

**UNITED STATES MARINE CORPS**  
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MM1406  
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**STUDENT OUTLINE**

**REFER THE SIGHT AND REALIGN THE AIMING POSTS FOR A M252 81MM MORTAR**

**TERMINAL LEARNING OBJECTIVE**

Given a mounted, SL-3 complete mortar and a subsequent fire command, as a mortar squad, refer the sight and realign the aiming posts by preparing the mortar to continue firing the mission within 75 seconds. (41TR.04.10)

1. **PURPOSE FOR REFERING THE SIGHT AND REALIGNING THE POST**

a. The mortar section is most effective when firing if all the guns fire at the same time, on the same sight data. This would normally result in all the rounds traveling down range parallel to each other, and impacting the ground in the same formation as the guns are positioned. The pattern the impacts make on the ground is called the "Sheaf". If one or more guns fire out of sheaf (not in the correct pattern on the ground), the forward observer will request a section left or right fire mission in order to determine which gun was firing out of sheaf. A section right for instance means that gun 3 would fire first, and then gun 2, and finally one. This allows the FO to identify which gun's impact he is observing. Once the FO determines which gun is out of sheaf, then that gun will be adjusted to bring the impact of the round to the desired location. Some of the reasons for firing out of sheaf are:

- (1) Shifting of the baseplate.
- (2) Improper lay of the gun.
- (3) The weapon was improperly bore sighted, or not bore sighted.
- (2) A different compass was used to lay in each gun.
- (3) Poor lay with M2 aiming circle.
- (5) Improper data on the sight does not mean you have to refer and realign.
- (6) Referring the sight and realigning aiming posts ensure that all mortars are on the same data. Having only one set of data to prepare decreases the workload on the FDC and increases speed and proficiency.

2. **REFER AND REALIGN**

a. After the sheaf is reestablished the FDC will issue the command (only to the guns that were out of sheaf) "GUN \_\_\_\_ REFER DEFLECTION \_\_\_\_", the refer deflection is the same deflection as the guns that are in sheaf. The gunner responds to the command by referring the sight deflection to match the deflection given in the command and looking in the sight. He does not manipulate the mortar.

b. The FDC would then command. "REALIGN AIMING POSTS". The word "post" acts as a command to the ammunition man to move out on the double to realign the aiming post. He knocks down the near aiming post and proceeds to the far aiming post. Following the arm-and-hand signals of the gunner (who is looking through the sight unit), he moves the far aiming post so that the gunner obtains an aligned sight picture. On the gunners command, the ammunition man will run in towards the near post and respond to the gunners hand and arm signals by moving the post as directed until the gunner indicates to drive the post into the deck.

(1) The entire command will be issued as one element. Below is an example of the command to refer and realign.

(a) "GUN THREE REFER DEFLECTION 2750, REALIGN AIMING POSTS."

(2) When the gunner drives the near post into the deck, the gunner checks to assure the post is properly positioned then calls the ammunition man in (via hand and arm signals).

(3) The ammunition man is in a position to see the front of the bipod. If the traversing bearing is not centered, the ammo man will command the gunner "CENTER TRAVERSE, MOVE BIPOD). The ammunition man will issue this command while forward of the gun.

(4) The gunner will center the traverse and check for four fingers of minor adjust.

(5) The gunner will relay the mortar on the aiming posts. The posts will be aligned. However they do not have to be straight up and down.

(6) The assistant gunner will assist the gunner in whatever capacity necessary to relay the mortar on the posts.

(7) When the gunner has re-laid the mortar on the posts and checked the bubbles he will announce gun up.

**REFERENCES.** FM 23-90 Mortars; pages 4-13 through 4-14.

**EXAM ID:** MM1406P

**EXAM TITLE:** Refer the sight and Realign the Aiming Posts for a M252 81mm Mortar Performance Examination

**TLO/ELO:** 41TR.04.10

**STUDENT INSTRUCTIONS:**

1. You are a mortar squad and must refer the sight and realign the aiming post for a mortar.
2. The mortar squad must refer the sight and realign the aiming posts in 75 seconds.
3. To achieve mastery, the mortar squad must perform each of the performance steps correctly and prepare the mortar to continue firing the mission within the allotted time.

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

Performance Steps	Master	Non-Master	Remarks
1. The mortar squad receives the command "referred deflection _____, realign aiming posts."			
2. The gunner places the referred deflection on the sight unit and looks in the sight without manipulating the mortar.			
3. On command "POSTS", the ammunition man moves out on the double to realign the posts.			
4. The ammunition man knocks down the near post and proceed to the far post and responds to the gunner's hand and arm signals.			
5. On command of the gunner, the ammunition man moves to the near post and places it in using the same procedure.			
6. When the gunner calls the ammunition man in, the ammunition man directs the gunner to "center traverse and move bipods" if the gun is out of center traverse.			
7. The gunner centers the traverse and relay on the posts.			
8. The gunner announces "gun up".			