Part One
The NBC Challenge
Chapter 1
Understanding NBC Warfare

"Whether or not GAS will be employed in future wars is a mater of conjecture, but the effect is so deadly to the unprepared that we can never afford to neglect the question."

--Final Report of general John J. Pershing, Commander-in-Chief, American Expeditionary Forces, 1920

The end of the Cold War and the disintegration of the Warsaw Pact introduced a complex strategic environment. That environment is multi-polar, interdependent, and regionally oriented. Emerging powers are rapidly transforming the strategic landscape and exhibiting new trends. One such trend is the changing nature of regional conflict. It is an alarming prospect that developing nations, with hostility towards the US, may have nuclear, biological, and chemical (NBC) munitions — weapons of mass destruction (WMD). The growth of these weapons increases the chance that many nations could use them. So, potential use of WMD dramatically alters the nature of regional conflict across the continuum of operations.

The premises of the Cold War, rooted in superpower adversarial relationships, give way to a new strategic pragmatism based on diversified, regional threats that may have WMD. Some experts argue that reducing WMD in the arsenals of major world powers lessens the likelihood of their use. This seems applicable only in the context of global conflict, a diminishing probability in these momentous times. We must consider the use of WMD as we have no assurance that we shall face a nation that has them.

The US can no longer intervene in regional conflicts involving use — or potential use — of WMD. We cannot reasonably expect their use to cease simply because our forces arrive. To the contrary, the belligerent who has the most to lose — or the most antipathy toward the US — may use WMD to escalate the conflict. So, potential use of these weapons has become a major cause of destabilization in regional conflict.

The lessened chance of global confrontation and a concomitant rise in regional instability and conflict are new realities. We cannot say the threat of WMD in Europe is extinct. We can only say that it is lessened by the contemporary political climate. While traditional superpowers no longer have political aims that would justify using these weapons, widespread growth in developing nations increases their likelihood of use.

The growth of WMD in the developing nations is an arms race within an arms race. Major world powers continue to reduce their inventory of conventional weapons and WMD. However, a significant number of developing nations maintain ambitious arms programs. These programs are designed to enhance

Contents

Proliferation of Weapons of Mass Destruction 1-2
Weapons of Mass Destruction: The Environment 1-3
NBC Challenges for US Forces 1-4
Protecting the Force 1-5
NBC Threat 1-6
US NBC Responses 1-7

conventional weapons capabilities and develop or improve their capability to use WMD.

The developing nations arms race is multi-dimensional, manifesting itself in vertical and horizontal growth. Vertical growth, the more traditional form, occurs as nations known to have NBC capability help their allies and client states. Horizontal growth proceeds as regional powers try to get weapons and technology, through development and/or purchase. WMD, growing throughout developing nations, present a danger we must contend with in assessing the new strategic environment. One serious result of such growth is the chance that WMD may fall into the hands of terrorists.

Terrorism is the threat of coercive violence for political ends. Practiced by nations, groups, or individuals, it takes on an entirely new perspective with the potential use of NBC weapons. We are aware that nations known to support international terrorism seek to become regional nuclear powers.

During the Cold War, possible possession of nuclear weapons by these nations raised no significant alarm. Their use against the continental US seemed an impossibility. The perspective is much different as our focus turns from force projection to regions of conflict. Furthermore, the international community's informal policy of benign growth — looking the other way --on nuclear arms in the developing nations seems in continuance. An analysis of current growth rates reveals that over the next 30 years more than 40 nations could produce nuclear weapons. Many more may have biological and chemical weapons.

PROLIFERATION OF WEAPONS OF MASS DESTRUCTION

The growth of WMD dramatically alters the nature of regional conflict. While the Army removes NBC weapons from its arsenal, other nations are getting them at an alarming rate. At any stage of build-up, during hostilities, and even during redeployment operations, US forces may come under attack by NBC weapons. Planning and training for operations in such an environment are urgent. No one should ignore the risks associated with WMD.

It is not the sheer killing power of WMD that signifies the greatest effect. It is the strategic, operational, psychological, and political impact of their use. The presence of these weapons will dramatically influence public opinion. This impacts on the decisions of policy makers at the strategic level, as well as commanders at the operational and tactical level. Introduction of forces into regional conflicts will become increasingly risky due to the potential use of WMD.

