

**UNITED STATES MARINE CORPS**  
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Training Command  
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MM1409  
19 Feb 04

**STUDENT OUTLINE**

**LAY A MORTAR RECIPROCAL LAY**

**TERMINAL LEARNING OBJECTIVE**

Given an SL-3 complete, M252 81mm mortar and commands from a M2 aiming circle operator, lay a mortar reciprocal lay by achieving a tolerance of 1 mil within 115 seconds. (41TR.04.03)

**1. LAYING OF THE SECTION**

a. When all mortars in the section are mounted, the section leader lays the section parallel on the prescribed azimuth with an aiming circle. The mortar section normally fires a parallel sheaf. To obtain this sheaf, it is necessary to lay the mortars parallel. When a section moves into a firing position, the FDC determines the azimuth on which the section is to be laid and notifies the platoon sergeant.

**2. RECIPROCAL LAY M2A2 AIMING CIRCLE**

a. The section leader announces to the mortar gunners, "Gun line aiming point this instrument."

b. Ensuring their gun is level; the gunners refer their sights until the vertical crosshair of the sight is sighted on the lens, or the reflector of the aiming circle.

c. The gunners announce, "Gun # (1,2, and so on), aiming point identified."

d. The section leader sights on the lens of the sight unit, reads the deflection and announces the deflection to the gunner on the mortar. Example ("Gun 1, Deflection 2350")

e. The gunner sets the deflection on the sight unit and performs the five steps of crew drill getting his mortar back up and level on the lens or reflector of the aiming circle.

f. When the sight has been sighted on the aiming circle and the mortar is level, the gunner reports, "Gun #\_\_Ready for re-check." The platoon sergeant again sights on the lens of the sight unit, and announces the deflection. This procedure is repeated until the gunner reports a difference of zero to one mil between successive deflections. Once the gunner is within zero or one mil of the aiming circle operator he will announce "Gun # zero to one mil out gun laid". The mortar has been laid.

g. As soon as each mortar is laid, the platoon sergeant commands "Refer deflection 2800 place out aiming posts." (The aiming posts are normally placed out on a referred deflection of 2800 mils.) The gunner, without disturbing the lay of the mortar, places the announced deflection on his sight and aligns the aiming posts with the vertical line of the mortar sight. He then announces, "Gun # UP".

h. When all mortar gunners announce "UP," the instrument operator covers the head of the aiming circle, but leaves the instrument in position to permit a rapid recheck of any mortar, if necessary.

i. The section can be laid parallel by laying all mortars at the same time. The instrument operator reads deflections to each of the mortars in turn. As soon as the gunner of any mortar announces, "READY FOR RECHECK", the instrument operator reads the new deflection to that mortar. By laying all mortars at the same time, the section is quickly ready to fire.

### 3. RECIPROCAL LAY USING THE MORTAR SIGHTS

a. The mortar section can be laid parallel by using the mortar sights. For this method, it is best to have the mortars positioned so that all sights are visible from the base mortar. The base mortar (normally No.2) is laid in the desired direction of fire by compass or by register on a known point. After the base mortar is laid for direction, the remaining mortars are laid parallel to the base mortar as follows.

b. The (section leader) moves to the mortar sight of the base mortar and commands "Gun line aiming point this instrument."

c. The gunner of the other mortars refer their sights to the sight of the base mortar and announce, "Gun # aiming point identified".

d. The section leader reads the deflection the sight of the base mortar. He then determines the back azimuth of that deflection and announces it to the other gunners. Adding or subtracting 3200 to the initial deflection determines a back azimuth. For example, "GUN NUMBER THREE, DEFLECTION, ONE TWO ZERO ZERO."

e. Each gunner repeats the announced deflection for his mortar, places the deflection on his sight, and re-lays (using the five steps of crew drill) on the sight of the base mortar. When the lens of the base mortar sight is not visible, the gunner lays the vertical cross line of his sight on one of the other two mortar sights. This mortar lays him in once it is parallel to the base mortar sight unit. He then announces, "NUMBER ONE (OR THREE), READY FOR RE-CHECK."

f. After each mortar has been laid parallel within zero (or one mil), the mortar barrels are parallel to the base mortar.

g. As soon as each mortar is laid, the section leader commands "GUN LINE, REFER DEFLECTION TWO EIGHT ZERO (2800), PLACE OUT AIMING POST."

### **REFERENCES :**

FM 23-90 Mortars; pages 2-35 through 2-41.

**EXAM ID:** MM1409P

**EXAM TITLE:** Lay A Mortar Reciprocal Lay Performance Examination.

**TLO/ELO:** 41TR.04.03

**STUDENT INSTRUCTIONS:**

1. You are a mortar squad and must lay your M252 81mm mortar reciprocal lay.
2. There is a 115 second time limit for this task.
3. To achieve mastery, the mortar squad must perform each of the performance steps correctly and by achieving a tolerance of 1 mil within the allotted time.

**PERFORMANCE STEPS AND/OR PERFORMANCE STANDARDS:**

Performance Steps	Master	Non-Master	Remarks
1. Did the student, the gunner, lays the mortar in the general direction of fire.			
2. Did the student, the gunner, upon receiving the command, "Aiming point this instrument." refers the sight to bisects the lens of the aiming circle, or base piece.			
3. Did the student, the gunner, announces, "Aiming point identified." once the vertical hairline of the sight is bisecting the lens of the aiming circle or base piece.			
4. Did the student, the gunner, places the deflection on the sight unit after receiving the deflection from the aiming circle/base piece.			
5. Did the student, the gunner, performs the five steps of crew drill to relay on the aiming circle/base piece.			
6. Did the student the gunner announce "gun# _____ ready for re-check".			
7. Did the student, the gunner, repeats steps 4 and 5 until the deflection announced from the aiming circle/base piece is within 1 mil of the deflection on the sight.			
8. Did the student, the gunner, announces "Gun# _____ one mil out/zero mils out, Gun layed.			
9. Did the student, the gunner, refers the sight to 2800 deflection and sends out the ammunition man 100 meters or as far as terrain allows up to 100 meters.			
10. Did the student, the gunner, utilizes hand and arm signals to direct the ammunition man in the placement of the far post.			
11. Did the student, the ammunition man, will drive the post into the ground and remove cant from the posts as directed by the gunner.			

12. Did the student, the ammunition man, on signal from the gunner runs half the distance to the gun and responds to the gunners hand and arm signals to place in the near post.			
13. Did the student, the ammunition man, will drive the post into the ground and remove cant from the posts as directed by the gunner.			
14. Did the student, the gunner, calls the ammunition man in with hand and arm signals once the correct sight picture has been attained and "announces gun# up".			