CONSTRUCTION BATTALION BATTLE SKILLS GUIDE

FOREWORD

1. The Construction Battalion Battle Skills Guide (CBBSG) is published as a series of four books. Each book consists of tasks required by Naval Construction Force personnel to gain knowledge and skills ranging from individual weapons, crew served weapons, patrolling, tactical measures, hand grenades, mines, and pyrotechnics, NBC defense, first aid and field sanitation, land navigation, and communications.

   Book 1  Construction Battalion Battle Skills Guide, All Hands, E1 and Above, Individual Skills contain combat skills tasks applicable for proficiency testing of pay grade E1 through3.


   Book 3  Construction Battalion Battle Skills Guide, E7 and Above, Individual Skills contains combat skills tasks applicable for proficiency testing of pay grade E7 and above.

   Book 4  Construction Battalion Battle Skills Guide, Crew / Team Skills contains combat skills tasks applicable for proficiency testing of specialized billets.

2. Following each individual training standard (ITS), you will find a box containing the words EVALUATION GUIDELINES TO BE USED DURING TRAINING. The purpose of this box is to provide the Seabee with information regarding exactly what is expected of him/her during evaluation of the ITS. It also provides the trainer/evaluator-expanded conditions, standards, and sometimes notes to help the Seabee and assess individual proficiency. When administrative notes are included, they explain, orient, and otherwise provide additional task-specific information, as reference tasks that train the base performance required of the instruct/conduct refresher training tasks. For example, task 2-24, requires the Seabee to "Implement Mission-Oriented Protective Posture (MOPP)". The Administrative Note refers to the base performance required in task 1-35, Don Individual Protective Clothing to MOPP 4. Usually the base performance task provides the steps necessary to instruct or refresh the training objective. Some instruct/conduct refresher training tasks have no base performance task in the CBBSG, and for those tasks the individual performance steps are listed following the evaluation box.

3. Summary of CBBSG can be found on page vi through ix.

4. Comments on the CBBSG should be forwarded to the Commanding Officer, Naval Facilities Expeditionary Logistics Center, Training Standards Department N7, Port Hueneme, CA 93043.

5. This publication is certified as an official Command publication and has been reviewed and approved in accordance with NAVFAC Instruction 5600.2G, June 1996.

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CONSTRUCTION BATTALION BATTLE SKILLS GUIDE

BOOK 3

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### SUMMARY OF
CONSTRUCTION BATTALION BATTLE SKILLS GUIDE

**BOOK 1**

*Construction Battalion Battle Skills Guide, Book 1, All Hands, E1 and Above, Individual Skills* consists of the following:

#### INDIVIDUAL WEAPONS

- Weapons Handling, Shoulder Fired Weapons
- Weapons Handling, Handguns
- Maintain the M16A3 Service Rifle
- Zero the M16A3 Service Rifle
- Engage Targets with the M16A3 Service Rifle
- ATTACHMENT (A1) Fundamentals of Marksmanship
- Maintain the M9 Service Pistol
- Engage Targets with the M9 Service Pistol

#### PATROLLING

- Participate in a Security Patrol
- Perform as a Member of a Convoy

#### TACTICAL MEASURES

- Prepare Individual Combat Equipment for Tactical Operations
- Perform Individual Movement
- Prepare a Fire Team Fire Plan and Fire Plan Sketch
- React to Enemy Indirect Fire
- Assume Field Firing Positions
- React to Enemy Direct Fire
- Construct Fighting Position
- Camouflage Self and Individual Equipment
- Participate in Squad-Size Defense
- Operate Night Vision Goggles (NVG)
- Employ Techniques of Unaided Night Vision
- Report Intelligence Information
- Conduct Vehicle Search Procedure
- Process Enemy Personnel
- Submit a Spot Report
- Perform as a Member of NMCB Interior Guard
- Perform as a Fire Team Member in Civil Disturbance Situations

#### HAND GRENADES, MINES, AND PYROTECHNICS

- Engage Targets with Hand Grenades
- Employ the M49A1 Trip Flare
- Employ the M18A1 Claymore Mine
- Locate Possible Mine/Boobytrap Sites

#### NBC DEFENSE

- Identify NATO NBC Markers
- Maintain the MCU-2A/P Protective Mask
- Don the MCU-2A/P Protective Mask with Hood
- Perform Basic Body Functions while in MOPP 4
- Identify Chemical Agents
- Decontaminate Skin and Personal Equipment Using the M291 Decontamination Kit
- Exchange MOPP Gear
- React to Nuclear Attack
- React to a Chemical or Biological Attack
- Treat a Chemical Agent Casualty

#### FIRST AID AND FIELD SANITATION

- Apply Basic First Aid
- Perform Basic First Aid Preventive Measures
- Practice Basic Field Sanitation
- Transport Casualties Using Manual Carries and Improvised Stretchers

#### LAND NAVIGATION

- Perform Basic Map Reading
- Navigate with a Map Using Terrain Association
- Navigate with a Map Using a Compass
- Orient a Map Using Hasty Field Expedient Techniques
- Locate an Unknown Point by Resection
- Locate an Unknown Point by Intersection
- Navigate Around an Obstacle Using the Box Method
- Convert Azimuths
- Determine the Elevation of a Point on the Ground Using a Map

#### COMMUNICATIONS

- Repair (Splice) Wire
- Operate a TA-1 Telephone Set
- Operate a TA-312 Telephone Set
- Operate an AN/PRC-119F Radio Set
- Communicate Using a Radio
- ATTACHMENT (A2) Phonetic Alphabet and Numeric Pronunciation
- ATTACHMENT (A3) Prowords and Warning Words and their Explanations
BOOK 2

Construction Battalion Battle Skills Guide, Book 2, E4 - E6, Individual Skills consists of following:

**INDIVIDUAL WEAPONS**
- Conduct Refresher Training on How to Maintain the M16A3 Service Rifle

**PATROLLING**
- Assist in the Conduct of a Squad-Sized Security Patrol
- Conduct a Squad-Sized Security Patrol
- Issue a Patrol Warning Order
- Issue a Patrol Order
- Conduct Patrol Inspections
- Conduct Patrol Rehearsals
- Conduct Patrolling Immediate Action Drills
- Prepare Patrol Routes

**TACTICAL MEASURES**
- Conduct Refresher Training on Fire Team-Size Combat Formations
- Prepare a Terrain Model
- Control Movement of Fire Team-Size Unit
- Establish Defensive Positions for a Fire Team-Size Unit
- Establish an Observation Outpost (OP) / Listening Post (LP)
- Direct Erection of Wire Obstacles
- Control Unit Fires
- Control Movement of a Squad-Size Unit
- Establish Defensive Positions for a Squad-Size Unit
- Adjust Indirect Fire
- Establish a Landing Zone
- Direct a Helicopter Landing Zone
- Direct the MEDEVAC of a Casualty

**NBC DEFENSE**
- Prepare NBC I Report (Observer's Report)
- Implement Mission-Oriented Protective Posture (MOPP)
- Control the Spread of Contamination
- Minimize Adverse Effects of Wearing MOPP Gear for Prolonged Periods

**FIRST AID AND FIELD SANITATION**
- Enforce Proper Field Sanitation
- Conduct Refresher First Aid and Field Sanitation Training

**COMMUNICATIONS**
- Install a Hot Loop
- Operate an AN/PRC-150(C) HF Field Radio Set
- Conduct Refresher Training on How to Operate the AN/PRC-119F/150(C) Radio Sets
- Conduct Refresher Training on How to Operate Field Telephones
- Supervise Operator Level Maintenance of Portable Communications Equipment
BOOK 3

Construction Battalion Battle Skills Guide, Book 3, E-7 and Above, Individual Skills consists of the following:

**CREW-SERVED WEAPONS**
- Employ Machine Guns
- Select M240B Machine Gun Firing Positions
- Select M2/MK19 Machine Gun Firing Positions
- Assign a Machine Gun FPL/PDF

**TACTICAL MEASURES**
- Issue a Fragmentary Order for a Defensive Mission
- Prepare a Fire Plan for Platoon-Size Defensive Position
- Control Defensive Fires
- Direct the Placement of Wire Obstacles
- Establish a Company-Size Command Post
- Prepare Operation Overlay
- Direct Casualty Evacuation
- Direct the Handling of Captured Enemy Personnel

**NBC DEFENSE**
- Supervise Conduct of Mask Confidence Exercise
- Assist Commander on Unmasking Procedures
- Execute Protective Measures for a Nuclear Attack
- Execute Protective Measures for a Biological and Chemical Attack
- Prepare NBC 4 Report (Reconnaissance, Monitoring, and Survey Results)
- Lead MOPP Gear Exchange

**COMMUNICATIONS**
- Apply the Elements of Communications
- Supervise Unit's Individual Training in Communications
BOOK 4

*Construction Battalion Battle Skills Guide, Book 4, Crew/Team Skills* consists of the following:

**INDIVIDUAL WEAPONS**
- Employ NMCB Organic Weapons
- Maintain the M203 Grenade Launcher
- Engage Targets with M203 Grenade Launcher
- Engage Targets with the AT4

**CREW-SERVED WEAPONS**
- Maintain the M240B Machine Gun
- Engage Ground Targets with the M240B Machine Gun
- Maintain the M2 Machine Gun
- Engage Ground Targets with the M2 Machine Gun
- Maintain the MK19 Machine Gun
- Engage Ground Targets with the MK19 Machine Gun
- Perform as an M240B Machine Gun Team Leader
- Perform as an M2/MK19 Machine Gun Team Leader
- Construct Machine Gun Positions
- Determine Range
- Prepare a Range Card
- Control Machine Gun Team Fires
- Lay an M240B/M2 Machine Gun
- Lay an MK19 Machine Gun
- Zero the M240B Machine Gun
- Zero the M2 Machine Gun
- Zero the M2 Machine Gun Using Night Vision
- Zero the MK19 Machine Gun
- Zero the MK19 Machine Gun Using Night Vision
- Sight
- Supervise the Construction of Machine Gun Positions
- Control Machine Gun Squad Fires
- Supervise Maintenance of Machine Guns
- Determine the Error in a Lensatic Compass
- Supervise Unit Individual Weapons Training
- Supervise Unit Crew-Served Weapon Training
- Prepare a Fire Support Plan for Platoon-Size Defensive Operations
COMBAT SKILLS TASKS

BOOK 3
TASK: EMPLOY MACHINE GUNS (3-1)

CONDITIONS: PROVIDED AN OPERATION ORDER, A TACTICAL MAP OVERLAY, AND THE REQUIREMENT TO TACTICALLY EMPLOY MACHINE GUNS.

STANDARD: EMPLOY MACHINE GUNS WHICH WILL SUPPORT THE MISSION.

EVALUATION GUIDELINES TO BE USED DURING TRAINING:

Conditions: The Seabee, acting as a machine gun section leader, is provided a ground-mounted machine gun section, a defensive or offensive mission scenario, a map overlay of the assigned mission area, and the requirement to tactically employ machine guns to support the mission.

Standard: The Seabee must receive and analyze the operation order using the key acronyms: METT-T, SALUTE, DRAW-D, and KOCOA. The Seabee must consider the characteristics of the machine guns to be employed, firing position placement, and the elements peculiar to a defensive or offensive mission. The Seabee directs the employment of the section to accomplish the mission, and ensures that the fire control and fire discipline of the section are maintained.

PERFORMANCE STEPS:

1. Receive and analyze the operation order using METT-T, SALUTE, DRAW-D, and KOCOA.

   NOTE: The platoon commander will issue the five-paragraph order (SMEAC) to the section and squad leaders, if time permits. If time does not permit, the platoon commander will issue the order to his section leaders who will issue the order to the squad leaders.

   a. METT-T:

      1) Analyze the Mission.

      2) Analyze the Enemy situation using SALUTE and Analyze the enemy's capabilities using DRAW-D.

      3) Analyze the Terrain and weather using KOCOA.

      4) Consider Troops and support available.

      5) Consider Time available.

   b. Analyze the Mission.

      1) Review the commander's intent.

      2) Review the map overlay.
c. Analyze the Enemy situation using SALUTE.

1) Size
2) Activity
3) Location
4) Unit
5) Time
6) Equipment

d. Analyze the enemy's capabilities using DRAW-D.

Is the enemy:
1) Defending
2) Reinforcing
3) Attacking
4) Withdrawing
5) Delaying

e. Analyze the Terrain and weather using KOCOA.

NOTE: Conduct a leader's reconnaissance of the assigned area and note the following if time and the mission allow.

1) Key terrain
2) Observation and fields of fire
3) Cover and concealment
4) Obstacles
5) Avenues of approach

f. Consider Troops and support available.

g. Consider Time available.
2. Consider the characteristics of the machine guns to be employed.
   a. Capabilities
   b. Ranges to targets
   c. Types of ammunition available

3. Consider the characteristics of the machine guns to be employed:
   a. Determine firing position placement to best support the mission by identifying:
      1) Primary positions
      2) Alternate positions
      3) Supplementary positions
   b. Ensure that firing positions cover their entire assigned sector of fire by:
      1) Locating alternate positions where machine gun teams can continue to accomplish the original mission.
      2) Locating supplementary positions that protects against surprise enemy attack.
      3) Ensuring cover and concealment is available for movement into supplementary positions.
      4) Completing range cards for each primary position.

4. Consider employment of the machine guns in defense:
   a. Effect against light armor
   b. Effect against aircraft
   c. Effect against personnel
   d. Assignment of a Final Protective Line (FPL):
      1) Position machine guns to the flanks to provide fire across the unit’s front.
      2) Ensure the position provides interlocking grazing fires within an assigned sector.
      3) Ensure that FPL dead space can be covered by alternate weapons (munitions, M203 grenade launchers, mortars, claymore mines).
e. Assignment of a Principal Direction of Fire (PDF):
   1) Ensure the position covers likely avenues of approach.
   2) Ensure the position covers obstacles.

f. Establish primary, alternate, and supplementary positions.

g. Establish priority of targets.

h. Establish security.

i. Method of employment.

j. Establish signals to commence and cease final protective fires.

