

FM 3-3
FMFM 11-17

Chemical and Biological Contamination Avoidance

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**HEADQUARTERS, DEPARTMENT OF THE ARMY
COMMANDANT MARINE CORPS**

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Chemical and Biological Contamination Avoidance

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* This publication supercedes the chemical and biological portions of FM 3-3, 30 September 1986.

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Preface

The mission of the Chemical Corps is to prepare the Army to survive and win in a Chemical and Biological (CB) warfare environment by -

- Developing doctrine, organizations, training products, and equipment for CB defense, chemical retaliation, and smoke and flame operations.
- Minimizing the impact of CB weapons through contamination avoidance, protection, and decontamination.
- Employing smoke.
- Employing flame.

This manual is one of five that explains the fundamentals of NBC defense:

- FM 3-3, Chemical and Biological Contamination Avoidance.
- FM 3-3-1, Nuclear Contamination Avoidance.
- FM 3-4, NBC Protection.
- FM 3-5, NBC Decontamination.
- FM 3-7, NBC Handbook

A general overview of these fundamentals is given in FM 3-100, NBC Operations. This manual, FM 3-3, defines and clarifies the entire process of CB contamination avoidance. Another manual, FM 3-3-1, outlines contamination avoidance procedures for nuclear operations. This manual has limited distribution specially for separate brigades, division, and corps level NBC Control Centers. Unless otherwise stated, whenever the masculine gender is used, both men and women are included.

FM 3-3 details the NBC Warning and Reporting System, how to locate and identify CB contamination, and how to operate in and around NBC contamination. This manual is designed and intended to be an

easy-to-read, step-by-step manual depicting the manual method of calculating CB contamination avoidance procedures for chemical officers and NCOs. However, subject matter discussed in Chapters 1 and 2 and Appendices A and C are of general use for all branches and MOS.

Chapter 1 defines the CB Threat, how to reduce unit vulnerability, and implements STANAG 2984, graduated levels of NBC Threat and minimum protection.

Chapter 2 defines how we warn our troops of an enemy CB attack and how we warn of a friendly chemical attack.

Chapters 3, 4, 5, and 6 detail procedures for detecting, identifying, evaluating and plotting hazards while operating in an CB environment. These chapters are essential for battalion, brigade, and division chemical personnel.

Appendix A provides operational situation guidelines for the principles of contamination avoidance in the form of a checklist.

Appendix B provides supplemental information on biological agents and a list of country codes used in processing biological samples.

Chemical personnel must be familiar with and be able to apply the information in this manual.

The proponent of this manual is the U.S. Army Chemical School. Submit changes for improving this publication on DA Form 2028 (Recommended Changes to Publications and Blank Forms) and forward to:

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Introduction

Contamination avoidance is the best defense against enemy use of chemical and biological (CB) weapons. Avoidance reduces the risk of being targeted by CB agents and minimizes the effects of CB contamination hazards. Knowing where contamination exists or how long the hazard may persist is essential to avoiding the hazard. Enemy use of CB weapons make battlefield operations more difficult and time consuming. Combat, combat support, and combat service support operations may be more difficult to perform in a CB environment. Tasks/missions may take more time, but they require prior training in Mission Oriented Protective Posture (MOPP) gear because of the problems created by CB contamination. CB attacks may cause casualties, materiel losses, and creation of many obstacles. Training will reduce the problems caused by CB attacks on the unit. Units must locate clean areas as well as locate contamination in an CB environment. Contaminated units will have to perform decontamination (decon) operations.

To survive and accomplish the mission, individuals and units must take precautions to avoid or minimize effects of initial and residual CB hazards. The threat of contamination may force individuals and units into MOPP gear or into collective protection. Wearing MOPP gear results in heat buildup and degrades individual performance. Using collective protection requires special procedures that are time consuming. See FM 3-4 for information on what measures or steps an enemy CB attack may affect friendly forces. FM 3-3 outlines how to anticipate an enemy CB attack and minimize the effects on friendly forces.

Contamination Avoidance

There are four steps to contamination avoidance: implement passive defensive measures, warn and report CB attacks, locate, identify, track and predict CB hazards, and limit exposure to CB hazards. If the mission permits, avoiding CB hazards completely is the best course of action. This is not always possible. The mission may force you to occupy or cross a contaminated area. This manual outlines procedures to use when working or training to work in a contaminated environment. Using these procedures, which are summarized by the four steps of contamination avoidance, units can minimize performance degradation.

Implement Passive Defensive Measures

Passive defensive measures are those measures taken to reduce the probability of being hit by a CB attack or, if hit, to reduce the effects of the attack. Operational security measures such as good communication procedures, light discipline, and good camouflage reduce the chances of a unit being targeted. Dispersion, hardening of positions and equipment, and using overhead cover reduces the effectiveness of an attack. Passive measures are discussed in more detail in Chapter 1.

Warn and Report

Once a CB attack has occurred everyone who might be affected by the hazard must be warned. This gives units time to protect themselves against a possible hazard. The NBC Warning and Reporting System (NBCWRS) is used for warning and reporting CB hazards. These messages and their use are standardized and kept simple so they can be passed rapidly and be easily understood. The NBCWRS is discussed in Chapter 2. The Automated NBC Information System (ANBACIS) will assist in speeding this process.

Locate and Identify, Track and Predict

NBC Hazards

By locating, identifying, tracking, and/or predicting CB hazards, commanders can make informed decisions for operating in or around NBC hazards. Planning CB reconnaissance is discussed in Chapter 5. Tactics and techniques of CB reconnaissance are contained in FM 3-19, NBC Reconnaissance. Techniques for predicting CB hazards are given in Chapters 3 and 4. A portion of ANBACIS provides for the automatic calculation of hazard areas due to chemical or biological weapons using or creating all NBC 1 through NBC 5 Reports.

Limit Exposure

If operation in a contaminated area is necessary, take steps to limit the amount of troop exposure. Chapters 3 and 4 discuss crossing contaminated areas. FM 3-4, NBC Protection, gives guidance on protective measures