



UNITED STATES MARINE CORPS
MARINE **CORPS** BASE
QUANTICO, VIRGINIA 2213445001

MCBO 3400.1
C 032
13 Dec 1982

MARINE CORPS BASE ORDER 3400.1

From: Commanding General
To: Distribution List

Subj: Nuclear, Biological and Chemical (NBC) Defense, Readiness
and Training

Ref: (a) MCO 3400.31)
(b) MCO 1510.2H
(c) TI 10010-15/1 (NOTAL)
(d) MCDEC Oplan 2-78 (NOTAL)
(e) MCDEC Oplan 5-76 (NOTAL)

Encl: (1) Definitions and Characteristics
(2) NBC Defense Organization
(3) NBC Defense Procedures
(4) Training
(5) Quarterly NBC Defense Report
(6) As-Required Reports
(7) Marking of Contaminated and/or Dangerous Land Areas
(8) Gas Chamber Safety Regulations

Report Required: NBC Defense Readiness Report (Report Symbol
MCDEC-3400-03) par. 4c(7)

1. Purpose. To implement references (a) through (e).
2. Cancellation. MCDECO P3400.1A.
3. Information

a. The ability of personnel to survive an NBC environment and maintain mission capability depends primarily on the degree of defense readiness of each organization. To achieve these requirements, all personnel must be proficient in NBC defense procedures. Reference (d) establishes preparedness and operational requirements in the event of an NBC disaster.

b. Enclosures (1) through (8) contain information and, details for implementation of this Order.

4. Action

a. Activity Heads. Conduct normal functions during NBC defense operations.

MCBO 3400.1
13Dec 1982

b. Assistant Chief of Staff, Operations. Assume the general **supervision of the NBC defense operations, inspect** training and initiate training exercises in coordination with the Commanding Officer, Headquarters and Service Battalion.

c. Organizational Commanders

(1) Review the requirements of MCDEC contingency plans, such as references (d) and (e), and organize NBC capabilities in accordance with those requirements.

(2) Ensure that personnel involved in the support of contingency plans participate in gas chamber **exercices** on a semiannual basis.

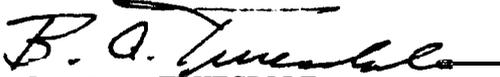
(3) Designate in writing an NBC officer and an NBC NCO and forward a copy of the designation to the Commanding General (Code C 03). Training of those Marines so designated is the organizational commanders' responsibility and includes budgeting for this training at appropriate schools. Request for school quotas will be submitted to the Commanding General (Code C 03). Those key personnel who have not attended NBC School will be enrolled or will have completed MCI Disaster Course 57.6.

(4) Execute all gas chamber exercises in accordance with enclosure (8).

(5) Equip organizations with sufficient NBC equipment necessary to fulfill NBC missions assigned in references (d) and (e), and be responsible for the maintenance of all NBC equipment.

(6) Ensure that NBC defense capabilities with necessary personnel and equipment, are organized down to and including unit level and that every Marine is trained in individual protective measures.

(7) Submit three copies of the quarterly NBC Defense Readiness Report to the Commanding General (Code C 032) no later than 5 working days after the end of the quarter. This report will be submitted in the format depicted in enclosure (5).


B. A. TRUESDALE
Chief of Staff

DISTRIBUTION: A/C plus 6(20)

DEFINITIONS AND CHARACTERISTICS

1. Nuclear Weapon. A device in which the explosion results from the energy released by reactions involving atomic nuclei, either fission, or both. These weapons produce mass casualties and extensive damage to material. The effects of nuclear weapons employment depends primarily upon the weapon, yield and delivery means and are affected by terrain features, height of bursts and weather in the target area.

a. Initial Effects. Casualties or damage produced by nuclear weapons **within the initial** 60 seconds following detonation.

b. Air Blast. Gases produced at detonation under extreme temperature and pressure, which expand with great force to create a powerful blast wave in the air.

c. Thermal Radiation. The heat and light produced by the **detonation**.

d. Nuclear Radiation. High speed neutrons, gamma rays and alpha/beta particles emitted from the burst.

e. Residual Radiation. Nuclear radiation that persists longer than **1 minute after burst**. This form of radiation appears on the ground in the following two forms:

(1) Fallout, which is found in a large, irregular pattern encompassing and extending for long distances downwind from the point of burst.

(2) Induced contamination, which is found within a relatively small circular pattern around the point of burst.

2. Biological Weapon (BW). An item of material which projects, **disburses or disseminates** a biological agent. Biological weapons are capable of producing mass lethal or incapacitating disease in personnel and extensive damage to vegetation and material over large areas.

a. Biological warfare agents are generally classified into the following five categories:

(1) Microorganisms (bacteria, viruses, rickettsias, fungi and protozoans).

(2) Vectors or carriers of disease (usually insects).

(3) Toxins (poisonous chemicals derived from microorganisms, animals and plants).

