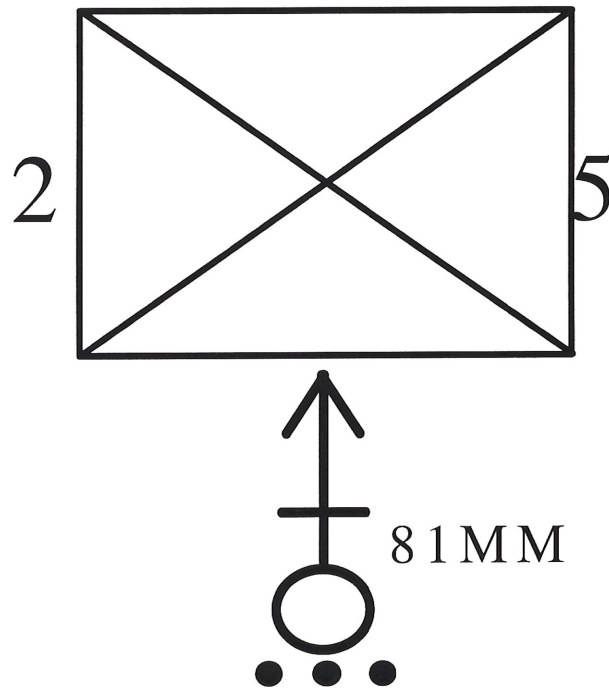


# UNITED STATES MARINE CORPS



## STANDING OPERATING PROCEDURE

APRIL 1999

UNITED STATES MARINE CORPS  
Weapons Company  
Second Battalion, Fifth Marines  
Camp Pendleton, CA 92055-5473

5000  
81's  
22 Apr 99

From: 81mm Mortar Platoon Commander  
To: Commanding Officer, Second Battalion, Fifth Marines  
Via: Commanding Officer, Weapons Company

Subj: 81mm MORTAR PLATOON STANDING OPERATING PROCEDURE

Ref: FM 7-90 Tactical Employment of Mortars  
FM 23-90 Mortars  
FM 23-91 Mortar Gunnery  
ARTEP 7-90 Mortars  
MCCRE  
81mm Mortar SOP (Sep 94)  
Chapter 10, AR 385-63, MCO P3570.1A

1. The 81mm Mortar Standing Operating Procedure is a compilation of ideas drawn from Fleet Manuals, publications, and experience. The procedures set forth by this document have been tested and proven over the course of multiple live-fire and maneuver evolutions.
2. Every Marine in the platoon is tasked with reading and understanding the 81mm Mortar Platoon SOP. Each Squad Leader is responsible for maintaining a current copy of the SOP within their squad cans. The concepts are not new and familiarity is the key. Keep in mind that the SOP is a malleable document and innovative ideas for change are always welcome.
3. Point of Contact for all matters pertaining to this document is 1stLt Maloney x-7527/7529.

J.W. MALONEY

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## 81MM MORTAR PLATOON RSOP-----

1. Purpose: Provide guidelines for the selection of primary and alternate positions. The positions must provide cover and concealment, afford proper drainage, and have an adequate supply route. These positions must allow for mask clearance and no overhead interference. The position must also allow for rapid displacement. This chapter will cover foot and vehicle reconnaissance.
2. Personnel: The recon is normally conducted by the platoon sergeant or platoon commander along with the following personnel:
  - (1) DRIVER
  - (1) PLT SGT / PLT CDR
  - (2) AMMO MEN to place out stakes and act as section ground guides
  - (3) AMMO MEN to provide security
  - (2) FDC PERSONNEL
  - WIREMAN(More personnel may be required based upon current threat and/or transportation assets available.)
3. Equipment.
  - (3) COMPASSES
  - (16) STAKES (8) baseplate and (8) direction stakes
  - (1) PLOTTING BOARD
  - (1) AIMING CIRCLE
  - (1) AN/PVS-11 (PLGR)
  - (1) OE-254
  - (2) PRC-119 (1) on mortar net and (1) on battalion tac
  - (1) DR-8 wire (minimum of 650 meters for gun loop and remoting comm)
  - (2) AN/PVS 7-B's (night)
  - (8) NIGHT AIMING DEVICES (night)
  - (1) PONCHO or tarp to cover FDC setup (night)
4. Performing the RSOP.
  - a. Prior to RSOP the element leader will:
    1. Issue a five point contingency plan.
    2. Frag all RSOP personnel on the movement.
    3. Notify the FSCC.
    4. Brief enroute markings.
  - b. Upon arrival to the potential mortar position
    1. Conduct a security sweep of the area.
    2. Establish security positions.
  - c. The element leader considers the following when conducting the position recon:
    1. Can the mission be accomplished from this position?
    2. Can good communications be established with HHQ or the supported unit?
    3. Is the position in defilade?
    4. Does the position offer good cover and concealment?
    5. Does the position offer good routes into and out of for displacement and supply?

