

INCH-POUND

MIL-DTL-3060F (AR)

23 June 2008

SUPERSEDING

MIL-B-3060E (AR)

12 December 1979

## DETAIL SPECIFICATION

## BOXES, SMALL ARMS AMMUNITION – M19A1 AND M2A1

This specification is approved for use by the US Army Armament Research, Development and Engineering Center (ARDEC), and is available for use by all Departments and Agencies of the Department of Defense.

## 1. SCOPE

1.1 This specification covers two model steel containers for shipping and storing ammunition (see 6.1).

1.2 Classification. The Boxes are described as follows:

1.2.1 M19A1. The M19A1 is a 3.23 cubic foot air tight metal can used to store and field ammunition.

1.2.2 M2A1. The M2A1 is a 4.33 cubic foot air tight metal can used to store and field ammunition.

## 2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3, or 4 of this standard. This section does not include documents cited in other sections of this standard 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 of documents cited in sections 3, or 4 of this standard, 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.

Comments, suggestions, or questions on this document should be addressed to: Commander, US Army ARDEC, Attn: AMSRD-AAR-QES-E, Picatinny, New Jersey 07806-5000 or emailed to [ardecstdzn@conus.army.mil](mailto:ardecstdzn@conus.army.mil). Since contact information can change, you may want to verify the currency of this address information using the ASSIST online database at <http://assist.daps.dla.mil>.

AMSC N/A

FSC 8140

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FEDERAL SPECIFICATIONS

- TT-C-490 - Chemical Conversion Coatings and Pretreatments for Ferrous Surfaces (Base for Organic Coatings.)

DEPARTMENT OF DEFENSE STANDARDS

- MIL-STD-1916 - DOD Preferred Method for Acceptance of Products
- MIL-STD-406 - Visual Inspection Standards for Terne Plate Cans and Steel Boxes Used in Small Arms Ammunition Packaging
- MIL-STD-1168 - Ammunition Lot Numbering and Ammunition Data Card

(Copies of these documents are available online at <http://assist.daps.dla.mil/quicksearch/> or from the Standardization Document Order Desk, 700 Robbins Avenue, Bldg. 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 are those cited in the solicitation.

U.S. ARMY ARDEC DRAWINGS

- 7553296 - Box, Ammunition, M2A1 Assembly
- 7553315 - Box, Ammunition, M19A1 Assembly
- 7553352 - Box, Shipping, for Box Ammunition, M2A1
- 7692103 - Box, Shipping, for Box Ammunition, M19A1
- 12982865 - Minimum Marking Instructions for Ammunition and Explosives Container

(Copies of these drawings may be requested through email to [pica.drawing.request@conus.army.mil](mailto:pica.drawing.request@conus.army.mil) or from U.S. Army ARDEC, ATTN: AMSRD-AAR-AIS-TD, Picatinny, NJ 07806-5000.)

2.3 Non-Government publications. The following documents 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.

AMERICAN SOCIETY FOR TESTING AND MATERIALS INTERNATIONAL (ASTM)

- ASTM B 117 - Standard Practice for Operating Salt Spray (Fog) Apparatus

(Copies of ASTM standards maybe ordered online at <http://www.astm.org> or from ASTM international, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959).

2.4 Order of precedence. Unless otherwise specified in this specification 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.

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### 3. REQUIREMENTS

#### 3.1 Required inspections.

3.1.1 First article. When specified (see 6.2), a sample shall be subjected to first article inspection in accordance with 4.2.

3.1.2 Conformance. When specified, a sample shall be subjected to first article inspection (see 4.3).

#### 3.2 Assembly.

3.2.1 M19A1. Components and assemblies for box, small arms ammunition, M19A1 shall be combined to produce an assembly which conforms to the requirements of drawing 7553315.

3.2.2 M2A1. Components and assemblies for Box, Small Arms Ammunition, M2A1 shall be combined to produce an assembly which conforms to the requirements of drawing 7553296.

