports the incident commander by planning and exercising mission command, casualty search and extraction, ambulatory and nonambulatory mass casualty decontamination, emergency medical triage and patient stabilization, and fatality search and recovery. The HRF supports the incident commander by planning and conducting C2, security operations and, if applicable, CERFP operations.</p>			
Army-Only Publications			
The USACBRNS is the U.S. Army proponent for four tactical-level, Army-only publications.			
ATP 3-11.24	<i>Technical Chemical, Biological, Radiological, Nuclear, and High-Yield Explosives (CBRNE) Force Employment</i>	6 May 14	Current.
ATP 3-11.24 describes how technical chemical, biological, radiological, nuclear, and explosives (CBRNE) forces support combatant commanders through every phase of operations conducted in-theater and in the homeland. This is important in educating those who are outside the CBRN community with regard to the true capabilities of the technical CBRNE force. The appendixes include information about specific technical CBRNE force missions, organizations, capabilities, and employment considerations.			
ATP 3-11.50	<i>Battlefield Obscuration</i>	15 May 14	Current.
ATP 3-11.50 provides TTP to plan obscuration operations and employ obscurants during, or in support of, unified land military operations at the tactical through operational levels of war.			
ATP 3-37.11	<i>Chemical, Biological, Radiological, Nuclear, and Explosives Task Force Operations</i>	TBD	Under development.
ATP 3-37.11 will inform those who employ CBRNE task forces about their mission, organization, key tasks, and capabilities across the countering WMD tactical tasks (conduct WMD security cooperation and partner activities, conduct WMD threat reduction cooperation, conduct WMD interdiction, conduct WMD offensive operations, conduct WMD elimination, conduct WMD active defense, conduct CBRNE passive defense, and conduct CBRNE consequence management) during operations in support of joint and combatant commands. It will provide guidance on the employment of CBRNE task forces across the range of military operations.			
FMI 3-90.10	<i>Chemical, Biological, Radiological, Nuclear, and High-Yield Explosives Operational Headquarters</i>	24 Jan 08	In accordance with the Army reengineering effort of 2015, this publication will be rescinded in December 2015.
FMI 3-90.10 educates the reader on the special capabilities that exist within the CBRNE mission command element.			
Technical Manuals			
The USACBRNS is the proponent and approving authority for two technical manuals.			
TM 3-11.32 MCWP 3-37.2A NTRP 3-11.25 AFTTP 3-2.56	<i>Multi-Service Reference for Chemical, Biological, Radiological, and Nuclear (CBRN) Warning, Reporting, and Hazard Prediction Procedures</i>	TBD	Under development. Will be published 2d quarter FY 16.
TM 3-11.32 will provide reference material for CBRN warning messages, incident reporting, and hazard prediction procedures.			
TM 3-11.42 MCWP 3-38.1 NTTP 3-11.36 AFTTP 3-2.82	<i>Multi-Service Tactics, Techniques, and Procedures for Installation Emergency Management</i>	23 Jun 14	Current.
Technical manual (TM) 3-11.42 addresses the installation commander's response to an incident that takes place on an installation. The scope of this revision has been expanded from CBRN defense to all-hazards installation emergency management, which includes the management of CBRN events. The publication defines the roles of DOD installation commanders and staffs and provides the TTP associated with installation planning and preparedness for, response to, and recovery from all hazards in order to save lives, protect property, and sustain mission readiness.			
TM 3-11.91 MCRP 3-37.1B NTRP 3-11.32 AFTTP 3-2.55	<i>Chemical, Biological, Radiological, and Nuclear Threats and Hazards</i>	TBD	Under development. Will revise and supersede FM 3-11.9 and FM 3-11.11. Will be published 2d quarter, FY 16.
TM 3-11.91 will serve as a one-stop shop for information about the technical aspects of CBRN threats and hazards, including information about the chemistry of homemade explosives. In addition to the technical information on CBRN threats and hazards, it will also include basic educational information and cover the "so what" and the field behavior of CBRN hazards (including riot control agents and herbicides). The appendixes will contain scientific CBRN data, and the centerpiece of the manual will be the CBRN threats and hazards diagram.			
<p>¹The <i>Department of Defense Strategy for Countering Weapons of Mass Destruction</i>, June 2014, replaces the <i>National Military Strategy to Combat Weapons of Mass Destruction</i>, 13 February 2006.</p> <p>²The eight military mission areas are offensive operations, elimination operations, interdiction operations, active defense, passive defense, WMD consequence management, security cooperation and partnership activities, and threat reduction cooperation. (See FM 3-11.)</p> <p>³The Secretary of Defense authorizes DSCA support by federal military forces (defense chemical, biological, radiological, and nuclear response force [DCRF] and command and control chemical, biological, radiological, and nuclear response element [C2CRE] A and C2CRE B).</p> <p>⁴The state governor authorizes DSCA by Army National Guard forces under state mission command (WMD-CST, CERFP, and HRF).</p>			



Reserve Component Update



Professional Military Education

Qualification training courses are listed and described in Table 1.

