

Are Our Troops Ready for Biological and Chemical Attacks?

by Eric R. Taylor

Executive Summary

As war with Iraq becomes imminent, U.S. military readiness takes center stage. Concerns about readiness focus not only on our ability to successfully attack Iraq but on our ability to defend U.S. forces against an enemy regime that, if its existence is threatened, could have every incentive to use weapons of mass destruction. In any war with Iraq, military experts worry most about attacks with chemical and biological weapons. They have reason to worry, given the U.S. military's lack of preparedness for such attacks.

In the Gulf War, military preparedness for chemical and biological attacks was so inadequate that teams of specialists had to be sent to the Middle East to provide "crash" training courses to deployed U.S. forces. According to one congressional report, it took six months to bring them up to speed.

Unfortunately, those same gaps in readiness remain. They are rooted in a lack of emphasis on such defenses by senior officers. Although nuclear, biological, and chemical (NBC) warfare

specialists are reasonably well trained and cognizant of the needs for training individuals and units, senior commanders present a major block to implementing realistic and technically meaningful NBC training for the troops. NBC field training is unrealistic because it does not involve the simulation of a worst-case surprise attack and is sometimes optional. Although approximately 40 hours of NBC defense training are needed per year, the military services require only four hours of training per year for new recruits and two hours of refresher training annually thereafter. Moreover, the people overseeing the training do not have the right educational background—only 30 percent of officers in the Army's Chemical Corps have degrees in the physical sciences. Although many senior officers view military NBC training as effective, that is not the view of the troops who will be on the front lines. This dismal state of affairs should be a wake-up call to officials of the Bush administration as they plan for a second war with Iraq.

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Introduction

During the Persian Gulf War, U.S. military forces faced a real threat of a chemical or biological (CB) attack by Iraqi forces—so real, in fact, that a massive crash refresher course in CB defense was needed “in theater.” CB defense is not flashy like smart bombs or expensive stealth bombers or sexy like heavy main battle tanks or assault helicopters. It is, however, the neglected middle child of the traditional combat activities (infantry, armor, artillery) and needs to be addressed. In 1991 the threat of U.S. nuclear retaliation served as an effective deterrent to Saddam’s use of chemical and biological weapons.

In 2003, we once again confront Iraq, probably by force of arms if United Nations inspection plans fail to bear fruit. Although the players remain the same, the rules of the game have changed. The nuclear deterrent that held the Soviets at bay and gave Saddam pause is not likely to have the same effect today. Saddam now knows he is to be removed from power, so he has little to lose by using any and all weapons at his command. He is cornered and, so, is much more dangerous. Given that he’s likely to use CB, it is important to ask whether U.S. troops are any better prepared today than they were in 1991 to effectively defend themselves against a CB attack.

Published post-Gulf War preparedness reports revealed glaring deficiencies in CB defense readiness during and after that conflict and concluded that the potential for significant CB casualties was high. Yet, even in 2002, the same deficiencies largely remain, despite the looming threat of direct war with Iraq in the near future. President George W. Bush appears confident that the military is ready for war with Iraq. But are U.S. forces really ready?

This paper will examine current military preparedness for biological or chemical attacks and provide a multilevel analysis of nuclear, biological, and chemical (NBC) education, field training, instructional adequacy, and coordination and integration in field exercises. It will also examine NBC defense

education—in the priorities of the leaders and its impact on those in the trenches—and explore reasons for the present state of affairs, potential pitfalls, and possible solutions.

The Gulf War and After

The specter of a CB attack during the Gulf War serves as the baseline for measurement of NBC concerns in the post-Soviet era. The General Accounting Office, the investigative arm of the U.S. Congress, issued several reports regarding the readiness of U.S. forces for CB operations. Those reports are illuminating. A 1996 GAO report found that U.S. forces were not prepared to defend themselves against Iraqi use of chemical or biological weapons and that those forces could have suffered significant casualties had Iraqi forces employed CB weapons.¹ The same report noted that both active and reserve forces required considerable chemical and biological training before and after their movement to the region. The document noted that “medical readiness problems included inadequate equipment and training.”² Of the training provided, the report declares that “many problems of the type encountered during the Gulf War remain uncorrected, and U.S. forces continue to experience serious training-related weaknesses in their chemical and biological proficiency.” And in what could be taken as a forecast for today’s contemplated actions against the same enemy army, the report states, “Units designated for early deployment today continue to face many of the same problems experienced by U.S. forces during the Gulf War.”³

Albert J. Mauroni, an expert in CB defense and a former U.S. Army chemical officer, noted in his book *Chemical-Biological Defense*:

What is evident is that without an offensive CB military capability, U.S. forces must rely on defensive measures and training more than ever. Failure to develop these defensive measures might mean that

America's sons and daughters will be killed in future combat operations by an opposing force employing chemical weapons, especially given the US military's past track record. If we lose sight of that important point, within the next twenty years the US military will be defeated in battle or suffer catastrophic consequences as a result of CB weapons use. The last thing our leaders should think is that the Persian Gulf War proved that the U.S. military does not need to worry about CB warfare any more.

A second 1996 GAO report observed: "It took 6 months during the Persian Gulf Conflict to prepare forces in theater to defend against chemical and biological agents. However, these skills declined again after this conflict."⁵ So despite all the "lessons learned" and "after-action" reports, it seems the U.S. military hasn't learned much about NBC preparedness.

