



Captain James E. Smith

When the 197th Infantry Brigade was notified on 11 August 1990 that it was going to deploy to Southwest Asia (SWA), I had been the brigade chemical officer for two months. Although I had commanded a company and had deployed to the National Training Center twice as a commander, this deployment was the real thing. The actions of the brigade chemical section could mean the difference

between survival and death for the brigade's soldiers on a chemical battlefield.

I would like to share with my fellow chemical officers, and with commanders as well, some of the lessons we learned during the predeployment and deployment phases, during the initial operations in the face of a possible chemical threat, and during sustainment training for chemical warfare.

Predeployment and Deployment

The predeployment and deployment phases were both exciting and challenging; this was not the time to make mistakes. The most important mission was to make sure each soldier left Fort Benning, Georgia, with all his required NBC (nuclear, biological, chemical) gear. This would help calm the soldiers' fears about their NBC equipment and the prospects of chemical warfare. The effort required persistence, hard work, and the support of the brigade commander.

One of my first actions after becoming the chemical officer had been to contact the assistant chief of the Supply and Services Branch, Directorate of Logistics, at Fort Benning for help in locating the brigade's stockage of overgarments, booties, gloves, and decontamination kits. Although I was assured everything was on hand, I was not satisfied and continued my coordination with the post representatives. This coordination paid off after we were alerted.

We learned several lessons in that process:

NBC gear and supplies must be on post. The brigade's CPOGs (chemical protective overgarments), booties, gloves, and other supplies simply were not available for issue. A brigade chemical officer must have a chemical defense warehouse under his control. The local post was not initially prepared to handle supplying a separate brigade for deployment. This was not only a post problem; it was an Army problem. The 20 years of neglect in NBC defense was apparent.

Soldiers must have protective masks in the right sizes. Despite our earlier quarterly fittings and CS chamber exercises, the soldiers now decided their protective masks did not fit. They had become more serious about the fit of their masks and now brought up size problems instead of hiding them. Their motivation was evident.

Soldiers must have the proper type of masks. Before the alert, the brigade was short of M17 masks, and M25 protective masks were issued instead. Once M17 masks became available, albeit slowly, we used good M25 masks to replace any unserviceable M25 masks.

Unserviceable masks must be coded and turned in. We ended up with more than the normal number of unserviceable masks on hand. The brigade was in the process of turning these masks in and had identified mask maintenance as a priority. Because the new masks were slow in coming in, however, we kept the unserviceable masks for the soldiers to use in training.

A brigade chemical officer must become an expert in

NBC logistics. The brigade commander looked to me to make sure all of the needed NBC gear, supplies, and equipment were issued before the brigade deployed to Fort Stewart, Georgia, for additional training before going on to SWA. Since there was not time for the normal supply procedures to work, the brigade chemical section circumvented the supply system and issued the NBC items to the units directly from a post warehouse. It was at this point that our earlier coordination with the post logistics people paid big dividends.

A working relationship with post representatives who control NBC supplies is essential. It did take a few days to develop such a relationship, but once they learned my purpose they were very responsive and helpful. A representative from the brigade materiel management center helped establish accountability for these supplies.

Supplies in CDE (chemical defense equipment) warehouses must be rotated. The rotation of supplies will help eliminate outdated NBC supplies and prevent having to requisition additional amounts at a time when they are in short supply. This problem would not have surfaced if the brigade had had the responsibility for the storage and upkeep of its NBC supplies in its own warehouse.

Units that are short of chemical officers and noncommissioned officers need help. The brigade chemical section helped the units with personnel shortages as best we could, but these shortages, unfortunately, did account for some misunderstandings, especially when the NBC supplies were issued. Unit supply personnel, for example, did not know what quantities to pick up or to whom they should be issued.

Neither of the brigade's infantry battalions had a chemical officer. Although the brigade had enough chemical officers assigned, several of them were women who could not be assigned to those battalions. The assignment of chemical officers in general and the policies on the assignment of female chemical officers need to be reevaluated.

A brigade should have back-up Unit Status Report (USR) officers other than the chemical officers. All of the chemical officers in our brigade were USR officers. As a result, all of them were out of the net during a critical time in the predeployment period. In peacetime, it may be all right to have chemical officers do USR, but in preparing for combat in a chemical environment, chemical officers cannot afford to spend two or three days on USR reports.

Training equipment should be included on all deployments. Because of a lack of space and because of the rapid deployment of vehicles and containers (MILVANS), NBC training items were not deployed to Fort Stewart between 15 and 17 August 1990. As a result, the brigade did not have enough NBC training equipment when it reached Saudi Arabia. On such future deployments, space should be dedicated to all kinds of training items, not just NBC items.