MCBO 3400.1
13 Dec 1982

(4) Pests of domestic and commercial plants and animals.

(5) **Anticrop** agents.

b. Biological agents can be employed in such a manner that there is no apparent physical damage to surrounding terrain, installations or facilities.

c. Immediate detection of the employment of these agents is **difficult** and even once detected, the identification of the agent, its appropriate epidemiology and treatment are complicated and time consuming.

d. The fear of biological agent employment is capable of producing marked psychological effects among personnel not familiar with their characteristics and limitations and the use of defensive countermeasures.

e. The effects of biological weapon employment depends largely upon meteorological conditions.

3. Chemical Weapon (CW). Chemical weapons/agents are capable of **producing mass casualties** and extensive damage to material over large areas.

a. Chemical agents, considered a significant part of the NBC environment, are those agents capable of producing serious injury or death when used in appropriate concentrations.

(1) Choking Agents. Chemical agents that attack lung tissue and cause pulmonary edema. These agents can cause serious damage to the respiratory system, and even death, as a result of drowning in the victim's own body fluids or by suffocation. Agents in this group are phosgene, chlorine and chlorine derivatives.

(2) Blood Agents. Chemical agents that produce lethal effects by **interfering with** the vital processes of transferring oxygen from the blood to body tissues. Hydrocyanic acid (AC) (also known as **prussic acid**), hydrogen cyanide and cyanogen chloride (CK) are the important agents in this group.

(3) Blister Agents. These agents act upon the eyes, the lungs and **the skin**; burning and blistering any part of the body they touch. Examples include mustard (HD), nitrogen mustards (**HN**), lewisite (L), other **arsenicals**, mixtures of mustards and phosgene oxide (CX).

(4) Nerve Agents. The nerve agents are among the deadliest chemical agents and include G-agents and V-agents. These agents are absorbed through any body surface, and in liquid

ENCLOSURE (1)

13 Dec 1982

form **may** rapidly penetrate ordinary clothing or impregnated permeable clothing. Nerve agents affect the complex electrochemical operation that enables nerves to control muscles and generally cause death from paralysis of the diaphragm, which makes it impossible for the **victim** to breathe. Examples of G-agents are tabun (GA), sarin (GR) and **soman** (GD). The standard V-agent is VX.

b. Chemical agents not considered part of the **NBC** environment include riot control agents, chemical herbicides, smokes and incendiaries.

NBC DEFENSE ORGANIZATION

1. The ability to survive an NBC attack depends primarily on proper organization. Organizational commanders are responsible for assigning qualified personnel to NBC teams to minimize the effects of an NBC attack.

2. Emergency Recovery Section (ERS). An ERS is designed to react to any type of **disaster** including an NBC attack or accident. In an NBC related occurrence the below-listed would generally be established. For organizations, MCDEC Oplan 2-78 directs teams to be established, members and types of personnel comprising the teams, functions of each team and equipment required to accomplish section missions.

a. Monitor/Survey Teams. Provide the capability to detect and determine the **extent to which** NBC agents are present in an area.

b. Service Teams. Provide administrative and communication support.

c. Personnel Decontamination Teams. Provide the capability to decontaminate personnel affected by an NBC agent.

d. Facilities and Area Decontamination Teams. Provide the **capacity for decontaminating facilities and equipment** affected by NBC agents.

e. Dosimetry Teams. Provide the capability for determining dosages of **radiation affecting** personnel and equipment.

f. Clothing Decontamination Teams. Provide the capability for **laundering and decontaminating** affected clothing.

g. Explosive - Ordnance Disposal Team. Provides the capability for disposing of **unexploded NBC ordnance**.

3. Organizational Level. The Commanding Officers of Headquarters and **Service Battalion**, The Basic School, Officer Candidates School, Weapons Training Battalion and Marine Corps Air Facility will establish an NBC control center team(s). Each team(s) will be composed of an NBC officer and NBC **defence** NCO, at a minimum, to advise and assist organizational commanders and staffs on NBC defense matters with particular emphasis directed toward achieving individual training objectives.

NBC - DEFENSE PROCEDURES

1. When NBC warfare has been initiated, any hostile attack will require defensive action by all personnel. Therefore, any alarm sounded will be considered an NBC defense alert.

2. Alarms and Signals

a. Condition Yellow. The station whistle sounds steadily for 3 to 5 minutes **indicating** a possible NBC attack.

b. Condition Red. The station whistle sounds short blasts for 3 minutes **indicating** an imminent NBC attack.

c. Visual Signals. Donning the protective mask and extending both arms **horizontally** sideways with fists doubled, facing up and rapidly moving fists to mask and back to the horizontal position, indicates detection of an NBC agent.

d. Vocal Signals. Shouting "GAS" or "SPRAY" indicates presence of an NBC Agent. Mask should be donned prior to shouting.

e. All Clear. The signal will be given orally when danger no longer **exists**. The frost call system may be utilized.

f. Other Signals. Activity signals may be implemented using metal **objects for percussion** or locally procured horns and sirens.

