

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

AMMUNITION, GENERAL

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HEADQUARTERS, DEPARTMENT OF THE ARMY

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AMMUNITION, GENERAL

	Paragraph	Page
CHAPTER 1. GENERAL		
Section I. Introduction	1-1	1-1
II. General discussion	1-3	1-1
CHAPTER 2. EXPLOSIVE AND CHEMICAL AGENTS		
Section I. Solid propellants	2-1	2-1
II. Liquid propellants	2-7	2-5
III. Low explosives	2-11	2-6
IV. High explosives	2-15	2-11
V. Chemical agents	2-19	2-19
CHAPTER 3. SMALL ARMS AMMUNITION	3-1	3-1
4. ARTILLERY AMMUNITION		
Section I. General	4-1	4-1
II. Complete rounds	4-5	4-3
III. Fuzes	4-12	4-18
IV. Practice, dummy, blank and subcaliber ammunition	4-15	4-26
V. Precautions	4-19	4-29
VI. Packing and marking	4-21	4-30
CHAPTER 5. ROCKETS		
Section I. Introduction	5-1	5-1
II. Complete round	5-5	5-3
III. Warhead	5-7	5-3
IV. Motor	5-13	5-4
V. Launchers	5-15	5-6
VI. Fuzes	5-17	5-6
VII. Identification and packing	5-19	5-7
VIII. Shoulder-fired rockets	5-29	5-11
IX. Ground-to-ground rockets	5-23	5-13
X. Aircraft rockets	5-25	5-12
XI. Precautions in storage and handling	5-21	5-13
XII. Firing precautions	5-27	5-14
CHAPTER 6. GRENADES		
Section I. Introduction	6-1	6-1
II. Hand grenades	6-3	6-3
III. Rifle grenades	6-4	6-6
IV. Identification and packing	6-6	6-12
V. Precautions in storage and handling	6-7	6-15
VI. Precautions in firing	6-9	6-15
CHAPTER 7. LAND MINES	7-1	7-1
8. DEMOLITION MATERIALS	8-1	8-1
9. PYROTECHNICS	9-1	9-1
10. BOMBS	DELETED	
CHAPTER 11. SCATTERABLE MINES		
Section I. Introduction	11-1	11-1
II. Mine dispersing subsystem, aircraft: M56	11-3	11-1

*This manual supersedes TM 9-1900/TO 11A-1-20, June 1956 including all changes.

	Paragraph	Page
CHAPTER 12. GUIDED MISSILES	12-1	12-1
13. PROPELLANT ACTUATED DEVICES.....	13-1	13-1
APPENDIX.....		A-1
INDEX.....		Index 1