Many regional powers have the capability to escalate a conflict well beyond the tactical level and immediately raise the stakes of our involvement. Rapid response and a swift end to the conflict will partially negate the potential rise in the use of these weapons.

The effective combination of active and passive operations is a prerequisite to nullify use of WMD by

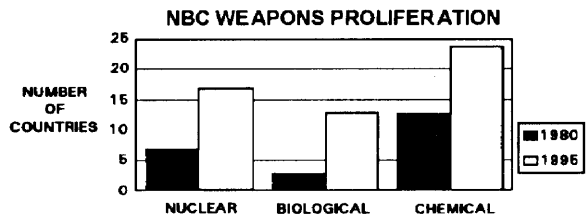


Figure 1-7. Proliferation of NBC weapons 1980 VS. 1995.

an adversary. Active measures include raids, strikes, and operations designed to locate and neutralize the threat of these weapons. Passive measures include adapting proactive NBC defense measures and planning for an effective air and ballistic missile defense to counter NBC weapon delivery systems. A significant consideration is an adversary's willingness to use these weapons and the conditions that would prompt him to do so. A clearly viable operational concept might defeat enemy forces, but result in the use of WMD. This would negate any national policy gains or potential for early conflict termination. As the scope and nature of conflict changes, so to do the objectives and outcomes.

Nuclear

Regional conflict will expand as the integration of ballistic missile technology and nuclear warhead technology proliferate in the developing nations and provide new challenges for deterrence. Basic nuclear technology, now over 40 years old, is readily available to any nation, group, or individual seeking it. The growth of ballistic missiles in the developing nations is of paramount importance as it couples the

conventional arms race to WMD. Ballistic missiles, some with the potential to adapt warheads, are in the inventories of more than a few nations. The growth of nuclear weapons expands the scope and nature of conflict, increasing the risk of escalation.

The integration of nuclear weapons and long-range ballistic missile systems expands the scope of regional conflict. Ballistic missiles significantly reduce reaction time. They create complex planning and decision criteria for power-projection forces. Some developing nations have the ability to use WMD at extended range using ballistic missiles. This significantly enhances their effectiveness as instruments of terror against unprotected targets.

With the ability of nations to use missiles at extra-regional targets comes the possibility of conflict escalation beyond the boundaries of the recognized region. Any attempt to expand conflict by attacking other nations is clearly an escalator act. Long-standing conflicts between adversaries will take on new dimensions as enhanced ballistic missile technology and growth of WMD continue to coalesce.

Intervention before or during a conflict involving nuclear weapons requires a detailed assessment of the value of the interests involved and potential costs in terms of casualties and political outcomes. Campaign planners advise the commander on an adversary's capability to use nuclear weapons and under what conditions he is most likely to do so. A critical planning consideration is to create force dispositions that do not provide lucrative targets for nuclear weapons.

The immediate effects of nuclear detonation are blast, thermal radiation, initial nuclear radiation, and electromagnetic pulse (EMP). These effects can cause significant personnel and materiel losses. Secondary effects include urban devastation, fires, and radiological contamination. EMP can cause a severe degradation of command, control, communication, and intelligence systems. Residual radiation can have long-term effects on personnel, equipment, facilities, terrain, and water sources.

Biological

The US has renounced the use of biological weapons. Many other nations have not. Still others have shown a willingness to ignore treaty commitments in this area. The availability of biological weapons (BWs) to possible adversaries requires our forces to prepare for operations in a biological environment. BW involves the use of living organisms or the by-products of an organism, such as toxins. Such organisms or toxins attack the human body and either kill or render that body ineffective. While the effects of BWs vary by type of organism or toxin used, their characteristics for use are similar. Biological agents, created to be highly infectious, ensure death or disablement, and are relatively simple to introduce over large areas.

Because of the perceptions caused by the use of BWs, psychological and political attitudes would be strongly affected. Military forces would, of course, be at risk. But the potential for grievous collateral damage is enormous. So, defensive measures — both active and passive — would be necessary to mitigate the effects of a biological attack. Populations — both military and civilian — would need informational, psychological, and medical preparation.

Chemical

All current and future operations have the potential to occur in a chemical environment. The US has renounced use of lethal or incapacitating chemical munitions. However, the first choice among WMD by other nations or terrorists groups may most likely be chemicals. Proper preparation for operations in a chemical environment is deterrence. Deterrence limits many of the possible advantages of an adversary's use of these weapons. Use of chemicals also poses a special dilemma. The measures we take to cope with them are militarily degrading.