#### 3.3 Protective coating.

3.3.1 Paint. The paint film thickness and coating shall comply with the requirements drawings: 7553296, 7553315, 7553352, and 7692103. In addition, the coating shall be smooth, unbroken and free of blisters, runs, thin spots and foreign matter. Adhesion of the paint to the pretreated surfaces shall comply with the applicable requirements of TT-C-490.

3.3.2 Corrosion resistance. The exterior surfaces of the box shall show no visible evidence of paint blistering, creepage (loss of adhesion), or corrosion of base metal in excess of 1/8 inch on either side of the score marks or rusting of parts of the hardware subject to pressure of abrasion in normal use or exceeding the standards permissible in MIL-STD-406, after exposure to a 5% solution of salt spray for 80 hours.

#### 3.4 Functioning.

3.4.1 Cover assembly. The cover of the box of the M19A1 and M2A1 shall open, close, and be removed without binding or requiring exertion of undue force. The gasket shall not stick to top edges of the box, be cut or split, not shift within the gasket retainer when the cover is opened. Hinge pins shall be secured in body half of hinge. The cover on the M19A1 box assembly only shall not fall off when opened and allowed to hang freely when the box is held in an inverted position. The formed lip on the side of each M19A1 box assembly cover skirt shall catch beneath the edge of the body fold and restrain the cover from opening fully when the partially opened box is inverted.

3.4.2 Hasp and latch. Mating parts of the body hasp and the latch shall meet without requiring deformation of any box part, and the latch shall close and open freely. When closed, the latch of the assembled box shall remain closed until manually opened.

3.4.3 Elevated temperature storage. Following storage of the box in its closed position at an air temperature of not less than 163 degrees Fahrenheit for a period of not less than 24 hours and subsequent return to ambient temperature, the cover of the box shall function as required in 3.4.1 and 3.4.2.

3.5 Airtightness of box assembly. The assembled box shall not release more than four (4) bubbles of air when subjected to an air pressure differential of three (3) pounds per square inch (psi).

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3.6 Weld security.

3.6.1 Cover handle assembly. The cover handle of the box shall withstand a pull of 300 pounds for a period of one minute without separation from the cover or failure of either link, clip, or any weld.

3.6.2 Latch, cover and hinge assembly. The latch, cover and hinge assembly shall withstand a pull of 300 pounds (lbs) for the M19A1 box.

3.6.3 Cover hinge assembly. The cover hinge assembly shall withstand a pull of 500 lbs for the M2A1 box.

3.6.4 Hasp assembly. The assembly of the hasp to the box shall withstand a pull of 1000 pounds for one minute without failure of the hasp or weld.

3.7 Gasket compression. The boxes shall have a gasket compression  $0.090 \pm 0.020$  inches when closed.

3.8 Workmanship.

3.8.1 Metal defects. The boxes shall be free of burrs, rough spots, sharp projections, cracks, splits, buckles or sintered surfaces.

3.8.2 Foreign matter. The boxes shall be free of corrosion, chips, dirt, grease and other foreign matter.

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## 4. VERIFICATION

TABLE I. Requirement/verification cross reference matrix

<u>METHOD OF VERIFICATION</u>		<u>CLASSES OF VERIFICATION</u>							
N/A – Not Applicable		A – First Article							
1 – Analysis		B – Conformance							
2 – Demonstration									
3 – Examination									
4 – Test									
Section 3 Requirement		Verification Methods					Verification Class		Section 4 Method
		N/A	1	2	3	4	A	B	
3.1	Required inspections				X	X	X	X	4.1
3.1.1	First article				X	X	X		4.2, 4.2.1, 4.2.2
3.1.2	Conformance				X	X		X	4.3, 4.3.1, 4.3.2
3.2	Assembly				X	X		X	4.3.2.1
3.2.1	M19A1				X	X	X	X	4.2, 4.3
3.2.2	M2A1				X	X	X	X	4.2, 4.3
3.3.1	Paint				X	X	X	X	4.4.1
3.3.2	Corrosion resistance				X	X	X	X	4.4.2
3.4	Functioning				X	X	X	X	4.4.3
3.4.1	Cover assembly				X		X	X	4.3.3.2
3.4.2	Hasp and latch				X		X	X	4.3.3.3, 4.4.3
3.4.3	Elevated temperature storage					X	X	X	4.3.3.4, 4.4.3
3.5	Airtightness of box assembly					X	X	X	4.4.4, 4.4.4.1
3.6	Weld security				X	X	X	X	4.4.5
3.6.1	Cover handle assembly				X		X	X	4.4.5.1
3.6.2	Latch, cover and hinge assembly				X		X	X	4.4.5.2
3.6.3	Cover hinge assembly				X		X	X	4.4.5.3
3.6.4	Hasp assembly				X		X	X	4.4.5.4
3.7	Gasket compression				X	X	X	X	4.4.6, 4.4.6.1, 4.4.6.2, 4.4.6.3, 4.4.6.4, 4.4.6.5
3.8	Workmanship				X	X	X		4.5
3.8.1	Metal defects				X	X	X		4.5
3.8.2	Foreign matter				X	X	X		4.5