6. Is the position defensible?

7. Is the position in keeping with commander's intent?

d. RSOP priority of work:

1. Confirm azimuth of fire with FDC.
2. Set up plotting board.
3. Determine the platoon formation.
4. (2) designated ammo men set in baseplate stakes and place out direction stakes.
5. Element leader sets up aiming circle.
6. Wireman runs the gun loop from FDC to each baseplate stake
  - a. Remote communications.
  - b. Set up OE-254 with FDC personnel.
7. Element leader contacts the platoon and calls for "punt".
8. Element leader checks security positions and lay of directions stakes.
9. The two ammo men that placed in stakes are posted in a location that allows them to act as section guides when platoon arrives.
10. Element leader moves to a point where he can conduct link-up and brief the platoon upon arrival.

e. Platoons arrival:

1. Guides lead sections to firing positions.
2. Squads begin priorities of work per platoon SOP.

# PRIORITY OF WORK (POST RSOP)

## GUN LINE

## FDC

## HEADQUARTERS

AMMOMAN TO AUGMENT SECURITY

SELECT POS 50m BEHIND GUNLINE

PLT SGT PREPARES TO LAY BY AIMING CIRCLE

POSITION ANALYSIS/SHIFT BASEPLATE STAKE IF REQ'D

RECHECK POS REP AND AZIMUTH OF FIRE

WIREMAN BEGINS COMM CHECKS

WHILE B.P. HOLE BEING DUG:  
-CHECK DIRECTION STAKE  
-FILL SAND BAGS  
-MOUNT MORTAR

CHECK BOARD SETUP

PLT CMDR NOTIFIES BN / FSCC OF POS & FIRE CAP

NOTIFIED FO'S / FSCC OF POS REP & FIRE CAP

RADIO MAN BEGINS TO REMOTE COMM

AMMO IS BROUGHT TO GUNS

PREP FIRING TABLES AND FIRST RECORD SHEET

MAN H-200

GUNNER PERFORMS PREFIRE SAFETY CHECKS AND INFORMS FDC

SQUADS SUBMIT FIREPLANS BEGIN POSITION IMPROVEMENT

MACHINEGUN AND CLAYMORE EMPLACEMENT ADJUSTED AS NECESSARY

ESTABLISH SECURITY PATROLS

## 81MM MORTAR PLATOON METHODS OF LAY-----

Time usually dictates the method of lay. More advanced methods of lay are utilized as a part of the platoon's position improvement.

### 1. Priority of Lay:

- a. Compass lay. Standard for platoon operations and checked by section leaders using (1) compass.
- b. Sight to sight. This method of lay is used when it is known that the aiming circle is not going to be employed or when line of sight with the aiming circle cannot be established with all guns.
- c. Aiming circle. This method is the most accurate way to lay the platoon parallel. The aiming circle will be set up every time the platoon in a fixed position and during all emergency fire missions if terrain allows.

\*\*\*Aiming circle limitations of declination can be overcome by conducting a simultaneous observation (SIMO) or by establishing your own end of orienting line (EOL) with a AN-PVS 11 having an 1105 fill. (See enclosure e.)

### 2. Emergency fire missions (hip shoots) may require the most expedient methods of lay.

- a. Hasty lay. Used when time is priority or when terrain does not allow initial emplacement of aiming stakes.
- b. Direct alignment. Used when squads are placed in situations where there is no operable controlsuch as FDC and are forced to engage targets.
- c. Direct lay. Used if the target is easily visible to the gunner through the sight.
- d. Reference Point. Utilized when the platoon needs to be layed quickly and normally only in clear areas.



## DISPLACEMENT TECHNIQUES-----

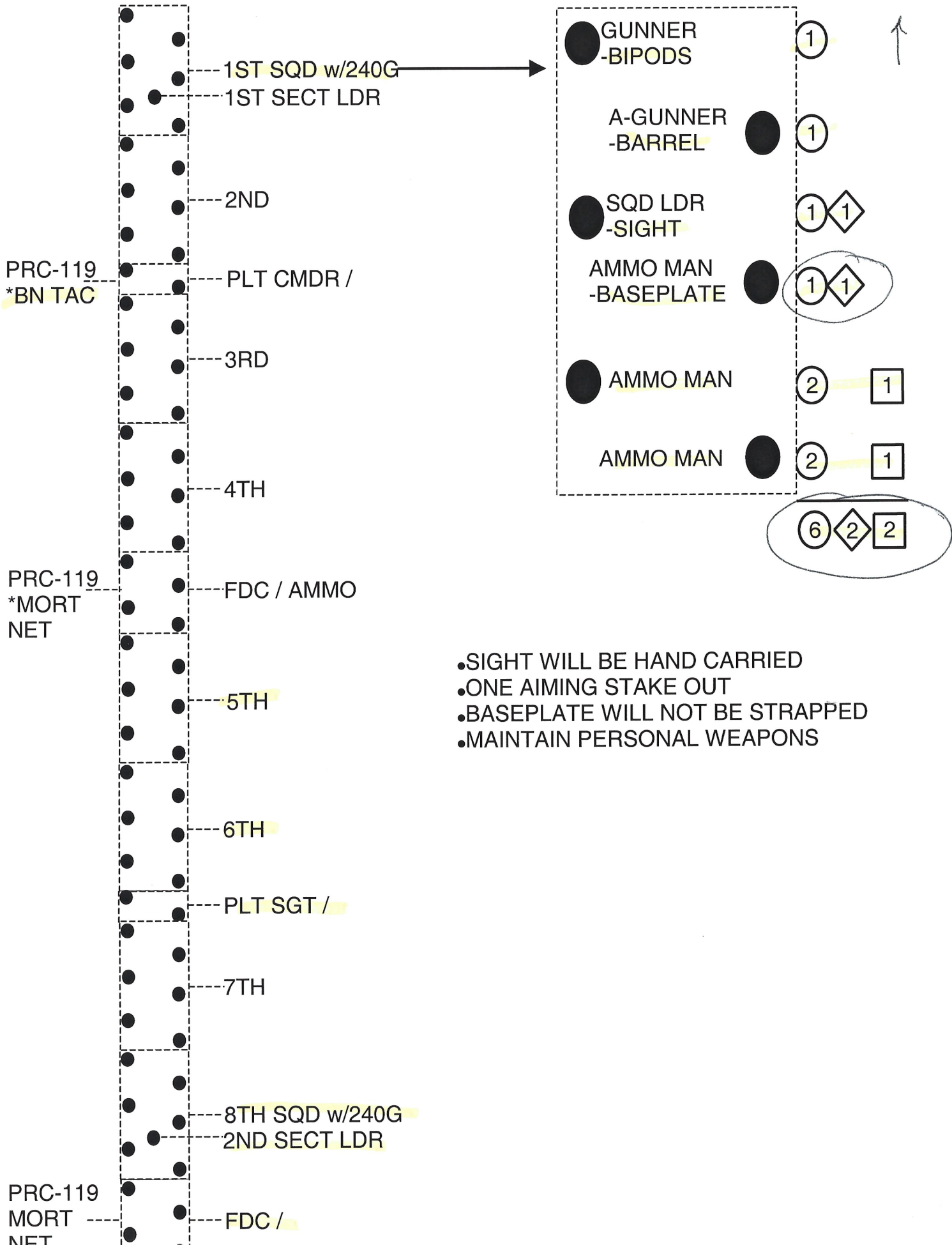
The displacement technique used for a particular operation depends on the factors of METT-TSL.

