

UNITED STATES MARINE CORPS
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Training Command
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MM1002
25 May 04

STUDENT OUTLINE

MORTAR POSITION

TERMINAL LEARNING OBJECTIVES

1. Given a SL-3 complete, M252 81mm mortar, designated position, direction of fire, entrenching tools, and sandbags, as a mortar squad, while wearing fighting loads, construct a mortar position in accordance with IP 2-31. (41TR.04.13)
2. Given a designated position, a sector of fire, and an assigned weapon, while wearing a fighting load, construct a fighting position in accordance with FMFM 6-5. (MCCS.15.01)

ENABLING LEARNING OBJECTIVES

1. Given a SL-3 complete, M252 81mm mortar, designated position, direction of fire, and entrenching tools, as a mortar squad, while wearing fighting loads, mark the dimensions of a mortar position in accordance with IP 2-31. (41TR.04.13a)
2. Given a SL-3 complete, M252 81mm mortar, designated position, direction of fire, entrenching tools, and sandbags, as a mortar squad, while wearing fighting loads, dig a mortar position in accordance with IP 2-31. (41TR.04.13b)
3. Given a SL-3 complete, M252 81mm mortar, designated position, direction of fire, entrenching tools, and sandbags, as a mortar squad, while wearing fighting loads, reinforce a mortar position parapet in accordance with IP 2-31. (41TR.04.13c)
4. Given a SL-3 complete, M252 81mm mortar, designated position, camouflage screening, and camouflage support assembly, as a mortar squad, while wearing fighting loads, camouflage a mortar position in accordance with FM 5-20. (41TR.04.13d)
5. Given a sector of fire, and assigned weapon, while wearing a fighting load, emplace aiming stakes in accordance with FMFM 6-5. (MCCS.15.01a)
6. Given a sector of fire and assigned weapon, while wearing a fighting load, clear fields of fire in accordance with FMFM 6-5. (MCCS.15.01b)

1. THE MORTAR POSITION

- a. Mortar Positions. Terrain and mission will dictate where the mortars are positioned. Mortar positions not only increase survivability for the

mortar crew but also enhance the support provided to the forward unit by keeping the crew active. The types of positions that are available and the density of the terrain determines the selection of the mortar position. In rural areas with relatively soft terrain, a position is dug into the ground. When conducting Military Operations in Urban terrain (MOUT), a position is built up using sandbags. Having identified the two different types of positions, we will discuss the make-up of each position.

(1) Rural Mortar Positions. Mortar positions are the actual locations of the individual mortars within the mortar platoon's position. The mortars are normally located 35 to 40 meters apart from each other but the terrain and size of the position may sometimes cause the mortars to be positioned closer. In some situations, it may be necessary to fire the mortar from the surface of the ground, but whenever possible the mortar should be dug into the ground to provide protection for the mortar and crew from enemy observation or attack. Camouflage of the mortar position and surrounding area is essential. This must start as soon as possible and is a continuous process as long as the position is occupied.

(2) Location of the Mortar Position. The most important consideration in the choice of positions is the mission of the unit involved. With this requirement in mind, try to find a "natural" position; a position that can be used almost as is. Whenever possible, the mortar should be placed in defilade from the enemy to limit observation and direct fire on the position. Routes of supply and evacuation should provide cover, if possible.

2. CONSTRUCTION OF THE MORTAR POSITION

a. After the mortar platoon position has been selected the exact location of each individual mortar is marked, the mortars are then mounted and laid for direction to the rear of the marked location with consideration given to dispersion of the mortars and the placement of positions that do not interfere with the construction of the gun pits.

b. After the mortars have been laid and aiming posts placed out, construction of the gun pit can begin. The pit is dug 2 to 3 feet deep for a radius of four feet from the center of the marked location of the base plate giving the gun pit an eight-foot diameter when completed. The pit can be no deeper than three feet because the sight unit of the mortar, when placed in the gun pit, must be above ground level so the gunner can see his aiming posts. The pit is dug with a 1 to 4 inch slope towards the rear of the gun pit to facilitate drainage in inclement weather and should be flat enabling the gun crew to fire 360 degrees.