LIST OF ILLUSTRATIONS

Figure No.	Title	Page
1-1	Color identification of typical pyrotechnic items	1-4
1-2	Deleted	
1-3	Color identification and typical marking of packing boxes and fiber containers	1-11
2-1	Shapes and forms of propellant grains	2-2
2-2	Relative sizes of propellant grains	2-2
2-3	Burning of propellant grains.....	2-3
2-4	Progressive burning of propellant grains (multiperforated)	2-3
2-5	Ball powder X25	2-4
2-6	Explosive trains-artillery ammunition	2-7
2-7	Detonating wave amplified by use of a booster	2-12
2-8	Schematic arrangements of explosive train components	2-14
3-1	Typical cartridge (sectioned)	3-1
3-2	7.62-mm bullets (sectioned)	3-2
3-3	5.56-mm and caliber .50 spotter-tracer bullets (sectioned)	3-3
3-4	Caliber .30 bullets (sectioned)	3-4
3-5	7.62-mm cartridges	3-5
3-6	5.56-mm cartridges	3-6
3-7	Caliber .30 cartridges	3-7
3-8	Caliber .30 carbine and caliber .45 cartridges	3-8
3-9	Caliber .50 cartridges	3-9
3-10	20-mm cartridges	3-10
3-11	Typical 30-mm cartridges	3-11
3-12	Caliber .22 cartridges	3-12
3-13	Caliber .38 cartridges	3-13
3-14	12-gage shotgun shells	3-14
3-15	Linked 7.62-mm cartridges	3-14
3-16	Links for caliber .30 and caliber .50 ammunition	3-15
3-17	Bandoleer, magazines, filler and clips	3-16
3-18	Cartridges in 20-round cartons in ammunition box	3-17
3-19	Cartridges, link belt, cartons, bandoleers and ammunition box	3-18
3-20	Ammunition boxes in wire bound box	3-18
4-1	Types of complete rounds	4-2
4-2	High-explosive projectile	4-4
4-3	High-explosive rocket-assisted projectile	4-5
4-4	High-explosive antitank projectile.....	4-6
4-5	Burster chemical projectile	4-7
4-6	BE chemical (smoke) projectiles	4-8
4-6.1	155-mm projectile, HE, M483A1	4-8.1
4-6.2	Warhead M251	4-8.2
4-6.3	Typical CBU	4-8.2
4-6.4	Dual purpose munition	4-8.3
4-7	Illuminating projectiles	4-9
4-8	Armor-piercing projectile	4-10
4-9	Armor-piercing capped cartridge	4-11
4-10	Antipersonnel (APERS) cartridge	4-12
4-11	Canister cartridge	4-13
4-12	Flash reducer	4-13
4-13	Propellant temperature indicator with thermometer	4-14
4-14	Percussion primer	4-15
4-15	Combination electric and percussion primer	4-16
4-16	Burster charge	4-16
4-17	Booster charge.....	4-17
4-18	Base-detonating fuze	4-19
4-19	Point-initiating, base-detonating fuze	4-20
4-20	Point-detonating fuze	4-21
4-21	Impact fuze	4-22

Figure No.	Title	Page
4-22	Time fuse, powder train	4-23
4-23	Time fuse, gear trains	4-24
4-24	Proximity fuses	4-25
4-25	Concrete-piercing fuse	4-26
4-26	Recoilless rifle, target practice cartridge	4-26
4-27	Mortar target practice cartridge	4-27
4-28	(Deleted)	
4-29	(Deleted)	
4-30	(Deleted)	
4-31	(Deleted)	
4-32	(Deleted)	
4-33	(Deleted)	
4-34	Dummy projectile	4-28
4-35	Blank cartridge	4-28
4-36	(Deleted)	
4-37	Typical wooden packing box	4-31
5-1	Principles of rocket propulsion.....	5-2
5-2	Major components of rocket motor	5-4
5-3	Packaging of small, complete round rocket	5-7
5-4	Typical rocket motor container for large motor	5-8
5-5	Typical warhead container for large warhead.....	5-8
5-6	Hermetically sealed container for proximity fuze	5-9
5-7	Metal container for proximity fuze	5-9
5-8	Wooden packing box for proximity fuzes.....	5-9
5-9	Exterior and cross section of 66-mm LAW rocket.....	5-10
5-10	6mm LAW system.....	5-10
5-11	Typical 1.6-Inch rocket	5-11
5-12	Long range, ground-to-ground rocket.....	5-12
5-13	Typical 2.75-inch aircraft rocket	5-13
6-1	Representative grenades	6-2
6-2	Hand grenade types	6-4
6-3	Illuminating hand grenade	6-5
6-4	Hand grenade simulator	6-5
6-5	Grenade launcher	6-6
6-6	Grenade cartridge	6-7
6-7	Projection adapter	6-8
6-8	HEAT rifle grenade	6-9
6-9	Burning-type (colored smoke) rifle grenade	6-10
6-10	Bursting-type (WP smoke) rifle grenade.....	6-11
6-11	Typical fiber container for rifle grenade	6-12
6-12	Typical packing boxes for grenades	6-14
7-1	Representative types of land mines.....	7-2
7-2	APERS mine ready for firing-A, by observer; B, by enemy	7-3
7-3	Typical bounding-type practice APERS mine	7-4
7-3.1	Typical Nonmetallic practice APEAS mine, M17	7-4.1
7-4	Nonmetallic APERS mine	7-5
7-5	Heavy AT mine	7-5
7-6	Heavy AT mine with fuse installed (cross section)	7-6
7-7	AT mine activator.....	7-6
7-8	Nonmetallic AT mine and fuse	7-7
7-9	Light AT mine and fuse	7-8
7-10	Off-route AT mine	7-8
7-11	Practice heavy AT mine	7-9
7-12	Insert light AT mine and Inert fuze.....	7-9
7-13	Installation of a boobytrapped AT mine	7-9
7-14	Incendiary burster	7-10
7-15	Representative methods of using firing devices in boobytrap installation.....	7-11
7-16	Packing box for APERS mine.....	7-12
7-17	Packing box for APERS practice mine and replacement parts.....	7-12
7-18	Heave AT mine as shipped	7-12
7-19	Metal packing box for 8 AT mines and 8 AT mine fuzes or 12 light AT practice mine without fuzes.....	7-12
8-1	Tetryol demolition block	8-2
8-2	Plastic demolition charges.....	8-3
8-3	Composition C4 block charge.....	8-3