Competency in NBC performance is much like marksmanship; it erodes over time if not reinforced by training. Any responsible gun owner knows that haphazard practice with a gun for self defense will produce haphazard performance when the gun is needed most. NBC training must not be haphazard. The problems with NBC training fall into the following categories: the instruction and knowledge base, the military mindset toward NBC training, and a wide communication gap between the troops in the trenches who might face NBC weapons and the generals in the Pentagon who direct training policies and priorities.

NBC Instruction and Knowledge Base

To assess the instruction and knowledge base of troops in NBC education and training programs, I was granted permission to observe first-hand the education and train-

ing practices at various military, naval, and air installations.

Air Force

Air Force NBC defense training comes under the civil engineering squadrons. While at Barksdale Air Force Base in Louisiana on March 5, 2001, I visited the 2nd Civil Engineering Squadron (2CES), 2nd Bomb Wing.⁶ The 2CES includes NBC-qualified instructors trained at the U.S. Army Chemical School. But Air Force units do not have a unit NBC officer or non-commissioned officer.

NBC training occurs at Barksdale twice a year. All deployable enlisted personnel and officers must take the course, subject to availability. But the lack of availability causes many personnel to miss valuable training. A gas-chamber exercise is generally a yearly requirement, but Barksdale's chamber was condemned; the gas-chamber requirement was suspended pending allocation of funds to build a new chamber building. In addition, the NBC cadre at Barksdale does not administer written tests to gauge the mastery of the NBC subject matter. According to one of the senior enlisted instructors, the results of the written tests were disappointing, so they discontinued them. An optional written test is available to those airmen who wish to take such an exam. Otherwise, the testing occurs in a "hands-on" practical environment.

To assess the overall NBC performance of a unit, an NBC component is part of any field exercise. A senior instructor noted that every attack on a unit in a field exercise contains a chemical component. Barksdale also has a covert biological attack as part of its field exercise. Failure in the NBC component is considered an overall failure in the exercise. After failure, retesting within 90 days is mandated.

The Air Force has seen an increase in budget funds for NBC equipment, but not for training. Moreover, only deployable personnel have protective masks and garments. Not everyone in the Air Force has NBC protective equipment. The author's findings are consistent with a 1998 GAO report that "found shortages in individual protective equip-

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ment, inadequate chemical and biological agent detection devices, inadequate command emphasis on chemical and biological capabilities, and deficiencies in medical personnel training and supplies.”⁷

Navy

The Navy would seem to have little trouble with the threat of NBC attacks. In the event of such an attack, Navy doctrine dictates that the ships will put to sea and hose down the decks with sea water. But what about training of its sailors and the protection of port facilities from which the ships sail? The Navy’s Seabees—the combat engineer construction battalions—have the job of building and maintaining ports. Gulfport, Mississippi, is the home of the 20th Naval Construction Regiment (20NCR) and the Naval Construction Training Center. The author interviewed Navy officials of both elements and observed a portion of their training in NBC on December 13 and 14, 2000.⁸

According to a senior NBC instructor at NCTC, the Navy thinks the Army Chemical Corps and associated commands will be available to the Navy if an NBC attack occurs. But an Army Chemical Officer stationed at Ft. Polk, Louisiana did not think the Chemical Corps could respond to any call for help by the Navy during an NBC attack overseas. The corps would likely be overwhelmed responding to the demands of the various Army commands. This confusion may be summarized by the 1998 GAO report, which addressed the vulnerability of overseas ports facilities by noting that

DOD’s doctrine and policy are inadequate regarding responsibility for the chemical and biological defense of overseas airfields and ports critical to the deployment, reinforcement, and logistical support of U.S. forces in the event of a conflict. As a result, questions are unresolved regarding the provision of the force structure and equipment needed to protect these facilities.⁹

The Navy’s readiness to respond to an NBC attack depends on the quality of training, as well as doctrine, policy, force structure, and equipment. The NCTC provided a few classroom training materials utilized in their NBC course. These materials are reasonably well written, thorough in scope, and within the limitations of the technical education of the average sailor or officer. They provide a well-rounded foundation in the subject of NBC.

In the 20NCR, the total training time devoted to NBC constitutes some 1.9 percent (140 hours) of the total training time (7,288 hours) over a six-month period. However, that figure is deceptive because the bulk of the NBC training time is dedicated to training Chemical-Biological Response (CBR) Teams serving as NBC “experts” for the regiment. CBR training constitutes roughly 1.6 percent (about 120 hours) of the total training time. Only the remainder—approximately 0.2 percent (some 18 hours)—constitutes NBC training for individual sailors. In contrast, the Driver’s License Examining and Mishap Investigation requires 0.5 percent (40 hours) of the total training time, some two-and-a-half times more than individual NBC defensive training. And this disparity occurs even though NBC training is required of all uniformed members—enlisted personal and officers—but the driver’s class seems dedicated to a select few since it is offered only once in the six month-long training schedule. Those figures demonstrate how little NBC training is given to individual sailors.

Marines

The U.S. Marine Corps is generally the “first responder” for the United States when force is deemed necessary in hot spots around the world. If the situation does not require the heavy forces of a U.S. Army mechanized division, the Marines are usually sent in. The Marines are also the acknowledged amphibious warfare experts. Thus, Marines are vulnerable to NBC attacks and must be prepared to adapt to such attacks in carrying out their assigned mission.