They are as follows:

- a. Scheme of maneuver of supported unit
  - b. Enemy activity
  - c. Trafficability of terrain
  - d. Number of mortars to be displaced
  - e. Time
  - f. Other supporting arms available
1. Displacement by Platoon. Displacement by platoon is used when there is little likelihood of enemy contact. The platoon will displace all of its mortars in one move. If a mission is called for during the movement, the platoon will perform emergency hip shoot procedures and fire the mission.
  2. Displacement by Section. This technique requires the "up" section to remain in position while the other moves. Once the displacing section is in position and fire capable it then becomes the "up" section and notifies the other section via the mortar net to displace.
  3. Displacement by Squads or Section (-). The mortar section may find a need to displace by squad. It may do so by using either alternate or successive bounds.
  4. Alternate or Successive Bounds.
    - a. Alternate Bounds. One unit displaces forward and sets in. When called, the second unit bounds up to the forward unit.
    - b. Successive Bounds. One unit displaces forward and sets in. The second unit then displaces and surpasses the first unit.

Note: The platoon's primary method of displacement is by section in successive bounds. Communication of the unit's movement will be by the SOP brevity codes of "punting" (enroute to new firing position) and "kickoff" (in position and fire capable).

# FOOT MOVEMENT

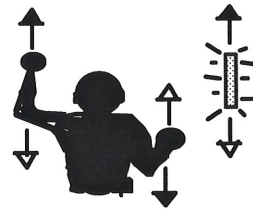
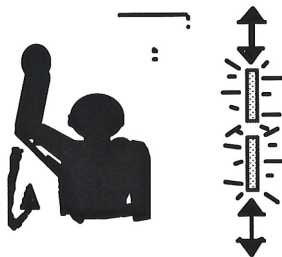


# VEHICULAR TACTICAL MOVEMENT

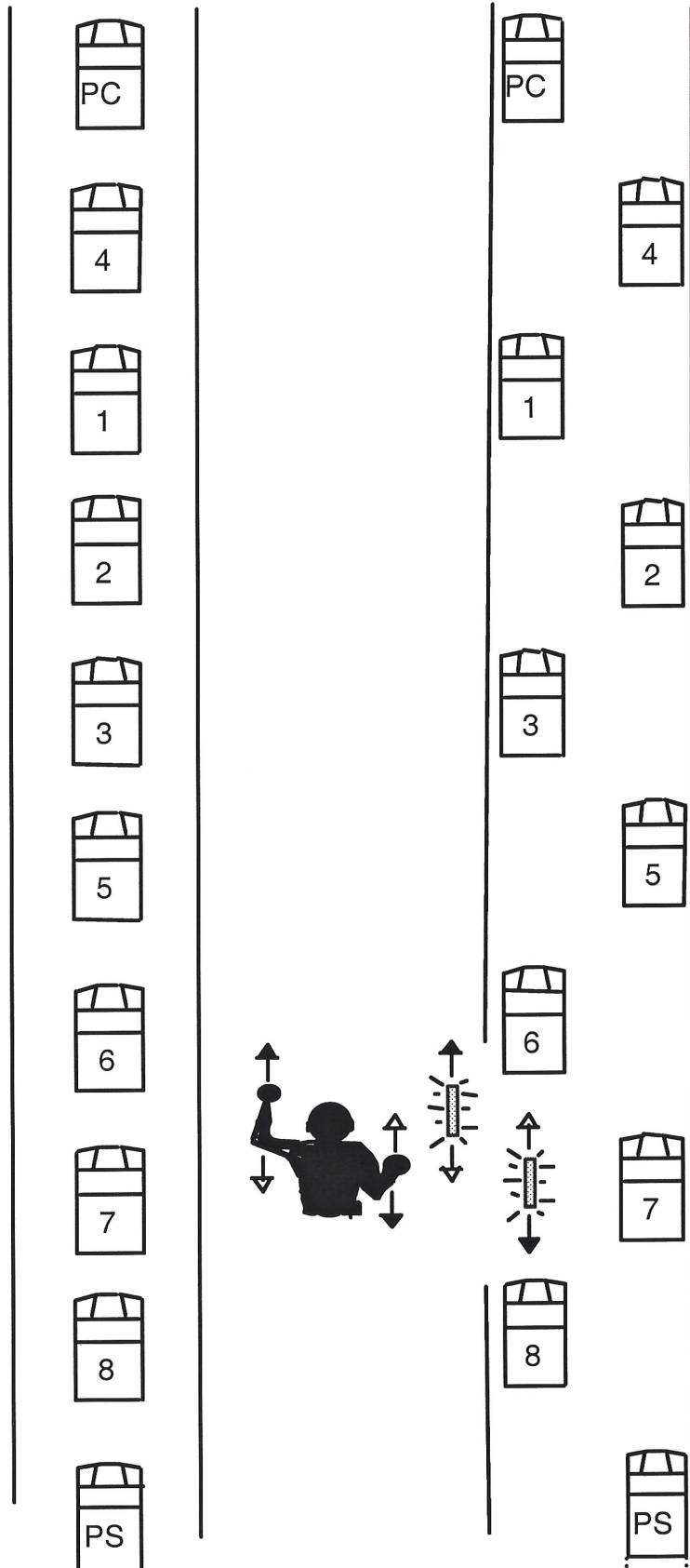
PLT CMDR /  
SCOUT  
-VRC-88 \*BN TAC  
-(1)PRC-119 \*MORTAR  
NET

