

**DETAIL SPECIFICATION
CARTRIDGE,
.300 WINCHESTER MAGNUM MATCH,
MK 248 MOD 1
DODIC AB43, NSN 1305-01-568-7504**

**Revision A
17 March 2009**

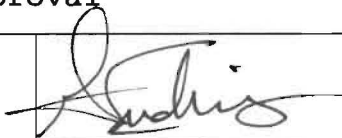
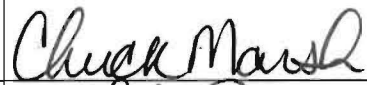


Supersedes DS/JXNN/C08/1604 of 31 October 2008

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 SMALL ARMS AMMUNITION AND TESTING BRANCH (CODE JXNN)

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PURPOSE OF REVISION

The purpose of Revision A is to modify the primed case sensitivity requirements (Section 3.5.4) and test methods (Section 4.5.5) to comply with SAAMI specifications instead of military specifications.

**DETAIL SPECIFICATION
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MK 248 MOD 1**

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**DETAIL SPECIFICATION
CARTRIDGE, .300 WINCHESTER MAGNUM MATCH,
MK 248 MOD 1**

1. SCOPE

This specification establishes the requirements for the Cartridge, .300 Winchester Magnum Match, MK 248 MOD 1. This ammunition shall be referred to hereafter as the MK 248 MOD 1 cartridge.

2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3 or 4 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 of documents cited in sections 3 or 4 of this specification, whether or not they are listed here.

2.2 Government Documents.

2.2.1 Specifications, standards, and publications. The following specifications, standards, and publications form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation (see 6.2b).

SPECIFICATIONSMILITARY

MIL-I-45607.....Inspection Equipment, Acquisition,
Maintenance and Disposition of

MIL-L-63460.....Lubricant, Cleaner and Preservative

MIL-P-15011.....Pallets, Material Handling, Wood Post
Construction, 4-Way Entry

MIL-P-46610.....Primers, Percussion, Styphnate and Chlorate
Types for Small Arms Ammunition

STANDARDSMILITARY

MIL-STD-129.....Marking for Shipment and Storage

MIL-STD-636.....Visual Inspection Standards for Small Arms
Ammunition through Caliber .50

MIL-STD-644.....Visual Inspection Standards and Inspection
Procedures for Inspection of Packaging Packing
and Marking of Small Arms Ammunition

MIL-STD-1168.....Ammunition Lot Numbering

DRAWINGSNAVAL SEA SYSTEMS COMMAND

53711-8330265.....Packing and Marking for Box, Wirebound for
Cartridge, .300WM Match, 220 Grain OTM
Bullet, MK 248 MOD 1

53711-8330266.....Packing and Marking for Box, Ammunition,
M2A1 for Cartridge, .300WM Match, 220
Grain OTM Bullet, MK 248 MOD 1

53711-8330264.....Packing and Marking for Carton, Paperboard
for Cartridge, .300WM Match, 220 Grain OTM
Bullet, MK 248 MOD 1

53711-824178891.....Separator

53711-824178892.....Carton

53711-8330252.....Cartridge, .300WM Match, 220 Grain OTM
Bullet, MK 248 MOD 1

53711-8330251.....Bullet, .300WM Match, 220 Grain OTM, MK
248 MOD 1

53711-7057696.....Barrel, Test

DEPARTMENT OF DEFENSE (DOD)

DOD-STD-2101....Classification of Characteristics

DOD 4145.26M....Contractor's Safety Manual for Ammunition,
Explosives and Related Dangerous Material

U.S. ARMY ARMAMENT RESEARCH AND DEVELOPMENT COMMAND DRAWINGS

19200-7643674...Classification of Cartridge Case Defects

19200-8593303...Fixture, Test, Accuracy or Penetration 7.62 MM

19200-6545100...Slide, Recoil, Assembly

19200-7553296...Box, Ammunition, M2A1

19200-7553347...Box, Wirebound for Boxes, Ammunition, M2A1

PUBLICATIONS

U.S. ARMY PUBLICATIONS

TECP 700-700 Vol. III.....Manual of Test Methods for Small Arms Ammunition

SCATP-7.62.....Ammunition Ballistic Acceptance Test Methods, Test Procedures for 7.62mm Cartridges, November 1992

NAVAL SEA SYSTEMS COMMAND PUBLICATIONS

OP 5 Volume 1...Ammunition and Explosives Ashore Safety Regulations for Handling, Storing, Production, Renovation and Shipping

(Unless otherwise indicated, copies of the above specifications, standards, and publications are available from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia PA 19111-5094.)

