

TM 9-1300-251-20&P

TECHNICAL MANUAL

**MAINTENANCE MANUAL
(INCLUDING REPAIR PARTS AND SPECIAL TOOLS LISTS)**

UNIT

**ARTILLERY AMMUNITION
FOR
GUNS, HOWITZERS, MORTARS,
RECOILLESS RIFLES,
AND
40MM GRENADE LAUNCHERS**

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HEADQUARTERS, DEPARTMENT OF THE ARMY

12 FEBRUARY 2003

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**HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, 12 February 2003**

**Unit Maintenance Manual
(Including Repair Parts and Special Tools List)**

**Artillery Ammunition
for
Guns, Howitzers, Mortars, Recoilless Rifles,
and 40mm Grenade Launchers**

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter or DA Form 2028-2 (Recommended Changes to Equipment Technical Publications) located in the back of this manual directly to Logistics Research and Engineering Directorate (AMSRD-AAR-AIL-LS), U.S. Army RDECOM, Armament Research, Development and Engineering Center, ATTN: AMSTA-AR-WEL-S, Picatinny, NJ 07806-5000. You may also send in your recommended changes via electronic mail or by fax. Our e-mail address is LSB@PICA.ARMY.MIL. Our fax number is DSN 880-4633, Commercial (973) 724-4633. A reply will be furnished to you.

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CHAPTER 1 INTRODUCTION

SECTION I GENERAL

NOTE

No maintenance is authorized below depot level for munitions filled with lethal agents.

1.1 SCOPE.

1.1.1 These instructions are for use by unit maintenance personnel. They apply to artillery ammunition ranging in calibers from 37 millimeters through 8 inches. Artillery ammunition, as it is defined in this manual, includes conventional and Improved Conventional Munitions for guns, howitzers, mortars, recoilless rifles and 40mm grenade launchers.

1.1.2 Operating instructions are contained in the appropriate weapon's manual.

1.1.3 Military Specification format for TMs requires that the Organizational Maintenance level TMs contain the complete Maintenance Allocation Chart (MAC).

1.1.4 Higher levels are to perform any maintenance authorized at a lower level (unless specifically stated otherwise) and to utilize any tools authorized for the maintenance operation.

1.1.5 The format requires that the available repair parts be authorized in the RPSTL for the lowest maintenance level that can perform the operation.

1.1.6 The format requires separate appendices for tools and expendable supplies.

1.1.7 For data sheet information on the items in this manual, refer to TM 43-0001-28.

1.2 FORMS, RECORDS AND REPORTS.

Department of the Army maintenance forms and reporting procedures are prescribed in DA PAM 738-750 (Functional Users Manual for The Army Maintenance Management System (TAMMS)). Accidents involving injury to personnel or damage to materiel will be reported on DA Form 285 (U.S. Army Accident Report) in accordance with AR 385-40 (Accident Reporting and Records). Explosive ammunition malfunctions will be reported in accordance with AR 75-1 (Malfunctions Involving Ammunition and Explosives).

1.3 DESTRUCTION OF AMMUNITION TO PREVENT ENEMY USE.

Destruction of artillery munitions when subject to capture or abandonment will be undertaken by the user only when, in judgment of the unit commander concerned, such action is necessary in accordance with orders of, or policy established by, the Army commander. (Refer to TM 43-0002-33.)

SECTION II DESCRIPTION AND DATA

1.4 GENERAL.

For description and data, see chapter 2.

SECTION III SAFETY, CARE, AND HANDLING

1.5 SAFETY.

1.5.1 Observe all safety regulations, local standing operating procedures and precautions generally applicable to ammunition. Safety rules peculiar to artillery ammunition are discussed below.

1.5.1.1 Fuzes contain extremely sensitive explosives and must be handled carefully at all times.

1.5.1.2 Disassembly of explosive components without specific authorization is prohibited.

1.5.1.3 Electrically primed ammunition must be handled very carefully when out of its packaging in work areas. Operators handling such ammunition must wear conductive safety shoes and the work area must be equipped with conductive floors or mats. Refer to AR 385-64 (U.S. Army Explosive Safety Program) and DA PAM 385-64 (Ammunition and Explosive Safety Standards) for complete precautions.

1.6 CARE AND HANDLING.

1.6.1 Do not drop, drag, throw, tumble or otherwise strike boxes containing explosive components.

1.6.2 Store ammunition in a dry, well ventilated place, protected from the direct rays of the sun and other sources of excessive heat.

1.6.3 Protect ammunition from mud, sand, moisture, frost, snow, ice, dirt, oil, grease and other foreign matter.

1.6.4 Handle unpacked ammunition carefully to prevent damage to primer, cartridge case, rotating band and fuzes.

1.6.5 Observe storage procedures outlined in chapter 4.

CHAPTER 2 DESCRIPTION AND DATA

SECTION I GENERAL

2.1 TYPES OF COMPLETE ROUNDS.

A complete round of ammunition consists of all the components required to fire a weapon once. Artillery ammunition comprises several different types (fixed, semifixed, and separate loading) designed for ease in handling and loading. The descriptive material in this chapter and the Maintenance Allocation Charts in appendix B are organized to reflect these classifications. Because of their unique maintenance requirements, 152mm ammunition, 155mm Copperhead rounds, mortar rounds and fuzes are covered separately.

