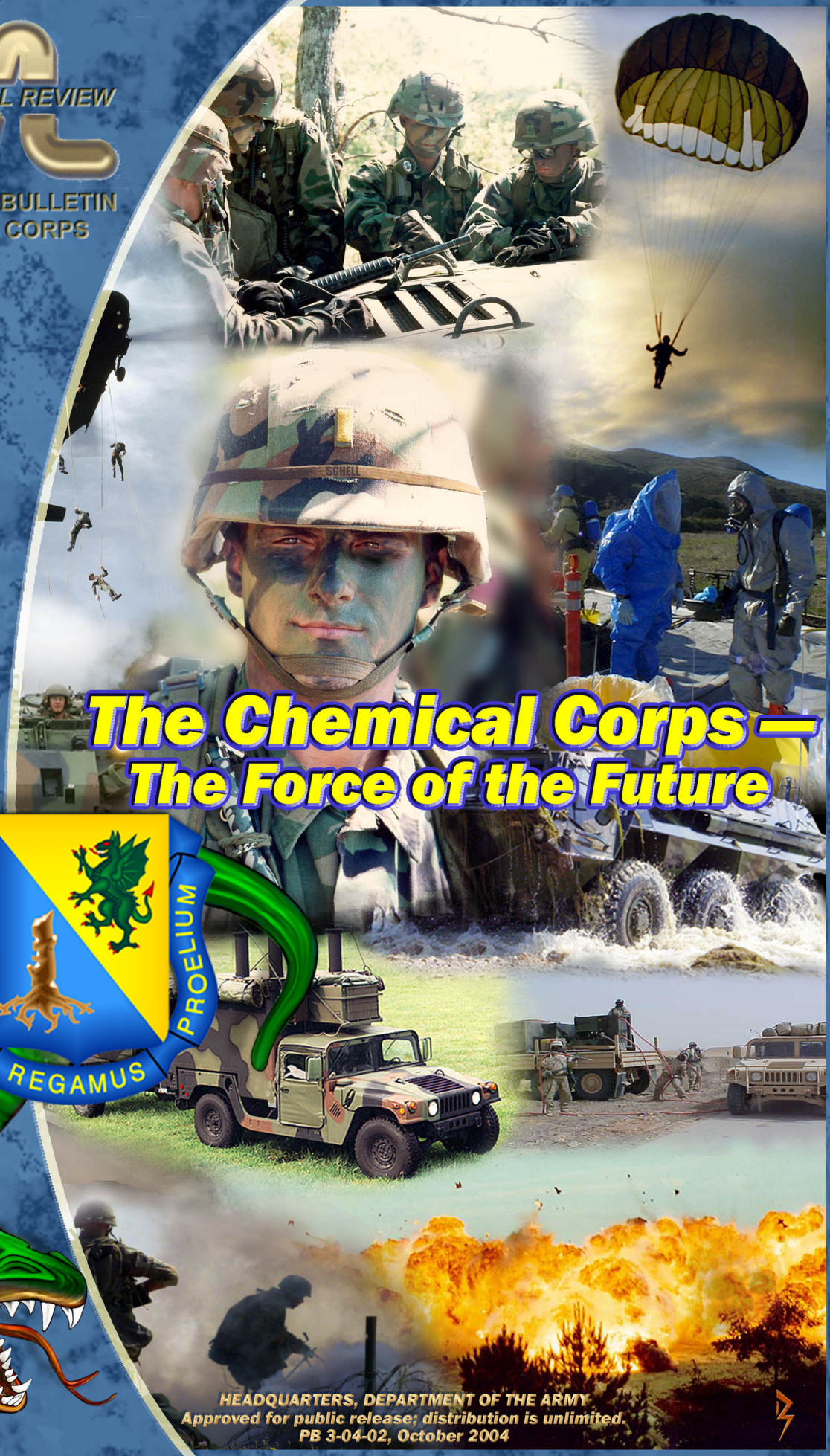
ARMY CHEMICAL REVIEW

THE PROFESSIONAL BULLETIN
OF THE CHEMICAL CORPS



The Chemical Corps — The Force of the Future

HEADQUARTERS, DEPARTMENT OF THE ARMY
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Back cover: Scenes from Brigadier General Stanley H. Lillie's promotion ceremony.

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Articles

Departments

Professionalism for the 21st Century Chemical Soldier: A Lesson From Rome

Brigadier General Stanley H. Lillie

"… they have never any truce from warlike exercises; … for their military exercises differ not at all from the real use of their arms, but every soldier is every day exercised, and that with great diligence, as if it were in time of war, which is the reason why they bear the fatigue of battles so easily; for neither can any disorder remove them from their usual regularity, nor can fear affright them out of it, nor can labor tire them;…"

"… they are moreover hardened for war by fear; for their laws inflict capital punishments, not only for soldiers running away from the ranks, but for slothfulness and inactivity,…and the readiness of obeying their commanders is so great, that it is very ornamental in peace; but when they come to a battle, the whole army is but one body, so well coupled together are their ranks, so sudden are their turnings about, so sharp their hearing as to what orders are given them, so quick their sight of the ensigns, and so nimble are their hands when they set to work; whereby it comes to pass that what they do is done quickly, and what they suffer they bear with the greatest patience …"

—Flavius Josephus
War of the Jews, Book III, Chapter 5

Professionalism—what does it mean for our chemical soldiers and leaders in this fast-paced world that we live in today? The Merriam-Webster's dictionary defines professionalism as "the conduct, aims, or qualities that characterize or mark a *profession* or a *professional* person." A profession is "a calling requiring specialized knowledge and often long and intensive academic preparation" and "the whole body of persons engaged in a calling." In Josephus' time, the Roman soldier was disciplined and exercised daily in the military craft and the unit was one of order that moved, acted, and fought with singularity of purpose. Can the words of Josephus, describing the Roman soldier almost 2,000 years ago, provide an azimuth for today's professional soldier? I believe it can. Using the acronym *PRIDE* (perseverance, readiness, inspiration, discipline, and excellence), we can characterize Josephus' words and define the meaning and requirement to be a member of the Chemical Corps in the 21st century.

Perseverance. The Romans had a sense of duty and loyalty not only to their commander and each other but also to Rome herself. We can gather from this short quote that when they set their sites on a task, they did not stop until it was accomplished and they persevered, even under the most arduous conditions. Perseverance is not getting through the tunnel when we see a light at the end; it is getting through the tunnel when there is no light. This is especially true for our leaders—if we falter when times are tough, to what rock will our soldiers cling? We must have the endurance, which requires a great deal of mental and physical toughness, to complete the mission just as the Roman soldiers had so many years ago.

Readiness. The Romans trained as they fought, so much so that Josephus described their "exercises as unbloody battles" and their "battles as bloody exercises." We too must imbed this mentality in the way we train, starting with our initial entry training. The lessons learned from recent conflicts must be captured in our doctrine and training, and we must never forget the lessons we learned in the past. According to Field Manual 7-0, *Training the Force*, "Training for warfighting is our number one priority in peace and in war. Warfighting readiness is derived from tactical and technical competence and confidence." Readiness for a chemical soldier is being at the right place, at the right time, in the right uniform, with the right equipment, and with the right attitude. In that short sentence is a host of skills we must be competent in: land navigation, troop-leading procedures, and maintenance. We must have the flexibility to perform nontraditional functions—those tasks that have nothing to do with chemical, biological, radiological, and nuclear defense but are necessary to accomplish the mission.

Inspiration. What inspired the Legionnaire? Was it the signum or standard that was carried in front of the formation? His centurions (officers)? His principales (NCOs)? Or simply a desire to serve the empire?

(Continued on page 4)

In this, my first article as the 10th Regimental Command Sergeant Major (RCSM), I would like to begin by sharing with you a little about my military career. First, let me begin by saying that I am a leader of soldiers, and I will always put my soldiers' needs before my own.

Command Sergeant Major Patrick Z. Alston

I began my military career as a medical specialist at Fort Belvoir, Virginia, where I was selected as the Fort Belvoir Soldier of the Quarter. I went on to attend and graduate from the Airborne School before my next assignment as a medical specialist in the 3d Battalion, 325th Infantry Regiment, 82d Airborne Division, where I deployed to Operation Urgent Fury (in Grenada) and earned my Combat Medical Badge. From there, I reclassified to the best corps in the Army—the Chemical Corps—and received a follow-on assignment to the most forward-deployed chemical company in the Army—the 4th Chemical Company, 2d Infantry Division. While there, I was named Division Support Command (DISCOM) Noncommissioned Officer (NCO) of the Quarter. Following this, I was assigned to the 3d Battalion, 73d Armor, 82d Airborne Division, where I attended the Primary Leadership Development Course (PLDC) and was named to the Commandant's List.

My next assignment took me to the 21st Chemical Company, the only airborne chemical company in the Army. There, I attended Air Assault School and was the Distinguished Honor Graduate. Next, I was assigned as a platoon sergeant with the 34th Support Group, Korea, where I was selected as the Association of the United States Army (AUSA) Outstanding NCO of the Year. I was then assigned to Fort McClellan, Alabama, where I attended Drill Sergeant School and graduated on the Commandant's List, attended the Advanced Noncommissioned Officer Course (ANCOC) and graduated Distinguished Honor Graduate, and was assigned to A Company, 82d Chemical Battalion, and later to the Contingency Support Detachment (White House Team).

After attending several schools, to include Honor Graduate from the Technical Escort Course, I was assigned to the Total Army Personnel Command (now the US Army Human Resources Command [HRC]) as the branch manager for the Chemical Corps. While there, I attended the First Sergeant Course, graduating on the Commandant's List. Next, I was assigned as the first sergeant of Headquarters and Headquarters Company, Soldier and Biological Chemical Command, Technical Escort Battalion. As a master sergeant, I served as the first Technical Escort Battalion Command Sergeant Major (CSM) and was selected to attend the US Army Sergeants Major Academy.

Following graduation from the Sergeants Major Academy, I was assigned as the division chemical sergeant major for the 2d Infantry Division in Korea. There, I was selected as the CSM for the 23d Chemical Battalion and later as the brigade sergeant major for the 23d Area Support Group. This brings me to my current position, for which I am honored to have been selected.

During my military tenure, I have received the following awards: Legion of Merit with first oak leaf cluster, Meritorious Service Medal with first oak leaf cluster, Army Commendation Medal with third oak leaf cluster, Army Achievement Medal with seventh oak leaf cluster, Airborne Parachute Badge, Air Assault Badge, Combat Medical Badge, Driver's Badge (Wheeled), Drill Sergeant Badge, German Armed Forces Military Efficiency Badge, and NCO Professional Development Ribbon (fourth award). Additionally, I was awarded the "Order of the Dragon," the Chemical Corps highest award.

As your RCSM, I want to continue to foster effective communication with the units in the field and the soldiers and civilians throughout the chemical community, support the heritage of the Corps, be a role model to all, share the great work we do as chemical soldiers and, where possible, improve identified weaknesses. I intend to share the Department of the Army vision of people, readiness, and transformation with everyone:

- People/soldiers, not equipment, are the centerpieces of our formation. We will take care of soldiers, civilians, and leaders. I always keep in mind that we have been trusted with our nation's greatest asset—its sons and daughters.
- Readiness is our mission. The Army has a nonnegotiable contract with the American people to fight and win our nation's wars. We must maintain near-term training and readiness to ensure that we

are prepared at all times to carry out our obligations. This is our daily mission; we will continue to work hard and improve our readiness. As NCOs and leaders, we are the standard bearers for readiness.

- Transformation is an imperative. Army transformation represents the strategic transition we will need to undergo to shed our cold war designs and prepare ourselves for the crises and wars of the 21st century.

This is a very critical time for our country. We will encounter many challenges that we will conquer together, working as a team. In closing, I must reiterate my focus for soldiers and leaders. I am an NCO; we are the backbone of the Army. I expect all leaders to lead by example, train from experience, maintain and enforce standards, and take care of soldiers. Remember, we are adapting to a changing environment.

(Chief of Chemical, continued from page 2)

Certainly, our soldiers today should have a desire to serve our great nation and protect the freedoms guaranteed by our previous generations. In the Roman Army, the officers and NCOs were truly the standard bearers. Do our leaders today inspire us to achieve excellence? If not, why not? Our leaders should set the mark for their soldiers to follow. This should not just encompass physical and mental attributes, but rather it should include word and deed. Leaders should be the moral compass for their organizations.

