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MIL-C-9963F
AMENDMENT 5
15 October 1999
SUPERSEDING
AMENDMENT 4
27 August 1996

MILITARY SPECIFICATION

CARTRIDGE, 5.56MM, BALL M193

MIL-C-9963F was inactivated after 27 August 1996 For New Design

This amendment forms a part of MIL-C-9963F, dated 15 October 1976, and is approved for use by all Departments and Agencies of the Department of Defense.

PAGE 2

2.1: Delete "10534605 - Packing and Marking, Cartridges, 5.56mm, Cartons; Bandoleers; Box, Ammunition, M2A1; Box Wirebound"

and substitute:

"12551963 - Packing and Marking for Box Wirebound for Cartridge 5.56mm"

Delete "10535858 - Packing and Marking Cartridges, 5.56mm; Cartons; Box, Ammunition, M2A1; Box, Wirebound"

Delete "10542258 - Packing and Marking, Cartridges, 5.56mm; 10 Rd Clips; Cartons; Bandoleers; Box, Ammunition, M2A1; Box Wirebound"

Delete "11735709 - Packing and Marking, Cartridges, 5.56mm; 10 Rd Clips; Cartons; Bandoleer M8; Box Ammunition, M2A1; Box Wirebound"

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PAGE 3

- * 3.7.1 Delete in its entirety.
- * 3.7.2 Renumber "3.7.2" to "3.7"
- * 3.8.1 Delete in its entirety.
- * 3.8.2 Renumber "3.8.2" to "3.8"

3.9: Delete in its entirety and substitute the following:

"3.9 Temperature stability. When the sample cartridges are conditioned and fired at the temperature extremes specified below:

a. Conditioned at $125^{\circ} \pm 2^{\circ}$ F for not less than one hour and fired at that temperature.

b. Conditioned at $-65^{\circ} \pm 2^{\circ}$ F for not less than one hour and fired at that temperature.

The average velocity, chamber pressure, and port pressure shall be in accordance with the following:

c. The average velocity shall not decrease by more than 250 feet/second with respect to the average velocity of the sample cartridges of the same lot, conditioned at $70^{\circ} \pm 2^{\circ}$ F for a minimum of 20 minutes. Any decrease in velocity of the sample cartridges is acceptable.

* d. The average chamber pressure measured shall not increase by more than 5,500 PSI with respect to the average chamber pressure of the sample cartridges of the same lot conditioned at $70^{\circ} \pm 2^{\circ}$ F for a minimum of 20 minutes. Any decrease in chamber pressure of the sample cartridges is acceptable.

* e. The average port pressure measured shall neither increase nor decrease by more than 2,000 PSI with respect to the average port pressure of the sample cartridges of the same lot conditioned at $70^{\circ} \pm 2^{\circ}$ F for a minimum of twenty minutes."

PAGE 5

4.3.2: Delete in its entirety and substitute the following:

"4.3.2 Examination. One hundred percent examination shall be performed for all critical and special defects: Examination shall be visual or by means of a Government approved automated inspection system such as optical, mechanical or electrical. Examination for major and minor defects shall be performed on a class bases in accordance with the classification of defects,

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Table I, using applicable sampling plans and acceptance criteria of MIL-STD-105. The Acceptable Quality Level (AQL) for the major class shall be 0.25 percent and the AQL for the minor class shall be 1.50 percent. Examination for Insufficient/Smearred Waterproofing Material (Primer Pocket joint), paragraph 4.3.2.1, Table I, No. 37, shall be on an individual basis with an AQL of 1.00 percent. All non-conforming cartridges shall be rejected."