The author was granted permission to observe a company of the 6th USMC Regiment and the regimental headquarters operations center undergoing NBC testing in the field on June 13 and 14, 2001.¹⁰ Because the Marines were in the field, there was no opportunity to observe classroom instruction or examine any published instructional material used in such classes.

But an “academic” testing of the troops, including senior officers, was performed. Essentially the Marines were lined up and asked a few questions to test the depth and breadth of their NBC knowledge. Prior to the officers being asked questions by an NBC cadre official, they were studying preprinted note cards on the subject—essentially a collegiate-like cramming session. Many of the officers obviously had trouble answering basic questions and were even coached by the junior enlisted NBC cadre official to get the correct answers. Clearly NBC knowledge is not second nature to the officers. Furthermore, I did not see the senior officers monitor the performance of their subordinate officers or troops in answering any of the NBC questions.

NBC field exercises appeared to be of no better use than the academic testing. In the NBC attack phase of the field exercise, the troops of the tested company experienced a CS gas (a type of tear gas) attack, which simulated a lethal attack with a chemical agent. The gas attack occurred about a half an hour before sunrise. The attack was intended to catch the troops in tactical bivouac by surprise. My impression was that some of the troops may have known what was coming since, while awaiting the “surprise” enemy attack, several appeared prepared to don masks. The NBC cadre, moving about in the bush, probably alerted the unit sentries, who—if posted, awake and alert—should have reported the movements to the sergeant of the guard. I did not see any senior officers present to observe the performance of the subordinate unit being attacked or any of the unit’s own officers out and about to observe the unit’s performance and response.

Because it was a gas attack, one would have expected the unit to respond. But rather than take up positions for repelling an assault or preparing to evacuate the area, most troops just sat in their positions, hands in pockets, awaiting the end to this annoyance. Although the NBC personnel in the unit were busy making reports and testing for the identity of the agent, the other unit troops were preoccupied with the normal military activity of “hurry up and wait.”

The decontamination component to the exercise was limited to a few vehicles and a few Marines. Not even an entire platoon was required to go through the decontamination process. Usually, such training, if done at all, occurs as a practical exercise in a formal course—using surplus, junked and stripped-down vehicles or aircraft frames. Small wonder then that a 1996 GAO report noted, “At the individual, unit, and commander level, the evaluations showed a wide variety of problems performing basic tasks critical to surviving and operating in a chemical or biological environment.”¹¹

At the invitation of the 6th Marine Regiment executive officer and its operations officer, I had an opportunity to observe the regimental headquarters section operate under NBC conditions. The entire headquarters section was in full protective posture for NBC contamination, which included the wearing of protective masks. Because today’s command-and-control personnel rely heavily on computer data transfer, display of critical battlefield tactical deployments of friendly and enemy units, and intelligence information, communication among them in the masked condition is still a vexing problem.

Furthermore, according to Marine sources, an NBC component in a field exercise is not mandatory. Yet, GAO, in the 2000 report, made the criticism that

commanders were not integrating chemical and biological defense into unit exercises and the training was not always realistic in terms of how units would operate in war. Officials

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at the Army and Marine Corps units we reviewed stated that chemical and biological defense training is being adversely affected by (1) a shortage of chemical and biological defense specialists and (2) specialists being assigned multiple responsibilities unrelated to their specialties.¹²

A follow-up report in 2002 observed that

Marine Corps commanders did not fully integrate chemical and biological defense into unit exercises, as required by Marine Corps policies, because operating in protective equipment is difficult and time consuming and this (1) decreases the number of combat essential tasks that can be performed during an exercise and (2) limits offensive combat operations.¹³

Those impediments to conventional combat activities are why NBC attacks create advantages for the enemy. For adversaries outmatched by U.S. conventional forces (every conventional adversary on the planet), an NBC attack may be the only hope of slowing or stopping an American offensive. Thus, in U.S. training for today's modern battlefield, NBC training should not be regarded as an extracurricular activity. Yet, the Marine Corps is not alone in its view of NBC training as an irritant in exercises. Even when an NBC component is part of an overall field exercise, it typically entails no more than 10 percent of the exercise time and is almost never the primary focus of any unit's field exercise efforts. Moreover, emphasis in a field exercise centers mostly on chemical attacks, with a biological threat thrown in on occasion.

One other critical component was missing from the NBC field exercises. Medical personnel assigned to a particular military unit—the company-level medics or battalion medical staff—need to experience training in responding to NBC casualties. Either by unconscious omission or a conscious desire

not to undermine morale, treating NBC casualties under battlefield conditions was not simulated in the field exercises. That is unfortunate. As in any other type of military operation, the medical response to NBC casualties requires training experience.

