

LIMITED ACCESS M252 81MM MORTAR TECHNICAL MANUAL

Operator's Manual for Mortar, 81-mm, M29A1, (1015-00-999-7794).

This publication prescribes guidance for leaders and crewmen of mortar squads. It concerns mortar crew training, and it is used with the applicable technical manuals (TMs) and Army Training and Evaluation Programs (ARTEPs). It presents practical solutions to assist in the timely delivery of accurate mortar fires, but does not discuss all possible situations. Local requirements may dictate minor variations from the methods and techniques described herein. However, principles should not be violated by modification of techniques and methods. The scope of this publication includes mortar crew training at the squad level. The 60-mm mortar, M224; 81-mm mortar, M252; and 120-mm mortars, M120/M121 are discussed, to include nomenclature, sighting, equipment, characteristics, capabilities, and ammunition.

81-MM Mortar M1

Developed from the highly successful French Brandt Mortar in 1935, the American M1 Mortar is an 81mm weapon. During WWII, the M1 was supplied to every U.S. infantry battalion, and was also mounted on the M3 Half-track. Producing a rate of fire of eighteen rounds per minute, with a muzzle velocity of 700 feet per second, the M1 could launch rounds up to 1.9 miles. Ammunition included both heavy and light explosive rounds, smoke, illumination and phosphorus / incendiary rounds. The weapon was typically serviced by a crew of 7-8 personnel, including a squad leader, gunner, assistant gunner, and ammunition bearers. The one drawback of the M1 was that the tube, mount and base plate weighed roughly 136 pounds. Starting in 1951, it was replaced by the considerably lighter M29 mortar. Produced in 1943 by the War Department, this restricted field manual was standard issue for M1 Mortar crews. It includes sections on maintenance and care, as well as information on the training of crew members. This includes chapters on the use of fire control instruments and sights, marksmanship and adjustment of fire, and advice for instructors. This manual has been reproduced in its entirety, with care taken to preserve the integrity of the text.

Organizational Maintenance Manual (including Repair Parts and Special Tools List) for 81-mm Mortar, M29A1 (1015-00-999-7794).

This publication prescribes guidance for leaders and crewmen of mortar squads. It concerns mortar crew training, and it is used with the applicable technical manuals (TMs) and Army Training and Evaluation Programs (ARTEPs). It presents practical solutions to assist in the timely delivery of accurate mortar fires, but does not discuss all possible situations. Local requirements may dictate minor variations from the methods and techniques described herein. However, principles should not be violated by modification of techniques and methods. The scope of this publication includes mortar crew training at the squad level. The 60-mm mortar, M224; 81-mm mortar, M252; and 120-mm mortars, M120/M121 are discussed, to include nomenclature, sighting, equipment, characteristics, capabilities, and ammunition. (For information on the tactics, techniques, and procedures that mortar sections and platoons use to execute the combat mission, refer to FM 7.90.)

Mortars

This manual provides guidance for military occupational specialty (MOS) 11C Soldiers and their trainers on

the employment of the 60-mm mortars (M224), 81-mm mortar (M252), and 120-mm mortar (M120). It discusses the practical applications of ballistics and a system combining the principles, techniques, and procedures essential to the delivery of timely and accurate mortar fire. (See FM 3-22.90 for information about mechanical training, crew drills, and the characteristics, components, and technical data of each mortar.) This manual is divided into six parts. Part 1 discusses the fundamentals of mortar fire direction; Part 2 summarizes the operational procedures of a fire direction center (FDC); Part 3 describes the capabilities and use of the mortar ballistic computer (MBC); Part 4 describes the capabilities and use of the M16/M19 plotting boards; Part 5 discusses the Mortar Fire Control System (MFCS); and Part 6 discusses the lightweight handheld mortar ballistic computer (LHMBC).

