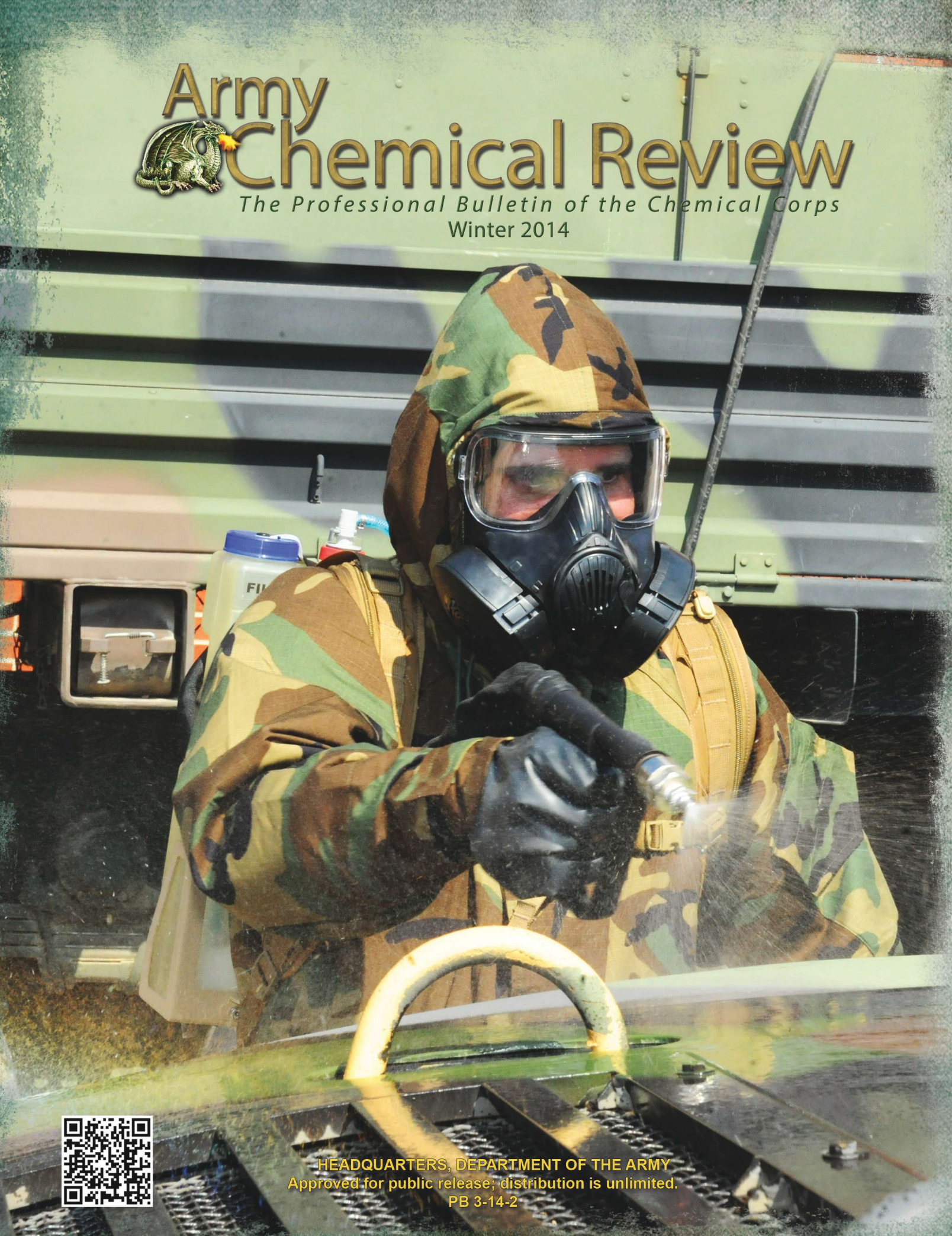
Army Chemical Review

The Professional Bulletin of the Chemical Corps

Winter 2014



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U.S. Army
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COMMANDANT
BG Maria R. Gervais **563-8053**
<maria.r.gervais.mil@mail.mil>

ASSISTANT COMMANDANT
COL Scott D. Kimmell **563-8053**
<scott.d.kimmell.mil@mail.mil>

CHIEF OF STAFF
VACANT **563-8052**

REGIMENTAL COMMAND SERGEANT MAJOR
CSM Kenneth J. Kraus Jr. **563-6133**
<kenneth.j.kraus.mil@mail.mil>

REGIMENTAL CHIEF WARRANT OFFICER
CW2 Matthew D. Chrisman **563-8051**
<matthew.d.chrisman@mail.mil>

DEPUTY ASSISTANT COMMANDANT
Mr. Peter G. Schulze **563-8132**
<peter.g.schulze.civ@mail.mil>

DEPUTY ASSISTANT COMMANDANT– ARMY RESERVE
COL Francisco S. Velez III **563-8050**
<francisco.s.velez.mil@mail.mil>

DEPUTY ASSISTANT COMMANDANT–NATIONAL GUARD
LTC Kenneth R. Napier **563-7676**
<kenneth.r.napier.mil@mail.mil>

3D CHEMICAL BRIGADE
COL Jon R. Drushal **596-0016**
<jon.r.drushal.mil@mail.mil>

DIRECTORATE OF TRAINING AND LEADER DEVELOPMENT
COL Casey P. Scott **563-6531**
<casey.p.scott.mil@mail.mil>

PERSONNEL DEVELOPMENT OFFICE
MAJ Ancle R. Evans **563-7374**
<ancle.r.evans.mil@mail.mil>

CHIEF OF DOCTRINE
MAJ Stephen B. Johnson **563-8189**
<stephen.b.johnson.mil@mail.mil>

G-37 PUBLICATIONS
Managing Editor, Diane E. Eidson **563-4137**
<diane.e.eidson.civ@mail.mil>

Editor, Diana K. Dean **563-5004**
<diana.k.dean.civ@mail.mil>

Assistant Editor, Saunci R. Barrett **563-7651**
<saunci.r.barrett.civ@mail.mil>

Graphic Designer, Dennis L. Schellingberger **563-5267**
<dennis.l.schellingberger.civ@mail.mil>

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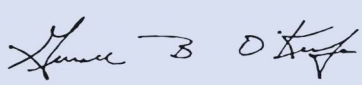
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RAYMOND T. ODIERNO
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Chief of Staff

Official:



GERALD B. O'KEEFE
Administrative Assistant to the
Secretary of the Army
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Army Chemical Review

The Professional Bulletin of the Chemical Corps

PB 3-14-2, Winter 2014

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Army Chemical Review is always looking for good-quality, action photographs (no "grip and grins," please) to use on the outside covers. If you have photographs of Soldiers who are in the proper, current uniform and are participating in training events or operations or photographs of current, branch-related equipment that is being used during training or operations, please send them to us at <usarmy.leonardwood.mscoe.mbx.mdotacr@mail.mil>. Ensure that photographs depict proper safety and security procedures, and do not send copyrighted photographs. All photographs must be high-resolution; most photographs obtained from the Internet, made smaller for e-mailing, or saved from an electronic file such as a Microsoft® PowerPoint or Word document cannot be used for print. In addition, include a caption that describes the photograph and identifies the subject(s) and photographer (if known). Please see our photograph guide at <http://www.wood.army.mil/chmdsd/documents/PhotoGuide.pdf> for more detailed information.

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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! This is another outstanding issue of *Army Chemical Review*.

I find it hard to believe that almost 4 months have passed since I assumed the role of Chief of Chemical and Commandant, U.S. Army Chemical, Biological, Radiological, and Nuclear School (USACBRNS). A lot has happened in those short 4 months—from forming our new USACBRNS leadership team to celebrating our regimental birthday and dedicating a monument in honor of our fallen Operation Enduring Freedom and Operation Iraqi Freedom Dragon Soldiers at Memorial Grove, Fort Leonard Wood, Missouri.

On 28 June 1918, President Woodrow Wilson ordered that the Chemical Warfare Service (precursor to the Chemical Corps) be established as a separate branch of the National Army. On 28 June 2014, we celebrated the 96th anniversary of the founding of our branch. This year's celebration, which took place at Fort Leonard Wood, was very special. We paid tribute to Ms. Carol Ann Watson; conducted a sunrise service, with a focus on 24 Dragon Soldiers who made the ultimate sacrifice in Operation Enduring Freedom or Operation Iraqi Freedom; inducted three individuals into the Hall of Fame and six individuals as Distinguished Members of the Corps; and made history when three of our general officers attended the Green Dragon Ball. What great events! And they are captured in this issue of *Army Chemical Review*. I am already looking forward to next year's celebration!

I am pleased to announce that the new USACBRNS leadership team is finally set and ready to assist you in any way possible. The team includes Colonel Scott D. Kimmell, Assistant Commandant; Colonel Casey P. Scott, Director of Training and Leader Development; and Command Sergeant Major Kenneth J. Kraus Jr., who assumed responsibility as the 13th Regimental Command Sergeant Major on 22 October 2014. I must extend special thanks to Command Sergeant Major Robert and Mrs. Carolyn Aldenberg for their outstanding leadership, guidance, and commitment to the Regiment over the past 4 months—an extremely turbulent time for USACBRNS and the Regiment. I can't thank them enough for the stability that they provided during the unprecedented transition or for the wise counsel that they personally provided to me.

As our Army and joint forces prepare for an uncertain and challenging future operational environment, the role of the Chemical Corps is more critical than ever before. And our Army and Nation are demanding our skills and training now more than ever before. U.S. and coalition forces involved in Operations Enduring Freedom and Iraqi Freedom faced two primary types of chemical, biological, radiological, and nuclear (CBRN) threats—the use of improvised explosive devices coupled with CBRN munitions and the use of toxic industrial materials to enhance the various improvised explosive devices. However, we have recently witnessed the use of chemical agents in Syria, the destruction of Syrian bulk chemical agents onboard the Motor Vessel Cape Ray, the discovery that the Islamic State in Iraq and Syria (ISIS) is exploring the development of biological weapons and the weaponization of bubonic plaque from infected animals, and a serious Ebola outbreak. In addition, the ever-present threat of the use of weapons of mass destruction (WMD) by state actors such as Iran, North Korea, and others still exists. Our current and previous presidents have continuously stated that the greatest threat to our country is at the intersection of technology and radicalism. Therefore, we must ensure that we are prepared to bring our unique capabilities to the fight and we must continue to train Army and joint forces not only to survive, but also to win, in a CBRN environment. At this critical juncture in history, it is extremely important that we pause to assess, plan, and prepare our Regiment to lead the Army and our partners in CBRN defense and counter WMD operations.

I am very proud to report that we are making progress on all fronts in the transformation of CBRN formations and capabilities to address the challenges of an uncertain operational environment and to meet the needs of Army Force 2025.[1] As Army and joint forces continue to prepare for 2025, the Chemical Corps is implementing several initiatives that will allow CBRN operations to be conducted "left of boom" to mitigate the impacts of WMD and better enable force protection, to allow our formations to better address the full range of WMD use, and to improve our ability to maintain our critical platforms and sensor suite technologies.

(Continued on page 6)

Regimental Command Sergeant Major

Greetings to all Chemical, Biological, Radiological, and Nuclear (CBRN) Warriors!

I am honored and humbled to serve as the 13th Regimental Command Sergeant Major of the Chemical Corps. But I must mention that this achievement is not mine alone; I've received an abundance of sage counsel, mentorship, and coaching from my peers and many of our best leaders. And I would be remiss if I did not also mention my Family; without their love, dedication, sacrifice, and support of my career decisions, I could not have reached this zenith. In addition, I would like to thank departing Regimental Command Sergeant Major Gabriel S. Arnold for his tireless service to our Corps and the Army and to wish him and his Family the best as they settle at Fort Knox, Kentucky.



Command Sergeant Major Kenneth J. Kraus Jr.

The past 13 years of conflict have provided our leaders with incredible experiences, through which we have developed and become more agile in guiding our Soldiers through complex and ever-changing environments. But as we learned during sequestration a year ago, we are not out of the woods. Uncertain fiscal and strategic realities persist. We will continue to strive for, and maintain, the proper balance between Corps personnel strength, readiness, and force modernization while still meeting operational commitments. For nearly 4 years, many of our CBRN forces have been aligned for response in the homeland and have been working closely with civil authorities. This posture is likely to continue so that expert responses can be provided during natural disasters and man-made events. Our CBRN forces may receive no advance notice in responding to these events; however, they must not show fear. They must diligently work to save lives, and they must fully understand that they get no second chance to get it right.

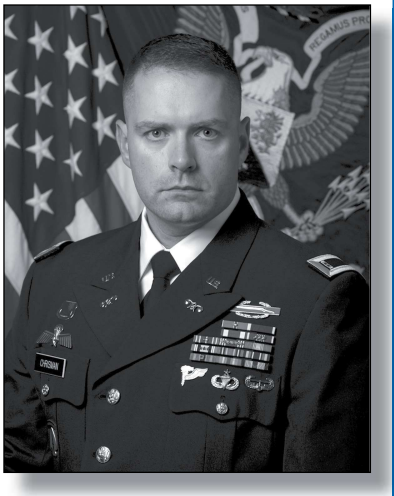
> ***"We will continue to strive for, and maintain, the proper balance between Corps personnel strength, readiness, and force modernization while still meeting operational commitments."***

According to the *Quadrennial Defense Review 2014*, CBRN forces will continue to be aligned in the defense support of civil authorities to provide a "whole of community" approach to national preparedness.[1] This assessment is reinforced by a statement made by the Honorable John M. McHugh, Secretary of the Army, and General Raymond T. Odierno, Chief of Staff of the Army, in "A Statement on the Posture of the United States Army 2013." They said, "Army leaders must be innovative; possess a willingness to accept prudent risk in unfamiliar, highly complex, and dangerous environments; and display an ability to adjust based on continuous assessment."[2] To achieve these goals, leaders must properly apply the leader competencies of—

- **Lead.** We own leadership; we cannot outsource it! We will demonstrate ***inspired leadership***, in which we lead by example in word and deed. We will properly ***educate*** our Soldiers. We will ensure that they complete the appropriate level of structured self-development and that they attend the correct level of Noncommissioned Officer Education System course work at the right time—and on time. We cannot afford to let our technical and tactical professional skills atrophy—especially during a time of fiscal uncertainty. We will continue to build cohesive teams and empower our subordinates to successfully take on more responsibility. Our Soldiers are our future. They will someday replace us when we move on. We will demonstrate our leadership agility, and we will lead them well!
- **Develop.** We must invest in our human capital, including our Soldiers and civilian partners. All leaders are responsible for personnel development. We must establish a baseline and leverage our knowledge to develop the correct process that generates a desired, measurable output. Without a baseline, we will never improve! There will be more fiscal challenges in our future, and the Army will rebalance current force strengths. We need installation leaders who can execute creative training with limited resources. We need to have a "sergeant's time" training mentality. Many of our CBRN forces are regionally aligned to a specific theater; remember, if you're going to deploy together, then train together.
- **Achieve.** Simply put, get results. Have confidence. Know that our Soldiers' accomplishments will be spectacular when we've led, developed, and trained them well; set realistic expectations; and empowered them. The field demands of our force typically lead to operations that take place outside of a leader's direct line of sight. Therefore, our professionals need to be capable of successfully carrying out missions to which they respond. We must embrace the Profession of Arms and provide mentorship and coaching. But most of all, we need to trust those who are placed in positions of power and responsibility and underwrite their decisions.[3]

(Continued on page 5)

Regimental Chief Warrant Officer



Chief Warrant Officer Two
Matthew Chrisman

Greetings Chemical, Biological, Radiological, and Nuclear (CBRN) Soldiers!

The time I've spent serving as your first Regimental Chief Warrant Officer this past year has been my life's honor. The progress made in the CBRN Warrant Officer Program since its inception in 2011 has been nothing short of spectacular.

To date, with the help of the U.S. Marine Corps, six iterations of the Warrant Officer Basic Course have been completed, resulting in 66 branch-certified CBRN warrant officers. The Directorate of Training and Leader Development, U.S. Army Chemical, Biological, Radiological, and Nuclear School (USACBRNS), has worked tirelessly to construct a new version of the Warrant Officer Basic Course that will be led by the USACBRNS beginning in 2015. The Directorate of Training and Leader Development is also creating the first Warrant Officer Advanced Course, which will prepare senior warrant officers for duties of increased responsibility. In addition, the Personnel Development Office, USACBRNS, has just finished codifying CBRN warrant officer roles and responsibilities in the Chemical Corps and clearly defining the paths for professional development. But with every leap that is made in furthering the CBRN Warrant Officer Program, new challenges also arise.

The challenges facing the Chemical Regiment as we move toward integrating the CBRN warrant officer into the Regiment include—

- **Establishing new, but familiar, relationships.** Because warrant officers have never executed CBRN duties from within CBRN units, new relationships must be established. However, most CBRN leaders will be able to recall previously serving with CBRN warrant officers when they were noncommissioned officers (NCOs). How exciting it will be when those Soldiers are welcomed back into the Regiment as warrant officers! And the addition of experienced warrant officers will add value to the Regiment.
- **Understanding the roles that CBRN warrant officers will perform.** A chief warrant officer two will be the standardization, certification, and training validation officer in a maneuver support company or an assistant team leader in a CBRN response team. In the future, senior CBRN warrant officers will serve as members of CBRN battalion through corps CBRN cell staffs.

These issues facing the Chemical Regiment are only considered challenges because they represent change. And given the current fluctuations in the Army, change is a certainty. Fortunately, Chemical Corps Soldiers are flexible and ready and able to accept such challenges.

There are many questions that have yet to be answered. But as the Chemical Regiment adjusts to a continuously changing Army, the CBRN warrant officer stands ready to serve the Regiment. The approved CBRN warrant officer revision will allow for the professional progression of restricted and unrestricted officers. Because warrant officers will be assigned to, and serving in, units within their career field, they can stay focused on the technical demands of their military occupational specialty. Conversely, as CBRN warrant officers transition into these positions, field artillery, air defense artillery, and military intelligence battalion CBRN officer positions will revert to lieutenants, or unrestricted officers. Lieutenants will progress as generalists, with broad-focus duties and responsibilities that will provide them with a better understanding of the big Army picture.

History has shown that when Soldiers join together, challenges are easily overcome through hard work and dedication. The Chemical Corps and the Army Warrant Officer Corps—with birthdays separated by only 12 days—are two corps rich in history. As we add to that history, 2015 promises to be a year full of uncertainty and excitement. It will begin with another warrant officer selection board in which only a few qualified NCOs will be granted the opportunity to earn appointments as warrant officers. But one good thing about low accessions is that the Corps can rest assured that its best and brightest members are being selected. Those who are selected will face the most challenging, difficult, and rewarding career path they have ever experienced. All current and future CBRN warrant officers will bear the standards of the Army profession:

- **Competence.** CBRN warrant officers embody the very definition of competence. Army warrant officers are aware of the high level of inherent expectation for their ranks; CBRN warrant officers welcome those demands. The example that CBRN warrant officers lead and operate by inspires Soldiers with whom they serve.

- **Commitment**. Soldiers deserve committed leaders. CBRN warrant officers have displayed the highest level of commitment as they have transitioned from the NCO ranks in hopes of having a greater impact on their Soldiers, units, and country. Soldiers become true professionals when they realize that they are Soldiers because of something greater than themselves.
- **Character.** CBRN warrant officers are leaders of character. The Corps demands that CBRN Soldiers focus on CBRN functions and operations; however, as consummate professionals, warrant officers also do everything within their power to support the team and the mission. When moral and ethical dilemmas arise, Army values and bedrock principles drive the decisionmaking process.

The choice to become a CBRN warrant officer is one of the biggest decisions a Dragon Soldier can make in his or her career. Given the technical requirements that already exist in the Chemical Corps and the added responsibility of becoming an expert in those technical requirements, the transition to a CBRN warrant officer is a huge undertaking. It means putting the needs of the Corps above all else, constantly pursuing excellence, and elevating the definition of selfless service. As the CBRN Warrant Officer Program approaches a new and refreshing glide path, support and aid are essential in guaranteeing the success of future warrant officers. I am excited that our current CBRN warrant officers will be able to look back years from now and say, "Teamwork is what made this program successful."

You should be as proud as I am of the hard work and efforts of those here at USACBRNS. Our regimental leadership wants nothing less than the best for our CBRN formations. No doubt, CBRN warrant officers are exactly what our units deserve. Continue to foster strong professional relationships. Always seek self-development. Never settle for the standard, but strive to rise above the standard.

As a CBRN warrant officer, I am honored to serve with Dragon Soldiers. The mission is my first priority. Defeat is not an option—and neither is quitting. And I will let no one fall behind. May our Warrior Ethos speak as loudly to you as it does to me.

Elementis regamus proelium!

("Regimental Command Sergeant Major," continued from page 3)

There is a difference between a layperson and a true professional.[4] Answer the following questions to help you determine to which category you belong. And ask yourself every day if your contributions made a positive difference.