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4.1 Classification of inspection. The following types of inspection shall be conducted on this item:

- a. First Article Inspection (see 4.3)
- b. Conformance Inspection (see 4.4)

4.2 First article. When specified, a sample of the M19A1 and M2A1 boxes shall be subject first article verification in accordance with Table II.

4.2.1 First article quantity. The first article sample shall consist of thirty (30) painted boxes and two (2) complete sets of unassembled component parts

4.2.2 First article rejection. If any assembly, component or test specimen fails to comply with any of the applicable requirements, the first article sample shall be rejected.

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TABLE II. First Article Inspection

EXAMINATION OR TEST	NO. OF SAMPLE UNITS	CONFORMANCE CRITERIA	REQUIREMENT PARAGRAPH	PARAGRAPH REFERENCE/INSPECTION METHOD
<u>Assembly</u> (Dwg. 7553296 or 7553315, as applicable) Examination for defects	15		3.2	4.3.2.1
<u>Functioning</u>	15		3.4	4.4.3
<u>Air Tightness of box assembly</u>	30		3.5	4.4.4, 4.4.4.1
<u>Gasket Compression</u> (Dwg. 7553296 or 7553315, as applicable)	10		3.1	4.4.6
<b><u>Weld Security</u></b> <u>1/</u>				
<u>Cover handle assembly</u>	5		3.6.1	4.4.5.1
<u>Latch, cover and hinge assembly</u> (Applicable to M19A1 box)	5		3.6.2	4.4.5.2
<u>Cover hinge assembly</u> (Applicable to M2A1 box)	5		3.6.3	4.4.5.3
<u>Hasp assembly</u>	5		3.6.4	4.4.5.4
NOTES:				
<u>1/</u> The weld security inspections shall be performed after the other inspections have been performed on the samples				

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4.3 Conformance inspection.

4.3.1 Inspection lot formation. Lot formation shall be in accordance with section A3.1.1 and MIL-STD-1916.

4.3.2 Sampling requirements. Inspection sampling requirements for Critical, Major and Minor characteristics are defined in MIL-STD-1916. Unless specified otherwise, Inspection Level IV shall be used for all characteristics defined as Majors and Inspection Level II for all Minor characteristics; Critical characteristics shall be addressed in accordance with MIL-STD-1916.

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Conformance Inspection by classification of characteristics

