

FM 23-91

Mortars Gunnery



U.S. Marine Corps

PCN 320 023410 00

PREFACE

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.)

This manual is divided into four parts: Part One discusses the fundamentals of mortar gunnery; Part Two summarizes the operational procedures of a fire direction center; Part Three describes the capabilities and use of the mortar ballistic computer; and Part Four describes the capabilities and use of the M16/M19 plotting board.

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Unless this publication states otherwise, masculine nouns and pronouns do not refer exclusively to men.

MORTAR GUNNERY

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*This publication supersedes FM 23-91, 6 December 1991.

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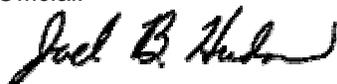
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By Order of the Secretary of the Army:

ERIC K. SHINSEKI
General, United States Army
Chief Of Staff

Official:



JOEL B. HUDSON
Administrative Assistant to the
Secretary of the Army
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PART ONE
INTRODUCTION AND FUNDAMENTALS OF
MORTAR GUNNERY

CHAPTER 1
INTRODUCTION

The mission of the mortar platoon is to provide close and immediate indirect fire support for the maneuver battalion and companies.

1-1. ORGANIZATION

Mortars are organized as part of a company and battalion. They are either sections or platoons in airborne, ranger, air assault, light infantry companies, and cavalry troops. They are organized as platoons in all tank and infantry mechanized battalions. Regardless of the organization to which they belong, mortars have the battlefield role of providing the maneuver commander with immediate indirect fires. They can fulfill that mission when all of the elements responsible for placing effective mortar fire on the enemy are properly trained.

1-2. GENERAL DOCTRINE

Doctrine demands the timely and accurate delivery of indirect fire to meet the needs of supported units. All members of the indirect fire team must be thoroughly indoctrinated with a sense of urgency. They must strive to reduce, by all possible measures, the time required to execute an effective fire mission.

a. For mortar fire to be effective, it must be dense enough and must hit the target at the right time with the right projectile and fuze. Good observation is required 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 may be radar or by 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.

b. Mortar fire must be delivered by the most accurate means that time and the tactical situation permit. When possible, survey data will be used to accurately locate the mortar position and target. Under some conditions, only a rapid estimate of the relative location of weapons and targets may be possible.

c. To achieve the most effective massed fires, units should conduct a survey using accurate maps of each mortar position and registration points and targets. The immediate objective is to deliver a large volume of accurate and timely fire to inflict as many casualties as possible on the enemy. The number of casualties inflicted in a target area can usually be increased by surprise fire. If surprise