5. Consider employment of machine guns in the offense:
   a. Effect against light armor
   b. Effect against aircraft
   c. Effect against personnel
   d. Indirect fire capabilities
   e. Methods of employment
   f. Techniques of fire
   g. Position of machine guns during movement to contact
   h. Priority of targets
   i. Placement of weapons in general or direct support, based on tactical situation
   j. Establish security

6. Direct the employment of the machine guns.

REFERENCE:

MCWP 3-15.1, Machine Guns and Machine Gun Gunnery
**TASK:** SELECT M240B MACHINE GUN POSITIONS (3-2)

**CONDITIONS:** PROVIDED AN M240B MACHINE GUN SQUAD, SECTOR OF FIRE, FPF/PDF, AND THE GENERAL LOCATION OF THE FIRING POSITIONS.

**STANDARD:** POSITION THE MACHINE GUNS SO THAT THEY COVER THE ASSIGNED SECTOR OF FIRE. ASSIGN A PRIMARY POSITION, AS MANY ALTERNATE POSITIONS AS THE SITUATION PERMITS, AND ASSIGN SUPPLEMENTARY POSITIONS TO COVER OUTSIDE THE ASSIGNED SECTOR OF FIRE.

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**EVALUATION GUIDELINES TO BE USED DURING TRAINING:**

**Conditions:** The Seabee, acting as a machine gun section leader, is given the requirement to select machine gun firing positions for one squad within his/her section. The Seabee is provided an M240B machinegun squad, a defensive tactical scenario, an assigned sector of fire, Final Protective Line (FPL) or Principal Direction of Fire (PDF) mission, and the general location the firing positions are to be selected.

**Standard:** The Seabee must conduct a leader's reconnaissance of the assigned area to determine if the section should be mounted or dismounted. The Seabee must consider the best placement of primary, alternate, and supplementary firing positions; assign the exact locations for each machine gun; ensure that the machine guns are properly laid on the assigned FPL or PDF; and ensure that the positions are properly constructed and occupied. Range cards must be prepared for each position and turned in to the section leader for consolidation.

**Administrative Notes:** See **TASKS:** CONSTRUCT MACHINE GUN POSITION (4-13)

PREPARE A RANGE CARD (4-15)

LAY AN M240B/M2 MACHINE GUN (4-17)

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**PERFORMANCE STEPS:**

1. *Conduct a leader's reconnaissance of the assigned area.*
   a. Approach the general location of the firing position from the rear or flank.

   **NOTE:** Ensure that you use natural cover and concealment.
   b. Note the position of the enemy.
   c. Note the terrain and vegetation in the area that can be used for protection and concealment.
   d. Note routes that will give cover and concealment while positioning and displacing, machine guns.
   e. Identify where friendly forces are located in case you must determine overhead safety limit.
2. **Consider placing firing positions in areas where the mission can be accomplished, such as areas that offer:**
   a. Good fields of fire and observation
   b. Good cover and/or concealment
   c. Covered routes to alternate and supplementary positions during displacement
   d. All around security can be provided
   e. Room for dispersion

3. **Identify firing positions.**
   a. Identify primary positions.
      1) Select the best available position in which the mission can be accomplished.
      2) Ensure that the position has covered routes to alternate and supplementary positions.
   b. Identify alternate positions.
      - Ensure that you locate alternate positions where the machine gun team can continue to accomplish the original mission.
   c. Identify supplementary positions.
      1) Ensure that you locate supplementary positions in areas that provide protection against surprise enemy attack.
      2) Ensure that cover and concealment are available for the movement into and out of the supplementary position.

4. **Assign the exact firing position for each team.**
   a. Ensure that there are at least 35 meters between each machine gun.
   b. Ensure that the positions cover the assigned sector of fire.
      1) Determine dead space and grazing fire.
      2) Inform the unit commander of any dead space in the sector.
   c. Ensure that both machine guns engage the same target and fire within the same sector.
      
      **NOTE:** A 50-mil sector per squad provides the best coverage.
   d. Ensure that the machine guns are properly laid on the FPL or PDF. (See TASK: LAY AN M240B/M2 MACHINE GUN (4-17).)
5.  Ensure that machinegun teams properly prepare and occupy firing positions. (See TASK: CONSTRUCT MACHINE GUN POSITION (4-13).)
   a. Ensure that the tripods are positioned.
   b. Ensure that the fields of fire are cleared.
   c. Ensure that the machinegun teams prepare a hasty position and improve it, as necessary.
   d. Ensure that the firing positions provide as much cover and concealment as possible.

6.  Ensure that range cards are prepared for each position. (See TASK: PREPARE A RANGE CARD (4-15).)

REFERENCES:

MCWP 3-15.1, Machine guns and Machine gun Gunnery
FM 3-22.68, Crew-Served Machine Guns 5.56 and 7.62mm,
TASK: SELECT M2/MK19 MACHINE GUNS POSITIONS (3-3)

CONDITIONS: PROVIDED M2/MK19 MACHINE GUNS, SECTOR OF FIRE, FPF/PDF, AND THE GENERAL LOCATION OF THE FIRING POSITIONS.

STANDARD: POSITION THE MACHINE GUNS SO THAT THEY COVER THE ASSIGNED SECTOR OF FIRE. ASSIGN A PRIMARY POSITION, AS MANY ALTERNATE POSITIONS AS THE SITUATION PERMITS, AND ASSIGN SUPPLEMENTARY POSITIONS TO COVER OUTSIDE THE ASSIGNED SECTOR OF FIRE.

EVALUATION GUIDELINES TO BE USED DURING TRAINING:

Conditions: The Seabee, acting as M2/MK19 machine guns section leader, is provided a mounted or dismounted machine gun section, a defensive tactical scenario, an assigned sector of fire, a Final Protective Line (FPL) or Principal Direction of Fire (PDF) mission, and the general location where the firing positions are to be selected.

Standard: The Seabee must conduct a leader's reconnaissance of the assigned area to determine if the section should be mounted or dismounted. The Seabee must consider the best placement of primary, alternate, and supplementary firing positions; assign the exact locations for each machine gun; ensure that the machine guns are properly laid on the assigned FPL or PDF; and ensure that the positions are properly constructed and occupied. Range cards must be prepared for each position and turned in to the section leader for consolidation.

Administrative Notes: See TASKS: CONSTRUCT A MACHINE GUN POSITION (4-13)

PERFORMANCE STEPS:

1. Conduct a leader's reconnaissance of the assigned area.
   a. Approach the general location of the firing position from the rear or flank.
      
      NOTE: Ensure that you use natural cover and concealment.
   b. Determine likely enemy avenues of approach.
   c. Note the terrain in the area that will provide protection.
   d. Note routes that will offer cover and concealment while positioning and displacing machine guns.
   e. Identify where friendly forces are located in case you must determine overhead safety limits.
2. Consider placing firing positions in areas where the mission can be accomplished, such as areas that offer:
   a. Good fields of fire and observation
   b. Good cover and/or concealment
   c. Covered routes to alternate and supplementary positions during displacement
   d. All around security can be provided
   e. Room for dispersion

3. Look for mounted firing positions. Consider mounted firing positions when:
   a. Enough firepower can be employed from a vehicle to accomplish the mission, and
   b. The section may have to displace quickly.

4. Choose dismounted firing positions when the terrain prevents vehicles from moving into position or if the vehicle cannot be concealed.

   NOTE: Inform the unit commander of any deadspace in the sector.

5. Identify firing positions.

   NOTE: Ensure that positions cover the assigned sector of fire.

   a. Identify primary positions.
      1) Select the best available position in which the mission can be accomplished.
      2) Ensure that the position has covered routes to alternate and supplementary positions.

   b. Identify alternate positions.
      - Ensure that you locate alternate positions where the machine gun teams can continue to accomplish the primary mission.

   c. Identify supplementary positions.
      1) Ensure that you locate supplementary positions in areas that provide protection against surprise enemy attack.
      2) Ensure that cover and concealment are available for the movement into and out of the supplementary position.
6. **Move vehicle into positions.**
   
a. Determine the exact firing position location for each machine gun.

b. Select a concealed route, and signal the vehicles to move forward.

c. Guide them into position.

d. Direct all to use the same route to the positions if possible.
   
   **NOTE:** This prevents the enemy from knowing how many vehicles are present.

e. Follow existing path, roads, fences, or natural lines in the terrain if possible.

f. Do not end exposed routes at the positions.

g. Distances between vehicles are usually less than 80 meters to allow for maximum command and control.

h. Post security.

7. **Ensure that the machine guns are properly laid.**
   
a. Ensure that the M2 machine guns are properly laid out. (See TASK: LAY AN M240B/M2 MACHINE GUN (4-17).)

b. Ensure that the MK19 machine guns are properly laid out. (See TASK: LAY A MK19 MACHINE GUN (4-18).)

8. **Ensure that the firing positions are properly prepared and occupied.** If you must use a hide position, perform the following steps. (See TASK: CONSTRUCT A MACHINE GUN POSITION (4-13).)
   
a. Place the vehicles in the hide position and camouflage as necessary.

b. Place an observer at the firing position with binoculars and communications to the section.
   
   **NOTE:** Ensure that the observer selects a good vantage point and is camouflaged.

c. Direct the observer to call the vehicles forward when targets appear.

9. **Ensure that range cards are prepared for each position.** (See TASK: PREPARE A RANGE CARD (4-15).)

REFERENCES:

MCWP 3-15.1, Machine guns and Machine gun Gunnery
FM 23-27, MK19 40mm Grenade Machine gun MOD 3
FM 23-65, Browning Machine gun Caliber.50 HB, M2
FM 71-1, Tank and Mechanized Infantry Company Team
**TASK:** ASSIGN A MACHINE GUN FPL/PDF (3-4)

**CONDITIONS:** POSITION A MACHINE GUN SQUAD IN THE DEFENSE.

**STANDARD:** WITHIN A SECTOR OF FIRE ASSIGN, EITHER A FINAL PROTECTIVE LINE (FPL) OR A PRINCIPAL DIRECTION OF FIRE (PDF) WHICH WILL SUPPORT THE MISSION.

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**EVALUATION GUIDELINES TO BE USED DURING TRAINING:**

**Conditions:** The Seabee, acting as a machine gun section leader, is provided an M240B, M2, or MK19 machine gun section, a defensive tactical scenario, a sector of fire, and the requirement to assign machine gun Principal Directions of Fire (PDF) or Final Protective Lines (FPL).

**Standard:** The Seabee must conduct a leader's reconnaissance of the assigned area to determine if the section should be mounted or dismounted. The Seabee must consider the best placement of primary, alternate, and supplementary firing positions; assign the exact locations for each machine gun; ensure that the machine guns are properly laid on the assigned FPL or PDF; and ensure that the positions are properly constructed and occupied. Range cards must be prepared for each position and turned in to the section leader for consolidation.

**Administrative Notes:** See **TASKS:** DIRECT ERECTION OF WIRE OBSTACLES (2-15)

DIRECT THE PLACEMENT OF WIRE OBSTACLES (3-8)

PREPARE A RANGE CARD (4-15)

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**PERFORMANCE STEPS:**

1. **Assign priority of machine gun fires to the most likely and critical avenue of approach.**
   
   a. Place machine guns on the Forward Line of Troops (FLOT).
   
   b. Place the machine guns to the rear of the FLOT.
   
   c. Place machine guns on the flanks.

2. **Assign an FPL for each machine gun squad.**

**NOTE:** The MK19 heavy machine gun does not fire an FPL.

a. Ensure that the FPL achieves the maximum flanking fire.

b. Ensure that the FPL obtains the maximum grazing fire. Grazing fire should parallel the expected long axis of the enemy assault waves.
c. Ensure interlocking fires are used to cover any gaps in the FPL and to provide mutual support between adjacent units.

d. Employ obstacles to slow down the enemy when reaching the FPL, if possible. (See TASKS: DIRECT ERECTION OF WIRE OBSTACLES (2-15) and DIRECT THE PLACEMENT OF WIRE OBSTACLES (3-8).)

3. Assign a sector of fire for each machine gun squad.

a. Designate the area of responsibility in which the squad can engage targets of opportunity.

b. Ensure that the sector does not exceed 800 mils (45 degrees).

c. Ensure that adjacent machine gun squad sectors overlap if possible.

d. Give the order for the FPL to comprise the near boundary of the sector, if possible.

   NOTE: When it is not possible to have the FPL on the near boundary of the sector, locate it within the sector. This works best when grazing fire is more frontal than desired and machine gun fire coverage closer to the FLOT is required.

4. Assign a Principal Direction of Fire (PDF).

a. Assign a PDF only when the terrain does not allow for effective FPL fires.

b. Ensure the PDF covers the most likely avenues of approach.

   NOTES: The PDF may fall within the sector of fire or comprise one of its boundaries.

   Location of machine guns must be changed daily/nightly or whenever needed.

5. When terrain and situation permit, employ machine guns in pairs.

      Ensure that the sectors of fire do not exceed 45 degrees if machine guns are split.

6. Ensure that range cards are prepared and submitted for each position (See TASK: PREPARE A RANGE CARD (4-15).)

REFERENCES:

FMFM 6-4, Marine Rifle Company and Platoon
FMFM 6-5, Marine Rifle Squad
MCWP 3-15.1, Machine guns and Machine guns Gunnery,
TASK:  ISSUE A FRAGMENTARY ORDER FOR A DEFENSIVE MISSION (3-5)

CONDITIONS:  (CONDITIONS ARE DETERMINED BY MISSION REQUIREMENTS) PROVIDED A HIGHER-LEVEL OPERATIONS ORDER FOR A DEFENSIVE MISSION, AND MAP.