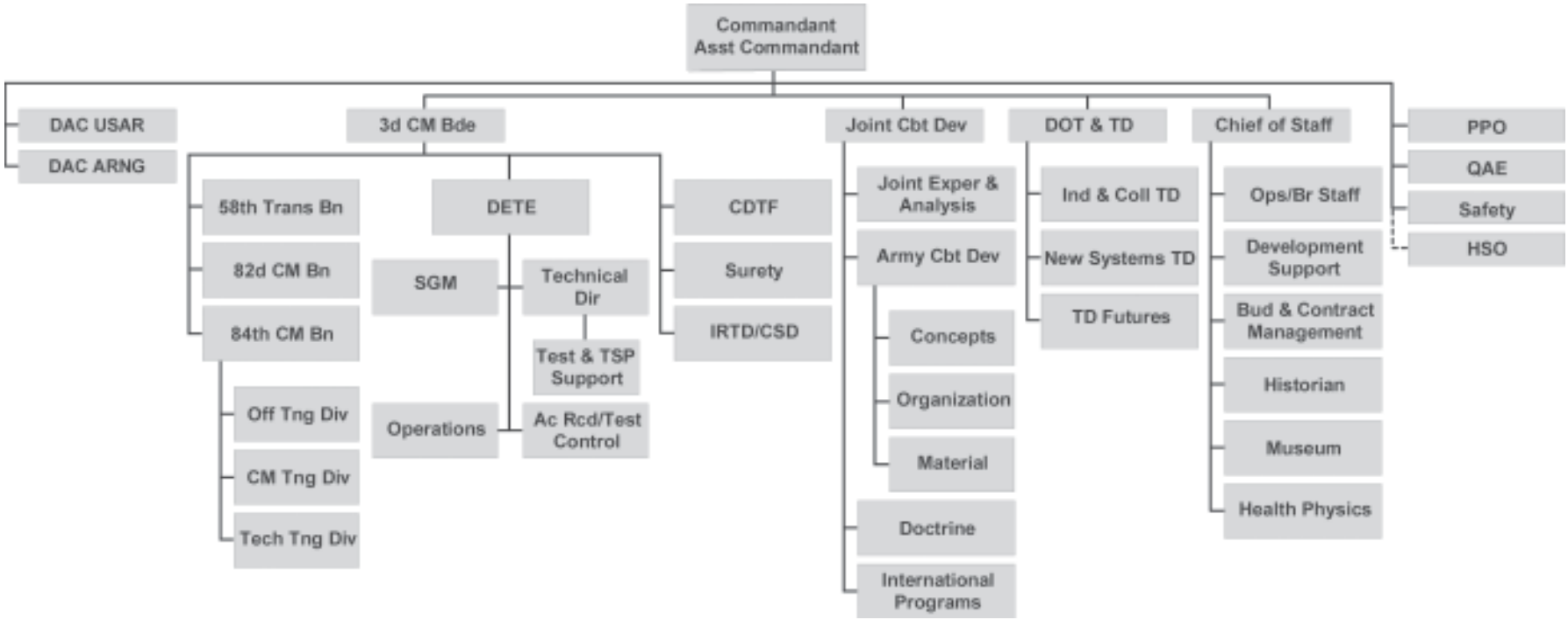
Discipline. Discipline is what set the Romans apart from other armies in their time. Army Regulation 670-1, *Wear and Appearance of Army Uniforms and Insignia*, reminds us that "the Army is a uniformed service where discipline is judged, in part, by the manner in which a soldier wears a prescribed uniform, as well as by the individual's personal appearance." Our appearance and the proper wear of our uniform is part of it, but what else can we learn from the Romans? Notice how Josephus' words on the Romans' obedience and their actions are viewed as if a single organism. How did they get that way? Self-discipline was woven through every aspect of the Legionnaire's life. Through daily drills and rehearsals, they became a team. They became one in every-thing—from marching, to establishing a campsite, to making contact with the enemy. They were obedient, not when the mood hit them, but immediately. Josephus saw this as an exceptional trait. But is that trait unobtainable today? Didn't we all raise our right hand and take an oath to do just that? It was Aristotle who said, "We are what we repeatedly do, excellence then is not an act, but a habit." As chemical soldiers, let's make excellence our habit.

Excellence. One of our greatest temptations is to settle for something less than our absolute best. The US Army ushered in our Army values—*loyalty, duty, responsibility, selfless service, honor, integrity, and personal courage*—in the late 1990s, but these values were certainly imbedded in the daily life and routine of the Legionnaire. These values should be second nature to us; living them can't help but push us to the next level. Not a lot separates mediocrity from excellence, just the will to do something and the pride to do it right. Pride should be an individual's personal commitment to quality, a mind-set that separates excellence from mediocrity. Should our goal be to achieve the minimum standard on the Army Physical Fitness Test or should it be the maximum, with the thought that we may have to carry a buddy out of a firefight? When you go to the range, is it to just wait your turn and hope to qualify so you can get back to work, or do you give an honest attempt to hit every target that comes up, knowing that the skill to do so may save someone's life someday? Some of the watchwords from our Soldier's Creed—*member of a team; mission first; never quit; disciplined, physically and mentally tough; trained;* and *professional*—were undoubtedly etched into the mind of the Roman Legionnaire. History has judged the Romans among the best; they took pride in their uniforms, their equipment, and their training. How will history judge us? Professionalism for the chemical soldier is not just doing the right thing when your subordinates and leaders are watching. It is doing the right thing when no one is watching!

I want to take this opportunity to recognize the Dragon soldiers of our Regiment who are serving our nation in the Global War on Terrorism. I particularly want to commend those serving in Iraq and Afghanistan. I want you to know that the professionalism you demonstrate each day makes the entire Corps very proud of you. I also want to personally thank all who are serving in our great Corps for your hard work and dedication; through my Army travels, I see the great accomplishments you have made. As a Corps, we must remain vigilant and prepared to meet the Army's commitment to our nation's security.

US Army Chemical School Reorganization

The Chemical School recently underwent a reorganization. The new organization brings the Joint Combat Development and Directorate of Training and Training Development sections (formerly combined with their Military Police and Engineer School counterparts under the Maneuver Support Center) back under the control of the Chemical School.



Legend:

ac	academic
ARNG	Army National Guard
asst	assistant
bde	brigade
bn	battalion
br	branch
bud	budget
cbt	combat
CDTF	Chemical Defense Training Facility
CM	chemical
coll	collective
CSD	Civil Support Detachment
DAC	Deputy Assistant Commandant
DETE	Directorate of Education and Training Execution
dev	development
dir	director
div	division
DOT	Directorate of Training
exper	experiment
HSO	Homeland Security Office
ind	individual
IRTD	Incident Response Training Department
off	officer
ops	operations
PPO	Personnel Proponency Office
QAE	Quality Assurance Element
rcd	records
SGM	sergeant major
TD	training development
tech	technical
tng	training
trans	transportation
TSP	training support package
USAR	United States Army Reserve

Chief of Chemical Earns Star

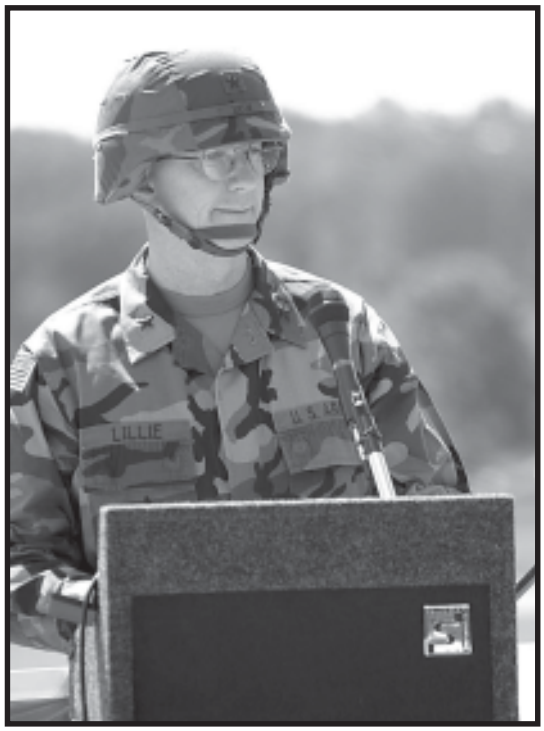
By Specialist Tremeshia Ellis

"America's finest, the best America has to offer, are standing on the field before you. I promise to give my best to lead these soldiers."

—Brigadier General Stanley H. Lillie

As the 399th Army Band played "March Grandioso," more than 1,000 soldiers marched onto Gammon Parade Field at Fort Leonard Wood, Missouri, to join members of the US Army Chemical Corps as Colonel Stanley H. Lillie, Chief of the US Army Chemical Corps and Commandant of the US Army Chemical School, was promoted to the rank of brigadier general.

Brigadier General Lillie, a native of Madison, Tennessee, had been anticipating the promotion for some time. "About time!" said Major General R.L. Van Antwerp, commanding general of the US Army Maneuver Support Center and Fort Leonard Wood, while addressing those in attendance before pinning a star on Lillie's collar. According to Major General Van Antwerp, the brigadier general selection board looks for officers who are passionate about the care of their soldiers when deciding who is promoted. "It's the greatest attribute an officer can have," he said. "We have one such officer right here in Brigadier General Stan Lillie." Van Antwerp went on to say that great officers have several things in common—great parents, family and support systems, challenging assignments, the ability to solve problems, and the courage to do the right thing under all circumstances. The two-star general then offered advice to the newly pinned one-star. "Realize you don't know everything, then pray for wisdom," he said. "Also surround yourself with wise council," he added. "Lastly," he said, "remember, you are never alone. Call on your friends; have courage and confidence in your ability."



Brigadier General Stanley H. Lillie: "I am truly humbled, truly honored."

Brigadier General Lillie's wife Bonita and Major General Van Antwerp pinned the general; and his daughters, Jana and Amanda, presented him with his general officer Kevlar helmet and belt. The presentation of his one-star flag by his mother, Mickey Lillie, was followed by the presentation of his 9-millimeter pistol by his father, retired Army Sergeant Major Hugh Lillie. As Brigadier General Lillie reviewed the troops for the first time as a general officer, he was joined on the stand by Mrs. Lillie and Regimental Command Sergeant Major Patrick Z. Alston.

According to the new brigadier general, soldiers should not expect a change in his leadership style, because he will continue to perform the way that

Brigadier General Lillie, Mrs. Lillie, and Command Sergeant Major Alston review the troops.

Brigadier General Lillie and Major General Van Antwerp

he has in the past. "However, I feel the weight that generals are supposed to be strategic thinkers, so I certainly want to concentrate on that," he added.

As Brigadier General Lillie looked out upon the soldiers of the Chemical Corps, he expressed his excitement about future operations, addressing new areas like sensitive-site exploitation; new and better detection systems for weapons of mass destruction; nuclear, biological, and chemical agent reconnaissance; and faster and smarter decontamination operations. Later, Lillie offered encouragement to those considering a life of military service, saying that the Army offers challenges and leadership opportunities.

I can't find the words to express the way I feel at this moment," Lillie said as he addressed the crowd. "I am truly humbled," he said, "truly honored." Brigadier General Lillie went on to state that he never thought he would be in the position he is in today, having began his Army career as a cadet on an ROTC scholarship. "Only in America, only in the United States of America, can an old country boy from Tennessee grow up to be a general in the Army," he said.

Specialist Ellis is a staff writer for the Fort Leonard Wood Guidon newspaper.

Colonial Germ Warfare

By Mr. Harold B. Gill, Jr.

"The humanizing of War! You might as well talk of the humanizing of Hell .... As if war could be civilized! If I'm in command when war breaks out I shall issue my order—'The essence of war is violence. Moderation in war is imbecility. Hit first, hit hard, and hit everywhere.'" [1]

—Sir Reginald Bacon

When armies get in desperate situations, the usual civilized rules of warfare are often thrown out the window. In the 1520s, Italian politician and author Niccolo Machiavelli wrote that when speaking of the safety of one's country, there must be no consideration of just or unjust, merciful or cruel, or praiseworthy or disgraceful; instead, setting aside every scruple, one must follow to the utmost any plan that will save her life and keep her liberty.

During Chief Pontiac's uprising in 1763, the Indians besieged Fort Pitt and burned nearby houses, forcing the inhabitants to take refuge in the well-protected fort.[2] The British officer in charge of the fort, Captain Simeon Ecuyer, reported to Colonel Henry Bouquet in Philadelphia that smallpox had already broken out and that he feared the crowded conditions would result in the spread of the virus. On 24 June 1763, William Trent, a local trader, recorded in his journal that two Indian chiefs visited the fort and urged the British to abandon the fight, but the British refused. Instead, when the chiefs departed, they were given blankets and a handkerchief out of the smallpox hospital.

Photo courtesy of the Colonial Williamsburg Foundation

Blankets infected with smallpox were offered to the Indians besieging Fort Pitt.

It is not known who conceived the plan, but there is no doubt that it met with the approval of the British military and may have been common practice. After the incident at Fort Pitt, Sir Jeffrey Amherst, commander of British forces in North America, wrote that the event was contrived to send the virus among the Indians. Sir Jeffrey ordered the extirpation of the Indians (without taking prisoners). About a week later, he wrote to Colonel Bouquet and recommended the additional inoculation of Indians with smallpox-infected blankets, in addition to every other method used to extirpate the "execrable race."

Though a connection cannot be proven, a smallpox epidemic erupted in the Ohio Valley that may have been the result of distributing infected articles at Fort Pitt. Whatever its origin, the outbreak devastated the Indians. Although modern readers may find such tactics atrocious and barbaric, these methods were acceptable during this time period. And all-out war was not foreign to the Indians. During Pontiac's rebellion, Indian warriors killed about 2,000 civilian settlers and 400 soldiers in an attempt to extirpate the enemy.

The Fort Pitt incident is the best-documented case of deliberately spreading smallpox among unsuspecting populations, but it was likely not the first time such a stratagem was employed by military forces. It appears that both Captain Ecuyer and Sir Jeffrey proposed the same idea independently at about the same time, suggesting that the practice was not unusual. The spread of sickness and disease among enemy forces has a long history. The ancient Assyrians and Greeks poisoned enemy water supplies; the Greeks used the herb *hellebore* to cause violent diarrhea. In 1340, attackers used a catapult to throw dead animals over the walls of the castle of Thun L 'Eveque in Hainault (now northern France), causing such a foul, unendurable odor that the defenders negotiated a truce.