2.2 IDENTIFICATION.

2.2.1 Markings. Ammunition is identified by markings on the packaging container, on the item proper, and/or on individual components. These markings include, as appropriate, National Stock Number (NSN), Department of Defense Identification Code (DODIC), caliber and type of weapon, type and model of projectile/cartridge, weight zone markings, ammunition lot number and loader's symbol, functional markings, characteristics, and other appropriate information. Ammunition is painted to protect it from deterioration. Specific colors are painted on the ammunition as a secondary means of identification.

2.2.2 Color Coding. Ammunition is color coded to identify its functioning or content. (For example, high explosive-loaded items are painted olive drab and marked with yellow lettering.) Color coding standards have been altered over the years, one reason being to achieve international standardization. This has resulted in more than one version of an item in the field; e.g., in the case of inert, practice, and training items there are three distinct generations in the field. The oldest, designated "inert," was painted black. The black color was also used on inert sections (projectiles) of fixed artillery rounds which had live, loaded cartridge cases. The second generation designated "training," or "practice," was painted blue. Training items are completely inert and practice items may or may not contain explosive sections such as propellant charges or spotting charges. Practice items containing such explosive sections are indicated by an olive drab band. The newest generation merely has the inert training items painted bronze, while practice items are blue or blue with a brown or yellow stripe.

SECTION II FIXED AMMUNITION FOR GUNS, RECOILLESS RIFLES,
AND GRENADE LAUNCHERS

2.3 DESCRIPTION.

Fixed ammunition (fig. 2-1) is designed for use in guns, recoilless rifles, and 40mm grenade launchers. It is issued completely assembled with the cartridge case (containing propelling charge and primer) permanently crimped or otherwise attached to a fused or unfuzed projectile.

2.4 DATA.

All Army-authorized fixed rounds for guns are listed in table 2-1; for recoilless rifles, in table 2-2; and for 40mm grenade launchers in table 2-3. Group numbers listed in these tables reflect authorized maintenance functions indicated in Appendix B, Section II for 01 GROUP, FIXED AMMUNITION (EXCEPT 152MM).

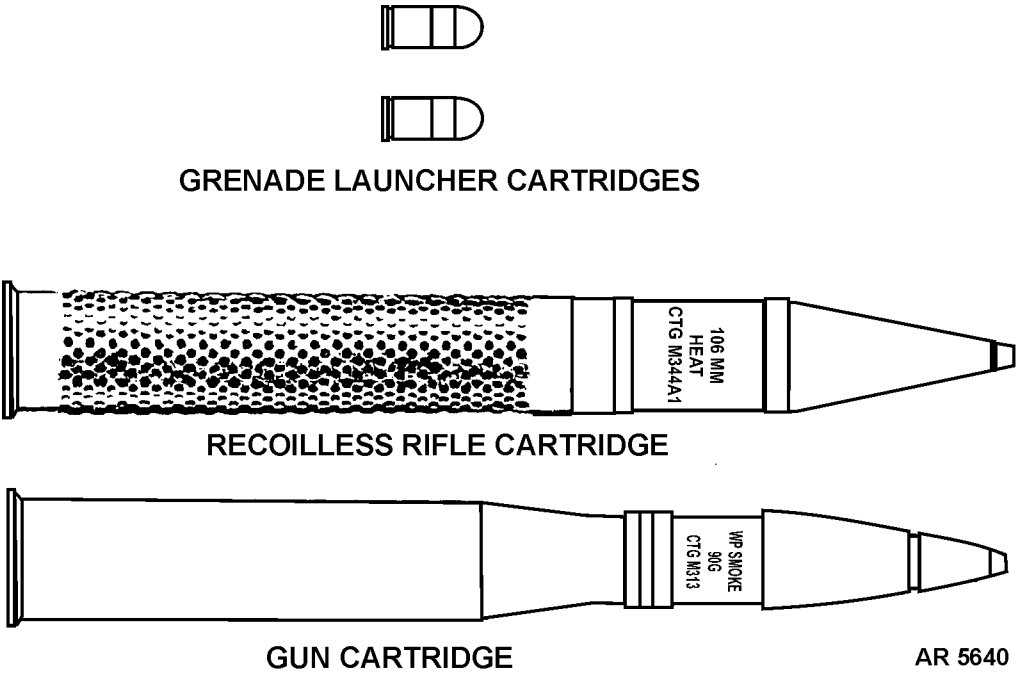


Figure 2-1. Typical Rounds of Fixed Ammunition.