

UNITED STATES MARINE CORPS
FIELD MEDICAL TRAINING BATTALION
Camp Lejeune, NC 28542-0042

FMSO 210

Don Mission-Oriented Protective Posture (MOPP) Gear

TERMINAL LEARNING OBJECTIVE

1. Given a CBRN environment, a field protective mask (SL-3 complete), CBRN alarm and CBRN incident indicator, or an order to mask, employ the Field Protective Mask (FPM) within a time limit of nine seconds of the issuance of the alarm, CBRN incident indicator, or an order. (HSS-CBRN-2001).

ENABLING LEARNING OBJECTIVES

1. Without the aid of references, given a description or title, select the definition of Mission Oriented Protective Posture, within 80% accuracy, per NBC Decontamination, FM 3-5. (HSS-CBRN-2001e)
2. Without the aid of references, given a list, identify the limitations of Mission Oriented Protective Posture, within 80% accuracy, per NBC Decontamination, FM 3-5. (HSS-CBRN-2001f)
3. Without the aid of references, given a description or title, identify the levels of Mission Oriented Protective Posture, within 80% accuracy, per NBC Decontamination, FM 3-5. (HSS-CBRN-2001g)
4. Without the aid of references, given a description or list, identify the methods of chemical agent detection, within 80% accuracy, per NBC Decontamination, FM 3-5. (HSS-CBRN-2001h)
5. Without the aid of references, given a description or list, identify the methods of personal decontamination, within 80% accuracy, per NBC Decontamination, FM 3-5. (HSS-CBRN-2001i)
6. Without the aid of reference, given a simulated NBC contaminated environment and the necessary equipment, employ NBC personal protective equipment and measures, to prevent further illness or injury, per NBC Decontamination, FM 3-5. (HSS-CBRN-2001k)

1. **MISSION-ORIENTED PROTECTIVE POSTURE (MOPP)**

Definition - MOPP is a flexible system of protection against chemical agents, which is used to facilitate mission accomplishment. Because of body heat buildup and basic human needs, the over garment cannot be worn forever. MOPP does give the commander a range of choices regarding the level of chemical protection. Choices range from no protection at all to full protection.

2. **LIMITATIONS OF MOPP**

Heat Exhaustion - individuals in protective gear working at a heavy rate may experience heat exhaustion at any time, especially during periods of high temperatures.

Work Rate - factors such as breathing resistance, an increase in body temperature, as well as psychological and physiological stress will reduce the total amount of work individuals can perform.

Five Senses - the senses and their related functions such as manual dexterity, visual acuity and voice communication will operate with less efficiency.

Personal Needs - individuals can not be in full chemical protection for indefinite periods and still attend to certain personal needs such as caring for wounds, personal hygiene, sleep and elimination of body waste.

Eating - it is impossible to eat with a gas mask on. The ability of troops to eat in an NBC environment depends on the type and extent of contamination.

3. **LEVELS OF MOPP** There are four levels of MOPP.

MOPP Level 1 - this level of protection is established when the *general warning* is given and the threat of NBC warfare exists.

- Over garment is worn open or closed
- Over boots are carried
- Mask is carried
- Gloves are carried

MOPP Level 2 - this level of protection should be established during tactical situations that require units to cross terrain where the previous use of chemical agents is *unknown*.

- Over garment is worn open or closed
- Over boots are worn

- Mask is carried
- Gloves are carried

MOPP Level 3 - this level of protection should be established when units are on the move and a chemical *attack is possible*.

- Over garment is worn and closed
- Over boots are worn
- Mask is worn; hood is open or closed, based on temperature
- Gloves are carried

MOPP Level 4 - this level of protection should be established when a unit will be *operating within an area of contamination*, or if there is an *imminent threat* of attack.