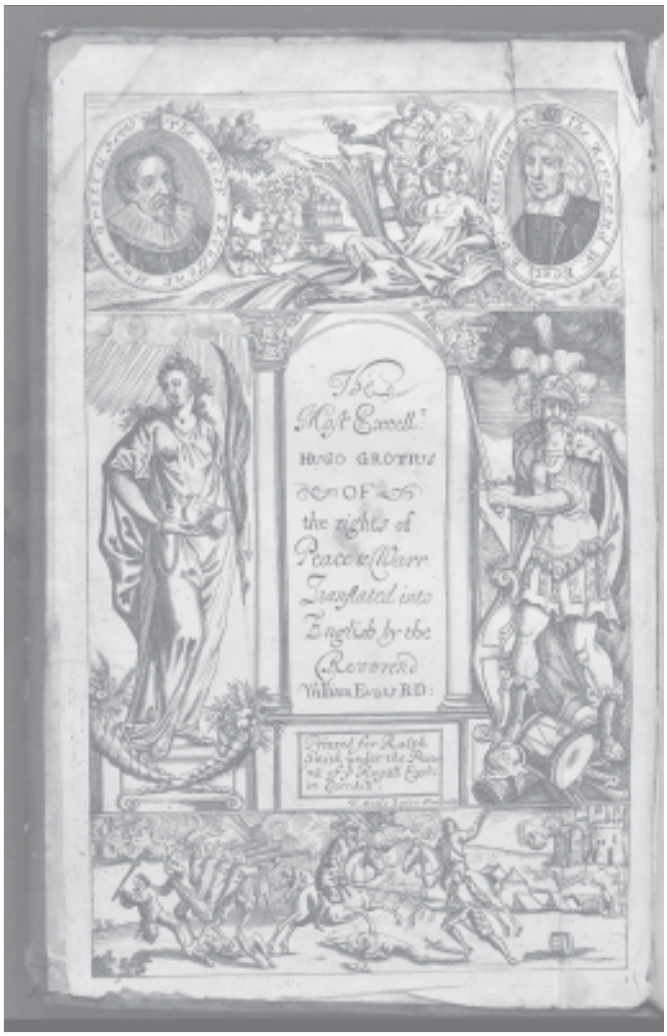


Photo courtesy of the Colonial Williamsburg Foundation

Grotius' interpretation of the accepted rights of peace and war was published in 1625.

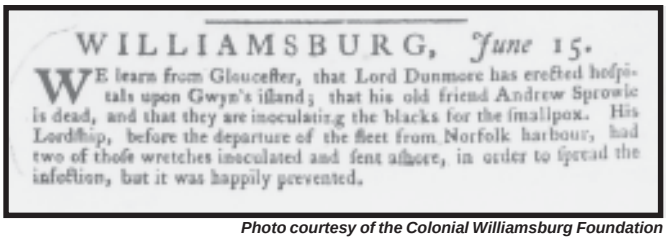
In 1623, Dr. John Pott, a physician at Jamestown, Virginia, was said to have poisoned Indians in retaliation for a Powhatan uprising in which 350 English died. On 22 May 1623, Captain William Tucker and 12 other men went to the Potomac River to secure the release of English prisoners held by Indians. To conclude the peace treaty, the English invited the chief and his men to drink a sack prepared for the occasion. But the Indians demanded that the English interpreter take the first drink, which he did from a different container. Afterward, a group of Indians, including two chiefs, were walking with the interpreter when the interpreter suddenly dropped to the ground while the English soldiers discharged a volley of shots into his Indian companions. The English estimated that about 200 Indians died of poison and 50 from gunshot wounds; however, Chief Opechancanough, the mastermind of the uprising, was not found among the dead.[3] Some Englishmen expressed reservations about using such tactics, even against the Indians, and Dr. Pott was later criticized for his actions.

By the 17th century, European military leaders were becoming conscious of ethics in warfare and rules for carrying out civilized war slowly developed. In 1625, a Dutch legal scholar, Hugo Grotius, published his codification of accepted rules of peace and war. Grotius departed from the classical view of war and did not regard the entire population of the antagonist state as the enemy. Other writers also made attempts to better define the term *enemy*, believing that a distinction between military forces and civilians needed to be established.

The next significant work on the rules of war was Emmerich de Vattel's *The Law of Nations*, published in 1758. De Vattel believed that the enemy could be deprived of his property and strength. Further, he believed that laying waste to a country and destroying the food supply prevented the ability of the enemy to subsist. De Vattel believed that such measures, used in moderation, were often necessary to attain the war objective.

Both Grotius and de Vattel thought women, children, the elderly, and the infirm should not be considered the enemy. They thought it was an improper practice to poison weapons and contaminate drinking water. Neither of the writers specifically condemned the intentional spread of disease among the enemy, most likely because, with the exception of smallpox and syphilis, it was not known how diseases were spread. What impact these writers and other philosophers made on military leaders is not known, but it appears that leaders were aware that public opinion regarded the practices as immoral and attempted to hide any evidence of the actions.

There is no decisive proof of attempts to spread disease within enemy troops during the American Revolutionary War, but there is plenty of circumstantial evidence. Almost from the beginning, Americans suspected that the British were trying to infect their army with smallpox. Just before Virginia's last royal governor, Lord John Dunmore, departed from his base at Norfolk in 1776, the *Virginia Gazette* reported that his lordship infected two slaves with smallpox and sent them ashore to spread the virus. The incident was unsuccessful.



WILLIAMSBURG, *June* 15.

WE learn from Glocester, that Lord Dunmore has erected hospitals upon Gwyn's iſland; that his old friend Andrew Sprowle is dead, and that they are inoculating the blacks for the ſmallpox. His Lordſhip, before the departure of the fleet from Norfolk harbour, had two of thoſe wretches inoculated and ſent aſhore, in order to ſpread the infection, but it was happily prevented.

Photo courtesy of the Colonial Williamsburg Foundation

The *Virginia Gazette* reported the failed smallpox plot of Lord Dunmore.

Most British troops were inoculated or were immune to the virus due to previous illness. In Europe, smallpox was endemic. Nearly everyone was exposed to the virus at an early age, so most of the adult population had protective antibodies. On the other hand, most American soldiers were susceptible to the virus. Due to the sparse population, Americans often reached adulthood without coming in contact with the smallpox virus. This placed General George Washington with a dilemma: if he ordered an inoculation of the Continental Army, most of the soldiers would be in the hospital at the same time—a certain disaster if the British learned of it. General Washington tried to get around the problem by ordering all new recruits who had not experienced the virus to be inoculated before joining the main army. Hospitals were set up at various locations to undertake the work. Even with these precautions, at one time about one-third of the army was incapacitated with the virus or undergoing inoculation.

When the American siege of Boston began in April 1775, smallpox was epidemic among civilians living there. Most British soldiers were immune to the virus, but General Washington suspected that some of the civilians leaving the city had been infected in hopes of spreading the virus in the Continental Army. In December, deserters coming to the American lines confirmed those suspicions. One week later, General Washington informed John Hancock of the enemy's malice intentions. A Boston physician later admitted to administering the virus to people leaving the city. Rumors and suspicions of British efforts to spread the virus were persistent throughout the war.

Smallpox also played a role in the failure of American forces to capture Quebec. It was rumored that General Guy Carleton, the British commander in Quebec, deliberately sent infected people to the American camp. Thomas Jefferson was convinced that the British were responsible and later wrote that he was informed by officers that the virus was sent into the Continental Army by the British commander. After the defeat at Quebec, American troops gathered at Crown Point where John Adams found deplorable conditions with disease and few, if any, provisions.

In most cases, the evidence against the British was strong but circumstantial, yet some evidence was quite explicit. When the British sent an expedition to Virginia in 1781, General Alexander Leslie revealed to General Charles Cornwallis his plan to spread disease among the Americans by sending 700 Negroes down the river with smallpox to infect the plantations. Leslie's motive was clear, but it is not known if he actually carried out his plan, though it is evident that the British had few qualms about the tactic of infecting the army and the general population. In 1777, a British officer, Robert Dunkin, published *Military Collections and Remarks*. In the book, Dunkin offered the shocking footnote suggestion of dipping arrows in the smallpox virus and shooting them at the Americans in an effort to disband the rebels.

In an article by a professor of history at George Washington University, the author points out that because the Americans were referred to as *savages*, any means was justified to exterminate them.[4] Such attitudes were probably often talked of, but were not put in writing, as evidenced by the fact that the offending footnote has since been removed from all but three copies of the book.

But what was considered an acceptable military tactic in the colonial period might not have been acceptable to later generations. Eighteenth-century warfare was conducted by relatively compact armies and with less loss and harassment to civilians. The laws of war were more concerned with the protection of noncombatants and the unnecessary suffering of military personnel. By the end of the 19th century, efforts were being made to prevent the horrors of chemical warfare.

Photo courtesy of the Colonial Williamsburg Foundation

Hospitals were set up at various locations to inoculate new recruits joining the Army.

The first Hague Peace Conference of 1899 issued a declaration prohibiting the use of poison and materials causing unnecessary suffering. The Geneva Protocol adopted in 1925 prohibited the use of asphyxiating, poisonous, or other gases; all analogous liquids, materials, and devices; and biological methods of warfare. Most countries have accepted the Geneva Protocol, though the guidelines are not always followed.

Endnotes

[1]Reginald Bacon, *The Life of Lord Fisher of Kilverstone, Admiral of the Fleet,* Doubleday, Doran, Garden City, New York, 1929, Vol. 1, pp. 120-121.

[2]Pontiac was chief of the Ottawa. Allied with the French forces during the French and Indian War (the North American branch of the Seven Years' War), Pontiac was hunted by the British after the French withdrawal. He led the Conspiracy of Pontiac in 1763.

[3]Opechancanough was chief of the Powhatan Confederacy from 1618 through 1644. He was responsible for the abduction of Captain Smith in 1608 and the massacres of 1622 and 1644.

[4]Elizabeth A. Fenn, "*Biological Warfare in Eighteenth-Century North America: Beyond Jeffrey Amherst," Journal of American History,* Vol. 86, No. 4, March 2000, pp. 1552-1580.

Mr. Gill is the consulting editor of the Colonial Williamsburg Journal and the author of more than fifty articles and five books on American history. He is the recipient of the 1998 North American Society for Oceanic History, John Lyman Book Award. Mr. Gill resides in Williamsburg, Virginia.

ACAP Services Change for Soldiers Affected by Stop Loss

By Ms. Tesia Williams

The recent implementation of the Active Army Unit Stop Loss/Stop Movement Program will affect Army Career and Alumni Program (ACAP) participation for some soldiers who are planning to leave the Army. Soldiers who are impacted by stop loss/stop movement and assigned to units selected for deployment to Iraq and Afghanistan will now receive their mandatory preseparation counseling prior to departure from their home station. The mandatory counseling will allow soldiers to receive an explanation of transition benefits and services 90 days prior to their separation date.

Many installations integrate ACAP preparation counseling into the predeployment process; however, soldiers need not wait until predeployment processing to begin receiving ACAP transition services. As time permits, soldiers should visit their local ACAP center and sign up for the transition and job assistance services available to them after the initial preseparation counseling. Early initiation of the ACAP process will increase a soldier's opportunity to receive available follow-on ACAP services and attend the Transition Assistance Program workshops prior to deployment. Additionally, ACAP offers online services that soldiers can take advantage of during downtime while they are deployed; however, to access these resources, they must have already received the preseparation counseling.

The Reserve Component unit stop-loss policy implemented in the fall of 2002 remains in effect. Army National Guard and Army Reserve personnel who have completed more than 180 days of continuous active duty are eligible for full ACAP services. ACAP provides transition and job assistance services to separating and retiring soldiers and their family members. Separating soldiers can enroll in the program up to one year prior to their separation date, and retiring soldiers can start the process as early as two years in advance of their retirement date. Soldiers can obtain additional information by visiting their local ACAP center or by going to the Web site <*www.acap.army.mil*>.

Ms. Williams is a Department of the Army public affairs specialist. She has written several articles on Army programs and advanced schooling, including the Veterans Educational Assistance Program and the Army University Access Online (eArmyU). She works in the Public Communications Office at the US Army Materiel Command, Fort Belvoir, Virginia.

Chemical Officer Training:
A Change for the Better

By Major Blaine Hedges and Captain Chuck Gutowski

Training for officers in the Chemical Corps has undergone many changes over the last few years. Changes to the Chemical Officer Basic Course (COBC) and the Chemical Captain's Career Course (CMC3), along with the incorporation of vertically integrated training (with emphasis on small-group and hands-on instruction), focus on lessons learned from recent conflicts to make officer instruction better for the student and our Army, while continuing to stay on the cutting edge of relevance.

Until recently, the training and support for COBC and CMC3 fell under two separate organizations—Alpha Company and Charlie Company of the 84th Chemical Battalion. Under the direction of the US Army Chemical School and the 3d Chemical Brigade chain of command, Charlie Company was deactivated in October 2003 and Alpha Company was designated as the team in charge of officer training. Additionally, the company commander position, traditionally filled by a major, is now a captain (as indicated on the table of distribution and allowances [TDA]). This change directs one field grade officer to supervise the execution of training for both COBC and CMC3, which facilitated several changes to training. The section given this vital mission of training company grade chemical officers is called the Officer Training Department. To accommodate the structural changes, the 84th Chemical Battalion developed new course curriculums comprised of three phases: common core, battalion/brigade chemical officer, and platoon leader/company commander. These course flows align the start and graduation dates between COBC and CMC3—a critical factor in the synchronization of vertically integrated training. With these changes, the instructor positions—formerly a training, assessing, and coaching (TAC) instructor for COBC and a small-group leader (SGL) for CMC3—have been combined. The officers filling these roles are now called *small-group instructors* and work in three-person teams. The small-group instruction team in a vertically integrated training course consists of two captains and one noncommissioned officer, who are charged with training a COBC and CMC3 iteration simultaneously.