- What is your level of expertise?
- Is your knowledge based on what you have personally read or on what you've been told by others?
- Are your discoveries Google™-fueled or Wiki®-based?
- Do you refuse to acknowledge alternative views?

We must immerse ourselves in the Profession of Arms on a daily basis—not only to improve ourselves, but also to improve our Soldiers and to make our Army the best it can be. However, being an expert and a professional does not mean that we are immune from making mistakes. We all make mistakes occasionally. What's important is that we learn from our errors, that we do not make those errors again, and that we use our experiences as tools for teaching others.

Our Nation may face uncertainty in the near future; and we need a strong Army that is properly manned, equipped, trained, and ready. Despite the best efforts of the leaders of our Army and our Nation to deter conflict, it is impossible to predict where the next contingency will arise that requires the expertise of our CBRN Soldiers. We must always be prepared. Remember, everything we do happens at the speed of ***trust***!

I look forward to working with all of our great military and civilian CBRN professionals within the Regular Army and the Reserve Component. We're all on the same team; and we will continue to share the same vision, goals, and objectives.

Army Strong!

Endnotes:

[1]*Quadrennial Defense Review 2014,* Department of Defense, 4 March 2014, p. 33, <http://www.defense.gov/pubs/2014_Quadrennial_Defense_Review.pdf>, accessed on 13 August 2014.

[2]John M. McHugh and Raymond T. Odierno, "A Statement on the Posture of the United States Army 2013," U.S. Army, May 2013, p. 8, <http://usarmy.vo.llnwd.net/e2/c/downloads/302970.pdf>, accessed on 13 August 2014.

[3]Army Doctrine Publication (ADP) 6-22, *Army Leadership*, 1 August 2012.

[4]Tom Nichols, "The Death of Expertise," *The War Room*, 11 December 2013, <http://tomnichols.net/blog/2013/12/11/the-death-of-expertise/>, accessed on 13 August 2014.

("Commandant," continued from page 2)



Lieutenant General Thomas W. Spoehr, Brigadier General Gervais, Major General Gerald G. Watson (Retired), and Major General Leslie C. Smith at the Green Dragon Ball

Force Design Update

I am pleased to announce that on 8 October 2014, after more than 2 years in the making, our CBRN Force Design Update was approved by the Vice Chief of Staff of the Army. Our fiscal year (FY) 2015 CBRN force structure is out of balance, with 73 percent of the total force structure dedicated to decontamination and biological detection—a design that was developed between 1980 and 2000 to mitigate and deter nuclear, biological, and chemical threats that existed during the Cold War era. The current design was developed based on a known threat and one that placed U.S. Army forces in a reactionary, versus proactive, mode of operation. The CBRN Force Design Update will rebalance required capabilities to provide a scalable, tailorable mix of mission command, reconnaissance, assessment, decontamination, and exploitation-capable forces to support maneuver brigade combat teams and divisions in conducting CBRN defense, WMD elimination, and consequence management operations. In addition, the CBRN Force Design Update will modernize our organizational design based on programmed Army and joint materiel procurement.

The CBRN Force Design Update will create, throughout the three Army components (minus strategic reserve assets), a standard operational CBRN battalion headquarters that is capable of executing mission command, sustainment, and counter WMD mission plans and synchronization so that divisions can conduct counter WMD operations and better address homeland defense CBRN response force mission requirements.

The CBRN Force Design Update will restructure 45 current maneuver support CBRN companies (15 per component) into multifunctional hazard response companies. These companies will be able to perform personnel and equipment decontamination and conduct mounted and dismounted hazmat reconnaissance, characterization, and assessment. This will enable the companies to contribute to defense support of civil authorities missions and battlefield counter WMD missions.

Under the CBRN Force Design Update, the Regiment will retain some large-area Biological Integrated Detection System and heavy decontamination capabilities within the strategic reserves.

Over the next year, a synchronized doctrine, organization, training, materiel, leadership and education, personnel, facilities, and policy implementation plan will be developed to ensure that CBRN readiness is maintained at all times. I intend to conduct a rehearsal-of-concept drill to ensure the seamless FY 16 implementation of the Force Design Update across our formations.

CBRN Warrant Officer Program

Colonel Kimmell and Chief Warrant Officer Two Matthew D. Chrisman, Regimental Chief Warrant Officer, are conducting a holistic review of the CBRN warrant officer implementation plan to ensure that we have clearly defined the roles and responsibilities of warrant officers at all levels and that the right authorities, documentation, and professional military educational opportunities are in place to support the program. The addition of warrant officers to our Regiment will undoubtedly provide the much-needed critical expertise required for our expanding counter WMD missions and for the future Army.

Key Modernization Efforts

Three key modernization efforts, which are critical to the CBRN Force Design Update, are currently taking place across our formations:

- The fielding of the Stryker Nuclear, Biological, and Chemical Reconnaissance Vehicle—our single most CBRN-capable platform—to our CBRN units. The final Nuclear, Biological, and Chemical Reconnaissance Vehicles will come off the assembly line this year, and we will continue to field the platform to our units through FY 16.
- The fielding of dismounted reconnaissance sets, kits, and outfits in Korea. Dismounted reconnaissance sets, kits, and outfits—which are fielded to all CBRN units in all Army components—are standardized kits consisting of mission-configurable component packages that include personal protective equipment and detection, marking, sampling, analysis, and technical decontamination capabilities.
- The institutionalization of mass casualty decontamination as an organizational capability with the development of a mass personnel decontamination program of record.

Vision Statement

We are currently conducting a holistic review of our vision statement and developing a campaign plan, which will unify the Regiment's capability to address the future operating environment and to meet the needs of Army Force 2025 and Joint Force 2020.[2] Based on the current environment and projections for an increasingly complex and challenging future environment in which rising terrorist groups and nonstate actors attempt to acquire WMD, we need seek no further justification for our mission as Dragon Soldiers. Therefore, I am proposing the following vision statement:

"We are the Nation's CBRN counterforce,
a world leader in WMD defense,
responsible for guarding the force
and protecting the homeland."

If you have any suggestions or feedback on the proposed vision statement, please send them to Mr. Peter G. Schulze, Deputy Assistant Commandant, at <peter.g.schulze.civ@mail.mil>.

As we prepare the Regiment and the joint force for their roles in Army Force 2025 and Joint Force 2020, additional initiatives will be forthcoming.

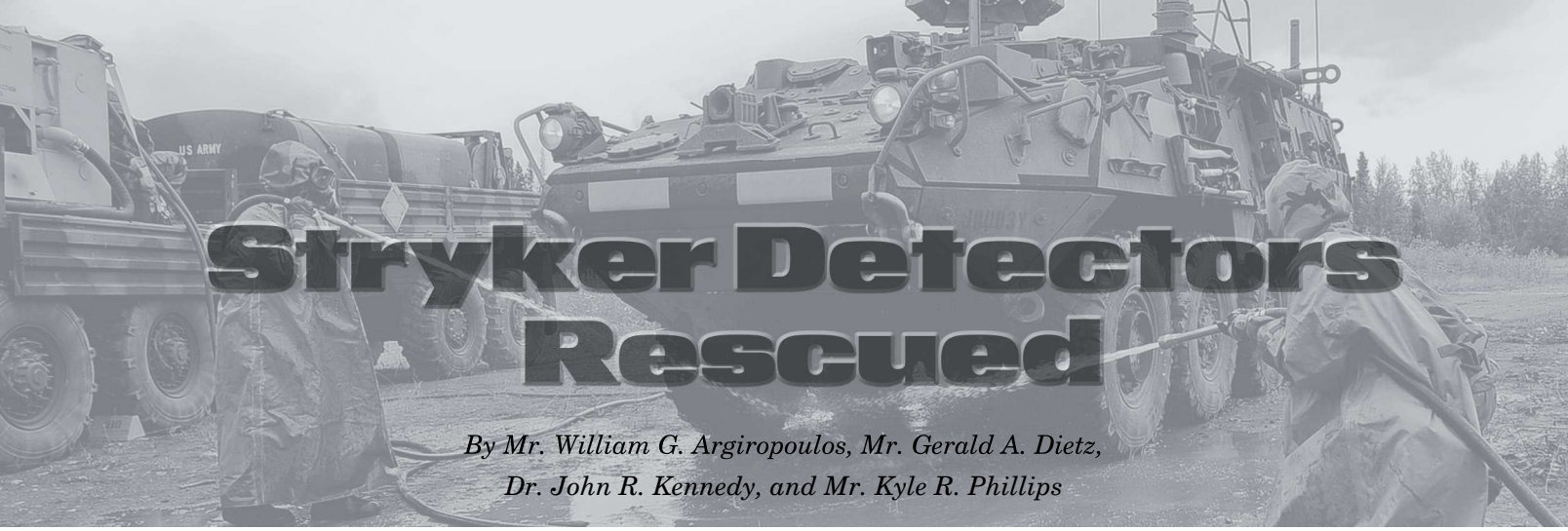
I am so honored to serve as your 28th Chief of Chemical, and I look forward to continuing to serve with you as we transform our Regiment. Along with Regimental Command Sergeant Major Kraus and Regimental Chief Warrant Officer Chrisman, I look forward to visiting you. We are anxious to see the great things you are doing and to partner with you to improve our Regiment.

Elementis regamus proelium!

Endnotes:

[1]"Force 2025 and Beyond," Army Capabilities Integration Center Web site, <http://www.arcic.army.mil/Initiatives/force-2025-beyond.aspx>, accessed on 30 October 2014.

[2]"Capstone Concept for Joint Operations: Joint Force 2020," 10 September 2012, <http://www.defenseinnovationmarketplace.mil/resources/JV2020_Capstone.pdf>, accessed on 30 October 2014.



Stryker Detectors Rescued

By Mr. William G. Argiropoulos, Mr. Gerald A. Dietz, Dr. John R. Kennedy, and Mr. Kyle R. Phillips

The rapid detection and warning of the use of chemical agents on the battlefield are critical to force protection. The Army's Stryker family of vehicles—consisting of 10 vehicle variants with specialized system capabilities—is outfitted with chemical detection and overpressure air filter systems that provide Stryker crews with vital protection from chemical threats. Each Stryker is equipped with an M88 detector (a component of the M22 Automatic Chemical Agent Detector Alarm [ACADA]) to detect nerve and blister agents. In the same way that the vehicle armor provides the Stryker with ballistic protection against small arms and explosives, the M88 detector protects the Stryker crew and passengers from chemical agent hazards. An inoperable M88 detector puts the lives of the warfighters aboard the vehicle at a risk that is no less than vehicle ballistic armor failure. Field personnel have observed that M88 detectors belonging to Stryker units are used far more than M88 detectors that belong to other units. As a result, Stryker M88 detectors commonly exhibit more wear and hardware failures than typical ACADA detectors.

CBERT Missions

Combat and stability operations in Iraq and Afghanistan placed tremendous demands on Army equipment. This, in turn, generated a significant maintenance burden and equipment replacement requirements that needed to be addressed when units returned to their home stations. In 2007, the TACOM Life Cycle Management Command established the Chemical Biological Equipment Repair Team (CBERT), which consists of engineers, technicians, and logisticians from TACOM, Edgewood Chemical Biological Center, Pine Bluff Arsenal, and Oregon Army National Guard. The CBERT provides on-site equipment reset services to ensure that the chemical, biological, radiological, and nuclear (CBRN) defense equipment of rotating units is returned to a completely serviceable condition and that it is fully mission-capable before redeployment. The CBERT has evaluated and repaired more than 19,300 M22/M88 detectors on more than 90 missions.

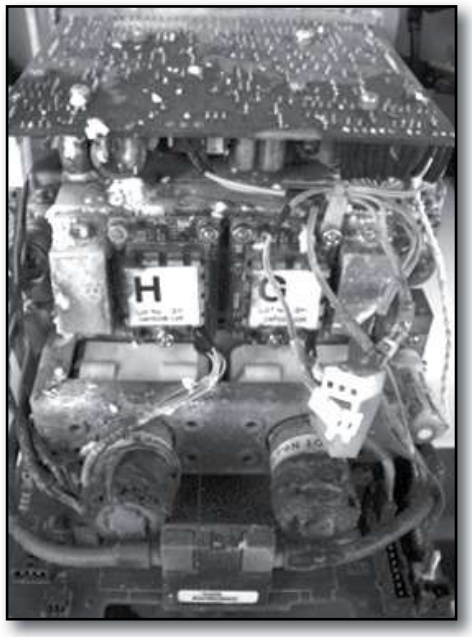
CBERT Revelations

The CBERT has observed a variety of issues and failures related to M22/M88 detectors. This has provided field engineers with the unique opportunity to document significant equipment operational issues and hardware failure trends. Many of the M88 detectors that were inspected were found to exhibit expected levels of wear and tear or physical damage; however, in some cases, the damage observed was indicative of a major issue or trend.

The most serious issue discovered involved a series of M88 detectors that showed evidence of water intrusion. In some instances, water literally poured from the detector when it was opened for inspection. In other instances, mud-like



Undamaged M88 interior



Corroded M88 interior



Undamaged M88 exterior—external screws, O-ring and covers for the remote alarm and communication and power ports, and remote alarm posts are present and undamaged.



Damaged M88 exterior—external screws are missing; O-ring and covers for the remote alarm and communication and power ports are damaged; and remote alarm posts are damaged.

residues adhered to the interior surfaces and components of the detector. Most of the affected M88 detectors exhibited a significant corrosion of internal components and were damaged to the point that they would not power on. Detectors that showed evidence of water intrusion were declared to be nonrepairable.

In an attempt to determine the cause of the water intrusion, the CBERT interviewed program management personnel, Soldiers from Stryker units, and maintenance personnel. However, it is still unclear how water got into the M88 detectors. One possibility is that it entered the internally mounted detectors when the exterior or interior of the Stryker was being cleaned or power-washed. The operator's manuals for the Strykers contain numerous warnings against the improper use of water to clean the Strykers and their subsystems and components. The manuals caution units not to power-wash the interiors of the vehicles because that could cause damage to equipment. Alternatively, it is possible that the detectors themselves were dismounted and then submerged in water, power-washed, or left exposed to the elements for extended periods of time. The M88 detector should never be submerged in water or power-washed. Instead, it should be cleaned by hand using a clean, dry cloth or brush without water or solvents. Stryker units use a general-purpose cleaning solution to clean the inside of the Strykers, but should not use the solution as a solvent to clean the M88.

The CBERT also discovered that many of the M88 detectors showed signs of damaged, loose, or missing external screws, seals, caps, or covers that are essential for protecting the systems from environmental factors and for preventing water intrusion. A properly maintained M88 with the external components fastened to the proper torque requirements is less likely to exhibit water intrusion or parts that have loosened through vibration. Proper torque specifications are detailed in the ACADA direct-support maintenance manual.

Many of the M88 detectors inspected by the CBERT exhibited physical damage. The team encountered detectors with damage to power switches, alarm assemblies, display assemblies, elapsed-time indicators, and exhaust assemblies. The binding posts and the unit power and data communication connectors were found to be especially susceptible to damage, including bent pins and broken connector shells. When these parts are damaged, it is impossible to provide power to, or communication from, the detectors. The integrity of the surrounding seals could also be compromised, which could allow water to enter the detector.

Finally, the CBERT discovered that some of the M88 detector housings were heavily dented and that the chemical agent-resistant coating on some was severely abraded. This served as further evidence of rough handling of the M88s.

Protection of the ACADA M88 Detector

The M88 detectors contained within Strykers serve as a first line of defense against nerve and blister agents. Although the intrusion of water into the detectors may be fairly uncommon, it is a significant risk. And when intrusion occurs, the damage can be catastrophic. If the M88 is to protect you, you must protect it. The following are a few tips for keeping the water out of the detector: [1]

- Ensure that the vehicle hatches are closed and that the environmental cover is in place to keep water out of the air intake and exhaust systems when washing the Stryker.
- Do not spray the Stryker crew compartment with water.
- Ensure that M88 detector dust caps and covers are installed and used properly; replace any missing caps or covers.
- Check M88 fasteners, fittings, connectors, selector switch and side case screws, sieve pack covers, exhaust ports, display and elapsed-time counters, and displays. Defective, damaged, or improperly fastened parts can allow water intrusion.
- Clean the M88 by hand with a clean, dry cloth or brush and without water or solvents. Do not power-wash the detector or immerse it in water.
- Store the M88 in a locked area with appropriate signs provided by the installation radiation safety office.
- Use the vehicle drain plugs to keep the Stryker dry. Keeping the Stryker dry provides not only good maintenance for the vehicle, but also a better environment for the M88 detector and other electrical equipment on the Stryker.

"In an environment with chemical agents, M88 detectors can be as critical as vehicle armor in protecting the lives of warfighters."

Other major problems caused by physical damage to the M88 detector can also be prevented through proper care and handling. For example, dust caps—which protect the M88 when the detector is not in operation—extend the operational life of the detector. The caps should always be installed when the M88 detector is removed from the Stryker. Likewise, tethered connector covers—which protect the M88 power and data communication connectors when the detector is not in use—should never be detached or discarded. In addition, when the M88 detector is mounted in the Stryker, operators must ensure that it is properly installed and that the front and top mounting brackets are securely fastened. Any shift in the position of the M88 during vehicle movement can cause damage to the detector. When removed from the Stryker, the M88 should be securely stowed to prevent damage to the detector as the ACADA transit cases that protect the dismounted detector are not available to Stryker units.

As with any equipment, it is necessary to conduct proper and timely maintenance on the M88 detector. The continuous evaluation of unit maintenance operations ensures that equipment is maintained at the highest possible state of readiness. Operators and maintainers should consult the following for further details:

- TM 3-6665-321-12&P, *Operator's and Unit Maintenance Manual (Including Repair Parts and Special Tools List) for Alarm, Chemical Agent, Automatic: M22 (NSN: 6665-01-438-6963) (EIC: Y14) and Auxiliary Equipment Power Supply, Chemical Agent Automatic Alarm: M28 (NSN: 6130-01-438-6960) (EIC: Y40) Mounting Kit, Chemical Agent Automatic Alarm: M281 (NSN: 6665-01-438-6959) (EIC: Y38) Alarm Unit, Chemical Agent Automatic Alarm: ABCA-M42 (NSN: 6665-00-859-2215) (EIC: 399).*
- TM 3-6665-321-30&P, *Direct Support Maintenance Manual (Including Repair Parts and Special Tools List) for Alarm, Chemical Agent, Automatic: M22 (NSN 6665-01-438-6963) (EIC:5AC) and Auxiliary Equipment Alarm Unit, Chemical Agent Automatic Alarm: ABCA-M42 (NSN 6665-00-859-2215).*

Conclusion

While M88 chemical agent detectors can be expected to exhibit wear and tear from employment on Strykers, the CBERT has encountered detectors that showed indications of water intrusion, detectors with missing external components, and detectors with severe physical damage during Stryker reset missions. In some cases, the damage caused by water intrusion or the physical damage was so severe that the detectors were determined to be non-mission-capable. Non-mission-capable detectors cannot provide vehicle crews with a critical first line of defense against chemical threats. In an environment with chemical agents, M88 detectors can be as critical as vehicle armor in protecting the lives of warfighters.

The water intrusion and physical damage observed with the M88 detector during reset missions are often entirely preventable through the proper storage, care, handling, and maintenance of the detector. These aspects are essential to the life of the detector and, therefore, the lives of the warfighters it protects.

The Detection Engineering Branch, Edgewood Chemical Biological Center, supports a number of warfighter technical assistance programs, such as the CBERT and the Equipment Assessment Unit program, which help units with the operation and maintenance of chemical defense equipment. For more information or assistance with chemical defense equipment, contact the Detection Engineering Branch by e-mail at <william.g.argiropoulos.civ@mail.mil> or <kyle.r.phillips.civ@mail.mil> or by phone at (410) 436-5680 or (410) 436-3608 (DSN 584).

(Continued on page 13)

JOINT RADIOLOGICAL AND NUCLEAR DEFENSE

By Lieutenant Colonel Valentin Novikov (Retired)

Birth of Joint Radiological and Nuclear Defense

The birth of joint radiological and nuclear defense took place on 17 December 2013, with the establishment of the Joint Project Manager for Radiological and Nuclear Defense (JPM-RND) within the Joint Program Executive Office for Chemical and Biological Defense, Aberdeen Proving Ground, Maryland. Lessons learned from Operation Tomodachi served as the impetus for the initiative.[1]

JPM-RND is responsible for the research, development, acquisition, fielding, and life cycle support of joint radiological and nuclear defense systems that support *The National Military Strategy of the United States of America, 2011: Redefining America's Military Leadership*. Working closely with the Defense Threat Reduction Agency and the Domestic Nuclear Detection Office, U.S. Department of Homeland Security, JPM-RND collaboratively develops and delivers radiological and nuclear defense capabilities to support the warfighters, our Nation, and our allies.

