

Nuclear, Biological, and Chemical (NBC) Warfighting Modernization

Discussion

Threats emerging from the proliferation of NBC weapons have become one of today's and the future's foremost security challenges. An increasing imbalance in conventional warfare capabilities has driven potential adversaries to find alternative means to obtain a balance of power. The worldwide proliferation of Weapons of Mass Destruction (WMD) has created a complex, uncertain and volatile NBC contingency environment. Marines must remain trained, equipped and ready to protect the Nation's security interests. To meet these NBC challenges, the Marine Corps is aggressively developing and fielding NBC Defense capabilities, and capabilities to conduct other missions, such as, Consequence Management. These development efforts include re-writing NBC Defense Concepts and Doctrine, fielding state-of-the-art technologies and equipment, and upgrading NBC Defense Training Plans to support the Marine Corps warfighting concepts Operational Maneuver From The Sea (OMFTS) and Ship to Objective Maneuver (STOM). Developing NBC Defense Capabilities is focused on the three pillars of NBC defense: Protection, Contamination Avoidance and Decontamination.

□ The Weapons of Mass Destruction (WMD) Consequence Management Team is responsible for acquisition of equipment to support the Consequence Management Mission Areas of Reconnaissance, Decontamination, Force Protection, Medical, and Command, Control, Communication, Computers, Intelligence, and Interoperability (C4I2). This is accomplished through implementation of effective Acquisition Reform Policies and Procedures, when appropriate. It also includes the evaluation and acceptance of proven commercial and non-development technologies, cooperation with DoD technology development assets and operational testing and fielding. To date the WMD Consequence Management Team has rapidly and successfully fielded over sixty items of equipment to support the Marine Corps WMD Consequence Management Capability. During and subsequent to fielding, the WMD Consequence Management Team provided training sustainment and the implementation of a comprehensive logistical support infrastructure designed to ensure life cycle success of the CBIRF Consequence Management Capabilities and MEU (SOC) Enhanced NBC (E-NBC) Capability Sets.

□ Individual and Collective Protection provide the warfighter life sustaining capabilities and the ability to continue operational capabilities in the event that early detection and warning is not possible or units are forced to occupy or traverse in NBC contaminated environments. This is especially important during the conduct of OMFTS and STOM operations. Individual protection includes protective masks, hoods, suits, boots and gloves exclusively designed for ground combat and air combat Marines. Collective protection includes two general categories: stand-alone shelters and integrated systems that provide a contamination-free, environmentally-controlled surrounding for Marines to perform their missions. Collective protection concepts include mobile and fixed command posts, medical facilities, rest and relief shelters, buildings/fixed sites, vehicles, aircraft, and ships. The Marine Corps is pursuing and fielding technologies that provide improved protection, better mobility in Mission Oriented Protective Postures (MOPP) vision and voice capabilities, and reduced heat stress over current individual protective equipment. It is also evaluating technologies for collective protection in contaminated areas to improve filtering and ventilation, and to reduce weight, volume, costs, and other resource demands.

□ Contamination Avoidance includes NBC reconnaissance, detection, identification, warning, and reporting. Early and reliable detection and warning is fundamental in avoiding chemical and biological agent contamination. This early and reliable detection and warning provides the MAGTF Commander with Situational Awareness of NBC conditions throughout the battlespace. It provides the Commander with a real-time picture of the invisible hazards associated with NBC Defense. Situational Awareness takes advantage of Information Age Technology to build our Contamination Avoidance doctrine. Situational Awareness integrates detector (point and standoff), identification of the agent(s), sample collection and storage, (vapor, liquid, and solid) intelligence (collection and transmission), operations, weather, and unit location networks to provide all units and elements with the requisite information to “paint” the NBC situation. The Marine Corps is aggressively pursuing technology advances in chemical and biological standoff detection, remote and early warning detection, sensor miniaturization, and improved detection sensitivity.

□ Decontamination systems provide the force a regeneration and restoration capability and a resumption of operations capability in the event that contamination cannot be avoided. Personnel and equipment must be decontaminated in order to reduce and/or eliminate hazards after chemical and biological agent employment and contact. Marine forces are developing concepts and training techniques to meet this

resource demanding requirement. Modular decontamination systems with engineering improvements have been fielded and future systems are being developed to include more effective personnel decontamination, fixed site, large equipment, and sensitive equipment decontamination. The Marine Corps is evaluating Sorbents, coatings, and physical removal of contamination on personnel, equipment, fixed sites, and sensitive equipment to permit forces to continue and resume operations. Additional considerations include reducing resource demands, developing effective concepts and doctrine, and organizing forces to efficiently conduct decontamination missions.

Marine Corps Position

The Marine Corps Combat and Materiel Developers are leveraging the Joint Services NBC Defense Program Development efforts and commercial and emerging technologies to field NBC Defense Capabilities to support Marine Corps Forces. Effective operational concepts and doctrine, validated and perfected by realistic exercise training remain fundamental to meeting and defending against the NBC threat.