Vertically Integrated Training

The primary focus of vertically integrated training is the combination of COBC and CMC3 training events, where captains fill their future roles as company commanders and brigade chemical officers and lieutenants fill their corresponding platoon leader and battalion chemical officer positions. Under the guidance and supervision of small-group instructors and other permanent-party cadre, captains begin their training in the art of mentoring, teaching, and coaching lieutenants, while lieutenants begin to build trust, confidence, and working relationships with their future bosses. The Chemical School has executed one pilot course and is currently in the certification phase with a second course. The complete implementation of vertically integrated training will begin in Fiscal Year (FY) 2005.

There are currently nine vertically integrated training events: physical training, leader development (counseling), team building, the military decision-making process (Capstone), training management, change of command (responsibility) inventory, obscuration, flame field expedients, and a 10-day field training exercise (FTX) (Capstone). It would be too difficult and lengthy to describe all of the combined events, but here is an example using an FTX:

The CMC3 students receive a battalion operation order (OPORD) four weeks prior to execution and, in return, produce a company OPORD. The small-group instructors choose one CMC3 student to assume the duties of company commander. That individual issues the order to the COBC lieutenants three weeks prior to tactically moving to the field. The lieutenants then produce a platoon OPORD under the direction of the remaining CMC3 students. During this process, the CMC3 students are running tactical exercises without troops (focused on basic soldier tasks and drills) on the ground they will soon occupy. When in the field, there are three company commander positions and several platoon leader positions that students fill at all times. The CMC3 students who are not currently in command positions observe and evaluate the lieutenants in graded positions using evaluation sheets from Army training and evaluation program (ARTEP) manuals. During the course of the FTX, every student rotates through at least one leadership position.

Small-Group Instruction

US Army Training and Doctrine Command (TRADOC) regulations state that in order to facilitate a small-group environment, there should be a ratio of no more than 16 students per instructor. Decreasing the size of groups increases the amount of "face time" each student receives with the instructor. This maximizes the students' opportunities for hands-on training, while allowing the instructors to better assess the individual strengths and weaknesses of their students. With seven COBC classes each year, averaging 40 to 50 students per class, it is impossible for permanent-party personnel to field these requirements without help. The scenario

Students work in a small-group environment.

Students perform hands-on training during the radiation portion of the battalion staff officer phase.

for vertically integrated training facilitates a level of training previously unattainable. Besides the changes already mentioned, the following changes have been incorporated into chemical officer training over the last two years:

COBC
Emphasis has been placed on hands-on practical exercises (as opposed to slide show presentations).
All lesson plans have been rewritten.
Hazardous-material (HAZMAT) training (full-range chemistry [toxic industrial materials and chemicals], sensitive-site exploitation, and HAZMAT awareness and operations) has been incorporated into the curriculum.
Scenarios have been rewritten to reflect updates in the contemporary operational environment.
The FTX focus has been expanded to include basic soldier skills (Warrior Ethos).
The M16 weapon qualification now includes night fire and nuclear, biological, and chemical (NBC) fire.
Familiarization with the joint warning and reporting network has been incorporated into the curriculum.
The time spent on the unit status report has been increased.
The Web page <*www.wood.army.mil/84chem/COBC/ACO.htm*> has been expanded to provide tools for platoon leaders and battalion chemical officers in the field. A survey is also provided for students to provide feedback so that we may continuously update the course materials. Tools not authorized due to disclosure issues are posted on the Army Knowledge Online Web site *<www.us.army./portal/portal_home.jhtml>.*

CMC3
Combined Arms and Services Staff School (CAS3) critical tasks have been incorporated in the FY 05 course flow. Since Fort Leavenworth no longer conducts the CAS3 course, all critical tasks that were not redundant have been integrated into the CMC3 curriculum.
The master level concept has been incorporated. Incoming students are responsible for knowing the information taught in COBC. Redundant information between the courses has been reduced to allow time for more technical chemical and biological instruction.
An entry level knowledge requirement has been implemented. Precourse examinations now ensure that students are prepared to further their education. Students not displaying proficiency of previously taught subjects are required to complete retraining exercises to refresh applicable skills before receiving new and more advanced materials.
Force XXI Battle Command–Brigade and Below (FBCB2) familiarization training on actual systems has been incorporated into the course curriculum.
The Maneuver Control System (MCS)–Light (the next phase of computer-based familiarization training) is projected for course integration in FY 05.
The Pea Ridge staff ride has been incorporated into the course curriculum. The overnight staff ride, which builds on the knowledge gained from the COBC staff ride to Wilson's Creek Battlefield, focuses on the campaign for control of the state of Missouri during the Civil War.
All lesson plans have been rewritten.
The Web page <*www.wood.army.mil/84chem/CMC3_New/welcome_page.htm*> has been expanded to include tools for company commanders and brigade officers. This page also provides a survey link for course feedback, and comments are always welcome.

Conclusion

The improvements to our chemical courses ensure that training remains on the cutting edge, providing the best training and instruction for the future leaders of our Chemical Corps and Army. Remember, your input is vital for us to remain pertinent in the current and future force structures. If you see something in the field that you believe we should be teaching or can improve on, or if you have questions, please feel free to contact the Officer Training Department at (573) 596-0131, extension 37713. Our mission is to prepare our company grade officers for their future missions.

Major Hedges is Chief of the Officer Training Department at the US Army Chemical School at Fort Leonard Wood, Missouri. He is the former commander of Alpha Company, 84th Chemical Battalion, where he was responsible for the plans, coordination, and resource requirements of COBC (prior to the implementation of the Officer Training Department). Major Hedges also served as a small-group instructor for CMC3.

Captain Gutowski is a small-group instructor at the US Army Chemical School. He has assisted in the planning and execution of vertically integrated training since its conception. He has instructed COBC and CMC3 since January 2003.

Computer Simulation of Decontamination Operations

By Captain Ian McCulloh

With potential deployments into areas with a likely threat of chemical warfare, what can a chemical company commander do to improve decontamination operations? How should he augment his decontamination line? Army doctrine provides a guide under ideal conditions, but a decontamination unit in a real-world situation will receive different resources to support the decontamination effort. The efficient use of these resources can greatly increase the speed of a decontamination operation and quickly return units to the field for future combat operations. Simulation scenarios are used to model queues, manpower requirements, and equipment in decontamination operations. An experimental approach is used in conjunction with the simulation to determine the optimum space and manpower requirements. In the same manner, the system can be evaluated for different levels of available resources, such as augmentation with additional personnel.

The essential performance measure of any study of military decontamination operations is to minimize the time to process (decontaminate) a unit. A unit waiting to be decontaminated is vulnerable and is not a combat multiplier. The speed at which it can return to the fight is determined by how quickly decontamination operations are performed. There are three more factors that significantly impact the overall time objective:

- The wait time in the decontamination line.
- The ideal space for queues.
- Optimally allocated manpower resources.

Computer simulation is used to mathematically integrate tactical scenarios with actual decontamination times for each step in the decontamination process. The steps in the process are statistically modeled from actual tests conducted by the US Army Test and Evaluation Command (TECOM). This simulation scenario does not attempt to predict untested human processes. Instead, the known human processes are rearranged from a planner's perspective to improve the overall decontamination process. This approach has been widely implemented in civilian industry with great success, but the simulation study is limited in that tactics, techniques, and procedures (TTP) must be proposed before they can be evaluated. Validation tests have shown that simulation models accurately evaluate new TTP.

System and Simulation Specifications

Simulation models can address scenarios under different decontamination site resource constraints, allowing chemical doctrine writers to better develop TTP. These scenarios may address the—

- Likely bottleneck locations.
- Normal queue space.
- Average time for a military unit to process through a decontamination line.
- Average time spent waiting in the decontamination line.

The different decontamination site resource allocations are evaluated based on the statistics gained from the scenario. The scenario evaluated for this model includes—

- Two doctrinal decontamination lines (according to Chapter 4 of Field Manual 3-5, *NBC Decontamination*).
  - An optimum M12A1 power-driven decontamination apparatus (PDDA) detailed equipment decontamination (DED) setup.
  - An alternate M12A1 PDDA DED setup.
- Several levels of personnel augmentation to evaluate the effects on the decontamination line. (The data gained from this scenario is especially useful for justifying personnel augmentations.)

System Description and Modeling Approach

The main model consists of four sections: unit arrival, detailed troop decontamination (DTD), DED, and unit departure. There are two sources of contaminated units arriving at the decontamination site: dismounted units requiring only DTD processing and combat and support vehicles with crews requiring both DTD and DED processing.

The DTD is a simple doctrinal model that contains eight stations. In this simulation, only seven are modeled. Station 7, mask cleaning, is not performed by soldiers processing through the decontamination area and, therefore, does not affect the planning times. The seven remaining stations are—

- Station 1: Individual-gear decontamination.
- Station 2: Overboot and hood decontamination.
- Station 3: Overgarment removal.
- Station 4: Overboot and glove removal.
- Station 5: Residual-contamination monitoring.
- Station 6: Mask removal.
- Station 8: Reissue point.

The DED is more complex to model due to the driver change at Station 3. The basic model follows Army doctrine:

- Station 1: Initial wash.
- Station 2: Decontaminating Solution Number 2 (DS2) application.
- Station 3: Wait/interior decontamination.
- Station 4: Rinse.
- Station 5: Check.

Station 3 of the DED requires the driver to dismount his vehicle and proceed to the DTD. After 30 minutes, a clean (decontaminated) driver drives the vehicle through the remainder of the DED. The driver change and 30-minute wait at Station 3 is modeled based on the arrival of an available licensed driver. When a driver exits the DTD, he enters a queue, waits to occupy another vehicle at Station 3, and finishes the decontamination process according to Army doctrine. The number of vehicles in the model is based on an average percentage of vehicles in a real-world scenario. As units depart the decontamination site, statistics of interest are tallied for analysis and comparison.

Model Input and Output

There are several key sources of model input. The contaminated unit is the first source of arrival information. This data is obtained from the National Training Center (NTC) at Fort Irwin, California. Predicting unit arrival information depends heavily on the extent of chemical contamination. Real-world data of chemical-weapons exposure was not available for this study. NTC routinely simulates chemical-weapons attacks in their training exercises, and this is the best available source of arrival data. But the NTC arrival data is slightly artificial, as all rotations of contaminated vehicles meet at a staging area before moving to the decontamination site. This is not the optimal method of routing vehicles through a decontamination line, but the model produces data with vehicles entering the site following a uniform distribution with a single arrival time.

The second source of model input is the actual process times for the DED stations. The TECOM provided data from field tests using chemical-agent simulants and the M12A1 PDDA. The US Army Chemical School provided information on tests conducted during the 1960s; this information is the basis for current chemical doctrine. When data were compared, the more recent tests resulted in faster processing times at the DS2 application station. The cause for this has not been determined, but this study uses the more recent data for evaluation. The stations that used an M12A1 PDDA followed a triangular statistical distribution. This makes intuitive sense, based on the similarity of the processes. Station 2 followed a lognormal distribution, and Station 5 followed the Weibull analysis distribution.

The third set of model input is the DTD. An actual chemical unit was tasked to conduct a DTD strictly by the manual. The average process times were recorded for each station. Detail in this area is not extremely important and is difficult to obtain due to recent world events. The key outputs for evaluation were the—

- Time required to decontaminate a unit.
- Average time a unit spends waiting in the system.
- Manpower for operations.
- Space required for each queue.
- Potential bottleneck locations.

Model Formulation

This section details the logic used to formulate the simulation model. The concept is essentially two models in one. *Figure 1* shows the logic diagram for the DTD line submodel. The simulation generates soldiers to arrive from a random exponential distribution. The soldiers then process through the seven stations of the eight-station decontamination line (Station 7 is not included in this simulation). The diamond-shaped decision box at the end sends a clean driver to Station 3 of the DED line to take the vehicle through the rest of the DED. The remaining clean soldiers depart the system. Stations 1 and 5 seize a resource. At Station 1, equipment is required to scrub individual equipment. At Station 5, medical personnel are required to check personnel for symptoms of contamination. All of the process times are set as constants. The purpose of this section of the model is

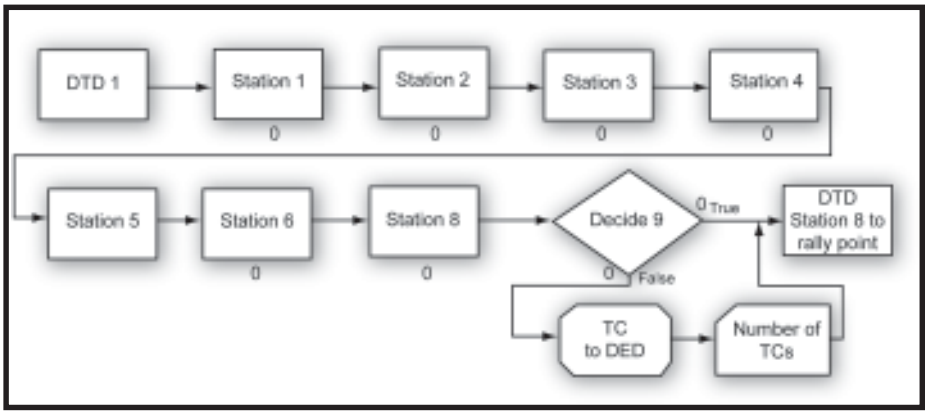


Figure 1. Logic diagram for the DTD line submodel

only to simulate the driver exchange in the DED. The decision module near the end of the logic diagram routes licensed drivers to an assignment module (octagonal box) that increments a global variable modeling a driver waiting in a queue to move a finished vehicle at Station 3 of the DED through the rest of the decontamination line. The record module (dog-eared box) tallies the number of licensed drivers that move through this logic. *Figure 2* shows the logic diagram for the DED.