"UP FDC / BASE  
GUN  
-(1)PRC-119  
\*MORTARNET  
(1)ANGR-39

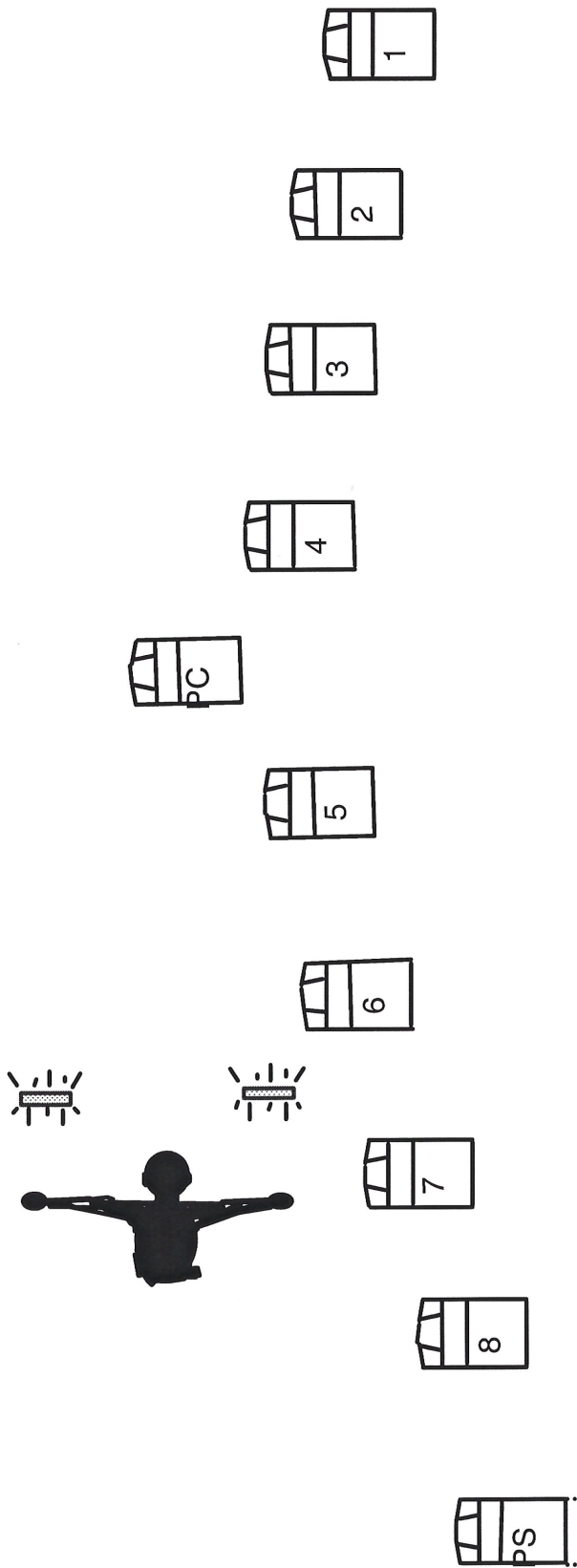
2ND FDC  
-(1)PRC-119  
\*MORTARNET  
(1)ANGR-39