3. Action Before NBC Attack. Organizational commanders will:

a. Activate NBC defense teams.

b. Distribute appropriate NBC supplies.

c. Commence monitoring.

d. Activate protective shelters.

e. Report that condition "yellow" has been set, to the Head, Emergency Recovery Section (organizational commanders will report for their units) by the most expeditious means available.

4. Action During NBC Attack

a. All personnel will make use of available shelters within the immediate area.

b. If caught in the open during a nuclear ~~burst~~, hit the deck (**face down**) and cover as much exposed skin as **possible**.

MCBO 3400.1
13 Dec 1982

c. Personnel will wear protective clothing and equipment issued to them.

d. If contaminated by fallout, chemical or biological agents, decontaminate to the maximum extent possible.

e. When a reading of 1 rad/hour is recorded, remain on continuous monitoring.

f. Report that condition "Red" has been set to the Head, Emergency Recovery Section (organizational commanders will report for their units) by the most expeditious means available.

5. Action After NBC Attack

a. All personnel will stay under cover until "all clear" is given. "All clear" will be disseminated by direction of the Commanding General, by the fastest possible means. The decision to announce "all clear" is a Command decision.

b. Organizational commanders will:

(1) Evaluate damage, casualties, fallout (if any) and mission effectiveness of their organizations.

(2) Maintain and/or restore the emergency plan in effect.

(3) Determine effects of attack.

(4) Evaluate casualties.

(5) Conduct personnel and equipment decontamination and continue assigned mission.

6. As-Required - NBC Reports. See enclosure (6).

7. Marking of Contaminated and/or Dangerous Land Areas. See enclosure (7).

ENCLOSURE (3)

TRAINING

1. NBC defense training is a command responsibility and will be no better than the emphasis placed on it by organizational and unit commanders. The training program must be supported by the organizational commander. NBC training will be based on the latest available doctrine with the ultimate goal being the ability to survive and continue the mission while under and subsequent to an NBC attack.

2. Individual Training

a. General Objective. Every Marine should achieve proficiency in individual protective measures necessary to survive during an NBC attack and operate in an NBC environment with a minimum reduction in effectiveness.

b. Specific Objectives/Proficiency Standards. Each Marine must be able to:-----

- (1) Recognize visual, vocal and noise alarms for NBC hazards.
- (2) Properly don, seat, clear and check the protective mask (with hood attached) within 9 seconds and complete the attachment of the hood under the arms within 6 seconds for a total of 15 seconds following a chemical or biological attack alarm.
- (3) Properly don chemical protective clothing, when assigned to duties requiring the wearing of protective clothing and equipment, and perform an assigned mission while in a mission-oriented protective posture for a minimum 1-hour period in moderate temperatures.
- (4) Recognize, by appearance or effects, a chemical hazard and take protective action.
- (5) Operate individual or crew-served weapons effectively while wearing complete protective clothing and equipment.
- (6) Perform simple decontamination of the Marine's person, clothing, personal equipment, individual weapon and position.
- (7) Be familiar with proper **hygenic** procedures while dressed in chemical protective clothing in a contaminated area.
- (8) Perform proper first aid, to include mouth-to-mouth and mask-to-mouth resuscitation, for respiratory failure caused by chemical agents.
- (9) Recognize all standard NATO markers or signs that indicate NBC contamination areas.

ENCLOSURE (4)

MCBO 3400.1
13 Dec 1982

(10) Cross chemically contaminated areas with minimum danger.

(11) Maintain individual chemical protective equipment, including changing the filter elements of the M17 series protective mask.

(12) Take proper individual protective measures against a nuclear attack.

3. Team Training

a. General Objective. NBC defense teams will provide **capabilities for the** control of information and operations, the detection of hazards and the decontamination of equipment.

b. Specific Objectives/Proficiency Standards. Team training will **ensure that team members can proficiently** perform the following team missions:

(1) Monitor/Survey Teams. Personnel should be capable of:

(a) Conducting field biological sampling and chemical agent detection.

(b) Operating monitoring and survey radiac instruments and T/E communication equipment.

(c) Working in contaminated areas in appropriate protective clothing/equipment.

(2) Personnel Decontamination Teams. Personnel should be capable of:

(a) Performing individual and group decontamination of personnel.

(b) Utilizing T/E radiac instruments and chemical agent detector kits.

(c) Establishing and operating personnel decontamination stations in conjunction with collective shelters.

(d) Ensuring proper control of contamination during decontamination operations.

(3) Facilities and Area Decontamination Teams. Personnel should be capable of:

(a) Establishing and operating field decontamination stations.

ENCLOSURE (4)

13 Dec 1982

(b) Working in contaminated areas in appropriate protective clothing/equipment for prolonged periods of time.

(c) Operating T/E radiac instruments and dosimeters.

(d) Utilizing chemical agent detector kits and chemical agent detector devices.

(e) Ensuring proper control of contamination during decontamination operations.