Table 1. Qualification training courses

Enlisted/Noncommissioned Officer (NCO) Qualification Training Courses	
74D10 Chemical, Biological, Radiological, and Nuclear (CBRN) Specialist Course (School Code 031)	
Phase I (Course 031-74D10 [R] [dL])	Once Soldiers are enrolled in Phase I, they will receive e-mail instructions from the Army Distributed Learning Program via Army Knowledge Online (AKO). Students must complete Phase I before reporting for Phase II training. An Army Correspondence Course Program (ACCP) certificate of completion (e-mailed) or other documentation must be presented as proof of Phase I completion during Phase II in-processing. Soldiers who experience problems with Phase I should telephone the ACCP at (800) 275-2872 (Option 3) or (757) 878-3322/3335. If no ACCP representative is available, they should contact Ms. Meredith Jansen at (573) 563-7164 or <meredith.a.jansen.civ@mail.mil>.
74D10 CBRN Specialist Course (School Code L031)	
Phases II and III (Course 031-74D10 [R1])	These phases consist of resident training conducted at Fort Leonard Wood, Missouri. Soldiers must have an e-mail printout indicating that they have completed Phase I. Soldiers who fail to provide the printout are returned to their units.
74D 2/3/4 CBRN Transition Course (School Code L031)	
This is a three-phase resident course. Soldiers attending the CBRN Transition Course (031-74D2/3/4) must be graduates of a military occupational specialty (MOS) Advanced Leader Course (ALC) or Basic Noncommissioned Officer Course (BNCOC). Soldiers who have not attended ALC or BNCOC must attend the CBRN Specialist Course (031-74D10) to become 74D10 MOS-qualified. Soldiers must complete the online Hazmat Awareness Training at <https://afcec.adls.af.mil> prior to attending the CBRN Transition Course; certificates must be presented during in-processing.	
74D30 CBRN ALC (School Code L031, Course 031-74D30-C45)	
CBRN ALC is a three-phase resident course. Phase I is waived for Soldiers who possess a certificate indicating that they have completed Department of Defense (DOD)-certified hazmat training at the technician level. Effective 1 October 2014, graduation from Structured Self-Development, Level II, is a prerequisite for attending CBRN ALC.	
74D40 Senior Leader Course (SLC) (School Code L031, Course 031-74D40-C46)	
This is a three-phase resident course conducted at Fort Leonard Wood. Graduation from Structured Self-Development, Level III, is a prerequisite for attending SLC.	
Officer Qualification Training Courses	
CBRN Captain's Career Course (C3) (School Code 031)	
Phase I (Course 4-3-C23 [dL])	This branch-specific distributed learning (dL) phase consists of 108 hours of dL instruction, which must be completed within 60 days before attending Phase II. Unit trainers enroll Soldiers through the Army Training Requirements System (ATTRS). Students receive e-mail instructions from the Army Distributed Learning Program. Hazmat awareness training can be accessed at <https://afcec.adls.af.mil> and completed by students prior to attending Phase II. Students who encounter problems should contact the U.S. Army Chemical, Biological, Radiological, and Nuclear School (USACBRNS) U.S. Army Reserve (USAR) Training Development NCO, Master Sergeant Larry Foreman, at (573) 563-7757 or <larry.d.foreman.mil@mail.mil>. The successful completion of Phase I is a prerequisite for Phase II attendance.
Phase II (Course 4-3-C23)	This branch-specific resident phase consists of 2 weeks of training conducted at USACBRNS. The focus is on radiological operations, live-agent training, hazmat awareness and operations level training and certification, and the basics of the Joint Warning and Reporting Network used within the Maneuver Control System. The successful completion of Phase II is a prerequisite for enrollment in Phase III.
Phase III (Course 4-3-C23 [dL])	This common-core (CC) phase consists of 59.2 hours of dL instruction. Unit trainers enroll Soldiers through ATTRS. Students receive e-mail instructions from the Army Distributed Learning Program. Students must complete Phase III within 60 days before attending Phase IV. Those who encounter problems should contact Master Sergeant Foreman at (573) 563-7757 or <larry.d.foreman.mil@mail.mil>. The successful completion of Phase III is a prerequisite for Phase IV attendance.
Phase IV (Course 4-3-C23)	This resident phase consists of 2 weeks of training conducted at USACBRNS. The focus is on a computer-aided exercise that includes additional Joint Warning and Reporting Network and Maneuver Control System training, culminating in a military decisionmaking process exercise using state-of-the-art battle simulation equipment.