The simulation then generates vehicles to arrive from a random exponential distribution to process through the DED. The station and route modules are identified on the screen in red. These modules enable the simulation to model the transfer time between decontamination stations. The actual stations of the DED are identified in yellow squares on the screen. There are two assignment modules on either side of Station 3. These assignment modules simulate the driver exchange. The first assignment module increments a global variable that allows a dirty (contaminated) driver to be created for the DTD. The wait station remains on hold for at least 30 minutes or until a clean, licensed driver is ready to drive the vehicle through the remainder of the decontamination line (if longer than 30 minutes). The second assignment module then resets the global variable that sends a clean driver. The diamond-shaped decision box at the end sends vehicles that are still dirty back to Station 2 along the dirty recycle route based on a set probability. The remaining clean vehicles depart the system.

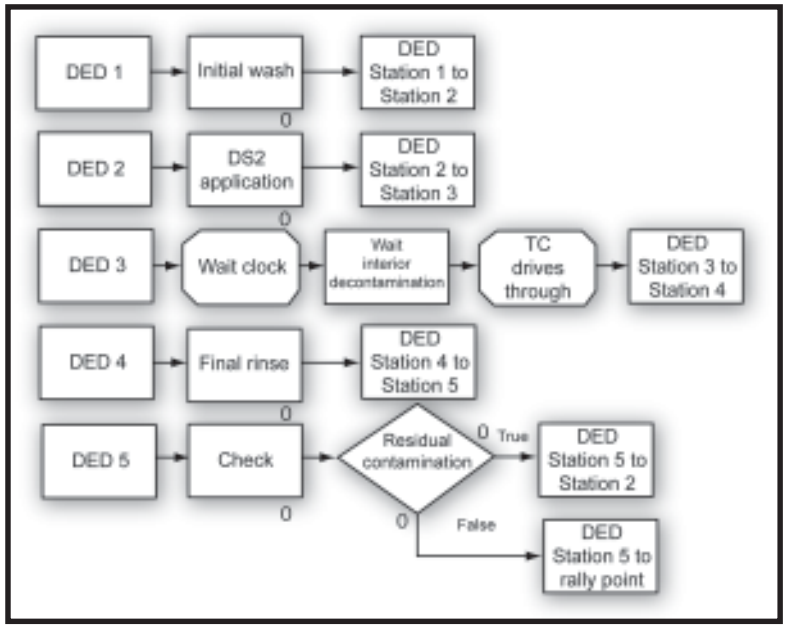


Figure 2. Logic diagram for the DED

Figure 3, page 18, shows the arrival of soldiers at the DTD. The first module creates dismounted soldiers to enter the DTD. More soldiers will slow down the DTD and impact the ability of the dirty drivers to process vehicles through the DED. The second module creates a dirty driver to go through the DTD. The third module creates crew members on various vehicle systems to process through the DTD. *Figure 4*, page 18, shows the arrival of vehicles at the DED. Three types of vehicles were modeled: tanks; medium trucks; and high-mobility, multipurpose wheeled vehicles (HMMWVs). The type of vehicle affects the process times at various stations throughout the DED. *Figure 5*, page 18, shows the departure of entities from the system. The simulation will organize chemical personnel and augmentees in the areas where they are working. For example, the DED 2 set contains all of the personnel who are working at Station 2 of the DED. Patient decontamination, security, and a clean bypass route are not considered in this simulation.

Verification and Validation

Model verification was conducted by observing global variables at different points in the simulation, as well as observing the queuing statistics for each station of the system. The data used to create the statistical distributions in the simulation were not used to validate the model. Validation was conducted against established Army doctrine for process times (according to FM 3-5). The simulation model was validated as being faster than the established standards. This is due to the test data for DED Station 2 being faster than the established standard (12 minutes versus 30 minutes). All other process times were within the standard. When the difference in the standard and DED Station 2 was added to the

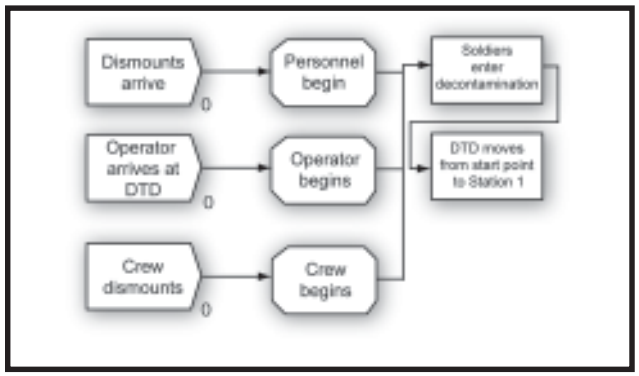


Figure 3. Arrival of soldiers at the DTD

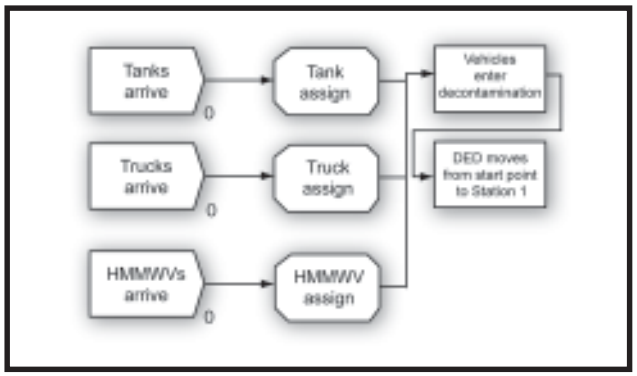


Figure 4. Arrival of vehicles at the DED

average process time for vehicles, the total time met the standard; therefore, this model is valid.

Experiment and Analysis

One benefit of conducting model simulations is the control of normally uncontrollable factors. As a result, analyzing the cause and effect of variability in a system is much simpler. Cause and effect relating to measurement, environment, and material are controlled and are not considered in this simulation. Furthermore, the choice of the decontamination apparatus is controlled and not considered.

Two areas that are considered for experimentation and analysis are manpower and methods. For manpower, there are many factors that influence the performance at the decontamination site. This model only addresses the augmentees. The method also impacts the performance of the decontamination procedures. This model addresses the standard two-lane "optimum layout" operation (according to FM 3-5). In some cases, as the required augmentees are varied, certain stations may behave like a one-lane "alternate layout" operation, but the equipment and resources are always present for a two-lane operation.

Experiment and Factors

Five experimental factors are considered when optimizing the decontamination site. Three of those factors are the augmentees provided at Stations 1, 2, and 4 of the DED. Two levels of factors are set for experimentation. The high level is the number of augmentees required under the doctrinal optimum layout. The low level is the number of augmentees required under the alternate layout. The other two experimental factors relate to the speed at which drivers were processed through the DTD. The first of these factors is "truck commander (TC) priority." The high-level TC priority allows drivers to process vehicles through the DTD ahead of other personnel. A low-level priority allows drivers to process vehicles in the order in which they arrive at the DTD. The second factor is DTD speed. The low-level priority of this factor is the normal DTD speed. The high-level priority is a theoretical setting where the DTD takes no time. Four responses to the experiments are measured. The first response is the total time a vehicle spends at the decontamination site, the second response is the time the vehicle spends waiting, and the third and fourth responses are models for dispersion of the first two responses. The models for dispersion are based on the range between the average maximum values and the average minimum values taken more than 100 experimental runs.

Experiment and Design

The simulation experiment follows a 2^{5-1} resolution-five design. With a resolution-five design, all main effects and two factor interactions are clear of any confusion or aliases. Two center points are used to detect any curvature in the model. Each design point is duplicated 100 times and averaged. This is equivalent to running 1,800 decontamination operations.

Statistical Analysis

The half normal plot in *Figure 6* shows that the TC priority in the decontamination line (B) and the DTD speed (E) are the most significant factors affecting the total time a unit spends at the decontamination site. The graph of the two factor interactions (BE) in *Figure 7* shows

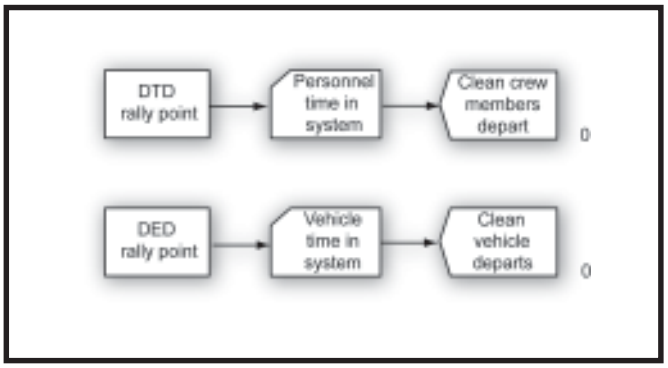


Figure 5. Departure of entities from the system

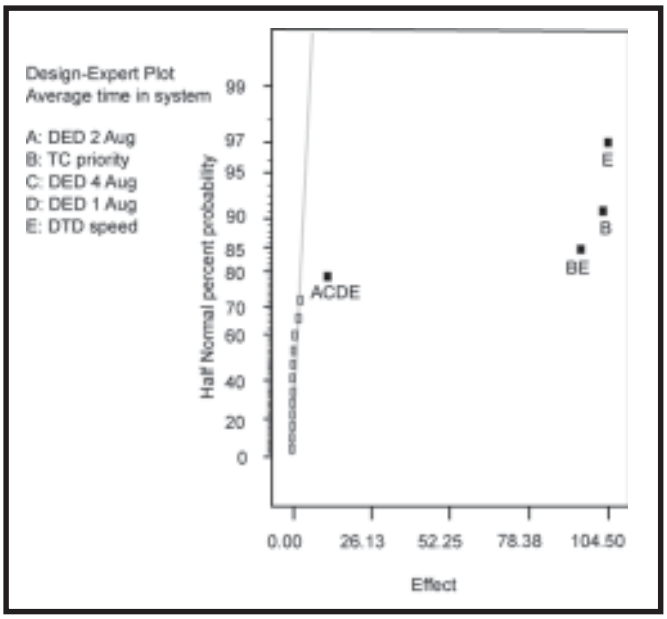


Figure 6. Half normal plot

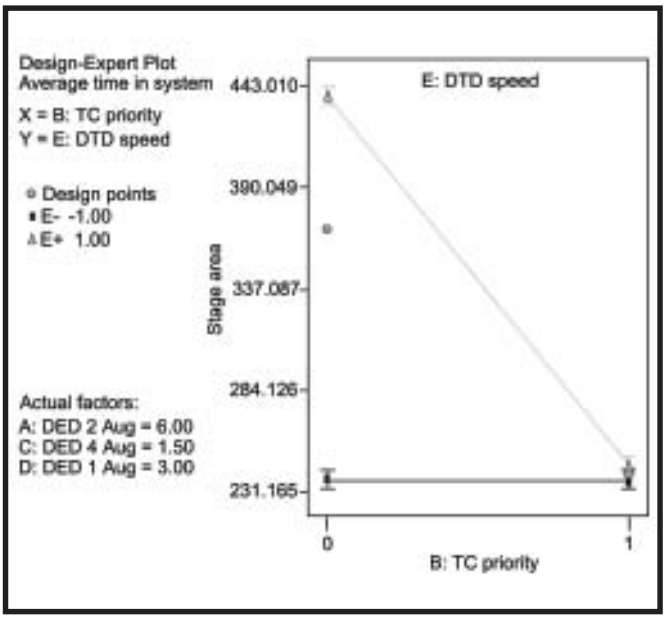


Figure 7. Interaction graph

intuitively obvious results. If the DTD is running slowly, then giving the TC priority in the DTD significantly shortens the time spent in the system. When the DTD takes no time at all, then giving the TC priority has no effect on the time. The analysis of the time spent waiting at the decontamination site yields the same results as the total time in the system. Furthermore, the dispersion models for the time in the system and the waiting time shows that faster DTD processing leads to less variability in the overall system.

Conclusion

The most important requirement to improve doctrinal decontamination operations and reduce the time it takes to decontaminate a unit is to have clean drivers available to drive vehicles from Station 3 of the DED through the rest of the decontamination site. This objective can be met in several ways:

- Prioritize licensed operators in the DTD, serving them ahead of other personnel. In practice, this can be very difficult. In mission-oriented protective posture (MOPP), a soldier will not have access to his military license to prove that he should be prioritized. Many soldiers may claim to have a license to get out of MOPP faster. The careful identification of drivers and TCs at the decontamination site entry point may solve this problem.
- Instruct the contaminated unit to provide additional qualified operators to move the vehicles through the DED after Station 3. This may be resource-intensive for the contaminated unit.
- Instruct conventional units to train multiple DTD teams and establish a multiple-lane DTD to perform decontamination procedures in a shorter amount of time. This would enable more personnel to be decontaminated in the same amount of time. This may also be resource-intensive for the contaminated unit.
- Use a faster method to decontaminate personnel. When used by trained personnel, the Expedient Personnel Decontamination System (EPDS) can fully decontaminate a soldier in less than 2 minutes. Unfortunately, the training costs—which involve cutting the MOPP suit with a handsaw—are high.

Additionally, consider the queue space. Station 3 of the DED must have sufficient parking space for at least three tanks, five 5-ton trucks, and five HMMWVs.

For additional information on using this simulation to evaluate your unit TTP, contact Captain McCulloh at the US Military Academy <*ian.mcculloh@us.army.mil*>.

Captain McCulloh is an instructor in the Math Department at the US Military Academy. He holds master's degrees in industrial engineering and applied statistics from Florida State University. Captain McCulloh previously commanded the 11th Chemical Company and the Chemical Decontamination Detachment, 1st Special Forces Group (Airborne), Fort Lewis, Washington.