c. Once the pit has been dug, the mortar is placed in it, laid for direction and aiming posts placed out. On frozen, hard or rocky surfaces the mortar crew places sandbags in the center of the gun pit to seat the base plate. In soft soil, mud, sand or snow the ground under the base plate will require preparation to keep the base plate from sinking too deep into the ground. The base plate should be placed over a 12-inch cushion of sandbags, earth and small stones and a backstop (log, tree trunk or ammunition canisters filled with dirt) placed behind it to keep the base plate from sliding or sinking too deep into the ground.

d. After the gun pit has been dug and the mortar emplaced the mortar crew will dig the squad ammunition pit to the left rear of the gun pit. The squad

ammunition pit should be three ammo boxes long and three ammo boxes wide. It should be a minimum of three feet deep.

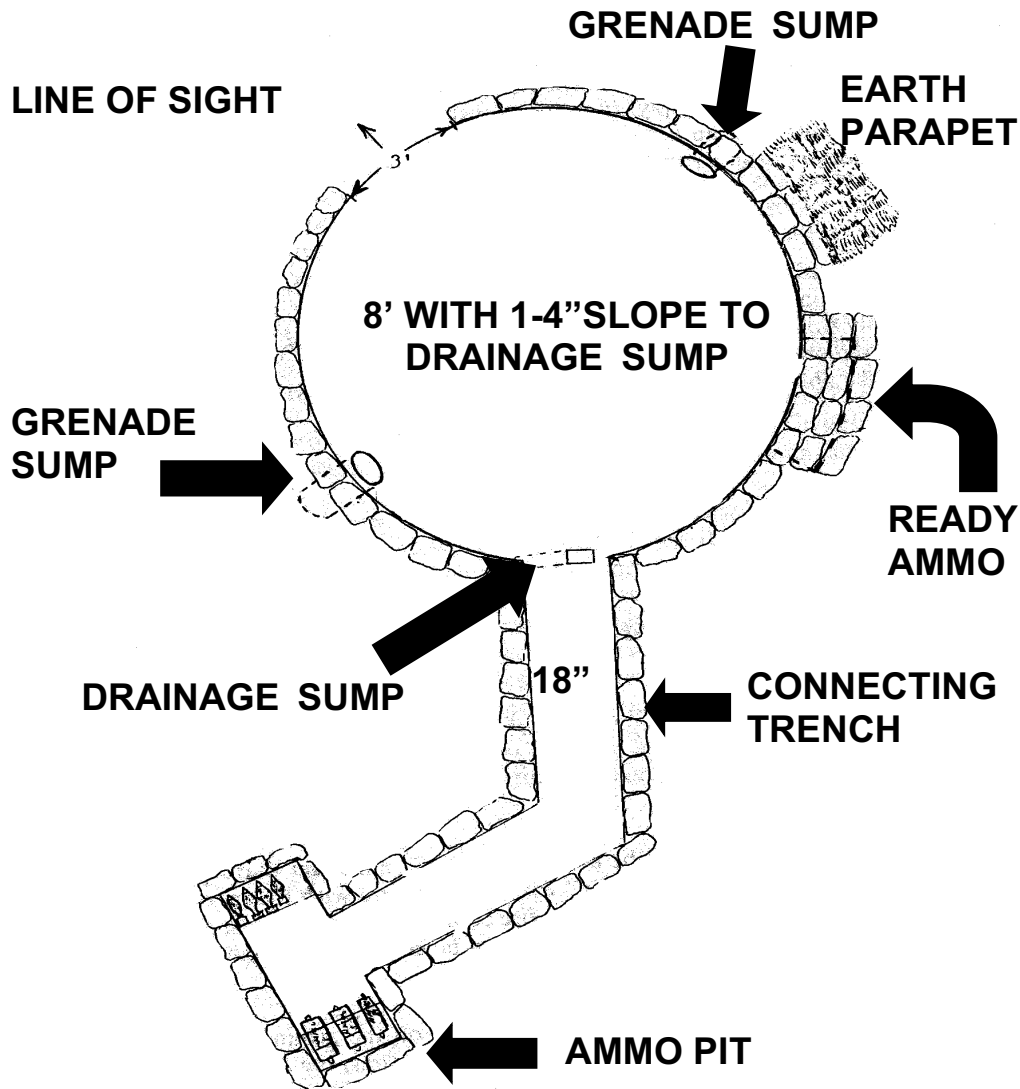
e. Once the squad ammunition pit has been completed a connecting trench between the ammunition pit and the gun pit is constructed. The connecting trench is 18 inches wide and should be a minimum of three feet deep. The connecting trench is turned approximately 45 to 90 degrees just before the ammunition pit to prevent an explosion in the gun pit from spreading to the ammunition stored in the squad ammunition pit. It also presents a more irregular pattern when viewed from the air. If the situation and time permits the squad ammunition pit and the connecting trench should be bunkered or dug under ground to provide protection from indirect fire weapons and air attack.