PARAGRAPH	TITLE		SHEET 1 OF 1		DRAWING NUMBER
					7553296/7553315
4.3.2.1	Assembly				NEXT HIGHER ASSEMBLY
CATEGORY	EXAMINATION OR TEST	NO. OF SAMPLE UNITS	CONFORMANCE CRITERIA	REQUIREMENT PARAGRAPH	PARAGRAPH REFERENCE/INSPECTION METHOD
<u>Critical</u>	None Defined.				
<u>Major</u>					
101	Inside length, minimum (min.)		LEVEL III	3.2	Gage
102	Inside width, min.		LEVEL III	3.2	Gage
103	Inside height, min.		LEVEL III	3.2	Gage
104	Incomplete manufacture		LEVEL III	3.2	Visual <u>1/</u>
105	Incorrect assembly		LEVEL III	3.2	Visual
106	Incomplete or inadequate paint coverage		LEVEL III	3.2	Visual
107	Burrs, rough spots, sharp projections, cracks, splits, buckles		LEVEL III	3.8.1	Visual
<u>Minor</u>					
201	Outside length, maximum (max.)		LEVEL II	3.2	Gage
202	Outside width, max.		LEVEL II	3.2	Gage
203	Outside height, max.		LEVEL II	3.2	Gage
204	Concavity or convexity of cover assembly		LEVEL II	3.2	Gage
205	Concavity or convexity of body assembly		LEVEL II	3.2	Gage
206	Chips, dirt, grease and other foreign matter		LEVEL II	3.8.2	Visual
207	Surface imperfections, excessive paint not dry		LEVEL II	3.2	Visual
NOTES:					
<u>1/</u> Refer to MIL-STD-406 for visual defects standards. The standard defects classified as incidental shall be considered permissible.					

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Conformance Inspection by classification of characteristics

PARAGRAPH	TITLE		SHEET 1 OF 1		DRAWING NUMBER 7692103/ 7553352
4.3.2.2	Box, Shipping prior to sealing				NEXT HIGHER ASSEMBLY
CATEGORY	EXAMINATION OR TEST	NO. OF SAMPLE UNITS	CONFORMANCE CRITERIA	REQUIREMENT PARAGRAPH	PARAGRAPH REFERENCE/INSPECTION METHOD
<u>Critical</u>	None defined				
<u>Major</u>	None defined				
<u>Minor</u>					
201	Contents incorrect		LEVEL II	3.2	Visual
202	Separator missing		LEVEL II	3.2	Visual
NOTES:					

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Conformance Inspection by classification of characteristics

PARAGRAPH	TITLE		SHEET 1 OF 1		DRAWING NUMBER 7692103/ 7553352
4.3.2.3	Box, shipping after sealing				NEXT HIGHER ASSEMBLY
CATEGORY	EXAMINATION OR TEST	NO. OF SAMPLE UNITS	CONFORMANCE CRITERIA	REQUIREMENT PARAGRAPH	PARAGRAPH REFERENCE/INSPECTION METHOD
<u>Critical</u>					
<u>Major</u>					
101	Box damaged		LEVEL III	3.1	Visual
102	Contents of box exposed		LEVEL III	3.1	Visual
<u>Minor</u>					
201	Contents loose		LEVEL II	3.1	Manual/Visual
202	Box inadequately or improperly sealed		LEVEL II	3.1	Visual
203	Marking missing, incorrect or illegible <u>1/</u>		LEVEL II	3.1	Visual
NOTES:					
<u>1/</u> In accordance with dwg. 12982865.					

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4.3.3 Testing.4.3.3.1 Functioning.

4.3.3.2 Cover assembly. – Major defect – Thirteen (13) box assemblies shall be randomly selected from each lot and tested as specified in 4.4.3. Failure of one or more sample unit to comply with the specified requirements for functioning of the cover assembly shall be cause for rejection of the lot.

4.3.3.3 Hasp and latch. – Major defect – Thirteen (13) box assemblies shall be randomly selected from each lot and tested as specified in 4.4.3. Failure of one or more sample unit to comply with the specified requirements for functioning of the hasp and latch assembly shall be cause for rejection of the lot.

4.3.3.4 Elevated temperature. – Major defect – Thirty-two (32) box assemblies shall be randomly selected from each lot and tested as specified in 4.4.3. Failure of one or more sample unit to comply with the specified requirements for functioning after the elevated test shall be cause for rejection of the lot.

4.4 Test methods and procedures.

4.4.1 Film thickness and paint adhesion. The method of test shall comply with applicable requirements of TT-C-490. The test shall be performed on three randomly selected surfaces of each unit of the sample. Three (3) boxes shall be randomly selected and tested. Failure of any box to conform to the requirement shall be cause to require the manufacturer to correct his painting practice to comply with the requirement.