PLT SGT  
-(1)PRC-119 \*MORTAR NET

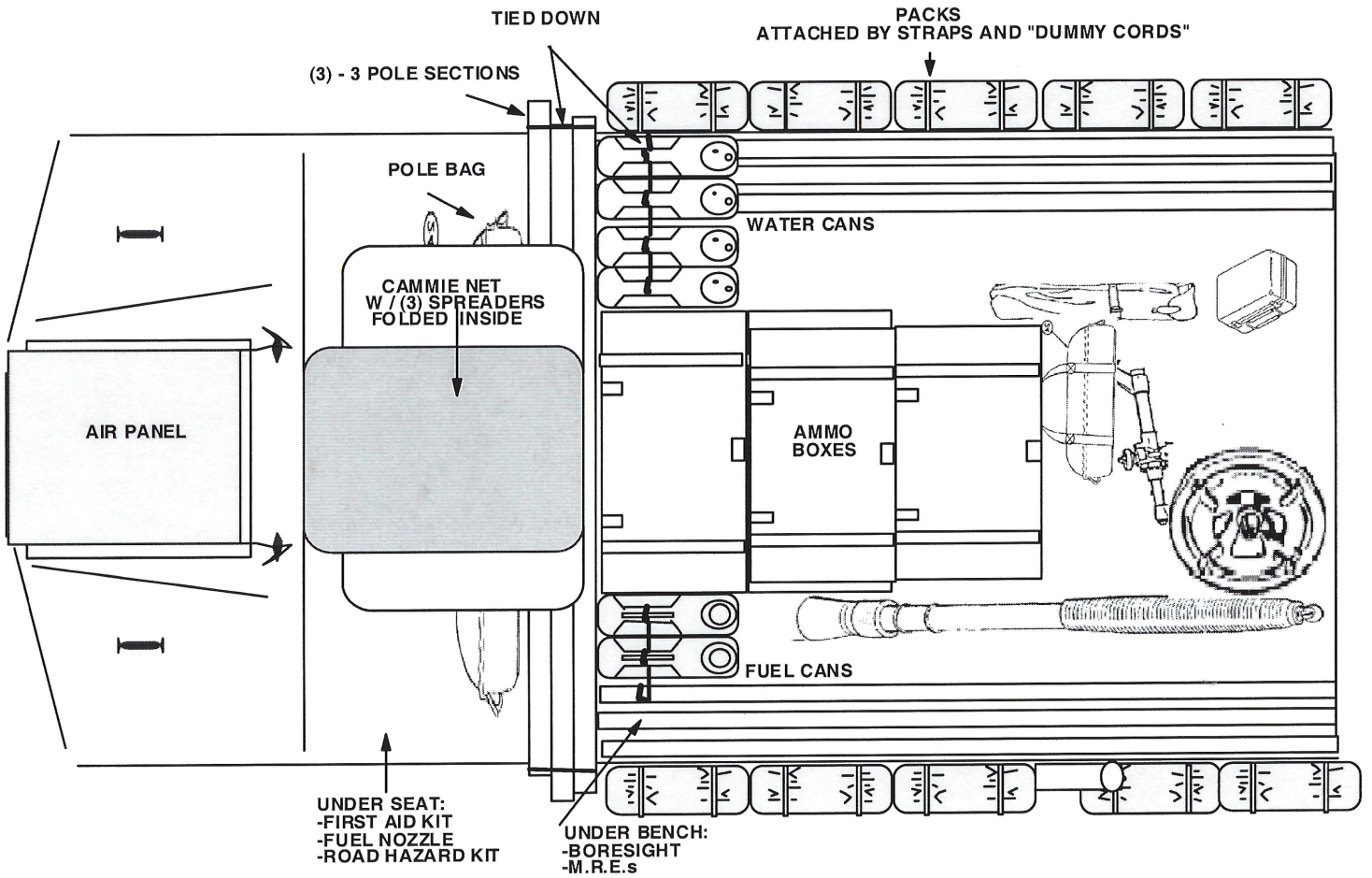


SPACE



SPACE

# HMMWV COMBAT LOAD



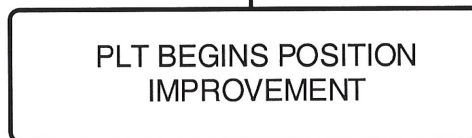
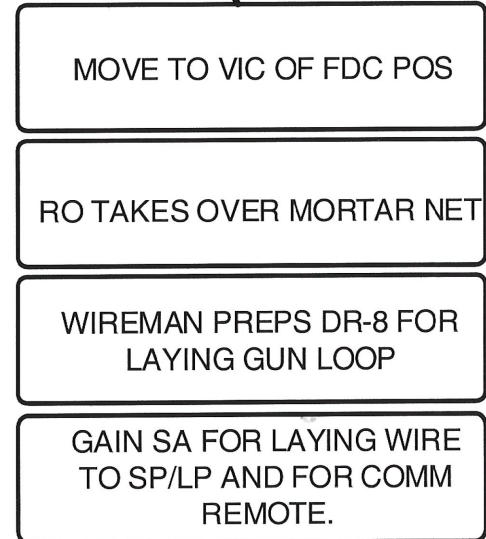
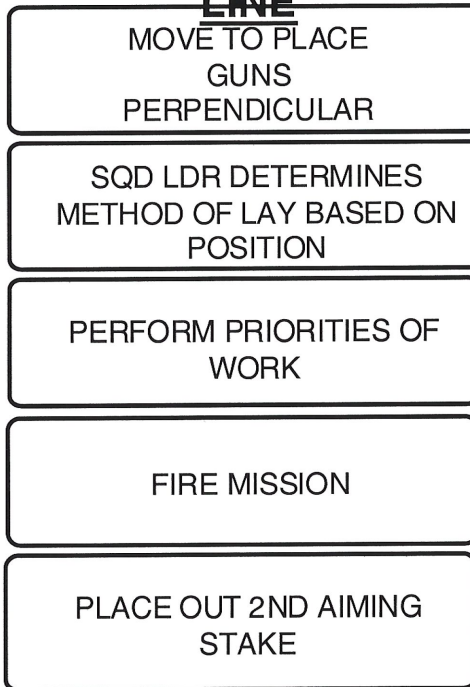
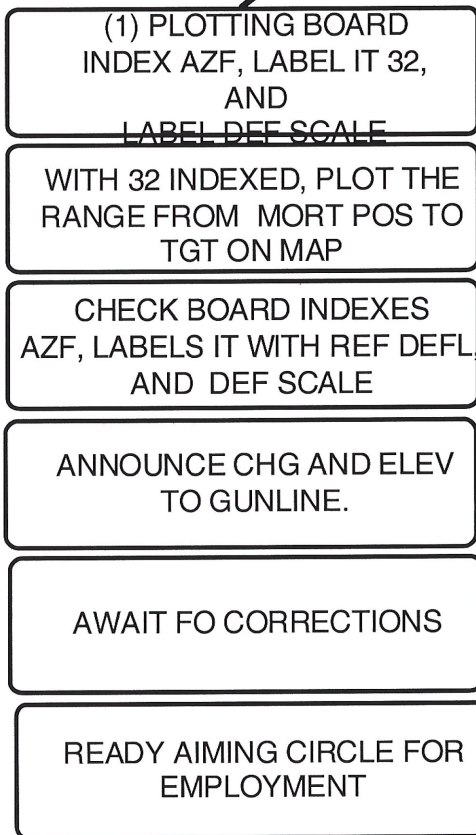
# EMERGENCY FIRE MISSION (HIP SHOOT)