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 the documents that are DOD adopted are those listed in the issue of the DODISS cited in the solicitation. Unless otherwise specified, the issues of the documents not listed in the DODISS are the issues of the documents cited in the solicitation (see 6.2b).

AMERICAN NATIONAL STANDARDS

ASTM B19 Cartridge Brass Sheet, Strip, Plate, Bar and Disks (Blanks)

ANSI/SAAMI Z299.4-1992 Sporting Arms and Ammunition Manufacturers Voluntary Performance Standards for Pressure and Velocity Of Centerfire Rifle Sporting Ammunition

ANSI/ASQC-A8402 Quality Management and Quality Assurance - Vocabulary

(Application for copies should be addressed to the American National Standards Institute, Headquarters, 11 West 42nd Street, 13th Floor, New York NY 10036. ANSI may also be contacted via their web site at www.ansi.org.)

2.4 Order of precedence. In the event of a conflict between the contract, the text of this document and the references cited herein, the contract takes precedence, followed by the text of this document, then the documents referenced herein. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Classification of characteristics. Where critical or major characteristic requirements are listed in this specification, they are annotated by a "C" or "M" and sequential reference number starting with "1" for critical and "101" for major. The letter and number are contained in parentheses. The main verbiage of the requirement is then surrounded by brackets, "[]". Minor characteristic requirements contain no annotation. Reference DOD-STD-2101.

3.1.1 Critical characteristic. One that analysis indicates is likely, if defective, to create or increase a hazard to human safety or to result in failure of a weapon system or major system to perform a required mission.

3.1.2 Major characteristic. One that analysis indicates is not critical but is likely, if defective, to result in failure of an end item to perform a required mission.

3.1.3 Minor characteristic. One that analysis indicates is significant to product quality but is not likely, if defective, to impair the mission performance of the item.

3.2 First Article. When specified in the solicitation (see 6.2g), a sample shall be subjected to First Article inspection in accordance with 4.2.

3.3 Government-loaned property. Government-loaned property (see 6.2e and 6.4) might be used for performing tests as specified in Section 4 and Appendices A, B and C of this specification. Government-loaned property shall be described in the contract where applicable.

3.4 Components. MK 248 MOD 1 cartridge components are the projectile, the cartridge case, the propellant, and the primer.

3.4.1 Projectile. The projectile for the MK 248 MOD 1 shall be

the 220 grain Sierra MatchKing® Hollow Point Boat Tail (HPBT) bullet, commercial part number 2240, manufactured by Sierra Bullets, (Drawing 53711-8330251). The bullet shall have a lead or lead alloy core and copper or copper alloy jacket. The bullet shall have a nominal weight of 220 grains, with a tolerance of ± 0.5 grains. The bullet diameter shall be 0.3086-0.0005 inches. The bullet shall be of the reverse drawn, Open Tip Match (OTM) type capable of meeting the accuracy requirements as specified in paragraph 3.6.4.

3.4.2 Cartridge case. The cartridge case shall be .300 Winchester Magnum constructed of copper alloy in accordance with ASTM B19, and shall not be plated. The cartridge case shall meet the external dimensional requirements of ANSI/SAAMI Z299.4-1992. (C1) [A vent hole shall be present in the primer pocket of the cartridge case].

3.4.2.1 Headstamp. The cartridge case headstamp marking shall consist of the identification code of the manufacturer, last 2 digits of year of manufacture and the notation "300 WM" or "300 WIN MAG" in accordance with drawing 53711-8330252.

3.4.3 Primer. The primer shall be a large match rifle primer, non-corrosive, nickel-plated, boxer type, and shall be of lead-styphnate type. The primer shall have a brass anvil and brass cup. The primer shall be capable of meeting the ballistic requirements herein.