f. Once the connecting trench has been completed the mortar squad will construct a ready ammunition niche on the right side of the gun pit. The ready ammunition niche is used to store final protective fire or other preset ammunition and should be wide enough to provide the stored ammunition protection from direct sunlight or wet weather.

g. After the ready ammunition niche has been dug the mortar crew will dig grenade sumps on both sides of the gun pit. These sumps should be E-tool deep and wide enough to allow a man on the opposite side of the pit to pitch a grenade in them with ease. A drainage sump is also dug to the rear of the pit to allow water to drain from the pit. It should be a minimum of 20 inches deep but can be deeper depending on the weather and soil.

h. Sandbags are placed around the outside edge of the gun pit. These sandbags will protect the gun and crew from small arms fire. The height of the sandbags must not restrict the mortar from being fired at its lowest elevation setting of 0800 mils. An opening to the left front of approximately 3 feet is left in the sandbags to allow the gunner to see his aiming posts through his M64A1 sight. If needed this opening can be enlarged by removing more sandbags to allow the gunner to direct lay on a target or a second opening may be made to the right rear of the gun pit to allow aiming posts to be put out to the rear. If time allows, dirt can be packed against the sandbags for further reinforcement making an earth and sandbag parapet 20" high and 36" wide.

i. After the mortar position is completed the mortar crew will dig individual fighting positions near the gun pit for enhanced security and individual protection.



3. **URBAN MORTAR POSITION.** The mortars are normally located 35 to 40 meters apart from each other but the terrain and size of the mortar platoon's position may sometimes cause them to be positioned closer. In some situations, it may be necessary to fire the mortar from the surface of the ground, but whenever possible the mortar should be dug into the ground to provide protection for the mortar and crew from enemy observation or attack. This option may not always be available. In urban terrain mortar positions will be constructed above the ground using sand bags and other available materials. Camouflage of the mortar position and surrounding area is essential. Use materials natural to the area you are operating in, rubble, a car door. This must start as soon as possible and is a continuous process as long as the position is occupied.

a. Location of the Mortar Position. The most important consideration in the choice of positions is the mission of the unit involved. With this requirement in mind, try to find a "natural" position; a position that can be used almost as is. Whenever possible, the mortar should be placed in defilade from the enemy to limit observation and direct fire on the position. Precautions will be taken to insure mask and overhead clearance are

determined. Routes of supply and evacuation should provide cover, if possible.

4. CONSTRUCTION OF THE MORTAR POSITION

a. After the mortar platoon position has been selected the exact location of each individual mortar is marked. The mortars are then mounted and laid for direction to the rear of the marked locations with consideration given to dispersion of the mortars and the placement of positions that do not interfere with the construction of the gun pits. Direction stakes may be placed out by the use of ammo cans full of dirt, sand, flour, or any other substance available. The direction stake is then driven into the material in the same manner, as it would be in the ground. Then the entire can will be moved until the aiming post standing up in the can is in the desired position.