Chemical weapons produce immediate and delayed effects that will hamper operations through the contamination of individuals, equipment, supplies, and critical terrain features. Commanders must constantly monitor the current and future situation through NBC recon and include NBC considerations in the intelligence preparation of the battlefield (IPB) process. Commanders use these tools to determine the best mission-oriented protective posture (MOPP) to mitigate the effects of any possible chemical use. NBC contamination avoidance (including NBC recon), protection, and decon are three planning imperatives for all future missions. Training for an NBC environment must be emphasized.

WEAPONS OF MASS DESTRUCTION: THE ENVIRONMENT

Extensive casualties and damage can occur very quickly in an environment where WMD are used. Shock and confusion control those who are not adequately trained and equipped. Defensive measures

(for example, wearing protective clothing, responding to alarms) and the cumulative effects of exposure to nuclear radiation or chemical agents affect performance. So, long-term operations in this environment will degrade performance.

Battle command will be more difficult. Command posts and headquarters at all levels may become significant targets. Control will be difficult even in the smallest unit as personnel in protective clothing will be hard to recognize and slower to respond to rapid changes in mission. Only cohesive, disciplined, physically fit, and well-trained units can function in these environments.

The use of WMD will dramatically alter the tempo of combat. When in conflict with an adversary who has these weapons, our forces must operate in full awareness that these weapons may be used at any time. We can never assume that we are immune from such attack, Commanders must act to accomplish the mission while minimizing acceptable risk.

Weapons of Mass Destruction
Weapons that through use or the threat of use can cause large-scale shifts in objectives, phases, and courses of action.
FM 100-5 Operations, 1993

Combined and coalition operations become more risky with the threat of WMD. Strong NBC defense readiness supports deterrence and should reduce the likelihood that an adversary will attack coalition members. Effective identification, detection, and warning systems within the theater further increase force readiness. However, many countries are not prepared for or protected from the use of WMD. So, they may become the primary target of an enemy's use of WMD to disintegrate a coalition. We will have to consider that possibility in all our operational and tactical planning.

Continuous intelligence preparation of the theater takes on new significance in locating and assessing the probability of use of WMD. The integration of national, joint, and combined intelligence means will be a prerequisite for intervention in a regional conflict.

The primary effects of the use of WMD would most likely be—

- Extensive casualties against an unprotected force. This is particularly crucial for allies or coalition members who may be less protected than our forces.
- Degraded command and control, and effectiveness of weapons and vehicles.
- Restricted use of supplies, weapons, and equipment due to contamination.
- Enhanced effects of other munitions.
- Reduced speed, cohesion, and flexibility of movement.
- Restricted or denied use of key terrain.
- Increased need for dispersion and negated advantages of concentration.
- Escalated conflict and creation of a more difficult environment for conflict termination and post-conflict activities.
- Psychological impact of mass casualties and operations for extended periods in protective equipment.
- Allocation of significant combat power in countering or defeating enemy weapons and delivery systems.
- Psychological impact through the threat of use.

NBC CHALLENGES FOR US FORCES

The doctrine of many potential enemies of the US calls for the wartime use of NBC weapons. These weapons require specific responses. Under NBC conditions, US commanders must take a full range of NBC defensive measures. For example, under nuclear conditions US commanders must disperse their forces and take protective measures against possible fallout or further nuclear attack. US forces must continually prepare for an enemy nuclear strike that could defeat conventional forces or preempt a US decision to use nuclear weapons. Similarly, an enemy can use chemical or biological weapons at any level of war to degrade US forces. CANE Evaluation Report, Phase I, gives the impact of such use:

"The nature of the direct fire battle changes dramatically (under NBC conditions) . . . It takes the platoon almost twice as long to complete an attack and, even though the battle is much less intense firing rates decline by 20% in the defense and 40% in the attack), nearly twice as many men are required for a successful attack . . . The number of casualties suffered per enemy defender killed increases by 75%. APC losses double . . . Of those shots fired, almost 20% are fired at friendly personnel (fratricide) . . . It is more difficult to locate targets accurately and radio calls for fire take longer... Leaders at all levels indicated that they did not have time to accomplish all their duties (because of added duties such as supervision of NBC activities) . . . Leaders reported severe degradation in their ability to direct fire and

maneuver . . . Communications were degraded by at least 50% . . . transmission times during the battle increased by more than 100% . . . the number of camouflage actions decreased by 39% (as fatigue and frustration overcame sound tactical practices)."