PAGE 6

4.3.2.1: Delete No. 6, 32, 33 and 34 in their entirety and substitute the following:

"No.	<u>Defect and Method of Inspection</u>	<u>Critical</u>	<u>Special</u>	<u>Major</u>	<u>Minor</u>	<u>Major or Minor</u>
6	Split case In K, L or M location	X				
	In I, S or J location when it is determined that there is a potential for loss of propellant	X				
	In I, S or J location when it is determined that there is no potential for loss of propellant				X	
32	No primer <u>4</u> /		X			
33	Cocked primer <u>4</u> /		X			
34	Inverted primer <u>4</u> /		X			"

PAGE 7

4.3.2.1: Delete No. 37 and No. 47 in their entirety and substitute the following:

"No.	<u>Defect and Method of Inspection</u>	<u>Critical</u>	<u>Major</u>	<u>Minor</u>	<u>Major or Minor</u>
37	Insufficient/Smearred Waterproofing Material (primer pocket joint)"			X	
47	Weighing Weight, min <u>2</u> /, <u>3</u> /	X"			

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Delete Notes 1/ and 2/ in their entirety and substitute the following:

" 1/ Refer to MIL-STD-636 (NATO Caliber 7.62mm Section) for visual defect standards for defects 1 through 38. Inspection for visual defects may be performed employing an automated inspection system that has been approved by the Government.

2/ One hundred percent examination for weight may be either by weighing or by measuring for propellant fill; method used must be capable of detecting a cartridge containing less than 10 grains of propellant.

3/ Acceptance Sample Inspection shall be by weight. Each lightweight cartridge shall be disassembled and the propellant weighed. Each such cartridge found to contain 10 grains or more of propellant shall be classed as a major defect. Any cartridge containing less than 10 grains shall be classed as a critical defect.

4/ Refer to MIL-A-48078, paragraph 6.5.4, for the definition of a special defect."

PAGE 11

4.3.4: Delete in its entirety and substitute the following:

"4.3.4 Packaging, packing and marking inspection. During or immediately prior to the packaging operation, 100 percent examination of the cartridges shall be performed to ascertain that the lot does not contain a blank cartridge or a cartridge with the bullet missing. Examination shall be visual or by means of a Government-approved inspection system. All non-conforming cartridges shall be removed from the lot. A sample of 244 shall be selected from each lot and examined for the presence of a high pressure test, dummy or blank cartridge, or a cartridge with the bullet missing. If a high pressure test, dummy or blank cartridge, or a cartridge with the bullet missing is found, the lot shall be rejected. Any occurrence of a high pressure test, dummy or blank cartridge, or a cartridge with the bullet missing after this inspection shall cause the lot to be rejected. Inspection for packaging, packing and marking shall be in accordance with MIL-STD-644 as applicable to the drawing."

Add new paragraph 4.3.6 as follows:

"4.3.6 Alternative quality conformance provisions. Unless otherwise specified herein or provided for in the contract, alternative quality conformance procedures, methods or equipment, such as statistical process control, tool control, other types of sampling plans, etc., may be used by the contractor when they provide, as a minimum, the level of quality assurance required by the provisions herein. Prior to

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applying such alternative procedures, methods or equipment, the contractor shall describe them in a written proposal submitted to the Government for evaluation (see 6.2). When required, the contractor shall demonstrate that the effectiveness of each proposed alternative is equal to or better than the specified quality conformance provisions(s) herein. In case of dispute as to whether the contractor's proposed alternative(s) provides equivalent assurance, the provisions of this specification shall apply. All approved alternative provisions shall be specifically incorporated into the contractor's quality program or inspection system, as applicable."

PAGE 13

5.1: Delete "F1053585, F105344605, F10542258 or F11735709" and substitute "12551963"

PAGE 14

Change paragraph number "6.2" to "6.3"

Add new paragraph 6.2 as follows:

"6.2 Submission of alternative quality conformance provisions. All contractor proposed alternative quality conformance provisions will be submitted to the Government for evaluation/approval as directed by the contracting activity."

The margins of this amendment are marked with an asterisk or vertical lines to indicate where changes (additions, modifications, corrections, deletions) from the previous amendment were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous amendment.

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