

**NOT MEASUREMENT  
SENSITIVE**

**MIL-PRF-63017D(TM)  
23 June 2014**

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**SUPERSEDING  
MIL-PRF-63017C(TM)  
3 May 2004**

# **PERFORMANCE SPECIFICATION MANUALS, TECHNICAL: REQUIREMENTS FOR MUNITION EQUIPMENT AND AMMUNITION DATA SHEETS**

This specification is approved for use by the Department of the Army and is available for use by all Departments and Agencies of the Department of Defense.

## **1. SCOPE.**

1.1 Scope. This specification contains detailed requirements for the preparation of data sheet technical manuals for munitions equipment and ammunition. No other types or classifications of technical manuals may be prepared using this specification.

Comments, suggestions, or questions on this document should be addressed to: Commander, USAMC Logistics Support Activity, ATTN: AMXLS-AP, Redstone Arsenal, AL 35898-7466 or e-mailed to [usarmy.redstone.logsa.mbx.tmss@mail.mil](mailto:usarmy.redstone.logsa.mbx.tmss@mail.mil). Since this contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at <https://assist.dla.mil/online/start/>.

**AMSC 9472**

**AREA TMSS**

**DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.**

## MIL-PRF-63017D(TM)

1.2 Examples/Figures. Figures used in this specification are examples only. The text of this document takes precedence over the figures.

## 2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3, 4, or 5 of this specification. This section does not include documents cited in other sections of this specification or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements documents cited in section 3 of this specification, whether or not they are listed.

### 2.2 Government documents.

2.2.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

#### STANDARDS

##### DEPARTMENT OF DEFENSE

MIL-STD-38784 — Standard Practices For Manuals, Technical: General Style and Format Requirements.

(Copies of the above standard are available online at <http://quicksearch.dla.mil> or from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

2.2.2 Other Government documents, drawings, and publications. The following other Government documents, drawings, and publications form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

DODM 5200.01, Volume 1	—	Information Security Program: Overview, Classification, and Declassification
DODM 5200.01, Volume 2	—	Information Security Program: Marking of Classified Information
DODM 5200.01, Volume 3	—	Information Security Program: Protection of Classified Information
DODM 5200.01, Volume 4	—	Information Security Program: Controlled Unclassified Information (CUI)

(Copies of DOD documents are available online at <http://www.dtic.mil/>.)

2.3 Order of precedence. Unless otherwise noted herein or in the contract, in the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

## MIL-PRF-63017D(TM)

## 3. REQUIREMENTS

3.1 General. The TM shall conform to the following general requirements:

3.1.1 Style and format. Unless otherwise specified herein, the general style and format of munitions equipment and ammunition data sheet technical manuals (TM) shall be prepared in accordance with MIL-STD-38784.

3.1.2 Illustrations. Illustrations shall be integrated with text and shall be used when text alone is not adequate.

3.1.3 Security classification markings. Security classification markings, if applicable, shall be placed on the front cover and title page, in accordance with DODM 5200.01 volumes 1-4.

3.1.4 Numbering. All numbering (e.g., paragraph, table, figure, etc.) shall be in accordance with MIL-STD-38784.

3.1.5 Callouts. Callouts on illustrations shall be identified by the nomenclature.

3.1.6 Divisions. The TM shall be divided into volume, chapter, section, and paragraph sequence, as applicable, in accordance with MIL-STD-38784.

3.2 Content and arrangement. The TM shall consist of the following:

3.2.1 Front matter. As applicable, front matter shall consist of the following in the order specified:

3.2.1.1 Front Cover. The front cover shall contain the publication number, publication type, publication title, supersedure notice (revisions only), distribution statement, export control notice warning (when required), destruction notice (when required), service nomenclature, and publication date. See figure 1.

3.2.1.2 Change transmittal page. A change transmittal page shall be prepared for each change and shall list all pages that have been changed, added, or deleted. See figure 2.

3.2.1.3 List of effective pages. A change transmittal page shall be prepared for the basic version and each subsequent change or revision. The list of effective pages shall contain the total number of pages in the publication, a complete list of all pages, and the latest change number of each page. See figure 3.

3.2.1.4 Title page. The title page shall include the reporting errors and recommending improvements statement (see 3.2.1.3.1) and applicable data shown in figure 4.

3.2.1.5 Reporting errors and recommending improvements statement. A reporting errors and recommending improvements statement shall be placed on the title page verbatim as shown below.

## MIL-PRF-63017D(TM)

**“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 this publication, please let us know. Mail your letter or DA Form 2028 (Recommended Changes to Publications and Blank Forms) located in the back of this manual directly to: (the address of proponent). You may also send in your recommended changes via electronic mail or by fax. Our e-mail address is (insert e-mail address of proponent). Our fax number is (insert fax number of proponent). A reply will be furnished to you.”

3.2.1.6 Table of contents. The table of contents shall be prepared in accordance with MIL-STD-38784. When space permits, the table of contents shall begin below the Reporting Errors and Recommending Improvements statement. If space does not permit, it shall begin on the next page.

3.2.1.7 Introduction. If the introduction is included in the front matter, it shall be placed on the first page after the table of contents. If the table of contents ends on a left-facing page, the reverse right-facing page shall be blank and the introduction paragraph shall begin on the next left-facing page. A statement similar to the following shall be included in the introduction:

“This manual is a reference document published as an aid in training, familiarization, and identification of (insert commodity item). This manual is not authorization for requisitioning, stockage, maintenance, or issue of the material described herein.”