3.4.4 Propellant. (C2) [Each cartridge shall contain Hodgdon H1000 propellant.] The propellant loaded in this cartridge shall contain flash reduction additives or coatings, and shall meet the temperature stability and ballistic requirements detailed in Section 3.6.

3.5 Complete cartridge.

3.5.1 Cartridge assembly. The cartridge assembly shall be manufactured and inspected in accordance with drawing 53711-8330252.

3.5.2 Primer seating depth. The primer shall be seated in the cartridge case to a depth of (M101) [0.000 to 0.008 inch below the face of the cartridge case head.] The primer shall not be staked or crimped in place.

3.5.3 Cartridge overall length. (M102) [The nominal overall length of the assembled cartridge shall be 3.500 inches maximum, 3.450 inches minimum] in accordance with drawing 53711-8330252. The distance from the cartridge case head to the 0.300 inch diameter datum on the projectile ogive shall be controlled to within ± 0.010 inches. The nominal overall length and the distance

from the cartridge case head to the 0.300 inch diameter datum on the projectile ogive of the assembled cartridge shall be established, within the above limits, by the manufacturer to meet performance requirements.

3.5.4 Cartridge headspace. (M103) [The cartridge headspace shall be 0.212 inches minimum, 0.220 inches maximum], in accordance with drawing 53711-8330252. Cartridge headspace shall be measured from the base of the cartridge case to the opposite surface of the belt of the cartridge case.

3.5.5 Primed case sensitivity. Primed Case Sensitivity tests shall be conducted on empty primed cases in accordance with 4.5.5. Primed case sensitivity shall be as follows:

- a. (C3) [The mean critical height minus two standard deviations ($\bar{H}-2\sigma$) shall be 3.0 inches minimum.]
- b. (M104) [The mean critical height plus four standard deviations ($\bar{H}+4\sigma$) shall be 22.0 inches maximum.]

3.6 Cartridge ballistic performance.

3.6.1 Velocity. (M105) [The corrected average muzzle velocity of the cartridges conditioned at $70^{\circ} \pm 5^{\circ}$ Fahrenheit (F) shall be $2,850 \pm 50$ ft/sec. feet per second (fps)]. The standard deviation of the corrected muzzle velocity at $70^{\circ} \pm 5^{\circ}$ F shall not exceed 15 fps. This test shall be conducted in accordance with paragraph 4.5.6.

3.6.2 Chamber Pressure. (M106) [The corrected average chamber pressure shall not exceed 68,100 pounds per square inch (psi) at 70° F.] Neither the chamber pressure of an individual sample test cartridge nor the average chamber pressure plus three standard deviations of chamber pressure shall exceed 78,900 psi. This test shall be conducted in accordance with paragraph 4.5.7.

3.6.3 Operational Temperature Stability (High and Low). The velocity and pressure of sample cartridges conditioned and fired at the temperature extremes specified below shall be in accordance with 3.6.3.1 and 3.6.3.2.

- a. Conditioned at 165° F - 5° F for not less than 2 hours immediately prior to firing.
- b. Conditioned at -20° F + 5° F for not less than 2 hours immediately prior to firing.

3.6.3.1 Velocity. (M107) [The average corrected muzzle velocity of the sample cartridges conditioned at -20°F shall not vary by more than 75 fps from the average corrected muzzle velocity of the sample cartridges conditioned at 165°F.]

3.6.3.2 Chamber Pressure. (M108) [The average corrected chamber pressure of the sample cartridges conditioned at -20°F and 165°F shall not exceed 71,500 psi.] Neither the chamber pressure of an individual sample test cartridge nor the average chamber pressure plus three standard deviations of chamber pressure shall exceed 78,900 psi.

3.6.4 Accuracy.

3.6.4.1 300 yard accuracy. (M109) [The extreme spread of any individual 10-shot group shall not exceed 4.5 inches at 300 yards. The average extreme spread of ten, 10-shot groups shall not exceed 3.5 inches at 300 yards.]

3.6.4.2 600 yard accuracy. (M110) [The extreme spread of any individual 10-shot group shall not exceed 9.0 inches at 600 yards. The average extreme spread of ten, 10-shot groups shall not exceed 7.0 inches at 600 yards.] This test shall be conducted in accordance with 4.5.8 and Appendix B, except that the range to target shall be 600 + 1 yard. This test shall be conducted as part of the First Article Sample or if a First Article Sample is not part of the contract, as part of the first production lot of a new contract.