Figure

<i>No.</i>	<i>Title</i>	<i>Page</i>
8-4	Cratering-type block demolition charge	8-4
8-5	15-Pound shaped demolition charge	8-5
8-6	40-Pound shaped demolition charge	8-5
8-7	8-Second delay friction detonator	8-7
8-8	8-Second delay friction detonator	8-7
8-8	15-Second delay friction detonator	8-7
8-9	8-Second delay percussion detonator	8-8
8-10	15-Second delay percussion detonator	8-9
8-11	Universal explosive destructor	8-9
8-12	Explosive destructor	8-10
8-13	Friction tinge blasting fuse igniter	8-11
8-14	Weatherproof time-blasting fuse igniter	8-11
8-15	Time blasting fuse (safety fuse)	8-12
8-16	Time blasting fuse	8-12
8-17	Typical detonating cord	8-13
8-18	Delay-type demolition firing device	8-13
8-19	Pressure-type demolition firing device	8-14
8-20	Pull-release type demolition firing device	8-14
8-21	Pull-type demolition firing device	8-15
8-22	Pressure-release type demolition firing device	8-15
8-23	Release-type demolition firing device	8-16
8-24	Percussion primer	8-16
8-25	Blasting caps	8-16
8-26	Use of explosive priming adapter	8-17
8-27	Bangalore torpedo demolition kit	8-19
8-28	Earth rod explosive kit	8-20
8-29	Demolition charge assembly	8-21
8-30	Demolition priming assembly	8-21
8-31	Projected charge demolition kit-arrangements of components in case	8-22
8-32	Projected charge demolition kit-laying cable over antipersonnel mine fields	8-23
8-33	Typical projected charge (rigid type) being pushed by a medium tank	8-24
8-34	Linear projected charge	8-25
8-35	Linear projected charge (cover removed)	8-25
9-1	Types and comparative sizes of military pyrotechnics	9-2
9-2	Representative ignition train	9-4
9-3	Aircraft parachute (illuminating) flare	9-5
9-4	Aircraft parachute flare with shade	9-6
9-5	Airport flare	9-8
9-6	Surface trip flare	9-9
9-7	Guide flare	9-10
9-8	Ramjet engine igniter	9-11
9-9	Aircraft signal patterns	9-12
9-10	Handheld marine smoke signal	9-13
9-11	High drift signal	9-14
9-12	Aircraft float light	9-15
9-13	Grenade-launcher ground signal	9-16
9-14	Rocket-propelled ground signal	9-17
9-15	Air burst simulator	9-18
9-16	Boobytrap simulator	9-18
9-17	Ground burst simulator	9-19
9-18	Artillery flash simulator	9-20
9-19	Hand grenade simulator	9-20.1
9-20	Explosive simulator	9-20.1
9-21	Packing box for ground signals	9-20.2
9-22	Packing box for aircraft signals	9-20.2
10-1 thru 10-26	Deleted

Figure
No.