3.2.2 Data sheets. Information on data sheets (see 6.4.2) shall contain, as applicable, the following information. NOTE: “a” is applicable to ammunition data sheets only; “e” is applicable to munitions equipment data sheets only; no code is applicable to both (see figures 5 and 6). Ammunition data sheets shall be separated into chapters based on commodity and each data sheet chapter shall have a title page.

- a. Photograph or line drawing of the munitions equipment or ammunition item
- b. Type classification (a).
- c. Use
- d. Description
- e. Functioning
- f. Differences between models
- g. Tabulated data
- h. Performance (a)
- i. Temperature limits (a)

## MIL-PRF-63017D(TM)

- j. Drawings (a)
- k. Unit of issue (a)
- l. Packing data (a)
- m. Shipping and storage data
- n. Limitations (a)
- o. References (a)
- p. Remarks (a)
- q. Associated equipment (e)
- r. Kits (e)

3.2.2.1 Photograph or line drawing of the munitions equipment or ammunition item. As required by the acquiring activity, a photograph or line drawing of the item shall be included on the data sheet.

3.2.2.2 Type classification. The type classification paragraph shall be the first paragraph of the ammunition data sheet and shall list the type classification (see 6.4.4) of the item.

3.2.2.3 Use. This paragraph shall describe the purpose for which the item is used.

3.2.2.4 Description. The description paragraph shall include the general characteristics, capabilities, and features of the item. Color coding information for ammunition items shall be included, as applicable.

3.2.2.5 Functioning. This paragraph shall include a simple description of how the item functions. The description shall explain what functional affect it has on other components and shall be presented by simple text and illustrations, as appropriate.

3.2.2.6 Differences between models. This paragraph shall identify differences in configuration or models when more than one model is described. Differences shall be clearly identified.

3.2.2.7 Tabulated data. This paragraph shall provide descriptive data of the item and its components. Ammunition items shall have: model, dimensions, weight, color, type of explosive used, packaging, national stock number (NSN), and Department of Defense Ammunition Code (DODAC). Munitions equipment shall have: Ammunition Peculiar Equipment (APE) number, unit of issue, installation data, utilities required, and production capacity.

3.2.2.8 Performance. This paragraph shall present information describing the normal use or operation of the item (e.g., chamber pressure, velocity, maximum range, trace, etc.).

3.2.2.9 Temperature limits. This paragraph shall list the firing and storage temperature limits of the item.

## MIL-PRF-63017D(TM)

3.2.2.10 Drawings. This paragraph shall list all applicable ammunition drawings, by number only of the ammunition end-item, components, and packaging configurations.

3.2.2.11 Unit of issue. This paragraph shall list the smallest quantity of the item authorized for issue.

3.2.2.12 Packing data. This paragraph shall provide the dimensions (length, width, height, and cube) and weight of a full depot pack configuration of the item.

3.2.2.13 Shipping and storage data. For ammunition items, this paragraph shall list all applicable shipping and storage data such as hazard classification and storage compatibility group, United Nations (UN) identification number and shipping name, and Department of Transportation (DOT) class. For munitions equipment it shall list the physical dimensions, weight, and cube of the equipment.

3.2.2.14 Limitations. This paragraph shall list any restriction, warning, or weakness associated with the item.

3.2.2.15 References. This paragraph shall be a list, citing only publication numbers, of all related technical manuals (TM), field manuals (FM), and supply catalogs (SC).

3.2.2.16 Remarks. This paragraph shall provide any other information deemed pertinent.

3.2.2.17 Associated equipment. This paragraph shall list any additional APE that is used in conjunction with the described munitions equipment.

3.2.2.18 Kits. This paragraph shall list any APE accessory equipment not normally supplied with the end item.

3.2.3 Appendices. Ammunition data sheet TMs shall contain a reference appendix that lists all publications referenced in the TM and any other appendices as specified by the acquiring activity. Munitions equipment data sheet TMs shall contain the following appendices.

3.2.3.1 Appendix A - deleted items. This appendix shall appear in all editions subsequent to the first edition. It shall consist of an alphabetical list of all items deleted from this TM as a result of a technical committee action or materiel status record (MSR). On first editions which contain no deleted items, Appendix A shall contain the following statement: "Since this is the first edition, there are no deleted items." (see figure 7).

3.2.3.2 Appendix B - operational index. When specified by the acquiring activity, the TM shall contain an operational appendix. It shall provide a cross-reference between ammunition items and the APE items needed for function testing, inspecting, maintenance, renovation, and demilitarization of the ammunition item. This appendix may consist of one or more sections (see figure 8).

3.2.3.3 Appendix C - Preparation and handling of ammunition peculiar equipment for shipment and storage. When specified by the acquiring activity, the TM shall contain a preparation and handling of APE for shipment and storage appendix. It shall contain an introduction (scope and definitions), general requirements (program requirements, levels of protection, and basic requirements), and detailed requirements section, as applicable, and requirements for checking for and removal of explosive contamination (see figure 9).

## MIL-PRF-63017D(TM)

3.2.4 Rear matter. As applicable, material following the last text page shall consist of the following in the order specified:

3.2.4.1 Index. As required by the acquiring activity, an alphabetical index shall be prepared in accordance with MIL-STD-38784.

3.2.4.2 Reporting errors and recommending improvements DA Form 2028. One filled-out sample copy of DA Form 2028 and a minimum of three blank DA Forms 2028 with the TM number, date, title, and proponent's address shall be included.

3.2.4.3 Authentication page. The authentication page shall be the last printed text page of the TM.

3.2.4.4 Back cover. The outside back cover shall be blank, except for the Publication Identification Number (PIN) placed in the lower right-hand corner.