STANDARD:  PREPARE AND ISSUE FRAGMENTARY ORDER BASED ON THE HIGHER-LEVEL OPERATIONS ORDER.

EVALUATION GUIDELINES TO BE USED DURING TRAINING:

Conditions:  The Seabee is provided a tactical scenario in any combat environment (day or night), operation order to establish a defensive position, a map, individual combat equipment, TOA weapon with ammunition, and a platoon of Seabees with weapons and equipment.

Standard:  The Seabee must prepare and issue to his subordinate leaders a warning order and a fragmentary order based on the higher level order. The fragmentary order must contain the situation, mission, execution, administration and logistics, and the command and signal paragraphs in sufficient detail to allow the unit to successfully establish a defensive position.

PERFORMANCE STEPS:

1. Listen to the commander's order, which should include the following:
   a. Terrain, weather, and their effects (KOCOA)
   b. Disposition and capabilities of the enemy (known and suspected)
   c. Disposition of friendly forces, including: (SALUTE and DRAW-D)
      1) Mission of the next two higher units and the commander's intent.
      2) Unit operating in your area and their:
         a) Missions and routes
         b) Frequencies and call signs
      3) Units providing fire support
         a) Types of fire support available (mortars, artillery, close air, etc).
         b) Means of requesting fire support
         c) Location of firing units (if known)
      4) Attachments (non-organic personnel, e.g. machine gunners, corpsman, engineers) and detachments (FOs and other units needing escort through your secured area).
d. The unit mission (who, what, where, when and why)
   - A clear, concise statement of what the platoon is to accomplish.

e. The types of defense to be conducted (linear and perimeter)

f. The fire support plan

g. Assignment of tasks

h. The priority of work

i. Ammunition loads and special ordnance to be used

j. Logistics available and details concerning resupply

k. Challenge and password, frequencies, call signs, and any brevity codes (signals for FPF, shift fire, etc.) to be used

2. *Review the mission with the commander and ask questions, if necessary.*

3. *Begin planning.*

   a. Estimate the situation using the acronyms **METT-T** and **KOCOA**.

      1) Analyze **METT-T** by considering:

         a) The **Mission** tasks and goals
         
         b) What is known about the **Enemy**? (SALUTE and DRAW-D)
         
         c) What is known about the **Terrain** and weather conditions? (KOCOA)
         
         d) The availability of **Troops** and fire support
         
         e) **Time** allotted for preparation

      2) Analyze **KOCOA** by considering:

         a) **Key** military aspects of terrain
         
         b) **Observation** points and fields of fire
         
         c) **Cover** and **Concealment**
         
         d) **Obstacles**
         
         e) **Avenues of approach**
b. Prepare a Warning Order using the modified five-paragraph order (SMEAC) to organize the following:

1) **Situation**
   - Provide a brief outline of the enemy and friendly situations.

2) **Mission**
   - Provide a clear, concise statement of what the platoon is to accomplish.

3) **Execution**
   a) Concept of operation
   b) Describe general organization and assignment of responsibilities.
   c) Designate subordinate leaders to accomplish tasks (unit and individual).
   d) Provide coordinating instructions.
      (1) Specify the time and place for receiving the fragmentary order.
      (2) Assign tasks to subordinate leaders to direct and supervise during preparation of the defense. (SAFE)
      (3) Specify coordination of fire between units.

4) **Administration and logistics**
   a) Specify prescribed load of ammunition, rations, and water.
   b) Designate crew-served weapons and provide guidance regarding distribution of weapons and ammunition.
   c) Specify location of Battle Aid Station (BAS) and collection points.
   d) Specify handling of Enemy Prisoners of War (EPW).
   e) Specify location of decontamination site.

5) **Command and signal**
   a) Identify any changes in the chain of command and to the communications plan.
   b) Identify location of key personnel.

c. Issue the Warning Order.
   1) Ensure that all subordinate leaders are present to receive the warning order.
2) Issue the warning order verbally.

NOTES: In defensive operations, the warning order is normally very brief and may be given verbally to expedite the preparations. However, the warning order may be written, if necessary.

4. **Arrange for reconnaissance.**
   a. Alert the squad leaders as to when you will arrive at their designated sector.
   b. Assign security patrols to screen the outer boundaries of the defensive position.

5. **Make the leader reconnaissance.**
   a. Identify likely avenues of approach.
   b. Locate any dead spaces and consider the most suitable weapon system or munitions to cover them.
   c. Identify suitable positions for the following:
      1) AT-4s
      2) Machine guns
      3) Observation posts (OPs) and listening posts (LPs)
      4) Claymore Anti-personnel Mines
   d. Debrief the security patrols to determine the suitability of the position for defensive operations.

6. **Complete the plan.**
   a. Determine the situation.
      1) Provide orientation (KOCOA).
      2) Provide the enemy situation.
         a) Identify known enemy activity using the acronym "SALUTE" (Size, Activity, Location, Unit or Uniform, Time and date, Equipment).
         b) Anticipate enemy intentions using the acronym "DRAW-D" (Defend, Reinforce, Attack, Withdraw, and Delay).
         c) Give the weather conditions and their expected effects on the platoon, including the times for sunrise, sunset, begin morning nautical twilight (BMNT), end of evening nautical twilight (EENT), and the percentage of illumination (moon phase).
      3) Determine the friendly situation by using the acronym HAS"(Higher, Adjacent, Supporting and identify the following:
         a) Mission of the next two higher unit and the commander's intent
b) Unit, location, mission, and planned actions of adjacent friendly units

c) Locations of any sentinel posts (LPs or OPs)

d) Missions and routes of any friendly patrols

e) Unit, location, type, and coordination measures with available friendly fire-support

b. State the mission in a clear and concise statement of the task that must be accomplished.

c. Determine the execution paragraph by identifying the following:

1) Concept of the operation
   a) Scheme of maneuver
      (1) The type of defense (linear and perimeter)
      (2) The counter attack plan
   b) Give the fire support plan

2) Assign exact duties to each of the squads and attached units.

3) Assign task to subordinates.

4) Give the coordinating instructions, which will include the following:
   a) Specify the priority of work, using the acronym SAFE (Security, Automatic weapon, Fields of fire, and Entrenchment).
      (1) Establish local security.
      (2) Position crew-served weapons and establishes sectors of fire.
      (3) Clear fields of fire; determine ranges, designate targets.
      (4) Prepare primary positions and weapons emplacements.
      (5) Plan and plot fire support.
      (6) Install tactical and supplementary wire.
      (7) Prepare mines, obstacles, and booby traps.
      (8) Prepare alternate and supplementary positions.
      (9) Prepare range cards and fire plan sketches.
      (10) Camouflage and improve positions continuously.
   b) Designate the times for stand-to.
NOTE: Stand-To, is an alert status that requires all personnel to be at 100% security. The commander may specify this security posture at any time, but it is normally directed to occur one-half an hour before BMNT until one-half an hour past sunrise and from one-half an hour before EENT until one-half an hour past sunset. A stand-to will be cancelled only on the commander’s order.

c) Alert percentage during the hours of darkness.

d) Instruct that movement out of positions after darkness will be on your order only.

e) Indicate when fire plan sketches and range cards are due.

f) Specify the type of fighting positions that are to be dug.

g) Establish a Principal Direction of Fire (PDF) to all squad automatic weapons.

NOTE: A PDF is the direction of fire assigned or designated as the main direction in which a weapon will be oriented. It is selected based on the enemy, mission, terrain, and weapons capability.

h) Establish a Final Protective Line (FPL) to each machine gun.

NOTE: A FPL is a predetermined line along which grazing fire is placed to stop an enemy assault. The fire is usually fixed in direction and elevation and can be fired under all conditions of visibility.

i) Indicate the use of aiming stakes in fighting positions.

j) Specify what will initiate the signal to commence the Final Protective Fire (FPF).

k) Indicate when OPs and LPs will be established and secured.

l) Establish radio and wire communication.

m) Indicate when work is to be completed, and any other condition that will impact on the conduct of the defense.

d. Provide administrative and logistical instructions about the following:

1) Amount of rations per man

2) Ammunition requirements to include rounds per man

3) Requirements for special ordnance such as pyrotechnics, smoke grenades, or mines

4) Logistics available and details concerning resupply

5) Method of handling Personnel Killed in Action (KIA), Wounded in Action (WIA), Enemy Prisoners of War (EPW)

6) Location of the corpsman and the aid-station
7) Location of the decontamination site

e. Specify the command and signal instructions by listing the following

1) Command
   a) Any changes to the chain of command
   b) Give the location of all key personnel.

2) Signals
   a) Indicate when monitoring of the net will commence.
   b) Give all brevity codes.
   c) Provide call signs and frequencies.
   d) Emergency signals and restrictions on communications
   e) Any prearranged signals
   f) The challenge and password
   g) Instruct that visual communications will be used within the platoon when not in contact.

7. Issue an order.

a. Orient the squad leaders, using a terrain model, sketch, or map.
   1) Point out which direction is north.
   2) Give the grid coordinates of the present location.
   3) Point out and give the grid coordinates of key terrain features and vegetation of the area.
   4) Point out likely avenues of approach, dead space, and gaps in the defense.
   5) Point out and give the grid coordinates (when applicable) of boundaries and coordinating points.
   6) Point out any fire support coordinating measures.
b. Read the prepared order.

c. Conduct a question and answer period.

d. Synchronize watches.

8. **Supervise.**

   a. Ensure that all personnel assigned understand their mission.

   b. Supervise all preparatory activities and phases of execution.

**REFERENCES:**

FMFM 6-4, *Marine Rifle Company and Platoon*

FMFM 6-5, *Marine Rifle Squad*
TASK: PREPARE A FIRE PLAN FOR PLATOON-SIZE DEFENSIVE POSITION (3-6)

CONDITIONS: PROVIDED WITH MACHINE GUN FINAL PROTECTIVE LINES (FPL), PRINCIPAL DIRECTION OF FIRE (PDF), BARRIERS, THE LOCATION OF FINAL PROTECTIVE FIRE (FPF) AND LOCATION OF SUBORDINATE UNITS.

STANDARD: DEVELOP A PLATOON FIRE PLAN INVOLVING THE USE OF THE PLATOON’S ORGANIC, ATTACHED, AND SUPPORTING WEAPONS THAT WELL SUPPORT THE PLAN OF THE DEFENSE BY DESTROYING OR REPPELLING THE ENEMY ASSAULT.

EVALUATION GUIDELINES TO BE USED DURING TRAINING:

Conditions: The Seabee, acting as a platoon leader, is provided information concerning machine gun Final Protective Lines (FPL), Principal Direction of Fire (PDF) barriers, the location of Final Protective Fires (FPF) and the location of subordinate units.

Standard: The Seabee must develop a platoon fire plan that will support the plan of defense by destroying or repelling the enemy assault. The plan must be integrated with the plans of higher headquarters, adjacent units and involve the use of organic, attached, and supporting, weapons.

PERFORMANCE STEPS:

1. Review the platoon’s barrier plan.
   a. Consider the employment of natural and artificial obstacles to restrict, delay, block, or stop the movement of enemy forces.
   b. Consider the use of available routes by the following friendly forces:
      1) Security elements during withdrawal
      2) Patrols
      3) Maneuver element of counterattacking forces
      4) Egress routes for casualties and ammunition resupply.

2. Prepare a fire plan.
   a. Coordinate the platoon fire with adjacent units and the company barrier plan.
      1) Plan to break up the enemy assault by firing immediately in front of the battle area.
      2) Plan to destroy or repel the enemy by firing within the battle area if the enemy succeeds in penetrating it.
   b. Determine the squad positions.
1) Establish primary positions.

2) Establish alternate and supplementary positions.

c. Determine the squad sectors of fire.
   - Establish lateral limits and forward limits.

d. Ensure that the squad leaders plan firing positions and Principal Directions of Fire (PDF) for specific automatic rifles, AT4s (if assigned) and M203 grenade launchers organic to the rifle squad.

e. Plan the location of the platoon sentinel post (OPs and LPs).

f. Plan the position and FPLs or PDFs for machine guns located in the platoon defense area.

g. Determine whether existing, prearranged sectors of fire are sufficient.
   1) Ensure that on-call targets cover all known and suspected enemy positions, likely avenues of approach, prominent or key, man-made or natural terrain features and dead space not covered by the platoon's M203s.
   2) Make a request to the company commander by radio or messenger, if necessary.

   **NOTE:** Use the assigned target number in subsequent requests for delivery of prearranged fires if requests are approved.

3. Draw a sketch or overlay of the fire plan.
   a. Compare the squad's defensive sketches with actual layout of the ground.

   b. Sketch the fire plan.
      1) Complete an administrative information block in the lower right hand corner, to include:
         a) Platoon number
         b) Company letter
         c) Date prepared

      2) Ensure that the sketch includes elements of paragraph 2.
   
   c. Make an extra copy of the completed fire plan sketch.

4. Submit the fire plan sketch to the company commander in accordance with the local SOP.

**REFERENCES:**

FMFM 6-4, *Marine Rifle Company and Platoon*

FMFM 6-5, *Marine Rifle Squad*
TASK: CONTROL DEFENSIVE FIRES (3-7)

CONDITIONS: CONTROL FIRES DURING THE DEFENSE OF A PLATOON-SIZE POSITION.

STANDARD: DIRECT THE ENGAGEMENT OF ALL TARGETS AND MAINTAIN THE FIRE DISCIPLINE OF THE UNIT UNTIL THE ENEMY'S ASSAULT IS DESTROYED OR REPELLED.

EVALUATION GUIDELINES TO BE USED DURING TRAINING:

Condition: The Seabee, acting as a platoon leader, is provided a platoon-size unit and a mission requirement to control defensive fires.

Standards: The Seabee must direct the engagement of targets and maintain the fire discipline of the unit until the enemy's assault is destroyed or repelled.