Operator's and Organizational Maintenance Manual (including Repair Parts and Special Tools List) for 81-mm Mortar Training Device, 81-mm Sabot (INERT) M1 and 22-mm Sub-caliber Practice Cartridge, M744, M745, M746, and M747

The scope of this publication includes mortar crew training at the squad level. The 60-mm mortar, M224; 81-mm mortar, M252; and 120-mm mortars, M120/M121 are discussed, to include nomenclature, sighting, equipment, characteristics, capabilities, and ammunition. (For information on the tactics, techniques, and procedures that mortar sections and platoons use to execute the combat mission, refer to FM 7.90.) Mortars are suppressive indirect fire weapons. They can be employed to neutralize or destroy area or point targets, screen large areas with smoke, and provide illumination or coordinated high-explosive/illumination. The mortar platoon's mission is to provide close and immediate indirect fire support for maneuver battalions and companies. For mortar fire to be effective, it must be dense and must hit the target at the right time with the right projectile and fuze. Good observation is necessary for effective mortar fire. Limited observation results in a greater expenditure of ammunition and less effective fire. Some type of observation is desirable for every target to ensure that fire is placed on the target. Observation of close battle areas is usually visual. When targets are hidden by terrain features or when great distance or limited visibility is involved, observation can be achieved by radar or sound. When observation is possible, corrections can be made to place mortar fire on the target by adjustment procedures; however, lack of observation must not preclude firing on targets that can be located by other means. Mortar fire must be delivered by the most accurate means that time and the tactical situation permit. When possible, survey data or systems, such as the Mortar Fire Control System (MFCS), are used to accurately locate the mortar position and target. Under some conditions, only a rapid estimate of the location of weapons and targets may be possible. To achieve the most effective massed fires, the MFCS should be used or a survey using accurate maps should be made of each mortar position, registration point, and target. The immediate objective is to deliver a large volume of accurate and timely fire to inflict as many enemy casualties as possible. The number of casualties inflicted in a target area can usually be increased by surprise fire. If surprise massed fires cannot be achieved, the time required to bring effective fires on the target should be kept to a minimum. The greatest demoralizing effect on the enemy can be achieved by delivering the maximum number of effective rounds from all the mortars in the shortest possible time. Mortar units must be prepared to accomplish multiple fire missions. They can provide an immediate, heavy volume of accurate fire for sustained periods. In heavy brigade combat team (HBCT) companies, mortars are normally fired from mortar carriers; however, they maintain their capability to be ground-mounted. Firing from carriers permits rapid displacement and quick reaction. Infantry brigade combat team (IBCT) companies must fire their mortars from the ground. Mortars should be employed in defilade to protect them from enemy direct fire and observation, and to take the greatest advantage of their indirect fire role. Although the use of defilade precludes sighting the weapons directly at the target (direct lay), it is necessary for survivability. Because mortars are indirect fire weapons, special procedures ensure that the weapon and ammunition settings used will cause the projectile to burst on or above the target. A coordinated effort by the indirect fire team ensures the timely and accurate engagement of targets.

Basic Field Manual

This publication, \"Mortars\" (FM 3-22.90), prescribes guidance for leaders and crewmen of mortar squads. It concerns mortar crew training, and it is used with the applicable technical manuals (TMs) and Army Training and Evaluation Programs (ARTEPs). It presents practical solutions to assist in the timely delivery of accurate mortar fires, but does not discuss all possible situations. Local requirements may dictate minor variations from the methods and techniques described herein. However, principles should not be violated by modification of techniques and methods. The scope of this publication includes mortar crew training at the squad level. The 60-mm mortar, M224; 81-mm mortar, M252; and 120-mm mortars, M120/M121 are discussed, to include nomenclature, sighting, equipment, characteristics, capabilities, and ammunition.

Technical Manual

This manual provides guidance for military occupational specialty (MOS) 11C Soldiers and their trainers on the employment of the 60-mm mortars (M224), 81-mm mortar (M252), and 120-mm mortar (M120). It discusses the practical applications of ballistics and a system combining the principles, techniques, and procedures essential to the delivery of timely and accurate mortar fire. (See FM 3-22.90 for information about mechanical training, crew drills, and the characteristics, components, and technical data of each mortar.) This manual is divided into six parts. Part 1 discusses the fundamentals of mortar fire direction; Part 2 summarizes the operational procedures of a fire direction center (FDC); Part 3 describes the capabilities and use of the mortar ballistic computer (MBC); Part 4 describes the capabilities and use of the M16/M19 plotting boards; Part 5 discusses the Mortar Fire Control System (MFCS); and Part 6 discusses the lightweight handheld mortar ballistic computer (LHMBC).