Submitting an Article to the *Army Chemical Review*

Articles may range from 2,000 to 4,000 words. Send a paper copy along with an electronic copy in Microsoft Word on a 3 1/2-inch or compact disk to *Army Chemical Review,* 401 MANSCEN Loop, Suite 1029, Fort Leonard Word, Missouri 65473-8926 or e-mail <*acr@wood.army.mil*> with "Submit an Article" in the subject line.

Contributors are encouraged to include black-and-white or color photographs, artwork, and/or line diagrams that illustrate information in the article. Include captions for any photographs submitted. If possible, include photographs of soldiers performing their missions. Hard-copy photographs are preferred, but we will accept digital images in TIF or JPG format originally saved at a resolution no lower than 200 dpi. Please do not include them in the text. If you use PowerPoint, save each illustration as a separate file and avoid excessive use of color and shading in graphics and slides. Please do not send photographs embedded in PowerPoint or Microsoft Word documents.

Articles should come from contributors with firsthand experience of the subject being presented. Articles should be concise, straightforward, and in the active voice. Any article containing information or quotations not referenced in the text should carry appropriate endnotes.

Include your full name, rank, current unit, and job title. Also include a list of your past assignments, experience, and education; your mailing address; a fax number; and commercial daytime telephone number.

Include a statement from your local security office stating that the information contained in the article is unclassified, nonsensitive, and releasable to the public.

All submissions are subject to editing.

US Army Chemical School Web Site

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A Tribute to Major General John J. Hayes

By Mr. Al Mauroni

Major General John J. Hayes died of cardiorespiratory failure on 6 February 2004 at his home in Annandale, Virginia. He leaves behind his wife Mary and five children, two of whom are retired Army colonels. Major General Hayes was a Chemical Corps officer from 1937 to 1972, serving during an era of chemical and biological (CB) weapons development and testing from World War II through the Cold War. While CB weapons are viewed as controversial today, during this era of heightened anxiety, they represented a keystone of the defense policy designed to protect the armed forces from adversarial use.

Major General Hayes began his military career in 1934 as a private in Company D, 138th Infantry Regiment, Missouri Army National Guard. He graduated from Washington University in St. Louis, Missouri, in 1935 with a bachelor's degree in chemical engineering and went on to pursue his master's and doctorate degrees in public welfare administration from Catholic University of America in Washington, D.C. He was originally commissioned as a second lieutenant in the Coast Artillery Corps in 1935, but transferred to the Chemical Warfare Service reserve in 1937, where he served on an extended tour of active duty service. In 1942, following the beginning of World War II, the then Major Hayes was transferred to England for duty with the Services of Supply headquarters, European Theater of Operations. In November 1942, following the invasion of North Africa by Allied Forces, he was assigned to II Corps as the Assistant Chief of Staff, G4 (Logistics) (G4) for the Mediterranean Base Section. In May 1944, he was promoted to lieutenant colonel (US Army Reserve), detailed to the Free French Forces as a combat liaison officer, and later transferred to the G4 position in the 1st French Corps in Corsica and Elba. He participated in the invasion of southern France with French Armee "B" and remained with the 1st French army until the end of the war. He celebrated the end of the war with a family in Dijon, toasting the event with bottles of champagne that had been buried in the backyard—the friendship with the family would last for decades. Major General Hayes returned to the United States in May 1945 and was appointed Commander of the Indianapolis Chemical Warfare Depot. In all, he participated in five campaigns (Corsica-Elba, Rome-Arno, southern France, Rhineland, and Central Europe).

Between December 1945 and October 1949, Major General Hayes worked in the Office of the Chief Chemical Officer and was promoted to colonel in 1946. From 1949 to 1952, he resided as the first comptroller of the Chemical Corps, where he worked on the concept of using industrial funds to support the work at Army depots and arsenals. This concept allowed depots and arsenals to operate in a businesslike manner (breaking even, rather than generating profits or losses). The use of industrial funds allowed the Army to optimize productivity and operational efficiencies at these sites.

In March 1952, the Hayes family moved to Arkansas, where Major General Hayes assumed command of Pine Bluff Arsenal. At the time, Pine Bluff Arsenal was the largest industrial installation of the Chemical Corps. Hayes oversaw a number of classified projects, including the completion of the Army

antipersonnel biological warfare production plant and the movement of chemical weapons to Okinawa. During this time, he was promoted to colonel (US Army), one of few regular Army colonels in the Chemical Corps.

In October 1953, Major General Hayes was assigned to the field office of the Chief Chemical Officer at Fort Detrick, Maryland; in January 1954, he was appointed Assistant Chief Chemical Officer for Biological Warfare; and in February 1956, he was appointed Commander of the Biological Warfare Laboratories. Between March 1954 and June 1957, he also served as Commander of Fort Detrick.[1] During this time, the labs were very busy researching biological warfare agents and defenses against their use. Hayes oversaw the production and testing of wheat stem rust and rye stem rust as anticrop agents. While these agents were never employed, the studies produced a better understanding of the effectiveness of the agents should the method ever be employed against the United States. Because most of the work conducted at Fort Detrick was classified, there are very few public records of what occurred. Mrs. Hayes recalls that her husband received vaccinations for every biological warfare agent being tested so that he could personally inspect the work conducted at every laboratory on the post.

After graduating from the Army War College at Carlisle Barracks, Pennsylvania, Major General Hayes was asked to stay for another year as a faculty member—a very rare request. After leaving the Army War College in August 1959, he was appointed as the Chemical Officer for Headquarters, US Army Europe, where he developed war plans and coordinated with the North Atlantic Treaty Organization (NATO) and the Central Army Group. In September 1961, Hayes returned to Washington, D.C., and assumed the position of Deputy Commander, US Army Chemical Corps Research and Development Command. In 1962, the Army reorganized, reshaping its technical services and eliminating the Office of the Chief Chemical Officer. Major General Hayes was transferred to the Army Chemical Center at Edgewood Arsenal, Maryland, to assume duties as Deputy Commander of the US Army Chemical-Biological-Radiological Agency.[2]

In addition to working on the development and testing of new chemical-agent munitions, Edgewood Arsenal was developing automatic chemical-agent detectors and collective-protection systems during this time period. The M17 mask (type-classified in 1959) was being fielded to Army units, and Edgewood Arsenal was releasing the M24 aviator mask (type-classified in 1962) and the M25A1 protective mask (type-classified in 1963). New efforts had just begun on the M256 chemical-agent detector kit, a simpler detector kit than the M18A1 chemical-agent detector kit (type-classified in 1964). Edgewood Arsenal released the M12 Power-Driven Decontamination Apparatus in 1962 to utilize Decontaminating Solution Number 2 (DS2).

On 1 August 1964, Hayes was promoted to brigadier general and transferred to the US Army Advisory Group, Korea, as a Senior Logistics Advisor to the Republic of Korea (ROK) army. He and his family stayed in Seoul, where he supported the ROK army through the procurement and distribution of equipment to the two ROK divisions deploying to support US forces in Vietnam. Major General Hayes remained very concerned about the welfare of "his" soldiers in Vietnam, going so far as to procure kimchi pots and other ethnic cooking materials that were not regular supply items. The ROK soldiers never forgot his efforts. Thirty-three years later, the veterans threw a formal celebration at which they recollected the support provided to their divisions.

In June 1966, General Hayes was appointed Commander of the Deseret Test Center. During this time, he oversaw the execution of two Project 112 exercises: the testing of riot control agent munition dispersion patterns in Panama and biological warfare simulant releases in the Pacific. However, he would not stay long. Hayes was promoted to major general in November 1966 and was briefly assigned as the Director of Procurement and Production. He was later assigned as the project manager for the T53 and T55 turbine aircraft engines—an unusual assignment for a chemical officer, but there were no pilots available for the acquisition position. During this assignment, Major General Hayes attended a special rotary-wing training course at the Army Aviation School in Fort Rucker, Alabama, to obtain flight-qualified status. He quickly fell in love with flying and spent much of his free time flying helicopters around the Washington, D.C., area.

In late 1967, Major General Hayes was appointed Director of Supply, US Army Materiel Command (AMC) and, in July 1968, Director of Material Requirements. In October 1968, he was appointed Director for Supply and Logistics for the Assistant Deputy Chief of Staff for Logistics. In February 1970, Major General Hayes received his final and most demanding assignment—the Assistant Deputy Chief of Staff for Logistics.

In July 1969, 23 American soldiers repainting depot buildings in Okinawa were hospitalized for exposure to low levels of sarin leaking from munitions in a nearby bunker. While all soldiers were back on duty within 24 hours, the resulting media blitz revealed the presence of overseas US chemical-weapons stockpiles. The Japanese government demanded that the United States remove the agents. This was a particularly delicate time, as the US government was discussing the potential return of Okinawa to the Japanese government. The Japanese government had already called for assurance that their policy of rejecting the presence of nuclear weapons would apply to any US forces in Okinawa. In November 1969, President Nixon announced the agreement between the two nations to transfer the island to the Japanese government. After political considerations to move the chemical munitions to Alaska and Oregon were rejected, the Army moved the weapons to the remote location of Johnston Island (southwest of Honolulu, Hawaii). This movement was called Operation Red Hat, as identified by the red, baseball cap-shaped pin worn by each member.

To execute Operation Red Hat, Major General Hayes assumed command of the 2d Logistical Command in August 1970. The operation required the safe movement of more than 12,500 tons of chemical munitions across the Pacific Ocean. Prior to moving the munitions, Major General Hayes and his staff planned the construction of storage facilities on Johnston Island, identified the routes of travel for ships, trained personnel (using the Army's Technical Escort Unit as trainers), and coordinated between the military services and numerous government agencies, while simultaneously directing Army logistics operations in Southeast Asia. The commander and deputy commander of AMC came to inspect the effort, as well as General William Westmoreland, the then Chief of Staff of the Army.

As the weapons were transferred from the depot to the ships by trucks, Major General Hayes inspected the operations from overhead in a UH-1 helicopter. The operation was similar to chemical-weapons transportation and disposal operations of today. The Okinawa natives welcomed, but feared, the weapons movement. At the same time, the natives were protesting the low salaries paid to them by the American government, to the point of obstructing the trucks transporting the munitions to the ships. They carried large bowls of rice behind the trucks and threw rice in the tracks to "dispel evil spirits."

Between January and September 1971, six separate movements of munitions resulted in the successful and uneventful transfer of all munitions from Okinawa to Johnston Island. The last ship leaving the docks carried a sign on its stern, with a picture of Porky Pig and the words "Th-th-th-that's all, folks!" Hayes overcame adverse public opinion and heated national opposition over the movement, successfully transporting all chemical munitions without any safety incidents or danger to the public. For his efforts, Major General Hayes received the Distinguished Service Medal. Following the deactivation of the 2d Logistics Command in May 1972, he was assigned to the Office of the Chief of Staff of the Army until his formal retirement. His last act on Okinawa as the ranking military officer, was to formally turn over the "keys to the island" to the Japanese government on 15 May 1972. In August of that same year, Major General Hayes retired with 37 years of service to his country.

Aerial view of Johnston Island

Major General Hayes was inducted into the Ordnance Corps Hall of Fame in 1977 (when the Chemical School was under Ordnance Center command) and the Chemical Corps Hall of Fame in 1989. His career, spanning the Chemical Corps surge of growth during World War II and through

Major General Hayes (far left) escorting General Westmoreland (left of center) on a tour of Okinawa

the Cold War, stands as a testimony to the heady days when the Chemical Corps supplied the US Army with an offensive CB warfare capability and robust CB defensive capability. His devotion to service represents great credit to him, the Chemical Corps, the US Army, and the nation.

Endnotes

[1]Prior to 1972, the commanders at Fort Detrick were primarily from the Chemical Corps. After 1972, the Medical Corps assumed command of the post.

[2]The US Army Chemical-Biological-Radiological Agency was redesignated the Edgewood Arsenal complex in May 1963.

Mr. Mauroni is a senior policy analyst with Innovative Emergency Management, Incorporated, currently working on the Army Chemical Demilitarization Program. He is a former US Army chemical officer who has worked on Department of Defense CB defense issues for more than 18 years. Mr. Mauroni has published numerous articles and four books on CB warfare. His most recent book is Chemical and Biological Warfare: A Reference Handbook, by ABC-Clio, 2003.

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Converting M49 General Aviator Protective Masks to M48 Apache Aviator Masks

By Mr. Lowry J. Brooks Jr. and Lieutenant Colonel Robert Walk

The design engineers said that it would be impossible to convert an M49 facepiece to an M48 facepiece without destroying the mask. But they were wrong. Today, Pine Bluff Arsenal (PBA) employees are converting facepieces and saving money for the American taxpayer.

The M48 Apache aviator mask program was implemented at PBA to convert stored M43A1 Type I Apache aviator masks into M48 Apache aviator masks. At the same time, a program was implemented to convert stored M43A1 Type II general aviator masks to M49s. The major difference between the two masks was the right eye lens. The M43A1 Type I and M48 masks had a notched right eye lens for use with the AH-64 Apache signature Integrated Helmet and Display Sighting System (IHADSS). Non-Apache aviators don't need this feature, so the lens was rounded in the M43A1 Type II and M49. Both masks were adopted as standard in 1996. The M45 general aviator mask, which would later replace the M49 due to the significant cost savings, was also adopted at about the same time. But the elimination of the M49 mask program left a large quantity of M43A1 Type II masks with no foreseeable use by the Army. In 2001, the production of M48 masks was ready to begin. Unfortunately, the requirement exceeded the number of available M43A1 Type I and M48 masks. The original production line for the M48 had closed in 1994, so restarting the line to make a few masks was cost-prohibitive. Apache aviator masks are more expensive and more labor-intensive to manufacture than other Army protective masks. The only available answer was to convert M43A1 Type II masks to Type I masks.