3.3 Classified material. All classified material shall be safeguarded, packaged, and marked in accordance with DODM 5200.01, volumes 1-4.

#### 4. VERIFICATION

4.1 Verification. Verification shall be as specified by the acquiring activity in the contract or order (see 6.2).

#### 5. PACKAGING

5.1 Packaging. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When actual packaging of material is to be performed by DoD or in-house contractor personnel, these personnel need to contact the responsible packaging activity to ascertain packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activity within the Military Service or Defense Agency, or within the military service's system commands. Packaging data retrieval is available from the managing Military Department's or Defense Agency's automated packaging files, CD-ROM products, or by contacting the responsible packaging activity.

#### 6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory).

6.1 Intended use. This specification is used to write/acquire munition equipment and ammunition data sheet TMs.

6.2 Acquisition requirements. Acquisition documents should specify the following items:

- a. Title, number, and date of this specification.
- b. Title and publication number of the technical manual (see 3.2.1.1).
- c. Type of reproducible copy desired.

## MIL-PRF-63017D(TM)

- d. Size of TM.
- e. Verification requirements (see 4.1).
- f. Packaging requirements (see 5.1).
- g. Completed Content/Format Selection Summary (Appendix).

6.3 Technical manuals. The requirement for technical manuals should be considered when this specification is applied on a contract. If technical manuals are required, specifications and standards that have been authorized and assigned an Acquisition Management System Control (AMSC) Number must be listed on a separate Contract Data Requirements List (DD Form 1423) which is included as an exhibit to the contract. The technical manuals must be acquired under separate contract line item in the contract.

#### 6.4 Definitions.

6.4.1 Basis of issue. Authority that prescribes the number of items to be issued to an individual, a unit, a military organization, or for a unit piece of equipment.

6.4.2 Data sheet. A complete unit in a TM containing text and illustration(s) to provide reference information on one commodity item.

6.4.3 Department of Defense Ammunition Code (DODAC). A code comprised of the Federal Supply Class and the Department of Defense Identification Code.

6.4.4 Type classification. A designation used by the Army that indicates acceptability for service use.

6.4.5 Unit of issue. The smallest quantity of the item authorized for issue.

6.5 Acronyms. The following acronyms are used in this specification:

AMSC	—	Acquisition Management System Control
APE	—	Ammunition Peculiar Equipment
DODAC	—	Department of Defense Ammunition Code
DOT	—	Department of Transportation
FM	—	Field Manual
MSR	—	Materiel Status Report
NSN	—	National Stock Number
PIN	—	Publication Identification Number
SC	—	Supply Catalog
TM	—	Technical Manual
UN	—	United Nations



MIL-PRF-63017D(TM)

6.6 Subject term (key word) listing.

APE  
DODAC  
Explosives  
Firing

6.7 Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent of the changes.

MIL-PRF-63017D(TM)

<div><b>TM 43-0001-28</b></div> <hr/> <div>TECHNICAL MANUAL</div> <div><b>ARMY AMMUNITION DATA SHEETS</b></div> <div><b>ARTILLERY AMMUNITION: GUNS, HOWITZERS, MORTARS, RECOILLESS RIFLES, GRENADE LAUNCHERS, AND ARTILLERY FUZES (FEDERAL SUPPLY CLASS 1310, 1315, 1320, 1390)</b></div> <div><p><b>SUPERSEDURE NOTICE</b> - TM 43-0001-28 dated 15 July 2011 supersedes TM 43-0001-28 dated 20 April 2006, including all changes.</p><p><b>DISTRIBUTION STATEMENT D</b> - Distribution authorized to the Department of Defense and U.S. DoD contractors only for Vulnerability Information, as determined on 12 May 2011. Other requests shall be referred to U.S. Army, RDECOM, ARDEC, Attn: RDAR-EIL-LA, Picatinny Arsenal, NJ 07806-5000.</p><p><b>WARNING</b> - This document contains technical data whose export is restricted by the Arms Export Control Act (Title 22, U.S.C., Sec 2751, et seq.) or the Export Administration Act of 1979 (Title 50, U.S.C., App. 2401, et seq.), as amended. Violations of these export laws are subject to severe criminal penalties. Disseminate in accordance with provisions of DoD Directive 5230.25.</p><p><b>DESTRUCTION NOTICE</b> - Destroy by any means possible to prevent disclosure of contents or reconstruction of the document.</p><div><b>HEADQUARTERS, DEPARTMENT OF THE ARMY</b></div><hr/><div><b>15 JULY 2011</b></div></div>
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FIGURE 1. Example of a front cover.

MIL-PRF-63017D(TM)