Title

Page

11-1	Sequence of mine functioning	11-1
11-2	Mine dispersing subsystem, aircraft: M56	11-2
11-3	Canister assembly	11-2
11-4	Mine dispersing subsystem, aircraft: M56 mounted on UH-1H helicopter (the struts, pylon assembly, pylon support, and support assembly comprise the multi-armament kit)	11-3
11-5	Shipping and storage container CNU-79/E	11-4
11-6	Mine canister shipping and storage container M602 (as used in reload kit)	11-5
11-7	Mine dispersing subsystem, M56 dispenser (DISP) control panel	11-7
12-1	Typical guided missile showing location of components	12-1
12-2	High explosive fragmentation warhead.....	12-4
12-3	Safety and arming device	12-5
13-1	Explosive embedment anchor	13-2
13-2	Mechanically fired cutter	13-3
13-3	Electrically fired cutter	13-4
13-4	Parachute ejector	13-4
13-5	Stores ejector cartridge	13-5
13-6	Fire extinguisher cartridges	13-6
13-7	Cable cutter cartridges	13-6
13-8	Escape system cartridge set	13-7
13-9	Training catapult cartridge.....	13-7
13-10	Parachute release delay cartridge	13-7

Change 5 v

CHAPTER 1

GENERAL

Section I. INTRODUCTION

1-1. Scope

This manual contains basic information on identification, classification, and physical characteristics of conventional ammunition. With TM 90 1300-206, it constitutes a source book on military ammunition.

1-2. Forms and Reports

a. Authorized Forms. DA Pam 738-750 contains instructions on use of the forms required to report incidents involving the ammunition covered in this manual. AR's 380-5, 380-6, and 380-40 cover classification of records and reports.

b. Accidents. Responsibilities and procedures for recording and reporting accidents involving injury to personnel or damage to equipment or property are contained in AR 385-40. Use of DA Form 285 is required.

c. Fire Reports. As prescribed by AR 420-90, DA Form 2324 and 2324-1 will be used to report technical information and actions relating to fires or explosions followed by fire, incident to an Army operation or activity in other than officially designated combat zones. DA Forms 2324 and 2324-1 are required in addition to the accident reports prescribed by AR 385-40.

d. Malfunction. Malfunction of Class V ammunition (e.g., bulk explosives, demolition materials, cartridges, propelling charges and projectiles) will be reported immediately by the commanding officer (or senior individual) in charge of the unit. Reports will be directed to the ammunition officer under whose supervision the ammunition is maintained or issued. The ammunition officer, after thorough investigation, will report other

than routine cases in accordance with AR 75-1. Malfunctions involving auxiliary gear or nonexplosive components, not involving contributory safety hazards (e.g., premature arming), will be reported in accordance with TB 9-1100-803-15.

e. Report of Safety Problems Involving Military Explosives or Ammunition. The Armed Services Explosives Safety Board must be kept informed of safety problems relating to development, manufacture, testing, handling, transportation, storage, maintenance, salvage and disposal of ammunition and explosives. Commanders of major commands will forward reports of such problems to the Board through the Deputy Chief of Staff for Personnel, ATTN: Director of Safety, Department of the Army, Washington, DC 20310. General schematic plans, siting plans, and specifications for construction of new facilities or major modifications to existing facilities for manufacturing, handling, transporting, storing, or testing military explosives or ammunition will be referred to the Board for review, through the Deputy Chief of Staff for Logistics and the Deputy Chief of Staff for Personnel. See AR 385-60 for further information.

f. Errors, Omissions and Recommended Changes. Reporting of errors, omissions, and recommendations for improving this publication by the individual user is encouraged. Reports should be submitted on DA Form 2028 (Recommended

Changes to Publications) and forwarded direct to: Commander, ARDEC, ATTN: SMCAR-LMB, Picatinny Arsenal, NJ 07806-5000.