It would be instructive to have an NBC-trained NCO or officer knowledgeable in the symptoms of a lethal chemical agent simulate exposure to the agent and have the unit medics or corpsmen treat and evacuate the casualty. Whatever the educational deficiencies of military physicians in treating NBC casualties, they do have the benefit of an in-depth medical education, especially in the mainstay of military medicine—trauma. The enlisted medical ranks of medics and corpsmen do not have this advantage. Realistic training in handling NBC casualties in the field is as essential as training in ballistic trauma wounds. A 2001 GAO report supports this view, citing the lack of information and deficiencies in NBC training for medical personnel as an impediment to any planning for responding to such an attack. Furthermore, the report acknowledged the lack of CB training in medical settings, stating, "Medical planners from each of the five regional unified commands told us that, to their knowledge, no realistic field exercise of chemical or biological defense had been conducted."¹⁴

Army

Since World War I, the U.S. Army has been the premier authority on chemical warfare. Today, that authority remains vested in the U.S. Army Chemical Corps and the Chemical School, currently headquartered at Fort Leonard Wood, Missouri. The other major services (Navy, Air Force, and Marines) also send selected personnel to the Army's Chemical School facility for in-depth training and familiarization with chemical warfare principles and agents. They, in turn, return to their services and disseminate that knowledge to units and personnel. During the Cold War, the U.S. Army also became a major authority on biological warfare through the U.S. Army Medical Research

Institute of Infectious Diseases, headquartered at Fort Detrick, Maryland.¹⁵ Various other subordinate and major Army commands have some role in these areas as well. Examples include the Army Quartermaster and Army Medical Corps.

Fort Polk, Louisiana, is the home of a Joint Readiness Training Center. It is one of the JRTCs around the nation in which the services conduct training of all four services personnel in combined arms operations scenarios. NBC operations training is a component of these efforts. From June 3, 2002, to June 18, 2002, the Fort Polk JRTC conducted a classroom course for unit NBC officers and NCOs. That course is open to junior officers and NCOs of units assigned to or on temporary duty at Ft. Polk. Because the U.S. Army relies heavily on unit NBC officers and NCOs for the training of NBC to personnel in the units, the competency of those unit NBC officers and NCOs is of paramount importance. Clearly, the training at the unit level in NBC defense operations can be no better than the training and competency of the unit NBC officers and NCOs. Also critical is the importance attached to NBC training by unit commanders up the chain of command and the available time permitted by training schedules at higher headquarters.

The two-week classroom training for NBC officers and NCOs includes an impressive list of study materials. One reference missing from this lengthy list of sources, though, is FM 3-6, Field Behavior of NBC Agents (including Smokes and Incendiaries).¹⁶ Given that troops would likely be attacked with NBC agents under specific scenarios in the field, this reference would seem to be a valuable source of information to unit NBC officers and NCOs on the behavior of agents subject to terrain, wind, and other weather effects.

There is no way, however, that such a volume of study materials can be absorbed and comprehended in two weeks. Yet, the unit NBC officer or NCO is to serve as the unit commander's expert adviser on NBC matters confronting the unit. In observing the conduct of the NBC course, I noted that the

highlights are covered—that is, information bearing on exam questions is presented. In the class of 25 students the author observed, five failed to complete the course, a 20 percent failure rate. Failure is based on failing any single exam given and subsequently failing the “retake” exam later the same day or the next day. Although students are encouraged to take the manuals and other written materials home overnight for study, most students (junior enlisted personnel) must take materials back to the barracks and attempt to study. Students attending the course are required to be excused from extra duties and details while enrolled, but there is no guarantee that this actually happens.¹⁷ This situation may lead to insufficient training of the NBC officers and NCOs. According to the 2000 GAO report, training of the trainers is a problem: “At one Army unit, officials said that personnel shortages required them to use inexperienced personnel to provide training, which adversely affected the quality of that training.”¹⁸

Thus, training of non-NBC officers and enlisted personnel is also deficient. Two junior officers attending the NBC course at Fort Polk asserted that their immediate commanders were supportive of NBC training. The problem was getting sufficient time to do such training. Both recalled receiving a few hours of initial NBC instruction during the officer's basic course, including the gas chamber exercise.¹⁹ But such training is clearly not enough.

Insufficient training is compounded by instruction that is too narrowly focused. There is much emphasis on instrumental detection methods for chemical agents. The U.S. armed forces are technology intensive, and little attention is paid to nontechnical detection or suspicion of NBC attacks. But many of the instruments are subject to false readings because of the presence of non-lethal odors and fumes, as well as normal instrument failures. Little attention is given to tactical indicators of NBC attack or symptoms of exposure to agents. This is akin to training physicians to diagnose patients' illnesses only

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by laboratory testing and down-playing or eliminating traditional nontechnical diagnostic arts—that is, analytical judgment.

In its early 2000 report, citing a DoD report in fiscal year 2000, the GAO best summed up the state of NBC training in the Army: “The Army’s combat training centers continue to see units at the company, battalion, and brigade levels unable to perform all chemical and biological defense tasks to standard.”²⁰

National Guard

The U.S. National Guard has a long history of bolstering the military might of the regular U.S. armed forces in time of war. Many of the National Guard units provide service and support roles to the combat arms units. Some of these service and support roles are also ideally suited to the needs of states, under the command of the governors, for civilian assistance in time of natural or technological disasters. No service and support role is more important to such customers than medical services. Also, morale is boosted when combat troops know that if they are wounded they will receive the best and most rapid medical care available.

I visited the Medical Company Training Site operated by the Mississippi Army National Guard at Camp Shelby, Mississippi, on November 11, 2000.²¹ Medical Service Companies are generally rear-echelon units. They do not operate on the front lines. According to Lieutenant Colonel Brown, then director of the MCTS at Camp Shelby, they provide training for Army and Air National Guard, Reserve and, in some cases, regular Air Force and Marine medical support units. Medical Service companies generally consist of nonmedical personnel who provide daily operational support for the medical people, who directly treat and care for the wounded.

MS units typically spend about two weeks training at Camp Shelby. The major problem with such medical training is that unit NBC training is optional at the MCTS. The decision is left to the discretion of the unit commander. Thus the final field-training exer-

cise, which lasts 72 hours, may or may not include a practical NBC component.