	TM 43-0001-28 C4
CHANGE ) ) NO. 4    )	HEADQUARTERS DEPARTMENT OF THE ARMY WASHINGTON, DC, 30 December 2013
 <b>Army Ammunition Data Sheets</b>  <b>Artillery Ammunition: Guns, Howitzers, Mortars, Recoilless Rifles, Grenade Launchers, and Artillery Fuzes</b> <b>(Federal Supply Class 1310, 1315, 1320, 1390)</b>	
 <u>DISTRIBUTION STATEMENT D</u> - Distribution authorized to the Department of Defense and U.S. DoD contractors only for Vulnerability Information, as determined on 12 May 2011. Other requests shall be referred to U.S. Army, RDECOM, ARDEC, Attn: RDAR-EIL-LA, Picatinny Arsenal, NJ 07806-5000. <u>WARNING</u> - This document contains technical data whose export is restricted by the Arms Export Control Act (Title 22, U.S.C., Sec 2751, et seq.) or the Export Administration Act of 1979 (Title 50, U.S.C., App. 2401, et seq.), as amended. Violations of these export laws are subject to severe criminal penalties. Disseminate in accordance with provisions of DoD Directive 5230.25. <u>DESTRUCTION NOTICE</u> - Destroy by any means possible to prevent disclosure of contents or reconstruction of the document.	
TM 43-0001-28, 15 July 2011, is changed as follows:	
<ol style="list-style-type: none"> <li>1. File this change sheet in front of the publication for reference purposes.</li> <li>2. Remove old pages and insert new pages as indicated below.</li> <li>3. New or changed material is indicated by a vertical bar in the outer margin of the page.</li> <li>4. Added or revised illustrations are indicated by a vertical bar adjacent to the illustration identification number.</li> <li>5. Added or revised appendixes are indicated by a vertical bar adjacent to the appendix title.</li> </ol>	
<u>Remove Pages</u>	<u>Insert Pages</u>
A and B	A and B
i thru iv	i thru iv
2-13 and 2-14	2-13 and 2-14
None	2-101 and 2-102
4-1 thru 4-6	4-1 thru 4-6
4-89 and 4-90	4-89 and 4-90
5-19 and 5-20	5-19 and 5-20
8-15 and 8-16	8-15 and 8-16
10-33 and 10-34	10-33 and 10-34

FIGURE 2. Example of a change transmittal sheet.

## MIL-PRF-63017D(TM)

TM 43-0001-28

**LIST OF EFFECTIVE PAGES**

INSERT LATEST CHANGED PAGES. DESTROY SUPERSEDED PAGES.

NOTE The portion of the text affected by the changes is indicated by a vertical line in the outer margins of the page. Changes to illustrations are indicated by a vertical line adjacent to the identification number.

Dates of issue for original and changed pages are:

Original .....	0 .....	15 July 2011	Change .....	3 .....	8 August 2012
Change .....	1 .....	4 November 2011	Change .....	4 .....	30 December 2013
Change .....	2 .....	16 March 2012			

TOTAL NUMBER OF PAGES IN THIS PUBLICATION IS 993, CONSISTING OF THE FOLLOWING:

Page No.	*Change No.	Page No.	*Change No.	Page No.	*Change No.
Front Cover .....	0	3-89 thru 112 .....	0	11-17 .....	1
i .....	1	4-1 thru 4-6 .....	4	11-18 and 11-19 .....	0
ii and iii .....	4	4-7 thru 4-25 .....	0	11-20 .....	1
iv .....	0	4-26 .....	1	11-21 thru 11-46 .....	0
v and vi .....	2	4-27 thru 4-88 .....	0	12-1 and 12-2 .....	2
vii .....	0	4-89 and 4-90 .....	4	12-3 thru 12-25 .....	0
viii .....	3	4-91 thru 4-124 .....	0	12-26 .....	1
ix .....	2	5-1 and 5-2 .....	0	12-27 thru 12-58 .....	0
x .....	0	5-3 .....	1		
1-1 .....	0	5-4 .....	3		
1-2 .....	1	5-5 thru 5-18 .....	0		
1-3 and 1-4 .....	0	5-19 .....	4		
1-5 .....	3	5-20 thru 5-33 .....	0		
1-6 thru 1-32 .....	0	5-34 and 5-35 .....	3		
1-33 .....	1	5-36 thru 5-76 .....	0		
1-34 thru 46 .....	0	5-77 .....	1		
2-1 thru 2-12 .....	0	5-78 thru 5-80 .....	0		
2-13 .....	4	6-1 thru 6-12 .....	0		
2-14 thru 2-74 .....	0	6-13 .....	1		
2-75 and 2-76 .....	1	6-14 thru 6-68 .....	0		
2-77 thru 2-80 .....	0	7-1 thru 7-26 .....	0		
2-81 and 2-82 .....	1	7-27 thru 7-30 .....	2		
2-83 thru 2-87 .....	0	7-31 thru 7-54 .....	0		
2-88 thru 2-90 .....	3	8-1 thru 11 .....	0		
2-91 and 92 .....	0	8-12 .....	1		
2-93 and 2-94 .....	2	8-13 and 8-14 .....	0		
2-95 thru 2-98 .....	1	8-15 .....	4		
2-99 .....	0	8-16 thru 8-72 .....	0		
2-100 .....	3	8-73 .....	1		
2-101 and 2-102 .....	4	8-74 thru 8-132 .....	0		
3-1 .....	0	9-1 thru 9-82 .....	0		
3-2 .....	1	10-1 thru 10-33 .....	0		
3-3 and 3-4 .....	0	10-34 .....	4		
3-5 .....	1	10-35 thru 10-40 .....	0		
3-6 thru 3-26 .....	0	10-41 and 10-42 .....	2		
3-27 and 3-28 .....	2	10-43 and 10-44 .....	3		
3-29 thru 3-84 .....	0	10-45 thru 10-78 .....	0		
3-85 thru 3-88 .....	1	11-1 thru 11-16 .....	0		

\*Zero in this column indicates an original page

Change 4 A

FIGURE 3. Example of a list of effective pages.

