

UNITED STATES MARINE CORPS
School of Infantry
Training Command
PSC Box 20161
Camp Lejeune, NC 28542-0161

MM1313
09 Mar 04

STUDENT OUTLINE

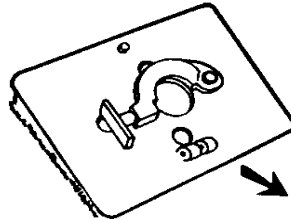
FIRE A M224 60MM MORTAR HAND-HELD

TERMINAL LEARNING OBJECTIVE

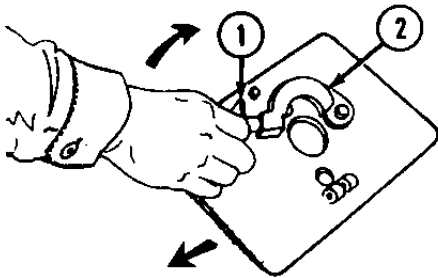
Given an M225 cannon, M8 baseplate, an asbestos mitten, 4 rounds of mortar ammunition, and a target between 300 and 1300 meters, as a mortar squad, fire a M224 60mm mortar in hand-held mode by achieving an impact on target within the casualty radius of the round. (41TR.04.08)

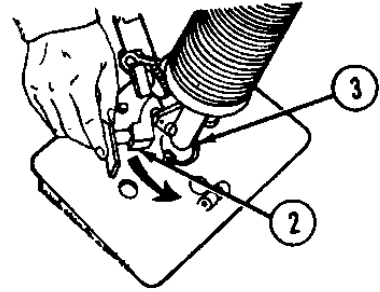
1. **MOUNT M224 60MM MORTAR IN HAND-HELD MODE**

- a. Place lower slope of M8 baseplate (1) in direction of fire.
- b. Pull latch knob (2) and rotate latch (3) open.
- c. Insert basecap (4) of cannon into socket of baseplate. Close latch