Furthermore, medical training in CB defense is deficient across all services. As far back as 1996, the GAO, speaking of regular units, stated “We found that these [medical] units often needed equipment and training.”²² Furthering its criticism of medical training, the GAO’s 2001 report noted, “We found that neither DOD nor the services had systematically examined the current distribution of medical personnel across specialties with respect to adequacy for chemical and biological defense.”²³ The report adds that “in general, DOD has not successfully adapted its conventional medical planning to chemical and biological warfare.”²⁴

General Observations

Albert Mauroni, author of the book *Chemical-Biological Defense*, noted that individuals and specialized chemical units are well trained. But he also pointed out that “battalion/brigade and other large unit exercises are without chem play [simulation of a chemical attack], since they don’t have the organization and it’s too hard to do it (still).”²⁵ Based on my own observations, individual training is less well done than Mauroni asserts. NBC specialists are reasonably well trained and cognizant of the needs for training individuals and units. But senior commanders remain the major hurdle to a determined implementation of any realistic and technically meaningful NBC defense training for the troops other than specialized chemical units. The junior commanders take their lead from their senior leaders. This institutional mindset toward NBC training may some day prove disastrously lethal and make the first American troops confronting CB weapons sacrificial lambs prior to any subsequent turnaround.

Doug Rokke, another expert on NBC preparedness, takes a more pessimistic view than Mauroni. Commenting on the four-hour initial NBC training given to entering service members and the two-hour NBC refresher course given each year, Rokke asserts:

Effective preparation and response to any type of NBC event requires mastery of knowledge, skills and attitudes. It also requires capable instructors, appropriate equipment, and time. None of these presently exist and have not existed for years. The mandated time must be based on individual and unit capabilities but at least 40 hours per year.²⁶

He further opines that

NBC training has been basically a cookbook approach for years. The individuals who graduate from the Chemical School are unprepared academically and technically to effectively respond to an NBC event much less prepare/teach anyone else. All they can do is provide the recipe.²⁷

Writing after the attack on the World Trade Center and the Pentagon and a spate of anthrax mailings, Rokke sums up the state of NBC training. "All indications from active and reserve and national guard components via commanders who care and others is that education/training is still broke [sic] and actual medical effects of exposure must not be revealed."²⁸

The deepest technical knowledge in the NBC specialty is required of those in the chemical military occupational specialty (MOS). Those personnel should have a solid scientific background, which will enable them to go beyond the rote, canned material and be able to synthesize answers to non-scripted questions that arise outside a classroom setting. Because a bachelor's degree is required of officers, and an associate or bachelor's is required of senior NCOs, chemical MOS personnel should have such degrees in the sciences. Ideally, unit officers who are appointed as the unit's NBC officer should also have a degree in the sciences or engineering. In the Engineer Corps, some 60 percent of the officers reportedly have a degree in some field of engineering.²⁹ According to

Rokke, "Astonishingly, less than 30 percent of officers in the Chemical Corps have degrees in the physical sciences. Enlisted soldiers in the Chemical Corps do not have any adequate science education even at high school level."³⁰ Admission to the basic NBC course at the U.S. Army Chemical School by enlisted, warrant and commissioned officers, does not require any technical background, education or degrees in the physical or natural sciences. Rokke is critical of the Chemical School: "I was disturbed by the extremely poor quality of instruction conducted at the Chemical School while I was assigned there on active duty and then as one of the civilian directors (GS-13)."

While attending the U.S. Army School of Advanced Military Studies, Maj. William E. King IV wrote a paper on the preparedness of the U.S. armed forces for biological warfare (BW).³¹ In his paper Major King addresses the technological issues, the nature of the biological agents to be confronted as weapons, countries possessing bioweapons research and development efforts, and military issues of training. Summarizing the current state of NBC training and the responsibilities of civilian and military leaders, he writes: "Commanders, political leaders and the public must be educated to and willing to accept the realities of higher number of BW casualties. This can be accomplished only through realistic exercise scenarios and leader training courses."³² But, in the longer term casualties may be reduced by identifying deficiencies in NBC defenses and improving NBC training: "Commanders and their planners must understand and make allowances for current deficiencies in biological defenses, and must assist in raising the level of biological defense education and training."³³

Finally, one major problem inhibiting training using protective gear for chemical and biological warfare is that the suits can cause heat stress and dehydration in hot climates. Perspiration and heat buildup, both from trapped body heat and heat absorption from the environment, do not escape the overgarments. This condition creates a threat of

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heat exhaustion and heat stroke. To date, there is no viable solution to this problem. Some commanders, particularly those training their forces in warm to hot environments, understandably shun any significant NBC training that entails the use of such extensive protective gear. No commander wants the task of explaining a soldier's death to a member of Congress or the soldier's relatives.

Military Mindset toward NBC: Nobody Cares

One of the indicators of the military's attitude toward NBC training is the level of involvement of senior officers in monitoring training and examinations of the troops and subordinate officers. As noted earlier, during the author's visit to the 6th Marine Regiment field exercise, many officers could not answer basic questions on NBC topics without assistance from the junior enlisted NBC specialist cadre, who were asking the questions. The most senior officers were not present to observe or monitor this process. The core problem with NBC readiness training by the military services is that it is considered less important than "shoot and scoot" combat training and that it, in fact, borders on being leisurely.