## MIL-PRF-63017D(TM)

		TM 43-0001-28
<b>TECHNICAL MANUAL</b>		<b>HEADQUARTERS</b>
<b>No. 43-0001-28</b>		<b>DEPARTMENT OF THE ARMY</b>
		<b>Washington, DC, 15 July 2011</b>
<b>Army Ammunition Data Sheets</b>		
<b>Artillery Ammunition: Guns, Howitzers, Mortars, Recoilless Rifles, Grenade Launchers, and Artillery Fuzes (Federal Supply Class 1310, 1315, 1320, 1390)</b>		
REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS		
<p>You can help improve this manual. If you find any mistakes or if you know of a way to improve this publication, please let us know. Mail your letter or DA Form 2028 (Recommended Changes to Publications and Blank Forms) located in the back of this manual directly to Logistics Research and Engineering Directorate (RDAR-EIL-LS), U.S. Army RDECOM, Armament Research, Development and Engineering Center, Picatinny Arsenal, NJ 07806-5000. You may also send in your recommended changes via electronic mail or by fax. Our e-mail address is <a href="mailto:usarmy.pica.ardec.list.publication-change-notification@mail.mil">usarmy.pica.ardec.list.publication-change-notification@mail.mil</a>. Our fax number is DSN 880-4633, Commercial (973) 724-4633. A reply will be furnished to you.</p>		
		Page
CHAPTER 1	INTRODUCTION . . . . .	1-1
	1.1 Purpose . . . . .	1-1
	1.2 Scope . . . . .	1-1
	1.3 DOD Hazard Classification/Division and Compatibility Group . . . . .	1-1
	1.4 Metric Conversion Chart . . . . .	1-2
	1.5 Key to Abbreviations and Symbols . . . . .	1-3
CHAPTER 2	ARTILLERY AMMUNITION FOR GUNS	
	Cartridge, 40 Millimeter: AP-T, M81A1 and M81 . . . . .	2-3
	Cartridge, 76 Millimeter: AP-T, M339 . . . . .	2-5
	Cartridge, 76 Millimeter: Blank, M355A2 . . . . .	2-7
	Cartridge, 76 Millimeter: Canister, M363 . . . . .	2-9
	Cartridge, 40 Millimeter: Dummy, M25 . . . . .	2-11
	Cartridge, 40 Millimeter: Dummy, M851 (For SGT YORK) . . . . .	2-13
	Cartridge, 76 Millimeter: HE, M352 . . . . .	2-15
	Cartridge, 40 Millimeter: HE, M822 with Fuze Proximity, M766 . . . . .	2-17
	Cartridge, 40 Millimeter: HE-T, SD, MK11, MK2, MV2870 and SD, M3 or M3A1, MV2700 . . . . .	2-19
	Cartridge, 76 Millimeter: HEAT-T, M496 . . . . .	2-21
	Cartridge, 40 Millimeter: HEI, M811 with Point Detonating Fuze M761 (For SGT YORK) . . . . .	2-23
	Cartridge, 40 Millimeter: HEI-T, SD, MK11, MK2, MV2890 . . . . .	2-25
	Cartridge, 76 Millimeter: HVAP-DS-T, M331A1 and M331A2 . . . . .	2-27
	Cartridge, 40 Millimeter: HVCC, M1001 . . . . .	2-29
	Cartridge, 40 Millimeter: Practice, Day/Night (D/N), XM1110 . . . . .	2-31
	Cartridge, 40 Millimeter: Tactical, CS Cartridge, M651 . . . . .	2-33
	Cartridge, 37 Millimeter: TP, M63, MOD 1 . . . . .	2-35
	Cartridge, 40 Millimeter: TP, M813 . . . . .	2-37
	Cartridge, 40 Millimeter: TP-T, M91 . . . . .	2-39
	Cartridge, 35 Millimeter: TP-T, M968 with Igniter, Electric, M63 . . . . .	2-41

FIGURE 4. Example of a title page.

## MIL-PRF-63017D(TM)

CARTRIDGE, 40MM: NON-LETHAL, M1006		TM 43-0001-28																																								
<p><b>TYPE CLASSIFICATION:</b></p> <p>STD April 1999.</p> <p><b>USE:</b></p> <p>Cartridge, 40mm: Non-Lethal, M1006 is used to incapacitate personnel without penetrating the person's body. It is used for riot control, policing and peace keeping situations. It is used with the M203 40mm Grenade Launcher (attached below the M16 series rifle and the M4 carbine barrels).</p> <p><b>DESCRIPTION:</b></p> <p>The cartridge is a fixed round of ammunition consisting of a projectile assembly and a cartridge case assembly. The projectile has a foam rubber nose and a high density plastic body. The projectile assembly is attached to the cartridge case by an adhesive. The cartridge case is a hollow bi-chambered plastic cylinder. Into the base of the cartridge case is pressed an aluminum insert which holds a brass .38 caliber case. The brass case holds the propellant and primer.</p> <p><b>FUNCTIONING:</b></p> <p>The weapon pin strikes the primer igniting the propelling charge. The burning propelling charge generates sufficient pressure to release the expanding propellant gases through the vent hole into the low-pressure chamber.</p>																																										
<p><b>TABULATED DATA:</b></p> <table border="0"> <tr> <td>NSN .....</td> <td>1310-01-452-1190</td> </tr> <tr> <td>DODAC .....</td> <td>1310-BA06</td> </tr> <tr> <td>Complete Round:</td> <td></td> </tr> <tr> <td>  Type .....</td> <td>Non-Lethal</td> </tr> <tr> <td>  Weight .....</td> <td>0.15 lb (0.068 kg)</td> </tr> <tr> <td>  Length .....</td> <td>3.95 in. (10.033 mm)</td> </tr> <tr> <td>  Weapon used with .....</td> <td>40mm grenade launchers M79, M203 (attached to M16 series rifle, and M4 carbines)</td> </tr> <tr> <td>  Ogive make-up .....</td> <td>Foam rubber</td> </tr> <tr> <td>  Color .....</td> <td>Green</td> </tr> <tr> <td>Projectile:</td> <td></td> </tr> <tr> <td>  Body material .....</td> <td>High density plastic</td> </tr> <tr> <td>  Color .....</td> <td>Black</td> </tr> <tr> <td>  Filler and weight .....</td> <td>None</td> </tr> <tr> <td>  Fuze .....</td> <td>None</td> </tr> <tr> <td>  Weight .....</td> <td>0.066 lb (30 g)</td> </tr> <tr> <td>Propelling Charge:</td> <td></td> </tr> <tr> <td>  Cartridge case .....</td> <td>M212</td> </tr> <tr> <td>  Propellant .....</td> <td>Winchester mix, 130 mg (0.0003 lb)</td> </tr> <tr> <td colspan="2"><b>PERFORMANCE:</b></td> </tr> <tr> <td>Muzzle velocity .....</td> <td>265 + 20 fps (81 + 6 mps)</td> </tr> </table>			NSN .....	1310-01-452-1190	DODAC .....	1310-BA06	Complete Round:		Type .....	Non-Lethal	Weight .....	0.15 lb (0.068 kg)	Length .....	3.95 in. (10.033 mm)	Weapon used with .....	40mm grenade launchers M79, M203 (attached to M16 series rifle, and M4 carbines)	Ogive make-up .....	Foam rubber	Color .....	Green	Projectile:		Body material .....	High density plastic	Color .....	Black	Filler and weight .....	None	Fuze .....	None	Weight .....	0.066 lb (30 g)	Propelling Charge:		Cartridge case .....	M212	Propellant .....	Winchester mix, 130 mg (0.0003 lb)	<b>PERFORMANCE:</b>		Muzzle velocity .....	265 + 20 fps (81 + 6 mps)
NSN .....	1310-01-452-1190																																									
DODAC .....	1310-BA06																																									
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Propellant .....	Winchester mix, 130 mg (0.0003 lb)																																									
<b>PERFORMANCE:</b>																																										
Muzzle velocity .....	265 + 20 fps (81 + 6 mps)																																									
		4-31																																								