US forces must prepare to fight and win under these conditions. This chapter describes the threat and the US national response. The remainder of the manual describes the doctrinal principles used by commanders and leaders to conduct combat operations under NBC conditions.

"....we could all be dying right now because we were not prepared to do our mission (under NBC conditions)."

Mortar Platoon Sergeant
Light Infantry Company
Light Forces CANE Field Test
Fort Hunter Ligget, 1992

PROTECTING THE FORCE

Force protection is crucial. Units will survive in a WMD environment only by anticipating the use of such weapons.

Training and equipping forces to operate on a contaminated battlefield are the principal keys to force survival. Dispersion of forces and installations, maintaining tactical and operational mobility, and planning for rapid reorganization of forces are a few other protection considerations. The likelihood of use of these weapons against our forces – not necessarily against our territory -- is greater than ever before. Enhancement of force protection by use of all available measures will reduce incentives for use of WMD by an adversary. Force protection imperatives are—

- Training. Ability to perform tasks will be reduced. Increased training is required to compensate.
- Maintaining alertness. Commanders at all levels must be constantly alert to the use of these weapons, They must balance risk against mission requirements and adjust their MOPP level without losing momentum.
- Developing leaders. Leaders are the most critical component in force protection. Confident, competent leaders make the difference in such a complex environment.
- Instilling discipline. Units must continue their missions in spite of the use of such weapons by an adversary. Personnel must be adequately trained, properly equipped, and psychologically prepared for the effects of NBC weapons.
- Avoiding detection. Units must use active and passive measures to negate both mechanical and human acquisition means. The combination of active and passive force protection measures will significantly reduce any advantage gained by WMD.
- Retaining mobility. Tactical, operational, and strategic mobility will enhance chances for survival. commanders at all levels must consider displacing or dispersing whenever the threat of nuclear weapons is imminent.
- Dispersing of forces and installations to minimize potential damage. Commanders will disperse forces based on an adversary's ability to use WMD. The extent of dispersion will depend on METT-T (mission, enemy, terrain, troops, and time available). Dispersion will include plans for massing forces quickly once there is a reduction in risk of use of WMD. The commander will determine the type and size of maneuver forces and the timing for their concentration. Troop concentrations should be brief, deception of the highest quality, and plans sufficiently flexible to accommodate sudden changes. Operations should be swift and violent to take advantage of concentration.
- Using terrain for cover and shielding. Careful use of natural terrain shields personnel and equipment from the effects of NBC weapons.
- Ensuring logistical preparedness. Combat service support personnel and installations will disperse while continuing to sustain the force. Units must have sufficient supplies, protective clothing, decon, and medical supplies to continue operations without immediate need for resupply.
- Planning for reorganization. Commanders must anticipate the need to reorganize units following the use of WMD. Prompt damage assessment of personnel and equipment and the rapid implementation of reorganization measures will allow the unit to maintain momentum and continue the mission.
- Reducing risk. Commanders plan and conduct operations with the knowledge that WMD may be used by an adversary at any time. Reducing the risk of their use is achieved primarily by avoiding detection and retaining mobility.
- Operating offensively. Nullify the use of WMD by attacking them at their source, before they can be used against friendly forces and populations.

The growth of WMD has altered the nature of regional conflict and subsequently the objectives and outcomes. Furthermore, the introduction of forces into regional conflicts has become increasingly risky. So commanders must use an effective combination of offensive and defensive operations to deter or limit the use of WMD by an adversary.

The potential for the use of WMD requires planners to consider creating force dispositions that do not provide lucrative targets. In addition, operations must incorporate force protection imperatives to ensure force preservation throughout the duration of the conflict or operations other than war. Effective use of NBC recon, smoke, and decon assets will enhance force protection during every phase of an operation. Leaders must emphasize training to reduce the effects of the threat or actual use of WMD.