During the simulated chemical attack on the selected 6th USMC Regiment company, the company commander remained at the command element site, conversing with the senior NBC warrant officer. Under real combat conditions, remaining at the command element location may be expected. But in a training scenario, the commander should want to roam among his unit, observing first hand the actions of the platoons, their leaders, and the troops—looking for problems or deficiencies. At no time during the hour or two of the chemical training scenario did the commander call his officers together for a tactical conference or assessment of the situation. Clearly, the NBC exercise was not an integral part of the overall field scenario to be dealt with by both the company and the regiment.

Furthermore, no regimental level officers were on the site of the targeted company to observe its responses to the chemical attack. That company was selected to receive a simulated chemical attack and serve as the model for the other companies. The regiment command element should have observed first hand how the company performed for comparison with the after-action report by the NBC specialist cadre. The lack of emphasis on NBC training throughout the chain of command was cited by the GAO in its 1996 study. "The primary cause for the deficiencies in chemical and biological defense preparedness is a lack of emphasis up and down the line of command in DoD."³⁴

Military training is designed to teach soldiers, airmen, marines, and sailors to react automatically to various stimuli that are characteristic of combat. Those reactions are not instinctual per se, but through training become nearly automatic. The lack of emphasis on NBC training will impede such vital automatic responses by U.S. forces in a real battle.

Military exercises must simulate battles, but simulations can become issues of contention in their own right. The training requirements for NBC knowledge and expertise among the forces are not sufficient to instill the level of competency of response required for the individual servicemen and women. That lack of competency cuts across both enlisted and officer ranks. When the enlisted see officers "cramming" for an NBC test, it sends the wrong message to the troops. When officers fail to directly monitor performance of the ranks, that too sends the wrong message.

Intense, last-minute NBC defense training for U.S. forces sent to a hot-spot overseas is perhaps better than nothing, but it is not compatible with a philosophy of training that seeks to instill "ingrained" responses in the face of a real threat on the battlefield. In the heat of battle, there is no time for practice and correction of deficiencies. The need for rush refresher training in NBC defense reflects a fundamental flaw in the overall NBC training practices of all ser-

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vices. Training in NBC seems more focused on compliance with the “letter of the law” requirements on paper than with the “spirit of the law” operational needs of the forces. In a peace-time military, an unwritten principle of war games is that the winner has demonstrated his tactical, strategic, and logistical prowess. Promotions and lucrative assignments follow. After all, who better to lead the military and make policy—the winner or the loser? But scripting can easily bias the outcome. And the outcome is the basis for conclusions from which decisions and doctrine will be derived. The scripting of field exercises, with a predetermined minimal period allotted for an NBC defense component, limits the discovery of problems with troop knowledge, training, equipment, and doctrine.

All the services manifest a lax attitude to NBC defense training. In some cases, an NBC component to a field exercise is optional. In addition, military units may have advance knowledge of the time, day, place, and specific NBC attack scenario in advance of the exercise. The military may rationalize such notice as being like an intelligence alert that would presumably occur in a real event. But such a telegraphed attack does not realistically simulate a worst-case surprise NBC attack, nor does it effectively test the unit’s response. If an enemy force seeking to use chemical or biological weapons has any competency, it will pick a time, place, and weapon that is the least predictable to the targeted force. Today the surprise factor in any NBC attack simulation in a field exercise is not realistically simulated. For example, the enemy could seed an area with a persistent chemical agent. An unknowing unit traversing the route would find itself taking casualties rather suddenly without the usual firing of weapons. I never saw any such “denying terrain through NBC” scenario simulated.

According to Mauroni, “the Army leadership outside of the Chemical Corps does not care” about the Army’s insufficient training. The Army’s attitude seems to be that “the Gulf War showed that shaking a stick [i.e., threatening nuclear retaliation] will stop the CB threat to them.” He also asserted that “policy

is being made by the Joint Staff and Air Force, for better or worse, and the Army tries to keep up. They are not leading as the DOD Executive Role suggests.”³⁵ Similarly, Rokke opines, “The predominant attitude of unit commanders at all levels is simply [that] NBC defense training is not my responsibility and a waste of time when we have other concerns.”³⁶

Comments from the Field

Although the views of the military on training come mainly from those whose uniforms are star-studded, the lower rank-and-file are the one’s who actually go into harm’s way. Consequently, I sought the views of those servicemen and women on their NBC training and readiness. Many responses were received from service members—officer and enlisted, active duty and retired, regular, reserve, and national guard forces.³⁷ Some of their responses are provided here. Those responses are important because what the troops think about NBC defense training and readiness runs counter to the official party line.

Effectiveness of NBC Training

- “Simulating decon is not acceptable.”
- “Ten years ago we had to wear our MOPP4 [chemical and biological protective suit] for 6 hours while we worked (normal stuff, motor pool, etc.). We need to get back to that ethic.”
- “It is with a great amount of experience that I can unequivocally state: the Army of the US is not prepared for a war with anybody that has NBC capabilities.”
- “I served in Fleet Hospital 21 Det J USNR. A while back we were required to attend training in Dallas, Texas. Part of this training included CBR training (this is what the Navy calls NBC). The training included about 50 people at a time watching 2 people putting on and taking off MOPP [mission-oriented protective posture] gear. Watching them decon, and then listening to a lecture from an

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enlisted PO [Petty Officer] who during his talk about the Mark I injector sets [for injecting antidotes to CB weapons] stated, 'I have no idea what these do for you.'"