Administrative Note. See TASK: CONTROL UNIT FIRES (2-16)

PERFORMANCE STEPS:

1. *Ensure that the platoon is in the ready position and that they are oriented in the direction of the enemy.*

   a. Ensure that each Seabee can cover his/her sector of fire.
   
   b. Ensure that each position has adequate cover and concealment.
   
   c. Ensure that the signal to commence firing is understood by all platoon members.
   
   d. Ensure that the signal to commence Final Protective Fires (FPF) is understood by all platoon members.
   
   e. Ensure that the signal to cease FPF is understood by all platoon members.
   
   f. Ensure that there are at least two signals (preferably one audio and one visual) for commence fire, fire the FPF, and cease firing the FPF.

2. *Issue fire commands using ADDRAC (See TASK: CONTROL UNIT FIRES (2-16).)*

3. *Control the fires depending on the situation with subsequent fire commands, hands and arms signals or pyrotechnics.*

4. *Control the proper distribution of fire.*

**NOTE:** Due to the extreme noise and confusion of battle, the platoon commander uses the field telephone, radio, or messenger, to contact the squad leader. The squad leader controls the rate of fire at the direction of the platoon commander.
a. Direct the engagement of targets.
   1) Regulate the volume, density, and coverage of the fire.
   2) Ensure a high probability of hits
b. Control the rate of fire.
   1) Establish the rate of fire.
   2) Increase the rate of fire until the enemy fire is reduced or stopped.
   3) Hold the rate of fire to fix, destroy, or repel the enemy.
c. Direct the destruction of the most dangerous targets first.
   1) Keep all parts of the target under suppressive fire.
   2) Subject enemy to fire until enemy fire ceases or becomes ineffective.

5. Make frequent reports to the company on the status of the battle.
6. Call in air strikes and on-call targets as required.
7. Terminate the engagement of targets.
8. Confirm ammunition and casualty counts.

REFERENCES:
FMFM 6-4, Marine Rifle Company and Platoon
FMFM 6-5, Marine Rifle Squad
**TASK:** DIRECT THE PLACEMENT OF WIRE OBSTACLES (3-8)

**CONDITIONS:** PROVIDED A TACTICAL SITUATION, GUIDANCE FROM THE UNIT COMMANDER, PICKETS, WIRE (CONCERTINA/BARBED), SLEDGE HAMMERS, LEATHER GLOVES, AND A DESIGNATED DEFENSIVE AREA.

**STANDARD:** DIRECT THE PLACEMENT OF A WIRE OBSTACLE PER COMMANDER’S GUIDANCE.

**EVALUATION GUIDELINES TO BE USED DURING TRAINING:**

**Conditions:** The Seabee is provided a training site, training support equipment, guidance from the unit commander, and the resources listed at the end of this task.

**Standard:** The Seabee must direct the placement of tactical, protective, and supplementary wire obstacles to ensure protection of the defensive position(s)/area.

**Administrative Note:** See TASKS: DIRECT ERECTION OF WIRE OBSTACLES (2-15)

**PERFORMANCE STEPS:**

1. Direct the placement of tactical wire.
   a. Place tactical wire entanglements parallel to and along the friendly side of the final protective line.
   b. Ensure tactical wire entanglements extend across the entire front of the defensive position(s)/area (Figure 1).

   **NOTE:** Tactical wire entanglements are used to break up enemy attack formations and to hold the enemy in areas covered by the most intense defensive fire.

2. Direct the placement of protective wire.
   - Place protective wire entanglements close enough to the defensive area for day and night observation and far enough away to prevent the enemy from using hand grenades effectively from points just beyond the wire obstacle, normally 50 to 100 meters.

3. Direct the placement of supplementary wire.
   - Place supplementary wire in front of the defensive perimeter to conceal the exact line of tactical wire (Figure 1).

   **NOTES:** When possible, place the supplementary wire the same time you place your protective wire.
REFERENCES:

FMFM 0-1, Unit Training Management Guide
FMFM 0-1A, How to Conduct Training
FMFM 6-4, Marine Rifle Company and Platoon
FMFM 5-15, Field Fortifications
FMFM 5-34, Engineer Field Data
**TASK:** ESTABLISH A COMPANY-SIZE COMMAND POST (3-9)

**CONDITIONS:** PROVIDED COMMANDER'S GUIDANCE AND THE REQUIREMENT TO ESTABLISH A COMPANY-SIZE COMMAND POST IN A TACTICAL ENVIRONMENT.

**STANDARDS:** ESTABLISH A COMMAND POST (CP) IN A POSITION WHERE EFFECTIVE COMMAND AND CONTROL CAN BE EXERCISED.

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**EVALUATION GUIDELINES TO BE USED DURING TRAINING:**

*Conditions:* The Seabee, acting as a Company Chief in a tactical environment, is provided commander's guidance, an area of operation, a company of Seabees, and the requirement to establish a company-size command post.

*Standards:* The Seabee must select and establish a CP site based on the commander's guidance. The position must be placed in an area where effective command and control can be exercised over the company units.

---

1. **PERFORMANCE STEPS:**

2. *Select a Command Post (CP) site based on the commander's guidance.*
   
   a. Review the commander's guidance.
   
   b. Locate a covered and/or concealed position (preferably defilade) to the rear of the company reserve area.
   
   c. Ensure that the position is situated where the company commander can exercise the most effective command and control.
   
   d. Ensure that the position offers maximum protection from enemy air observation and direct fire.
   
   e. Ensure that the position offers covered routes forward and to the rear to allow:
      
      1) Resupply of the front line platoons
      
      2) Evacuation of casualties
   
   f. Ensure that the position is large enough to accommodate both the command element and communicator.
   
   g. Ensure that all-around security can be maintained by the line platoons.
   
   h. Ensure that the area will accommodate good communications (wire communications network, visual signals, radio and message).
   
   i. Ensure that the terrain around the CP is suitable for CP personnel to dig fighting positions.
j. Ensure that an alternate CP position is also located.

3. Establish the CP.

NOTE: The Company Chief is responsible for the internal and external arrangement of the CP. He/She will select and supervise the preparation of positions within the site.

a. Direct the placement of local security for the CP (if required).

NOTE: At the company level, local security is provided by the line platoons and augmented by personnel who man the CP.

b. Ensure that fighting positions are dug in for all CP personnel to diminish casualties from single rounds of mortar or artillery fire.

- Dispersion is a major consideration in the placement of individual fighting holes.

c. Supervise the installation of the company wire communication network.

NOTES: Wire communications are preferred to radio for security reasons, however, the wire network will be supplemented by maintaining the company tactical radio network.

Messengers and visual signals will further augment communications.

d. Supervise and continually inspect to ensure that full use is made of natural cover, concealment, and supplementary camouflage measures.

e. Supervise to ensure that foot of vehicle traffic is kept to an absolute minimum, both into and out of the CP area.

f. Ensure light and noise discipline is maintained.

REFERENCES:
FMFM 3-1, Command and Staff Action
FMFM 6-4, The Marine Rifle Company and Platoon
**TASK:** PREPARE OPERATION OVERLAY (3-10)

**CONDITIONS:** PROVIDED A MAP OF AREA OF OPERATION, AN OPERATIONS ORDER, COMMANDERS GUIDANCE, AND ADMINISTRATIVE MATERIALS.

**STANDARD:** GRAPHICALLY DEPICT ON AN OVERLAY THE UNITS OPERATIONS ORDER USING CORRECT MILITARY SYMBOLS.

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**EVALUATION GUIDELINES TO BE USED DURING TRAINING**

*Conditions:* The Seabee, acting as an Operations Chief in a Combat Operation Center (COC), is provided a map, an operations order, guidance from the S-3, administrative materials, and the resources listed at the end of this task.

*Standards:* When directed, the Seabee must graphically depict on an overlay, the unit's concept of operations as it pertains to the operations order using correct military symbols and overlay techniques.

*Administrative Note:* Due to the vast nature of this task, every existing military symbol will not be addressed nor will their employment considerations be discussed. Refer to the resources listed at the end of this task for further information.

---

**PERFORMANCE STEPS:**

1. *Place overlay materials over a standard military map and secure it in place with tape.*
   
   a. Register overlay material to the map (Figure 1).

![Figure 1](image-url)
b. Trace the grid intersections on the opposite corners of the overlay (Figure 1).

c. Correctly label each grid intersection with the proper grid reference number.

**NOTES:** These register marks show the recipient of your overlay exactly where it fits in relation to the map. Without the marks, the overlay would be difficult to orient.

Absolute care must be taken when registering the overlay material to the map because even the smallest mistake will make the overlay inaccurate.

2. **Apply these general rules when creating overlays.**

   a. Don't draw directly on a map sheet; make your annotations on the overlay material.
   
   b. Use a protractor to determine precise locations of units, weapons, and equipment.
   
   c. Use a ruler or straightedge when drawing straight lines.
   
   d. If available, use a military template to depict standard map symbols.
   
   e. Use alcohol based pens or indelible markers to create overlays, especially in inclement weather.
   
   f. Ensure that your markers have a fine point. This will prevent your graphics from becoming blurred and unreadable.
   
   g. Always use the original set of graphics when producing numerous copies of overlays.
   
   h. If you observe topographical or cultural features that are not on the map sheet show them on your overlay.
   
   i. Use standard topographical and military symbols to indicate the details of an operation.

3. **Plot the military symbols on the overlay material in accordance with the operations order.**

   **NOTE:** Ideally, different colors should be used to depict friendly and enemy map symbols.

   Since different colors may not always be available, procedures have been developed for both single-color and multi-color representations.

   a. Indicate single-color representation.
      
      1) Use single lines to indicate friendly symbols.
      
      2) Use double lines to indicate enemy symbols.
      
      3) Put the abbreviation "EN" near each symbol to indicate enemy equipment, ground environment, and activities.
b. Indicate multi-color representation.

1) Use blue or black representation symbols to indicate friendly units, posts and installations, equipment, activities, and ground environment symbols that are not covered by other colors.

2) Use red representation symbols to indicate enemy units, posts and installations, equipment, and activities, and restrictive fire support coordination measures that are not covered by other colors.

   NOTE: Red may be difficult to see when using red light.

3) Use yellow representation symbols to indicate friendly and/or enemy chemical, biological or radiological areas and enemy biological areas.

4) Use green representation symbols to indicate friendly and/or enemy man-made obstacles.

   NOTES: If you use other colors, you must explain them in a legend.

   When overlays are transmitted by facsimile, only black on white is possible.

   To differentiate between friendly and enemy contaminated areas or obstacles, use the abbreviation “EN” on the line that defines the enemy areas.

c. Use solid and broken lines to indicate the location of units, installations, or coordinating details.

   NOTES: The location of a unit, installation, or coordinating detail (e.g. line of departure or boundary) that is current or in effect upon publication of the overlay is depicted with solid lines.

   Any future or proposed locations and coordinating details which will become effective at a later time will be indicated with broken lines.

   Despite these general rules, there are some exceptions where broken lines or dashed lines are always used. These exceptions will be individually discussed later.

d. Indicate basic unit symbols (Figure 2).

   - Use center mass of a symbol to indicate the physical center or the general vicinity of that unit.

   NOTE: If a staff is added to identify a headquarters, unit or installation, the base of the staff indicates the precise location of the unit.
NOTE: Each basic unit symbol requires minimal information in order to identify and understand its function. Placing information in and around the basic unit symbol conveys this information. This information is referred to as fields. Certain fields are mandatory and some are optional. Refer to Figure 3 for details.
1) Mandatory Fields. These are fields which must contain information.

   A - Role indicator - Figure 5
   B - Size indicator - Figure 4
   T - Unique designation
   P - Addressing number; used to identify the enemy when actual identity and purpose is doubtful.

2) Conditional Fields. Those fields must contain information, when applicable.

   D - Special size indicator
   F - Reinforced or detached
   N - Enemy; not required when identified by color or double lines.

3) Optional Fields

   E - Unconfirmed, used for enemy only and indicated by “?”.
   Q - Direction of movement arrow. Represents the direction the symbol is moving or will move.
   W - Date-time group

   e. Indicate the size of the unit (Figure 4).

   - Place the appropriate size indicator directly above the basic unit symbol.

   NOTES: If a unit is reinforced (REIN) with attached elements, indicate this by placing a (+) or (REIN) to the right of the basic unit symbol.

   If a unit has detached elements, indicate this by placing a (-) to the right of the basic unit symbol.

   If a unit has attached elements and also elements that have detached, this is indicated by placing a (+) or (-) to the right of the basic unit symbol.

<table>
<thead>
<tr>
<th>Fire Team</th>
<th>Ø</th>
<th>Squad/Crew</th>
<th>⬋</th>
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<td>Platoon/Detachment</td>
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<td>Battalion/Squadron</td>
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<tr>
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<td>Brigade</td>
<td>X</td>
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<td>Corps/Force</td>
<td>🎌 🎌 🎌 🎌</td>
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</tbody>
</table>

Figure 4
f. Indicate the unit's role (Figure 5).

<table>
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<th>Role</th>
<th>Symbol</th>
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</thead>
<tbody>
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<tr>
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<td>![Tank Symbol]</td>
</tr>
<tr>
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<td>![Assault Amphibian Symbol]</td>
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<td>Supply</td>
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</tr>
<tr>
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<tr>
<td>Medical</td>
<td>![Medical Symbol]</td>
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</tr>
<tr>
<td>Electronic Warfare</td>
<td>![Electronic Warfare Symbol]</td>
</tr>
<tr>
<td>Amphibious</td>
<td>![Amphibious Symbol]</td>
</tr>
<tr>
<td>MAGTF</td>
<td>![MAGTF Symbol]</td>
</tr>
<tr>
<td>Chemical</td>
<td>![Chemical Symbol]</td>
</tr>
<tr>
<td>Aviation</td>
<td>![Aviation Symbol]</td>
</tr>
<tr>
<td>Shore Party</td>
<td>![Shore Party Symbol]</td>
</tr>
<tr>
<td>NMCB</td>
<td>![NMCB Symbol]</td>
</tr>
</tbody>
</table>

**NOTE:** Some role indicators can be combined to show the exact function of a particular unit. For example, the infantry and tank role indicators combined constitutes a mechanized infantry unit. Take a look at the Marine Air Ground Task Force (MAGTF) symbol; amphibious, aviation, and infantry all rolled into one.
g. Indicate the unit's identity (Figure 6).