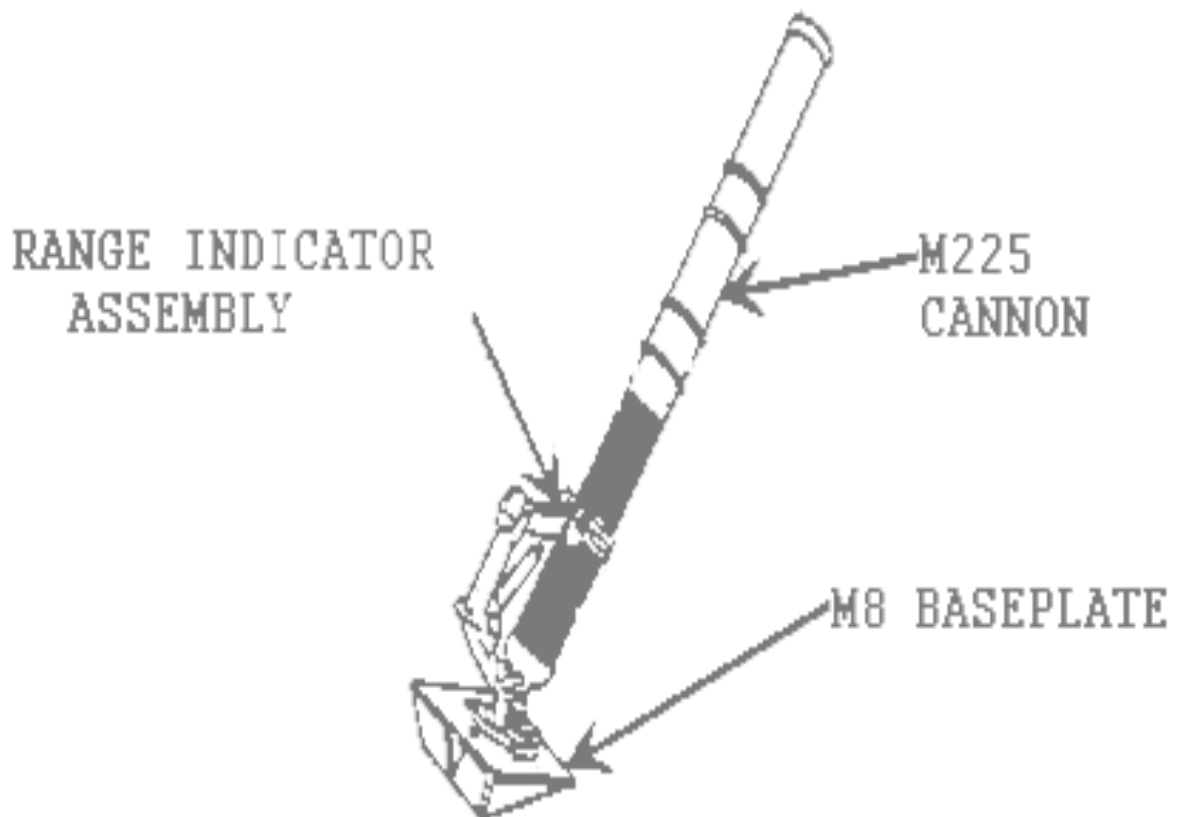


Make sure latch pin seats.





Mounting the M225 Cannon on M8 Baseplate



2. M224 60mm Mortar in Hand-Held Mode

a. Sector of Fire. The sector of fire that the M224 60mm Mortar can cover when mounted in the hand-held mode is 0800 mils left and 0800 mils right of the center of fire for a total sector of coverage of 1600 mils. The hand-held mode offers great flexibility because it is easily manipulated towards different direction for center of fire due to ease of mounting.

b. Safety Considerations:

- (1) Firing site must have mask clearance and no overhead obstructions.

(2) Firing over the heads of unprotected troops is prohibited per AR385-63.

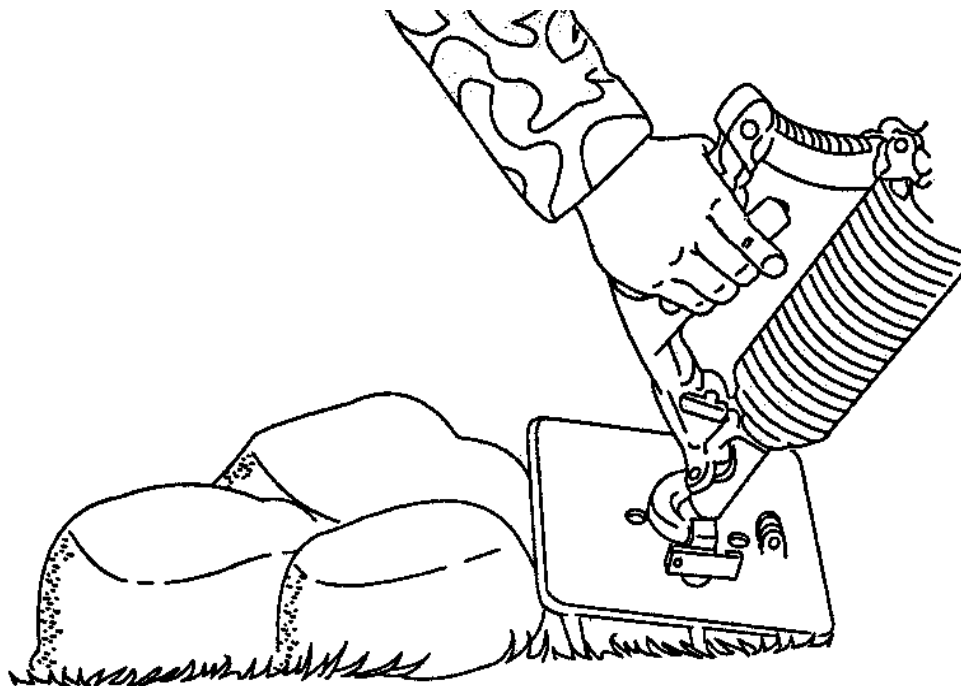
(3) If a crewmember is within one meter of the muzzle, during firing, single hearing protection must be used.