NBC THREAT

US forces face a potential NBC threat across a broad range of military operations. Many potential adversaries use former Soviet-style equipment and doctrine. Others use a mixture of military equipment and have developed their own doctrine. So we must study potential threat forces, their general military doctrine, and their concept for using WMD. By understanding potential adversaries' NBC capabilities, a picture of the modern NBC battlefield can be developed.

Regional Threat

The growth of NBC capabilities beyond those of major world powers has increased the likelihood of NBC use. The number of developing countries seeking the technology for nuclear weapons and advanced surface-to-surface missiles (SSM) has increased. Since 1985 more than 20 countries are reported to have chemical weapons. No developing nations' doctrine for the use of NBC weapons exists. It would be safe to assume that any doctrine used would be based on their sources of training, systems, and technological advances. More detailed information on this subject is available from other sources.

Nuclear Warfare

Thirty years after World War II, nuclear weapons were the sole prerogative of five world powers: the US, Soviet Union, Great Britain, France, and China. The detonation of a nuclear device in India in 1974 marked the first instance of another nation joining the nuclear fraternity. Today a variety of nations have or desire the technical capabilities to develop a nuclear weapons program. Many nations are seeking access to the materials needed to produce nuclear weapons. Many nations known as aggressors to their neighboring countries are actively pursuing these capabilities.

Many of these nations have delivery means for nuclear munitions. The acquisition of nuclear capability would give them the political advantage they need to wage war at will.

Biological Warfare

Biological weapons have been characterized as the poor man's atomic bomb. Many BWs represent cheaper and less sophisticated alternatives to chemical, nuclear, and conventional weapons. According to the United Nation's testimony of a panel of chemical-biological warfare experts in 1969, the estimated cost per square kilometer of coverage (for BW weapons) needed to produce mass casualties was only one dollar. In contrast, the estimated costs for comparable coverage were $600 for chemical nerve agent weapons, $800 for nuclear weapons, and $2,000 for conventional weapons.

Today, production of a fissionable device would cost hundreds of millions of dollars. Botulinum toxin can be produced for under $400 a kilogram. In addition, BW agents can be produced with little difficulty in a relatively short time. They can be produced covertly by those of modest education using limited tools and space. In the 1980's, an increasing number of Middle Eastern countries turned their attention to the development of BW agents. Using commercially available equipment and established microbiological techniques (perfected decades ago), several countries rapidly put together viable offensive BW programs.

Vietnamese use of mycotoxins in Kampuchea in the 1970's and 1980's proved the effectiveness of toxins. Mounting evidence indicates forces on the battlefield are susceptible to the hazards of toxins and genetically engineered pathogens.

Chemical Warfare

Most countries do not have the technology or the resources to build nuclear weapons. However, many countries could produce chemical weapons. In the 1970's and 1980's, there was an increased emphasis on the development of chemical weapons in the Middle East. The actual use of chemical agents in warfare in the Iran-Iraq conflict soon followed. Chemical munitions require little more expense or expertise to manufacture than conventional munitions.

The technology and literature are readily available on the world market. Once the decision is made to arm with chemical weapons, stockpiles can be rapidly produced.

Since the end of World War II, combatants have used chemical weapons in Yemen (1963 to 1967), Laos and Cambodia (late 1970's), Afghanistan (mid-1980's), and the Iran-Iraq War (late 1980's). In some cases, notably against large concentrations of untrained troops, chemical weapons have been credited for major successes. World censure of chemical weapons has been sporadic and ineffective.

Initially, developing nations use of chemical weapons may be unsophisticated. The learning curve for use, even with military advisors, will be slowed by rudimentary training in basic skills. The combatants must learn to handle the logistics burden, friendly protection, weapons effects prediction, and difficulty in storage and handling. A potential aggressor facing US forces would probably prefer to use a massive first strike for maximum effect.

However, he may not have the logistics or fire support base to support such an attack. Even if he can support the strike, he may reveal his intentions through intelligence indicators. Further, the threat of massive conventional retaliation may disrupt the attacker's activities. We cannot predict whether or not a developing nation would use chemical agents against well-trained and well-equipped forces who have a devastating array of retaliatory options. From our perspective, a decision to use chemical weapons against US forces may seem ill-advised. However, politico-military decisions of this nature rarely follow Western logic,

Operational Use

Developing nations' adversaries who follow former Soviet doctrine, with adequate stocks of chemicals, will likely use persistent chemical agents to restrict air base and port operations. Persistent nerve and blister agents will slow or stop the servicing of aircraft and ships and hinder cargo handling. Persistent agents on logistics facilities will impair resupply and service operations. It will seriously delay medical care and the use of pre-positioned stocks.