1) Place the identity of the unit on the left side of the basic unit symbol.

2) Place the identity of the higher headquarters on the right side of the basic unit symbol.

NOTE: Alpha - numeric designators are used to differentiate units from one another, particularly those of similar size and type. The designation of units must stay consistent with the size indicator.

<table>
<thead>
<tr>
<th>TACTICAL UNIT</th>
<th>SYMBOL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Marine Division</td>
<td><img src="image1" alt="Symbol" /></td>
</tr>
<tr>
<td>1st Marine Regiment</td>
<td><img src="image2" alt="Symbol" /></td>
</tr>
<tr>
<td>3rd Battalion, 1st Marines (Rein)</td>
<td><img src="image3" alt="Symbol" /></td>
</tr>
<tr>
<td>Co A, 3rd Tank Battalion (Minus)</td>
<td><img src="image4" alt="Symbol" /></td>
</tr>
<tr>
<td>Btry H, 3rd Battalion, 12th Marines</td>
<td><img src="image5" alt="Symbol" /></td>
</tr>
<tr>
<td>Observation Post (OP #2), 2nd Battalion, 8th Marines</td>
<td><img src="image6" alt="Symbol" /></td>
</tr>
<tr>
<td>1st Marine Aircraft Wing</td>
<td><img src="image7" alt="Symbol" /></td>
</tr>
<tr>
<td>Marine Aircraft Group</td>
<td><img src="image8" alt="Symbol" /></td>
</tr>
<tr>
<td>Co A, 2nd Assault Amphibious Vehicle Battalion</td>
<td><img src="image9" alt="Symbol" /></td>
</tr>
<tr>
<td>Amphibious Construction Battalion ONE (ACB 1)</td>
<td><img src="image10" alt="Symbol" /></td>
</tr>
<tr>
<td>Naval Mobile Construction Battalion FOUR (NMCB 4)</td>
<td><img src="image11" alt="Symbol" /></td>
</tr>
<tr>
<td>3rd Platoon, Co “A”, NMCB 74</td>
<td><img src="image12" alt="Symbol" /></td>
</tr>
<tr>
<td>30th Naval Construction Regiment</td>
<td><img src="image13" alt="Symbol" /></td>
</tr>
</tbody>
</table>

Figure 6
h. Indicate weapon symbols (Figure 7).

1) Plot the location of a weapon system or a group of weapon systems.

2) Select the type and size of the weapon system(s).
   - Add horizontal bars to the weapon symbol to indicate size (one horizontal bar for medium weapons and two horizontal bars for heavy weapons).

   **NOTES:** If a weapon has a high trajectory, a ◯ is placed at the base of the weapon.

   a) If a weapon has a flat trajectory, a ▲ is placed at the base of the weapon.
   
   b) If the weapon is primarily used for air defense, a ⬠ is placed at the base of the weapon.
   
   c) If the weapon is rocket launched, a ◊ is placed on the head of the weapon.

![Figure 7](image_url)

Figure 7
i. Indicate vehicle symbols (Figure 8).

**NOTE:** Except for armored vehicles, symbols for vehicles are made by combining two types of symbols; one for body type and the other for the means of mobility. The employment considerations and the detail description of vehicle and mobility symbols are discussed at length in FM 101-5-1 Operational Terms and Symbols.

<table>
<thead>
<tr>
<th>Vehicle Type</th>
<th>Symbol</th>
<th>Subtypes</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAV</td>
<td>![AAV Symbol]</td>
<td>AAVP</td>
</tr>
<tr>
<td>TANK</td>
<td>![Tank Symbol]</td>
<td></td>
</tr>
<tr>
<td>LIGHT ARMORED VEHICLE</td>
<td>![Light Armored Veh Symbol]</td>
<td>LAV-25, LAV-AT, LAV-AD, LAV-M, LAV-C</td>
</tr>
<tr>
<td>APC</td>
<td>![APC Symbol]</td>
<td></td>
</tr>
<tr>
<td>CAVALRY VEHICLE</td>
<td>![Cavalry Veh Symbol]</td>
<td></td>
</tr>
<tr>
<td>ARMORED VEHICLE</td>
<td>![Armored Veh Symbol]</td>
<td></td>
</tr>
<tr>
<td>LAYING BRIDGE (AVLB)</td>
<td>![AVLB Symbol]</td>
<td></td>
</tr>
</tbody>
</table>

Figure 8
j. Indicate area control measures (Figure 9).

NOTES: Area control measures are irregular lines used to designate a piece of terrain or space in which different of activities and events will occur.

The employment considerations and the detail description of these control measures are discussed at length in FM 101-5-1 Operational Terms and Symbols.
k. Indicate movement control measures (Figure 10).

**NOTES:** Movement control measures are used in both offensive and defensive operations. They give the commander a general route of advance which allows flexibility and control over subordinate units along a specific axis.

The employment considerations and the detail description of these control measures are discussed at length in FM 101-5-1 Operational Terms and Symbols.

![Diagram of movement control measures](image)
I. Indicate point control measures (Figure 11).

NOTES: Point control measures are used to designate specific points on a map as it relates to the ground. These points are used to coordinate the movement of units within an area of operation. The center mass of a point control measure indicates the precise location on the ground.

The employment considerations and the detail description of these control measures are discussed at length in FM 101-5-1 Operational Terms and Symbols.
m. Indicate fire support coordination measures (Figure 12).

1) Use a black marker to indicate permissive fire support coordination measures.

2) Use a red marker to indicate restrictive fire support coordination measures.

NOTES: Fire support coordination measures are designed to safeguard friendly forces and to facilitate the rapid engagement of targets.

Permissive measures are primarily used to allow the attack of a target without prior coordination.

Restrictive measures are primarily used to place restrictions on supporting arms agencies in designated areas until certain coordination requirements are met.

The employment considerations and the detail description of these control measures are discussed at length in FM 101-5-1 Operational Terms and Symbols.
n. Indicate target reference points (Figure 13).

**NOTES:** Target reference points are used to depict the fire support plan established by the operating unit. These target reference points are usually located on known or suspected enemy positions and on easily identifiable terrain features.

The employment considerations and the detail description of these reference points are discussed at length in FM 101-5-1 Operational Terms and Symbols.

![Diagram of Target Reference Points](image)

**Figure 13**

4. *Record marginal intonation on the prepared overlay (Figure 14).*
   
a. Indicate the overlay's security classification (e.g. unclassified, confidential, or secret).

b. Indicate the number of copies prepared (e.g. Copy no____of____copies).

c. Indicate the issuing command.

d. Indicate the place of issue and the date-time-group.

e. Indicate the map used (e.g. sheet name, sheet number, series number, and scale).

f. Indicate the time zone.

g. Indicate acknowledgment of receipt instructions if applicable.
h. Indicate the distribution instructions.

i. Provide a place for the Commanding Officer or his/her representative to sign.

5. Ensure that all commanders and attachments get a copy of the overlays.

Figure 14

REFERENCES:

FM 101-5-1, Operational Terms and Symbols
OH 6-1, Ground Combat Operations
TASK: DIRECT CASUALTY EVACUATION (3-11)

CONDITIONS: PROVIDED A TACTICAL ENVIRONMENT AND A CASUALTY.

STANDARD: DIRECT THE EVACUATION OF THE CASUALTY TO THE APPROPRIATE BATTLE AID STATION (BAS).

EVALUATION GUIDELINES TO BE USED DURING TRAINING:

Conditions: The Seabee is provided a platoon of Seabees in a tactical environment (day or night), individual first aid kit, litters, a variety of simulated casualties, a radio, call signs and frequencies, a casualty evacuation vehicle (ambulance, truck, helicopter, etc.), a designated Landing Zone (LZ), and Casualty Report (CASREP) forms as per local unit SOP.

Standards: The Seabee must assign litter bearers. The Seabee must ensure that the casualty is removed from the immediate danger area. The Seabee must ensure that first aid is administered. The Seabee must evacuate the casualty, if necessary, and direct the evacuation to a safe place if interrupted by the enemy and request assistance if large amounts of casualties occur. The Seabee must report the casualties to higher headquarters after the evacuation is complete.

Administrative Notes. See TASKS: APPLY BASIC FIRST AID (1-43)

ESTABLISH A LANDING ZONE (2-20)

DIRECT A HELICOPTER IN A LANDING ZONE (2-21)

DIRECT THE Medical Evacuation (MEDEVAC) OF A CASUALTY (2-22)

PERFORMANCE STEPS:

1. Assign personnel to act as litter bearers before the operation.

2. Direct the removal of the casualty from the immediate danger area.
   a. Move the casualty to a safe place within the platoon area of operation.
   b. Employ covering fire, smoke, or other means to shield the evacuation, if necessary.

3. Ensure that emergency first aid is administered. (See TASK: APPLY BASIC FIRST AID (1-43).)

4. Determine the condition of the casualty, and determine if it’s serious enough to demand evacuation. (See TASK: DIRECT CASUALTY EVACUATION (2-22).)
   a. Collect personal information for CASREP.
   b. Direct the Seabee to the route of evacuation if the casualty can walk on his/her own.
c. Direct litter bearers to assist in the evacuation.
d. Inform the unit commander if the casualty is a high priority.

5. Determine the evacuation method:

<table>
<thead>
<tr>
<th>IF</th>
<th>THEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evacuating by ambulance</td>
<td>Give explicit instructions on the routes to be taken and the exact</td>
</tr>
<tr>
<td></td>
<td>location of the casualty.</td>
</tr>
<tr>
<td></td>
<td>Keep the vehicle out of direct observation of the enemy.</td>
</tr>
<tr>
<td>Evacuating by helicopter</td>
<td>Request MedEvac support. (See TASK: DIRECT THE MEDEVAC OF A CASUALTY</td>
</tr>
<tr>
<td></td>
<td>(2-22).)</td>
</tr>
<tr>
<td></td>
<td>Establish and secure a landing area. (See TASK: ESTABLISH A LANDING</td>
</tr>
<tr>
<td></td>
<td>ZONE (2-20).)</td>
</tr>
<tr>
<td></td>
<td>Mark the landing zone and helicopter direction within the area. (See</td>
</tr>
<tr>
<td></td>
<td>TASK: DIRECT A HELICOPTER IN A LANDING ZONE (2-21).)</td>
</tr>
<tr>
<td></td>
<td>Guide MedEvac helicopter to or from the landing site. (See TASK:</td>
</tr>
<tr>
<td></td>
<td>DIRECT A HELICOPTER IN A LANDING ZONE (2-21).)</td>
</tr>
</tbody>
</table>

6. Ensure accountability of the casualty’s weapon and individual equipment.

7. Submit a casualty report (CASREP) to higher authority.

**NOTE:** A CASREP must follow the MedEvac request. Direct Air Support Center (DACS) is informed when the MedEvac is completed.

**REFERENCES:**

FMFM 5-3, Assault Support  
FMFM 6-4, Marine Rifle Platoon ICompany  

3-45
TASK: DIRECT THE HANDLING OF CAPTURED ENEMY PERSONNEL (3-12)

CONDITIONS: PROVIDED SIMULATED SUSPECTED ENEMY PERSONNEL, CAPTIVE TAGS, RESTRAINING DEVICES, AND A COLLECTION POINT DESTINATION.

STANDARD: DIRECT SIMULATED SUSPECTED PERSONNEL TO THE COLLECTION POINT.

EVALUATION GUIDELINES TO BE USED DURING TRAINING:

Conditions: The Seabee is provided simulated suspected enemy personnel, captive tags, restraining devices, and a collection point.

Standards: The Seabee must direct simulated suspected personnel to the battalion collection point.

Administrative Note: See TASK: PROCESS ENEMY PERSONNEL (1-24)

PERFORMANCE STEPS:

1. Coordinate the processing of enemy personnel. (See TASK: PROCESS ENEMY PERSONNEL (1-24).)

2. Arrange to have EPWs transported to the collection point.
   a. Ensure that the EPWs are secured in the vehicle. Use seat belts if available.
   b. Ensure that security is maintained at all times, regardless of the means of transportation to the collection point.
   c. Establish a temporary holding facility if transportation is not available.

3. Release EPWs at the collection point only, to authorized personnel.

REFERENCES:

FMFM 6-5, Marine Rifle Squad
FMFM 6-7, Scouting and patrolling for Infantry Units
FM 19-40, Enemy POW Civilian Interns
FM 21-75, Combat Skills of the Soldier
OH 3-5, Employment of Military Police in Combat
TASK: SUPERVISE CONDUCT OF MASK CONFIDENCE EXERCISE (3-13)

CONDITIONS: PROVIDED AN M40A1 PROTECTIVE MASK AND A GAS CHAMBER EXERCISE CONDUCTED BY A QUALIFIED INSTRUCTOR.

STANDARD: SUPERVISE GAS MASK CONFIDENCE EXERCISE PER LOCAL SOP’S AND REGULATIONS.

EVALUATION GUIDELINES TO BE USED DURING TRAINING:

Conditions: The Seabee is provided a unit of Seabees, a field protective mask, an environment conducive to conducting CBR training, a qualified CBR instructor, and resources listed at the end of this task.

Standard: The Seabee must supervise the mask confidence exercise by ensuring that prescribed safety measures, including medical screening of participants, and exercise procedures are followed.

Administrative Notes: The purpose of the mask confidence exercise is to provide the Seabee with an opportunity to check the operation, fit and serviceability of their mask and instill confidence in basic CBR principles. The exercise should never be used to discipline or harass Seabees.