Notched right eye lens on the Apache aviator mask

Converting the M43A1 Type II masks was the solution, but there were technological hurdles to overcome. First, the masks were assembled with the eye lenses permanently installed and the lenses could not be removed without destroying the mask. Second, there were no replacement notched eye lenses available for installation. Third, there was no approved procedure to perform this alteration. And lastly, there was little funding available for the project.

Mask interface with AH-64 Apache IHADSS

So work began to find a method of converting Type II masks to Type I masks. The M48 team recognized a possible avenue for funding through the Army Operation and Support Cost Reduction Program, but the first proposal was rejected as technologically infeasible. However, through persistence, the M48 team succeeded in obtaining a small grant to conduct engineering research on the removal of the eye lenses.

But the conversion method was meticulous and time-consuming, requiring that the cross-linked polyurethane adhesive holding the lens in place be removed without damaging the rubber facepiece. The remaining adhesive in the eye lens socket was then carefully cleaned out, the eye lens socket was lightly abraded, and an adhesion promoter was applied. The new notched eye lens was then bonded in place inside and outside the mask, and the modified mask was cured and checked for leakage. An additional advantage to this process was the repair of M48 facepieces with scratched eye lenses, a defect that would normally classify the mask as unserviceable.

The M48 team conducted trials to determine the procedure to obtain optimal bonding of the new eye lens

A PBA worker uses a pneumatic adhesive dispenser to bond the new eye lens.

to the facepiece and the necessary testing required to prove that the eye lens removal and replacement process worked. PBA sent several unserviceable masks with scratched eye lenses to the US Army Edgewood Chemical Biological Center, and the team replaced the eye lenses in the laboratory. A battery of testing followed, including accelerated storage, rough handling, and leakage. The mask conversion process passed all validation tests and was approved for production in 2002.

Though the notched right eye lens for the M48 mask had not been in production for a decade, a producer was found to supply the necessary replacement part. The M48 team ensured that the new eye lens met the same chemical-agent resistance, physical, and optical performance requirements of the original lens. With the lens replacement problem solved, the M48 team began to focus on who would do the work.

Workers display the first M48 Apache aviator mask from the production line at PBA.

PBA already had a mask conversion production line, and PBA workers volunteered to learn the new conversion process. Initially, four workers were identified as having the necessary skills and patience to complete the job (although only three are currently doing the work). The M48 team worked closely with PBA to determine the best way to adapt the eye lens removal and insertion methodology from a laboratory to a production environment. The resulting work procedures will be adopted in the depot maintenance work requirements manual for the M48 mask.

Dedicated PBA employees continue to convert M43A1 Type II masks to the M48 standard. With the additional converted M49 masks and the M48 Apache masks already on hand, PBA will have sufficient masks available to meet the needs of the Army for at least the next 10 years. This is a quantum leap in Apache aviator protective-mask availability.

What is the savings? A new production contract for 1,000 M48 masks could be as high as $10 million. A sunk cost of $1.8 million has been realized through the production of 1,000 M43A1 Type II masks. Despite the hand labor involved, M43A1 Type II masks are being converted to the M48 standard for about $400 ($400,000 for 1,000 masks). This represents a cost savings of $7.8 million compared with starting a new M48 mask production line.

They said it couldn't be done, but with a little imagination, a small amount of funding, and a positive attitude, it was. The Apache aviator and the American taxpayer are reaping the results of a world-class protective mask.

Reference

Lowry J. Brooks Jr., *"Development of an Eye Lens Removal and Insertion Process to Sustain Chemical-Biological Facepiece Assemblies for Apache Aviators,"* Supply Management Army Operation and Support Cost Reduction Program Proposal, 20 May 2000.

Mr. Brooks is the product manager for the joint service mask leakage tester program. He works for the joint project manager for individual protection at the US Army Edgewood Chemical Biological Center. He previously held the position of product manager for the M48 chemical-biological Apache aviator mask program. He holds a bachelor's degree in physical science from Salisbury State University and a bachelor's degree in mechanical engineering from the University of Maryland, College Park. Mr. Brooks has 11 years of experience in respiratory protection and chemical-biological defense.

Lieutenant Colonel Walk is an Active Reserve chemical officer currently assigned to the Army G8. He is a graduate of the US Army War College, the US Army Command and General Staff College, and the US Army Chemical School. He has held commands at the detachment, company, and battalion levels. Lieutenant Colonel Walk is a qualified hazardous-material technician and a Pennsylvania Essentials trained firefighter.

SOLDIER ENHANCEMENT PROGRAM

By Sergeant Major Thomas House and Mr. Larry T. Hasty

The Army has established a process to help soldiers get needed commercial items fielded in a short period of time. The Soldier Enhancement Program (SEP) was congressionally approved in 1989, initially for the "foot soldier," but was revised in 1992 to include all soldiers. The objective of the SEP is to increase the lethality, survivability, mobility, command and control, and sustainability of the soldier through an accelerated acquisition process to get lighter, more lethal weapons and improved "soldier items" into the hands of soldiers quicker. SEP recommendations from soldiers and their commanders are highly encouraged. Participation by soldiers and their commands enhances the credibility of the program and ensures that SEP dollars are focused where they will do the most good. Proposals go to the SEP Council, which convenes quarterly. To qualify for a SEP project, a proposal must be—

- An item that will be worn, carried, or consumed by individuals in a tactical environment.
- A nondevelopmental item that is now commercially available, off the shelf.
- An item soldiers are buying with their own money to make life better in the field.

Upon approval by the SEP Council, the proposal will be assigned to one of the US Army Training and Doctrine Command (TRADOC) proponent schools to develop a tailored capability development document (CDD) for the item. The CDD will be approved by that school's commandant to expedite the process. For some items, such as other government agency items or items in the General Services Administration catalog, a CDD may not be required.

The SEP is not an incentive awards program. No monetary awards are given for proposals that are adopted for use and result in a savings to the government. Current programs in various stages of the SEP process include the following:

- Rapid wall-breaching kit.
- XM102 reloadable hand grenade.
- M9 pistol rail.
- Blast-protective footwear.
- Enhanced fuel bar.
- Electric stun device.
- Petroleum, oil, and lubricants handler's glove.
- Family of metal detectors.
- Semiautomatic sniper system.
- Close-combat mission capability kit.
- Close-quarters battle kit.
- Modular accessory shotgun.
- Family of suppressors.
- Integrated-laser, white-light pointer.
- 12-gauge, extended-range, nonlethal round.
- XM104 nonlethal, bursting hand grenade.
- Fuel handler's coveralls.
- Future handgun system.
- Military operations in urban terrain lifeline.
- Maxillofacial shield.

SEP proposals can be submitted through the automated process at <*http://www.peosoldier.army.mil*>. SEP proposal forms can be obtained by e-mailing Sergeant Major Thomas House <*houset@benning.army.mil*> or Mr. Ken Sutton <*suttonk@benning.army.mil*> at the TRADOC System Manager, Soldier (TSMS) Office, Fort Benning, Georgia, or by calling DSN 835-1189/6047/3327 or commercial (706) 545-1189/6047/3327. Mail proposals to Mr. Ken Sutton, 6751 Constitution Loop, Building 4, Room 632, Fort Benning, GA 31905.

The Assistant TSMS Office, Fort Knox, Kentucky, can also provide information and SEP proposal forms. E-mail Lieutenant Colonel Craig Carson <*craig.carson@knox.army.mil*> or Mr. Larry Hasty <*larry.hasty@knox.army.mil*> or call DSN 464-3662/3519 or commercial (502) 624-3662/3519. Mail proposals to Unit of Action Maneuver Battle Lab, Building 2002, Knox Street, Attn: ATZK-UA (LTC Carson or Mr. Hasty), Fort Knox, KY 40121.

Sergeant Major House is the TSMS Sergeant Major at Fort Benning, Georgia.

Mr. Hasty is the deputy and senior technical advisor to the Assistant TSMS at the US Army Armor Center, Fort Knox, Kentucky.

Veterans From the 81st Chemical Mortar Battalion Look Back 60 Years to D-Day

By Specialist Shatara Seymour

What would this country be like if the attacks and attempts by American forces had failed on 6 June 1944—D-Day? The events and efforts of this day led to success for many around the world. This year marks the 60th anniversary of one of the most trying times of World War II. To mark this anniversary, the 81st Chemical Mortar Battalion gathered at Fort Leonard Wood, Missouri, 3–6 June. The unit wanted to have its reunion at Fort Leonard Wood because the 81st was disbanded there after World War II.

The 81st holds the honor of firing the first mortar rounds in support of D-Day operations on Omaha Beach in Normandy, France. Of the eight distinguished service crosses given to the Chemical Corps, six were awarded to the 81st—four for actions against the enemy on D-Day. Eight veterans and four widows, along with their children and grandchildren, attended the reunion. The US Army Chemical School and the Chemical Corps Regimental Association honored the veterans with a dining out, memorial service, K-ration lunch, tours, and a view of training (provided by the 3d Chemical Brigade). Each veteran received a reunion glass from the Chief of the Chemical Corps/Chemical School Commandant, Brigadier General Stanley H. Lillie, and a videotape of the reunion programs.

Throughout the reunion, veterans shared their memories of the day in which so many of their fellow soldiers made the ultimate sacrifice. John Martino of Greensburg, Pennsylvania, remembers that it was raining when the battalion landed on Omaha Beach, "We all put our life preservers on. My buddy right beside me was killed, and most of the war, we were scared. …When I knew I was going [overseas to fight], my mother gave me a prayer book and a prayer rosary to take with me. I carried them throughout my Army career. I said those prayers, and God was with me. I made it through the war safely and returned home."

Don Pike, John Martino, and soldiers from the NCO Academy laying a wreath in memory of their fallen comrades

For those veterans who have passed on, their loved ones continue to mark anniversary reunions in their honor. Betty Young of Charleston, West Virginia, whose husband, Walter Young, was a member of the

81st, feels that attending reunions is something that she is supposed to do. "It was very hard to go to Normandy and see where the men came in on Omaha Beach. I don't see how any of them lived to get on the beach, much less to spend 4 years over there and make it back home," Young said. She added that the men of today have come through when they were needed and are doing a great job. "… it makes you appreciate more what the men go through and do so we can have freedom," she said.

Members of the 81st Chemical Mortar Battalion with Brigadier General Lillie and Colonel Don Bailey, Commander of the 3d Chemical Brigade

Widows of the 81st Chemical Mortar Battalion members

Clint Longenecker of Toledo, Ohio, said that D-Day was the scariest of all, but that the times of war were not all grim. "We had a time when we were placed in an apple orchard and had an apple war. I threw an apple and hit the captain in the temple and knocked him out," Longenecker said. Though the veterans can add humor to their war stories, it is still not enough to make them want to relive those tragic events. "There is not enough money to have me do it all over again," Longenecker said, but then added, "I probably would if the country needed me to …."

Specialist Seymour is a senior journalist/copy editor for the Fort Leonard Wood Guidon newspaper.

Army's Top Deployers Receive Excellence Award

By Mr. Henry H. Johnson

Lieutenant General Claude Christianson, Deputy Chief of Staff, G4 (Logistics) (G4), presented 23 awards at the 2004 Army Deployment Excellence Award (DEA) Ceremony held 22 June 2004 at the Hilton Alexandria Mark Center in Washington, D.C.

The Army Chief of Staff established the DEA program in 2000 to recognize Active Army, Reserve, and National Guard units and installations for outstanding deployment accomplishments. The DEA program is open to any unit or installation that has deployed or supported a training or contingency deployment during the competition year (1 December through 30 November). Units and installations can participate in the following categories:

- Large unit (battalion and above).
- Small unit (company and below).
- Supporting unit.
- Installation.
- Operational deployment.

Eligible units and installations participating in the first four categories submit self-nomination packets to their major command (MACOM). The MACOM forwards the top packet selections to an Army level evaluation board who determines the semifinalists in each category. A team of deployment specialists then visits the selected units and/or installations, validates their deployment practices, and determines the best entry in each DEA category. The unit scores from the board and the site validation visit are combined and sent to the G4 for approval and winner announcement.

The operational-deployment category (introduced in 2003) involves units deploying in support of missions like the Global War on Terrorism, peacekeeping, rotations, and humanitarian relief.

- MACOMs may nominate specific units based on their history of deployment excellence. A team from the Deployment Process Modernization Office observes and scores the deployment (including the preparation and submission of deployment data).
- Units can contend for the large or small unit award.
- The submission of a nomination packet is not required, and the unit is not required to do anything other than deploy.

For additional information, visit the Deployment Process Modernization Office Web site <*http://www.deploy.eustis.army.mil/DEA/default.htm*> to view or download the award evaluation criteria, checklists, and sample nomination packets.

