

APPENDIX G

NUCLEAR, BIOLOGICAL, AND CHEMICAL CONSIDERATIONS**G-1. Threat**

a. The potential for the employment of NBC weaponry against a deployed US force must be considered as a condition of the battlefield by commanders at all levels. The ease of NBC employment, the difficulty of identification and treatment, and most importantly, the publicity value of even an isolated BW or CW agent attack lends itself well to stability and support operations. The use of an agent would rapidly focus international attention on the deployed US forces, their mission, training, and readiness posture to protect themselves. Further, a terrorist organization claiming responsibility for the attack would receive media attention (which is frequently their goal). In this regard, chemical agents with their historical shock value would be particularly well suited from the terrorist standpoint to gain the maximum psychological impact.

b. The ability of small organizations (especially terrorists) to either produce or procure supplies of BW and CW agents has been documented. The degree to which such agents pose a threat against a deployed US force is dependent upon the goals and objectives of the terrorist organizations. As such, the degree of the NBC threat must be developed from the standard threat indicators formula—*capabilities + intentions = threat*. This threat must be addressed as a part of the overall threat identification process. Protective procedures can be developed by the commander following this assessment. Protective measures for a commander to consider include—

- Training.
- Protection.
- Detection and identification.
- Prophylaxis.
- Contamination avoidance.
- Decontamination (patients, personnel, and materiel).

G-2. Biological Warfare Agents

a. Biological warfare agents range in spectrum from sophisticated, specifically engineered infectious microorganisms and toxins produced in modern biotechnology laboratories, to simple expedient food contaminants employed by insurgents or terrorists in stability and support operations. Gross contamination of water supplies or ingestion of adulterated foodstuffs present the most likely mode of BW agent delivery. Commonly used techniques which have been employed in stability and support operations include—

- Sharpened stakes (Punji stakes) smeared with human or animal waste. (This results in an infection in addition to the actual puncture wound.)

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- Contamination of water and ice sources using infectious waste (discarded bandages or medical dressings), animal and human excreta, or carrion or remains.
- Contamination of locally procured foodstuffs with infectious organisms.
- Direct contamination of foodstuffs by locally hired cooks and food handlers sympathetic to or coerced by terrorists.

b. In considering the threat posed by BW agents, the primary means of protection available to US forces is to implement PMM. These measures include—

- Practicing personal hygiene and field sanitation (FMs 21-10 and 21-10-1).
- Maintaining a current immunization status for the AO.
- Taking prescribed prophylaxis.
- Implementing a rigorous field sanitation program incorporating water inspection by PVNTMED personnel (inspection of food for wholesomeness is the responsibility of the Veterinary Service).
- Developing a medical screening and health certification program for the hire of HN personnel, if required by medical authority.
- Implementing water discipline and sleep programs.
- Establishing a health care program to closely monitor the health of the command.
- Health care personnel must be alert to any increase in infectious disease rates or disease cases not commonly found in the AO. (The commander must be kept informed as they occur. Medical observation continues to provide the primary warning as rapid field BW agent detectors are not available.)

c. Suspected or confirmed incidents of BW agent employment are reported through the Special Telegraphic Report of Selected Diseases, RCS MED-16. Format for this report is provided in AR 40-400 and through NBC reporting procedures as outlined in FM 3-3.

d. Initial treatment of biological agent patients is based on symptomatic indicators. Refer to FM 8-9 and FM 8-10-7 for additional information.

G-3. Chemical Warfare Agents

a. Chemical warfare agents provide the terrorist with a capability to produce casualties and capture media attention as does no other single weapon at his disposal. Chemical agents are relatively easy to make and to employ; their effects are immediate and dramatic. Chemical warfare agents/weapons are used for their injury or death production mechanism, especially the well-known variety of vesicants and

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nerve agents. These categories have the most potential for threatening deployed US forces. Possible means by which chemical agents can be employed include—

- Terrorist chemical attack using locally made low-strength agents.
- Water source contamination.
- Contamination of foodstuffs, to include direct contamination by locally hired cooks and food handlers.
- Chemical weapons provided through a country sympathetic to the terrorist cause.

b. Although not classed as chemical agents (weapons), incendiary/flame munitions, phosphorus compounds, and irritants (CS and CN) will most likely be encountered by US forces in stability and support operations.

c. The NBC defense is a balance of three principles—avoidance, protection, and decontamination—in order to defend against the effects of NBC weapons. These principles apply in stability and support operations as well as war. United States forces must try to avoid or limit the spread of contamination. There are fairly broad groups of activities that comprise protective measures. They are hardening positions and protecting personnel, assuming MOPP, reacting to the attack, and using collective protection. As is the case of BW agent protection, a thorough food and water sanitation/inspection program greatly reduces the possibility of a clandestine chemical assault achieving its goal. In the event of an overt chemical attack, or indirect exposure, physical protection measures and supporting equipment are readily available to the force commander for detection and protection. The keys to protecting the force are individual and unit training on basic soldier skills and leader tasks with emphasis on—

- Recognizing and reacting to NBC hazards.
- Donning, wearing, removing, and storing the protective mask.
- Decontaminating skin and personal equipment.
- Administering nerve agent antidote to self (self-aid) and to a buddy (buddy aid).
- Exchanging MOPP gear.
- Maintaining individual protective mask.
- Maintaining and putting NBC defense equipment into operation.

d. Signs, symptoms, first aid, patient decontamination, and medical treatment procedures for chemical agent casualties or military chemical injuries are provided in FM 8-9, FM 8-285, and FM 8-10-7.

G-4. Nuclear Weaponry

a. The employment of nuclear weapons in stability and support operations is not likely; however, commanders must be prepared for their use. With the advent of new technologies, it is conceivable that a terrorist or terrorist organization could obtain a small nuclear device. This device could then be used to hold a city or state at ransom. The employment of nuclear weapons could rapidly escalate a stability and support operational scenario into a major war.

b. The use of radioactive material to contaminate food and water supplies is a more likely method of employment by terrorists. Monitoring food and water is a must.

c. Food suspected of being contaminated with radioactive material must be inspected by veterinary personnel. They will determine if the food can be used as is, decontaminated then used, or whether it must be destroyed. Food containers, such as unopened cans, can be decontaminated by unit personnel. Refer to FM 8-10-7 for additional information.

d. Preventive medicine personnel will evaluate the water supply to determine if it is safe to consume.

G-5. Operations Under Nuclear, Biological, and Chemical Conditions

Operations under NBC conditions for US forces will cause additional concerns for medical units. Increased incidence of heat casualties may occur due to prolonged wearing of MOPP. An increased number of psychological casualties may also occur from personnel thinking they were exposed to CW agents. Further, if persistent blister agents are used, significant resources may be required to care for these patients. Due to slow wound healing, these injuries require a long and intensive treatment process.

G-6. Civilian Disasters

In stability and support operations, CHS personnel must also be prepared to respond to and treat victims of civilian disasters involving commercial biological research, chemical production, or nuclear power generating facilities. These facilities could be damaged due to collateral damage involving military action, accidents, damage from natural disasters (earthquakes, hurricanes), or terrorist activity. Further, the transport of chemical or nuclear weapons or materials could potentially create a chemical/nuclear contamination situation within a civilian community due to either an accident or terrorist incident. The same triage and treatment protocols are used in these instances as are used for military NBC casualties.