When possible, conduct training outside. Exposing unit(s) to field concentrations of the agent will add a measure of realism to the exercise, particularly when performed in conjunction with other training missions.

See TASKS: DON AND CLEAR THE M40A1 PROTECTIVE MASK (1-34)
TREAT A CHEMICAL AGENT CASUALTY (1-42)

PERFORMANCE STEPS:

1. Review policies and regulations governing combat training (see resources).
   - Review symptoms and treatment for riot control agents. (See TASK: TREAT A CHEMICAL AGENT CASUALTY (1-42).)

2. Review local safety regulations.

3. Ensure that Seabees receive safety lecture/brief.
   a. The instructor should:
      1) Have Seabees conduct a serviceability check of the mask.
      2) Provide replacement of worn or missing mask components/accessories.
3) Allow qualified instructor to size their masks.

4) Instruct on procedures and safety precautions while in the chamber.

5) Demonstrate procedures for donning, clearing, and adjusting the mask. (See TASKS: DON AND CLEAR THE M40A1 PROTECTIVE MASK (1-34).)

6) Allow Seabees the opportunity to practice donning and clearing the mask.

7) Instruct decontamination procedures.
   a) Face into the wind.
   b) Move UPWIND of the contamination, NEVER downwind.
   c) DO NOT run!
   d) DO NOT touch or rub face or eyes.
   e) If necessary, flush eyes with water.
   f) When necessary, wash exposed skin.
   g) If symptoms persist, report to medical personnel.

4. Screen Seabees for physical problems.
   a. When conducting a mask confidence exercise, medical personnel will be provided in accordance with units SOP.
   b. Refer personnel having severe facial acne, history of asthma, or serious respiratory or cardiac conditions to the medical officer prior to training.

   NOTES: Seabees with questionable medical problems will be referred to medical personnel present.

   Authorize unlimited consumption of water.

   Only water is permitted through the drinking device of the M40A1 protective mask.

5. Use safe precautions in the chamber.
   a. Look for indicators of an overcharged chamber.
      1) Check for stinging or burning on the back of your neck or arms, particularly on warm humid days. If the chamber is overcharged, doors and windows should be opened to ventilate the chamber level to an appropriate level.
      2) Ensure that there is not a smoky or light haze present in the chamber. The agent should not be seen.
WARNING: An overcharged chamber can cause casualties in the form of reddening of the skin, burns, and blisters.

CAUTION: Never allow O-Chlororobenzalmononitrile (CS) grenades in the chamber. CS grenades will act as an obscurant and will reduce the oxygen level below that necessary to sustain life.

b. If Seabees are not wearing MOPP gear, have them roll down sleeves and button up collar.

   - The exercises supervised in this step refer to both inside and outside the chamber.

   NOTE: For detailed instruction on conducting a mask confidence exercise, refer to the resources listed at the end of this task.

7. Provide leadership.
   a. Be a positive role model.
   b. Set the example by participating in the exercise.
   c. When necessary, provide assistance to the instructor in the chamber.
      1) Receive brief from instructor on emergencies, safety, and procedures.
      2) Enforce safety precautions.
      3) Keep participants calm.
      4) Monitor participants closely.
      5) Ensure that participants follow instructions.
      6) Ensure that Seabees exit in an orderly manner.

8. Record data.
   - Ensure that appropriate training rosters are completed in accordance with local training SOPs for those Seabees successfully completing the exercise.

REFERENCES:

MCRP 3-OA, Unit Training Management Guide
MCRP 3-OB, How to Conduct Training
FMFM 11-1, Nuclear, Chemical and Defensive Biological Operations in the FMF
MCO 1500.40, USMC Training Philosophy, Definitions, Priorities and Training Requirements
MCO 1553.1A, The Systems Approach to Training
MCO P3400.3, Nuclear, Biological and Chemical (NBC) Defense Readiness and Training Requirements
MCO P3570.1, Policies and Procedures for Firing Ammunition for Training, Target Practice, and Combat Local Training SOP
TASK:         ASSIST COMMANDER ON UNMASKING PROCEDURES (3-14)
CONDITIONS:  PROVIDED COMMANDER'S REQUEST FOR ASSISTANCE IN UNMASKING,
             SEABEES WEARING FIELD PROTECTIVE MASK, AN AREA WHERE CHEMICALS
             HAZARD MAY OR MAY NOT BE PRESENT, AND M256Al CHEMICAL DETECTOR
             KIT, IF AVAILABLE.
STANDARD:    IN ACCORDANCE WITH THE REFERENCE, ADVISE COMMANDER ON THE
             CORRECT UNMASKING PROCEDURES THAT WILL MINIMIZE CHANCE FOR
             CASUALTY.

EVALUATION GUIDELINES TO BE USED DURING TRAINING:

Conditions: Given an CBR scenario in which chemical agents have been employed, a group of
             Seabees at MOPP level 4, and standard chemical agent detectors, to include the
             M256A1 chemical agent detector kit.

Standard:   The Seabee must assist the unit commander in conducting unmasking procedures
             without unnecessarily contaminating or exposing Seabees to chemical agents. If
             those procedures are not utilized, as a result of unavailability of detector equipment,
             the Seabee must explain this in detail.

Administrative Notes: Unmasking procedures should be conducted when a reasonable amount of
                     time has passed following a chemical attack, if the unit has moved through
                     or out of an area of suspected contamination, or when directed to do so by
                     other competent authorities.

See TASKS:   IDENTIFY CHEMICAL AGENTS (1-37)
             TREAT A CHEMICAL AGENT CASUALTY (1-42)

PERFORMANCE STEPS:

1. Perform unmasking procedures when an M256A1 chemical agent detector kits is available. (See
   TASK: IDENTIFY CHEMICAL AGENTS (1-37).)
   a. Test for the presence of chemical agents, vapors, including liquid contamination, by using the M256A1
      kit, or available M8 or M9 detector paper.

      WARNING: Should detector paper (which takes seconds to determine the presence of liquid
                 chemical agents) or the M256A1 chemical detector kit, be positive - STOP and do
                 not perform unmasking procedures. To continue will result in casualties.
   b. If the results are negative, select two or three Seabees of varying builds, heights, and weights,
      and start unmasking procedures.
      - Ensure that you disarm all selected Seabees. Security, to aid in monitoring selected
        Seabees, may be an additional requirement
c. Whenever possible, conduct tests in the shade.

d. Instruct selected Seabees to unmask for five minutes, breathing normally with their eyes open; then don their masks, reseal, and clear their masks.

e. Observe the selected Seabees for 10 minutes to determine if there are symptoms that may have resulted from chemical agent exposure. (See TASK: TREAT A CHEMICAL AGENT CASUALTY (1-42)).

f. If no symptoms appear, give the all clear signal, and unmask per unit CBR SOP.

   WARNING: Never unmask 100% of your unit immediately. Unmasking a quarter or a third of your unit is preferred; refer to your unit CBR SOP.

g. Return weapons to the Seabees who were selected for initial unmasking.

h. Continue to observe selected Seabees for possible delayed symptoms.

i. Have first aid treatment readily available.

2. Perform unmasking procedures when an M256A1 chemical agent detector kit is not available.

   NOTE: Unmasking procedures when the M256A1 kit is not available will take approximately 35 minutes.

a. Whenever possible, conduct tests in the shade to prevent constriction of the pupils and possible false symptoms.

b. Use M8 or M9 detector paper to check the area for possible liquid contamination.

   WARNING: Should detector paper (which takes seconds to determine the presence of liquid chemical agents) be positive – STOP and do not permit unmasking procedures. To continue would result in casualties.

   NOTE: Seabees are issued M8 or M9 detector paper as a component to their field protective masks.

c. Select two or three Seabees of varying heights, builds, and weights.

   NOTE: Ensure that you disarm all selected Seabees to provide unit safety. It may be necessary to move to an uncontaminated area, if the chemical agent is persistent. The results of a persistent agent may not be readily detected.

d. Instruct Seabees to take a deep breath and hold it, break the seal of the mask for 15 seconds, and keep their eyes open.

e. Have the Seabees reseal, clear, and check their masks.

f. Observe the selected Seabees for symptoms of chemical agent poisoning for 10 minutes.

g. If no symptoms appear, have the same Seabees break the seals of their masks again, take a couple of deep breaths, then reseal, clear, and check their masks.
h. Observe the selected Seabees for symptoms of chemical agent poisoning for 10 minutes.
i. If no symptoms appear, have the same Seabees unmask for 5 minutes, and then remask.
j. If no symptoms appear in 10 minutes, initiate unmasking per unit CBR SOP.
k. Return weapons to the Seabees who were selected for initial unmasking.
l. Continue observing selected Seabees for symptoms of chemical agent poisoning.
m. Caution everyone to be alert for symptoms.

REFERENCE:

FM 3-4, NBC Protection
TASK: EXECUTE PROTECTIVE MEASURES FOR A NUCLEAR ATTACK (3-15)

CONDITIONS: PROVIDED A POTENTIAL NUCLEAR WARFARE ENVIRONMENT.

STANDARD: AS PER THE REFERENCE, EXECUTE PROTECTIVE MEASURES IN ORDER TO PROVIDE MAXIMUM PROTECTION FROM THE EFFECTS OF AN ATTACK.

EVALUATION GUIDELINES TO BE USED DURING TRAINING:

Conditions: The Seabee is provided a simulated nuclear warfare environment, Seabees with entrenching tools, the unit's CBR SOP, the unit's monitor/survey team and equipment, and the commander's guidance.

Standard: The Seabee must execute protective measures to provide maximum protection from the effects of a nuclear attack.

Administrative Notes: See TASKS: REACT TO A NUCLEAR ATTACK (1-40)
PREPARE NBC I (OBSERVER'S) REPORT (2-23)
PREPARE NBC 4 REPORT (3-17)

PERFORMANCE STEPS:

NOTE: To survive a nuclear attack, units must utilize a combination of dispersion, movement, and cover. Shielding should be considered when moving or selecting positions.

1. Prepare for a nuclear attack.

   a. Prepare the unit.

      1) Disperse Seabees over their assigned objective area.

      2) Move frequently to avoid being targeted by the enemy, when possible.

      3) Take advantage of cover, concealment, and shielding provided by terrain.

         a) Use reverse slopes of hills and mountains.

         b) Use depressions and obstructions.

         c) Use woods and forests.

   b. Prepare positions.

      1) Improve fighting positions.

         a) Dig fighting holes deeper.
NOTE: Nuclear radiation is reduced by a factor of two for each 16 inches of depth.

b) Construct revetments and reinforce the fighting holes.

c) Cover any metal and reflecting surfaces with dark rough materials (wool blanket, canvas) to prevent being burned from nuclear blast heat.

NOTE: Do not use rubber or plastic materials alone, such as ponchos, because these might melt and cause burns.

d) Construct overhead cover using expedient materials, such as earth or sandbags. (Figure 1). Make openings as small as possible

Figure 1

NOTE: Adding at least 3 feet of overhead cover (earth) will significantly reduce the damage from a nuclear blast.

2) Construct underground shelters, if time and equipment are available.

   a) Construct two exits in case one collapses.

   b) Construct entrances at right angles to avoid direct exposure to blast and thermal radiation (Figure 2).
c) Provide for an air supply, either natural flow or forced air.

3) Use existing structures (Figure 3).
a) Select shelter in buildings that are constructed of reinforced concrete or steel-framed.

b) Seek buildings with underground floors (basements); they provide better shielding than above ground buildings.

c) Position yourself in the center of the building rather than at an outside wall in above ground buildings.

d) Position yourself at the corner of a room on the lowest floor in below ground level buildings.

e) Sandbag windows and doors.

f) Seek lowest position in building.

4) Use vehicles (tracked and untracked) for protection.
   a) Select shelter in or under a tracked vehicle (Figure 4).

   ![Figure 4](image)

   **NOTE:** A tracked vehicle could move into a position over a dug in fighting hole. Although the vehicle will provide overhead cover from fallout and radiation, a nuclear blast may render the vehicle incapable of moving to uncover the fighting hole.

b) Orient the vehicle with its rear toward the blast area.

c) Dig the vehicle in (hull defilade).

d) Sandbag the top and openings in the vehicle.

e) Close all hatches.
f) Secure all equipment.

g) Ensure that Seabees wear helmets.

5) Field expedient shelters.
   - Select shelters in tunnels, caves, storm drains, or any other terrain features that provide cover and shielding/protection (Figure 5).

   **NOTE:** Culverts, drains, and ditches provide partial cover.

![Figure 5](image)

6) Use individual protective measures.
   - Ensure that Seabees button up the collar and sleeves of their blouse.
   - Have the Seabees tuck their blouse inside their trousers to prevent contamination.
c) A wet cloth or T-shirt may be worn over the mouth and nose to prevent ingestion of fallout.

d) Ensure that MOPP gear is operable and available for use.

**NOTE:** MOPP gear and the field protective mask should be used only as a last resort. However, if dirt or dust is a problem, wear the mask.

MOPP gear does not protect against initial nuclear radiation or the hazards of residual radiological contamination from induced gamma radiation and fallout. It does give some radiation protection because of complete body coverage. It reduces the chance of beta particles coming in contact with and burning the skin, and it reduces the ingestion of alpha particles. The protective mask may help the Seabee to breathe easier when fallout dust makes breathing difficult.

e) Ensure that the unit's monitor/survey teams and their equipment are available for use.

7) Prepare supplies and equipment for nuclear attack.

a) Disperse ammunition and flammable supplies to reduce the fire hazard.

b) Turn off all electronic equipment and radios that are not mission essential.

c) Remove antennas and disconnect power cables/batteries.

d) Shield communication-electronic equipment by placing it inside bunkers or armored vehicles.

e) Prepare dug-in positions.

f) Keep everything packaged and sealed.

g) Secure everything to prevent it from becoming flying debris.

h) Provide overhead cover.