4.4.2 Corrosion resistance. The method of test shall be as specified in ASTM B117-64- Method of Test for Salt Spray (FOG) Testing. Using a sharp instrument, (machinist scriber or equivalent) one “X” approximately three (3) inches long shall be scored across the flat portion of each side, the bottom, the hinge end and the cover. The sample shall be so positioned that the hinged edge of the assembled box is elevated approximately 15 degrees from the horizontal and rests upon a wooden support while the cover face is parallel to the principal direction of horizontal flow of fog through the chamber. Three (3) boxes shall be randomly selected and tested. Failure of any box to conform to the requirement shall be cause to require the manufacturer to correct his painting processes to comply with the requirement.

4.4.3 Functioning. The box shall be inspected to assure compliance with requirements of 3.5 through the following procedures:

a. Unlock and lock the cover assembly by hand leverage. Note the locking and unlocking action on the M19A1 and the M2A1 box assembly for effectiveness and ease of operation. Then only the M19A1 box assembly shall be unlocked, latch disengaged, and held in an inverted position. The formed lip inside of each M19A1 box assembly cover skirt shall catch beneath the edge of the body fold and restrain the cover from opening fully when partially opened box is inverted.

b. Remove and replace the cover assembly. Note any sticking of gaskets to the top edge of the body assemblies, or any misfit or bind within the body assembly and inspect hinge pins for security in the body half of the hinge.

c. Remove all cover assemblies. Inspect the gaskets for fit security, cuts, and splits.

d. Environmentally condition the box assemblies as specified in 3.5. after conditioning, re-inspect the box assemblies in accordance with a, b, and c above.

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4.4.4 Airtightness of box assembly. The container shall be conditioned to a temperature of not less than 50°F and ambient pressure prior to testing. The containers shall be tested in accordance with 4.4.4.1 (see 6.4 and see 6.5 for alternative methods). A wetting agent may be used to minimize air bubbles clinging to the exterior surface. Any box assembly which fails to meet this requirement shall be removed from the lot. These defective box assemblies may be reworked and resubmitted for retesting.

4.4.4.1 Vacuum method. The assembled container shall be tested for leakage by immersing the closed box, in a vacuum vessel, to a depth of at least one inch below the surface of the water. The air pressure in the vessel shall be lowered to 3 psi below ambient pressure. Observation for leakage of air from the interior of the box assembly shall be made during the period of lowering pressure and for a minimum of 16 seconds while the 3 psi pressure differential is maintained.

4.4.5 Weld security.

4.4.5.1 Cover handle assembly. The assembled box shall be clamped with the sample body assembly resting on its bottom. Attach the test fixture to the cover handle. With one fixture securely held, apply the specified tensional force through the other test fixture, vertical to the box bottom against the ferrule of each handle. The force shall be applied at a rate of .125 to .25 inch per minute and held for one minute. After removal of the force, examine the handle and hasp for distortion and weld failure. See cover handle assembly (see 3.6.1), latch, cover and handle assembly for M19A1 Box (see 3.6.2), cover hinge assembly for M2A1 Box (see 3.6.3) and hasp assembly (3.6.4) – Major defect.- Thirteen (13) box assemblies shall be randomly selected from each lot and tested as specified herein. Failure of one or more of the sample unit to comply with the specified requirements for weld security shall be cause for rejection of the lot.

4.4.5.2 Latch, cover, and hinge assembly (M19A1). The assembly shall be tested in a suitable fixture with the box resting on its bottom and with the cover raised at a right angle. The box shall be clamped securely and the body assembly shall be supported by means of a snug fitting wood filler box in order to prevent its distortion or collapse. Secure the other test fixture to the latch assembly and slowly apply a tensional perpendicular to the body assembly. The force shall be applied at a rate of .125 to .25 inch per minute and held for one minute. After removal of the force, examine the latch, latch link, latch link retainer, cover, cover hinge and body hinge for distortion and weld failure.

4.4.5.3 Cover hinge assembly (M2A1). The assembly shall be tested in a suitable fixture with the box resting on its bottom with the cover raised at a right angle. The box shall be clamped securely and the body assembly shall be supported by means of a snug fitting wood filler box in order to prevent its distortion or collapse. Secure the other test fixture to the cover and slowly apply a tensional force perpendicular to the body assembly. The force shall be applied at a rate of .125 to .25 inch per minute and held for one minute. After removal of the force, examine the cover, cover hinge and the body hinge for distortion and weld failure.