Tactical Use

Developing nations' combatants who use former Soviet doctrine, with adequate chemical stocks, would likely use nonpersistent agents against front line troops and on lines of attack. They would be inclined to use persistent agents on bypassed troops, strongpoints, and flanks. They may use persistent or nonpersistent chemicals in barrier and denial plans. With small stockpiles, however, they may use chemicals selectively to support a critical attack or defense, particularly against massed troops or potential staging areas. Some of these nations place a different value on human life than we do. The use of non-persistent chemicals against an unprotected populace would impact US and allied forces, both politically and militarily. Competition for scarce medical resources and increased refugee flow on main supply routes (MSRs) are just a few of the difficulties planners must consider.

The possibility of use of chemical weapons by terrorist groups must not be overlooked. US forces must prepare for any adversarial use of chemicals. Any country with a chemical or pharmaceutical industry can produce chemical agents. Nation-states inclined to weaponize these substances may hide their production behind the guise of pharmaceutical or industrial chemical facilities.

Iraq

In over eight years of military operations against Iran, Iraq built a competent military force committed to large-scale combined arms operations that include the integration of chemical weapons. Iraq's success radically changed the style of warfare in the Middle East. They are doctrinally attuned and tactically capable of using chemical weapons by all means to include artillery, rockets, helicopter fire aerial bombs, and possibly by tactical ballistic missiles.

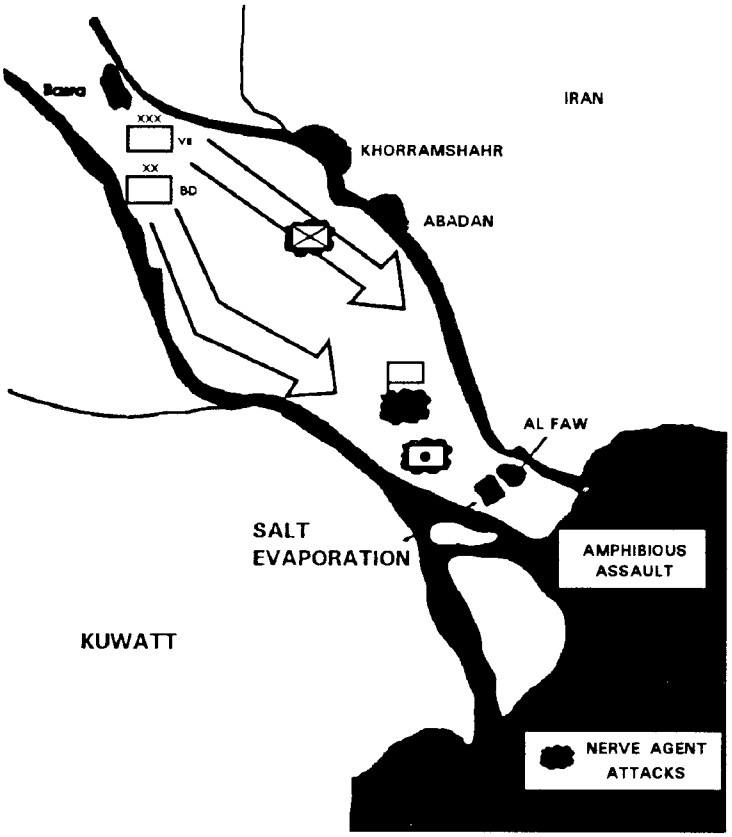
To avoid defeat, Iraq sought out every possible weapon. This included developing a self-sustaining capability to produce militarily significant quantities of chemical warfare agents. In the defense, integrating chemical weapons offered a solution to the masses of lightly armed Basif and Posdoran. Chemical weapons were singularly effective when used on troop assembly areas and supporting artillery. When conducting offensive operations, Iraq routinely supported the attacks with deep fires and integrated chemical fires on forward defenses, command posts, artillery positions, and logistical facilities.