(4) Clothing Decontamination Teams. Personnel should be capable of:

(a) Establishing the reusability of contaminated clothing.

(b) Operating T/E radiac instruments and dosimeters.

(c) Ensuring proper control of contamination during decontamination operations.

(5) Dosimetry Teams. Team members should be able to read, record and report **decontamination** levels.

(6) Control Center Teams. Team members should be capable of:

(a) Plotting and predicting actual fallout computation of contamination decay, time of entry and time of stay.

(b) Communicating and reporting procedures.

(c) Plotting and maintaining an NBC situation map.

4. Essential Military Subjects and NBC Training. NBC training should be integrated into essential military subjects training whenever possible. Small activity training should include NBC training where feasible.

QUARTERLY-NBC DEFENSE REPORT

1. NBC Officer (Note 1)

NAME RANK MOS NBC SCOL ATTENDED LENGTH/DATE COMPL OFF TP

2. NBC Defense NCO (Note 1)

3. Nr of pers with-MOS 5711 assigned to organization _____ Primary _____ Secondary _____
 4. Nr of officers who have attended NBC schools 2 weeks or longer.
 5. Nr of enlisted who have attended NBC schools 2 weeks or longer.
 6. Nr of man-hours of training conducted with personnel donned in protective mask. _____
 7. Gas chamber: Total unit strength (for this reporting period)

Officers _____ Enlisted _____ Date _____ Nr Officers Attending _____ Nr Enlisted _____

 SUBJECT OR TYPE NR PERSONNEL ATTENDED TOTAL HOURS
 OFFICERS ENLISTED INSTRUCTION - - -

8. Basic training NBC _____ I - - - - -
 9. Organizational training _____ - - - - -
 10. Team training _____ - - - - -

FOOTNOTE:

1. If NBC officer or defense NCO is not school trained, indicate on attached sheet action being taken to fulfill this requirement.

1

ENCLOSURE (5)

MCBO 3400.1
 13 Dec 1982

AS-REQUIRED REPORTS

1. NBC Formats

- NBC-1 Observers' initial report with basic data (par. 3)
- NBC-2 Report used for passing evaluated data (par. 4)
- NBC-3 Immediate warning of expected contamination (par. 5)
- NBC-4 Report of radiation dose-rate measurements (par. 6)
- NBC-5 Report of areas of contamination (par. 7)

2. Letter items listed below identify content of both Nuclear and Toxic/Biological reports. When submitting reports, utilize all letter items for which information is available. The letters used in all reports have the following meaning:

<u>Nuclear Report</u>	<u>Toxic and Biological Reports</u>
A. Strike serial number(s).	Strike serial number(s).
B. Position of observer, (grid coord) universal transverse mercator (UTM).	Position of observer, universal transverse mercator or place.
C. Grid or magnetic (state which) bearing or azimuth of attack from observer in degrees or mils (state which).	Grid or magnetic (state which) bearing or azimuth of attack from observer in degrees or mils (state which).
D. Date/time of detonation, local or Zulu, (state which).	Date/time of detonation, local or Zulu (state which).
E. Illumination time (duration reported in seconds).	Date/time attack ended, local or Zulu time (state which).
F. Location of attack (grid coord), actual or estimated (state which).	Area attacked, actual or estimated (state which).
G. Means of delivery.	Means of delivery.
H. Type of burst, air, surface or unknown (state which) including height, if known.	Type of toxic agent if known or type of attack. (BW or CW).
I. N/A	Type and number of munitions or aircraft (state which).

MCBO 3400.1

13 Dec 1982

- J. Flash to bang time (seconds). N/A
- K. Crater present or absent and diameter if known (meters). N/A
- L. Cloud width at H plus 5 minutes in degrees, mils, meters or feet (state which) N/A
- M. Cloud top (CT) or cloud bottom (CB) angle (state which) at H plus 10 minutes in degrees, mils, meters or feet (state which). N/A
- N. Estimated yield in kilotons (KT) or megatons (MT). N/A
- O. Reference date/time for estimated contours when not H plus 1 hour. N/A
- P. For radar purposes only
PA. UTM coordinates of **points** to outline external contours of radioactive cloud.
PB. effective wind direction (from) in magnetic degrees or mils (state which). Area of expected contamination (UTM).
- Q. Location of reading (UTM place). N/A
- R. Dose rate in rads per hr. "increasing", "peak" or "decreasing" **may be added**. When decay rate is reported the words "decay normal", "decay fast", "decay slow" or the actual **value** of decay constant exponent may be inserted. The words "initial",
- S. Date/time of reading (local or Zulu time). N/A
- T. H plus 1 hour date/time (local or Zulu time). N/A

ENCLOSURE (6)