- "Every person in the military should have to do their job [in the protective suits] for one complete 24-hour period twice a year as a minimum, anything less and you are signing your troops' death warrant."
- "Current standards instill contempt for NBC training and that is about all."
- "My unit in the MC [Marine Corps] had 12 to 14 helicopters, my decon crew had 7 marines counting myself. After about the 3rd aircraft my guys were too exhausted to do much more. How could we have ever done that task in the field under combat conditions?"
- "I was in the U.S. Army during Desert Storm and my job involved the training of hospital units on setting up their field hospitals as they came into the AO [area of operations]. Many of the units that came through 7th Medical Command had questions about NBC issues that we as trainers and fielders could not answer. Many is the unit that departed our area worried about NBC threat with no clear answers about what or how to do anything about it."
- "Yes, I would feel confident in MY training, but I feel that I've been trained far in excess of the average person."
- "I think the NG [National Guard] takes this less seriously than anybody else."
- "Over the last 10 years most exercises usually included a day or two at most in a POTENTIAL chemical environment and usually less than 2 hours per shift in full gear and mask."
- "Decon procedures were a bad joke, people ignored shuffle boxes and rarely practiced decon procedures on any equipment."
- "Given today's capabilities and personnel I think most AF (Air Force) units would be able to continue to function but at a sub-

stantially reduced pace with up to 50 percent casualties." (Note: Any unit that suffers 50 percent casualties is regarded as combat ineffective.)

- "The training during my last 10 to 12 years was not sufficient, and the protective measures deteriorated in the extreme. This is one of the things that prompted my retirement at the time."
- "I deployed with the 'Big Red One' on REFORGER in 1973, but no NBC Training . . . until after Saigon fell. All of a sudden we were told that NBC training was woefully inadequate when compared with our adversaries. Suddenly we were subjected to more NBC training, in all aspects than previously experienced. I thought this was good because I always believed in tough, worst-case scenario training. But with the collapse of the Soviet Union the pendulum swung back the other way. The 'rogue nations' we were now expected to face were thought to have limited NBC capabilities."

NBC Training Attitudes

- "Most commanders fear and would rather avoid the training because they don't understand it themselves."
- "Most people to include Commanders at all levels view NBC training as more of a bother rather than a valuable training event."
- "My opinion of the current system of NBC is that it's a waste of time and basically for show."
- "NBC training has taken a back seat in my view to our focus on Stability and Support operations. When the threat is low or not acknowledged, then the impetus to training is not there."
- "Senior commanders are only concerned with the grade on the IG inspection. They may say that it's important but the truth is in the training time."
- "I did bring these concerns [NBC training deficiencies] to the officers, but was ignored."
- "I believe we have grown arrogant and complacent, and therefore vulnerable to

the next challenger.”

- “There needs to be priority set on NBC by higher command and by the NCO Support Channel.”

Conclusion

An examination of potential U.S. adversaries that have active NBC research and development programs makes clear the very real possibility that U.S. forces will encounter a foe that would use NBC. The tactical, and in some cases strategic, advantages of an enemy using NBC against U.S. forces might outweigh any negative consequences from their use. For example in the case of Iraq, if threatened with the extinction of his regime and himself, Saddam Hussein would have every incentive to use such weapons against U.S. forces. Other small rogue states might use NBC weapons as a way to counter the superiority of U.S. conventional forces. At the very least, NBC employment serves a useful harassment function, which can wear down an opposing force’s readiness and responsiveness. For example, in desert environments, the use of protective suits to combat NBC can result in heat-related injuries and deaths.

Yet military efforts to respond to an NBC attack receive insufficient emphasis. Today, only four hours of NBC training time are required by all the services on induction of new recruits. Only two hours of refresher training are required annually. Not surprisingly, a crash refresher training of US forces was needed in Saudi Arabia before the start of Desert Storm. In contrast, civilian workers involved in combating NBC terrorism under the Nunn-Lugar-Domenici Law (PL 104-201) receive an aggregate 46 hours of initial training broken down into specialty areas.³⁸ In addition, only about 30 percent of the officers in the Chemical Corps have college degrees in the sciences, compared with 60 percent of the officers of the Engineer Corps who have college degrees in some field of engineering. Most of the services don’t have unit NBC officers or NCOs; even when they

do, being a unit NBC officer or NCO is a secondary or even tertiary duty.

Furthermore, my review of unit-level NBC defense training showed insufficient knowledge of NBC countermeasures. Although equipment shortages and maintenance deficiencies are still problematic in some cases, equipment availability, serviceability, and applicability in the field are steadily improving, particularly in the wake of the anthrax attacks following the attacks on September 11. The Achilles’ heel is the inadequate training given to the troops who must use that equipment.

Current NBC training is not realistic because it does not involve a surprise attack. The lack of regular, in-depth, unit-wide training devoted to NBC is reflected in the lack of instant recall of responses by troops to NBC questions about NBC. The time, dedication, and interest in NBC training seem as deficient now as they were three decades ago. Examination of training attitudes among the command structure—indicated by training time and practices—suggests that the mindset of the command structure of the U.S. armed forces has undergone little improvement—even in the wake of Desert Storm.