FIGURE 5. Example of an ammunition data sheet.



## MIL-PRF-63017D(TM)

<b>TM 43-0001-28</b>	
<u>TEMPERATURE LIMITS:</u>	
Firing:	
Lower limit .....	0 °F (-18 °C)
Upper limit .....	+125 °F (+52 °C)
Storage:	
Lower limit .....	-65 °F (-54 °C)
Upper limit .....	+125 °F (+52 °C)
<u>DRAWINGS:</u>	
Cartridge .....	12986143
Packing:	
Inner .....	9209204
Outer .....	9209205
<u>UNIT OF ISSUE:</u>	
Packing .....	22 rounds per M2A1 metal box; 2 metal boxes (44 rounds) per wirebound wooden box
<u>PACKING DATA:</u>	
Packing Box:	
Dimensions .....	14-5/8 x 12-13/16 x 9-1/8 in. (371.48 x 325.44 x 231.78 mm)
Cube .....	1 cu ft (0.028 cu m)
Weight .....	32 lb (14.515 kg)
<u>SHIPPING AND STORAGE DATA:</u>	
DOD hazard class/division .....	1.4
Compatibility group .....	S
Proper shipping name .....	CARTRIDGES FOR WEAPONS, INERT PROJECTILES
UN number .....	0339
<u>REFERENCES:</u>	
TM 9-1010-221-10	
TM 9-1310-205-10	
TM 9-1300-251-23&P	
<b>4-32</b>	

FIGURE 5. Example of an ammunition data sheet - Continued.

MIL-PRF-63017D(TM)

TM 43-0001-47

## APE 1028 --- SYSTEM, VACUUM COLLECTION

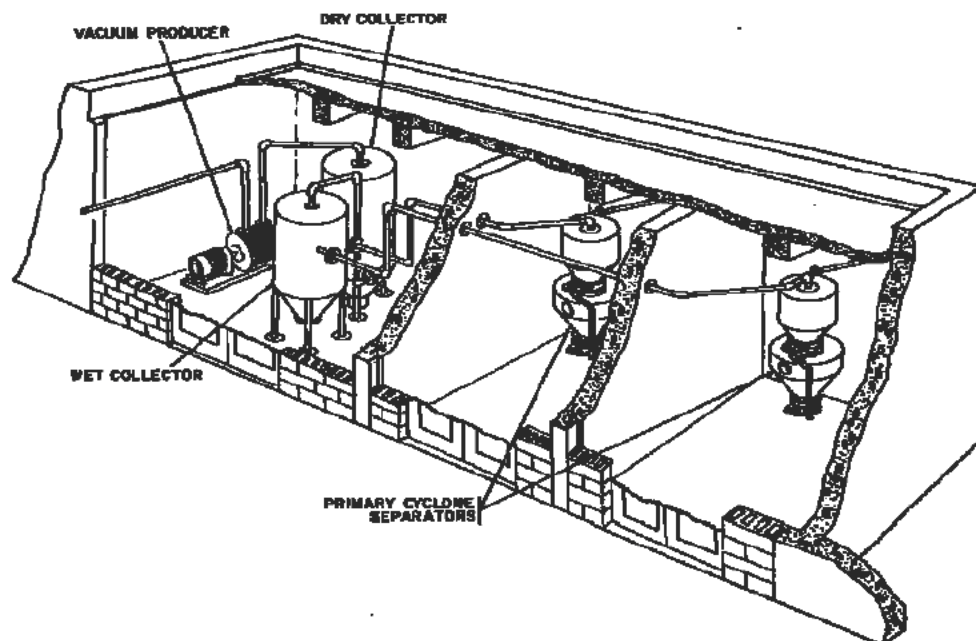


Figure 2-12.