The chemical officer of a separate brigade should be a major. A separate brigade consists of five battalions and three separate companies, and the chemical officer performs the functions of both a division and a brigade chemical officer. An officer in the rank of major is authorized, and



the Chemical Branch assignment officers should support this authorization. Although all tasks were accomplished in preparing the brigade for deployment, a major probably would have eased the coordination with the post staff and with the battalion S-3s and executive officers.

A driver should be assigned to the chemical section. The brigade chemical section is not authorized a driver by TOE (tables of organization and equipment). Although this is acceptable in peacetime, during deployment we found that extra soldiers were rare. As a result, an NBC NCO who was needed to help issue NBC supplies had to act as the section's driver. This meant he was also involved in preparing the vehicle for both deployment and convoy operations.

Although the predeployment and deployment phases were fast-paced, we took several initiatives during this time that would later pay big dividends:

First, M17 lightweight decontaminating systems (called SANATORS) were requisitioned directly from the Chemical School—two per battalion, one per separate company, and three for the brigade's organic decontamination platoon. This allowed the brigade to concentrate on both hasty and deliberate decontamination operations in Saudi Arabia.

Commercial portable patient decontamination systems (HOT DOGS) were requisitioned through the Fort Benning Directorate of Logistics for use in decontaminating chemical casualties. These were issued to the medical company and the battalion aid stations.

To meet the brigade commander's guidance for each soldier to have all his required NBC gear and supplies before deployment, we found it necessary to use a top-down distribution of NBC supplies. Although this worked in

getting the brigade deployed, it did cause some problems later on when we tried to get the units to requisition NBC supplies through the supply system. Additionally, we bulk-ordered NBC supplies for the brigade, but most of them arrived only after we were in Saudi Arabia.

We created a brigade CDE warehouse to store the extra NBC supplies we obtained during the last days of our deployment. This later allowed the brigade to replace its unserviceable masks and to supply its units in SWA without having to wait for the items to arrive from the United States. In fact, the brigade started helping the division we were attached to. Additionally, the brigade began receiving, directly from Fort Benning, the NBC supplies that were bulk-ordered earlier.

Even after the brigade was attached to the 24th Infantry Division and moved to Fort Stewart, the brigade chemical section was divided between the two posts. I stayed at Fort Benning to continue working with the post staff in obtaining additional NBC supplies while the section's two NCOs deployed to Fort Stewart to help the units conduct additional NBC training and fill critical NBC shortages for incoming personnel. In fact, one of them remained at Fort Stewart until the last flight to Saudi Arabia to make sure new personnel had all their required NBC gear.

Initial Operations

Among the first words we heard when we arrived at the port of Damman were those of the deputy brigade commander: "Gentlemen, you are in SCUD-B range. You

will have your protective mask and weapon at your side at all times.”

After five hours of in-processing (following an 18-hour flight from Georgia), the brigade settled into its first temporary housing area, a warehouse at the port. The 24th Division's main command post (CP) was set up two warehouses down the pier. Two days later, the brigade moved to a tent city along the Persian Gulf where it would remain for two weeks. The soldiers became somewhat acclimatized while downloading equipment at the port.

The lessons learned during this time (31 August 1990 to 1 October 1990) are highlighted as follows:

Coordination with the higher headquarters staff must begin immediately. Developing a working relationship with the division chemical officer was essential, along with learning his expectations and requirements. Because the division chemical section was tasked to handle all NBC logistical matters, I found myself again heavily involved in NBC logistics. I found that visiting the people in the division chemical section each day was one way to maintain an effective relationship with them.

Reconnaissance must be conducted. During the early days in SWA, riding with the brigade S-3 was the best way for me to reconnoiter the brigade's sector. Although the heat was almost unbearable during these trips, the effort paid big dividends later on.

The battalion chemical officers must be fully briefed. Briefing battalion chemical officers on the chemical threat as soon as they arrived in country and getting them on line with what the division needed was important. I visited with these officers daily in tent city. Although the distance to walk was not far, the heat and humidity quickly sapped my strength. Because of the heat, activities were kept to a minimum from 1300 to 1500 hours, and work was done either early in the morning or late in the afternoon or early evening. Meetings were conducted about twice a week with the chemical officers.

The chemical section must understand shower operations. The brigade chemical section was tasked to ensure that the shower point at tent city stayed operational. Even though the shower point was operated by the division, the brigade chemical NCOs helped solve problems that arose and provided liaison between the division and the brigade.