4.4.5.4 Hasp assembly. The sample body assembly resting on their bottoms shall be clamped in a suitable device. Using a test fixture clamped securely on the hasp assembly, the specified force shall be slowly applied perpendicular to the bottom and against the underside of the offset of the hasp. The force shall be applied at a rate of .125 to .25 inch per minute and held for one (1) minute. After removal of the force, examine the hasp for distortion and weld failure.

4.4.6 Gasket compression. (see dwg. 7553315/ 7553296 as applicable) –Major defect.- The box assemblies shall be sampled in accordance with MIL-STD-1916, using verification Level IV. Failure of

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any box to comply with the requirements or failure of the sample to meet the criteria of the variables sampling plan, shall be cause for rejection of the lot.

4.4.6.1 Compressed gasket and cover measurements (Applicable to M19A1). The box shall be positioned in a suitable fixture so that it cannot be moved (see 6.5). For the M19A1, four points, two on each side, two inches from the front and the rear, shall be located (and numbered 1, 2, 3, and 4) on both the body and cover. With the body fully closed, a reading at each point, with a standard height gage, shall be recorded, then the cover shall be removed and the height to the hemmed edge of the body at the same point shall be recorded. Subtraction of the second reading from the first reading gives the value of the compressed gasket and cover.

4.4.6.2 Compressed gasket and cover measurements (Applicable to M2A1). For the M2A1, six points, two on each side, two inches from the front and the rear of the container body; and two on the hasp end, 1 1/2 inches measured from either side of the container body shall be located (and numbered 1, 2, 3, 4, 5, and 6) on both the body and the cover as shown in Figure 1. With the body fully closed, a reading at each point (6 points for the M2A1), shall be recorded with a standard height gage, then the cover shall be removed and the height to the hemmed edge of the body at the same point shall be recorded. Subtraction of the second reading from the first reading gives the value of the compressed gasket and cover.

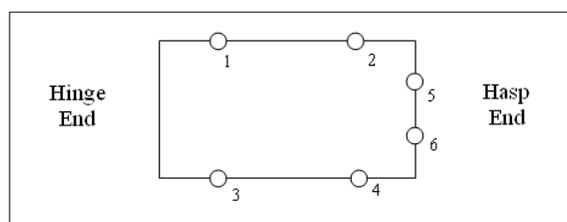


FIGURE 1. Gasket compression measurement points

4.4.6.3 Uncompressed gasket and cover measurements (Applicable to M19A1). The cover and uncompressed gasket shall be measured at each of the four locations (points 1, 2, 3 and 4 from figure 1) with a precision measurement device and readings recorded. Care must be exercised so that the surface of the measuring device does not rest in the groove of the compression set. These readings are the uncompressed gasket and cover values.

4.4.6.4 Average gasket compression value. The compressed gasket and cover results (see 4.5.6.1 and 4.5.6.2) shall be subtracted from the uncompressed gasket and cover readings (see 4.5.6.3 and 4.5.6.4) at corresponding location points (1, 2, 3, and 4 only for both M2A1 and M19A1). The sum of the resulting values for the four location points divided by four shall be considered the average gasket compression value. The average value for each box shall be used in the application of the procedures of ANSI/ASCQ 21.9-1993.

4.4.6.5 Local gasket compression value (for M2A1 only). The compressed gasket and cover results (See 4.5.6.2) shall be subtracted from the uncompressed gasket and cover readings (see 4.5.6.3) at the corresponding location points (points 5 & 6 only). These are the local gasket compression values and neither shall exceed 0.130 inches.

4.5 Workmanship. Visually verify that all parts and assemblies meet the requirements of paragraph 3.8.

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## 5. PACKAGING

5.1 Packaging. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When packaging of materiel is to be performed by DOD or in-house 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 activities 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. Boxes, M19A1 and M2A1 are intended for diversified use in the packaging of small arms ammunition. The M2A1 box is also suitable for the packaging of Artillery Fuzes, Rocket Fuzes, Mortar Fuzes, 60MM and 40MM cartridges and other ammunition.