Unlike the U.S. Department of Defense (DOD) Chemical and Biological Defense Program, which was established at congressional direction, the joint radiological and nuclear defense acquisition initiative was sponsored by the Deputy Assistant Secretary of Defense for Nuclear Matters. Hence, the research and development for new radiological and nuclear defense systems are being funded by the Office of the Secretary of Defense for Nuclear Matters.

Modernization of Legacy Passive Defense and Consequence Management Capabilities

Using Secretary of Defense for Nuclear Matters funding, JPM-RND will replace the Army AN/PDR-77 and AN/VDR-2 Radiac Sets, Marine AN/PDR-77 Radiac Set, Navy Multifunction Radiac, and Air Force ADM-300 series instruments with a common joint system—the Radiological Detection System (RDS). This constitutes the first DOD joint radiological modernization acquisition program.

The RDS will employ different probes for alpha, beta, gamma, x-ray, and neutron detection; and it will consist of an open architecture that enables the upgrade of probes in response to emerging technological advancements, alleviating the need for future replacement of the entire system. And because the RDS will be a joint system that is common to all Services (and will also be used by the U.S Coast Guard), it will enable interoperability with common units of measure.

Furthermore, unlike the stand-alone legacy equipment, the RDS will be able to interface with the military global positioning system (GPS). This will allow the RDS to capture the location and date-time group information from the GPS and to store it with the radiation detection information for use in creating a Chemical Biological, Radiological, and Nuclear (CBRN) 4 report.[2] It will also be possible to plug the RDS into a military radio, such as the PRC-154A Rifleman Radio, to transmit the data for the CBRN 4 report. If a radio is not readily available, the RDS will store the data needed to create multiple CBRN 4 reports that can be downloaded onto a computer at the end of the reconnaissance mission. These system improvements will address two of the lessons learned during Operation Tomodachi.

The RDS has been placed on an accelerated development timeline, with system testing of multiple prototypes expected to be completed in fiscal year (FY) 2016. This testing will conclude with the selection of the most cost-effective prototype for manufacture and operational testing with Soldiers in FY 18. The first systems are anticipated to be fielded to units beginning in FY 19.

JPM-RND is also currently fielding AN/PDR-75A Tactical Dosimeter Systems to Army units that do not have legacy AN/PDR-75 dosimeters. The AN/PDR-75A is not a replacement for the older AN/PDR-75 dosimeters, but a

procurement of the most recently required systems under the AN/PDR-75 program. Due to a significant time delay from the procurement of the fielded AN/PDR-75, JPM-RND was able to procure the vastly improved, smaller, lighter-weight AN/PDR-75A system, which has significantly better detection capability. Unfortunately, the AN/PDR-75A, like its predecessor, is a stand-alone system that requires the operator to manually record each Soldier's exposure data. However, a key benefit not found in its predecessor is the ability of the AN/PDR-75A to capture accurate, low-level exposure data that can be placed in the Soldier's medical record. The completion of AN/PDR-75A fielding is anticipated in mid-FY 15.

". . . a key benefit not found in its predecessor is the ability of the AN/PDR-75A to capture accurate, low-level exposure data that can be placed in the Soldier's medical record."

JPM-RND is collaborating with the Navy on the development of a new Joint Personal Dosimeter (JPD) that can be used to replace the obsolete Navy IM-270 Casualty Dosimeter and the aging Army AN/PDR-75 dosimeter. In addition to capabilities similar to the AN/PDR-75A (such as capabilities of detecting low-level exposures during events like Operation Tomodachi and high-level exposures from tactical nuclear events), the JPD will be capable of being plugged into a computer to download Soldiers' exposure information. This will make entering the information in Soldiers' medical records easier and will reduce the possibility of transcription errors. JPM-RND will begin testing to verify the suitability and effectiveness of the JPD for use by ground forces in FY 15; fielding of the AN/PDR-75 replacement is anticipated to begin in FY 17.



The new AN/PDR 75A (left) and the legacy AN/PDR 75 (right)

JPM-RND, in collaboration with science and technology partners at the Defense Threat Reduction Agency, has developed several proposals for future programs to meet capabilities requirements. These include a radiological contamination air monitor for ships, key infrastructure to replace the aging Navy AN/PDR-65 Radiac Set, and a radiological point sensor to replace the aging Army and Marine UDR-13 Radiac Set. In addition to its use on ships, the radiological contamination air monitor will provide detection capabilities for critical infrastructure on large, forward operating bases and fixed sites. The RDS will be capable of multiple configurations for use, including perimeter-mounted configurations on forward operating bases, vehicle-mounted configurations, and configurations that can be carried with Soldiers' load-bearing equipment. The radiological contamination air monitor and the radiological point sensor will be network-capable so that they can automatically report contamination in excess of background levels to the bridge of the ship, installation mission command centers, or vehicle commanders. JPM-RND is prepared to initiate the radiological contamination air monitor and radiological point sensor programs when funding becomes available.

Development of Future Interdiction, Elimination, and Forensics Capabilities

In addition to developing and acquiring radiological and nuclear defense capabilities in support of CBRN passive defense and consequence management, JPM-RND provides capabilities in support of radiological and nuclear interdiction, elimination, and forensics. JPM-RND is closely collaborating with the Maneuver Support Center of Excellence (MSCoE) and the U.S. Army Chemical, Biological, Radiological, and Nuclear School (USACBRNS) to develop a system to support searching for and finding radiological and nuclear materials of interest during sensitive-site assessment and exploitation missions. The system components include the Man-Portable Radiological Identification System, a communications package containing PRC-154A radios to transmit real-time data from the Man-Portable Radiological Identification System, and computers with a situational awareness tool. The Man-Portable Radiological Identification System consists of two components: a hands-free search device commonly known as a backpack detector and a handheld Radionuclide Isotope Identification Detector. The backpack detector allows the rapid interrogation of suspect areas to presumptively identify radiological materials of interest. The Radionuclide Isotope Identification Detector enables a detailed inspection of these areas to provide field confirmatory identification of the materials of interest and theater confirmatory identification of isotopes during sensitive-site exploitation missions. With the backpack detectors, radios, and computers containing the situational awareness tool, Soldiers will be able to safely and efficiently conduct initial-entry operations at suspect facilities to determine potential locations of materials of interest. Using the Radionuclide Isotope Identification Detectors, radios, and computers with the situational awareness tool, Soldiers will also be

able to safely and effectively interrogate and characterize the suspect materials to accurately identify isotopes during sensitive-site assessment and exploitation missions. The extensive system communications package will enable the mission commander to see and track the progress of the initial-entry and characterization teams in finding and positively identifying the materials found within the suspect facilities. JPM-RND is prepared to begin the acquisition and testing of the new system upon receipt of funding.

The National Technical Nuclear Forensics Joint Capability Technology Demonstration is exploring capabilities available to allow the rapid reconnaissance of post-nuclear detonation debris fields for isotopes that provide detailed information about the characteristics of the employed weapon, and JPM-RND is working closely with the Defense Threat Reduction Agency so that the technologies successfully demonstrated during the National Technical Nuclear Forensics Joint Capability Technology Demonstration can be transitioned to JPM-RND. Pending the availability of future funding, JPM-RND will begin the advanced development of selected capabilities.

Conclusion

Although JPM-RND has only begun two acquisition programs (RDS and JPD) to date, it has proactively coordinated with other domestic and international organizations to understand the required capabilities for supporting future technologies and to develop cost-effective, collaborative acquisition strategies for the Soldiers, Marines, Sailors, Airmen, and Coast Guardsmen who are at the tip of the spear for the radiological and nuclear defense of the Nation.

Endnotes:

[1]Operation Tomodachi was a U.S. armed forces operation that provided disaster relief support to Japan following the 2011 Tōhoku earthquake and tsunami and the resulting Fukushima Daiichi nuclear incident.

[2]A sample CBRN 4 report (Reconnaissance, Monitoring, and Survey Results) is available in Graphic Training Aid (GTA) 03-06-008, *CBRN Warning and Reporting System*, October 2011.

Reference:

The National Military Strategy of the United States of America, 2011: Redefining America's Military Leadership, DOD, 11 December 2012.

Lieutenant Colonel Novikov, who retired as a chemical officer with 25 years of service in the Army, is the deputy JPM-RND. He holds a bachelor's degree in computer science from Hawaii Pacific University and master's degrees in operations research and industrial engineering from the University of Texas at Austin and national security and strategic studies from the U.S. Naval War College, Newport, Rhode Island.

("Stryker Detectors Rescued," continued from page 10)

Endnote:

[1]"Dry Up ACADA Water Threat," *PS: The Preventive Maintenance Monthly*, Issue 736, March 2014, pp. 44 and 45.

References:

TM 3-6665-321-12&P, *Operator's and Unit Maintenance Manual (Including Repair Parts and Special Tools List) for Alarm, Chemical Agent, Automatic: M22 (NSN: 6665-01-438-6963) (EIC: Y14) and Auxiliary Equipment Power Supply, Chemical Agent Automatic Alarm: M28 (NSN: 6130-01-438-6960) (EIC: Y40) Mounting Kit, Chemical Agent Automatic Alarm: M281 (NSN: 6665-01-438-6959) (EIC: Y38) Alarm Unit, Chemical Agent Automatic Alarm: ABCA-M42 (NSN: 6665-00-859-2215) (EIC: 399),* 1 March 1998.

TM 3-6665-321-30&P, *Direct Support Maintenance Manual (Including Repair Parts and Special Tools List) for Alarm, Chemical Agent, Automatic: M22 (NSN 6665-01-438-6963) (EIC:5AC) and Auxiliary Equipment Alarm Unit, Chemical Agent Automatic Alarm: ABCA-M42 (NSN 6665-00-859-2215),* 28 May 2002.

Mr. Argiropoulos supervises the Detection and Decontamination Engineering Branches, Edgewood Chemical Biological Center. He holds a bachelor's degree in mechanical engineering from Polytechnic Institute of New York and master's degrees in mechanical engineering from Columbia University, New York, and business administration from St. Ambrose University, Davenport, Iowa. He is a retired U.S. Army National Guard lieutenant colonel and a graduate of the Associate Logistics Executive Development Course and the U.S. Army Command and General Staff College. He is also a member of the Army Acquisition Corps. He has 29 years of experience in the development, testing, production, fielding, and sustainment of detection and decontamination systems.

Mr. Dietz is a chemical engineer with the Detection Engineering Branch, Edgewood Chemical Biological Center, where he serves as the configuration manager for the M22 ACADA. He holds a bachelor's degree in chemical engineering from University at Buffalo, The State University of New York. He has more than 34 years of acquisition experience in the areas of systems engineering, development, test and evaluation, production, and sustainment of chemical defense systems.

Dr. Kennedy is a physical scientist with the Edgewood Chemical Biological Center. He holds a bachelor's degree in chemistry from New Mexico State University, a master's degree in physical chemistry from Texas Tech University, and doctor of philosophy degree in physical chemistry from Texas A&M University. He is a retired U.S. Army Reserve lieutenant colonel and a graduate of the U.S. Army Command and General Staff College and the U.S. Naval War College, College of Naval Command. Dr. Kennedy is also a member of the Army Acquisition Corps.

Mr. Phillips is a chemical engineer with the Detection Engineering Branch, Edgewood Chemical Biological Center. He holds a bachelor's degree in chemical engineering from the University of Maryland, College Park, and a master's degree in environmental science and policy from Johns Hopkins University, Baltimore, Maryland. He has 10 years of experience in the areas of sustainment, fielding, training, maintenance, and logistics of chemical and biological detection systems.

An Analysis of the Chemical Warfare Potential of ISIS

By Captain Trey W. Ferguson

A controversy exists over whether or not the July 2014 capture of two bunkers at a former Iraqi chemical weapons facility by the Islamic State in Iraq and Syria (ISIS) poses a significant military threat. The bunkers captured were—

- Bunker 13. This bunker contained 2,500 sarin-filled, 122-millimeter chemical rockets that had been produced and filled before 1991 and about 180 tonnes of sodium cyanide (a very toxic chemical and a precursor for the chemical warfare agent tabun).[1]
- Bunker 41. This bunker contained 2,000 empty, 155-millimeter artillery shells contaminated with the chemical warfare agent mustard; 605 one-ton mustard containers with residues; and heavily contaminated construction materials.[2]

"While the degraded chemical warfare agents stored in the bunkers may no longer be suitable for conventional military use, the remnants could represent a valid hybrid risk."

While the degraded chemical warfare agents that are stored in the bunkers may no longer be suitable for conventional military use, the remnants could represent a valid hybrid risk. The extent of the deterioration of the chemical agents depends on environmental factors and the quality of the storage containers. Further evaluation of the storage conditions would be required in order to determine hazard levels.[3] Considering the procedures and checks used at U.S. ports of entry, the possibility that these products would ever enter the United States is minute. However, local Iraqi populations that are already under attack by ISIS are more vulnerable to being attacked with these chemicals in the event that ISIS extremists acquire the equipment necessary to transport the chemicals.

U.S. State Department spokeswoman Ms. Jennifer Psaki affirms that the chemical remnants "don't include intact chemical weapons . . . and [that it] would be very difficult, if not impossible, to safely use this for military purposes or, frankly, to move it."[4] This testimonial allayed the fears of the general public when ISIS initially captured the facilities. However, Ms. Psaki failed to describe the potential hazards of the leaking chemical armaments.

Signatories to the Convention on the Prohibition of the Development, Production, Stockpiling, and Use of Chemical Weapons and on Their Destruction (Chemical Weapons Convention) understand the inherent dangers of disposing of chemical weapons. The United States, in particular, follows strict guidelines for destroying chemical weapons and accounts for its munitions to ensure that the base components are destroyed during the demilitarization process.[5] U.S. destruction methods include incineration (in which chemicals are exposed to extreme heat in excess of 2,000°F) and neutralization (in which chemicals are combined with hot water and sodium hydroxide). Metal components that remain after the destruction process are sent to a smelting plant, and hydrolysate wastewater that is generated by the destruction process is sent to other locations for further cleansing.[6] Although this is only a brief summary of a long, involved process, it is enough to illustrate the point that chemical destruction procedures are extensive. If it is necessary to go to such great lengths to render these compounds safe, then Ms. Psaki's characterization of the remains of chemical warfare agents from the Iraqi bunkers as innocuous could signal an inaccurate assessment of the latent risks of those munitions.

Furthermore, with the proper equipment, it would be possible to remove the degraded chemical warfare agents from Bunkers 13 and 41. Any individual or organization can purchase commercial protective suits and air respirators; depending on the vender, the total price of a protective suit and self-contained breathing apparatus is about $10,000.

(Continued on page 16)

Expectations for Command

By Lieutenant General Thomas W. Spoehr

Congratulations! You're a promotable major, lieutenant colonel, or colonel (no small accomplishment in our hypercompetitive Army), and you've reached the point in your career where you have been asked if you wish to compete for command. Maybe you've always had a burning desire to command and have never questioned whether you would compete. Maybe you've always admired your battalion or brigade commander and have always wanted to emulate him or her—or maybe do things better! Maybe you've examined Department of the Army (DA) Pamphlet (Pam) 600-3, *Commissioned Officer Professional Development and Career Management,* and have noted where command lies along the timeline of a successful chemical, biological, radiological, and nuclear (CBRN) officer's career. Or maybe, like many others, you believe that command provides one of the best opportunities available to make a positive difference in the lives of other Soldiers and to help improve our great Army institution. Whatever your reason(s), carefully consider your decision before opting for battalion or brigade command. You may be unaware of some informal command expectations. These expectations are not written, official, or universally accepted; therefore, I offer them solely as my own—developed throughout the course of my career, especially while serving as the Chief of Chemical.

"In order for us to accomplish our mission of supporting and protecting the Army, we need a certain number of senior officers, especially colonels, to fill our most critical Chemical Corps positions."

Under the current system, officers who opt for command are not allowed to choose the category in which they wish to compete. And an officer who opts for command but then declines to assume command following selection, has the annotation "declined command following selection" added to his or her DA Form 4037, *Officer Record Brief*. Although there is no historical data with which to judge the impact of that annotation on the remainder of an officer's career, it is probably safe to assume that it won't be favorable. In addition, officers who decline command following selection are ineligible to compete for command again.

But let's talk about what else takes place when an officer declines command following selection. A qualified individual from the alternate list is activated to take command in place of the officer who was originally selected. The alternate is certainly happy about that. However, the activation is not publically announced like a selection list is. Instead, an e-mail message is sent to the alternate's command asking that the alternate be notified of the activation and the alternate then leaves for command. There is none of the congratulations or fanfare that is associated with the publication of a command list. So an officer who declines command following selection effectively denies another officer the opportunity to be publically acknowledged and recognized for his or her achievement of command selection. Furthermore, a notification of activation versus selection usually comes later than desired and is often needlessly disruptive to the officer and the Family being activated. Finally, the Army value of selfless service suggests that principled Army officers would put the welfare of the Nation, the Army, and their subordinates before their own and assume command of the units for which they are slated—even though those units may not be their primary choices.[1] Therefore, the expectation is that if you choose to compete for command, you unquestioningly embrace the command for which you are slated—even if it is not your first choice. And even if it is not one of your choices at all.

Next, let's discuss the informal expectations for those officers who are selected for command and assume it. In order for us to accomplish our mission of supporting and protecting the Army, we need a certain number of senior officers, especially colonels, to fill our most critical Chemical Corps positions. In the past couple of years, Chemical Corps colonels have been selected from the pool of CBRN lieutenant colonels who have successfully commanded at the battalion level. The basic health of our branch and our ability to fill key senior Army and joint positions ultimately rest on the shoulders of officers who have—

- Been selected for battalion command.
- Successfully completed command.
- Been selected to attend Senior Service College.
- Been selected for colonel.
- Been selected for brigade command.

Even if every one of these CBRN officers stays on track, there are often not enough colonels available to fill key positions, such as positions at major headquarters. On the surface, the choice of whether to compete for battalion command seems simple; however, in reality, if you are selected for battalion or brigade command, you will be expected to make yourself reasonably available to serve in positions of increasing responsibility worldwide to satisfy our requirements for experienced senior Chemical Corps leaders.

The Chemical Corps command track typically involves more moves of shorter duration than the noncommand track. Furthermore, due to the skill, maturity, and experience required, many of our most critical colonel positions must be filled by former brigade commanders. Hence, it is especially important that our small group of former brigade commanders continue to serve after command and that they continue to accept tough, often inconvenient, CBRN jobs.

Can unexpected events occur after you opt for command? Certainly. Issues such as a Family member's deteriorating health or a catastrophic event cannot be anticipated. But many other situations, such as children in high school, can be anticipated with a modicum of forethought. So before opting for battalion or brigade command, take the time to seriously discuss the decision with your Family. Some of the implications may not be obvious immediately. I respect officers who are able to look forward, determine that they will not be able to fully meet expectations, and choose to opt out of command before selection.

The informal expectations presented in this article are not described in any Army regulation or policy. They are a product of my own views of our system and culture, and I hope that you'll take them in that regard. You are free to heed or disregard them as you wish. I wish you the best of luck in your decisions and in your career. And should you choose to compete for command and are selected, relish the opportunity that you have to make a difference in our great Chemical Corps and Army.

Endnote:

[1]DA Pam 600-3, *Commissioned Officer Professional Development and Career Management*, 1 February 2010, p. 299.

Reference:

DA Form 4037, *Officer Record Brief*, 1 July 1982.

Lieutenant General Spoehr is the director of the U.S. Army Office of Business Transformation. He served as the 24th Chief of Chemical and commandant of the U.S. Army Chemical, Biological, Radiological, and Nuclear School (USACBRNS), Fort Leonard Wood, Missouri, from 2006 to 2008. He holds a bachelor's degree in biology from the College of William and Mary, Williamsburg, Virginia, and a master's degree in public administration from Webster University, St. Louis, Missouri.

("An Analysis of the Chemical Warfare Potential of ISIS," continued from page 14)

A terrorist organization with financial support could acquire these resources. For large entities that want to spread terror, that cost is minuscule.

"The United States should determine whether ISIS is preparing to use chemical agents to further its agenda."

The United States should determine whether ISIS is preparing to use chemical agents to further its agenda. Based on the immoral actions it has taken thus far in its rise to power, ISIS appears to have no qualms about exploiting any advantage available to expand its influence. If U.S. military forces are called upon to assist with a catastrophic chemical attack, the United States must have an effective strategy.

Endnotes:

[1]"ISIS Seizes Former Chemical Weapons Plant in Iraq," *The Guardian*, Associated Press at the United Nations, 9 July 2014, <http://www.theguardian.com/world/2014/jul/09/isis-seizes-chemical-eapons-plant-muthanna-iraq>, accessed on 19 September 2014.

[2]Ibid.

[3]Hank Ellison, *Handbook of Chemical and Biological Warfare Agents, Second Edition*, CRC Press, Taylor and Francis Group, Boca Raton, Florida, 2008.

[4]"ISIS Seizes Former Chemical Weapons Plant in Iraq."