On 10 September, the main brigade CP moved to a field site in northern Saudi Arabia and immediately set up for operations. Because some of the headquarters company equipment was still on ships, the brigade chemical section set up in a small tent until the ARFAB (Airborne) tent we usually operated out of was available. (The engineer and communication sections also operated out of this tent.)

Even though both chemical section NCOs were still at the port awaiting vehicles and equipment, we had to disseminate chemical downwind messages (CDMs) 24 hours a day. The lessons learned and the actions that required attention during these early days in the field included the following:

A chemical annex must be prepared. The units needed

information on chemical agent characteristics, Iraqi artillery weapon systems and ranges, and the agents fired with each system. Little was known about how long chemical agents would last in the desert, so we tested motor oil and water to see how long they would last. Until we had more information, this would serve as a guide. We completed an Iraqi chemical capability booklet, a project we had started at the port. It included information from every battle in which chemical agents had been used during the Iran-Iraq war.

Reconnaissance is important. We conducted numerous reconnaissance missions with the assistant engineer officer to identify road networks, water points, and potential decontamination points. This made our later decontamination planning easier.

Units should deploy with field expedient weather measuring devices. Weather data from division did not apply to our location, and we had to prepare CDMs with field expedient weather devices. Great distances separated the brigade from the division, and we were affected by the Gulf while the rest of the division was not. Fortunately, a separate brigade has an Air Force weather section, and this weather data was useful in preparing CDMs.

The decontamination platoon should be positioned close to the brigade main CP. Before the deployment, the decontamination platoon had always deployed with the support battalion, but this was not acceptable. Accordingly, the brigade S-3 positioned the platoon in an assembly area close to the brigade main CP, and this facilitated coordination with the decontamination platoon leader, who received his taskings from the brigade S-3.

After some initial hesitation in setting up in a separate assembly area, the leaders of the decontamination platoon soon realized the benefits of this arrangement. My earlier command experience had taught me that positioning a platoon in its own assembly area helped develop leadership skills in the platoon chain of command. Once combat operations were imminent, however, we planned to place the platoon under the operational control of the support battalion and it would deploy with the logistics release point (LRP) as a “decon package” consisting of the decontamination platoon, the water truck, and supply trucks carrying DS2 (a decontaminating solution), STB (a supertropical bleach), M258A2 decontaminating kits, CPOGs, gloves, boots, kevlar covers, and other NBC supplies. The decontamination platoon leader would maintain communication with the brigade on the operations and intelligence net. If a deliberate decontamination operation was needed, the decon package would be deployed to the appropriate site. A representative from the brigade chemical section would help coordinate among the decontamination platoon, the contaminated unit, and the support battalion in getting additional supplies.

An assistant brigade chemical officer is needed. Although the brigade was authorized an assistant chemical officer, one was not available. During an operations order brief in September, the brigade commander decided to bring one of the two chemical officers in the support battalion up



to the brigade main CP. This enabled one officer to go with the decon package to ease resupply actions and make sure communication was maintained between the decontamination platoon and the brigade main CP.

The brigade chemical section's responsibilities should be clear. With the addition of an assistant, the section's responsibilities were redefined. The assistant became the logistics expert, a function I gladly surrendered.

The section's NCO in charge was also the tactical command post (TAC CP) operations sergeant major, in charge of evaluating NBC training and providing technical assistance. (The brigade has a TAC CP that was operated separately from the main CP) My computer plotter, therefore, became the NCOIC of the chemical section-TOC, and also the driver.

As the brigade chemical officer, I attended all meetings, operations orders, and planning sessions and prepared operations orders and chemical annexes, participated in all staff battle exercises, and conducted briefings. During the daily 1830 section meeting, we exchanged information to keep each other abreast of actions pending and completed. This also helped keep the members of the section working together, despite the fact that we were all going in different directions.

Resupply operations need to be spelled out. The brigade deployed with only one CPOG ensemble per soldier, but a second set was needed. Additionally, storing and hauling this second set and other NBC supplies had to be considered. During a combat service support staff battle exercise, each unit dedicated sufficient haul capability for their SANATORs and NBC gear. It was decided that when the second sets arrived they would be stored in a trains area—either

company, combat, or field. Although haul capability was short, the battalion commanders realized the importance of transporting these items.

Decontamination sites must be selected and reconnoitered.

Again, prior reconnaissance helped in the selection of sites that supported the tactical plan. Units were issued the grid coordinates for decontamination link-up points that were spotted within one or two kilometers of the actual decontamination site to ensure that the contaminated unit linked up with the decontamination platoon leader before entering the site.