- U. 1000 **rads/hours** contour line
coord (UTM) (red). **N/A**
- V. 300 rads/hours contour line
coord (UTM) (green). Area of measured *con-*
tamination grid coord
(yellow) (chemical or
biological).
- W. 100 **rads/hours** contour line
coord (UTM) (blue). **N/A**
- x. 20 rads/hours contour line
coord (UTM) (black). **(30**
rads/hours used by NATO forces
(STANAG-2103)). **N/A**
- Y. Bearing or azimuth of left,
then right radial lines in
degrees or mils (state which)
(four digits each). **N/A**
- Z. Effective wind speed in kilometers
per hour (KPH) 3 digits:
downwind distance of Zone 1
(km), 3 digits; cloud radius
(km) 2 digits. (When effective
wind speed is less than 8 **KMPH**
3 digits only for radial
distance of Zone 1). **N/A**

3. NBC-1 (Nuclear) Observers Initial Report (With Basic Data).
Use letter items B through J and omit letter items not applicable.

EXAMPLE

Type of report	NBC-1 (Nuclear)	Precedence Flash
BRAVO		190400
CHARLIE		60 mils grid
DELTA		2915002
HOTEL		Unknown
JULIET		5 sec
Send at H plus 10 minutes	NBC-1 (Nuclear)	Precedence Immediate

MCBO 3400.1
13 Dec 1982

BRAVO	190400	(local)
DELTA	291500	(local)
MIKE	250 mils top	100 mils bottom

NOTE: Transmit all data except line "MIKE" immediately after bang time, and transmit lines "BRAVO", "DELTA" and "MIKE" after measurements are made at H plus 10 minutes.

4. NBC-2 Report Used for Passing Evaluated Data

a. This report is normally used by the NBC activity heads for passing evaluated data to subordinate and adjacent activity heads. This report is based on two or more NBC-1 reports. Other information included is an estimated ground zero (GZ) plus an evaluated yield in the case of nuclear detonations.

b. Letter items A, D, F, H and N, may be repeated as often as necessary to produce summary reports. Other letter items may be added at the users' discretion.

EXAMPLE

Type of report	NBC-2 (Nuclear)	NBC-2 (Toxic)	NBC-2 (Biological)
ALFA	10	9	22
DELTA	2915002	2915002	2915002
FOXTROT	190400	190400	190400
GOLF	aircraft	aerial spray	artillery
HOTEL	unknown	nerve	nerve
NOVEMBER	50 KT		

5. NBC-3 Report Used to Issue Warning of Expected Contamination

a. NBC-3 reports are designated for reporting expected areas of fallout contamination resulting from enemy nuclear detonation.

b. Users of NBC-3 reports are not confined solely to the use of the letter items shown in the examples below. Other items may be added at the users' discretion in the case of toxic reports.

ENCLOSURE (6)

c. The NBC-3 (nuclear) report is normally used by NBC activity heads to issue fallout predictions and areas of chemical contamination.

EXAMPLE

Type of Report	N B C - 3 (Nuclear)	NBC-3 (Toxic)	NBC-3 (Biological)
DELTA	2915002	2915002	291500Z
FOXTROT	190400	190400	190400
PAPA		198420 199520 201400 212990	198420 199420 201400 212990
YANKEE	32004800	mils grid	
ZULU	01902505		

6. NBC-4 Report Used for Radiation Dose-Rate Measurements

a. Letter items "Q", "R" and "S" may be used or repeated as often as necessary and in sequence for each report.

b. Radiation dose rates are measured in the open, 1 meter above the ground. Specify other conditions in report.

EXAMPLE

Type of Report	NBC-4 (Nuclear)
QUEBEC	190400
ROMEO	35 rads/hr
SIERRA	291500 (local time)
QUEBEC	190400
ROMEO	50 rads/hour increasing
SIERRA	291530 (Local time)

7. NBC-5 Report of Areas of Contamination

a. When the contamination arises from a single enemy or unidentified burst, the dose rates will always refer to H plus 1 hours, and the letter item "T" will be used. When there have been several detonations at different times or on different days and no single H plus 1 hour reading is possible, then the dose rates will be reported as of a specified time using the letter item "O". Letter items "O" and "T" are therefore alternative and both cannot be used in the same report.

b. It is not necessary or even desirable to report all four of the contours of different dose rates. Four are used or given to provide flexibility. In the example only two are reported.

c. Letter item "X" is used for chemical areas of tactical significance.

d. When a contour closes to form a complete ring, the first coordinate is repeated at the end (see example 300 rads/hr).

e. Colors, when used in plotting and when sending the report by means of a trace or overlay, are:

Red for 1000 rads/hour
Green for 300 rads/hour
Blue for 100 rads/hour
Black for 20 rads/hour (30 rads/hr used for NATO forces (STANAG-2103))
Yellow for chemical and biological contamination

f. Contour lines will be annotated with the dose rates.

g. Decay rates will be transmitted when requested.

h. Users of NBC-5 reports are not confined solely to the use of the letter items shown in the example.

i. NBC-5 reports should be sent by means of trace or overlay if time and distance permit.