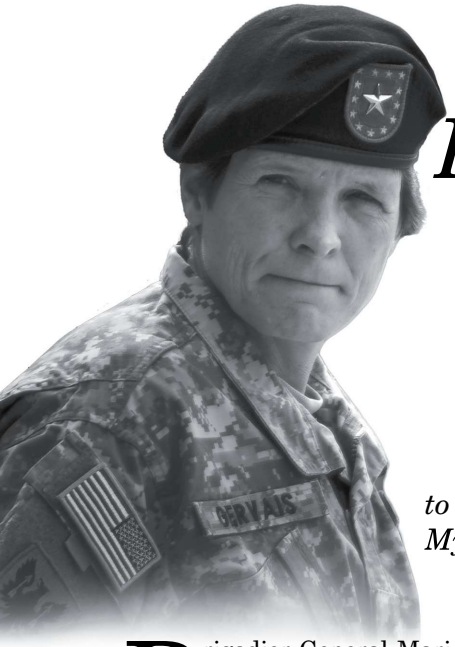
[5]"Neutralization of Chemical Agents," fact sheet, U.S. Army Chemical Materials Agency, 3 December 2008, <http://www.cma.army.mil/fndocumentviewer.aspx?docid=003672521>, accessed on 19 September 2014.

[6]Ibid.

Reference:

Convention on the Prohibition of the Development, Production, Stockpiling, and Use of Chemical Weapons and on Their Destruction (Chemical Weapons Convention), 3 September 1992.

Captain Ferguson is a chemical, biological, radiological, and nuclear (CBRN) officer currently attending the CBRN Captain's Career Course at Fort Leonard Wood, Missouri. He holds a bachelor's degree in English from the University of South Florida and is working toward master's degrees in environmental science and English literature.



Brigadier General Gervais Takes Command

By Ms. Dawn Arden

"My pledge to you and this Regiment is that I will strive each and every day to live up to the trust, confidence, and expectations that have been placed in me. My goal is to never let you, the Regiment, or our Army down."

Brigadier General Maria R. Gervais became the 28th Chief of Chemical and the commandant of the U.S. Army Chemical, Biological, Radiological, and Nuclear School (USACBRNS) during a ceremony held at Fort Leonard Wood, Missouri, on 3 June 2014. Major General Leslie C. Smith, commanding general of the Maneuver Support Center of Excellence (MSCoE) and Fort Leonard Wood, presided over the ceremony.

Major General Smith welcomed Brigadier General Gervais and her Family back to Fort Leonard Wood. He then reminded her that the Army carefully chooses its leaders and commanders. "You are the very best in the Army for this position and will be valuable to the Regiment and [MSCoE] as we continue transitioning our Army," he said. "Your experiences, character, and competences truly make you the perfect fit for this position at this time."



Brigadier General Gervais thanked those attending the ceremony and declared that there is no installation or community better than Fort Leonard Wood. "I can't even begin to tell you just how good it feels to be back home here at Fort Leonard Wood and just how thrilled we are to be joining the great [MSCoE] team," she said. "[My husband] Chris and I consider ourselves extremely blessed to be assigned here again."

Brigadier General Gervais made the following pledge to Major General Smith: "My pledge to you and this Regiment is that I will strive each and every day to live up to the trust, confidence, and expectations that have been placed in me. My goal is to never let you, the Regiment, or our Army down."

In addressing the attendees, Brigadier General Gervais stated, "I stand before you extremely honored, grateful, and yet very humbled to have been given this opportunity to serve as the 28th Chief of Chemical and commandant of the [USACBRNS]—especially during such a historic time within our Army and during a time when the future is so uncertain. To me, there is no greater honor than to lead the Dragon Soldiers, civilians, and Family members of the Chemical Regiment."

Major General Smith commended Colonel Jeffrey M. Brodeur, assistant commandant, USACBRNS, on the great job he did as acting commandant of USACBRNS for the past 4 months. "You are an outstanding leader and have done a great job keeping continuity with all training, leader development, proponency, and other initiatives with Army level visibility," he said. "Well done. And thank you for your service and everything you have done for Fort Leonard Wood and the Army."

Brigadier General Gervais' previous assignment was as deputy commanding general of the U.S. Army Cadet Command and Fort Knox, Kentucky. This is the second time that she has been stationed at Fort Leonard Wood. She was the first female to lead the 82d Chemical Battalion, and she formerly served as the chief of staff of USACBRNS and the chief of staff of MSCoE.

Ms. Arden is an assistant editor with the Fort Leonard Wood Guidon.

The Resurging Relevance of Obscuration

By First Lieutenant Scott Sikora

Introduction

In 2010, the Army began its post-9/11 transition from counterinsurgency to decisive action. Throughout its 239 years of history, the Army has made tough choices in revolutionizing, evolving, and reinvesting in its former capabilities. But one critical capability that has not yet been reintegrated is that of obscuration generated from vehicle-mounted platforms. Vehicle-mounted obscuration generation is a unique and highly adaptable force enabler that can dramatically increase the combat effectiveness of a maneuver unit.

Recent Training Use

During Rotation 14-03 at the National Training Center (NTC), Fort Irwin, California, in January 2014, the NTC opposing force conducted an integrated attack involving a brigade tactical group core shaping operation that consisted of a demonstration held near two critical passes. The objective was to draw reserve assets from the opposing rotational training unit to the edge of the battlefield, thereby giving the brigade tactical group decisive operation the opportunity to achieve mission success. The linchpin of the operation was an asset that rotational training unit leaders had not seen in more than 10 years—generated smoke.

As the demonstration got underway, one of the brigade tactical group M58 mechanized smoke obscurant carriers began its mission. Smoke billowed and spread throughout the passes, obscuring all vision to the rear of the demonstrating force. Unable to see through the haze, rotational training unit leaders were forced to assume that the smoke was obscuring a larger operation. They redirected all aviation assets to defend against this unknown threat, allowing the brigade tactical group demonstration in support of the decisive operation to succeed. The demonstrating force hid in the smoke and retained combat effectiveness despite the engagement from an overwhelming enemy force.

A single mechanized smoke obscurant carrier was decisive in the success of the opposing-force mission for this engagement. It is evident that, when targeted, even the most minimal incorporation of obscuration can dynamically affect a massive operating environment. According to the commander of Troop C (Cold Steel), 1st Squadron, 11th Armored Cavalry Regiment, NTC, "Obscuration (smoke) is an absolute combat multiplier and one underutilized at the National Training Center. Combined with indirect fire and concentrated direct fire, smoke can allow a maneuvering force the ability to move to key terrain undetected or, at a minimum, [mask] the true size of the element."

Yet despite the benefits provided by obscurant capabilities, the Army inventory of vehicle-mounted obscurations has been dramatically reduced. Although generated obscuration has nearly been forgotten during the last 10 years, it arguably remains a vital asset that can help meet tomorrow's needs as the Army transitions to respond to future decisive-action threats.

History

The use of battlefield obscuration by the U.S. Army began during World War I, and it has played a role in almost every major conflict since—World War II, the defense of the Fulda Gap, the Korean War, the Vietnam War, Operation Desert Storm, the Kosovo War, and the invasion of Iraq.[1] It reached its pinnacle during World War II when mechanized obscuration was incorporated into missions such as amphibious landings, bridge crossings, and defense of airstrips.[2] Smoke operations became so important during the Mediterranean campaign of 1944 that there were not enough generator units available to fulfill all theater requests.[3]

Throughout the years, generated obscuration has been a staple of the Chemical Corps. It is consistently requested by field commanders who have experienced generated obscuration as a mission-essential enabler. Yet despite this history, modern technology and a shift in focus toward counterinsurgency have—in the eyes of most senior leaders—rendered obscuration obsolete.

The Army maintains some obscuration vehicles—most of which are included in pre-positioned stock or in reserve within the continental United States, rather than in use by a deployable unit. Today, the only two chemical, biological, radiological, and nuclear (CBRN) companies that continue to have an obscuration mission are maintained within the Army National Guard. The only Regular Army unit in which mechanized obscuration is the primary mission is the Smoke Platoon, Military Intelligence Company, Regimental Support Squadron, 11th Armored Cavalry Regiment. The Smoke Platoon uses M58 smoke systems (consisting of M113A3 armored personnel carriers with built-in smoke generators) in support of the opposing force during unified land operations in decisive-action training environment rotations.



Reasons for the Decline

In the mid-2000s, the division-based Army transitioned to all-encompassing brigade combat teams. Each of the Army's capabilities was evaluated using a total Army analysis tool to determine how it fit into the force restructuring. In the midst of the restructuring, the Army was also engaged in counterinsurgency operations, which dramatically affected the assets that the total Army analysis determined were or were not needed.

There are a few uses of generated obscuration in counterinsurgency-focused operating environments. For example, generated obscuration is useful in providing cover from sniper fire and in controlling riots. However, it is not logistically feasible to allocate significant personnel and resources toward mechanized obscuration to support counterinsurgency.

The Chemical Corps needed to make hard decisions to meet the theater-specific requirements of Iraq and Afghanistan. Retaining capabilities while also meeting mission requirements would necessitate more personnel and funding. This wasn't possible at the time, so the Corps rededicated its assets to keep up with its mission demands. Obscuration was one of the capabilities that went by the wayside in favor of other capabilities that better met the immediate needs of the Army, such as CBRN reconnaissance and homemade-explosive laboratory exploitation capabilities. Despite their historical status as highly sought-after assets, the vast majority of Army obscuration units was permanently realigned.

A common argument for the phasing-out of vehicle-based obscuration was that artillery is a cheaper and easier means of employing obscuration. Artillery-projected obscurants can be emplaced with pinpoint accuracy, can reach locations where vehicles carrying smoke generators cannot traverse, and can eliminate the need for vehicle-mounted obscuration elements beyond the forward line of troops for maneuver-based units. In addition, several widely available devices can see through the obscurants used by the Chemical Corps. While it is possible to block the spectra of light used by some of these devices by adding certain additives to the obscurants, the necessary supplies are expensive and difficult to obtain.

Advances in targeting and artillery-projected obscuration, combined with the strategic focus on counterinsurgency operations, have all but hammered the last nail in the coffin for generated obscuration. Today, obscuration operations carry the same stigma as other outdated weapons of the past such as horses and spears—both of which met their ends due to the steady advance of technology.

Arguments for Continued Relevance

Obscurants can tactically benefit field commanders in several ways. They can—

- Conceal forces in open terrain.
- Draw enemy attention to a particular portion of the battle as a demonstration or feint.
- Flush out enemies occupying key terrain.
- Confuse and disorient enemy forces that become surrounded by the smoke.

Research has also been conducted on the use of multispectral obscurants to protect equipment from

electronic magnetic pulses and directed energy and to disrupt communication as a form of electronic warfare.[4] In the hands of an inventive commander, there are few limits to what can be done with obscurants.

Furthermore, other nations continue to develop target acquisition capabilities to exploit U.S. countermeasure weaknesses. In response, the United States is researching more significant means of denying enemy targeting capabilities. Obscuration serves as one of the most effective means of denying multispectral targeting by the enemy; graphite-infused smoke is one type of widely available obscurant used for that purpose. Generated obscuration is the only obscuration method with the complexity and span to integrate multispectral sensor denial on a large scale. This will become more and more important as potential adversaries continue to advance their reconnaissance and surveillance capabilities.

While Army obscuration capabilities were undergoing reductions, funding was approved for the development of replacement equipment to fill the capability gap. The new generator—the Screening Obscuration Module—attaches to combat vehicles to provide localized generated obscuration. But one problem with the Screening Obscuration Module is that it provides only enough smoke to cover a single vehicle in a confined environment—not to provide large-area cover or obscuration in open terrain. Furthermore, it is not capable of creating multispectral obscurants. While the Screening Obscuration Module is well-suited for small-scale use in constricted environments, it is simply not capable of replacing the large array of former Army generated-obscuration capabilities.

There are some advantages to artillery-delivered obscuration over vehicle-mounted obscuration; however, artillery rounds do not measure up to a platoon of M58 smoke carriers on many levels of practical implementation. For example, it is logistically difficult to cover a number of large areas with smoke using projected obscuration. U.S. Army artillery-delivered smoke rounds usually consist of white phosphorous (WP) and, depending on weather conditions, provide very limited smoke coverage per round. An Army M56 obscuration generator can cover much more land than a WP round—and can cover it for a significantly longer period of time.[5] Working in concert, the seven generators of a smoke platoon are simply more effective at obscuring large-area targets and can significantly relieve the Field Artillery Corps workload. In addition, if not implemented with strict firing measures, WP rounds can be lethal to nearby units.

The preparation of an avenue of approach through open terrain with WP artillery rounds can be useful and necessary. However, airfields, sensitive sites, and areas occupied by civilians complicate the use of WP. Therefore, the commanders must assess the situation to prevent collateral damage that could be caused by projected WP rounds.

In addition to the aforementioned benefits of obscurants, obscuration can also be used in support of breaching operations. According to Army Tactics, Techniques, and Procedures (ATTP) 3-90.4, *Combined Arms Mobility Operations*, a breach consists of five fundamentals—suppress, ***obscure***, secure, reduce, and assault (SOSRA).[6] Obscuration has long been a core aspect of breaching operations.

One of the best approaches in using obscuration for a breach is to combine projected and generated obscuration. The obscuration vehicles can be concealed by artillery-projected obscurants while they move into the correct positions to provide the large-scale obscuration needed for a full breach. Without the synergy of projected and generated obscuration, a breaching force in open terrain is unconcealed and under unnecessary risk. Most breaches lose effectiveness without a supporting generated-obscuration force. The five SOSRA fundamentals will need to be redeveloped to address the capability gap caused by the phase out of vehicle-mounted obscuration.

The following excerpt from Army Techniques Publication (ATP) 3-11.50, *Battlefield Obscuration*, illustrates the continued relevance of large-scale obscuration and describes its tangible impact as a force enabler in modern combat operations:

> *On 1 April 2003, 5th Platoon, 92d Chemical Company, the [division] organic smoke platoon, was [ordered] . . . to provide an obscuration haze at Objective Peach to screen the task force movement over the Euphrates River. . . . At approximately 1500 hours, as the platoon approached its primary obscuration position northwest of the bridge, the artillery battalion fired obscuration rounds, but to no effect due to unstable weather conditions. . . . Regardless of the lack of concealment, at 1515, the platoon began obscuring the area. As the screen built, it drifted steadily toward its objective—the bridge over the Eurphrates River.*[7]

The maneuver units were able to safely cross the bridge and engage their targets. U.S. forces used obscuration to provide a marked advantage over the enemy. Due to volume limitations and potential collateral damage, projected WP rounds could have presented unacceptable risk to the unit commander.

The Path Forward

Vehicle-mounted obscuration can be an invaluable asset to commanders. But for it to be viewed as relevant once again, efforts must be made to influence the total Army analysis process so that battlefield obscuration is considered as a capability gap. Until CBRN subject matter experts who influence the total Army analysis process realize the continuing need for obscuration, nothing will be done.

A possible resolution would involve increasing the attention given to the employment of obscuration at combat training centers. Operations involving obscuration occur during every rotation at NTC, and opposing-force Soldiers are very knowledgeable about the use of obscurants. While

most of the combat effects at NTC are simulated, obscuration is employed just as it would be on an actual battlefield. Therefore, doctrine created from observations made at NTC will lose little fidelity when applied to real combat situations. Monitoring the usefulness of obscuration at combat training centers should be one of the first steps taken in determining whether there is a place for obscuration in the future of the Army.

The expertise and vehicles required to reintegrate vehicle-mounted obscuration as a major part of the Army mission set exist within the senior CBRN leaders of today and the few smoke units that still remain. Yet if vehicle-mounted obscuration returns to the Army capability set, things will not be the same as they once were.

One change that could be made is that the Chemical Corps could hand over responsibility for obscuration to another branch of the Army. The responsibility for obscuration was assigned to the Chemical Corps when the Corps was new and trying to justify its existence; however, as the years have passed, the Chemical Corps has forged an identity into which obscuration no longer cleanly fits. Today, the Engineer Corps or a maneuver branch would be better suited to take on responsibility for vehicle-mounted obscuration. Soldiers in those organizations are better trained to maneuver obscuration vehicles on the battlefield and to effectively employ obscuration during a breach.

A concern with this possible change is that there is an art to obscuration. Many factors play into an obscuration mission, and those factors would need to be taught to the new Soldiers. The Soldiers would need to learn how obscuration is affected by variables such as temperature gradients, barometric pressures, and wind and terrain effects. Soldiers trained in all CBRN aspects but no aspects of maneuvering or breaching will not be as effective at employing obscuration as Soldiers who are specifically trained in those areas. A new military occupational specialty focused on the employment of obscuration could be created within each of the appropriate maneuver branches. This would produce specialized Soldiers who are better tailored to the task, and it would allow the field of obscuration to retain a solid identity as it did in the past.

Another necessary change would be the enhancement of generator and obscurant properties. As previously mentioned, obscurants that protect along multiple spectra will become more and more useful on the battlefield of the future. In addition, a mere switch in obscurants would simplify the Army use of fuels. The obscurants that are currently used are produced by fog oil—a fuel source that has no other purpose within the Army. Switching to a JP-8-based fuel source would reduce the number of fuel types needed by the Army. Although JP-8 is presently considered a poor substitute for fog oil with regard to obscuration production, research into better generators and possible adaptations to JP-8 could lead to easier obscuration resourcing.

New technologies are also capable of revolutionizing how generated obscurants are employed. Commanders are currently hesitant to employ vehicle-generated obscurants in high-risk areas. However, if combat vehicles containing generators can be remotely operated in the future, then large-scale obscuration missions can be carried out in combat zones under heavy enemy engagement. Without the fear of casualties, the versatility of vehicle-mounted obscuration greatly increases.

Conclusion

Among Army leaders, there is a natural tendency to move in one direction with the rest of the force. According to Colonel Jon Drushal, commander of the 3d Chemical Brigade, "Some are scared to look backwards for fear of being accused of not looking forward. The fact remains that there are capabilities that were eliminated over the past decade that simply did not make sense in support of counterinsurgency operations and may make sense moving forward in support of joint combined arms operations." With the massive transition toward facing hybrid threats, the Army is in a perfect position to reevaluate obscuration and its role for the future. An honest evaluation will reveal that obscuration is irreplaceable. Technological advances and minor updates to the force structure will allow Army leaders to continue to keep looking forward to see obscuration as an asset that is well suited to address several future obstacles.

With a greater investment in obscuration, the U.S. Army could enhance the ability to conduct combined arms maneuver and wide area security. NTC commanders are excited about integrating the smoke platoon into their missions, and they are seeking opportunities to employ mechanical obscuration into their schemes of maneuver. As the U.S. military reconditions itself for conventional warfare and hybrid threats, an expanded obscuration capability can only help.

Endnotes:

[1]Michael J. Padden, "Vanishing Act: The Glorious Life and Silent Death of Battlefield Obscuration," *Army Chemical Review*, Winter 2012, pp. 45–49.

[2]Ibid.

[3]Ibid, p. 46.

[4]Frank D. Chapman and Andrew Reichert, "Obscurants and Electronic Warfare," *Army Chemical Review*, Winter 2011, pp. 21–25.

[5]ATP 3-11.50, *Battlefield Obscuration*, 15 May 2014.

[6]ATTP 3-90.4, *Combined Arms Mobility Operations*, 10 August 2011.

[7]ATP 3-11.50.

First Lieutenant Sikora is the leader of the Smoke Platoon, Military Intelligence Company, Regimental Support Squadron, 11th Armored Cavalry Regiment. He holds a bachelor's degree in political science with a minor in military studies from the University of New Mexico.

82d Airborne Paves the Way for CBW Entry Team Training

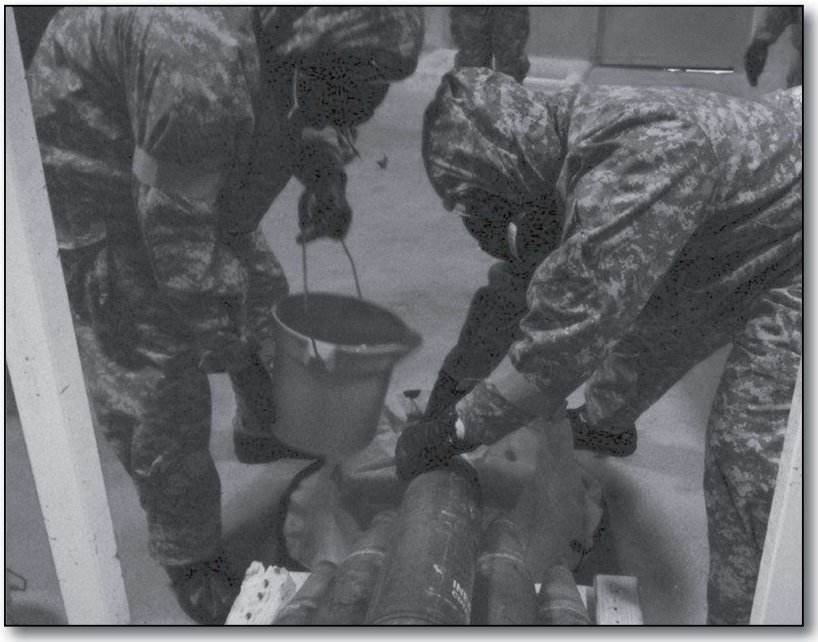
By Major Christine L. Kay and Mr. Daniel S. Murray

The scenario: After nearly 2 hours of steady rain in stifling summer heat, the humidity settled at about 92 percent with very low cloud cover. The stillness of the Ozarks countryside was broken by the rumbling engines of the approaching C-130s (military transport aircraft). Against the backdrop of a suspected weapons of mass destruction production facility, 82d Airborne Division paratroopers from the 1st Battalion, 505th Parachute Infantry Regiment (Panthers), and the 37th Brigade Engineer Battalion (Green Falcons) fell from the sky to seize, secure, and exploit suspected chemical and biological weapon (CBW) sites.