**Use:**

The vacuum collection system was developed to convey propellant from maintenance operations to a powder collection building.

**Description:**

The component parts of this system are a vacuum producer; a primary separator and storage hopper; a wet type explosives separator; and a dry type explosives separator. All components are connected by stainless steel piping. This is installed equipment requiring special layouts adaptable to various locations.

**Difference Between Models:**

Original design

**Tabulated Data:**

APE No. .... 10280000  
Unit of Issue ..... Each

**Installation Data:**

Length ..... not available  
Width ..... dependent on  
plant layout  
Height ..... not available  
Weight ..... not available

**Utilities Required:**

220 vac, 3 phase, 60 Hz, 27 amp.

**Installation Data:**

Length ..... not available  
Width ..... dependent on  
plant layout

2-28

FIGURE 6. Example of a munitions equipment data sheet.



## MIL-PRF-63017D(TM)

TM 43-0001-47

Height .....	not available	HOPPER	
Weight .....	not available	Length .....	84 in.
Utilities Required:		Width .....	24 in.
220 vac, 3 phase, 60 Hz, 27 amp.		Height .....	24 in.
Production Capacity:		Cube .....	28 cu. ft.
Not applicable.		Weight .....	750 lb.
Shipping Data:		PIPING	
EXHAUSTER		Length .....	14 ft.
Length .....	72 in.	Width .....	4 ft.
Width .....	36 in.	Height .....	4 ft.
Height .....	24 in.	Cube .....	224 cu. ft.
Cube .....	36 cu. ft.	Weight .....	1200 lb.
Weight .....	2000 lb.	Associated Equipment:	
WET COLLECTOR		None.	
Length .....	72 in.	Kits:	
Width .....	36 in.	1028E001	KIT, Exhauster, Centrifugal
Height .....	36 in.	1028E003	KIT, Control System,
Cube .....	54 cu.ft.		Propellant Discharge,
Weight .....	750 lb.		Pneumatic
DRY COLLECTOR			
Length .....	108 in.		
Width .....	36 in.		
Height .....	36 in.		
Cube .....	81 cu. ft.		
Weight .....	1000 lb.		

2-29

FIGURE 6. Example of a munitions equipment data sheet - Continued.

## MIL-PRF-63017D(TM)

TM 43-0001-47

## APPENDIX A

### DELETED ITEMS

The following Ammunition Peculiar Equipment are deleted items. They are not to be used in ammunition operations; they are superseded, obsolete or are no longer required.

APE Number	Items
APE 1005	Primer Press Machine
APE 1006	Debugging Machine
APE 1007	Heat Exchanger
APE 1008	Ammunition Projectile Cart
APE 1008A	Ammunition Complete Round Cart
APE 1008B	Ammunition Small Items Cart
APE 1009M4	Furnace, Deactivation
APE 1012	Flashing Furnace Explosive
APE 1013	Washout Plant Pickling Unit,
APE 1014	6-Tank Pickling Unit, 9-Tank
APE 1015	Deactivation Furnace Facility
APE 1016	Washout Facility
APE 1017	Bomb Head Break Off Machine
APE 1018	Propellant Beaker
APE 1019	Bomb Washout Fixture
APE 1020	Paint Spray Booth
APE 1023	Fuze Removing Machine, 37-MM M56 PD Fuze
APE 1026	Priming and Depriming Machine, Fulcrum Lever Type
APE 1027	Machine Powered Strapping
APE 1030M1	Warm Air Makeup System
APE 1031	Marking Machine Box
APE 1033	Repair Machine Doors,
APE 1034	Armor Plate, BSR
APE 1038	Storage Hopper
APE 1040	Pitch in Protective Barricade
APE 1041	Small Arms Brass Storage Tank
APE 1046	Mutilation Machine
APE 1047	Abrasive Blast Machine
APE 1048	

A-1

FIGURE 7. Example of a deleted items appendix.

## MIL-PRF-63017D(TM)

TM 43-0001-47

APPENDIX B  
OPERATIONAL INDEX

This appendix contains a cross reference between ammunition items and the APE items needed for function testing, inspecting, maintenance, renovation and demilitarization of the ammunition item.

Section I. SURVEILLANCE FUNCTION TESTS

Items tested	Equipment used for test	
	APE no.	Nomenclature
AMMUNITION FUNCTION TESTING	1937/1905	Shelter, Personnel Protection
BOMB, FIRE FMU 7A/B, FMU 7B/B, and 7C/B: Fuze Assembly, Indicator Assembly, and Cable Assembly	1935	Test Equipment Continuity and function FMU 7A/B Fire Bomb
CAP, BLASTING ELECTRIC	1901	Tank, Immersion
	1903	Table, Testing, Function
	1916M1	Oven, Preconditioning
	1938/1904	Chamber, Low Temperature
	1980	Universal Resistance Test Instrument
CAP, BLASTING NONELECTRIC; M7 Special: Type 1 (J-1) (PETN or RDX) No. 6 and 8, Instantaneous Tetryl, Type A	1903	Table, Testing
	1903E005	Kit Function Test
	1916M1	Nonelectric Blasting Caps Oven, Preconditioning
	1938/1904	Chamber, Low Temperature
CARTRIDGE, PHOTOFLASH: M112 Series (, 2, and 4 Second Delay) Practice M121 and M124 M112, M112A1, M121 Ctgs	1902M2/1908	Device Holding, Function Test Measuring Device, Altitude and Drift
	1921M2	Device, Photoflash, Cartridge Test
	1921E001	Kit, Testing

B-1

FIGURE 8. Example of an operational appendix.