(4) When firing during training, the minimum horizontal range is 350 meters.

(5) Loading a mortar weapon with two men (alternately) can be very dangerous and could prove fatal. Even with one-man loading, double loading can occur. This is especially true in rapid-fire exercises. For this reason, it is imperative that there is absolute certainty that the previous round has left the mortar tube before a new round is dropped in.

(6) In hand-held mode, place baseplate against a solid object when:

- (a) Firing at ranges more than 300 meters at charge zero.
- (b) Firing at ranges of more than 900 meters for charge one.



Supported Baseplate

3. Ammunition

- a. Maximum charge for 800 series ammunition is one.
- b. M720/M888 cartridge: Charge one
- c. M49A4 cartridge: Charge three
- d. M83 series cartridge: Charge two

e. M302A1 cartridge:Charge two

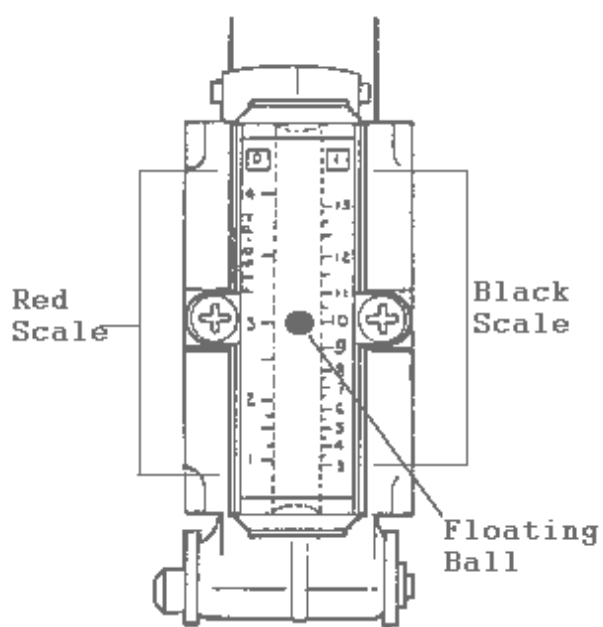
(1) Short rounds may occur if an excessive amount of oil or water is in barrel during firing. Ensure you have a clean and dry cannon prior to firing.

f. M224 60mm Mortar Range Indicator Assembly. Before firing a round from the M224 60mm Mortar in the hand-held mode, you must know how to read the range indicator assembly on the M225 Cannon. The range indicator assembly has two range scales on it that display to the gunner what charge to use for the range at which the gunner is trying to fire with a given cartridge. It also serves as the method to indicate the elevation to the cannon for a given range. The following are characteristics of the range indicator assembly:

- (1) Used only for in the hand-held mode.
- (2) Can only be used for M720 / M888 cartridges.
- (3) Red scale used for charge zero.
- (4) Black scale used for charge "1".
- (5) Both scales are in meters, not mils.
- (6) The range scales are illuminated at night by the use of tritium.

(8) The yellow index marks (range 3 on red scale and range 10 on black scale) serves as warning reminders for the gunner to brace the baseplate before firing a round at those ranges.

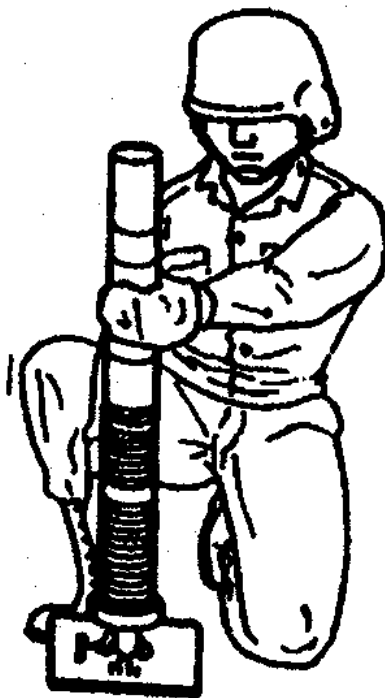
(9) A black floating ball indicates the range at which the round will be fired depending on the charge used. The ball serves as the indicator of the elevation applied to the cannon.