For several years, technical teams from operational units have leveraged the training resources available at the U.S. Army Chemical, Biological, Radiological, and Nuclear School (USACBRNS) and Fort Leonard Wood, Missouri. These specific teams have executed training operations as initiatives that they developed on their own or as cost-effective alternatives to higher-priced training available at other venues. The Chemical Defense Training Facility (CDTF) and the First Lieutenant Joseph Terry Chemical, Biological, Radiological, and Nuclear (CBRN) Responder Training Facility are world-class facilities that have played host to technical teams from across all components and the joint force, including teams from the 5th Special Forces Group, the 23d Civil Support Team, the 4th Maneuver Enhancement Brigade, the 4th Marine Logistics Group, the 15th Marine Expeditionary Unit, the U.S. Coast Guard Gulf Strike Team, and the National Strike Force. Most recently, the CDTF and the First Lieutenant Terry Facility hosted entire 82d Airborne Division CBW entry teams (technical, security, entry, and support elements) from the 2d and 3d Brigade Combat Teams.

At the invitation of the Commander, 3d Chemical Brigade, Fort Leonard Wood, 82d Airborne Division planning began in September 2013 and culminated in June 2014 when about 120 CBRN, infantry, and explosive-ordnance disposal Soldiers descended on the drop zone at Forney Army Airfield. Once they arrived at the Fort Leonard Wood training sites, the incoming Soldiers faced multiple, tactically driven mission sets to validate unit CBW security and exploitation team battle drills. The purpose of the training was to prepare the Soldiers for duty as the division global response force. The two company teams provided by the 3d Chemical Brigade demonstrated that the training resources available are no longer reserved solely for the use of initial-entry training or professional military education. It was evident that the 3d Chemical Brigade and USACBRNS are flexible enough to support a wide variety of individual and collective training objectives at an affordable cost.

The training operation tested the desire of USACBRNS and Fort Leonard Wood to provide a legitimate training venue for entire CBW teams. It also tested collective tasks involving airborne operations, entry team tactics, site security, CBRN battle drill procedures, and the use of specialized CBRN equipment that the division intends to incorporate into the global response force training package. Future 82d Airborne Division training events will require global response force CBW entry teams to validate contingency operations involving multiple CBW sites over an extended and continuous tactical period. From the CBRN mission perspective, there are numerous USACBRNS facilities that



Soldiers from the 82d Airborne work to complete their mission inside the CDTF.

could be considered for training locations as units develop their training plans. The most popular of those facilities are the CDTF and the First Lieutenant Terry Facility. Other possible training locations include—

- Radiological laboratories.
- Biological Integrated Detection System suites.
- Mass casualty decontamination sites.
- Hazmat training sites.

Many units prefer to train at the CDTF, which has provided small-unit, collective-training opportunities for joint force and allied operational units for about 6 years. The CDTF offers live nerve agent training for uniformed Service members. Scenarios, which are constructed to meet unit training objectives, offer the opportunity for detection, identification, sampling, packaging, and decontamination under hazardous conditions that feature chemical, biological, and radiological materials. The CDTF is well equipped to ensure that units train with the latest personal protective equipment and detection gear (see Table 1).

Category	Description
Standard Military Chemical PPE	• JSLIST chemical protective overgarments • M50 JSGPM • AFS chemical/biological protective footwear • Chemical-protective gloves
Commercial Chemical PPE	• Draeger PSS® 7000 SCBA • Kapler Zytron® 500 Level A protective ensemble • Dupont™ Tychem® responder Level A protective ensemble • Dupont Tyvek® F Level B splash-protective ensemble
Chemical Detection	• M4 JCAD • M22 ACADA • ICAM • M256 detection kit • M8/9 paper/tape • Ahura Scientific, Incorporated, handheld Raman spectrometer • HazMatID™ infrared chemical-material identifier • HazMaster G3® CBRN detector
Radiological Detection	• AN/VDR-2 radiac set
Biological Detection	• DOD biological sampling kit (handheld assay)
O_2 and/or Explosive Gases	• MultiRAE™ gas meter
Decontamination	• M295/M100 sorbent decontamination powder • SPEEDS® decontamination system • Tactical hazmat shower station
Sampling Tools	• DOD sampling kit
Medical	• ATNAA
Communications	• Kenwood™ tactical handheld FM radios with throat microphones

Legend:

ACADA—automatic chemical-agent alarm
AFS—alternative footwear solutions
ATNAA—antidote treatment–nerve agent, auto-injector
DOD—Department of Defense
ICAM—improved chemical-agent monitor
JCAD—joint chemical-agent detector
JSGPM—joint service general-purpose mask
JSLIST—joint service, lightweight, integrated suit technology
O_2—oxygen
PPE—personal protective equipment
SCBA—self-contained breathing apparatus

Table 1. Personal protective equipment and CBRN detection equipment available at the CDTF

The First Lieutenant Terry Facility is also well equipped to ensure that units experience successful training events (see Table 2, page 24). The Incident Response Training Department at the facility executes the eight highly technical functional courses:

- Civil Support Skills for civil support team personnel to achieve military occupational specialty qualification.
- Analytical Laboratory System Operator for civil support team laboratory technicians to obtain certification.
- Unified Command Suite Operator for civil support team unified-command system operators.
- CBRN Responder for hazmat technicians to obtain certification.
- Mass Casualty Decontamination for units supporting the domestic CBRN response force mission.
- CBRN Dismounted Reconnaissance for dismounted reconnaissance and surveillance platoons.
- Installation Emergency Planning for installation level emergency operation center personnel.
- Technical Escort for Army technical-escort teams.

Category	Description
PPE	• SCBA
Chemical Detection	• HazMatID™ with HazMaster G3® • Colometric tubes • IdentiFINDER™ • FirstDefender™ (liquids and solids) • JCAD
Radiological Detection	• UDR-14 • EPD-2N (dosimeters) • PDR-77
O_2 and/or Explosive Gases	• MultiRAE gas meter
Explosives Detection	• FIDO®
Decontamination	• DEB kit
Sampling Tools	• Quicksilver Analytics Sampling Kit
Weather Detection	• Kestrel® pocket weather station
Legend: **DEB**—decontamination expeditionary bag **JCAD**—joint chemical-agent detector **PPE**—personal protective equipment **SCBA**—self-contained breathing apparatus	**Note: Additional equipment is available upon request.**

Table 2. Personal protective equipment and CBRN detection equipment available at the First Lieutenant Terry Facility

The First Lieutenant Terry Facility includes 22.5 acres of unique above- and belowground training areas for the Incident Response Training Department to facilitate the courses and provide training for the operational force. Simulated hazmat is used in sensitive-site scenarios that include—

- Chemical weapon containerization and storage.
- Chemical warfare material production.
- Anthrax weaponization.
- Asymmetric ammonium nitrate and aluminum production of homemade explosives.
- Confined-space operations.
- Asymmetric methamphetamine production.
- Hazmat mitigation at venues such as commercial toxic industrial chemical storage facilities.

Training costs have become a key concern for commanders looking for realistic, relevant, and innovative training strategies to support unit missions and mission-essential task lists. Despite the attractive free play gained from deploying units and equipment to specialty sites like the Defense Research Establishment Suffield, Canada, such options are cost-prohibitive during periods of extreme fiscal austerity. Table 3 contains a field budget estimate for training facilities and life support for operational units deploying to Fort Leonard Wood. It is recommended that leaders of these units lock in multiple venues and training facilities to get the most from their training experience. Unit leaders who wish to use USACBRNS and Fort Leonard Wood facilities should contact the Staff Operations Section, 3d Chemical Brigade, at (573) 596-0131, extension 65378 or 60789 for current information.

While the No. 1 priority of the U.S. Army Training and Doctrine Command is to support initial-entry training and professional military education, no training requests from operational units have been turned down. Information that can be used to simplify the coordination of training with the 3d Chemical Brigade is provided in Figure 1, which identifies the key aspects needed to lock in training resources. Early planning is key. Training requests for large units or groups of 40 or more should be initiated at least 8 months in advance. This allows 3d Chemical Brigade personnel to reserve time on the calendar so that they can give full attention to supporting the exercises.

The 3d Chemical Brigade, USACBRNS, and Fort Leonard Wood strive to provide operational units with the opportunity to validate key training objectives through the use of world-class facilities at an affordable cost. Although the brigade is not manned or qualified to provide certification,



Soldiers from the 82d Airborne conduct nerve agent detection at the CDTF.

Description	Total	Fund	Notes
Class 1	$18,200	Personnel	Cost is taken from Soldiers for MRE draw and DFAC support ($91 per person).
TDY	$9,762	Unit	This includes a site visit and ADVON/trail party personnel.
Transportation	$0	Unit	FLW provides buses to transport troops. Tactical vehicles are available pending OPTEMPO and training schedules.
Barracks	$0	FLW	Barracks or training sites are available at no cost to the unit pending resource availability.
CDTF	$22,426	Unit	This is the estimated cost for 50 personnel ($448.51 per person) to execute live-agent training.
Terry Facility	$0	FLW	Advanced planning is required to adjust instructor schedules to eliminate potential overtime.

Legend:

ADVON—advanced echelon
DFAC—dining facility
FLW—Fort Leonard Wood
MRE—meal, ready to eat
OPTEMPO—operational tempo
TDY—temporary duty

Table 3. Field budget estimate (June 2014)

the expertise provided by its cadre of military and civilian professionals—coupled with world-class CBRN training facilities—provides a unique training opportunity for operational units across the Department of Defense to improve their CBRN defense skill readiness. Hopefully, the successful 82d Airborne Division training event will be the first of many opportunities for entire CBW entry teams across the joint force to leverage the incredible training resources available at Fort Leonard Wood.

Major Kay is the operations and training officer, 3d Chemical Brigade. She holds a bachelor's degree in business administration from Kent State University, Kent, Ohio, and a master's degree in environmental management from Webster University.

Mr. Murray is the director of the CDTF. He is a retired CBRN officer and holds a master's degree in military art and science from the U.S. Army Command and General Staff College.

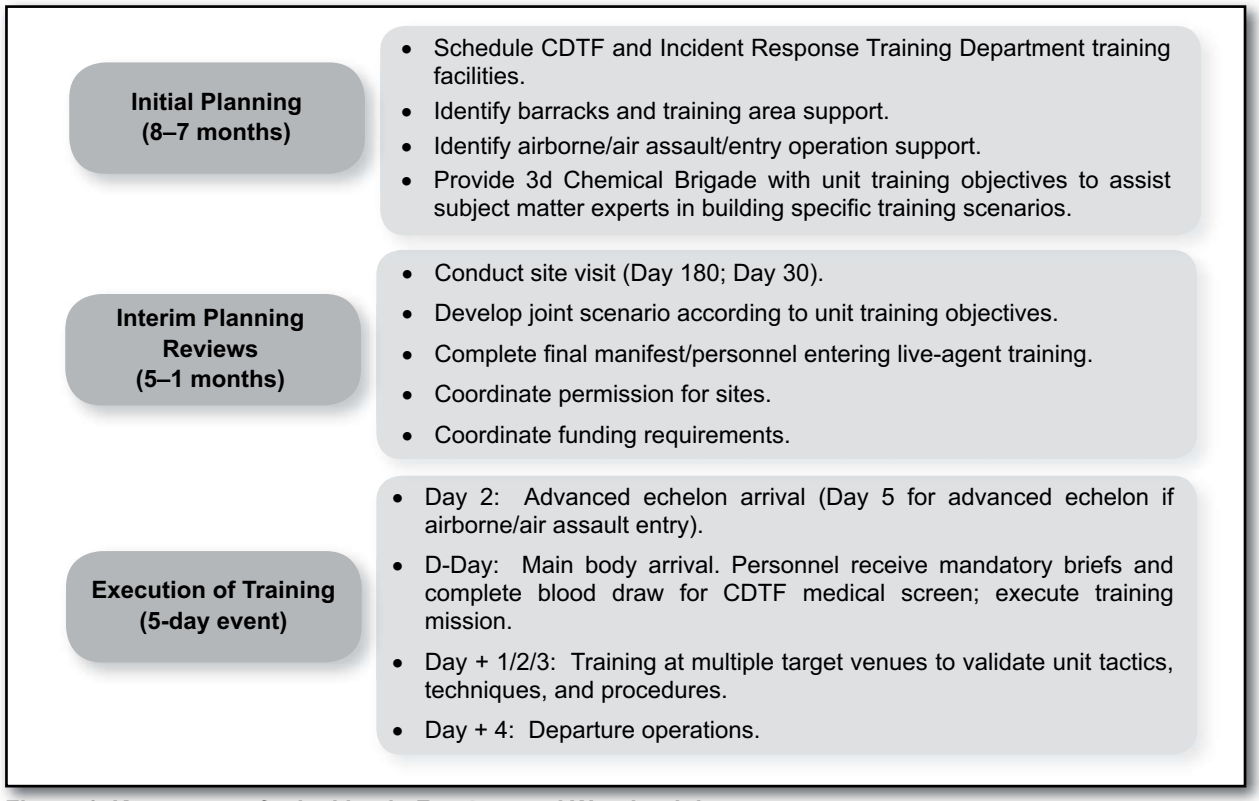


Figure 1. Key aspects for locking in Fort Leonard Wood training resources

Celebrating 96 Years of Chemical Corps History

The U.S. Army Chemical Corps celebrated its 96th birthday at the home of the Regiment—Fort Leonard Wood, Missouri—from 25 to 27 June 2014. Chemical, biological, radiological, and nuclear (CBRN) Soldiers, showing pride in the Regiment, participated in the festivities.

During an early morning birthday run, leaders picked up battalions along the route to Gammon Field, where Brigadier General Maria R. Gervais, 28th Chief of Chemical and commandant of the U.S. Army Chemical, Biological, Radiological and Nuclear School (USACBRNS), addressed the Regiment. "This is a way that we come together for esprit de corps, camaraderie, cohesion, and to recognize those who came before us, who stood on this very field or stood on some of those battlefields, and have earned our legacy that we enjoy so much today," she told the Regiment.

Brigadier General Gervais told those attending a 27 June sunrise service honoring fallen CBRN Soldiers that there is no tradition more important than honoring those who gave everything they had in the defense of this country.





Soldiers prepare to lay a wreath in honor of fallen CBRN Soldiers.

Event or Award	Recipients
Advanced Leader's Course dedication	Command Sergeant Major James Patten (Retired)
	Sergeant Major Kimberly Garrick (Retired)
Best CBRN Warrior Award	**Officer:** Captain Noel Ethier, 92d Chemical, Biological, Radiological, Nuclear, and Explosives (CBRNE) Battalion, 415th CBRN Brigade, Decatur, Georgia
	Noncommissioned officer: Staff Sergeant Edward Schmitt, 54th Civil Support Team, Madison, Wisconsin
	Soldier: Specialist Diego Murillo, 401st CBRN Company, Special Troops Battalion, Camp Arifjan, Kuwait
Sibert Award	**Regular Army:** 9th CBRNE Company (Technical Escort); 110th CBRNE Battalion; Joint Base Lewis-McChord, Washington
	Army National Guard: 138th CBRN Company, Joint Task Force 781 CBRNE, Dobbins Air Reserve Base, Georgia
	U.S. Army Reserve: 401st CBRN Company, Special Troops Battalion, Camp Arifjan, Kuwait
Hall of Fame Induction	Brigadier General Stanley H. Lillie (Retired)
	Brigadier General Patricia L. Nilo (Retired)
	Mr. Andrew M. Barr
Distinguished Member of the Corps Induction	Brigadier General Wendall B. McLain (Retired)
	Lieutenant Colonel Randal L. Kennedy (Retired)
	Lieutenant Colonel Stephen C. Malone (Retired)
	Lieutenant Colonel Charles S. McArthur (Retired)
	Command Sergeant Major Vincent D. Young (Retired)
	Sergeant Major Gwendolyn N. Evans (Retired)

Table 1. Event and Award Recipients

Other events included the Advanced Leader's Course dedication, a Best CBRN Warrior/Sibert Award ceremony, Hall of Fame and Distinguished Member of the Corps inductions, the Green Dragon Ball, and spouse-specific activities that culminated in a Rite of Passage ceremony. A list of events and award recipients is provided in Table 1.

The Corps birthday cake was cut by Master Sergeant Marcus Elliott, 3d Chemical Brigade, Fort Leonard Wood, and Private Eban Lobis, Soldier in training at Fort Leonard Wood—the oldest and youngest CBRN Soldiers in attendance, respectively—with help from Brigadier General Gervais, then Regimental Command Sergeant Major Gabriel S. Arnold, and Regimental Chief Warrant Officer Two Matthew D. Chrisman.

This article was originally published in the Fort Leonard Wood Guidon *on 2 July 2014.*



From left to right: Master Sergeant Elliot, Regimental Chief Warrant Officer Two Chrisman, Brigadier General Gervais, then Regimental Command Sergeant Major Arnold, and Private Lobis cut the Chemical Corps birthday cake.

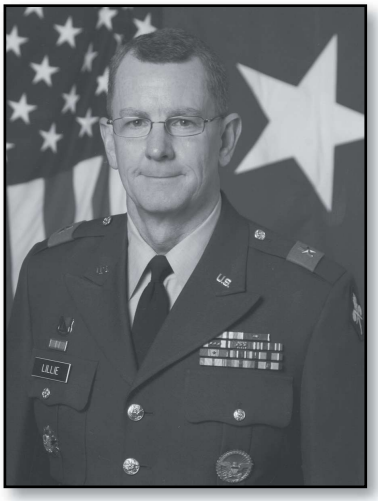
2014 Honorees of the U.S. Army Chemical Corps

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 or continue to work in ways that benefit the 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. The ranks of the Hall of Fame are inundated with scientists who tirelessly worked to protect the force through innovations and with Soldiers who exemplified the tenets of courage and honor. Three individuals were inducted into the Hall of Fame on 27 June 2014.

Brigadier General Stanley H. Lillie (Retired)



Stanley H. Lillie, a native of Nashville, Tennessee, received a bachelor's degree in biology from Middle Tennessee State University. Following graduation, he was commissioned into the Chemical Corps, where he demonstrated remarkable leadership and vision throughout his 30 years of service.

As commander of the 83d Ordnance Battalion and Akizuki Army Ammunition Depot, Lillie provided oversight of construction projects, resulting in an Army savings of several million dollars. As commander of the U.S. Army Environmental Center, he facilitated public appreciation of the military while ensuring the retention of training lands for Soldier use. As chief of the Chemical and Biological Defense Division, Office of the Deputy Chief of Staff for Programs, Headquarters, Department of the Army (DA), Lillie secured vital equipment for deploying units. He also worked with the Joint Program Executive Office for Chemical and Biological Defense to facilitate the rebuilding program for the M12A1 Power-Driven Decontamination Apparatus and with the Office of the Deputy Chief of Staff for Operations, Headquarters, DA, to stand up the new 20th Support Command and the 48th Chemical Brigade. As the commandant of the U.S. Army Chemical School and the 23d Chief of Chemical, Brigadier General Lillie guided the development of the concepts and requirements for dismounted chemical, biological, radiological, and nuclear (CBRN) reconnaissance and sensitive-site exploitation; the development of weapons of mass destruction (WMD)–civil support team (CST) capabilities and emergency response; and the improvement of the technical capabilities of general-purpose chemical units. He also spearheaded efforts to reacquire proponency for technical escort training; secured funding for the First Lieutenant Joseph Terry CBRN Responder Training Facility; and directed the complete revision of training for the Chemical Defense Training Facility, shifting the focus to real-world scenarios tailored to the students' rank and experience. In addition, he laid the groundwork for the first online training courses in basic science to ensure that all CBRN Soldiers received the proper background information. Furthermore, he initiated the development of a warrant officer program for the Chemical Corps by commissioning a study. Finally, Brigadier General Lillie developed a comprehensive Chemical Corps vision, which incorporated the responsibilities of doctrine, organization, training, materiel, leadership and education, personnel, and facilities (DOTMLPF). This vision, which has guided the Corps for many years, is still in use by the Joint Program Executive Office for Chemical and Biological Defense for the development and fielding of new systems.