Deliberate and hasty decontamination rehearsals must be conducted. Each company in the brigade was required to conduct deliberate decontamination rehearsals with the decontamination platoon. Each company conducted detailed troop decontamination training before these rehearsals, met the decontamination platoon leader and sergeant, and conducted a walk-through of the operation. The units also conducted detailed troop decontamination training afterwards. Deliberate decontamination rehearsals were evaluated by the brigade chemical section. The units that sent a chemical officer or NCO to the walk-through and rehearsals experienced fewer problems than the units that did not.

Each unit conducted hasty decontamination rehearsals with its organic SANATORs. The brigade deployed with its authorized SANATORs, which allowed hasty decontamination without using the brigade's decontamination platoon. This also allowed the brigade to concentrate on both deliberate and hasty decontamination operations during the same time period. The brigade's decontamination platoon was dedicated to conducting deliberate decontamination

missions while the units used SANATORs to conduct hasty decontamination.

Units also used the engine exhaust from M1 Abrams tanks for field expedient hasty decontamination. In this method, either two or four tanks are positioned facing away from each other with the grill doors open at the rear, and a contaminated vehicle is driven between them. Using heat from the tanks' engines is more practical in the desert than using water-based decontamination equipment, and the M1 is definitely more mobile than five-ton trucks.

A brigade NBC warehouse is needed. Additional NBC supplies were stored at the Class II yard. Loading all the extra NBC supplies from the three containers brought from Fort Benning was crucial. The inventories conducted earlier had to be confirmed and the equipment issued. Soldiers needed additional masks, hoods, gloves, booties, and other NBC supplies. Again the brigade chemical section was deeply involved in NBC logistics, and it took a while to get the units to use normal supply procedures.

If a training CPOG is not available, a training chemical suit should be designated. Since the brigade, as well as the division, had only one CPOG per soldier, a training suit was needed. After experimenting with wet weather gear, desert combat uniforms, desert night parkas, and other gear, we chose the desert night parka to simulate the CPOG. Its design was similar to the CPOG. Work gloves were used instead of chemical gloves, and wet weather boots or field boots instead of chemical booties.

Equipment is needed for detecting mustard gas before an attack. The M8A1 chemical agent alarm detects only nerve agents while the M256 chemical detection kit works only after an attack. Fortunately, mustard gas does have a distinctive odor similar to garlic.

Procedures for chemical casualty evacuation and decontamination and for graves registration must be developed before deployment. The present doctrinal procedures either were not applicable or were not detailed enough for desert operations. Fortunately, Chemical Casualty Management Course classes were conducted in country, and the assistant chemical officer as well as the medical personnel in the brigade attended. Detailed procedures were published later in the operation.

This time period provided a tremendous learning experience. Brainstorming and flexibility were crucial. We experimented with procedures and modified them as necessary, and we stood ready to meet the chemical threat.

Sustainment Training

When the brigade realized that war was not imminent, its focus shifted toward sustainment operations. The emphasis was on training for war, and this included NBC-related combat tasks. The following are the lessons learned and actions taken during this period (1 October 1990 to 31 December 1990):

An NBC training program must be developed. Key

components of our NBC program included the following:

- Acclimatize soldiers to MOPP (mission oriented protective posture).
- Go into MOPP IV.
- Conduct deliberate and hasty decontamination rehearsals.
- Emplace and operate M8A1 alarms each week.
- Conduct chemical casualty/decontamination exercises.
- Conduct daily masking drills.
- Conduct weekly NBC control party exercises.

This program was included in the brigade's command training guidance.

The soldiers must train with chemical protective overgarments. Once the second set of chemical protective overgarments came in, the first was designated as both a training and a "go to war" set. The soldiers were to train with the overgarment, dry it out, and store it in a protective bag. Assuring the soldiers that their overgarments would work on a chemical battlefield would eventually become a morale issue. Later, the brigade received messages that validated the decision to use this first set as an operational set. As a result, the brigade opened the new battle dress overgarment (BDO) instead of the older green CPOGs that had been brought during deployment. If the first set had been designated for training, the CPOG would have been opened first and the longer-lasting BDO saved for combat. Wet weather boots and chemical gloves were also opened and used.

Rehearsals must concentrate on both detailed troop decontamination (DTD) and MOPP gear exchange. Detailed troop decontamination and MOPP gear exchange were identified as weaknesses during the company decontamination rehearsals that were held during this period. The control of soldiers and the transfer of contaminated and uncontaminated drivers during deliberate decontamination missions also needs to be addressed. Either the battalion chemical officer or NCO must be at the site to help control the DTD and the flow of personnel.

