

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

OPERATOR'S MANUAL
RANGE CLEARING PROCEDURES
FOR CARTRIDGE 40MM: TP, M918

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Headquarters, Department of the Army, Washington DC
24 February 1995

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

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SECTION I. INTRODUCTION

1. Purpose. The purpose of this Technical Bulletin (TB) is to provide specific operator level instructions on Range Clearing Procedures for Cartridge, 40MM, TP, M918. These procedures are supplemental to any and all local installation SOPs and should be integrated into local procedures.

2. Scope. This bulletin is a supplement to the operator weapon technical manual TM 91010-230-10, Operator's Manual and Components List for Machine Gun, 40MM, MK19 MOD 3; and to TM 9-6920-767-10, Operator's Manual for Cartridge, Subcaliber Ammunition, Training (CSAT).

*This bulletin supersedes TB 9-1310-251-10 dated 14 May 1992.

SECTION II. INFORMATION AND PROCEDURES TO BE INCORPORATED INTO OPERATOR'S TECHNICAL MANUAL

3. General. Personnel moving downrange to locate and identify projectile in accordance with procedures in this document must have adequate equipment and be able to identify M918 projectiles.

a. Identification.

(1) Cartridge. The M918 cartridge (fig. 1) is a fixed round of ammunition with a straight wall rimmed cartridge case. The cartridge consists of the cartridge case attached to the projectile. The cartridge case is anodized green. The markings "CTG 40MM M918 TP" are stenciled in black on the cartridge case.

(2) Projectile. The M918 projectile body (fig. 1) features an ogive with an annular groove and a copper rotating band. The projectile is blue with a 1/4-inch brown band behind the ogive. The markings "40MM M918 TP" are stenciled in black on the projectile body. The annular groove is provided for identification as a TP round. In addition, the letters "TP" are stamped in three places on the bottom of the projectile body.

b. Use. The M918 40MM Target Practice Cartridge is used in training to simulate the M430 HEDP 40MM Cartridge. It is also used to simulate the handling, loading, and firing of 165MM ammunition in the CSAT M970.

c. Equipment.

(1) Individual Equipment (Personnel Protection Equipment)¹

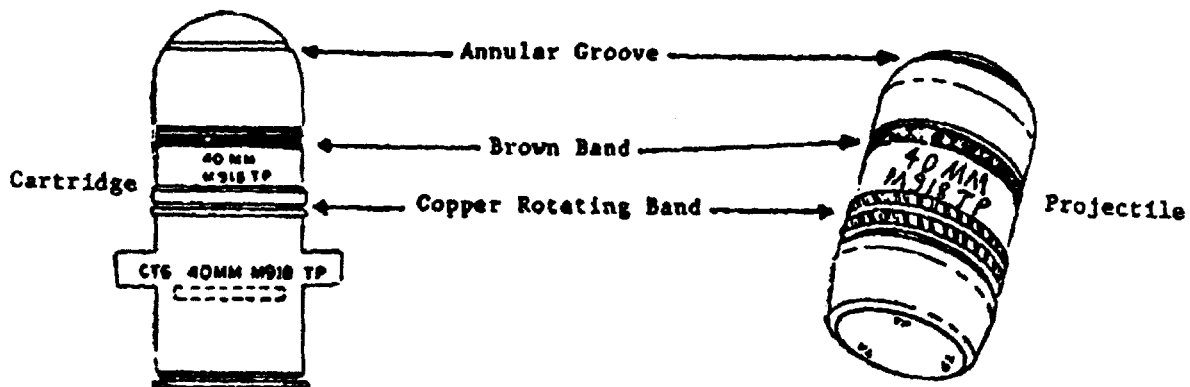
Face Shield²
Safety Glasses²
Safety Goggles²
Leather Gloves
Single Hearing Protection³
Field Uniform (Helmet, BDUs, Boots)

(2) Tools.

Shovels⁴
Tongs (recommended)⁵
M548 Metal Box

Notes.

¹Limited testing has shown that the personnel protection equipment listed above is only adequate in protecting personnel at projectile functioning distances of 24 inches or greater. A projectile that functions within 24 inches of a person with the base pointed at the person may



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Figure 1. Cartridge and Projectile, 40MM, TP, M918.

cause injury even when wearing the safety equipment. A standard military boot sole will protect the bottom of the foot if a projectile is stepped on and functions. However, when a projectile functions right against the soft side of a boot or against a standard issue military glove, a hole will be blown through the material.