- Over garment is worn and closed
- Over boots are worn
- Mask and hood are worn and closed
- Gloves are worn

4. **NBC DETECTION EQUIPMENT**

The chemical agent detection devices utilized by the armed forces include the following:

M8 Chemical Agent Detector Paper

Purpose - the purpose of M8 paper is to identify the type of chemical agent present in liquid form on the battlefield.

Supplied - the M8 detection paper is supplied in a booklet and carried within the M40 field protective mask carrier.

Instructions For Use

- When an unknown liquid, suspected of being a chemical agent is encountered, immediately don the M40 field protective mask and protective suit.
- When all protective clothing has been put on obtain the M8 paper booklet from the carrier.
- Remove a half sheet from the booklet, and if possible, affix the sheet to a stick (to use as a handle).
- Blot the paper onto the unknown liquid and wait for 30 seconds for a color reaction to occur. The resulting color may then be compared to the colors on the inside of the front cover of the booklet to identify the type of liquid agent encountered.

M9 Chemical Agent Detector Paper (See figure 1)

Purpose - used to detect the presence of liquid nerve and blister chemical agents. However, M9 chemical agent detector paper does not identify either the specific agent or the type of agent encountered.

Supplied - M9 detector paper comes in a thirty-foot-long (30') and two-inch (2") wide roll strip in the form of a tape.

Instructions For Use

- The tape is placed around a sleeve and a trouser leg of the overgarments. (NOTE: The tape contains an indicator dye that is a potential carcinogen. Avoid contact with the skin. Gloves should be worn during application,.)
- The tape is a dull off-white or cream color in the absence of liquid agent. The indicator chemical, when dissolved in liquid agent turns a reddish color.
- When the service member sees the tape turn a reddish color, immediately don your protective mask and alert others.
- If there is a possibility of skin contamination, immediately decontaminate the suspected area.
- False positive results can occur if liquid insecticides are on the surface being tested. Antifreeze and petroleum products will also cause false positive reactions.



Figure 1. M9 Chemical Agent Detector Paper

M256A1 Chemical Agent Detector Kit

Purpose - the M256A1 chemical agent detector kit is used to detect and identify chemical agents present, either as a liquid or as a vapor.

Supplies - the kit consists of a booklet of M8 paper to detect agents in liquid form and twelve (12) foil-wrapped detector tickets containing eel enzymes as reagents to detect even very low concentrations of chemical vapors.

Instructions For Use - instructions for the use of this kit appear on the outside of each foil package. There is also an instruction booklet in the kit. The kit detects the following agents: nerve, blister and blood agents.

- Following the accompanying instruction, the testing can be completed in approximately 20 minutes.

- During testing it is important to keep the ticket out of direct sunlight. Sunlight speeds up the evaporation of the reagents. The ticket, when testing, must be kept stationary during all parts of the test.

5. **PERSONAL DECONTAMINATION**

M291 Skin Decontaminating Kit (See figure 2)

Purpose - to absorb and then neutralize liquid chemical agents present on the skin.

Supplied - the kit comes with six identical packets each containing a mixture of activated resins in the form of applicator pads.



Figure 2. M291 Skin Decontaminating Kit

Instructions For Use

- Remove a packet from the kit.
- Remove the applicator pad and apply an even coating of resin powder while scrubbing the entire skin area suspected to be contaminated.
- One applicator pad will decontaminate both hands and the face if necessary.
- If the face must be decontaminated, then the neck (including the throat area) and the ears must also be decontaminated using a second applicator pad.
- The black resin powder residue will provide a visual confirmation of the thoroughness of application.
- The resin will not cause skin irritations, even after prolonged contact with skin.
- Care must be taken in keeping the resin out of the eyes, mouth, and open wounds.

REFERENCES:

NBC Decontamination, FM 3-5, Pgs. 2-1 through 2-5
MOPP Review

1. List the five limitations of MOPP?
2. Are gloves worn or carried in MOPP Level 3?
3. Which types of agents can be detected by the M256A1 Kit?
4. Describe the relationship of the M256A1 kit and direct sunlight?