

**DEPARTMENT OF THE ARMY TECHNICAL BULLETIN**  
**OPERATOR/MAINTENANCE INFORMATION**  
**ON CARTRIDGE, 35MM: TP-T, XM968**  
**AND IGNITOR, ELECTRIC, M63**

Approved for public release; distribution is unlimited.  
 Headquarters, Department of the Army, Washington, DC  
 30 September 1989

**REPORTING OF ERRORS**

You can help improve this bulletin. If you find any mistakes or know of a way to improve the procedures, please let us know. Mail your DA Form 2028 (Recommended Changes to Publications and Blank Forms), direct to Commander, US Army Armament, Munitions and Chemical Command, ATTN: AMSMC-MAY -T(D), Picatinny Arsenal, NJ 07806-5000. A reply will be furnished direct to you.

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SECTION I. INTRODUCTION

1. **Purpose.** The purpose of this bulletin is to provide supplemental operator/maintenance level Information on Cartridge, 35mm TP-T, XM968 and Ignitor, Electric, M63. These Items are assembled to an adaptor, which Is fired from the Tank Precision Gunnery Inbore Device (TPGID) mounted Inside the 120mm smooth bore M256 cannon. The XM968 is a German-produced ammunition item for the U.S. Army.
  
2. **General.** This bulletin contains data that will be Incorporated Into the following ammunition and weapon technical manuals.
  - a. TM 9-2350-264-10 Operator's Manual, Tank, Combat, Full-TrackeD: 120mm Gun, M1A1 (ABRAMS).
  - b. TM 9-1300-251-20 Organizational Maintenance Manual Artillery Ammunition for Guns, Howitzers, Mortars, Recoilless Rifles, and 40mm Grenade Launcher.
  - c. TM 9-1300-251-34 Direct Support and General .Support Maintenance Manual, Artillery Ammunition for Guns, Howitzers, Mortars, Recoilless Rifles, and 40Omm Grenade Launchers.
  - d. TM 43-0001-28 Army Ammunition Data Sheets, Artillery Ammunition for Guns, Howitzers, Mortars, Recoilless Rifles, Grenade Launchers, and Artillery Fuzes.

\*This TB supersedes TB 9-2350-354-14, dated 17 November 1988.

## SECTION II. INFORMATION MD PROCEDURES TO BE INCORPORATED INTO OPERATOR/MAINTENANCE TECHNICAL MANUALS

3. **General.** The Information In the following paragraphs will be incorporated as changes to the ammunition chapter of the effected manuals.

### 4. Description and Tabulated Data.

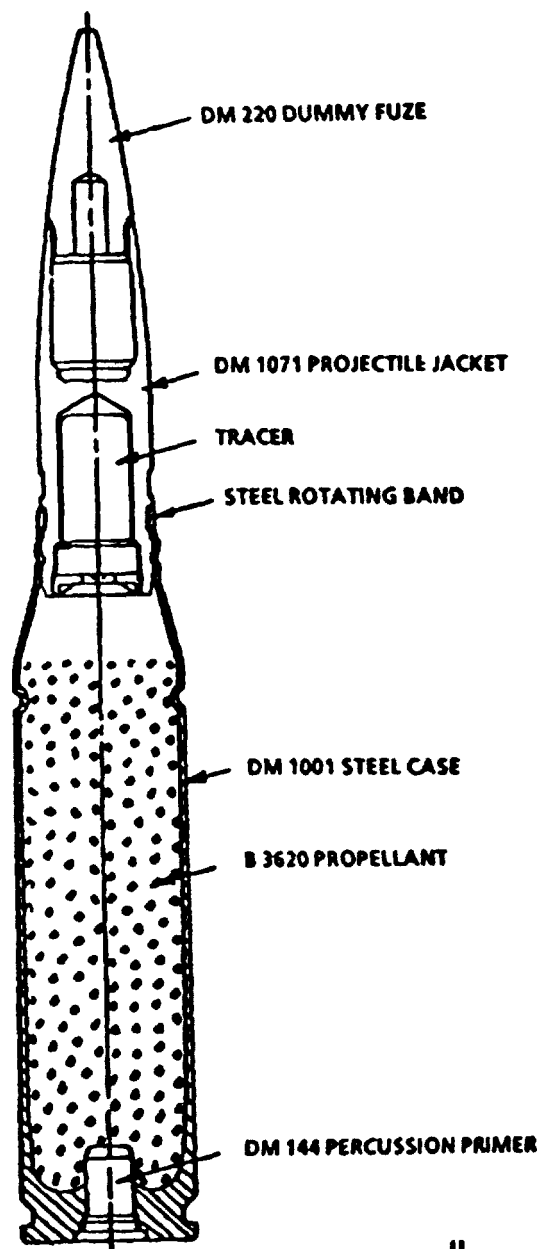
#### a. Configuration.