²Recovery personnel have the option to wear either face shield, safety glasses or safety goggles.

³Any single hearing protection as approved by local safety representative.

⁴Shovel must be a minimum of five feet long.

⁵Tongs must be a minimum of two feet long.

4. Operating Instructions.

a. General.

(1) Recovery of the projectiles by other than qualified Explosive Ordnance Disposal (EOD) personnel is only authorized on ranges that either are used solely for these cartridges or have been certified by Range Control or the appropriate installation safety representative to be free of all visible or identifiable rounds of other explosive ordnance after the range has been cleared initially by EOD personnel. Areas which personnel were permitted to occupy prior to M918 firing should be considered safe for recovery personnel to clear M918 projectiles.

(2) Do not recover the M918 projectiles fired in areas where High Explosive (HE) duds could exist. When a dedicated range is reassigned, it must be cleared of HE rounds along with M918 projectiles.

(3) If a sterile area is to be used as a temporary range, all M918 projectiles must be recovered.

(4) It is recommended that personnel clear the designated impact area of high grass, excess weeds, and other obstacles that could interfere with firing, observation, and recovery.

(5) It is recommended that recovery be performed on the same day as firing. This will aid in locating and identifying projectiles. If recovery is not started or completed on the same day as firing, positive steps should be taken to secure the impact area and ensure that unauthorized personnel are prevented from entering the impact area. Range Control secures the field until it is fully cleared according to their Standard Operating Procedures. Different situations might require different means of security per Range Control's direction.

(6) Prior to beginning recovery operations, verify that all firing into the impact area has been completely stopped.

(7) Only personnel who are trained and qualified by either the Range Control officer, safety officer of the involved unit, appropriate installation safety or EOD Detachment personnel shall be permitted to participate in the recovery operations. Training shall consist of two phases. The first phase shall be a requirement for recovery personnel to read and thoroughly understand this TB. The second phase shall be for the Range Control officer, the safety officer of the involved unit, or other appropriate installation safety representative to brief recovery personnel. This briefing shall consist of familiarizing recovery personnel with: the projectile identification (dud and functioned), the use of recovery tools and equipment, an understanding of the hazards involved, and a full knowledge of all safety precautions and safe recovery and disposal techniques as outlined in this TB.

(8) The recovery team chief in charge will ensure that adequate equipment, material and tools are provided to perform the recovery operation in a safe and efficient manner.

(9) The number of personnel permitted to engage in the recovery operation will be restricted to the minimum required to perform the job in a safe and efficient manner as determined by the officer in charge. The recovery team will never consist of less than two personnel.

(10) A vehicle in good mechanical condition should be kept readily available for evacuation in case of an emergency. Also, a ready means of communication between recovery teams must be made available at all times.

(11) Every projectile that is examined will be considered a dud unless it can be positively and absolutely verified that it has functioned.

b. Recovery Procedures.

WARNING

- **DO NOT DISTURB ANY UNIDENTIFIABLE METAL OBJECTS OR PROJECTILES. ONLY IDENTIFIED M918 PROJECTILES ARE AUTHORIZED TO BE DISTURBED AND/OR REMOVED IN ACCORDANCE WITH THIS TB.**
- **WHILE ENGAGED IN RECOVERY OPERATIONS IN THE IMPACT AREA, PERSONNEL SHOULD KEEP ALERT TO AVOID STEPPING ON PROJECTILES.**

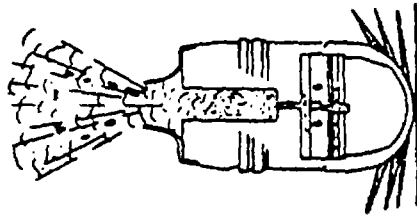
(1) Personnel will move downrange into the impact area to locate and identify the M918 projectiles. Upon sighting any object, verify that the object is the M918 projectile before disturbing it. Identification of the M918 projectile should be made using the projectile description above.