Reserve Component Update



Joint Senior Leader Course (Course 4K-74A/494-F18)

This is a 4-day course for senior leaders focusing on operational- and strategic-level aspects of countering weapons of mass destruction (WMD). Participants also receive toxic-agent training at the Chemical Defense Training Facility. In addition, the Joint SLC forum offers a unique opportunity for senior military leaders, civilian government agency leaders, and leaders representing allied and coalition partners to exchange ideas. You are required to register for the Joint SLC through the Joint SLC action officer, Mr. Steve Nutter at <nutters@battelle.org> or (573) 336-9289. Registration through ATTRS will not guarantee a seat and may result in being bumped from the course.

CBRN Precommand Course (Course 4K0F4)

This is a 5-day course that prepares Regular Army and Reserve Component (RC) officers who have been selected for command of a CBRN battalion or brigade or a CBRN position in a division. Each student receives instruction in the application of Army Doctrine Publication (ADP) 7-0, *Training Units and Developing Leaders*, concepts to the battalion training management process.

Note: Additional information is available at <<https://www.atrrs.army.mil/>>.

The courses shown in Table 2 are required by command and control chemical, biological, radiological, and nuclear response element (C2CRE); chemical, biological, radiological, nuclear, and explosives enhanced response force package (CERFP); WMD-civil support team (CST); domestic response force; and homeland response force units for MOS qualification.

Table 2. Functional training courses

Mass Casualty Decontamination Course (School Code 031, Course 4K-F25/494-F-30)

This 9-day course is appropriate for CERFP and domestic-response casualty decontamination team members. Students who successfully complete the course receive certification at the operations levels. The Hazmat Awareness Course is a prerequisite for attending this course and can be accessed at <<https://afcec.adls.af.mil/>>.

CBRN Responder Course (School Code 031, Course 4K-F24/494-F29)

This 10-day course is appropriate for C2CRE members. All students attending the course must be International Fire Service Accreditation Congress (IFSAC) DOD awareness-certified before arriving. Students who successfully complete the course receive certification at the hazmat operations and technician levels.

Civil Support Skills Course (CSSC) (School Code 031, Course 4K-F20/494-28)

This 8-week course is appropriate for Army National Guard WMD-CST members. Students receive advanced training in hazmat technician and incident command and CBRN survey, point reconnaissance, sampling operations, personal protective equipment selection and certification, and decontamination. They also receive specialized training on a variety of military and commercial CBRN detection equipment.

Note: All students who successfully complete hazmat training are awarded certificates issued by IFSAC and DOD. Additional copies of certificates can be obtained at <<http://www.dodffcert.com/>>.

A Soldier who arrives for any resident course without having first completed all appropriate dL requirements will be returned to his or her unit without action.

USACBRNS RC Personnel

Officers (O-3 through O-5) and NCOs (E-7 through E-9) who are interested in available drilling individual mobilization augmentee positions throughout USACBRNS should contact the USAR training development NCO.

Field grade USAR officers who would like to transfer into the Chemical Corps should contact the USACBRNS Deputy Assistant Commandant–Army Reserve (DAC-AR) for specific branch qualification information.

The 3d Brigade (Chemical), 102d Division (Maneuver Support), is currently seeking instructors for various locations. An applicant should be an E-6 or E-7, should be qualified (or able to be trained) as an Army basic instructor, and should have completed the appropriate NCO Professional Development System coursework. Interested Soldiers should contact the brigade senior operations NCO, Master Sergeant Yamil Rodriguez at (860) 570-7114 or <yamil.rodriguez.mil@mail.mil>.

Contact Information

Lieutenant Colonel (P) Leslie M. Dillard (DAC-AR), (573) 563-8050 or <leslie.m.dillard.mil@mail.mil>.

Sergeant Major Phillip D. Pennington (CBRN USAR Sergeant Major), (573) 563-4026 or <phillip.d.pennington2.mil@mail.mil>.

Master Sergeant Larry D. Foreman (Training Development NCO–AR), (573) 563-7757 or <larry.d.foreman.mil@mail.mil>.

Lieutenant Colonel Kenneth R. Napier (DAC-NG), (573) 563-7676 or <kenneth.r.napier.mil@mail.mil>.

Master Sergeant Christopher C. Lemley (Proponency NCO–NG), (573) 563-7667 or <christopher.c.lemley.mil@mail.mil>.

Sergeant First Class Verna A. Forbes (RC-LNO), (573) 596-3226 or <verna.a.forbes.mil@mail.mil>.

Reference:

ADP 7-0, *Training Units and Developing Leaders*, 23 August 2012.

The Commandant's Reading Program

Compiled by Major James P. Harwell

President Harry S. Truman once said, "Not all readers are leaders, but all leaders are readers." Reading should form the foundation of every leader's self-development program. It supplements institutional training and operational experience and provides leaders with knowledge to react to a complex world. The Commandant's Reading Program provides chemical, biological, radiological, and nuclear (CBRN) leaders with the basis for a lifelong self-development program. It supplements other reading lists from the Chief of Staff of the Army to the local unit level, with a particular emphasis on the CBRN profession. The Commandant's Reading Program is not all-inclusive. CBRN leaders should use it as a guide, but should develop their personal programs based on their individual needs, knowledge, and experiences.