6.2 Acquisition requirements. Acquisition documents should specify the following:

- a. Title, number and date of this specification
- b. Quantity required and delivery schedules
- c. Serialization requirements, if applicable.
- d. Quality conformance inspection, if other than specified in Section 4 of this specification.
- e. First article sample requirements, if other than specified in Section 4 of the specification.
- f. Packaging requirements, if other than specified in section 5 of this specification.

6.3 Measurement for gasket compression. Three pint contact of the container resting on blocks may be used to overcome any rocking which might be encountered with the container resting on the surface plate. However, since the measurement technique relies upon relative distances, care should be taken to assure that there is no displacement on the referenced surfaces between the readings.

6.4 Hot water method for airtightness. The hot water test procedure for each container should be submitted to Commander, ARDEC, AMSRD-AAR-QEM-A, Dover, NJ 07806-5000, for approval. The test procedure should include water temperature, immersion time, the data to support time and periodic verification procedure. The assembled container should be tested for leakage by immersing the closed container to a depth of one inch below the surface of the water. The temperature of the water and the length of time of immersion should be that which will assure an increase in pressure to a minimum of 3 psi above ambient pressure. Observation for air leakage from the interior of the box assembly should be made during the period of pressure build up and for a minimum of 16 seconds after the 3 psi pressure differential has been reached.

6.5 Dry vacuum method for airtightness. They dry vacuum test procedure should be submitted to Commander, US Army ARDEC, AMSRD-AAR-QEM-A, Picatinny Arsenal, NJ 07806-5000, for

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approval. The test procedure should include periodic verification procedure and test device specification. The assembled container should be tested for leakage in a dry vacuum chamber by using an Army Peculiar Equipment (APE) 1958 test device or equal. Air leakage should not exceed .4 cubic centimeters for a minimum of 5 seconds.

### 6.6 Definitions.

6.6.1 Inspection Lot. The term “inspection lot” is defined as a homogeneous collection of units of product from which a representative sample is drawn or which is inspected 100 percent to determine conformance with applicable requirements.

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

### 6.8 Subject term (key word) listing.

M19A1, Small Arms Box  
M2A1, Small Arms Box

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APPENDIX A

RENOVATION OF M2A1 AMMUNITION BOX ASSEMBLY PROVISIONS FOR RENOVATION OF  
M2A1 AMMUNITION BOX ASSEMBLY

A1. SCOPE

A1.1 Scope. This appendix provides the Conformance for the renovation of Box, Ammunition, M2A1 Assembly. This Appendix (is or is not) a mandatory part of the specification. The information contained herein is intended for (compliance or guidance only).

A2. REQUIREMENTS

A2.1 Seams. Defective seams should not be repaired. Container assemblies with this defect should be rejected and properly disposed of.

A2.2 Gaskets. The gasket on the cover assembly should be replaced.

A2.3 Marking. The renovated body assembly should be marked in accordance with Dwg. 7553297.

A2.4 Dents. Dents which do not preclude good stenciling and/or do not affect proper functioning of the container assembly or hinder proper packing of ammunition should be acceptable. The container assembly should not contain any dents greater than ¼ inch in depth. Dents should be removed as required to comply with the provisions described herein.

A2.5 Cleaning. There should be no rust present and the interior and exterior of the container assembly should be free of chips, dirt, grease, rust and foreign matter. All rust should be removed and the exterior and interior of the container assembly cleaned.

A2.6 Refinishing. Bare metal should be primed and finish coated as specified on the applicable drawings (Dwg. 7553297 and 7553298) and 3.3.1. Bare metal should be primed and the complete exterior of the container assembly repainted. The interior of the body assembly and the inside of the cover assembly may be spot primed and repainted as required.

A2.7 Protective coating.

A2.8 Paint. See 3.3.1.

A2.9 Corrosion resistance. See 3.3.2.

A2.10 Functioning.

A2.11 Cover assembly. See 3.4.1.