Brigadier General Lillie's awards include the Distinguished Service Medal, the Department of Defense (DOD) Distinguished Service Medal, the Defense Superior Service Medal, the Legion of Merit with three oak-leaf clusters, the Meritorious Service Medal (4th Award), and the Humanitarian Service Medal.

Lillie holds a master's degree in national resources strategy from the National Defense University. In 2007, he founded S. H. Lillie Associates, LLC—a consulting company for CBRN defense issues. He provides advice and assistance to companies developing and building systems for the U.S. Army. In addition, Brigadier General Lillie (Retired) supports the U.S. Army Chemical, Biological, Radiological, and Nuclear School (USACBRNS) and the Chemical Corps Regimental Association (CCRA) at every opportunity.

Brigadier General Patricia L. Nilo (Retired)



Patricia L. Nilo was born in Medford, Massachusetts. She received a bachelor's degree in biology and a master's degree in education administration from Boston State College. She entered the military in 1974 via a direct commission as a first lieutenant in the Women's Army Corps. Detailed to the Ordnance Corps as a chemical specialist, she transferred to the Chemical Corps in 1977.

Nilo's first CBRN assignments included chemical staff officer, assistant chemical officer, and commander of the 278th Chemical Detachment—all with the 3d Brigade, 1st Armored Division, U.S. Army Europe and 7th Army. She went on to hold numerous command and staff positions during her 30-year military career—many of which were upper-level, CBRN-related staff assignments in the Pentagon. Her other major assignments included commander of the 84th Chemical Battalion; commander of Pine Bluff Arsenal; and chief of the Chemical and Nuclear, Biological, and Chemical (NBC) Defense Division, Force Development Directorate, Office of the Deputy Chief of Staff for Operations and Plans, Headquarters, DA. In 1999, Brigadier General Nilo became the commandant of the Chemical School and the 22d Chief of Chemical. Under her direction, the Chemical Corps institutionalized training for CSTs and Reserve Component units tasked to provide consequence management support to civil authorities. This training leads Soldiers to nationally recognized hazmat awareness, operations, and technician certifications and incident command level certifications. Brigadier General Nilo also developed the concept of a CBRN responder training facility, which was urgently needed to train Soldiers in the additional responsibilities of homeland security, accident and incident response, and toxic industrial materials handling. In doing so, she set the foundation for the construction and institutionalization of the present First Lieutenant Joseph Terry CBRN Responder Training Facility. Brigadier General Nilo finished her military career as director of the Weapons Elimination Directorate, Defense Threat Reduction Agency. She spent her entire career within the framework of the chemical and biological fields.

Aside from her specific military assignments, Brigadier General Nilo (Retired)—who was commissioned as the first female general officer of the Chemical Corps—has been a strong advocate of the role of women in the Corps. In a speech to a Reserve Officers' Training Corps class, she pointed out that women in today's Reserve Officers' Training Corps programs can go on to hold duty positions that were not available to her. She closed her speech by stating, "Every person in this room brings something very special to the table while ensuring the security of this country."

Brigadier General Nilo's awards include the Legion of Merit with three oak-leaf clusters, the Defense Meritorious Service Medal, the Meritorious Service Medal (5th award), the Office of the Joint Chiefs of Staff Identification Badge, and the Army Staff Identification Badge.

Mr. Andrew McIver Barr



Andrew McIver Barr was born in Greenville, South Carolina, on 7 November 1928. He enlisted in the Army in 1946 and was accepted for Officer Candidate School following basic training. Upon graduation, he chose to become an officer of the Chemical Corps since he would be afforded a greater opportunity for additional schooling.

For his valorous actions as a forward observer with the 2d Chemical Mortar Battalion in Korea from 1950 to 1951, First Lieutenant Barr earned two Silver Star Medals and a Bronze Star Medal, making him the most decorated Chemical Corps veteran of the Korean War.

A narrative account of Mr. Barr's extraordinary accomplishments is included in the article entitled "Andrew Barr Inducted Into Hall of Fame" on page 35.

Distinguished Members of the Chemical Corps Inductees

The award of the Distinguished Member of the Chemical Corps title signifies that these individuals have not only contributed a lifetime of service in the Corps, but also support the Chief of Chemical in implementing the Corps vision. Six individuals were inducted into the 2014 Distinguished Members of the Chemical Corps on 27 June 2014.

Brigadier General Wendall B. McLain (Retired)



Wendall B. McLain was born in Lineville, Alabama. His military career began when he was drafted into the U.S. Army in 1968. During his career with the Alabama Army National Guard, McLain completed Officer Candidate School and subsequently served in many command positions. He received a bachelor's degree in management from Jacksonville State University, Jacksonville, Alabama, and master's degrees in human resources management from Troy University, Troy, Alabama, and strategic studies from the Air University, Maxwell Air Force Base, Alabama. His military education includes the Air War College, the Joint Senior Leader's Course (Chemical School), the Associate Logistics Executive Development Course, and the Command and General Staff College.

During Operations Desert Shield and Desert Storm, McLain deployed to Saudi Arabia and Iraq with the 1659th Transportation Detachment. Following several years of commanding detachments, companies, and battalions, he eventually assumed command of the 31st Chemical Brigade. During his 5-year tenure there, the brigade trained more than 1,200 Soldiers and deployed and redeployed them to Afghanistan and Iraq. During Hurricane Rita, McLain assumed command of Task Force Alabama, deploying with more than 1,200 Soldiers to southwest Louisiana, where they provided security, engineer, and food and water distribution support for more than 5 weeks. He also developed ties with Fort Leonard Wood, Missouri, which shaped the future of the 31st Chemical Brigade within the CBRN arena. Through active participation in the Chemical Brigade Training Council, he led the development of mass casualty decontamination training at the First Lieutenant Joseph Terry CBRN Responder Training Facility for more than 50 Soldiers from the 31st Chemical Brigade. The continued relationship afforded the 31st the opportunity to take part in the DOTMLPF process of designing the force structure for the CBRN spectrum of the Chemical Corps. And the connection that Brigadier General McLain established between the 31st Chemical Brigade and Fort Leonard Wood is expected to endure into the future of the Chemical Corps.

Brigadier General McLain's awards and ribbons include the Legion of Merit, the Bronze Star Medal, the Meritorious Service Medal (2d Award), the Army Commendation Medal with three oak-leaf clusters, the Army Achievement Medal, the Parachute Badge, and the Expert Infantryman Badge.

Today, Brigadier General McLain (Retired) stays active by serving on the CCRA Board as vice president of Reserve Component Affairs. He still mentors commanders and officers who serve with the 31st Chemical Brigade and the Alabama Army National Guard.

Lieutenant Colonel Randal L. Kennedy (Retired)



Randal L. Kennedy was born in Woodville, Alabama. He received a bachelor's degree in secondary education from the University of West Alabama and a master's degree in education, educational supervision, and administration from Alabama Agricultural and Mechanical (A&M) University.

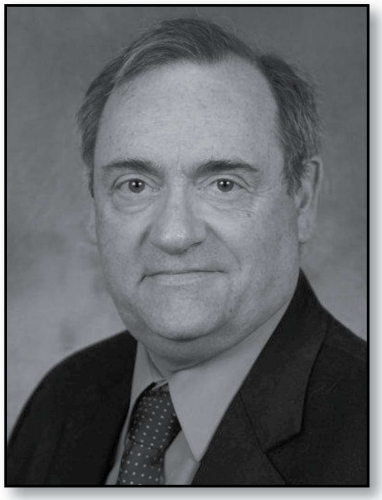
As a chemical officer, Kennedy served as a platoon leader; the commander of the 496th Nuclear, Chemical, and Biological Element; the commander of the 326th Chemical Company (Smoke Generation); an operations officer with the 451st Chemical Battalion; a chemical officer with the 90th Army Reserve Command; and the deputy assistant commandant of the Chemical School. Throughout his career, Kennedy worked on a number of projects that were critical to the evolution of CBRN response programs. He was responsible for planning, facilitating, and analyzing numerous CBRN and consequence management map exercises; staff exercises; tabletop exercises; virtual requirements; and doctrine, organization, training, and materiel requirements. His work on exercises included the development and execution of training for WMD-CSTs. He also provided doctrine, training development, and combat development support to USACBRNS and the U.S. Army Maneuver Support Center of Excellence (MSCoE) in the areas of homeland defense, homeland security, and consequence management. In addition, he developed the operational architecture products for six CBRN defense systems (the Unified Command Suite; the Analytical Laboratory System; the Mass Casualty Modular

Decontamination System; the Chemical, Biological, and Radiological Sampling Kit; the Chemical, Biological, Radiological, and Explosives Detection System; and the CBRN Toxic Industrial Chemical/Toxic Industrial Material Response Ensemble) that supported DOD in its homeland security role. He also supported homeland security and Chemical Stockpile Emergency Preparedness Program exercises and the development of the concept capabilities plans and total Army analysis plans for homeland defense and combating WMD.

Lieutenant Colonel Kennedy's awards include the Army Achievement Medal, the Army Commendation Medal with four oak-leaf clusters, the National Defense Service Medal with bronze service star, the Armed Forces Reserve Medal, and the Army Reserve Components Achievement Medal.

For the past 4 years, Lieutenant Colonel Kennedy (Retired) has served as the national president of the CCRA. During this time, the number of CCRA chapters has increased from six to 10 and the number of lifetime CCRA memberships has increased by more than 1,600. Lieutenant Colonel Kennedy was also responsible for the CCRA sponsorship of the very successful 2011 and 2012 Joint, Interagency, Intergovernmental, Multinational, Industry, and Academia Conference exhibitions.

Lieutenant Colonel Stephen C. Malone (Retired)



Stephen C. Malone was born in Salzburg, Austria. He received a bachelor's degree in history from Texas Tech University and a master's degree in management from Webster University. His military career encompassed the best aspects of the Army—serving in field units, developing multidisciplinary skills while remaining strategically focused, and providing well-reasoned recommendations to military and civilian leaders.

Malone, who has more than 36 years of experience in the areas of CBRN defense operations and homeland security and defense, has spent nearly 2 decades in Washington, D.C., where he served as the lead officer for collaborative projects involving DOD, non-DOD federal agencies, and the British Ministry of Defence. While serving with the Chemical and Biological Defense Program, DOD, he managed a multiyear project in which he oversaw U.S. delegation support to a North Atlantic Treaty Organization (NATO) Systems Analysis and Studies Panel that was focused on "Defence Against CBRN Attacks in the Changing NATO Strategic Environment" and submitted a formal report to the NATO Research and Technology Organisation. He also served as the lead project officer for the activation of the Army's first biological detection company. In addition, he served in the Chemical, Biological, Radiological, Nuclear, and Explosives (CBRNE) Division, Deputy Directorate for Antiterrorism/Homeland Defense (J-34), Joint Staff.

Throughout his career, Malone has provided subject matter expertise in the areas of homeland security, WMD, antiterrorism, force protection, vulnerability risk assessments, consequence management, and CBRN defense. He has developed a generation of CBRN officers, noncommissioned officers, lower-enlisted Soldiers, and units through his analysis, development, and execution of strategic plans to restructure, activate, train, and deploy U.S. Army Reserve CBRN Soldiers specializing in CBRN reconnaissance, detection, identification, and decontamination. He has also spoken publicly to civic groups about the importance of homeland defense preparedness.

Lieutenant Colonel Malone's awards include the Legion of Merit, the Meritorious Service Medal (5th Award), the Army Commendation Medal with seven oak-leaf clusters, and two performance awards from private industry for his work on critical infrastructure protection and Operation Tomodachi.

Malone has produced numerous written products for the CBRN community, including two articles for the *Encyclopedia of World Terrorism*—"National Guard: New Missions" and "Armed Forces: New Missions." He also contributed to the DOD Tiger Team report on "Integrating National Guard and Reserve Component Support for Response to Attacks Using Weapons of Mass Destruction," and he coauthored the DOD "Report to Congress: Domestic Preparedness Program in the Defense Against Weapons of Mass Destruction."

Lieutenant Colonel Charles S. McArthur (Retired)



Charles S. McArthur was born in Fayetteville, North Carolina. Upon earning a bachelor's degree in political science from North Carolina Agricultural and Technical (A&T) State University, he received a Chemical Corps commission as a Reserve Officers' Training Corps distinguished military graduate. He went on to receive his master's degree in human resources development from Webster University.

McArthur's first duty assignments were platoon leader, 2d Platoon, 21st Chemical Company (Airborne); director, NBC Center, Headquarters and Headquarters Company; and brigade chemical officer/air operations and training officer (S-3–AIR), Division Support Command—all with the 82d Airborne Division. After completing the Chemical Officer Advanced Course, McArthur was assigned as the chemical officer, 558th U.S. Army Artillery Group (Special Weapons), Athens, Greece. He was then assigned as the intelligence officer (S-2)/operations and training officer (S-3), 264th Corps Support Battalion, and was deployed to Operations Desert Shield and Desert Storm, where the unit supported the XVIII Airborne Corps and coalition assets. After serving as the deputy division chemical officer with the 2d Infantry Division in Korea, McArthur was assigned as the senior chemical controller, Brigade Command and Control, Operations Group, Joint Readiness Training Center, where he initiated more realistic hands-on training that was used to revitalize NBC participation in joint exercises and to foster a change in the infantry mind-set such that infantry personnel no longer claimed that NBC stood for "nobody cares," but rather "now be careful." In advance of the final transition of the Chemical Corps, McArthur moved from Fort McClellan, Alabama, to Fort Leonard Wood, where he managed the development of the first mission training plan for the first 10 Army National Guard WMD-CMTs to undergo training at Fort Leonard Wood. He then reported for the most rewarding job of his career—division chemical officer, 82d Airborne Division, where his responsibilities led to extreme confidence among all division chemical elements in planning for Operations Enduring Freedom and Iraqi Freedom. Lieutenant Colonel McArthur's final military assignment was as the deputy corps chemical officer, XVIII Airborne Corps, where he ensured that CBRN Soldiers were able to plan, develop, coordinate, integrate, and synchronize executable orders.

Lieutenant Colonel McArthur's awards include the Legion of Merit, the Bronze Star Medal with two oak-leaf clusters, the Meritorious Service Medal, the Southwest Asia Service Medal with three bronze service stars, and the Kuwait Liberation Medal.

Lieutenant Colonel McArthur (Retired) continues to enhance the cohesiveness, esprit de corps, and legacy of the Chemical Corps. He is currently the chairman of the board for the CCRA and is one of the longest-serving board members.

Command Sergeant Major Vincent D. Young (Retired)



Vincent D. Young was born in Los Angeles, California. He received a bachelor's degree in management from the University of Maryland and a master's degree in leadership and management from Webster University. He also received a certificate in public leadership from the Brookings Institute, Washington, D.C., and completed a Senior Executive Fellows Course from the John F. Kennedy School of Government at Harvard University, Cambridge, Massachusetts. His military education includes the Joint Senior Leader's NBC Course, the Sustainment Base Leadership Course, the Continuing Education for Senior Leaders Course; and the Graduate School–Executive Survival Skills Course.

As a first sergeant, Young was selected as a proponency sergeant major. In this position, he flawlessly managed the entire enlisted Soldier transition and movement plan for the Chemical School base realignment and closure move to Fort Leonard Wood. He also spearheaded the final production and fielding of the first chemical Soldier "Professional Development Guide." Next, he served as the command sergeant major of the 2d Chemical Battalion. His accomplishments there included providing support for five National Training Center exercises and assistance with the Adopt-A-School Program (for which he received recognition from Texas Governor Rick Perry). Young went on to become the command sergeant major of the 3d Chemical Brigade, where he served as the president of the Chemical Corps Critical Task Selection Board, which established the focus of future training for all chemical Soldiers. Young provided guidance and advice on how to establish and institutionalize the Civil Support Skills Course, which established standards for skills taught to CSTs and other agencies associated with homeland security, domestic preparedness, and CBRNE defense.

Command Sergeant Major Young's military awards include the Legion of Merit, the Meritorious Service Medal (3d Award), the National Defense Service Medal, and the Global War on Terrorism Service Medal.

Today, Command Sergeant Major Young (Retired) is the chief of Programs, Training Operations Management Activity, Headquarters, U.S. Army Training and Doctrine Command, where he provides assistance and expertise to USACBRNS, ensuring that new and modified courses meet DA standards for acceptance. Specifically, he has been instrumental in the successful implementation of the new CBRN Warrant Officer Basic and Advanced Courses. He also participated in the initiative to successfully add hazmat training to the 74B10 Chemical Operations Specialist Course. He is responsible for offering professional expertise on resource solutions and training strategies that directly support the entire Army and specifically include the Chemical Corps. Command Sergeant Major Young (Retired) has received the Commander's Award for Civilian Service (2d Award).

Sergeant Major Gwendolyn N. Evans (Retired)



Gwendolyn N. Evans was born in Raleigh, North Carolina. She holds an associate's degree in supervisory leadership from Hawaii Pacific University. She enjoyed a long and distinguished military career, serving 32 years in the Army—26 of which were with the Chemical Corps. Her military education ranges from the Basic Airborne Course at the U.S. Army Airborne School to the Primary Leadership Development Course and the U.S. Army Sergeants Major Academy.

Evans' first major assignment was as squad leader and heavy decontamination platoon sergeant, 2d Platoon, 101st Chemical Company. She was serving in the unit during Operation Desert Storm, when the unit deployed to Iraq as part of the 212th Field Artillery Brigade assigned to Task Force 2-1 Air Defense Artillery from September 1990 to April 1991. Through her actions, she earned the Kuwait Liberation Medal and the Bronze Star Medal with the following citation:

> *For exceptionally meritorious achievement in support of actions against a hostile force in the Persian Gulf from 17 January 1991 through 9 March 1991 while assigned to XVIII Airborne Corps Artillery, XVIII Airborne Corps, Saudi Arabia. Staff Sergeant Evans' performance in combat operations was a key factor in enabling the XVIII Airborne Corps to assist in restoring the world security goals of the United Nations. Her devotion to duty, aggressiveness, and ability to excel while under great pressure contributed significantly to the successful accomplishment of her unit's mission.*

Following an assignment as the chief instructor at the Chemical Defense Training Facility, Sergeant Major Evans served as the Chemical Corps personnel proponency sergeant major from February 2005 through October 2011. She was the third female Soldier promoted to the rank of sergeant major in the Chemical Corps, the second female to hold the position of personnel proponency sergeant major, and the first female to hold that post for 5 years. During that time, Sergeant Major Evans directly impacted all Chemical Corps personnel and was instrumental in standing up the CBRN Warrant Officer Program.

Sergeant Major Evans' awards include the Legion of Merit, the Bronze Star Medal, the Kuwait Liberation Medal, the Humanitarian Service Medal, and the Military Outstanding Volunteer Service Medal.

Sergeant Major Evans (Retired) has demonstrated a lifetime of volunteerism. She organized and started the Boys and Girls Center in her hometown of Dunn, North Carolina. She left her mark on every community in which she served throughout her career. And today, she volunteers at the Community Living Center of the Veterans Administration Pacific Islands Health Care System and at the Oahu Society for the Prevention of Cruelty to Animals.

Ms. Lindberg is the assistant historian at the USACBRNS History Office, Fort Leonard Wood.



2015 Nominations for Hall of Fame and Distinguished Member of the Corps

Nominations are being accepted for the 2015 Chemical Corps Regimental Honors Program for Hall of Fame and Distinguished Member of the Corps.

- **Hall of Fame.** This award is extended to chemical, biological, radiological, and nuclear personnel (living or deceased) who spent their professional careers serving the Chemical Corps in an exceptional manner or who performed a significant act of heroism. Nominations are open to military and Department of Defense civilian personnel who have been retired from active federal service for at least 2 years. Their service to the Corps must have been extraordinary.
- **Distinguished Member of the Corps.** This award is extended to living or deceased members who served the Corps in their professional lives and continued to serve it in their personal lives. Nominations are limited to personnel who have been retired from active federal service (military or civilian) for at least 2 years. Active Army military and current (nonretired) federal civilian personnel are not eligible for the program.

Nomination packets should be sent to—

Commandant
U.S. Army Chemical, Biological, Radiological, and Nuclear School
ATTN: ATSN-CM-H (Regimental Historian)
401 MSCoE Loop, Suite 1041
Fort Leonard Wood, MO 65473-8926

All packets must arrive before 13 February 2015. For more information, see the CCRA Web site at <http://www.ccrassn.org>, call (573) 563-7339, or e-mail <christy.l.lindberg.civ@mail.mil>.

Reporting Crime to CID

The U.S. Army Criminal Investigation Command, commonly known as CID, is continuing its campaign to combat crime in the Army by adding another way for the Army community to report a crime. The recent addition to CID's many reporting methods is a new, toll-free telephone number: 1-844-ARMY-CID (844-276-9243). The number allows Soldiers, Family members, and civilians to report a crime 24 hours per day, 7 days per week.