EXAMPLE

Type of Report	NBC-5 (Nuclear)	NBC-5 (Toxic)	NBC-5 (Biological)
ALFA	14	15	03
OSCAR	N/A	N/A	N/A

ENCLOSURE (6)

MCBO 3400.1
13 **Dec** 1982

TANGO	2015052	2015052	2015052
VICTOR	651455 810551 821459 651455		
WHISKEY	604718 991686 114420 595007		
XRAY	206991 201575 200787 206991	664839 toxic 774553 664886 467354	996774 bio 886775 996776 995446

ENCLOSURE (6)

13 Dec 1982

MARKING OF CONTAMINATED AND/OR DANGEROUS LAND AREAS

1. Marking Contamination. For the purpose of this Order, marking contamination will include such dangers as radioactive contamination, biological contamination, chemical contamination, chemical minefields (or barriers), minefields (or barriers) other than chemical, booby-trapped areas and unexploded bombs. These dangers will always be marked by triangular signs (right-angled **isosceles** triangle) unless the area is to be abandoned to the enemy.

2. Color of Signs. The nature of the contamination or danger of the considered area is to be indicated by the colors of the signs. These include:

a. The primary color, used for the background of the front surface and for the entire back surface of the sign.

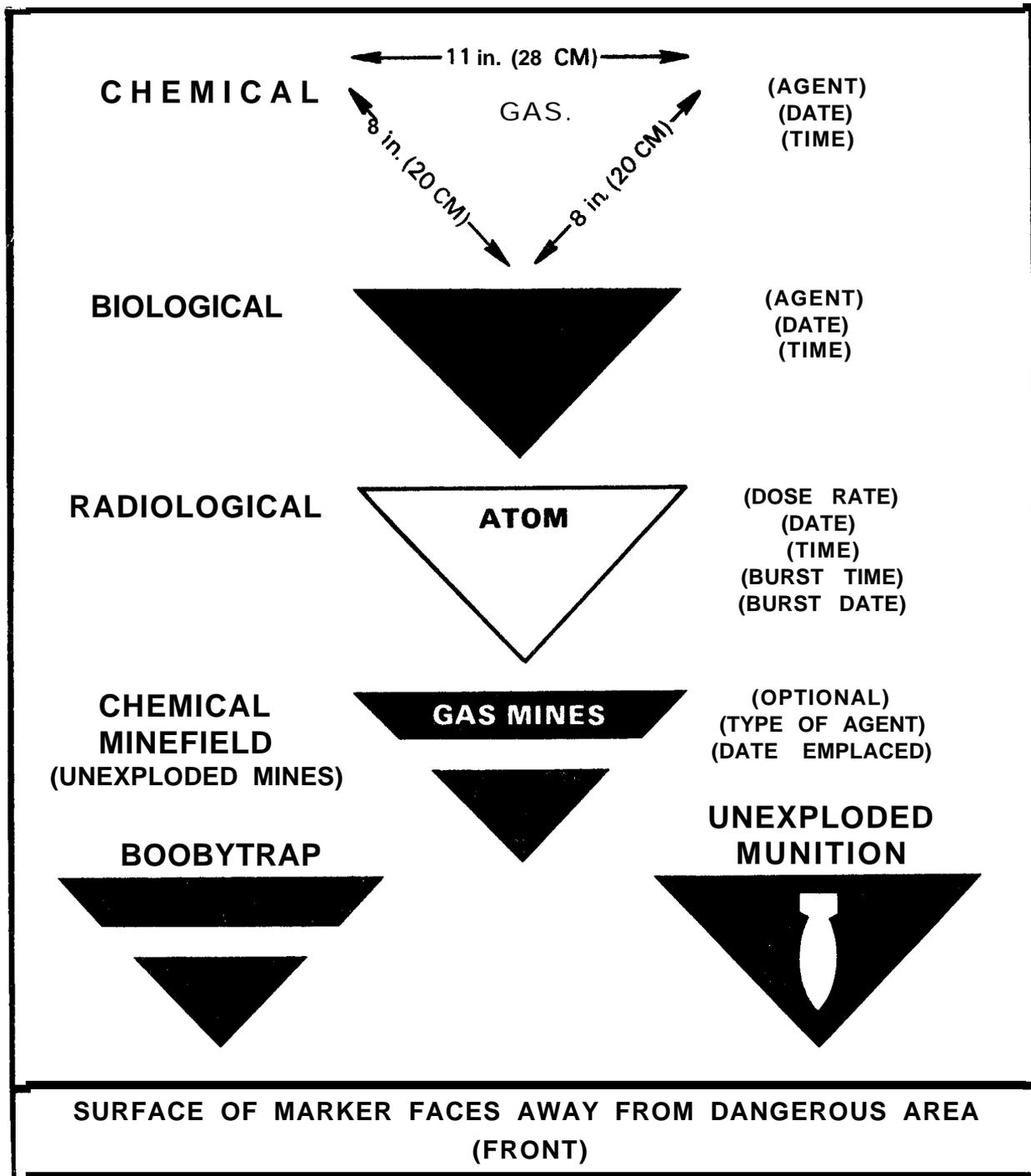
b. A secondary color, used for additional markings and/or inscription on the front surface.