Section II. GENERAL DISCUSSION

1-3. Classification

a. Ammunition is classified according to its physical characteristics. The basic types-artillery ammunition, grenades, rockets, etc.-are defined in this paragraph, in JCS Pub 1, or in AR310-25 Further classification within these basic types is

based on the following:

(1) Standardization (standard, substitute standard, or limited standard).

(2) Use (service, practice, dummy, or blank).

(3) Form (fixed, semifixed, separated, or separate loading).

(4) Kind of filler (explosive, chemical, leaflet, or inert).

b. For purposes of handling and storage, ammunition is identified by the following:

(1) Quantity-distance class.

(2) Storage compatibility group.

(3) Burning or explosive characteristics.

These categories are discussed in detail in TM 9-1300-206.

c. Further classification for handling and shipping is based on the following:

(1) Department of Transportation Shipping Regulations (see AR's 55-228 and 55-355 and Bureau of Explosives Tariff BOE 6000).

(2) Security regulations (see AR 380-5).

1-4. Identification

Army adopted items of materiel which have been type classified in accordance with AR 700-20, and component items designated reportable in accordance with Circular 310-70 are officially identified by logistical terms to facilitate supply in the field. Thus, the standard nomenclature, code symbols, etc., must be used in messages, requisitions, and records.

a. *Standard Nomenclature.* Standard nomenclature for the ammunition covered in this manual consists of an item name and a model designation. Sufficient additional information differentiates between items having the same item name. *For example:* CARTRIDGE, 152 MILLIMETER: HE, M657E2w/fuze, PD, M720E1.

b. *Federal Item Identification.* A National Item Identification Number (NIIN) is an approved item identification for an item of supply to which a Federal Stock Number (FSC) is assigned. It consists of the data adequate to establish the essential characteristics of the item which make it unique and differentiate it from other item of supply.

c. *Department of Defense Ammunition Code (DODAC).* An eight-character number divided into two parts separated by a hyphen. The first part consists of four numerals; e.g., 1320, which forms the Federal Supply Classification (FSC) code number assigned to the items covered by the ammunition generic description (see SB 700-20). The second part consists of a letter and three numerals assigned to an ammunition generic description with the FSC class; e.g.,

D548, assigned to Projectile, 155 Millimeter, Smoke, HC.

d. *NSNs and DODAC's.* The National/NATO Stock Number, e.g., NSN 1325-00-028-5298, has replaced the Federal Stock Number (FSN). There is a different NSN for each item of supply. The first four digits in an NSN are always the FSC class to which the item belongs. The next seven digits constitute the NIIN. The dash between the third and fourth digits in the NIIN serves to reduce errors in transmitting. There is a different NIIN for each item. A Department of Defense identification code (DODIC) is added as a suffix to the NSN, e.g., 1325-00o-28-5298E450. The DODAC is an eight-character representation consisting of the four-character FSC code number and a second part consisting of a letter and three digits (DODIC). Thus, for example, 1325-E450, a typical DODAC, consists of FSC class 1325 and DODIC E450. The DODIC, when suffixed to more than one NSN, indicates items are interchangeable for issue and use.

e. *Mode.* To identify a particular design, a model designation is assigned at the time the model is classified as an adopted type. This model designation, an essential part of the nomenclature, is included in the marking of the item. A model designation consists of an M followed by an Arabic numeral M1 is an example. Modifications are indicated by adding an A and the appropriate Arabic numeral. Thus M1A1 indicates the first modification of an item for which the original model designation was M1. An XM designation signifies that the item is under development. An E designates an experimental or noncertified change to an item (e.g., Propellant M26E1 indicates an experimental change to Propellant M26).

f. *Lot Number.*

(1) When ammunition is manufactured, an ammunition lot number is assigned in accord with pertinent specifications. As an essential part of the marking, this lot number is stamped or marked on the item, size permitting, as well as on all packing containers. It is required for all purposes of record, including reports on condition and functioning, and for accidents in which the ammunition is involved.