## FDC

## GUN LINE

## HEADQUARTERS



## **IMMEDIATE SUPPRESSION / IMMEDIATE SMOKE-----**

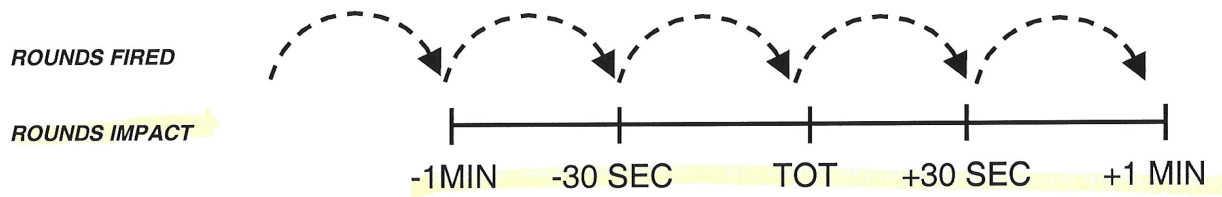
1. An immediate suppression/smoke mission has precedence over all other types of calls for fire. Usually immediate suppression/smoke is requested when the calling party is receiving enemy fires and is in dire need of relief or a quick screen. Time is of the essence and accuracy is essential. Rounds must be fired within two minutes if the platoon/section is already set in, and within five minutes if the platoon is on the move.
2. The platoon/section will fire two rounds of HEDP in response to an immediate suppression mission. One round of RP will be fired in response to an immediate smoke mission. Keep in mind that all smoke must first be cleared for usage in the TAOR by higher; therefore, mission approval by the FSC may take longer than usual.
3. Should the platoon/section be unable to provide the standard two rounds of HEDP, or one round of RP, maximum support will be provided with the remainder of the rounds available.

## SEAD (Suppression of Enemy Air Defense)

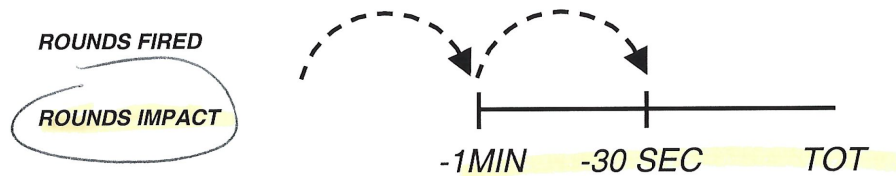
1. There are two types of SEAD missions: Standard and Non-standard.

a. Standard. There are two categories of standard SEAD: Continuous and Interrupted.

1. Continuous: Rounds impact at -1 min, -30, TOT, +30, +1 min.



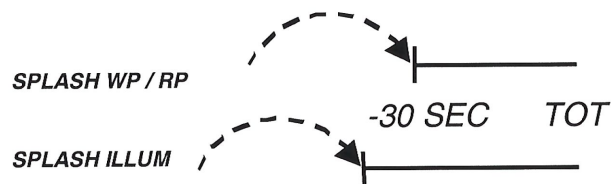
2. Interrupted: Rounds impact at -1 min, -30.



b. Non-standard. Any SEAD that does not adhere to the time line of a standard SEAD.

2. Marks: Marks may be requested independent of SEAD missions, but are normally part of the SEAD call for fire. Three basic principles must be followed when firing the mark.

- A phosphorous mark works well in any type of terrain during the day or night; however, illumination is a very good mark in wide open terrain.
- When a mark is requested, a back up gun will be ready to fire in the event the primary gun is not fire capable at the time for firing.
- Red and white phosphorous must impact -30 seconds prior to TOT; however illumination must impact -45 seconds prior to TOT in order to allow the mark to develop.