Non-water-based decon systems must be developed. Because of the lack of water sources and of mobility with the five-ton trucks, a decontamination system that does not require water needs to be developed. One example is the M1 tanks' engine exhaust that we used, and the M1 did provide better mobility and more flexibility for conducting hasty and deliberate decontamination.

NBC control party exercises should be conducted. The company level control parties needed practice, and exercises were conducted weekly on Thursdays from 1000 to 1200. The units could block out this time to train company and battalion level NBC personnel. One of my NCOs initiated the NBC Warning and Reporting System at a selected company and monitored actions at both company and battalion level. Battalion NBC reports forwarded to the brigade were sent to the division chemical section. This was also the time period in which the headquarters company operated in MOPP gear.

NBC training must be checked. All NBC training was

compiled from the master training schedule into an NBC training schedule, and this training was checked to ensure that it was being conducted to standard. Hasty decontamination, deliberate decontamination, and chemical casualty/decontamination exercises were prime training highlights.

NBC training equipment must be ordered. If NBC training equipment is not included during the deployment phase, it should be requisitioned as soon as the unit arrives. Once sustainment operations began, this training equipment was essential in conducting realistic NBC training.

Visits to chemical officers and NCOs are helpful. My goal was to visit chemical personnel at their locations once a week, or to have my representative visit. Of course, this depended on the availability of the section vehicle, but we were usually able to do it.

Periodic chemical officer/NCO meetings should be conducted. These meetings were conducted monthly at the brigade main CP. Along with the visits, they allowed for an exchange of information and ideas between chemical personnel within the brigade.

A decentralized style of leadership works best. A centralized style of leadership does not work when dealing with battalion chemical officers and NCOs, because they work for the battalion S-3 and not for the brigade chemical officer. The latter, therefore, must share information, coach, and then teach, where appropriate, without becoming dictatorial.

The soldiers must maintain their NBC equipment. The desert sand and extreme heat in Saudi Arabia are rough on equipment. Squad leaders must make sure the soldiers perform maintenance on their equipment. Officers should also be checked to ensure that they perform maintenance on their own equipment.

M8A1 alarms and batteries need to be protected. An M8A1 alarm must be protected from the sand and heat while it is being emplaced. Shade can protect it or it can be emplaced in deep sand. It should be used mainly at night. There is really no need to operate it during the daytime. The batteries must be protected from the heat; high temperatures will dissipate their energy quickly and reduce their life.

NBC scenarios can be integrated into other training exercises. The brigade conducted numerous command post exercises of our general defense plan, staff battle exercises, and staff planning exercises. Realistic NBC scenarios can be integrated into such exercises. One of the chemical officer's hardest tasks is to make sure he is an integral part of the staff. He can do this by being proactive.

Real-world crises or incidents can be used as training events. Periodically, certain incidents would increase the apprehension level within the brigade. The chemical officer must not overreact to situations and put soldiers in MOPP IV without good reason. These incidents, however, can be used as training events to gauge the units' state of training. An incident on the morning of 2 December 1990 is an excellent example. Iraq fired three SCUD missiles toward Israel. By mid-morning, alerted that Iraq had launched SCUD missiles, the brigade immediately upgraded its alert level. Then the direction of fire was reported as being toward the west. Although the brigade did not go into MOPP IV, all MOPP gear was available. Although the situation was tense and looked serious, the brigade staff did not overreact during this incident. Some allied forces on our flank, however, did put their units into MOPP IV.

In another incident when M8A1 alarms were activated at 0300 hours, one unit went into MOPP IV just as its soldiers had been trained to do. It turned out that these alarms were from an adjacent unit conducting an NBC exercise in preparation for a deliberate decontamination rehearsal. Although the incident was regarded as funny afterwards, when in doubt it is always better to mask first and ask questions later.

The fears of the soldiers should be calmed. Many soldiers and leaders as well tended to overestimate the chemical threat. The Iraqis knew this and, I believe, tried to heighten these fears. A chemical officer should not get caught up in this but should realistically analyze all reports, especially unconfirmed ones and open-source news reports. Examples included over-emphasizing the danger of hydrogen sulfide gas, Iraq's nuclear capability, and fuel explosive weapons. We need to have a healthy respect for chemical weapons but also need to realize that they cannot contaminate the whole battlefield.

The uncertainty of this period brought about realistic and combat focused training, particularly in NBC. The soldiers realized the threat—some maybe for the first time—and trained as if their lives depended on it. As a result, the brigade stood ready to meet the challenges ahead.

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