US NBC RESPONSES

The overriding mission of US armed forces is to deter war. Should deterrence fail, the US will prosecute war to a successful conclusion. Should the enemy use NBC weapons, US armed forces will respond with military operations, which may include nuclear and

HISTORICAL VIGNETTE

"In April 1988, Iraq began Operation "Blessed Ramadan" to retake the Al Faw peninsula. The attack began on the morning of 17 April. Armored forces of the Republican Guard conducted the main attack. The Iraq 7th Corps conducted a supporting attack along the west bank of the Shatt al-Arab waterway. The Iraqis also conducted two amphibious assaults along the western coast of the peninsula. The Iraqi plan called for a three-phases operation lasting four to five days The employment of chemical weapons was an integral part of the Iraqi plan. Nonpersistent nerve agent was used on the defending Iranians. Reports indicated that front line forces, command and control sites, and artillery positions were targeted."



"Both artillery and aircraft delivered the chemical agent on the intended targets. Only 35 hours were required to complete the operation. The Iranians never recovered from the initial assault and were unable to to reestablish an effect defense. The Iranian retreat across the Shatt al-Arab waterway turned into a complete rout, with the Iranians abandoning most of their equipment. The Iraqis did not win this battle solely by employing chemical weapons, but their impact was significant. The employment of chemical weapons in this battle caused casualties, disrupted operations, hindered battle command, and allowed the Iraqis to retain the initiative throughout the attack.

Lessons from the Iraq-Iran War show that the employment of chemical weapons did have tactical significance during several battles. One analyst felt that the employment in the Iran-Iraq War was an example of "low-level, sporadic use of chemical weapons." He concluded that "this was far less devastating to those involved than it might have been or could be in a future conflict." Yet, this limited usage was a major contributor to Iraq's successes against an otherwise superior force. The Iraqi use of chemical weapons during its war with Iran clearly demonstrates the impact that weapons of mass destruction can h. e on the battlefield."

Figure 1-2. Battle for Al Faw, April 1988.

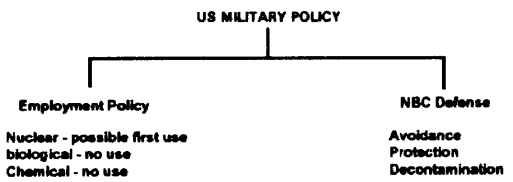
conventional attacks. The goal of these operations is to force the enemy to cease NBC warfare. See Figure 1-3 for US employment policy during armed conflict.

US national security policy is to seek a reliable, verifiable ban on the production, stockpiling, and use of NBC weapons. Without such a ban, the US deters adversaries development or use of NBC weapons through a balance of information activities, political, economic, and military measures. International cooperation through processes such as bilateral and multilateral treaty negotiations and public education helps limit an adversary's willingness to produce and use NBC weapons. These efforts are also aimed toward destruction of chemical warfare (CW) stocks.

US military policy is to deter enemy NBC use through a strong nuclear force and an NBC defense posture that enables US forces to survive, fight, and win under NBC conditions. The US seeks to control NBC weapons through treaties and counter-proliferation initiatives.

The US may use nuclear weapons to terminate a conflict or war at the lowest acceptable level of hostilities. This means we may use nuclear weapons first. Another nation(s) cannot attack us using conventional weapons without risking nuclear war. When faced with a numerically superior enemy, we reserve the right to use nuclear weapons against that enemy. Nuclear weapons use requires Presidential release authority.

The US will never use biological agents. Enemy use of biological agents or toxins against US or allied forces will be considered a violation of the 1972 Biological Weapon Convention and possibly the 1925 Geneva Protocol. US policy allows the option of responding to such an attack with conventional or nuclear weapons.



Nuclear - US forces use nuclear weapons first, if necessary.
Biological (including Toxins - US forces will never use biological weapons.
Chemical - US forces will never use chemical weapons.
Herbicides - US forces may use herbicides under specific conditions.
Riot control agents - US forces may use riot control agents under specific conditions.

Figure 1-3. US employment policy during armed conflict.

The US will not use chemical weapons. We will try to deter enemy use or cease enemy use of chemical weapons by conventional and other means.

The US considers neither herbicides nor riot control agents chemical weapons. But, we have adopted policies concerning their possible use during armed conflict.

The US has renounced first use of herbicides in war except for control of vegetation within US bases and installations or around their immediate perimeters. The President must approve the use of herbicides in war.