(1) **Cartridge XM968.** The projectile consists of a DM1071 projectile Jacket, a DM220 dummy point-detonating fuze, a tracer, and a press-sealed steel rotating band. The projectile is crimped to a DM1001 Steel Cartridge Case, which holds approximately 0.69 lb of B3620 single base propellant and is fitted with a DM144 percussion primer.

(2) **Ignitor M63.** The M63 Ignitor consists of a closing plug assembly, ignitor body assembly, and an ignitor element assembly. The Ignitor element assembly is loaded with approximately 0.006 oz. of ignitor material (40% Potassium Chlorate, 32% Lead Thiocyanate, 18% Charcoal, and 10% Egyptian Lacquer), and is assembled to the ignitor body. The closing plug assembly contains approximately 0.007 oz. of black powder, which is also assembled to the Ignitor body.

b. **Use.** The XM968 Cartridge (fig. 1) and the M63 Ignitor (fig. 2) are assembled to the Adapt ion Cartridge component of the weapon system. See Mauser Tank Precision Gunnery Inbore Device (TPGID) Operator's Manual for loading sequence. The XM968 cartridge is a target practice round for use in the 35mm TPGID system, which is mounted inside the 120mm Smooth Bore M256 Cannon. It is designed to simulate the flight characteristics of the M830 round out to 1,800 meter.

c. **Function.** The TPCID adaption cartridge is loaded into the 120mm smooth bore cannon in the normal manner. Upon initiation of the M63 ignitor in the weapon, gases from the ignitor force the piston /firing pin mechanism to strike the percussion primer of the XM968. Functioning of the percussion primer initiates the B3620 propellant; the resulting gases drive the projectile from the gun and ignite the tracer. The projectile is spin stabilized during its flight to target.



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Figure 1. Cartridge, 35mm: TP-T, XM968.

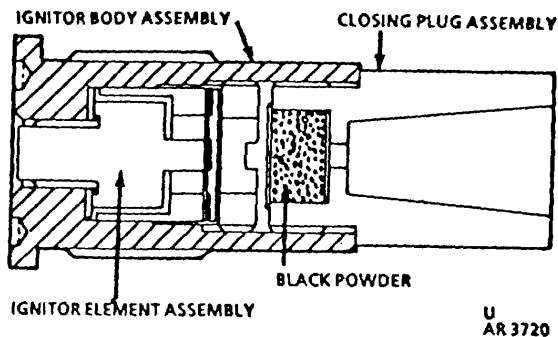


Figure 2. Ignitor, primer, M63.

d. Tabulated Data.

**XM968 Cartridge**

Type classification..... LPU, 30 May 88  
 SMR coder..... SB000  
 Federal supply code for  
 DOT hazard class .....  
     manufacturing ..... 19200  
 Complete round:  
     Type ..... Fixed, TP-T  
     Length ..... 15.24 In.  
 Weight---..... 3.46 lb  
 Cannon used with..... 35mm TPGID System  
     mounted to a 120mm  
     Smooth Bore M256  
     Cannon  
 Assembly drawing..... 12910291  
 Color..... Blue w/white mark-  
     ing on projectile  
 Temperature limits:  
 Firing:  
     Lower limit ..... -25°F (-31.7°C)  
     Upper limit ..... +100°F (+37.8°C)  
 Storage:  
     Lower limit ..... -25°F (-31.7°C)  
     Upper limit ..... +125°F (+51.7°C)  
 Packaging:  
     Packing and Marking  
         drawing ..... 12910292  
     \*Packing ..... 2 rounds per  
         styrofoam pack, 8  
         styrofoam packs  
         per metal con-  
         tainer, 10 metal  
         containers per  
         pallet.