CAUTION

- **AVOID STRIKING THE M918 PROJECTILE IF A SHOVEL IS USED TO EXPOSE OR CLEAN THE BURIED ITEM.**
- **WHEN EXAMINING, IDENTIFYING AND HANDLING THE M918 PROJECTILE WITH THE SHOVEL OR TONGS, KEEP THE BASE (REAR) AND THE OGIVE (FRONT) OF THE PROJECTILE POINTED AWAY FROM THE BODY AND OTHER PERSONNEL AT ALL TIMES.**
- **DO NOT DISTURB ANY METAL/PROJECTILE TYPE OBJECT YOU CAN'T IDENTIFY AS AN M918 PROJECTILE OR SMALL CALIBER BULLET. DRIVE A STAKE/FLAG INTO THE GROUND NEAR IT AND NOTIFY EOD OF ITS LOCATION.**

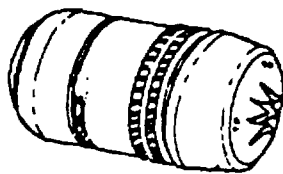
(2) Assure that projectiles that are partially or completely buried are known to be M918's before using a shovel to expose enough of the projectile so that tongs can engage the projectile body. However, leave the projectile on the ground until it has been properly identified.

(3) Once the M918 projectile is out on the ground, visually examine it without any direct handling to determine if it has functioned or not. When viewing the projectile, look at it from a side angle in such a manner that the back of the projectile is never directly pointed at the body or other personnel. M918 projectile functioning is shown in Figure 2. A projectile that has functioned is easily recognized. The base (rear) of a projectile that has functioned will be distinctly ripped open in the form of a number of petals which are peeled back from the center of the projectile base. Any projectile that has this characteristic can be considered to have properly functioned (fig. 3). If the projectile base has not been ripped open and remains flat, it can be considered to be a dud (fig. 4). Every M918 projectile that is examined will be considered a dud unless it can be positively and absolutely verified that the base has been distinctly ripped open into the form of petals which are readily visible.



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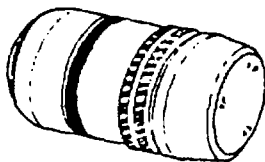
Figure 2. Functioning Projectile, 40mm, TP, M918.



FUNCTIONED

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Figure 3. Appearance of Functioned Projectile, 40mm, TP, M918.



DUD FIRED

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Figure 4. Appearance of Dud Fired Projectile, 40mm, TP, M918.

WARNING

DO NOT DISTURB ANY PROJECTILES OTHER THAN M918 PROJECTILES OR SMALL CALIBER BULLETS.

CAUTION

- ALL M918 DUDS OR SUSPECTED DUDS SHALL BE TREATED AS ARMED AND CAPABLE OF FIRING WITH ANY DISTURBANCE OTHER THAN THE PROCEDURE AS OUTLINED IN THIS DOCUMENT.
- AVOID STRIKING OR DROPPING THE M918 PROJECTILES WHEN HANDLING WITH THE SHOVEL OR THE TONGS.

(4) If the M918 projectile is covered with dirt, mud or other debris such that visible identification is difficult or impossible, it should be treated with care given to a dud. Carefully, with as little disturbance as possible, use the shovel and/or tongs to try and remove enough dirt, mud and debris to identify the projectile. Do not use the hands or get body parts too close when trying to remove debris. If after removing some of the debris, the projectile still cannot be identified, it should be treated as a dud and procedures outlined should be followed.

(5) Projectiles that have been identified as having functioned may be picked up by hand and placed in one container. Those projectiles identified as M918 duds will be picked up using tongs (recommended) or by hand, cautiously, making sure the base (rear) and ogive (front) of the projectile are pointed away from the body and other personnel at all times. These duds will be placed in another container so that each type of projectile (dud or functioned) is segregated into separate containers. The projectiles shall be carefully placed in the containers in a horizontal position. Each container should be marked as to whether it contains duds or functioned projectiles. The

container will be marked so that the markings cannot be removed during course of operation or interchanged by mistake.

(6) The containers holding functioned projectiles shall be placed on the truck in an upright position and securely strapped down to prevent any movement during transport.

(7) The containers holding duds will be set aside and EOD contacted for disposal.

(8) The functioned projectiles must be certified as inert by authorized personnel and then transported to a disposal area in accordance with local procedures.

By Order of the Secretary of Army:

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