



# OPERATIONS in an NBC ENVIRONMENT

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As events over the past year in the Persian Gulf have shown, a Third World nation can present a very real NBC (nuclear, biological, chemical) threat. For our military services, just being able to survive such a threat is not enough. The evolving AirLand Battle-Future doctrine requires that

they also be prepared to operate in an NBC environment. The leaders who must accomplish their missions in this environment must therefore have some understanding of the organization, doctrinal tenets, and tasks that are required for both survival and sustainment.

The experience of some U.S. forces in World War I demonstrate this problem. Although the major agents and delivery systems that would be used had already been introduced by the time a substantial number of U.S. forces entered the war, those forces still were not prepared for chemical warfare. On 25 February 1918, elements of the American Expeditionary Force suffered 95 percent casualties after being struck by a German projector attack using phosgene and chloropicrin. This gas attack was no different from those that had become commonplace on the Western Front. Most of the U.S. casualties in that attack (75 percent) were attributed to the soldiers' unmasking before they had received orders to do so.

A recently completed study of unit performance at our combat training centers in 1989 and 1990 also identified unmasking procedures as one of the major training deficiencies. While the units are much better now than they were, problems still exist, and in an NBC environment, there is little or no margin for error.

Since chemical agents had been used earlier in the region, the U.S. soldiers deployed to Southwest Asia during Operations DESERT STORM and DESERT SHIELD were equipped and trained to operate on a contaminated battlefield. Nevertheless, proactive chemical units continue to be needed more than ever.

The basic framework of the Chemical branch is built around two major elements. First, technical expertise and individual organizational equipment is integrated into all other units to permit them to continue to operate with little degradation. Second, chemical units are placed at division level and higher to provide NBC reconnaissance, decontamination, and smoke support. Both elements are critical — the first allows a unit to make the most of its operational effectiveness, the second augments and reinforces its combat power and sustainability.

## LOCATION

Chemical units are located at regiment, separate brigade, division, corps, and theater army levels. Only 32 percent of our Chemical officers and NCOs are found within those TOEs (tables of organization and equipment); the other 68 percent are assigned to positions in non-chemical units.

The chemical personnel in these other units are trained to integrate their professional knowledge into a unit's operational planning and to offer a commander sound recommendations for solving complex problems.

The basic functions of the Chemical branch are:

- To manage an AirLand Battlefield that has been contaminated by nuclear, biological, or chemical weapons.
- To provide NBC defense through the avoidance of contamination, protection from contamination, and decontamination.
- To conduct smoke operations.
- To integrate flame weapons and systems into offensive and defensive operations.

- To plan for retaliating against an enemy if he uses NBC weapons (at division and higher levels).

One chemical sergeant is authorized to carry out these functions at company level. He is the company commander's principal NBC defense trainer and advisor on NBC defense operations and NBC equipment. Each company in the Army must be able to survive an NBC attack, report its status and the condition of the area in which it is located, clean itself of contamination (which may require the support of a chemical unit), and resume its mission. If a company becomes totally immersed in these NBC tasks, then the enemy has succeeded in keeping that company from performing its mission.

The company Chemical NCO is concerned with the way the company organizes itself for NBC defense, positions its alarms and detectors, reacts to attacks and warnings of attacks, disseminates attack warnings, and reestablishes its operational capability after an NBC attack. This NCO must also help to integrate NBC into the company's operational planning.

During wartime, the Chemical NCO is located where he can best keep the company commander advised — in the command post or the commander's vehicle. This NCO constantly tracks the situation, analyzing company dispositions, consolidating spot reports, and recommending ways to avoid contamination. He recommends such protective measures as the positioning or repositioning of the unit's chemical agent alarm system, mask filter changes, and MOPP levels as a result of his MOPP analysis. He stores the wind information he receives so that simplified fallout predictions and downwind hazard information can be computed rapidly.

## HAZARDS

Monitoring for NBC hazards is a company responsibility and is conducted along with its other operations. The Chemical NCO recommends which soldiers should be trained to perform these functions and, with the concurrence of the commander, trains them, checks to see that they properly monitor for NBC hazards, and that they report their information accurately using the NBC Warning and Reporting System (NBCWRS). He also records the time spent in MOPP 4 and the radiation status of the platoons. In brief, the chemical NCO provides technical information in a form that the company commander can use to make his tactical decisions.

When a company is directly affected by NBC weapons, it must immediately report its status (using the NBCWRS). The Chemical NCO must become involved so that he can then quickly and accurately assess the damage and report that assessment. The objective is to restore the company as quickly as possible without having the soldiers encumbered with MOPP gear. If decontamination is necessary, everyone should have been trained on the basic skills, and each leader prepared to lead MOPP gear exchange



or to process through a vehicle washdown.

A hasty decontamination requires quick action to decrease the contamination levels. Contaminated vehicles and critical items of equipment must be identified, decontamination priorities established, and coordination made with the battalion to ensure that vehicles are promptly washed down. The squad leaders direct their soldiers in conducting MOPP gear exchange while the Chemical NCO coordinates the overall operation.

Deliberate decontamination is a joint operation with the supporting chemical decontamination unit. When a decision is made to conduct deliberate decontamination, a company must stand down for reconstitution. The company itself sets up and runs a detailed troop decontamination operation. The Chemical NCO controls this operation and coordinates with the supporting chemical decontamination unit, which will provide the necessary detailed decontamination equipment. The company must augment the equipment decontamination unit if necessary. The decontamination unit leader controls the operation.