b. After the mortars have been laid and aiming posts placed out, construction of the gun position can begin. The position is started by laying out the floor; a minimum depth of three layers of sandbags is required under the base plate to prevent damage from the shock of firing. The floor will extend out four feet from the center of the base plate, giving the position an inside diameter of eight feet. With an inside diameter of eight feet, the walls of the parapet will continue on out for an additional three feet on each side. Keep in mind that upon completion, you must have remembered to insert a path for grenades to exit as well as a path for water to drain. Your imagination will determine what materials you use to create these two sumps, but they are essential to a good fighting pit. Some examples of material available to use to create these two sumps are PVC tubing, heating and air conditioning ductwork, or guttering from nearby houses.

c. The remainder of the pit is to be built to the same dimensions and design as discussed previously when building a mortar pit in rural areas. Camouflage is no different than before, as you'll use your imagination and surrounding items to enable you to blend into your environment.

5. CAMOUFLAGE

a. Each Marine must use terrain to give himself cover and concealment. He must supplement natural cover and concealment with camouflage.

b. Cover is protection from the fire of enemy weapons. It may be natural or manmade.

c. Natural cover includes logs, trees, stumps, ravines, hollows, reverse slopes, and so forth. Manmade cover includes fighting holes, trenches, walls, rubble, abandoned equipment, and craters. Even the smallest depression or fold in the ground gives some cover. Marines must look for and use every bit of cover the terrain offers.

d. Before camouflaging, Marines study the terrain and vegetation of the area they are in and the area to which they are going. Grass, leaves, brush, and other natural materials must be arranged to conform to the area. Tree branches stuck into the ground in an open field will not fool anyone.

Vegetation changes from area to area. As units move from one area to another, camouflage must be changed to blend with the vegetation.

e. Marines should only use material which is needed. Too much camouflage (natural or manmade) may call attention to a position as easily as too little. Camouflage materials should be gathered from a wide area. An area stripped of all its foliage will draw attention.

f. You must continue to camouflage your positions as you prepare it. Work on a defensive position in daylight depends on the enemy air threat and whether or not the enemy can see the position. When the enemy has air superiority, work may be possible only at night. Shiny or light-colored objects, which attract attention from the air, must not be left lying about. Mirrors, food containers, towels, etc., must all be hidden. Shirts must not be removed, as the exposed skin stands out and increases the chance of being seen. Fires must not be used where there is a chance that the enemy will see the smoke or flame. Trails and other evidence of movement must be hidden.

g. After camouflage is complete, the fighting position should be inspected from the enemies point of view. Camouflage should be checked often to see that it stays natural looking and conceals the position. If it looks like a camouflaged position to the Marines inspecting, it is almost certain that it will look like a camouflaged position to the enemy.

REFERENECES :

IP 2-31, Infantry Mortars: pages 156-158

FMFM 6-5, Marine Rifle Squad

FM 5-20, Camouflage: pages 33 through 34 and 44 through 47.

EXAM ID: MM1002P

EXAM TITLE: Mortar Position Performance Evaluation

TLO/ELO: 41TR.04.13

STUDENT INSTRUCTIONS:

1. You are a mortar squad and must construct a mortar position.
2. There is no time limit for this task.
3. To achieve mastery, the mortar squad must perform each of the performance steps correctly.

PERFORMANCE STEPS AND/OR PERFORMANCE STANDARDS:

Performance Steps	Master	Non-Master	Remarks
1. The squad mounts and lays the mortar in front of the position.			
2. The squad digs a mortar pit that is 3 feet deep and 8 feet in diameter.			
3. The squad digs an ammunition pit to the right or left rear of the mortar pit that is large enough to stack ammunition boxes 3 high and 3 deep and allows separation of the different ammunition types.			
4. The squad mounts and lays the mortar in the prepared pit.			
5. The squad builds a parapet 3 feet thick and at least 20 inches high reinforced with sandbags and sloping away from the position, leaving an opening that is 3 feet wide in the parapet to provide a clear line of sight to the aiming posts.			
6. The squad digs a connecting trench from the mortar pit to the ammunition pit that is 18 inches wide and 20 inches deep with a 45 degree angle in the trench.			
7. The squad digs a position for ready ammunition on the right side of the pit.			
8. The squad digs grenade sumps into the left and right side of the pit.			
9. The squad digs a drainage sump.			
10. The squad camouflages the position.			