The US has renounced first use of riot control agents (RCAs) in war except in defensive military modes to save lives, such as in—

- Riot control situations in areas under direct and distinct US military control, including the control of rioting prisoners of war.
- Situations in which civilians are used to mask or screen attacks and civilian casualties can be reduced or avoided.
- Rescue missions in remote or isolated areas, such as recovering downed aircrews and passengers and rescuing escaping prisoners of war.
- Rear-echelon areas outside the zone of immediate combat to protect convoys from civil disturbances, terrorists, and paramilitary operations.
- Security operations regarding the protection or recovery of nuclear weapons.

The President must approve the use of RCAs in war. Chapter 5 contains more information on the use of herbicides and RCAs.

Throughout history new weapons have been used primarily against troops who have limited defensive or retaliatory capability. Chemical (gas) weapons were first used on a large scale by Germany in World War I against Russia, France, and Britain. Germany maintained a technological lead in chemical warfare throughout World War I. This lead allowed German forces to introduce chemicals and delivery systems that sometimes proved very effective.

Nations have shown little restraint in their weapons selection when opposing an enemy that could not defend itself against certain weapons or retaliate in kind. The Italo-Abyssinian War of 1935 is one example. Major General J.F.C. Fuller, military historian, reported, "It is no exaggeration to say the mustard gas sprinkled from airplanes (by the Italians)

was the decisive tactical factor in this war, because it shortened its duration by months, if not by years. "

Potential adversaries will use NBC warfare to counter—

- Initiative. Contamination degrades the ability of commanders and their subordinate leaders to set or change the terms of battle.
- Agility. NBC contamination and protective measures have a degrading effect on the mental and physical quality of friendly agility. This reduces the ability of commanders and their subordinate leaders to rapidly concentrate friendly strength against enemy vulnerabilities.
- Depth. Combat actions frequently require more personnel under NBC conditions. This additional concentration of forces in close operations reduces the commander's ability to control the necessary space through the depth of the battlefield and to maneuver effectively.
- Synchronization. NBC weapons attack command, control, and communications, and degrade the commander's ability to arrange battlefield activities to produce maximum relative combat power at the decisive point.
- Versatility. The residual effect of NBC contamination strips away a unit's versatility. Contaminated units are unable to shift rapidly from one mission to another.

US forces will survive and win under NBC conditions by using established doctrinal principles. By being better prepared than the enemy for continuous operations under NBC conditions, we will maintain an advantage. This advantage will deter aggressor use of NBC weapons. If an enemy uses these weapons, our advantage will force him to cease use or continue the conflict at a disadvantage. US forces use three basic NBC defensive principles:

- Avoidance. This principle forms the cornerstone of our defensive doctrine. If we can avoid NBC effects through active or passive defensive measures, we reduce our casualties. We avoid the burdens of protection and decon, eliminating significant time and resource requirements. Avoidance measures include camouflage and concealment, dispersion, recon, detection, warning, and limitation of contamination spread.
- Protection. If we must operate in a contaminated area, we must protect ourselves and our equipment. In this way we can avoid losing combat effectiveness. Protection involves hardening of positions, application of MOPP, and individual and unit actions before, during, and after such an attack. Protection also includes the use of collective protection for our fighting systems.
- Decontamination. If we become contaminated, we must decontaminate to allow a reduction in protective posture. Reducing our protective posture increases our combat power. Decon enhances survivability on the contaminated battlefield.

Chemical units support the force's use of NBC defense principles. Their presence is a factor in the maintenance of deterrence (for example, strong NBC defense capability). Chemical units operate throughout the theater, from the communications **zone to the** combat zone. The important combat support role provided by chemical units supports the force with smoke, NBC recon, and decon operations.

Support responsiveness brings about increases in combat power by providing needed obscuration and NBC defense support. Chemical battle staff is integrated into US Army force structure from company to Army service component command (ASCC) level. These soldiers provide essential staff support and advise commanders on implementation of NBC defense principles. Chapters 4 and 7 contain more information on the principles of NBC defense and chemical unit organization, respectively.

NBC response directly implements US national security policy. All military operations pursue and are governed by political objectives. Success in battle must translate to a desired political outcome. This manual does not address the formulation of US strategies of warfighting. It provides chemical leaders and staff officers with doctrinal guidance on how to fight and win under NBC conditions.