A company Chemical NCO also assesses and recommends unit training requirements, checks the condition of individual and company NBC defense equipment, and prepares company NBC SOPs (standing operating procedures).

During peacetime he concentrates on training the unit's leaders, working to ensure that each leader sustains his proficiency in the higher skill level common tasks in STP 21-24. These tasks involve reacting to an NBC situation (leading MOPP gear exchange, for example) or gathering information that may affect future operations (using an IM174 radiacmeter). Each leader, in turn, is then responsible for sustaining his soldiers' proficiency on the individual NBC

survival tasks in the Soldier's Manual of Common Tasks (STP 21-1).

Normally, company NBC equipment is assigned as prescribed in its MTOE. Under some conditions, a company may centralize the maintenance of equipment in an NBC room, but the responsibility for performing and supervising maintenance still resides with the element designated by the MTOE.

The Chemical NCO has the knowledge and ability to deal with such potential problems as the radioactive source on the M8A1 chemical agent alarm system, and he is also the one best qualified to initially size an individual soldier's protective mask. A commander, by using the chemical NCO's abilities, and a little banana oil, can ensure that each of his soldiers has a mask that fits. (A protective mask fit validation system is being developed to make this process easier.)

For a company, NBC readiness also means being able to perform the company's mission under NBC conditions. The soldiers must survive the initial encounter and then reestablish themselves as a functioning entity while wearing MOPP 4 protective gear. The Chemical NCO can integrate realistic NBC situations into collective training events so that the company is prepared to survive and operate under NBC conditions. A company that has a truly high degree of NBC readiness does not have any NBC tasks on its training schedule, but it shows NBC as a condition for performing the tasks on its mission essential task list (METL).

Too often company NBC SOPs only rehash what has already been standardized in the Soldier's Manuals of Common Tasks (STP 21-1 and 21-24). To avoid redundancy, a unit SOP should not address such topics as filling out

NBC-1 reports and using M256 kits, but should focus on the critical elements that are relevant to that unit. The company SOP should state how operational procedures are performed differently in a contaminated environment and should identify any tasks that will be deferred or delayed until the contaminated area is cleared. SOPs should describe modifications to procedures and ensure that everybody in the company knows them. When a company can use its SOPs in conjunction with drills, it is approaching NBC readiness. Some iterations of standard drills must be trained in MOPP 4.

At battalion level, the infrastructure consists of a chemical officer (BC 74), who is the assistant S-3, and a chemical NCO (a staff sergeant, MOS 54B, in maneuver units or a sergeant first class, MOS 54B, in other units).

A battalion is also authorized an NBC specialist who trains and supervises a decontamination crew from the battalion. This crew uses the lightweight decontamination system (LDS) located in the headquarters company to perform hasty decontamination. Radiological and chemical surveys and biological sampling are planned and controlled at this level.

The primary purpose of this infrastructure is much the same as that at company level — the chemical personnel advise the commander and train the battalion to survive and operate under NBC conditions on the AirLand Battlefield. They work with the companies to assess and recommend training requirements, to manage the maintenance of NBC equipment, and to integrate SOPs into workable procedures. Throughout this process, they also train the units to standard on their collective tasks and the individuals on their common and branch specific tasks.

Some of the ways in which chemical staff personnel work with the members of the battalion staff are as follows:

**S-1.** Planning for NBC casualties; providing administrative support in a contaminated area; recording radiation exposure status.

**S-2.** Incorporating threat NBC capability into the intelligence preparation of the battlefield process and projecting likely enemy courses of action; providing for NBC reconnaissance in the reconnaissance and surveillance (R&S) plan; predicting the effects of enemy NBC weapons.

**S-3.** Recommending MOPP levels; deploying units to minimize NBC effects; planning for and controlling chemical units attached to the battalion or under its operational control; analyzing unit level NBC reports; requesting smoke and flame support.

**S-4.** Estimating MOPP gear and decontamination

requirements; preparing area damage control plans; resupplying NBC equipment.

**All.** Incorporating NBC considerations into planning; modifying plans and orders based on the NBC situation; facilitating operations using smoke and flame.

Critical NBC decisions are made at battalion or task force level. If a company reports an NBC attack, for example, they immediately begin to determine what the soldiers can do while wearing their MOPP gear, whether decontamination will be required, when and where it will be conducted, and how the contaminated unit will link up with the task force's decontamination team.

At brigade level, a chemical officer (a captain) and NCO (a sergeant first class) perform the same kinds of functions and also help plan the employment of chemical and nuclear weapons when such employment is authorized. They gather information from the brigade's entire sector and assess which NBC attacks will affect the brigade's current and future battle.

At division level and above, a chemical staff section under a lieutenant colonel (or at corps level, a colonel) mans an NBC center (NBCC) 24 hours a day. The center receives, collates, evaluates, prepares, and distributes NBC reports; maintains the subordinate units' radiation dose status and the time their soldiers have spent in MOPP 4; and prepares wind vector plots, detailed fallout predictions, chemical downwind hazard predictions, and vulnerability analyses; and manages the NBC Warning and Reporting System.

Additionally, the chemical section performs all the staff functions previously discussed and conducts retaliation planning with the fire support element to produce nuclear and chemical fire support plans. Other actions include working with the G-4/DMMC concerning NBC supplies and equipment; exercising operational control over assigned or attached chemical units; and working with the G-5, when necessary, to mitigate the effects of NBC weapons on civilian personnel and integrate host nation NBC reports.

Today's chemical officers and NCOs stand ready to assist the Army's maneuver elements in carrying out their missions on the battlefield of the future.

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