CID officials remind members of the Army community that if they want to report a crime, are victims of a crime, have information about a crime, or would like to speak with a CID special agent, they can call their local CID office or military police, call 1-844-ARMY-CID, or e-mail CID at <Army.CID.Crime.Tips@mail.mil>. Personnel can contact their local CID office by visiting the CID Web site at <www.cid.army.mil> and selecting the unit directory tab at the top of the page. Officials also remind the public that if immediate assistance is required, they should dial 911 or the local military police.

Andrew Barr Inducted Into Hall of Fame

By Mr. Kip A. Lindberg

"Ladies and gentlemen, on 22 July 2014, I had the greatest honor and privilege to participate in two events—meeting Mr. Andrew M. Barr and attending the Medal of Honor Reception in honor of Staff Sergeant Ryan Pitts. Both of these events were incredible and had a profound impact on me. Although Mr. Barr and Staff Sergeant Pitts are separated by 58 years and served in different wars, on vastly different terrain, and in different theaters, their stories are very similar. Their actions were very heroic—and both were ordinary people who acted in an extraordinary manner. The article below highlights Mr. Barr's career and our visit with him to present him with his Chemical Corps Hall of Fame plaque."

—Brigadier General Maria R. Gervais
28th Chief of Chemical

Andrew M. Barr was born into a family of service. His father was a U.S. Army Air Service pilot during World War I, his older brother George Jr. died serving as a midshipman in his senior year at the U.S. Naval Academy, and his sister Edwina served 2 years with the American Red Cross in Italy during World War II. As soon as it was legal (at the age of 17), Barr enlisted in the Army. By the beginning of the Korean War, he had graduated from Officer Candidate School and was a first lieutenant. He was assigned as a replacement officer with Company C, 2d Chemical Mortar Battalion, Korea, in the opening stages of the Chinese Offensive of November 1950.

Within an hour of beginning his assignment (and before he had met the other members of his platoon), First Lieutenant Barr saw his first fellow chemical Soldiers get wounded and killed; he also sustained his first incoming fire, with one round sending him through the air to land hard, on his back, on the frozen ground. Within a week, Barr's courage and leadership skills were again tested under fire. As a platoon leader and forward observer for Company C, he found himself surrounded by Chinese Communist forces on Thanksgiving Day, 1950. Through his determination to defend his position, First Lieutenant Barr earned the first of two Silver Star Medals. The award citation reads:

Although the enemy occupied three surrounding ridges and [was] delivering heavy mortar, small arms, and machine gun fire on the platoon's position, Lieutenant Barr, exposing himself to the barrage of enemy fire, ran from position to position, encouraging his men to hold their ground. He then set up, and put into action, a .50-caliber machine gun and delivered devastating fire on the enemy while the two other platoons of the company withdrew. Aware that his position was becoming untenable, he directed the withdrawal of his men until only three remained with him. Then, moving from one end of a defiladed ditch to the other, he fired his weapon from different positions, leading the enemy to believe that many more men were defending the position and thereby preventing them from charging into the area. After ascertaining that all wounded personnel in his platoon had been safely evacuated, he skillfully led his remaining three men through an enemy roadblock to friendly positions.

In February 1951, as one of only two officers serving as forward observers in his company, First Lieutenant Barr called fire for more than 32 continuous hours to help thwart a division-size Chinese counteroffensive—a feat for which he received the Bronze Star Medal.

While supporting Princess Patricia's Canadian Light Infantry Battalion, near Kapyong, South Korea, on 24 April 1951, the platoon again found itself at the heart of a vicious attack by a numerically superior Chinese Communist force. And again, First Lieutenant Barr guided his men in the defense of their position, successfully repelling attacks until ordered to withdraw. Barr was recommended for a Distinguished Service Cross for his actions; the award was downgraded, and he instead received an oak-leaf cluster for his Silver Star Medal. The award citation reads:

Disregarding the fact that the position was under enemy small arms and machine gun fire, Lieutenant Barr moved openly about the area, encouraging his men to load everything, and went to each mortar position

to assure himself that all equipment was loaded. He called in his outpost and withdrew his platoon from the area. He then reentered the company position alone, firing armor-piercing ammunition into the barrels of the abandoned mortars of another platoon. As a result, these mortars were pierced or dented and rendered useless to the enemy.

Later, Lieutenant Barr organized a group of men to return to the mortar position and recover some equipment that had been left by another platoon. As the group moved through a narrow mountain pass, they were fired upon from a planned enemy ambush. Lieutenant Barr deployed his men, who returned the enemy fire as he moved about the area to determine the enemy strength and disposition. He came upon a position occupied by three enemy soldiers and ordered them to surrender, but was fired upon. He then killed two of them and wounded the third. Learning that his group was facing a superior number, he ordered a withdrawal and disengaged from the action, suffering no casualties. On his return, Lieutenant Barr found and rescued two wounded British soldiers, who were loaded into his jeep, which—by this time—had had its brake lines and one tire shot out.

After leaving the Army as a captain in 1953, Mr. Barr began a successful real estate career in the Arlington, Virginia, area. He has since authored five books on the real estate business. He has endowed a scholarship program at his alma mater—Washington-Lee High School in Arlington. He has also donated hundreds of sleeping bags to ensure that the homeless population in our Nation's capital has at least the basics for survival because, as one man said, citing Mr. Barr's wartime service, "He knows what it's like to be cold and alone in unfriendly territory."



Mr. Barr is presented a Chemical Corps Hall of Fame plaque by Lieutenant General Spoehr and Brigadier General Gervais.

Mr. Barr was inducted into the U.S. Army Chemical Corps Hall of Fame during the 96th regimental birthday celebration on 27 June 2014. Unfortunately, he was unable to attend the induction ceremony. However, Lieutenant General Thomas W. Spoehr (Director, U.S. Army Office of Business Transformation) and Brigadier General Maria R. Gervais (28th Chief of Chemical and commandant of the U.S. Army Chemical, Biological, Radiological, and Nuclear School [USACBRNS]) visited Mr. Barr at his home in Arlington, Virginia, on 22 July 2014 and presented him with a replica of the plaque that is hanging in the command hallway of USACBRNS. Mr. Barr graciously accepted the plaque, and Lieutenant General Spoehr and Brigadier General Gervais listened intently as Mr. Barr recounted numerous close calls that he experienced during the Korean War. "We spent over an hour hearing Andy Barr talk about his experiences, and the time flew by," said Lieutenant General Spoehr. "He has a remarkable memory. Near the end, he said that this Hall of Fame induction was the greatest honor he'd been paid in his life; and I was so glad Brigadier General Gervais and I had the chance to be a part of it."

Reflecting on his time with the Chemical Corps, Mr. Barr stated:

You never know what you can truly do until the moment you need to do it. Your Nation has given you the best it has to prepare you for that test. But when the time comes, all you will have will be your training and the Soldiers around you. Listen to your officers, follow your noncommissioned officers, and trust that your fellow Soldiers have, like you, given their best in training to prepare them for the trial ahead. My greatest honor was to serve our glorious country, yet still shoot faster and more accurately than my various "opponents"—may they rest in peace.

Mr. Barr's outstanding service in Korea and the community involvement and altruism that he has displayed since then make him an example for today's Dragon Soldiers to emulate. According to Brigadier General Gervais, "Andrew Barr is truly one of the Chemical Corps' very best, and all Dragon Soldiers should strive to uphold the legacy he, along with many other Dragon Soldiers who served and paid the ultimate sacrifice, established for our Regiment."

Mr. Lindberg is the director of the U.S. Army Chemical Corps Museum.



The Father of Chemical Warfare Demonstrates the Need for a Theoretical Basis of the Army Ethic



By Captain Shaun K. Tateishi

Considered a sinner and saint, Mr. Fritz Haber is lauded as the Nobel laureate whose advancements in chemistry are responsible for the growth in world population from 1.6 billion in 1900 to more than 6 billion today and simultaneously vilified as the father of chemical warfare, having personally directed the first use of chemical weapons—a massive chlorine attack that changed the face of World War I.[1, 2] The latter action serves as an extreme example of the need for an ethical foundation for the military profession and provides an ideal case study for ethical lessons learned.

While Department of Defense (DOD) 5500.7-R, *Joint Ethics Regulation (JER)*, addresses the issue of the military ethic, the term *ethic* is not currently defined in U.S. Army doctrine.[3] The Center for the Army Profession and Ethic, Mission Command Center of Excellence, U.S. Army Combined Arms Center, recently published "The Army Ethic White Paper," which is intended to explain the Army ethic program; however, there is no description of a theoretical foundation.[4] Whereas a concrete list of virtues provides solutions to certain selections of issues, a theoretical foundation provides guidance for the wide range of diverse problems that we can expect in today's combat environment. Applied ethics can and should provide the theoretical foundation for the Army ethic program, bridging the gap between theory and reality while supporting the professional and moral development of Army professionals.

The Army Ethic Program

Ethics provide a foundation for the moral behavior of Army professionals. Because there is currently no doctrinal definition of the Army ethic, there is a potential for inconsistencies in the moral actions of members of the profession. "The Army Ethic White Paper" represents an attempt to rectify this shortcoming through a three-part description of the Army ethic program, which emphasizes character, competency, and commitment.[5]

While the proposed Army ethic succinctly defines the guiding moral principles of the Army by providing direction regarding appropriate character virtues, it does not offer a theoretical framework. The exclusion of ethical theory negates the power of the Army's intellectual capital—an immense resource that can be harnessed through applied ethics.

Applied Ethics

Applied ethics provide a practical bridging mechanism between ethical (moral) theory and practical solutions.[6] This article does not recommend an ethical theory for the Army; rather, it suggests that theoretical training allows the Army, as an intellectual entity, greater flexibility in confronting the complex ethical dilemmas of modern operations. Applied ethics challenge the Army as a profession to philosophically confront practical problems and form agreeable solutions.

The Father of Chemical Warfare

In the early 20th century, Mr. Haber discovered a process whereby nitrogen from the air could be converted into ammonia—arguably one of the most important discoveries of the 20th century. The synthesis of ammonia meant that fertilizer could be used to increase the natural output limits of the soil, allowing for exponentially greater agricultural production.[7] Without the ammonia synthesis process, about 40 percent of the world population would be nonsustainable.[8]

But while Haber may have developed the science necessary to support life, he also developed the means to take life away. The same process that was used to develop fertilizer was also used to make explosives during World War I. Haber famously ushered in the age of chemical warfare when he directed the first gas attack at Ypres, Belgium.[9] Soon after the attack at Ypres, Haber's wife Clara committed suicide in apparent condemnation of her husband's role in the chemical attack. Haber rushed back to the front lines; and as the head of the German chemical program, led the development of increasingly effective chemical weapons.

Conclusion

When considered through the concrete example of the Army ethic described in "The Army Ethic White Paper," Haber's actions are not, on the face, unethical. Haber took pride in serving his nation (a virtue of character), understood that his mission required taking the lives of his enemies while advancing his profession (a virtue of competency), and ensured that his army was well equipped to complete its wartime mission (a virtue of commitment). He did not view chemical warfare as any more inhumane than any other means of war; he only viewed it as another means to an end.[10] Furthermore, Haber's work has resulted in far

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FILLING THE VOID

By Captain Kenneth M. Coleman

Upon graduation from the Chemical, Biological, Radiological, and Nuclear (CBRN) Basic Officer Leader's Course and CBRN Captain's Career Course, lieutenants and captains are fully prepared to execute their duties as battalion and brigade level CBRN officers. According to Field Manual (FM) 3-11, *Multi-Service Doctrine for Chemical, Biological, Radiological, and Nuclear Operations*, the overall purpose of battalion and brigade CBRN officers is to advise the commander on all CBRN hazards, ranging from toxic industrial materials to weapons of mass destruction. Although the likelihood of encountering a CBRN threat is greater now than ever before, lieutenants and captains find themselves in certain units in which their CBRN expertise is not used to the extent that it should be. This article explains why CBRN officers are not used to their maximum potential and identifies methods of improving their ability to enhance CBRN readiness across the Army.

"Officers who lack the ability to use doctrine to effectively communicate maneuver tactics and CBRN expertise can hinder their ability to conduct future CBRN training or to play a vital role in the development of their prospective units."

CBRN officers can be embedded at nearly any staff level. However, the likelihood of executing their duties to the maximum extent possible depends on multiple variables. Upon arrival at a new unit, a CBRN officer receives an initial counseling from his or her rater. The CBRN officer provides the rater with a Department of the Army (DA) Form 67-10-1A, *Officer Evaluation Report Support Form*, which outlines the officer's capabilities for serving with the unit. However, the rater and, in some cases, the senior rater may have other intentions for the incoming CBRN officer. Based on mission and training guidance from the higher command, CBRN issues may not be a high priority for the unit.

CBRN officers are expected to understand their jobs in order to enhance the protection warfighting function of their units. But when embedded in maneuver units, CBRN officers are expected to understand and communicate maneuver issues in addition to providing CBRN expertise. Abiding by the Army Profession of Arms requires that officers project military expertise and trust in all aspects. Officers who lack the ability to use doctrine to effectively communicate maneuver tactics and CBRN expertise can hinder their ability to conduct future CBRN training or to play a vital role in the development of their prospective units.

CBRN officers also face many other obstacles; however, if you are a CBRN staff officer, there are a few steps that you can take to become an effective team player within your unit while continuing to perform your job as a CBRN officer:

- **Step 1: Know your job.** To execute your job, you must know your job. You must be brilliant and ready. According to Army Doctrine Reference Publication (ADRP) 6-22, *Army Leadership*, Soldiers are expected to exhibit value-based leadership, impeccable character, and professional competence. Normally, the battalion or brigade CBRN officer is the only CBRN officer on staff. To be considered an asset to any commander or staff, the CBRN staff officer must be able to execute his or her job better than anyone else. Therefore, CBRN officers should continually strive for self-development by gaining personal experience, seeking counseling from experienced leaders, and reading doctrine and professional publications.
- **Step 2: Prepare yourself.** If you know the type of unit to which you will next be assigned, you should begin researching the associated doctrine and capabilities in order to prepare for your assignment. For example, if you are slated for an assignment to an air defense artillery unit, you should learn, through advance research, that air defense artillery units conduct crew certification exercises that require mission-oriented protective posture gear—and that this, in turn, requires a logistics plan for the resupply of gear. By simply researching the unit to which you are headed, you will be equipped to plan a few baseline tasks from which all other tasks can be conducted.

- **Step 3: Learn outside your realm.** Although you are assigned to your unit as a CBRN officer, that doesn't mean that you need only conduct CBRN operations. When the commander is unavailable, the executive officer takes charge. You must, therefore, take time to learn how your counterparts and your unit operate. Get up from your computer, and go talk to other staff members and subordinate unit leaders face to face. Learning how non-CBRN operations are conducted will help you identify ways that you can contribute to other staff sections and subordinate units. This, in turn, will build team cohesion. The more cohesive the staff team becomes, the more likely it is that staff sections will be willing to support you during future CBRN operations, when requesting the addition of a CBRN lane to a field training exercise, or while ordering additional CBRN equipment.

> ***"CBRN officers are truly great at what they do, but they must sometimes remind their units that they are valuable assets."***

Junior CBRN officers are capable of enhancing CBRN readiness by training and mentoring CBRN Soldiers, producing CBRN operation orders, and planning decontamination missions. CBRN officers are truly great at what they do, but they must sometimes remind their units that they are valuable assets. By exhibiting military expertise and being fully prepared to support CBRN and non-CBRN missions, they will surely set themselves up for success.

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Captain Coleman is a student in the CBRN Captain's Career Course, Fort Leonard Wood, Missouri. His follow-on assignment is CBRN officer in charge, 2d Brigade Combat Team, 1st Armored Division, Fort Bliss, Texas.

("The Father of Chemical Warfare . . . ," continued from page 37)

more lives gained through fertilizer development than lost through chemical warfare development.

In spite of those statistics, it is easy to see that Haber was lacking in ethics. By modern standards, chemical weapons are not viewed as ethical alternatives to conventional weaponry. Even by the standards of his time, Haber's actions were questionable. At the Hague Conference in the early 1900s, arguments were made against the use of poisonous weapons that might cause unnecessary suffering.[11] Our ethical analysis cannot be based on our stated ethical virtues alone; we must also include philosophical discourse.

"The Army Ethic White Paper" is a good first step toward establishing ethical doctrine within our Profession of Arms. However, the mere listing of the virtues of ethical character is not enough. The Haber situation serves as an excellent example of the limitations of adopting ethical virtues alone. This approach is overly simplified and does not allow for discourse and debate. We must fully harness the power of our intellectual capital through a philosophical framework of applied ethics in order to successfully confront the complicated ethical environment of modern operations.

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Captain Tateishi is currently a student in the Chemical, Biological, Radiological, and Nuclear Captain's Career Course at Fort Leonard Wood, Missouri. He holds bachelor's and master's degrees in communication from Hawaii Pacific University and a graduate certificate in museum studies from the University of Hawaii.

Die Nebeltruppe

By Mr. Egon R. Hatfield

Germany's armed forces were defeated in World War I and, based on "The Treaty of Peace Between the Allied and Associated Powers and Germany" (commonly known as the Treaty of Versailles), were not allowed to recover.[1] The German army was limited to 100,000 men, and there were bans on the production of tanks and poisonous gas. The German navy was limited to 15,000 men and six outdated capital ships, and there was a ban on submarines. And a German air force was banned. The German Great General Staff was disbanded, and conscription was abolished.

In 1929, the German armed forces began considering how to increase the defensive posture of the troops while still obeying the numerous stipulations of the Treaty of Versailles. Because the treaty did not mention bans on the use of smoke for screening or the use of rockets as a delivery system, the German army began researching and testing these capabilities.[2]

In mid-1929, when 2d Company, Transport Squadron 4, turned in horses and received motor vehicles, it began developing smoke agents and equipment. During the next few years, the company tested smoke pots, smoke candles, and smoke dispensers filled with sulfur trioxide in chlorosulfonic acid (FS) to establish operational doctrine.[3]

In 1934, 2d Company was renamed Artillery Battalion Königsbrück. The battalion consisted of two batteries. Each of the batteries received the 10-centimeter Smoke Projector 35, which was similar to the U.S. Army Chemical Warfare Service 4.2-inch (10.7-centimeter) mortar and had a range of about 3,000 meters. The 2d Battery also received the 11-centimeter rocket launcher, which was basically a bipod-supported rail that fired a rocket (with a smoke trail) to a distance of about 4,500 meters.[4]

In 1935, battalion personnel comprised the cadre of Smoke Battalion 1 and Smoke Battalion 2. Together, these units became known as the Smoke Troops (*Nebeltruppe*). The branch color for this newest branch of the German armed forces was bordeaux red (a mix of artillery red and transportation blue); that was the color of the piping on the uniforms.[5] The missions of the new Smoke Troops included battlefield smoke generation, area contamination, gas protection, and area decontamination.[6]

In 1936, the German armed forces established the Smoke Training and Experiment Battalion as part of the Smoke Troops. The 1st Battery was responsible for testing new equipment for shooting smoke projectiles. The missions of 2d Battery included area contamination and area decontamination. In 1937, the Smoke Training and Experiment Battalion received three developmental weapons for testing: an up-gunned, 18-centimeter, smoke trail device; a 10-centimeter Smoke Projector 40 (a breech-loading mortar); and a six-tube, 15-centimeter rocket launcher. The smoke trail device was not fielded due to unacceptable rocket dispersion. The mortar, although eventually fielded, was later relegated to air force ground units due to weight and expense. The rocket launcher remained in development until 1940.[7]

World War II began on 1 September 1939, and the expanded Smoke Troops experienced an inauspicious start. Smoke Battalions 1 and 2 saw limited action in Poland, Smoke Battalion 3 was still being organized, and Smoke Battalion 5 was positioned in western Germany.[8] Eight months later, Smoke Troops were again in action—this time, in Belgium, France, Luxembourg, and the Netherlands.

