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# **Mortars**

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**U.S. Marine Corps**

## PREFACE

This publication prescribes guidance for leaders and crewmen of mortar squads and platoons. It is concerned with the problems of mortar crew training. 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 squad and section levels. The 60-mm mortar, M224; 81-mm mortar, M29A1; 81-mm mortar, M252; 4.2-inch (107-mm) mortar, M30; and 120-mm mortar, M120, are discussed herein to include nomenclature, sighting, equipment, characteristics, capabilities, ammunition, and maintenance.

**Note:** For clarity and simplicity, the artwork in this manual does not show soldiers in BDUs. The words and required art detail cannot be seen due to the camouflage on BDUs.

The provisions of this publication are the subject of international agreements:

QSTAG 900	Characteristics of a Multirole Mortar Fuze (Edition One)
STANAG 2321	NATO Code of Colors for the Identification of Ammunition (Except Ammunition of a Caliber Below 22 millimeters)

The proponent of this manual is HQ TRADOC. Submit changes for improving this publication on DA Form 2028 (Recommended Changes to Publications and Blank Forms) and forward it to US Army Infantry School, ATTN: ATSH-INB-O, Fort Benning, GA 31905-5594.

Unless otherwise stated, whenever the masculine gender is used, both men and women are included.

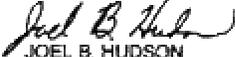
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**FM 23-90**  
**TECHNICAL ORDER 11W2-5-13-21**  
**1 MARCH 2000**

By Order of the Secretary of the Army:

ERIC K. SHINSEKI  
*General, United States*  
*Army*  
*Chief of Staff*

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**HEADQUARTERS  
DEPARTMENT OF THE ARMY  
AND THE AIR FORCE  
WASHINGTON, DC, 1 March 2000**

<p><b>FM 23-90 MCRP 3-15.2A</b></p>
<p><b>MORTARS</b></p>

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**REFERENCES**

**AUTHENTICATION**

**DISTRIBUTION RESTRICTION:** Approved for public release, distribution is unlimited.

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## CHAPTER 1

### INTRODUCTION

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

#### Section I. 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 trained to quickly execute an effective fire mission.

##### 1-1. EFFECTIVE MORTAR FIRE

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 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 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.

a. Mortar fire must be delivered by the most accurate means that time and the tactical situation permit. When possible, survey data 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, a survey using accurate maps should be made of each mortar position, registration points, and targets.

b. 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 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 delivery of a maximum number of effective rounds from all the mortars in the shortest possible time.

c. Mortar units must be prepared to accomplish multiple fire missions. They can provide an immediate, heavy volume of accurate fire for sustained periods. Mortars are suppressive indirect fire (high-angle-of-fire) weapons. They can be