Metal Container

Weight (w/ammo)----- 99 lb  
 Dimensions ----- ... -27.1 In. L x 7.8 in.  
     W x 7.8 In. H  
 Cube ..... 0.96 cu. ft.  
 Shipping and Storage Data:  
     DOT hazard class ..... 1.4  
 DOD storage compatibility.. C  
 DOT designation ..... Ammunition for  
     Cannon w/solid projectile,  
     Class C Explosive  
 DODAC ..... 1310-B591

M63 Ignitor.

Type classification..... NA  
 SMR code ..... SB000  
 Federal supply code for  
     manufacturing ..... 19200  
 Complete round:  
     Type..... Ignitor, Electric  
     Length ..... 1.72 In.  
     Weight ..... 1.68 oz.  
     Cannon ..... used with--35mm TPGID System  
         mounted to a 120mm  
         Smooth Bore M256  
         Cannon  
     Assembly drawing ..... 8839497  
     Color ..... Brass with black  
         marking  
 Temperature limits:  
 Firing:  
     Lower limit ..... -25°F (-31.7°C)  
     Upper limit ..... +100°F (+37.8°C)  
 Storage:  
     Lower limit ..... -25°F (-31.7°C)  
     Upper limit ..... +125°F (+51.7°C)

Packaging:

Inner packing drawing . 8837890  
 Outer packing drawing 8837897  
 \*Packing ..... 50 Ignitors per car  
 ton, 9 cartons per  
 box

Shipping and Storage Data:

DOT hazard class ..... (04) 1.2 C  
 DOD storage compatability- G  
 DOT designation Cannon Primer  
 Handle carefully  
 DODAC..... 1305. N700

Box Container:

Weight..... 75 lb  
 Dimensions..... 15 in. L x 9.375 In.  
 ..... W x 7.44 in H  
 Cube..... 0.7 cu. ft

**NOTE**

Only the XM968 is to be fired from the 35mm TPGID System.

**WARNING**

DO NOT FIRE CARTRIDGE 35MM TRAINING DEVICE UNLESS NBC OVERPRESSURE SYSTEM IS ON AND ALL HATCHES ARE CLOSED.

5. Markings.

- a. Typical markings for the XM968 cartridge are shown in figure 3.

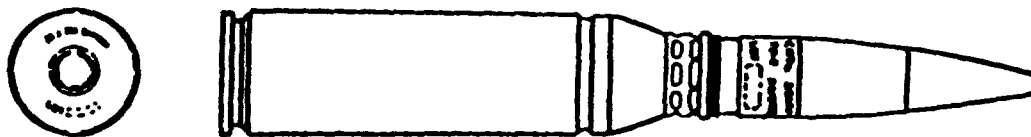
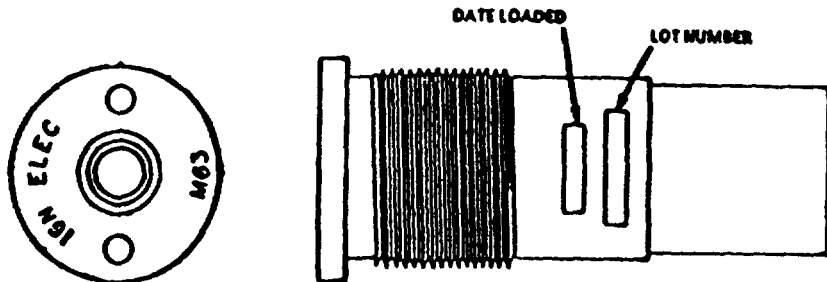


Figure 3. Typical marking for 35mm gun cartridge, XM968.

- b. Typical markings for the M63 Ignitor are shown in figure 4.



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Figure 4. Typical marking for M63 electric ignitor.

By order of the Secretary of the Army:

**CARL E. VUONO**  
General, United States Army  
Chief of Staff

Official:

**WILLIAM J. MEEHAN II**  
Brigadier General, United States Army  
The Adjutant General

Distribution:

To be distributed in accordance with DA Form 12-40 A-R Operator/Maintenance requirements for Artillery Ammunition and DA Form 12-37-R Operator/Maintenance requirements for Tank, Combat, Full-Tracked: 120MM Gun, M1A1.

RECOMMENDED CHANGES TO EQUIPMENT TECHNICAL PUBLICATIONS

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P.S.--IF YOUR OUTFIT WANTS TO KNOW ABOUT YOUR RECOMMENDATION MAKE A CARBON COPY OF THIS AND GIVE IT TO YOUR HEADQUARTERS.