Key Dates for the 2005 DEA	
Competition period	1 Dec 03–30 Nov 04
DEA operational on-site visits	1 Feb 04–9 Feb 05
MACOM nominations submitted to DEA board	31 Jan 05
DEA board convention	14–25 Feb 05
Semifinalist list forwarded to DA	8 Mar 05
DA announcement of semifinalists	11 Mar 05
DEA validation teams on-site visits	15 Mar–15 Apr 05
List of winners forwarded to DA	19 Apr 05
DA announcement of winners	22 Apr 05
Award presentation	1 Jun 05

2004 DEA Award Recipients	
Active Army, large unit	53d Movement Control Battalion (EAC), Fort McPherson, Georgia Runner-up: 11th Signal Brigade, Fort Huachuca, Arizona
Active Army, small unit	Headquarters and Headquarters Company, 7th Transportation Group, Fort Eustis, Virginia Runner-up: 469th Transportation Detachment, 24th Transportation Battalion, Fort Eustis, Virginia
Active Army, support unit	842d Transportation Battalion, Beaumont, Texas Runner-up: 831st Transportation Battalion, Port of Salalah, Oman
Army installation	Fort Stewart, Georgia Runner-up: Fort Bliss, Texas
Reserve, large unit	1192d Transportation Terminal Brigade, New Orleans, Louisiana Runner-up: 1394th Deployment Support Brigade, Camp Pendleton, California
Reserve, small unit	Headquarters and Headquarters Company, United States Army Civil Affairs and Psychological Operations Command, Fort Bragg, North Carolina Runner-up: 1190th Deployment Support Team, 1190th Deployment Support Brigade, Baton Rouge, Louisiana
Reserve, support unit	2125th Garrison Support Unit, 82d Airborne Division, Fort Bragg, North Carolina Runner-up: 307th Quartermaster Battalion, Salt Lake City, Utah
National Guard, large unit	2d Battalion, 116th Infantry Regiment, Lynchburg, Virginia Runner-up: 1st Battalion, 162d Infantry Regiment, Forest Grove, Oregon
National Guard, small unit	82d Rear Operations Center, Lake Oswego, Oregon Runner-up: Company B, 52d Engineer Battalion, Lake Oswego, Oregon
National Guard, support unit	1067th Transportation Company, Phoenixville, Pennsylvania Runner-up: Florida State Area Command
Operational deployment, large unit	2d Battalion, 227th Aviation Regiment, 1st Cavalry Division, Fort Hood, Texas
Operational deployment, small unit	Charlie Company, 121st Signal Battalion, 1st Infantry Division, Kitzingen, Germany
Operational deployment, small unit	Bravo Company, 65th Engineer Battalion, 25th Infantry Division, Schofield Barracks, Hawaii

Mr. Johnson is a transportation systems specialist and a retired Army command sergeant major with 30 years of service. He is the Headquarters, DA DEA program manager, located in the Deployment Process Modernization Office at Fort Eustis, Virginia.

The Marauders:

A Small-Scale Joint and Multinational Operation

By Major Ted Read

Fort Leonard Wood, Missouri, is the home of the Army's Engineer, Military Police, and Chemical branches, and it is also home to a championship rugby side (team). The Fort Leonard Wood Rugby Football Club—the Marauders—is the 2003 Missouri Rugby Football Union Division III Champion, and on 14–15 May, the club became the 2004 Western Region runner-up. The Marauders have earned the Missouri Rugby Football Union a No. 2 seed in next year's Western Region Division Championship Tournament.

These are outstanding accomplishments for a military side. The Marauders are one of the smallest (in weight) and most mature (in player age) clubs in Missouri and definitely the smallest and oldest club with a large portion of first-time players in the Western Region Division III Tournament. In short, the club is old and slow, but also young (inexperienced) and skinny. Despite this, it went on to win in Division III and played in one of only seven regional championship matches in the nation. The club's success comes from technique, teamwork, and a large dose of heart.

The Fort Leonard Wood international community contributes greatly to the club's success by assisting with the development of techniques, thorough up-to-date drills, and practices. There are Australian, New Zealand, British, Canadian, and American players, as well as family members and supporters of the side. The club's president is a British colonel who has played on the English National 7s. Last year's vice president was a British military police major, and the club's on-field captains in the Western Region Division championship game were a major from Australia and a warrant officer from New Zealand. In short, the club is a minicoalition that puts aside national and personal differences to share sweat, pain, and blood in the middle of Missouri.

The team is living proof that joint and allied interdependence is, in the micro, a reality. Both the American and international players and the coaches have put aside branch and service baggage to attain a higher goal. The team is truly a combined arms outfit, with engineer, military police, chemical, medical, aviation, and judge advocate (No, he is not on retainer!) soldiers on the rolls.

2003 Missouri Rugby Football Union Division III Champions

The team is also joint—with Army, Marine, and Coast Guard members. The team relies on everyone's blended backgrounds to ensure success.

Nothing in America can be done without community support. The mid-Missouri area has contributed greatly to the club in both financial and moral support. The club has sponsors and supporters from Rolla in the east, Springfield in the west, Lake Ozark in the north, and St. Robert in the south. All of the players, coaches, and family members send a heartfelt "thank you" to the community for all it does, not only for the club but for all soldiers in general.

2004 Western Region Runner-Up Team

The greatest attribute of the team is its heart and spirit. One of the members—a 60-year-old man who has battled throat cancer—puts every ounce of his energy into the time he is on the pitch (field). When he steps onto the pitch, the complexion of the game changes completely. No pain is felt by the Fort Leonard Wood side, because he feels more pain walking up the stairs than the rest of the club does after a three-match (game) day. To commemorate this "fire," the club has created an award that bears his name—the Heart Award. You can see the award in the club's trophy case on the second floor of Lincoln Hall, at the Maneuver Support Center, Fort Leonard Wood.

The magnitude of this award can be seen in this year's recipient. Early in the season, one of the players was in a terrible automobile accident that he miraculously survived. However, he was told that he would not get out of the hospital for months and would probably never walk again. But he surprised everyone 6 weeks later when he willed himself, his body, and his walker across a quarter mile of uneven terrain to be on the sideline at an away game in St. Louis. Three months later, he walked completely unassisted to watch the club's last home match. Three weeks after that, the Army could not keep him away from his job teaching soldiers how to fight, win, and survive to fight again on the battlefield. The club's players and supporters have nothing but admiration for these two phenomenal people. They are an inspiration to all.

Even though the club is old, inexperienced, small, and from a patchwork of disciplines and nationalities, it has a reputation of being tough, gritty, aggressive, and team-driven. It also has a reputation of being a well-rounded side where no grudges are kept and both sides meet afterward for an outstanding meal (from one of their sponsors) and a drink or two to ensure that the brotherhood of rugby (players, supporters, and families) lives on. The key to this positive reputation in the rugby and Ozark communities is heart. Heart comes in all shapes and sizes and in all nationalities. Fort Leonard Wood has that heart, which comes from the community—civilian and military, international and American—and it has a tough, disciplined rugby club to prove it.


Phase play against a Galveston team

Major Read is a student at the US Army Command and General Staff College, Fort Leavenworth, Kansas. He was previously an instructor/writer in the Department of Instruction, US Army Engineer School. Prior to that, he was an engineer observer/controller at the Combat Maneuver Training Center, Hohenfels, Germany, and commanded Charlie Company, 9th Engineer Battalion, 1st Infantry Division, in Schweinfurt, Germany. He has deployed to operations in Somalia, Haiti, the Balkans, and Afghanistan.

Book Review

By Captain Valerie Hauer

The Gathering Biological Warfare Storm,
Jim A. Davis and Barry R. Schneider,
Praeger Publishers, 30 May 2004.

The events of 11 September 2001 were the catalyst for the United States to develop the Homeland Security Advisory System. Since the creation of this system, the Nation has spent the majority of time at an elevated threat condition. It has been said numerous times that, as a Nation, we need to be vigilant, prepared, and ready to deter terrorist attacks. *The Gathering Biological Warfare Storm* outlines the Nation's shortcomings in response to bioterrorism.

As a whole, Mr. Davis and Mr. Schneider do an excellent job of bringing together a book that highlights the Nation's largest threats of biological weapons and bioterrorist threats. The authors show many challenging issues that our country faces, but they also offer many recommendations and solutions to those challenges. Many authors share the same opinion: before the events of 11 September and the anthrax scare that followed, the Nation did not take bioterrorism seriously. Even congressional appropriations are not reflecting the growing threat of agroterrorism and bioterrorism that our Nation could face.

From the first chapter to the last, the book keeps you interested and fascinated. It begins with the stance of the United States following 11 September and continues with the history of agroterrorism and how our Nation can and will respond to bioterrorism. The book then covers the history of anthrax, the anthrax vaccine, and the smallpox virus. From there, the book addresses methodologies that both state and nonstate players could use to employ biological warfare agents against the United States and our allies.

The Gathering Biological Warfare Storm is a "must read" for anyone interested in the history of biological warfare, bioterrorism, or the national policy toward agroterrorism and bioterrorism and for Americans with a desire to know our Nation's state of preparedness in response to biological warfare.

Captain Hauer is the technical support operations officer at the Chemical Defense Training Facility at Fort Leonard Wood, Missouri. She holds a bachelor's degree in biology, with a minor in chemistry, from the University of Central Arkansas.

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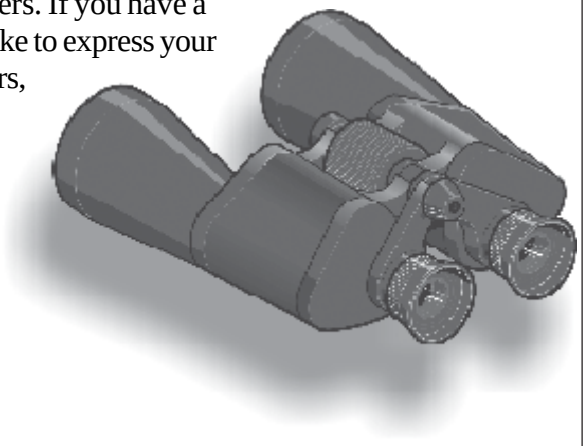

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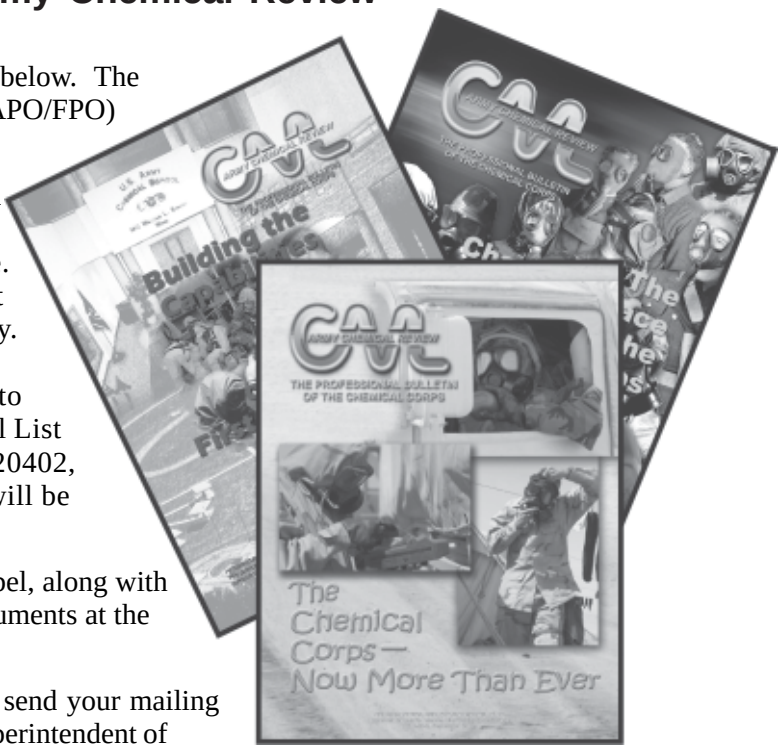

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Is the Flag "Backward" on Soldiers' Sleeves?

By Ms. Lisa Burgess

Why do American soldiers wear the US flag insignia "backward" on the right shoulder of their utility uniforms, with the canton (the rectangle with the stars) on the observer's right? It's a question that soldiers hear frequently as they travel through civilian airports or talk to members of other services. And it does look "wrong" because US federal code calls for the canton to always be positioned on the left.

The soldiers aren't wrong, however, and neither are their tailors. The Army has two authorized flag patches, one to be worn on the left shoulder, with the canton on the left, and another "reverse field" patch worn on the right shoulder, with the canton on the right. The two different orientations are mandated because Army regulations call for the flag "to be worn so that to observers, it looks as if the flag is flying against a breeze."

What does a stiff wind have to do with this custom? The rule is a nod to the US Army's early history, when wars were fought as a series of carefully choreographed battles, with two armies meeting on a field, clashing head-on until one side emerged victorious. In those battles, infantry and mounted cavalry units would always designate one soldier as "standard bearer" to carry the colors into the fight. As the standard bearer charged, his rapid forward movement would cause the flag to stream back. And since the Stars and Stripes is mounted with the canton next to the pole, that section would always be forward. So if a soldier were charging into battle, the flag would give the appearance of forward motion. When worn on the right shoulder, the flag only appears to be backward. And that's why soldiers wear the flag patches on the right shoulder backward. Because retreat in battle, as any soldier will tell you, is not the Army way.

Notes

1. A variation of this article was printed in the 28 February 2004 European edition of Stars and Stripes.

2. A change to Army Regulation 670-1, *Wear and Appearance of Army Uniforms and Insignia*, dated 5 September 2003, instructs all soldiers, regardless of deployment status, to permanently wear the US flag insignia on utility uniforms. This includes battle dress uniforms (BDUs), desert BDUs, maternity BDUs, cold-weather coats, air crew BDUs, and combat vehicle crewman uniforms and jackets (cold weather). The mandatory wear date is 1 October 2005.

Ms. Burgess began her career in journalism in 1985 after graduating from the University of Chicago. She joined the Pentagon press pool in 1989, covering national defense topics for a variety of publications before joining Stars and Stripes in 2001. Ms. Burgess has a master's degree in national security strategy from the National War College and has twice been named as a Freedom Forum Fellow.

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