81-MM Mortar M1

Training Circular TC 3-22.90 Mortars March 2017 This publication prescribes guidance for leaders and members of mortar squads. It concerns mortar squad training and is used with the applicable technical manuals (TMs) and Army training programs. It presents practical solutions to assist in the timely delivery of accurate mortar fires, but does not discuss all possible situations. Local requirements may dictate minor variations from the methods and techniques described herein. However, principles should not be violated by modification of techniques and methods. The scope of this publication includes mortar squad training at the squad level. The 60-millimeter (mm) mortar, M224/M224A1; 81-mm mortar, M252/M252A1; 120-mm mortars, M120/M121; and the Recoil Mortar System 6-Lightweight (RMS6-L) are discussed, and includes nomenclature, sighting, equipment, characteristics, capabilities, and ammunition. (Refer to ATTP 3-21.90 for information on the tactics, techniques, and procedures that mortar sections and platoons use to execute the combat mission.) This publication prescribes DA Form 5964 (Gunner's Examination Scorecard-Mortars).

81-MM Mortar M1

The mission of the mortar platoon is to provide close and immediate indirect fire support for maneuver battalions and companies. Mortars are organized as part of a company, battalion, and cavalry squadron. They are organized either as sections or platoons in infantry brigade combat team (IBCT) companies and as platoons in tank and heavy brigade combat team (HBCT) battalions. Regardless of the organization to which they belong, mortars have the battlefield role of providing the maneuver commander with immediate indirect fires. Mortars fulfill this mission when all of the elements responsible for placing effective mortar fire on the enemy are properly trained. This manual provides guidance for military occupational specialty (MOS) 11C Soldiers and their trainers on the employment of the 60-mm mortars (M224), 81-mm mortar (M252), and 120-mm mortar (M120). It discusses the practical applications of ballistics and a system combining the principles, techniques, and procedures essential to the delivery of timely and accurate mortar fire. This manual is divided into six parts. Part 1 discusses the fundamentals of mortar fire direction; Part 2 summarizes the operational procedures of a fire direction center (FDC); Part 3 describes the capabilities and use of the mortar ballistic computer (MBC); Part 4 describes the capabilities and use of the M16/M19 plotting boards; Part 5 discusses the Mortar Fire Control System (MFCS), and Part 6 discusses the lightweight handheld

mortar ballistic computer (LHMBC).

Field Manual FM 3-22. 90 Mortars December 2007

This manual provides guidance for military occupational specialty (MOS) 11C Soldiers and their trainers on the employment of the 60-mm mortars (M224), 81-mm mortar (M252), and 120-mm mortar (M120). It discusses the practical applications of ballistics and a system combining the principles, techniques, and procedures essential to the delivery of timely and accurate mortar fire. (See FM 3-22.90 for information about mechanical training, crew drills, and the characteristics, components, and technical data of each mortar.)

Mortar Fire Direction Procedures

This manual provides guidance for MOS 11C soldiers and their trainers on the employment of the 60-mm (M224 and M19) mortars, 81-mm (M252 and M29A1) mortars, 4.2-inch (M30) mortar, and 120-mm (M120) mortars. It discusses the practical applications of ballistics and a system combining the principals, techniques, and procedures essential to the delivery of timely and accurate mortar fire. (See FM 23-90 for information on mechanical training, crew drills, and the characteristics, components, and technical data of each mortar.)

Operator's Manual

This manual, \"Mortar Fire Direction Procedures\" (TC 3-22.91 / FM 3-22.91), provides guidance for military occupational specialty (MOS) 11C Soldiers and their trainers on the employment of the 60-mm mortars (M224), 81-mm mortar (M252), and 120-mm mortar (M120). It discusses the practical applications of ballistics and a system combining the principles, techniques, and procedures essential to the delivery of timely and accurate mortar fire.

Mortars

The 3-inch mortar was one of the most effective battalion weapons, used for medium and long range support and bombardment on the battlefield. It has served the British Army in various forms (it is now the 81mm Mortar) for many decades. It delivers a high explosive charge at high angle, allowing it to be effective against troops on the ground, troops in trenches, and to bring fire behind intervening obstacles such as buildings, trees and hills. The pamphlet gives full details of the weapon including the mounting, base plate and sights. The working stores are listed and there is a substantial examination of ammunition and fuses. Four plates show the weapon assembled, the mounting, the sights and the bomb.

Direct Support Maintenance Manual Including Repair Parts and Special Tools List (including Depot Maintenance Repair Parts and Special Tools) for 81-mm Mortar, M29A1, (1015-00-999-7794).

60-MM Mortar M2

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