Spring 1940 was an important time of transition for the Smoke Troops. The older battalions (Smoke Battalions 1, 2, 3, and 5), which retained the 10-centimeter Smoke Projector 35, were renamed smoke projector battalions and were joined by newly formed Smoke Projector Battalions 4 and 6. The amount of action seen in the campaign varied by unit, but commanders began to realize the importance of the Smoke Troops, which conducted screening and high-explosive fire missions for river crossings (which included crossings of the Maas and Marne Rivers).[9]

At the same time, smoke projector regiments were being formed with a revolutionary weapon. From 1936 to 1940, the 15-centimeter Smoke Projector 41 was under development. On 18 April 1940, 1st Company, Smoke Training and Experiment Battalion, provided a live-fire demonstration of the new smoke projector to General Heinrich Alfred Hermann Walther von Brauchitsch (commander in chief of the Germany army) and Colonel Hermann Ochsner (General of the Smoke Troops) at the Munster Training Area, Germany. The eight rocket launchers performed so well that the weapon was considered to be ready for use in combat and ready for serial production.[10]

The 15-centimeter Smoke Projector 41 consisted of six smooth bore tubes arranged in a hexagonal pattern and mounted on a two-wheeled, antitank gun chassis weighing only about 540 kilograms.[11] With a range of about 6,900 meters, the 15-centimeter Smoke Projector 41 was the most important German army rocket launcher. About 5,800 of the launchers were built between 1940 and 1945.[12]

Each of the rockets launched by the 15-centimeter Smoke Projector 41 was about 93 centimeters long and weighed about 35 kilograms.[13] Each had a nose cone, which served a ballistic purpose only. Below the nose cone, there was a cylinder containing fuel. And below the fuel, there was a turbine that had 26 swirl nozzles positioned around the body to provide spin. The explosive charge and fuze were under the turbine. Once launched, the rocket exploded upon impact (spewing more shrapnel than a conventional round) and then became buried in the ground.[14]

The combination of high-volume fire (six rockets per volley and a reload time of 80 seconds) and increased shrapnel and shock waves (accompanied by areas of high and low pressures) made the rocket launcher perfect for its mission—the engagement of area targets.[15] U.S. Soldiers in France described the sounds of the incoming rounds as moaning, whining, and screaming, resulting in the nickname of "Screaming Meemie" for the rocket launcher. The Soldiers also related anecdotes of the concussions that occurred upon rocket impact.[16]

There were many advantages to the 15-centimeter Smoke Projector 41 rocket launcher. It was cheap to produce, easy to transport, and able to launch a variety of payloads (smoke, high-explosive munitions, and chemical munitions). Since the rockets rested on guides and did not need rifling, the rocket launcher tubes lasted longer than conventional artillery tubes.[17] However, the 15-centimeter Smoke Projector 41 was not a replacement for tube artillery, which could engage point targets at a greater range.

Other, heavier rockets—including a 28-centimeter, high-explosive rocket (with an approximate range of 1,925 meters) and a 32-centimeter incendiary rocket (with an approximate range of 2,200 meters)—were developed in parallel with the 15-centimeter Smoke Projector 41. These rockets were launched from their shipping crates using a special frame for support. The high-explosive rocket, which was launched first, was used to break up the target (such as a building); it was followed by the incendiary rocket, which was used to start fires. It took some time to manhandle the heavy rockets (83 kilograms for the high-explosive rocket and 79 kilograms for the incendiary rocket) into position and to aim them. To provide added mobility, a special-purpose vehicle was modified so that three rockets, still in their shipping crates, could be carried on each side of the vehicle.[18]

The first widespread use of German rockets occurred on the Eastern Front in the campaign against the Soviet Union. From November 1941 to July 1942, the German army used bombers, railway guns, and rockets to reduce fortifications protecting the Crimean port and naval base at Sevastopol, Crimea. Combining smoke projector regiments and separate battalions, the Germans used more than 500 launcher tubes in support of the attacks.[19]

Two more rocket types and an important mobility asset were added to the inventory in 1943. The 21-centimeter Smoke Projector 42 looked exactly like the 15-centimeter Smoke Projector 41, except that it had only five tubes. The rocket looked like a normal artillery projectile, but was more aerodynamic. And although it weighed 110 kilograms (three times the weight of the 15-centimeter rocket) and was harder and slower to load, it had double the explosive effect of the 15-centimeter Smoke Projector 41. The range was about 7,850 meters.[20]

The development of the 30-centimeter Smoke Projector 42 was an attempt to introduce standardization to the 28- and 32-centimeter rockets. Built only as a high-explosive rocket, the 30-centimeter Smoke Projector 42 had a range of about 4,500 meters.[21]

The firing of the smoke projectors resulted in a large amount of airborne dust and debris at the launcher sites. It was usually necessary to quickly relocate the towed launchers to another area to prevent them from being targeted by counterbattery artillery fire. The launchers needed to be quickly set up at the new area for the next firing mission. Expanding on the concept of the Special-Purpose Vehicle 251, the Opel® half-track series—which was nicknamed *Maultier* (Mule)—was selected as the base for 10 (two horizontal rows of five) 15-centimeter Smoke Projector 41 tubes. The Mule was lightly armored and was capable of transporting the crew within the driver and fighting compartments, carrying 10 rockets for reloading and, when necessary, "shooting and scooting." The Mule also enabled smoke projector support to move forward with mobile units.[22]

Most models of smoke projectors continued to be manufactured and fielded until late 1944 through early 1945. The increasing inventory during that time was evidenced by firing during two German offensive operations. The largest concentration of rockets on the Eastern Front occurred during the Battle of Kursk in June and July 1943. More than 2,200 tubes were used.[23] The largest concentration of rockets during World War II occurred during the Battle of the Bulge on the Western Front in Europe in late 1944. Nearly 5,500 tubes were used.[24]

As the war progressed, the mission of the Smoke Troops changed. The use of high-explosive rockets, which complemented the smoke generation mission, increased. Year by year, the emphasis on contamination and decontamination decreased. Due to the mobile nature of warfare and the fear of retaliation, the German armed forces viewed the employment of chemical agents as less likely. Increased manpower and equipment needs effectively gutted the few contamination/decontamination units that had been organized.[25]

However, to retaliate against the possible Allied use of chemical agents, the Germans manufactured and stored chemical-filled ammunition (artillery shells, land mines, aviation bombs) in depots throughout Germany. The ammunition could not be issued without the highest authorization, and it was not allowed to be transported beyond the borders of Germany.[26] In the closing phase of the war, British, French, Soviet, and U.S. forces seized the depots containing the chemical-filled ammunition.

There were five major German army and air force depots and dumps located within the U.S. zone of occupation: Frankenberg, Grafenwoehr, Schierling, Sankt Georgen, and Wildflecken. A total of 122,409 tons of chemical-filled ammunition was captured, including about 93,000 fifteen-centimeter rockets filled with adamsite (DM), mustard (H), and nitrogen mustard (HN).[27] The Chemical Warfare Service established programs to demilitarize/dispose of the dangerous ordnance. Demilitarization was achieved through burning, detonation, scuttling at sea, and chemical decontamination.[28]

The history of the Smoke Troops encompasses innovation and new technology. At one time, the Smoke Troops were the newest, smallest, and most modern branch of the German armed forces.[29] The growth of the branch from 2,044 men in 1939 to more than 112,000 men in 1945 represented a 50-fold increase. At a time when parts of the German infantry still marched and parts of the German artillery were still horse-drawn, the Smoke Troops were fully motorized to ensure their survival.[30] And they used revolutionary weapons to deadly effect. From an experimental beginning with chemical roots to a lethal component of fire support, the *Nebeltruppe* and its smoke projector contributed to a new face of combat.

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Mr. Hatfield is a historian with the U.S. Army Research, Development, and Engineering Command, Aberdeen Proving Ground, Maryland. He holds a bachelor's degree in German from Georgetown University, Washington, D.C., and a master's degree in military studies from the American Military University. He served for 30 years in Germany—on active duty, with the United Service Organizations (USO), and as a Department of the Army civilian—and is fluent in German.

DRSKO PROJECT QUICKLY MOVING TOWARD PRODUCTION

By Ms. Rachel C. Selby

A potential long-term production project for the Directorate of Chemical and Biological Defense Operations, Pine Bluff Arsenal, Arkansas, is ramping up very quickly, with production slated for sometime around the first of next year. The project involves Dismounted Reconnaissance Sets, Kits, and Outfits (DRSKO); and Mr. Allen Dehaghani, project engineer, is very excited about it.

"The DRSKO is a system of sensors, protective suits, boots, etcetera, that provides a capability to Soldiers that helps them detect and isolate any chemical hazard in the field," said Mr. Dehaghani. "Each branch of Service has their own DRSKO units and, with these, come different requirements."

According to information provided by the Directorate of Engineering and Technology, Pine Bluff Arsenal, DRSKO systems are used by military forces in situations that emphasize enclosed or confined spaces that current systems cannot reach as part of the overall reconnaissance and surveillance efforts for the detection; identification; sample collection; and marking of chemical, biological, radiological, and nuclear and toxic industrial chemical contaminants.

According to Mr. Dehaghani, Pine Bluff Arsenal will be providing DRSKO systems in support of civil support teams. "[The materials provided will] consist of five to seven crated units. Each crate will have several different items inside," he said. "These items will be placed in a secure area inside cages, where they will be inventoried and stored. About six to 10 production workers will be given a 'grocery list' of items that go in each unit." Pictures of the individual items will be included on the backs of the lists. The workers will enter the cages, obtain the items for the bags they are assembling, present them for a quality assurance inspection, and then pack the bags with the proper items. Although very little equipment is required for this process, each unit consists of roughly 600 pieces.

In addition, visual aids will be placed at each workstation so that workers can see which item goes in which pocket of the bag and how all of the items fit together. "We are trying to make it as simple as possible because the number of pieces is just overwhelming," said Dehaghani. "Once this mission gets up and running, we will be working on one unit at a time. This means that, when we are working on bag number one, we will fill all of bag number one first and go from there."



A boot-filled crate is part of the DRSKO unit.

Dehaghani said that this start with civilian support team units may lead to future work with units from the Army, Air Force, and Marines. "I am hoping we will be the hub for DRSKO work," he said. "We will store, pack, send these units to wherever they need to go; and hopefully, in the future, we will be able to refurbish these units as well. There is a lot of potential for future work."

Ms. Selby is the editor of the Pine Bluff Arsenal newspaper, the Arsenal Sentinel*. She holds a bachelor's degree in communications (with an emphasis in journalism) from Drury College, Springfield, Missouri, and a master's degree in journalism from the University of Arkansas at Little Rock.*

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			
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.			
JP 3-11	*Operations in Chemical, Biological, Radiological, and Nuclear (CBRN) Environments*	4 Oct 13	Current.
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 preevent 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.			
JP 3-27	*Homeland Defense*	29 Jul 13	Current.
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 *defense of the U.S. homeland* with *homeland defense*. 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, *Interorganizational Coordination During Joint Operations*, 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.			
JP 3-28	*Civil Support*	31 Jul 13	Current.
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 *civil support* with the term *DSCA* and replacing the term *National Response Plan* with the term *National Response Framework*.			
JP 3-40	*Combating Weapons of Mass Destruction*	10 Jun 09	Under revision.
The JP 3-40 revision effort is being synchronized with that of the *Department of Defense Strategy for Countering Weapons of Mass Destruction.*[1] Major changes include replacing the term *combating weapons of mass destruction (WMD)* (struggling with or fighting) with the term *countering WMD* (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 will no longer be 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 are also being added. This is a significant addition since combating/countering WMD considerations for the continental United States have not previously been incorporated. JP 3-40 will continue to focus on "left of boom" (dissuade, deter, disrupt) proactive measures.			
JP 3-41	*Chemical, Biological, Radiological, and Nuclear Consequence Management*	21 Jun 12	Current.
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]			
Multi-Service Publications			
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.			
FM 3-11 MCWP 3-37.1 NWP 3-11 AFTTP 3-2.42	*Multi-Service Doctrine for Chemical, Biological, Radiological, and Nuclear Operations*	1 Jul 11	Current. Will be revised in the near future due to the publishing of the *Department of Defense Strategy for Countering Weapons of Mass Destruction* 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.
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).			

Number	Title	Date	Status
ATP 3-11.23 MCWP 3-37.7 NTTP 3-11.35 AFTTP 3-2.71	*Multi-Service Tactics, Techniques, and Procedures for Weapons of Mass Destruction Elimination Operations*	1 Nov 13	Current. Supersedes Army Tactics, Techniques, and Procedures (ATTP) 3-11.23.
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.			
ATP 3-11.32 MCWP 3-37.2 NTTP 3-11.37 AFTTP 3-2.46 (Volumes I and II)	*Multi-Service Tactics, Techniques, and Procedures for Chemical, Biological, Radiological, and Nuclear Passive Defense*	TBD	Under development. Will combine, revise, and supersede FM 3-11.3, FM 3-11.4, and FM 3-11.5. Will be published 3d quarter, fiscal year (FY) 2015.
ATP 3-11.32 will consist of two volumes. Volume I will contain information for conducting operations; performing tactics, techniques, and procedures (TTP); and understanding how to carry out CBRN passive defense. Volume II will contain supporting technical information (CBRN Warning and Reporting System, hazard prediction, decontamination). ATP 3-11.32 will contain the latest validated information regarding hazard prediction and warning and reporting procedures. It will present tactical-level discussions on the validated joint concept of contamination mitigation, which will be introduced in the revised JP 3-11.			
ATP 3-11.36 MCRP 3-37B NTTP 3-11.34 AFTTP 3-2.70	*Multi-Service Tactics, Techniques, and Procedures for Chemical, Biological, Radiological, and Nuclear Aspects of Command and Control*	1 Nov 13	Current. Supersedes ATTP 3-11.36.
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.			
ATP 3-11.37 MCWP 3-37.4 NTTP 3-11.29 AFTTP 3-2.44	*Multi-Service Tactics, Techniques, and Procedures for Chemical, Biological, Radiological, and Nuclear Reconnaissance and Surveillance*	25 Mar 13	Current. Supersedes FM 3-11.19 and FM 3-11.86.
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.			
FM 3-11.21 MCRP 3-37.2C NTTP 3-11.24 AFTTP(I) 3-2.37	*Multi-Service Tactics, Techniques, and Procedures for Chemical, Biological, Radiological, and Nuclear Consequence Management Operations*	1 Apr 08	Under revision. Will be redesignated ATP 3-11.41.
FM 3-11.21 focuses on DOD support to domestic or foreign CBRN consequence management operations. It will be designed for CBRN responders who plan and conduct CBRN consequence management operations in domestic, foreign, or theater operational environments. It will provide an important reference for planning and conducting CBRN consequence management.			
ATP 3-11.46 AFTTP 3-2.81	*Weapons of Mass Destruction–Civil Support Team Operations*	20 May 14	Current. Revises and supersedes FM 3-11.22.
ATP 3-11.46 serves as the foundation for WMD–civil support team (CST) doctrine. It focuses on the organization, mission, command and control (C2), 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), *Armed Forces*, WMD-CSTs operate in 32 USC, *National Guard*, 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.			
ATP 3-11.47 AFTTP 3-2.79	*Chemical, Biological, Radiological, Nuclear, and High-Yield Explosives Enhanced Response Force Package (CERFP) and Homeland Response Force (HRF) Operations*	26 Apr 13	Current.

Number	Title	Date	Status
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.			
Army-Only Publications			
The USACBRNS is the U.S. Army proponent for four tactical-level, Army-only publications.			
ATP 3-11.24	*Technical Chemical, Biological, Radiological, Nuclear, and High-Yield Explosives (CBRNE) Force Employment*	6 May 14	Current. Revises and supersedes FM 3-11.20.
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	*Battlefield Obscuration*	15 May 14	Current. Revises and supersedes FM 3-11.50.
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	*Chemical, Biological, Radiological, Nuclear, and Explosives Task Force Operations*	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	*Chemical, Biological, Radiological, Nuclear, and High-Yield Explosives Operational Headquarters*	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 3-11.42 MCWP 3-38.1 NTTP 3-11.36 AFTTP 3-2.82	*Multi-Service Tactics, Techniques, and Procedures for Installation Emergency Management*	23 Jun 14	Current. Supersedes ATP 3-11.42.
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	*Chemical, Biological, Radiological, and Nuclear Threats and Hazards*	TBD	Under development. Will revise and supersede FM 3-11.9 and FM 3-11.11. Will be published 3d quarter, FY 15.
TM 3-11.91 serves 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 also includes basic educational information and covers the "so what" and the field behavior of CBRN hazards (including riot control agents and herbicides). The appendixes contain scientific CBRN data, and the centerpiece of the manual is the CBRN threats and hazards diagram.			

[1]The *Department of Defense Strategy for Countering Weapons of Mass Destruction,* June 2014*,* replaces the *National Military Strategy to Combat Weapons of Mass Destruction*, 13 February 2006.

[2]The 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.)

[3]The 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).

[4]The state governor authorizes DSCA by Army National Guard forces under state mission command (WMD-CST, CERFP, and HRF).

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 R031)	
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.
CBRN Transition Course (School Code R031)	
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 (<https://afcesa.csd.disa.mil/kc/login/login.asp>) prior to attending the CBRN Transition Course; certificates must be presented during in-processing.	
74D30 CBRN ALC (School Code R031, 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 R031, Course 031-74D30-C46)	
This is a three-phase resident course conducted at Fort Leonard Wood. Effective 1 June 2013, 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://afcesa.csd.disa.mil/kc/login/login.asp> 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, Sergeant First Class Larry Foreman, at (573) 563-7757 or <larry.d.foreman.mil@mail.mil>. The successful completion of Phase I (and the CBRN Defense Course [branch transfers]) 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 the 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 of attending Phase IV. Those who encounter problems should contact Sergeant First Class 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 the 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.

Joint SLC (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.
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 hazmat awareness and operations levels.
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 Proponency 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 Education System coursework. Interested Soldiers should contact Master Sergeant Yamil Rodriguez at (860) 570-7114 or <yamil.rodriguez.mil@mail.mil>.

Contact Information

Colonel Francisco S. Velez (DAC-AR), (573) 563-8050 or <francisco.s.velez.mil@mail.mil>.

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

Sergeant First Class 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 Joseph C. Bahr (Proponency NCO–NG), (573) 563-7667 or <joseph.c.bahr.mil@mail.mil>.

Reference:

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

Chief of Chemical's Recommended Professional Reading List

By Brigadier General Maria R. Gervais

This installment of my recommended professional reading list, which is updated and published in each issue of *Army Chemical Review*, is designed to provide Dragon Soldiers of all ranks with a guide to building understanding. It contains four books, an article, an Army techniques publication (ATP), and a podcast that span four broad categories of topics: leadership; joint/Army doctrine and policy; the chemical, biological, radiological, and nuclear (CBRN) profession; and history/miscellaneous.

Three critical factors must be addressed in our continuing competence as Dragon Soldiers—institutional training, practical experience within units, and self-development. One of the key components of self-development is professional reading. It builds an independent basis of knowledge upon which to form opinions and make judgments. Professional reading continues to be vital as Soldiers maintain the initiative of today and prepare for an uncertain tomorrow.

The professional reading list below contains information from many different backgrounds. I encourage you to read or listen to the publications and article below and reflect on how they may further your education and expertise.

Leadership

- Edward Emerling, "The Awful, Horrible Bosses Who Taught Me Everything," *LinkedIn*, 3 September 2014, <http://www.linkedin.com/today/post/article/20140903062641-279350529-the-nine-best-lessons-i-learned-from-the-three-worst-bosses>, accessed on 17 October 2014.
- L. David Marquet, *Turn the Ship Around! A True Story of Turning Followers into Leaders*, Portfolio Hardcover, 16 May 2013, ISBN-13: 9781591846404.
- John C. Maxwell, *The 21 Irrefutable Laws of Leadership: Follow Them and People Will Follow You*, Thomas Nelson, Inc., 18 September 2007, ISBN-10: 9780785288374.

Joint/Army Doctrine and Policy

- ATP 3-05.11, *Special Operations Chemical, Biological, Radiological, and Nuclear Operations,* 30 April 2014.

The CBRN Profession

- Donald Richter, *Chemical Soldiers: British Gas Warfare in World War One*, Pen and Sword Books Limited, 19 June 2014, ISBN-13: 9781783461738.

History/Miscellaneous

- Dan Carlin, *Hardcore History 43—Wrath of the Khans I,* podcast, Orator LLC, 13 June 2012, <http://www.dancarlin.com/product/hardcore-history-43-wrath-of-the-khans-i/>, accessed on 17 October 2014.
- Ben Macintyre, *A Spy Among Friends: Kim Philby and the Great Betrayal*, Crown Publishing Group, 29 July 2014, ISBN-13: 9780804136631.

I want your feedback. I encourage you to identify books, articles, and other forms of media for possible inclusion in the recommended professional reading list. Please contact Major Christopher Levesque at the address below with any comments or suggestions for future reading lists.

Major Christopher Levesque
Doctrine Developer, CBRN Doctrine
14000 MSCoE Loop, Suite 246
Fort Leonard Wood, MO 65473
E-mail: <christopher.a.levesque.mil@mail.mil>

Monument in honor of our fallen Operation Enduring Freedom and Operation Iraqi Freedom Dragon Soldiers

CPL Mark A. Bibby
2LT Benjamin J. Colgan
SSG Morgan D. Kennon
SPC Arron R. Clark
CPL Forest J. Jostes
SGT Gregory L. Wahl
SPC Mark J. Kasecky
SGT Thomas C. Rosenbaum
SSG Robert S. Johnson
SFC Mickey E. Zaun
SSG Stephen R. Sherman
SGT Lizbeth Robles



SPC Ignacio Ramirez
SGT Jonathan E. Lootens
SGT Marco L. Miller
SPC Elias G. Elias
CPL Jason Nunez
SPC Eddie D. Tamez
SGT Jacob S. Schmuecker
CPL James D. Gudridge
SPC Arturo Huerta-Cruz
SGT Jaime Gonzalez Jr.
SSG Scott H. Burgess
SPC Krystal M. Fitts

PIN 104569-000