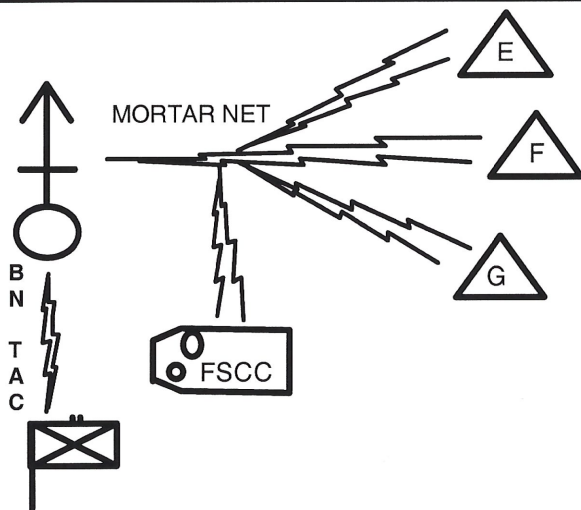


## COMMUNICATION ASSETS-----

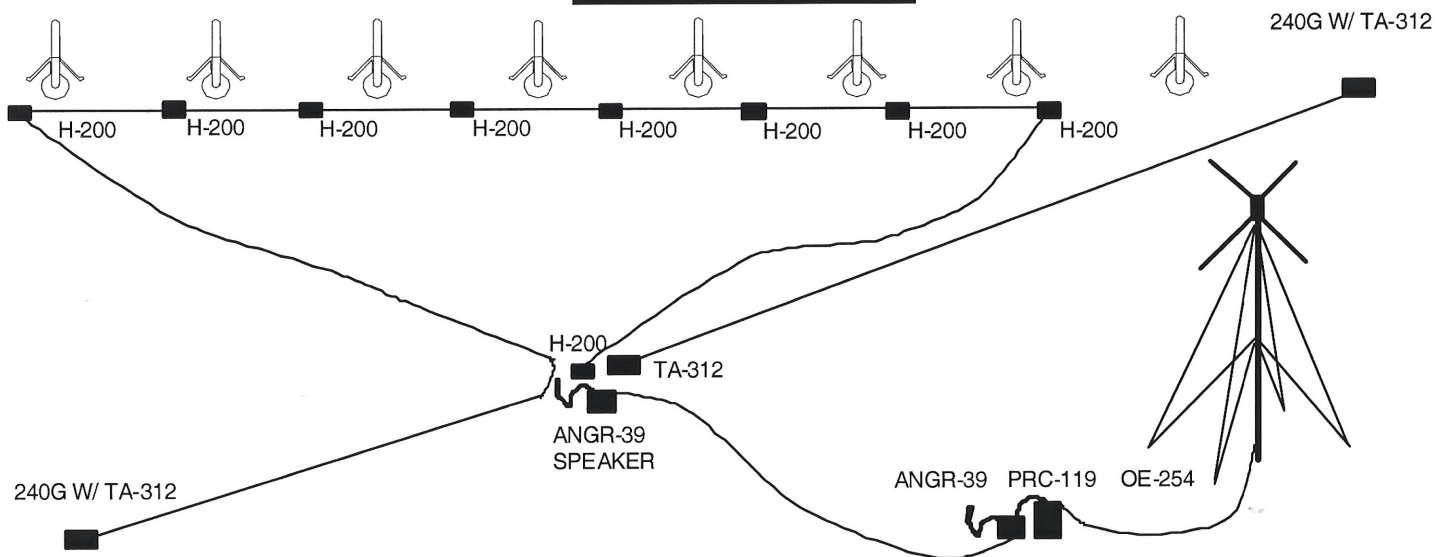
1. Communication equipment: Gear is drawn from both the company suite and H&S comm platoon. Ideally 81's platoon ought to have the following equipment and personnel allotted to it:

<u>ITEM</u>	<u>QUANTITY</u>
PRC 119	6
VRC-88	2
ANGR-39	2
OE-254	2
CEOI	6
H-200	12
TA-312	4
DR-8 / 306	4 / 2
AN-PVS 11 (PLGR)	2
CYZ-10	1
JUNCTION BOX	1
RADIO OPERATOR (2512)	1
WIRE MAN (2531)	1

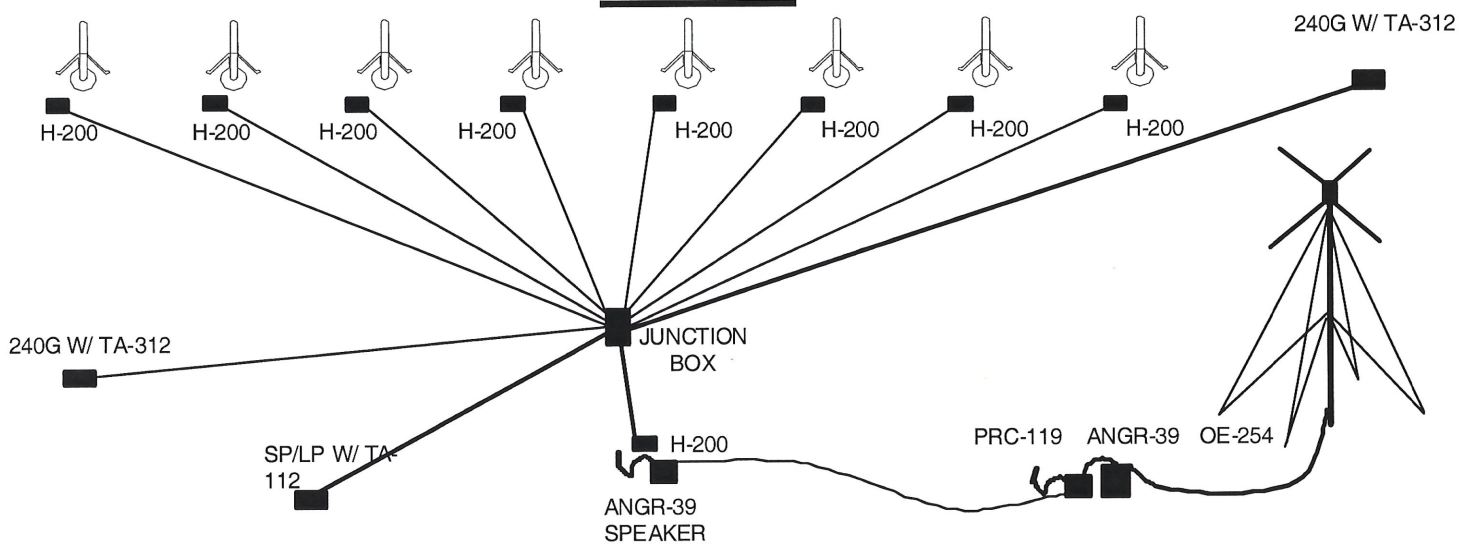
# EXTERNAL/INTERNAL COMMUNICATION



## GUN LOOP



## J-BOX



## LOGISTICS AND SUPPLY-----

1. Basic Allotment. BA is an allocation of mortar munitions that ought to be maintained outside of the appropriated Daily Operational Allotment. Always maintain your BA in reserve and use only in an emergency or if a supply is not possible. The basic allotment for the 81mm Mortar ammunition depends upon the mode of transportation available.