c. The dangers and designated colors are as follows:

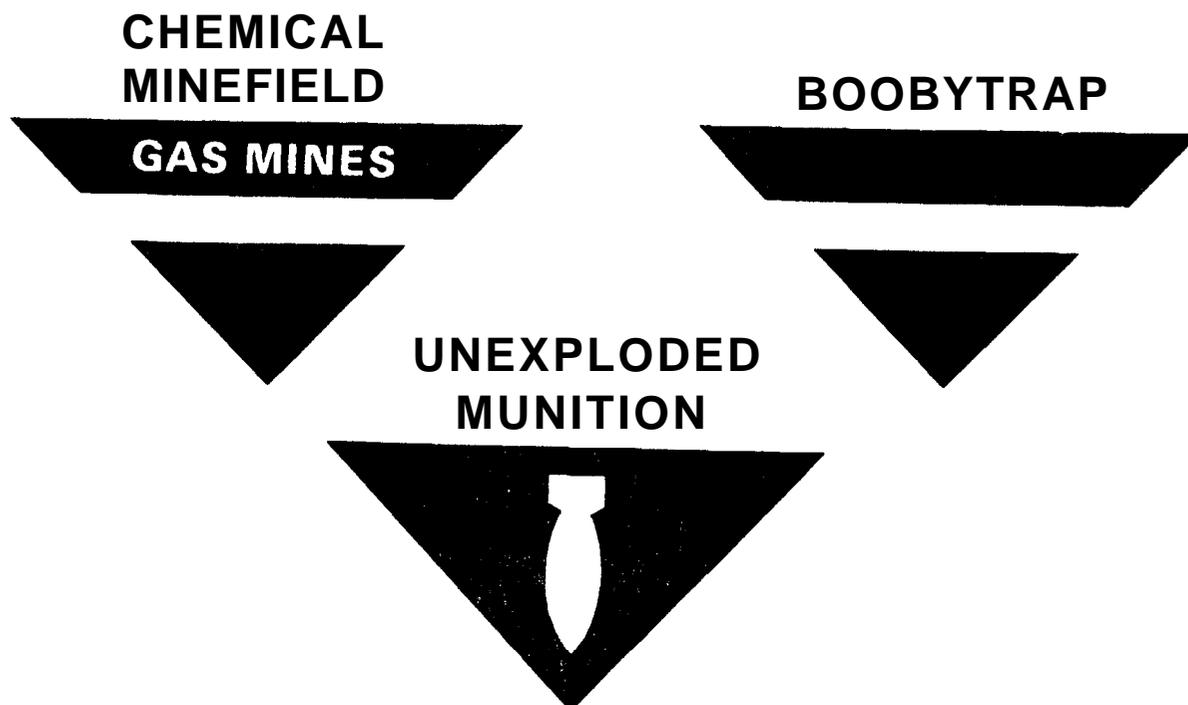
Dangers	Primary Color	Secondary Markings	Colors Inscription
Radioactive contamination	White	None	Black
Biological contamination	Blue	None	Red
Chemical contamination	Yellow	None	Red
Chemical minefields (or barriers)	Red	Yellow stripe	Yellow
Minefields (or barriers other than chemical)	Red	None	White
Booby-trapped areas	Red	White stripe	White
Unexploded bombs	Red	White bomb	None

3. The front surface of the sign will face away from the contaminated or dangerous areas, the illustrations on the following page apply.

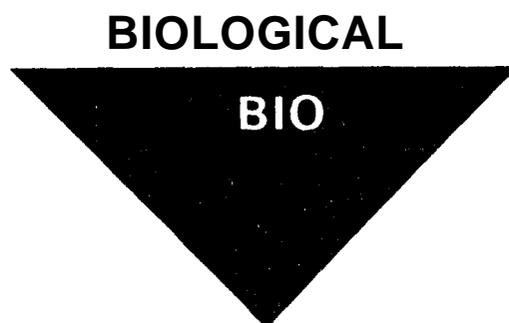
ENCLOSURE (7)



4. Chemical Minefields (or Barriers), Booby Traps and Unexploded Bombs. In the case of danger due to chemical minefields (or barriers), booby traps and unexploded bombs, the front surface of the sign which faces away from the dangerous area has two colors and will be marked as follows:



5. Minefields (or Barriers) and Biological Radioactive and Chemical Contaminations. In the case of danger due to minefields (or barriers other than chemical) and of danger due to biological, chemical and radioactive contamination, the primary color and the pattern of the signs by themselves will be the principal means of recognizing the type of contamination. As a safeguard, the words "MINES", "GAS MINES", "GAS", "BIO" (for biological contamination) or "ATOM" with the optional symbol of a trefoil (for radioactive contamination) will be painted or written with the secondary color on the front surface. The language to be used for these inscriptions will be written parallel to the longer side of the sign. For example:



6. Description of Signs. In addition, when practical, details of **biological**, chemical and radioactive contaminations will be written on the front surface of each sign. For biological contamination and for persistent or moderately persistent chemical agents, the name of the agent used (when known) and the date and time of detection are required. In cases of radioactive contamination, the following information will be inscribed on each, sign:

a. The dose rate.

b. Date and **time** of reading.

c. The date and **time** of the detonation that produced the contamination (if available).