2. **Take immediate actions during a nuclear attack:** (See TASK: REACT TO A NUCLEAR ATTACK (1-40).)

**NOTE:** There may be little or no warning of a nuclear attack. The first indication of an enemy nuclear attack will be a very intense light, much brighter than sunlight. You may see a mushroom-shaped cloud. Heat and radiation come with the intense light of the explosion. The blast wave follows within seconds.
3. Actions following a nuclear attack:

a. Prepare and report an NBC I (Nuclear) report. (See TASK: PREPARE NBC I REPORT (2-23).)

b. Ensure that the unit's monitor/survey teams detects, records, and reports radiation doses. (See TASK: PREPARE NBC 4 REPORT (3-17).)

c. Treat casualties as soon as possible.
   1) Apply first aid to burns and blast injuries.
   2) Watch for symptoms of radiation sickness:
      a) Nausea and vomiting
      b) Symptoms disappear and individual feels normal
      c) Symptoms reappear and individual becomes incapacitated
   3) Seek medical treatment.

d. Follow the unit's CBR SOP and commander's guidance.

e. Prepare for fallout.
   1) Repair or reinforce positions.
   2) Ensure that monitor/survey team is standing by to announce arrival of fallout and to determine the extent and intensity of the hazard.

f. Maintain control of the unit

g. Check weapon systems.
   - Verify that weapons are operational; strip and clean as necessary.

h. Conduct decontamination procedures.
   1) Have monitor/survey teams monitor personnel for radiation.
   2) If contamination is found, instruct Seabees to wash and bathe.
   3) If bathing is not an available option:
      a) Remove and vigorously shake clothing.
      b) Wipe clothing with a brush, broom, or shrubbery.
      c) Remove dust from hair and from under fingertips.
      d) Wipe exposed side with a damp cloth.
e) Bathe and change clothing as soon as possible.

f) Decontaminate equipment by washing and scrubbing with water.

g) Remove approximately 1/2 inch of dirt from the sides and bottom of the fighting hole and throw it out.

h) Wash and scrub the outside of any food or water that is packaged or sealed.

NOTE: Keep protective mask on while performing the above activities.

i. Monitor unit's radiation dose.

   1) Ensure the monitor/survey teams detect and records the radiation dose received by your unit.

   2) Observe the unit's SOP and commander's guidance on radiation dose control.

4. Continue the mission.

REFERENCES:

FMFM 11-1, Nuclear, Chemical and Defensive Biological Operations in the FMF
FM 3-4, NBC Protection
TASK: EXECUTE PROTECTIVE MEASURES FOR A BIOLOGICAL/ CHEMICAL ATTACK (3-16)

CONDITION: PROVIDED THE POTENTIAL FOR BIOLOGICAL OR CHEMICAL WARFARE ENVIRONMENT.

STANDARD: AS PER THE REFERENCE, EXECUTE PROTECTIVE MEASURES IN ORDER TO PROVIDE PROTECTION FROM THE EFFECTS OF AN ATTACK.

EVALUATION GUIDLINES TO BE USED DURING TRAINING:

Conditions: The Seabee is provided a potential biological or chemical warfare environment, a unit of Seabees, the unit's CBR SOP, and the commander's guidance.

Standard: The Seabee must execute protective measures in order to provide maximum protection from the effects of a biological/chemical attack.

Administrative Notes: See TASKS: IDENTIFY NATO NBC MARKERS (1-32)
TREAT CHEMICAL AGENT CASUALTIES (1-42)
IDENTIFY CHEMICAL AGENTS (1-37)
DECONTAMINATE SKIN AND EQUIPMEENT USING THE DECONTAMINATION KIT (1-38)
REACT TO A CHEMICAL/BIOLOGICAL ATTACK (1-41)
PREPARE NBC 1 REPORT (2-23)
IMPLEMENT MISSION-ORIENTED PROTECTIVE POSTURE (MOPP) (2-24)
ASSIST UNIT COMMANDER IN UNMASKING PROCEDURES (3-13)

PERFORMANCE STEPS:

1. Prepare for a biological/chemical attack

   a. Prepare individual Seabees.

      1) Ensure that each Seabee has been issued a complete set of MOPP gear, to include medicants and decon kits.

      NOTE: Bloused trousers, rolled down and buttoned sleeves may provide the same level of protection against biological agents (lice, fleas, ticks, and mosquitoes) as MOPP gear, without impeding the Seabees' performance. Apply insect repellent liberally to neck, face, ankles, and wrists.
2) Ensure that individual CBR defense skills meet or exceed standards.

3) Ensure personal health of each Seabee.
   a) Immunizations are up to date.
   b) Proper sanitation and hygiene are practiced.
   c) Seabees are well conditioned.
   d) Seabees are well rested, hydrated and fed.

b. Prepare the unit.

1) Inform Seabees of the threat, recognition of the attack, and protective measures

2) Ensure that the unit's CBR defense teams have been properly equipped.

3) Gain intelligence on threat capabilities and intentions.

4) Avoid detection by employing good Operational Security (OPSEC) measures.
   a) Disperse all equipment, supplies, and vehicles depending on the Mission, Enemy, Terrain, Troops, and Times available (METT-T).
   
   b) Cover/camouflage all items.
   
   c) Ensure that chemical alarms, kits, and detectors are operational.
   
   d) Deploy automatic chemical alarms based on wind speed and direction, terrain, and the tactical situation.

5) Deploy CBR recon (monitor/survey) teams.

6) Ensure that Seabees maintain the appropriate MOPP level.

7) Select positions that provide overhead cover.

   **CAUTION:** Positioning Seabees in some terrain features, like wooded areas or jungles, will expose them to increased hazards from a biological/chemical attack. Wooded areas and jungles retain moisture and block sunlight. These characteristics will allow biological agents (germs, mosquitoes, ticks, lice, and fleas) to thrive. Personnel will be protected from chemical agents in liquid form, but not in vapor form.

   - Construct overhead cover for fighting holes.

8) Remain mobile, if possible.

9) Identify alternate (back-up) food, water, and supply sources in case of contamination.
10) Set up collective protection systems for personnel, equipment, and supplies.

11) Begin insecticide and other pest control measures if biological attack is expected.

12) Expect a biological attack to be made at night since most biological agents are sensitive to sunlight.

13) Park vans with air conditioning intakes opposite prevailing wind direction.

14) Shut off air conditioners, then cover intakes.

2. Take immediate actions during a biological/chemical attack (See TASK: REACT TO A CHEMICAL or BIOLOGICAL ATTACK (1-41).)
   a. Repulse or eliminate delivery vehicle or weapons.

      NOTES: Since the attack may be chemical or toxins, MOPP 4 is required initially until the attack is identified.

      It may be difficult to detect a biological attack initially because there are no alarms for detecting it. Use intelligence of the enemy to recognize a pattern of employment before the attack. After the attack, observe the symptoms in a large number of personnel.

   b. Identify the type of attack.

      - Use standard chemical detection devices will rule out the probability of a biological attack and identify specific chemical agents used. (See TASK: IDENTIFY CHEMICAL AGENTS (1-37).)

   c. Warn others.

   d. Report the attack. (See TASK: PREPARE NBC 1 REPORT (2-23).)

   e. Initiate and maintain the appropriate MOPP level. (See TASK: IMPLEMENT MISSION-ORIENTED PROTECTIVE POSTURE (MOPP) (2-24).)

   f. Conduct emergency decontamination.

3. Take actions following a biological/chemical attack.
   a. Apply first aid to casualties. (See TASK: TREAT CHEMICAL AGENT CASUALTIES (1-42).)

   b. Decontaminate any exposed skin. (See TASK: DECONTAMINATE SKIN AND EQUIPMENT USING THE DECONTAMINATION KIT (1-38).)

   c. Conduct decontamination procedures.
<table>
<thead>
<tr>
<th>LEVEL</th>
<th>TECHNIQUE</th>
<th>BEST START TIME</th>
<th>DONE BY</th>
<th>GAINS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immediate</td>
<td>Skin decon</td>
<td>Before 1 minute</td>
<td>Individual</td>
<td>Stops agent from penetrating.</td>
</tr>
<tr>
<td></td>
<td>Personal wipedown</td>
<td>Within 15 minutes</td>
<td>Individual or crew</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Operator’s spray down</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operational</td>
<td>MOPP gear exchange</td>
<td>Within 6 hours</td>
<td>Unit</td>
<td>Possible temporary relief from MOPP. Limits liquid agent spread.</td>
</tr>
<tr>
<td></td>
<td>Vehicle washdown</td>
<td></td>
<td>Battalion crew</td>
<td></td>
</tr>
<tr>
<td>Detailed</td>
<td>Detailed equipment decon</td>
<td>When mission allows</td>
<td>Decon team</td>
<td>Probable long-term MOPP reduction with minimum risks</td>
</tr>
<tr>
<td></td>
<td>Detailed troop decon</td>
<td>reconstitution</td>
<td>Unit</td>
<td></td>
</tr>
</tbody>
</table>

**Table 1**

**NOTE:** These techniques become increasingly less effective the longer they are delayed. Vehicle washdown is most effective if started within 1 hour, but will often have to be delayed for logistical reasons.

d. Follow the unit's CBR SOP and the commander's guidance.

e. Maintain control of the unit.

f. Treat casualties as soon as possible.

g. Ensure medical personnel check food and water supplies.

h. Consume only sealed rations and properly contained water.

**NOTE:** Outside surfaces of containers must be properly decontaminated.

i. Separate biological casualties.

j. Mark all contaminated equipment and areas. (See **TASK: IDENTIFY NATO NBC MARKERS (1-32).**)

k. Leave or avoid contaminated areas.

l. Assess combat capability of the unit.
m. Send NBC 1 report with a FLASH precedence.

n. Assess chemical downwind hazard.
   1) If not in the target area, determine if your unit is in the downwind zone of the hazard and will it affect your unit.
   2) If in the hazard area, take avoidance or protective measures accordingly.
      a) Prepare by protecting against downwind hazard.
      b) Move out of/avoid the hazard area.

o. Increase unit combat capability.
   1) Unmask by either:
      a) Moving to an uncontaminated area
      b) Making use of collective protection -
         NOTE: Follow prescribed unmasking procedures. (See TASK: ASSIST UNIT COMMANDER IN UNMASKING PROCEDURES (3-13))
   2) Ensure that the Seabees relieve themselves.
   3) Ensure that the Seabees eat and drink.

4. Continue with the mission.

REFERENCES:
FMFM 11-1, Nuclear, Chemical and Defensive Operations in the FMF
FM 3-3, Chemical and Biological Contamination Avoidance
FM 3-4, NBC Protection
FM 3-5, NBC Decontamination
TASK: PREPARE NBC 4 REPORT (RECONNAISSANCE, MONITORING, AND SURVEY RESULTS) (3-17)

CONDITIONS: PROVIDED MONITORING/SURVEY/RECONNAISSANCE RADIOLOGICAL DATA, PAPER, PENCIL, LIST OF MEANING OF LINE ITEMS IN NBC REPORTS, AND REPORT FORMAT.

STANDARD: IN ACCORDANCE WITH THE REFERENCE, COMPLETE AN NBC 4 REPORT WITH AT LEAST THE MANDATORY LINES FOR NUCLEAR (QUEBEC, ROMEO, SIERRA) AND CHEMICAL (HOTEL, QUEBEC, SIERRA) ATTACKS.

EVALUATION GUIDELINES TO BE USED DURING TRAINING:

Conditions: The Seabee is provided a CBR attack scenario, monitoring survey or reconnaissance data, NBC Warning and Reporting System (current edition), paper, a pencil, and report format.

Standard: The Seabee must record and report the required heading information and the mandatory required line items for nuclear (Q, R, S) and chemical (H, Q, S) reports to the unit leader for transmission of the NBC 4 report to the COC.

Administrative Note: See TASK: COMMUNICATE USING A FIELD RADIO (1-60)

PERFORMANCE STEPS:

1. Prepare an NBC 4 Nuclear Report (Table 1).

NOTES: An NBC 4 nuclear report may be prepared as the result of radiological monitoring or when survey or monitoring data has been requested by higher headquarters.

A date-time group consists of six numerals and one alphabetic character. The first two numerals indicate the day of the month and the last four the time of day in the military 24-hour clock system. An alphabetic character will indicate the time. Report all time as Zulu time (Z). For CBR messages, "Z" time is preferred.

Lines items of an NBC 4 may be repeated as often as necessary.

a. Place necessary data into report format.

1) Record appropriate heading information (precedence, date-time group, security classification, from, to, and type of report).

NOTES: Data should be recorded in a field message book. (See TASK: COMMUNICATE USING A RADIO (1-60).)

Determine the reports precedence, e.g., IMMEDIATE or according to your unit SOP. If a reading is taken inside a vehicle or shelter (a shielded reading), also give the transmission factor. A transmission factor is described as the numerical difference between an inside and outside dose rate reading.
2) Record the type of NBC 4 report as nuclear.

NBC 4 REPORT (RECONNAISSANCE, MONITORING, AND SURVEY RESULTS)

<table>
<thead>
<tr>
<th>LINE</th>
<th>NUCLEAR</th>
<th>CHEMICAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>N/A</td>
<td>Nerve, V</td>
</tr>
<tr>
<td>Q</td>
<td>LB123987</td>
<td>LB200300, Liquid</td>
</tr>
<tr>
<td>R</td>
<td>35</td>
<td>N/A</td>
</tr>
<tr>
<td>S</td>
<td>201535Z</td>
<td>170610Z</td>
</tr>
</tbody>
</table>

Table 1

3) Complete line Quebec.
   - Record the location of readings as 8-digit grid coordinates.

4) Complete line Romeo.
   a) Record the dose rate in cGyph (centigray per hour).