a. Vehicle Mobile HE: 9  
RP: 3  
ILL: 3  
15 rounds per vehicle (minimum)

b. Foot Mobile HE: 3  
RP: 3  
ILL: 3  
9 rounds per tube (minimum)

2. Daily Operational Allotment. DOA is a logistical estimate of round consumption for the S-4 in planning. The S-4 uses the DOA to plan transportation, storage, and availability of ammunition to the firing units. The 81mm Mortar Platoon's DOA is as follows:

	<u>Assault</u>	<u>Sustained</u>
HE	104.31	80.09
RP	13.56	10.41
ILL	20.86	16.02

In most situations a BA with DOA will be too large for the platoon to transport without outside vehicular support.

3. Methods of Supply. Per Battalion SOP.

## MORTAR RANGE SAFETY BRIEF-----

Mortar range safety officer should have in-depth knowledge of the M252 mortar.

1. Upon arrival at the mortar position the RSO will:

- a. Read range regulations.
- b. Inspect plotting board set up.
- c. Verify safety "T" information.
- d. Verify lay of the gun line.
- e. Issue the safety brief.

2. Brief Checklist.

- \_\_\_ Everyone is considered an RSO. If anyone witnesses an unsafe condition, call "cease fire".
- \_\_\_ Helmets and flaks will be worn at all times.
- \_\_\_ No one will sleep on the gun line or in the FDC unless a sleep plan is established.
- \_\_\_ No one will go forward of the gunline while the range is hot.
- \_\_\_ No smoking within 50 ft of any ammo.
- \_\_\_ Increments will be in an ammunition canister during the mission, and dropped in another canister 10 meters behind each gun at EOM.
- \_\_\_ Pre-fire safety checks will be completed by each gunner before he begins the first mission. This will include boresighting if the first mission of the day.
- \_\_\_ Each gun position and FDC will have a safety "T" for each type and series of round to be fired.
- \_\_\_ Each FDC and squad leader will verify each def/chg/elev with the safety "T".
- \_\_\_ Each ammo man will inspect the round, ensure the proper charge is on the round and that the safety wire has been removed.
- \_\_\_ Each squad leader and ammo man will keep an accurate round count and save all canisters. Round count sheets will be turned in to FDC after completion of firing.
- \_\_\_ Each gun will punch the barrel after every 10 rounds or FFE.
- \_\_\_ If for some reason a round lands outside the impact area, the range will immediately go cold. No one will touch their sights and move away from the gun. The FDC will set down plotting boards and record sheets.
- \_\_\_ In case of a "short round", everyone will go immediately to the prone and stay there until the RSO announces "all clear".
- \_\_\_ Review proper method for dropping rounds.
- \_\_\_ Misfire procedures M252 81mm mortar:
  1. "Misfire" is sounded:
    - a. Gunline is cleared by 50 meters for 60 seconds

2. Gunner and A-gunner move to the gun:
  - a. Gunner holds bipods,
  - b. A-gunner kicks barrel at least 3 times.
  - b. Both move off gunline for 60 seconds.
  
3. Necessary squad members return to gun:
  - a. Gunner prepares the gun:
    1. Lower elevation all the way down,
    2. Remove sight (hands to A-gunner),
    3. Check barrel for coolness,
    4. Remove firing pin,
    5. Unlock barrel clamp, rotate barrel, re-lock clamp,
    6. Get in gunners position.
  
  - b. A-gunner gets into position:
    1. Place meaty portion of hands on B.A.D.,  
right hand under, *palm up*,  
left hand on top, *palm down*.
    2. Place right foot in front and against bipods.
  
4. Ammo man (barrel to one side) lifts barrel slowly and evenly.
5. A-gunner catches the sliding round with thumbs. (If round does not come out, release the barrel clamp and the entire barrel will be placed in a dud pit and EOD notified.)
6. A-gunner reinserts safety wire and inspects round.
7. Gun team:
  - a. Invert barrel and shakes to clear,
  - b. Reattach barrel to baseplate,
  - c. Reinsert firing pin,
  - d. Punch bore
  - e. Place sight on gun and get up.

\*Note: If primer was dented, round will be placed in dud pit.  
If primer was not dented, attempt to re-fire round on another gun.

\_\_\_ Dud pits are located at \_\_\_\_\_.

\_\_\_ If a round is "buzzing" immediately attempt to reinsert the safety wire and place in the nearest dud pit.

\_\_\_ During inclement weather ensure that the muzzle cover is over the bore until a round is to be fired. Any unusual sound occurs when a round is fired, it will be immediately reported to the FDC.

\_\_\_ Squad leaders will ensure night aiming devices are out prior to darkness.

\_\_\_ The head is located \_\_\_\_\_.

GROUND MARKING	AZIMUTH
Left Lat :	Left Lat :            m            g
Right Lat :	Right Lat :           m            g
	AZF :                    m            g