MIL-PRF-63017D(TM)

TM 43-0001-47

## APPENDIX C PREPARATION AND HANDLING OF AMMUNITION PECULIAR EQUIPMENT FOR SHIPMENT AND STORAGE

### Section I. INTRODUCTION

#### C-1 Scope

a. This appendix contains instructions for the preparation and handling of Ammunition Peculiar Equipment (APE) for shipment and storage. It applies to equipment which has been inspected, tested and determined to be suitable for retention in the APE system. The procedures and methods contained herein provide uniform guidance on the minimum requirements for disassembly, inspection, cleaning, preservation-packaging, packing, marking, blocking, bracing and skidding prior to shipment or storage. Storage requirements include maintenance and surveillance of equipment throughout the storage period.

b. The provisions of this appendix apply to all organizations controlling APE to be shipped, placed in storage, or layed away for future use.

#### C-2. Definitions

For the purpose of this appendix, the following definitions apply.

a. Cleaning. Cleaning is a process accomplished by a variety of methods and techniques to remove all sludge, chips, abrasives, dirt, rust and other harmful foreign matter.

b. Compressed air, moisture-free. Moisture-free compressed air is obtained by using properly maintained traps, filters and desiccators in the source system.

c. Disassembly. Disassembly means the

removal of only those major and minor assemblies and components required to provide access to machine areas for inspection, cleaning, preservation and preparation for shipment.

d. Documentation. Documentation consists of packing lists, inspection and test reports, operating and installation instructions, diagrams of electrical, fluidic, pneumatic and hydraulic systems and utility connections. When specified, the documentation shall include photographs, manufacturing procedures and other required technical data.

e. Equipment, non-serviceable. A type of plant equipment which, due to size or design, cannot be removed economically from its installed position for storage or shipment.

f. Exercising. Periodic operation of a machine under no-load conditions to distribute lubricants or preservatives.

g. Shipping Document. A document prepared on DD Form 1149, Requisition and Invoice/Shipping Document, or DD Form 1348, Single Line Item Requisition System Document, which directs or authorizes movement and transfer of accountability of APE items reportable to AMCCOM.

h. Owning Agency. The organization which has accountability for APE.

C-1

FIGURE 9. Example of a preparation and handling of APE for shipment and storage appendix.

MIL-PRF-63017D(TM)

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MIL-PRF-63017D(TM)

**APPENDIX****CONTENT/FORMAT SELECTION SUMMARY FOR MUNITIONS  
EQUIPMENT AND AMMUNITION DATA SHEETS (TM)****A.1 GENERAL.**

A.1.1 Scope. This appendix may be used to tailor out the optional requirements that are not to be contractually imposed in the acquisition of munitions equipment and ammunition data sheet TMs. This appendix is a mandatory part of this specification. The information contained herein is intended for compliance when the Content/Format Selection Summary is completed by the Government.

A.1.2 Application. This appendix is intended to be copied/reproduced, completed, used for contract solicitation, and incorporated into the contract.

A.1.3 Tailoring. The contracting activity should evaluate the individual requirements of this specification to determine the extent to which they are most suitable for the acquisition and modify the requirements to ensure that each achieves the optimal balance between operational needs and cost. Exclusions of sections, paragraphs, or sentences shall be indicated on the Content/Format Selection Summary. When necessary, remarks should be expanded and included on a separate sheet of paper attached to the Summary List. In all cases, tailoring shall be compatible with this specification.

A.1.4 Explanation of columns - content/format selection summary. Column (1), Item no., self explanatory. Column (2) is the type of requirement and column (3) identifies the applicable paragraph in the specification. Column (4) Options Selected, subcolumn (a) "yes", should be marked with an "X" for each item/requirement applicable to the solicitation/acquisition as written. Column (4), subcolumn (b), "no", should be marked with an "X" for each item that is not applicable as written, but is applicable as specified in subcolumn (c). Subcolumn (c), Explanation/Remarks is provided for clarity.

**A.2 APPLICABLE DOCUMENTS.**

This section is not applicable to this appendix.

MIL-PRF-63017D(TM)

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MIL-PRF-63017D(TM)

**APPENDIX****CONTENT/FORMAT SELECTION SUMMARY SHEET****EQUIPMENT NAME/NOMENCLATURE** \_\_\_\_\_**CONTRACT NO.** \_\_\_\_\_**NOTE:** Applicable requirements are indicated by an "x" in column 4a or explained in column 4b.

(1) Item No.	(2) Requirements	(3) Applicable Paragraph No.	(4)		
			(a)	(b)	©
			Options Selected		Explanation/Remarks
			(yes)	(no)	
1	Appendices	3.2.3			
2	Appendix A	3.2.3.1			
3	Appendix B	3.2.3.2			
4	Appendix C	3.2.3.3			
5	Verification	4.1			
6	Packaging	5.1			

NOTE: The above selected requirements tailoring options identified by an "X" in the Options Selected column 4, subcolumn 4(a) or 4(b), or the explanation provided in the Remarks subcolumn 4© are a mandatory part of this contract.

COMPLETED BY: \_\_\_\_\_  
(authorized signature)

PUBLICATIONS ACTIVITY: \_\_\_\_\_ DATE: \_\_\_\_\_



MIL-PRF-63017D(TM)

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MIL-PRF-63017D(TM)

### CONCLUDING MATERIAL

Custodian:  
Army - TM

Preparing Activity: Army - TM

Review Activities:  
AR, AT, AV, CR, EA, GL, MI

(Project TMSS-2014-008 Army:

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at <https://assist.dla.mil/online/start/>.