Range Indicator Assembly

4. LOADING AND FIRING

a. Gunner kneels directly behind barrel, bracing the baseplate with his left foot. Grasps the cannon with an asbestos glove on the left hand, and right hand should be around the handle, fingers straight and off the trigger.

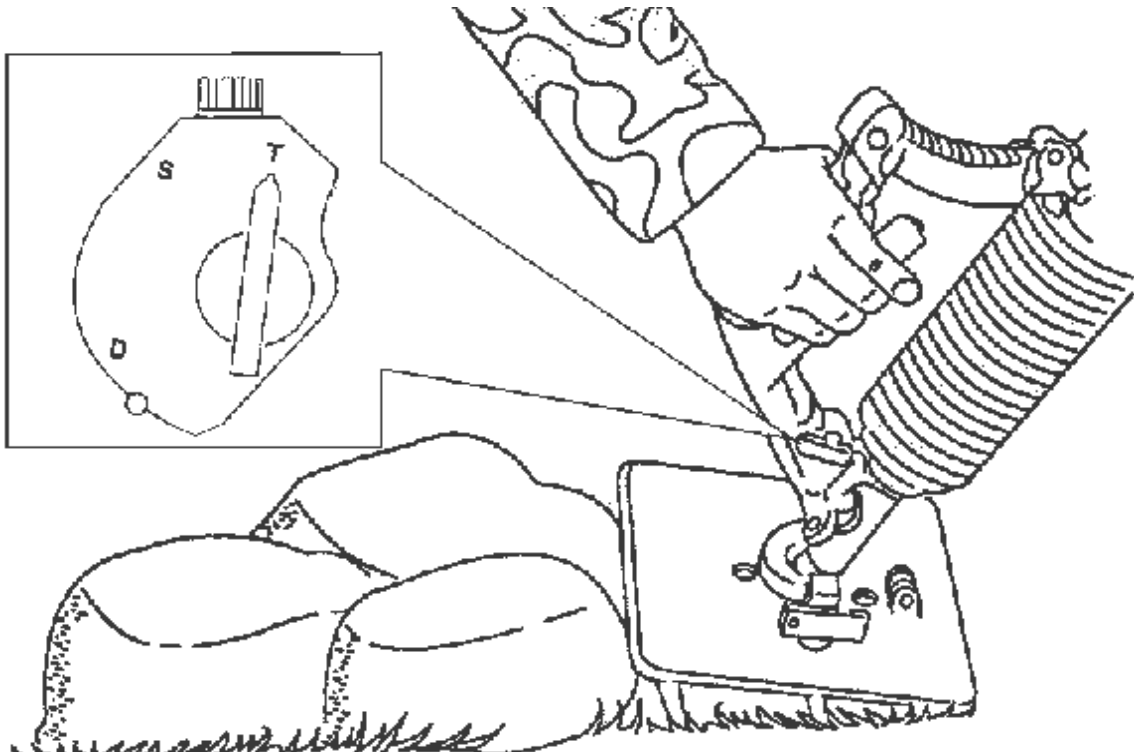


Firing Position



Firing Position (as seen from side)

b. Gunner sets the firing selector on "T" for trigger.



Firing Selector on "T" for Trigger Fire

c. Gunner lays the weapon on the target utilizing the range indicator. Sights in over or on the side of the cannon muzzle for azimuth. Holding the mortar steady, the gunner assumes a safe firing position.

d. The gunner must estimate the range to target, or respond to a fire command for range, in order to lay on target for range.