(2) To provide for the most uniform functioning, all of the components in any one lot are manufactured under as nearly identical, conditions as practicable. To obtain the greatest accuracy when firing fixed or semifixed ammunition, successive rounds should be of the same lot number; when firing separate-loading ammunition, successive rounds should consist of projectiles of one lot.

number, propelling charges of one lot number, fuzes of one lot number and primers of one lot number.

(3) An X appearing after the lot number of a cartridge case indicates a steel case. Lots reworked or renovated once have an A after the lot number; twice, a B, etc.

(4) The ammunition data card (DD 1650), a basic reference document, is a 5-by 8-inch card prepared for each lot of accepted ammunition. DD 1650 is furnished with the shipping ticket with each shipment of ammunition, except small arms ammunition. Information on the data card includes lot number, date packed, identity of components, expected pressures and Instructions. National/NATO Stock Numbers, etc.

g. Calibration of Lots. Calibration data for certain lot of artillery ammunition are computed to improve the relative accuracy of predicted fire. The data account for variations in performance due to the employment of individual ammunition-weapon combinations. TC 6-40 contains detailed information on methods of calibration and the application of calibration data.

1-5. Marking

a. The marking stenciled or stamped on ammunition includes all the information necessary for complete identification. In addition to standard nomenclature and lot numbers, marking may include such information as the model and type of fuze, and the weapon in which the item is fired. In the case of separate-loading artillery ammunition, marking includes the weight of the projectile. Except on small arms cartridges, marking does not include grade. In the case of some rounds of small caliber artillery ammunition, the muzzle velocity may appear on the packing box; otherwise, this information can be obtained from firing tables and ammunition data cards.

b. Service components or rounds that have been inserted for training purposes are marked as follows:

(1) Components such as cartridges, projectiles, fuzes, boosters, artillery primers, cartridge cases, bombs, and flares in which all explosives, incendiary, or toxic materials have been simulated by substitution of inert material are identified by Impressed INERT markings.

(2) Such components as cartridges, projectiles, fuzes, boosters, artillery primers, cartridge cases, bombs, and flares in which all explosives,

incendiaries and toxics have been omitted are identified by stamped EMPTY markings.

(3) Such components as empty projectiles, bombs, inert-loaded and empty cartridge cases, in addition to being marked INERT or EMPTY, have four holes, not smaller than one-quarter of an inch, drilled 90° apart, if size permits. Exceptions are Inert projectiles, such as those used in target practice, practice bombs, and other Inert items, the designed use of which would be Impaired by the presence of drilled holes. Such items are considered suitably identified when they are INERT marked.

(4) Inert, cloth-covered components, such as bagged propelling charges, are marked with durable, waterproof, sunfast ink.

(5) Inert mortar propellant increments have INERT cut through each increment.

1-6. Painting

Ammunition is painted to prevent rust and to provide, by the color, a means of identification or camouflage. A color coding system is employed to indicate the primary use of items of ammunition, the presence of a hazardous (explosive, flammable, irritant or toxic) filler and/or the color of tracers, dye loads and flash signals. Table 1-1 lists the generally used color schemes for ammunition.

a. Primary Use. The color indicating primary use is applied, preferable, to the entire exterior surface as the background color of the item. However, if either tactical or technical considerations indicate a different background color, primary use may be indicated by the color of the markings and/or a band of color not more than 2 inches wide. Discs, squares, or triangles of the appropriate color can also be used to indicate the primary use of the item. The most prevalent use of this exception to the rule is found in the fact that a vast majority of HIGH EXPLOSIVE loaded ammunition is simply painted olive drab and marked in yellow.

b. Hazardous Filler. Items with hazardous fillers (not indicated by the primary, use code) employ bands of color, data markings, etc., to indicate the nature of the hazard. For example, the background color of a WP smoke round may be a light green to indicate its primary use. Markings in red will indicate incendiary characteristics, and a yellow band will indicate the presence of an explosive burster.