   **NOTES:** The term cGyph/hr is the standard unit of measure when discussing dose rates. All readings should be taken in the open, with the instrument held 1 meter above the ground. However, if readings are taken inside (radiation levels are too high); include at least one outside reading and additional inside readings.

   b) Automatic reports (Table 2) are submitted to identify key occurrences necessary to track radiological hazards and to warn affected units.

**AUTOMATIC REPORTS**

- **Initial**  Fallout arriving at this location (send report when a dose rate of 1 cGyph or more is detected).
- **Peak**    The dose rate is steadily rising until it reaches the highest reading and then decreases.
- **Special** The circumstances surrounding the measurement of the dose rate warrant command attention.
- **Contact** When a dose rate reading is encountered by a unit.

Table 2
c) Certain words can be used to associate dose rates when describing the circumstances surrounding the contamination.

**NOTES:** Table 3 contains a list of prowords commonly used in conjunction with describing the circumstances of dose rates in an NBC 4 report.

<table>
<thead>
<tr>
<th>CBR PROWORDS</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decreasing</td>
<td>The dose rate is decaying (dropping from peak).</td>
</tr>
<tr>
<td>Fallout</td>
<td>The dose rate measured in an area that received contamination falling from a surface or subsurface nuclear burst.</td>
</tr>
<tr>
<td>Increasing</td>
<td>Fallout continuing to arrive at this location.</td>
</tr>
<tr>
<td>Induced</td>
<td>The dose rate measured in an area where neutron induced contamination is present.</td>
</tr>
<tr>
<td>Overlapping</td>
<td>The dose rate measured in an area where fallout from one burst was deposited over fallout from another burst.</td>
</tr>
<tr>
<td>Series</td>
<td>The dose-rate readings measured at the same location at 30-minute intervals for 2 1/2 hours followed by hourly reports. This report begins after a peak reading.</td>
</tr>
<tr>
<td>Summary</td>
<td>A group of dose rates measured at different locations in a contaminated area that provides a composite picture of a unit's area which updates the contamination status.</td>
</tr>
<tr>
<td>Verification</td>
<td>1. Data sent in response to a request by NBC Control Center to ensure that the previously received questionable data is correct.</td>
</tr>
<tr>
<td></td>
<td>2. An area of zero dose rate located.</td>
</tr>
</tbody>
</table>

Table 3

**NOTES:** More than one proword may be used on a single report and repeated as often as necessary.

Designated observers, those units with a variety of radiac instruments, will be directed to report additional information as it becomes available. This information, in the form of NBC 4 reports with prowords, will enable further evaluation of radiological data.

d) Report the first contact with radiation immediately.

5) Complete line Sierra.

- Record the date-time group of reading(s).
2. **Prepare an NBC 4 Chemical Report** *(NBC Warning and Reporting System, current edition)*.

   a. Record appropriate heading information.
   
      1) Follow steps outlined in performance step 1.a.1).
      
      2) Record the type of NBC 4 report as chemical.
   
   b. Complete line Hotel.
      
      - Record the type of agent and type of burst, if known, indicating whether burst was air (including approximate height of burst) or ground.
   
   c. Complete line Quebec.
      
      - Record the location of sampling in grid coordinates and the type of sample taken, stating whether sample was air or liquid.
   
   d. Complete line Sierra.
      
      - Record the date-time group when contamination was detected.

3. **Submit or transmit the completed NBC 4 report to your unit leader or COC via your chain of command.**

**REFERENCES:**

FM 3-3, *Chemical and Biological Contamination Avoidance NBC Warning and Reporting System (current edition)*
TASK: LEAD MOPP GEAR EXCHANGE (3-18)

CONDITIONS: PROVIDED MOPP 4 CONDITIONS, SEABEES IN CONTAMINATED MOPP GEAR, REPLACEMENT MOPP GEAR, AN UNCONTAMINATED AREA, UNIT DECON TEAM WITH DECON SUPPLIES AND EQUIPMENT.

STANDARD: IN ACCORDANCE WITH THE REFERENCE, LEAD A MOPP GEAR EXCHANGE TO REMOVE ALL LIQUID CONTAMINATION OR SOLID CONTAMINATION FROM SEABEES AND THEIR INDIVIDUAL EQUIPMENT.

EVALUATION GUIDELINES TO BE USED FOR TRAINING:

Conditions: The Seabee is provided a simulated CBR scenario with MOPP 4 conditions, contaminated Seabees in simulated contaminated MOPP gear, replacement MOPP gear, unit decon team with decon equipment and supplies, in an uncontaminated environment.

Standard: The Seabee must lead a MOPP gear exchange to remove contamination from the Seabees and their individual equipment. Those performance steps that cannot be performed due to unavailability of equipment, materials must be explained in detail by the Seabee leading the MOPP gear exchange.

Administrative Notes: See TASKS: IDENTIFY CHEMICAL AGENTS (1-37)

EXCHANGE MOPP GEAR (1-39)

PERFORMANCE STEPS:

NOTES: MOPP gear exchange is the removal of gross liquid contamination and is performed in conjunction with hasty decon operations.

MOPP gear exchange is generally performed using squad-size units in order to provide control, prevent confusion, control the spread of contamination, and facilitate speed of the operation.

The COC is aware of your unit's activities through the submission of CBR reports. They will direct your unit to report to either the immediate decon site (where MOPP gear exchange will occur), or to the Detailed Troop Decon (DTD). The COC will direct the efforts of all support activities necessary in assisting your unit in decontamination activities.

1. Prepare for MOPP gear exchange.
   a. Make contact via standard communications means.
   b. Request guidance concerning CBR-related matters, specifically, decontamination assistance.
   c. (COC) Direct your unit to a location prepared by decon team members.
d. Establish liaison at decon site.

1) Designate a member of your unit to approach the site and request instructions.

   NOTE: This will keep down the spread of contamination.

2) (The designated Seabee) Return with specific instructions for your unit.

   NOTES: In many cases your unit will be in direct contact with the decon team via a field radio or similar form of communication. The decon team will begin to provide instruction prior to your arrival at the decon site.

   MOPP gear exchange sites are prepared prior to your arrival. Necessary decontamination and replacement equipment will be made available for your unit.

   MOPP gear exchange sites are usually located as close to the contaminated area possible to preclude the spread of contamination.

2. Ensure that the selected MOPP exchange area is properly equipped and uncontaminated.

   a. Ask the senior decon team member what preparations have been made to the exchange site.

   b. Verify that the site has been checked for contamination. If the site has not been checked for contamination, use standard detection equipment. (See TASK: IDENTIFY CHEMICAL AGENTS (1-37).)

      NOTE: Whenever possible, use the most expedient method available to check the area. M8 or M9 paper can be used to check for liquid contaminants and the M256A1 for vapors. The M256A1 takes approximately 15 minutes to operate. The M8 and M9 take only seconds.

   c. Check to ensure the site is laid out in a manner to facilitate decontamination operations.

   d. Ensure that decon equipment, decon solutions, first aid, and replacement equipment are available.

3. Follow prescribed decontamination procedures. (See TASK: EXCHANGE MOPP GEAR (1-39).)

   a. Position Seabees in accordance with Figure 1.
b. Brief Seabees on MOPP gear exchange and demonstrate the procedures.

c. Maintain strict control of Seabees and decontamination procedures.

**CAUTIONS:** It is recommended that you perform the exchange using step-by-step procedures. This will prevent Seabees from getting ahead and will facilitate thorough removal of the contamination. Closely following procedures prevents casualties.

Stop procedures anytime you suspect contamination has spread to the skin or undergarments.

**NOTE:** It is difficult to hear while wearing the field protective mask. It is recommended that you develop hand and arms signals to aid you in conducting a MOPP gear exchange.

4. **Direct the unit's decon team to check the completeness of the operation.**

   a. Use the M256A1 chemical agent detector kit or Chemical Agent Monitor (CAM) to check Seabees for residual chemical contamination.

   b. Use a standard radiacmeter to check Seabees for residual radiological contamination.
      - Ensure that the contamination is below the negligible risk level of 0.33 centigray per hour.
5. Perform procedures after the gear exchange.
   a. Assist the CBR decon team as necessary in decontaminating the area or disposal of contaminated equipment.
   b. Once the exchange is completed, your unit may be directed to report to
      1) Your areas of responsibility
      2) A Detailed Troop Decon (DTD), where the hazard will be reduced even further
         - Following the PDS, your unit will be directed to areas established for Rest and Relaxation (R&R), where your Seabees will have an opportunity to
            a) relieve themselves
            b) eat chow
            c) receive medical attention
            d) get some sleep
            NOTE: This R&R is dependent upon your unit's mission and will vary from unit to unit.

6. Continue the mission.

REFERENCES:
FM 3-5, NBC Decontamination
STP 21-1-SMCT, Soldiers Manual of Common Tasks
TASK: APPLY THE ELEMENTS OF COMMUNICATIONS (3-19)

CONDITIONS: PROVIDED APPROPRIATE COMMUNICATIONS ELECTRONIC EQUIPMENT AND SEABEES TO OPERATE EQUIPMENT.

STANDARD: AS PER THE REFERENCES, APPLY EVERY SAFEGUARD CONSISTENT WITH OPERATIONAL REQUIREMENTS.

EVALUATION GUIDELINES TO BE USED DURING TRAINING:

Conditions: The Seabee is provided with appropriate communications equipment, a sound cryptographic system, personnel to operate the equipment, and the references listed at the end of this task.

Standard: The Seabee must define and state the purpose of Communications Security (COMSEC) and ensure that the four elements of COMSEC (physical, cryptographic, transmission, and emission) are employed.

PERFORMANCE STEPS:

1. Define COMSEC.
   - COMSEC is defined as that protection resulting from all measures designed to deny unauthorized persons information of value from the study of communications.

2. State the purpose of COMSEC.
   - The purpose of COMSEC is to deny unauthorized persons valuable information that could be obtained from studying our communications information. The constant aim of unauthorized intelligence services is to obtain, by physical means, items of COMSEC material or any information that discloses methods, techniques, or procedures that may compromise or prove detrimental to the security of communications.

3. Ensure physical security.

   NOTE: Physical security is the component of communications security which results from all necessary physical measures taken to safeguard classified equipment, material, and documents against loss, theft, capture, or disclosure.

   a. Ensure that the strictest physical security precautions are taken from the time of initial production of COMSEC material to the time of its destruction.
   b. Safeguard information.

      1) Mark classified material properly.
      2) Control and document the dissemination of the material.
      3) Store and account for the material.
4) Destroy classified material properly and thoroughly when it is no longer required.

5) Provide procedures for emergency destruction of material.

6) Report security violations.

7) Establish security areas.

4. Ensure cryptographic security.

 NOTE: Cryptographic security is that component of COMSEC that results from the provision of technically sound cryptographic systems.

a. Ensure that cryptographic security begins with the introduction of a cryptographic system and continues through its destruction.

b. Ensure that a cryptographic system consists of all associated materials (hardware and software) that provide a single means of encryption and decryption.

5. Ensure transmission security.

 NOTE: Transmission security is the component of COMSEC which results from all measures designed to protect transmissions from interception and exploitation by means other than cryptographic analysis.

a. Determine the best authorized transmission means for information being passed.

 NOTE: The most secure means of transmission is messenger, followed by wire. The least secure is radio because radio is particularly susceptible to interception. Messenger traffic, on the other hand, is considered the most secure. The comparative need for speed versus security must be resolved when selecting the transmission means. When speed is important, as in rapidly moving tactical situations, a radio may be more desirable.

b. Use wire communications rather than a radio whenever possible.

6. Ensure emission security.

 NOTE: Emission security results from all measures taken to deny unauthorized persons information of value that might be obtained from interception and analysis of compromising emanations from cryptographic equipment and telecommunications systems.

a. Use the lowest power output possible to transmit.

b. Use directional antennas.

c. Use terrain masking.
TASK: SUPERVISE UNIT’S INDIVIDUAL TRAINING IN COMMUNICATIONS (3-20)

CONDITIONS: PROVIDED THE REFERENCES AND UNIT TRAINING SCHEDULE.

STANDARD: IN ACCORDANCE WITH THE COMMANDER’S GUIDANCE AND THE REFERENCES, ENSURE THE UNIT’S REQUIREMENTS ARE MET FOR INDIVIDUAL TRAINING IN COMMUNICATIONS.

EVALUATION GUIDELINES TO BE USED DURING TRAINING:

Conditions: The Seabee is provided the unit training schedule, a list of operational commitments, unit personnel, Individual Training Standards (ITSs) applicable to communications, and the resources listed at the end of this task.

Standard: The Seabee must ensure that the unit’s requirements are met for individual training in communications in accordance with the commander’s guidance. The Seabee must ensure that the training is realistic, mission oriented, and complies with safety regulations. The Seabee must identify training deficiencies, if any, and recommends solutions to improve deficient performance.

REFERENCES:

MCO 1510.89, Individual Training Standards (ITS) System for Marine Battle Skills Training (MBST), Volume 1-Private-Lance Corporal
MCO 1510.90, Individual Training Standards (ITS) System for Marine Battle Skills Training (MBST), Volume 2- Corporal-Gunnery Sergeant
MCO 1553.1B, The Marine Corps Training and Education System
MCO 1553.3, Marine Corps Unit Training Management, Local Training SOP
FMFM 0-1, Unit Training Management Guide
FMFM 0-1A, How to Conduct Training
NOTE: Terrain masking is placing terrain obstacles between the radio antenna and the enemy. This reduces the risk of interception and radio direction finding operations.

d. Minimize the amount of time you are on the air for all transmissions.
   1) Use brevity codes whenever possible.
   2) Sends low priority messages by wire or messenger.

e. Remote transmitters from CPs.

REFERENCES:
MCWP 6-22 Communications and Information Systems
OPNAVINST 5510.1, Information and Personnel Security Regulations Manual
CSP 1, DON Cryptographic Security Policy and Procedures Manual