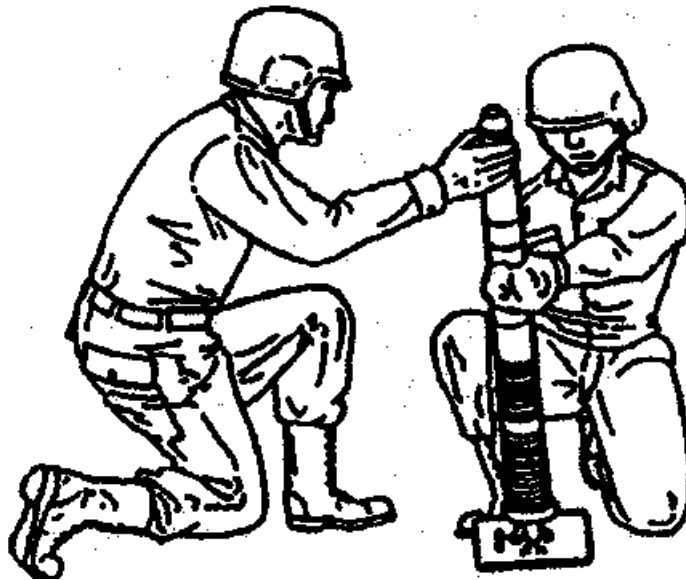
e. The gunner will tell the ammo man what charge to place on the cartridge for the range scale he is utilizing on the range indicator.

f. Ammunition handler prepares propellant charge as directed, sets the fuse for burst desired, and removes the safety wire/pin.

g. Assistant-gunner grasps the cartridge near center and inserts cartridge (fuse end up) in muzzle. He then releases the round and assumes a safe position.

h. The loading of the mortar will be controlled by either the gunner or by an appointed unit leader/safety NCO.

i. At no time will the assistant-gunner "half-load"; "load", or "drop" round without command from an instructor.



Loading and Preparing to Fire

j. When the gunner has weapon laid on target, he will squeeze the trigger to fire, and then release the trigger after firing.

k. The gunner will observe the burst of the impact and adjust fire, in compliance to loading and firing procedures, accordingly in order to have effect on target.

l. After every 10 rounds or fire for effect, the cannon must be swabbed.

m. The cannon must be dry before resuming firing after it is swabbed.

REFERENCES :

FM 23-90 Mortars; pages 6-15 through 6-20.

TM 08206A-10/1A Operator's Manual for Lightweight Company Mortar; 60-mm, M224
pages 0006 00-1 through 0009 00-2.

EXAM ID: MM1313P

EXAM TITLE: Fire a M224 60mm Mortar in Hand-held Mode Performance Examination

TLO/ELO: 41TR.04.08

STUDENT INSTRUCTIONS:

1. You are a mortar squad and must fire your M224 60mm mortar in hand-held mode.
2. There is no time limit for this task.
3. To achieve mastery, a mortar squad must perform each of the performance steps correctly and by achieving an impact on target within the fire for effect radius of the round.

PERFORMANCE STEPS AND/OR PERFORMANCE STANDARDS:

Performance Steps	Master	Non-Master	Remarks
1. The gunner places fire selector on trigger fire "T".			
2. The gunner estimate range to target.			
3. The gunner kneels directly behind the cannon.			
4. The gunner places the ball of the left foot on the M-8 baseplate.			
5. The gunner identifies the charge to be used to engage targets at the estimated range.			
6. The ammunition man prepares the round for firing.			
7. On command half load, the assistant gunner releases the round and assumes a safe posture.			
8. On command half load, the assistant gunner releases the round and assumes a safe posture.			
9. 8. The gunner elevates or depresses the cannon until the indicator ball floats next to the estimated range on the appropriate scale.			
10. The gunner sights in over the top or side of the cannon.			
11. The gunner sights in over the top or side of the cannon.			
12. When the weapon is on target and the indicator ball is floating next to the estimated range, the gunner starts applying pressure on the trigger to fire.			
13. The gunner checks alignment and range indicator until the round fires.			
14. The gunner releases the trigger.			

15. The gunner observes the impact and makes range corrections and weapon alignment corrections.			
16. Repeat steps 8-15 until the rounds have effect on target.			