7. Multiple Contaminations. Areas which contain more than one type of **contamination** will be marked with the relevant signs placed near each other.

a. Special Case of Mined and Booby-Trapped Areas. All areas requiring marking that contain mines, **booby traps** or both, will be enclosed on the friendly side by a fence (preferably barbed wire), the lower strand ankle height and the upper strand at waist height, which must reliably warn friendly troops. Fencing on the flank and enemy side **may** be added when required for protection of friendly troops, and is required in all rear areas.

9. Marking of Simulated Contamination Areas. The system of marking simulated contaminated areas such as simulated minefields (or barriers) will be exactly the same as for marking actual ones.

10. Size and Shape of Signs

a. Existing stocks of colored triangular signs of slightly divergent shapes and sizes will be retained and used until stocks are exhausted.

b. The triangle will be a right-angled **isosceles** triangle.

c. The base of the triangle will be approximately 11 1/2 inches (28 cm) and the opposite sides will be approximately 8 inches (20 cm). **These dimensions** may be varied to suit local material.

d. Triangles will be made of metal, wood, plastic, composition board or any other similar rigid material available.

11. Placing of Signs. Signs will be placed above ground, right-angled **apex** downwards on wire boundary fences, trees, rocks or poles or by putting the apex into the ground. This latter-method

13 Dec 1982

should not be used if the other methods, can be adopted, as the signs might well be **obscured** by grass and other undergrowth and can be readily knocked down.

12. Night Lighting. No standardization for lighting of signs is specified. **Each** activity head will provide lighting or reflecting devices where deemed necessary.

13. Nonmarking Contaminations

a. Nonmarking contamination consists of contamination resulting from latrines, garbage, **soakage** and refuse. These forms of contamination will be marked by rectangular signs which may be of any color and any convenient size.

b. When closed, earth mounds will be placed on the top of the nonmarking contaminations and the rectangular sign **will** be placed on the top of the mound. The sign will indicate the type of pit, the date closed and in nonoperational areas, the activity designation.

ENCLOSURE (7)

13 Dec 1982

GAS CHAMBER SAFETY REGULATIONS1. Responsibility and Duties of Personnel Conducting Exercise

a. Safety Officer. A safety officer shall be assigned by the **commanding officer** of the organization/unit scheduled for a particular class. The safety officer will ensure that:

(1) A corpsman has been provided by the requesting organizational/unit commander.

(2) All exit doors are clear at all times.

(3) Anyone who becomes panicky is ushered out of the chamber immediately.

b. Senior Instructor

(1) Inspect masks for proper fit and ascertain that all personnel are proficient in protective mask drill before the exercise starts.

(2) Have personnel remove jewelry, metal objects and glasses before entering the gas chamber.

(3) Conduct chamber exercise or delegate duties to assistant instructors.

(4) Ensure that personnel carry out instructions in each phase of the exercise.

(5) Build up the concentration of chemical agents in the chamber as described in paragraph 2a below.

c. Assistant Instructors. Assistant instructors should be trained in toxic agent (NBC) warfare techniques and be used as needed in order to conduct a proper gas chamber exercise.

d. Hospital Corpsman. A hospital corpsman will:

(1) Be present at all gas chamber exercises.

(2) Be in a position outside of the chamber in order to be readily available, should services of a corpsman be needed.

(3) Have necessary first-aid items available at the chamber site.

2. Gas Chamber

a. Gas-generative capsules and an improvised generator are used to set up a concentration in the chamber. One capsule is required for each 30 cubic meters of the chamber used, with additional capsules being added as necessary to maintain an effective concentration. Normally, a fewer number of capsules will **be** required in hot weather.

b. CS grenades will not be used inside the gas chamber.

c. No more than 30 persons will be permitted in the chamber at one time.

3. Gas Chamber Area

a. No smoke grenades will be detonated within 15 feet of personnel.

b. No CS (burning-type grenade) will be detonated within 10 feet of personnel.

c. No CS (bursting-type grenade) will be detonated within 50 feet of personnel.

d. No persons suffering from effects of CS should rub their eyes. They will face into the wind with eyes opened. They will not use any liquid in eyes or on their skin, unless told to do so by an instructor or a corpsman.

e. No special decontamination procedures are required except that showering should be delayed for about 6 hours.

f. For emergency removal of gross accidental contamination, flush with copious **amounts** of water to remove **most** of the agent and use a 5-percent solution of sodium bisulfate to remove the remainder of the agent (except in or around eyes).