A2.12 Hasp and latch. See 3.4.2.

A2.13 Elevated temperature storage. See 3.4.3.

A2.14 Airtightness. See 3.5.

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A2.15 Workmanship. See 3.7

A3. VERIFICATION.

A3.1 Conformance inspection.

A3.1.1 Inspection lot formation. The term “inspection lot” is defined as a homogeneous collection of renovated container assemblies from which a representative sample is drawn or which is inspected 100 percent to determine conformance with applicable requirements. Units of product selected for inspection should represent only the inspection lot from which drawn and should not be construed to represent any prior or subsequent quantities presented for inspection. The inspection lot should have been produced by one container assembly manufacturer. In addition, the inspection lot should consist of container assemblies renovated in one unchanged process using the same drawings, revisions, materials and methods. All material submitted for inspection in accordance with this inspection should comply with the homogeneity criteria specified herein, regardless of the type of inspection procedure which is being applied to determine conformance with requirements. Lot numbering, as required, should be in accordance with MIL-STD-1168.

A3.1.2 Examination. Unless otherwise specified in the Classification of Defects and Test Tables, sampling plans and procedures for major and minor defects should be in accordance with MIL-STD-1916, Inspection Level III for major defects and Inspection Level II for minor defects, except that inspection for critical defects should be 100 percent. Continuous sampling plans in accordance with MIL-STD-1916 may be used if approved by the procuring activity.

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Conformance Inspection by classification of characteristics

PARAGRAPH	TITLE			SHEET 1 OF 1		DRAWING NUMBER See Below
A3.1.2.1						NEXT HIGHER ASSEMBLY
CATEGORY	EXAMINATION OR TEST	NO. OF SAMPLE UNITS	CONFORMANCE CRITERIA	REQUIREMENT PARAGRAPH	PARAGRAPH REFERENCE/INSPECTION METHOD	
<u>Critical</u>	None Defined.					
<u>Major</u>						
101	Airtightness		LEVEL III	3.5	4.4.4	
102	Seam weld cracked		LEVEL III	3.5	Visual	
103	Paint thickness	3	LEVEL III	A3.10	3.3.1	
104	Paint adhesion	3	LEVEL III	A3.10	3.3.1	
105	Corrosion Resistance	3	LEVEL III	A3.11	3.3.2	
106	Functioning – cover assembly	13	LEVEL III	A3.13	3.4.1	
107	Functioning – hasp and latch	13	LEVEL III	A3.14	3.4.2	
108	Functioning – elevated temperature storage	13	LEVEL III	A3.15	3.4.3	
109	Gasket compression		LEVEL III	A3.4	4.4.3	
110	Dents affecting stenciling, functioning or packing of ammunition or dents greater than 1/4"		LEVEL III	A3.6	Visual/SMTE	
111	Cleaning improper prior to priming and painting		LEVEL III	A3.7	Visual	
112	Gasket not replaced properly		LEVEL III	3.4.1	4.4.3	
113	Bare metal not primed prior to painting		LEVEL III	A3.8	Visual	
114	Paint improper		LEVEL III	3.3.1	Visual	
115	One or more spot or projection welds broken on cover assembly or body assembly		LEVEL III	3.4	Visual	
<u>Minor</u>						
201	Marking on body assembly missing, incomplete or illegible <u>1/</u>		LEVEL II	3.4	Visual	
202	Evidence of poor workmanship		LEVEL II	3.8	Visual	
NOTES:						
<u>1/</u> In accordance with dwg. 12982865.						

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A4. Notes.

A4.1 The renovated container assemblies should be packaged in accordance with dwg. 7553352 or procedures approved by the Government for packaging and palletization.

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

A4.2 Submission of renovation, inspection, and packaging and palletization of procedures. The procedures for the renovation, inspection, and packaging and palletization of the M2A1 Ammunition Box Assembly should be submitted for approval to: Commander, ARDEC, ATTN: AMSMC-QAF-S (D), Picatinny Arsenal, NJ 07806-5000.

Preparing Activity  
Army-AR  
(Project 8140-2007-003)

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 <http://assist.daps.dla.mil>.