The reading program consists of two parts—the commandant's bookshelf and nightstand. The commandant's bookshelf is composed of works focused specifically on the CBRN profession. The bookshelf remains relatively static, with only minor changes as new works are published. The commandant's nightstand is a dynamic list of books, papers, and articles that address contemporary issues facing the Chemical Corps and the Army. The Commandant's nightstand will change with each issue of *Army Chemical Review* and reflect the issues that Army senior leaders find important today, providing the basis for discourse among members of the CBRN community of practice.

Commandant's Bookshelf

- Graham T. Allison, *Nuclear Terrorism: The Ultimate Preventable Catastrophe*, Henry Holt and Company, LLC, New York, 2004, ISBN-13: 978-0-8050-7852-7.
- Kurt M. Campbell et al., *The Nuclear Tipping Point: Why States Reconsider Their Nuclear Choices*, Brookings Institution Press, 2004, ISBN-13: 978-0-8157-1330-2.
- Charles D. Ferguson and William C. Potter, *The Four Faces of Nuclear Terrorism*, Routledge, Taylor & Francis Group, New York, 2005, ISBN-13: 978-0-415-94244-1.
- Laurie Garrett, *The Coming Plague: Newly Emerging Diseases in a World Out of Balance*, The Penguin Group, New York, 1994, ISBN-13: 978-0-14-025091-6.
- Richard L. Garwin and Georges Charpak, *Megawatts and Megatons: The Future of Nuclear Power and Nuclear Weapons*, University of Chicago Press, Chicago, 2002, ISBN-13: 978-0-226-28427-9.
- Robert Harris and Jeremy Paxman, *A Higher Form of Killing: The Secret History of Chemical and Biological Warfare*, Random House Publishing Group, 2002, ISBN-13: 978-0-8129-6653-4.
- Gregory D. Koblentz, *Living Weapons: Biological Warfare and International Security*, Cornell University Press, Ithaca, 2009, ISBN-13: 978-0-8014-7752-2.
- William Langewiesche, *The Atomic Bazaar: The Rise of the Nuclear Poor*, Farrar, Straus, and Giroux, New York, 2007, ISBN-13: 978-0-374-10678-2.
- Judith Miller et al., *Germ: Biological Weapons and America's Secret War*, Touchstone, New York, 2002, ISBN-13: 978-0-684-87159-2.
- Michael B. A. Oldstone, *Viruses, Plagues, & History: Past, Present, and Future*, Oxford University Press, New York, 2010, ISBN-13: 978-0-19-532731-1.
- Richard Preston, *The Demon in the Freezer: A True Story*, Random House Publishing Group, 2002, ISBN-13: 978-00345-46663-1.
- Jonathan B. Tucker, *War of Nerves: Chemical Warfare from World War I to Al-Qaeda*, Anchor Books, New York, 2006, ISBN-13: 978-1-4000-3233-4.

Commandant's Nightstand

The commandant's nightstand focuses on two issues facing the Chemical Corps—the role of intelligence in support of counter-ing weapons of mass destruction operations and the development of agile, adaptive leaders who can not only survive, but thrive in chaos.

- David Brooks, *The Road to Character*, Random House Publishing Group, New York, 2015, ISBN-13: 978-0-8129-9325-7.
- William R. Forstchen, *One Second After*, Tom Doherty Associates, LLC, New York, 2009, ISBN-13: 978-0-7653-1758-2.
- Thomas Graham Jr. and Keith A. Hansen, *Preventing Catastrophe: The Use and Misuse of Intelligence in Efforts to Halt the Proliferation of Weapons of Mass Destruction*, Stanford University Press, Stanford, California, 2009, ISBN-13: 978-0-8047-6360-8.
- Robert Jervis, *Why Intelligence Fails: Lessons from the Iranian Revolution and the Iraq War*, Cornell University Press, Ithaca and London, 2010, ISBN-13: 978-0-80147-8062.
- Steven D. Levitt and Stephen J. Dubner, *Think Like a Freak: The Authors of Freakonomics Offer to Retrain Your Brain*, Harper Collins Publishers, New York, 2014, ISBN-13: 978-0-06-221834-6.
- Report to the President of the United States, *Commission on the Intelligence Capabilities of the United States Regarding Weapons of Mass Destruction*, Government Printing Office, 2005, <<http://www.gpo.gov/fdsys/pkg/GPO-WMD/pdf/GPO-WMD.pdf>>, accessed on 8 October 2015.



Dragon Soldiers



America's CBRN Counterforce