There is a huge discrepancy between what the upper echelons of officers say about the quality and effectiveness of training in NBC and what the troops in the trenches think. Only increased command attention to NBC defense preparedness will close that gap and reduce the dangers of an NBC attack on U.S. forces in the field. Given the possibility that a cornered Saddam Hussein could use such weapons against U.S. forces conducting an invasion of Iraq, improved command attention is critical.

Notes

1. General Accounting Office, “Chemical and Biological Defense: Emphasis Remains Insufficient to Resolve Continuing Problems” (GAO/NSIAD-96-103), March 1996, p. 2.
2. Ibid., p. 2.
3. Ibid., p. 8.

All the services manifest a lax attitude to NBC defense training.

4. Albert J. Mauroni, *Chemical-Biological Defense: U.S. Military Policies and Decisions in the Gulf War* (Westport, Conn.: Praeger, 1999), p. 149.
5. General Accounting Office, "Emphasis Remains Insufficient," p.4.
6. To my knowledge, the 2nd Bomb Wing (2BW) located at Barksdale AFB is the remaining nuclear-capable combat wing of the U.S. Air Force. The wing flies the venerable B-52 Stratofortress. I wish to thank Technical Sergeant Adkins of 2CES and Vice Wing Commander Imondi of 2BW for their assistance in this investigation.
7. General Accounting Office, "Emphasis Remains Insufficient," p. 4.
8. I wish to thank Commander Peacock, executive officer of the 20NCR, and Chief Petty Officer Fritz of the NCTC for meeting with me to assist in this study.
9. General Accounting Office, "Observations on DoD's Plans to Protect U.S. Forces," (GA)/T-NSIAD-98-83), March 17, p. 3.
10. I wish to thank Colonel John C. Coleman, commander, for the hospitality he extended during my three days at Camp Lejeune and the opportunity to observe elements of his command in the field. Thanks also to Chief Warrant Officer 4 Hassan, NBCD officer, 2nd Marine Division, for his attentive assistance during my stay with the 6th Marine Regiment, as he and his assistants performed the NBC testing, and to Lieutenant Colonel O'Rourke, S-3 (operations officer) of the 6th Marine Regiment for his invitation to observe the headquarters section as it conducted and coordinated the exercise battle.
11. General Accounting Office, "Emphasis Remains Insufficient to Resolve Continuing Problems," p. 8.
12. General Accounting Office, "Units Better Equipped, but Training and Readiness Reporting Problems Remain" (GAO-1-27), November 2000, p. 12.
13. General Accounting Office, "Chemical and Biological Defense: Observations on DoD's Risk Assessment of Defense Capabilities," (GAO-03-137T), p. 4, October 1, 2002.
14. General Accounting Office, "Units Better Equipped," p. 3.
15. In 1969, President Nixon ordered an end to all military research and development on offensive biological weapons. He did not order an end to defensive research and development to combat the use of biological weapons, one of the triad of U.S. defensive NBC research efforts.
17. Department of the Army, "FM 3-6, Field Behavior of NBC Agents (including Smokes and Incendiaries)," November 3, 1986.
17. Answer to a question posed to Juan Natal Roman, senior instructor for the NBC course, at Fort Polk during that period.
18. General Accounting Office, "Units Better Equipped," p. 15.
19. That exercise, using the tear gas CS, is designed to instill confidence in the soldier that his or her protective mask will adequately filter NBC agents. For that reason, the exercise has come to be called the confidence exercise. In older protective masks, the filter elements used for training filter only CS. Even if the filter element in the newer masks filters chemical agents, the exercise with CS only proves to the soldier that the mask will filter CS.
20. General Accounting Office, "Units Better Equipped," p. 13
21. I wish to thank Lt. Colonel Wilford D. Brown, director of the Medical Company Training Site, Camp Shelby, Mississippi, for his assistance during the visit.
22. General Accounting Office, "Emphasis Remains Insufficient to Resolve Continuing Problems," p. 5.
23. General Accounting Office, "DoD Should Clarify Expectations for Medical Readiness," p. 2.
24. *Ibid.*, p. 2.
25. Albert Mauroni, personal communication with author, April 25, 2001.
26. Doug Rokke, personal communication with author, September 6, 2001.
27. *Ibid.*
28. *Ibid.*
29. Victoria Anthony, U.S. Army Engineering School, Fort Leonard Wood, Missouri, personal communication with the author, August 12, 2002.
30. Doug Rokke, personal communication with the author, September 6, 2001.
31. William E. King, IV, "Biological Warfare: Are U.S. Armed Forces Ready?" Land Warfare Paper no. 34, Institute of Land Warfare, Association of the United States Army, October 1999.

32. Ibid., p. 23.
33. Ibid., p. 24.
34. General Accounting Office, "Emphasis Remains Insufficient to Resolve Continuing Problems," p. 7
35. Personal communication with Albert Mauroni, April 25, 2001.
36. Doug Rokke, personal communication with the author, September 6, 2001.
37. The author sought opinions from U.S. servicemen and women on the issue of NBC training and defense. Col. David Hackworth, a well-decorated combat veteran of both the Korean and Vietnam Wars and presently a journalist specializing in military affairs, issues a newsletter that is widely read by members of the armed forces. He was kind enough to include in one of his newsletters a short list of questions the author wished to disseminate to service members.
38. Eric R. Taylor, "Are We Prepared for Terrorism Using Weapons of Mass Destruction? Government Half Measures," Cato Institute Policy Analysis no. 387, November 27, 2000, pp. 7-8.

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