3.6.5 Function and Casualty. (M111) [There shall be no weapon stoppages due to the cartridge.] The cartridge shall meet all function and safety requirements of Table I. Misfires shall be considered separately in accordance with Table I. Function and causality testing shall be conducted using the rifles as specified in the contract.

Table I. Ballistics function and safety. ⁽¹⁾

Characteristics ⁽²⁾	Classification	Accept	Reject
1. There shall be no hangfires.	(C4)	0	1
2. There shall be no misfires. ⁽³⁾	(M112)		
3. A projectile or portion thereof shall not remain in the bore.	(C5)	0	1
4. There shall be no gas leakage or primer failures due to:			
a. Perforation in firing pin indent.	Minor	10	11
b. Escape of gas through primer cup other than 4a	Minor	10	11
c. Escape of gas around primer cup. ⁽⁴⁾	Minor	10	11
d. Loose primer.	(M113)	5	6
e. Blown primer.	(C6)	0	1
5. There shall be no cartridge case casualties due to: ⁽⁵⁾			
a. Longitudinal split of the:			
(1) Mouth (I)	(M114)	5	6
(2) Neck (S)	(M115)	5	6
(3) Body - upper 2/3 (J)	(M116)	5	6
(4) Body - lower 1/3 (K)	(C7)	0	1
(5) Head - extending into extractor groove (L)	(C8)	0	1
(6) Head - extending into primer pocket (M)	(C9)	0	1
b. Circumferential rupture:			
(1) Partial, Neck (S)	Minor	10	11
(2) Partial, Body - upper 2/3 (J)	Minor	10	11
(3) Partial, Body - lower 1/3 (K)	(M117)	5	6
(4) Partial, Head (L)	(C10)	0	1
(5) Complete	(C11)	0	1
6. There shall be no premature cartridge functions.	(C12)	0	1
7. There shall be no weapon stoppages due to the cartridge. ⁽⁶⁾	(M118)	1	2
8. There shall be no failures to extract. ⁽⁶⁾	(M119)	1	2

TABLE I: Ballistics function and safety⁽¹⁾ - Continued.

NOTES:

- (1) The occurrence of one or more critical defectives attributable to the cartridge during any test, including warm and foul firings of cartridges from the test lot, shall result in rejection of the lot.
- (2) For definition of characteristics, see 6.3.
- (3) Each cartridge that misfires shall be disassembled and examined to determine the cause of the misfire.
- a. If the misfire is attributed to a defective cartridge (for other than a critical defect) due to improper assembly or missing components, then the criteria for acceptance/rejection for major characteristic shall be accept on 1, reject on 2 defectives. If one misfire occurs, then a second Function and Casualty sample of 360 cartridges shall be tested in accordance with Table II and Appendix C. The occurrence of any additional misfires shall result in rejection of the lot (accept on 1, reject on 2 defective for the cumulative total of all firings). Additionally, the occurrence of one or more critical defectives during the firing of any test, including the second Function and Casualty sample, shall result in rejection of the lot.
 - b. The lot shall be rejected if the cartridge does not meet the critical requirements of 3.4.2 (presence of primer pocket vent hole) or 3.4.4 (presence of propellant charge).
 - c. If the misfire is attributed to the test weapon, then the weapon shall be repaired or replaced and another cartridge fired in place of the misfire.
- (4) Gas escape around more than 50 percent of periphery of the primer cup.
- (5) For location of characteristics indicated by letters in parentheses, see 19200-7643674.
- (6) If weapon stoppages or failures to extract occur due to the ammunition cartridges, then the criteria for acceptance/rejection for major characteristics M113 and M114 shall be accept on one (1), reject on two (2) defectives. If one (1) weapon stoppage or one (1) failure to extract due to the cartridge occurs, then a second Function and Casualty sample shall be tested at the temperature range(s) of the failure in accordance with 4.5.9. The occurrence of any additional weapon stoppage or failure to extract shall result in rejection of the lot and the acceptance criteria for the cumulative total of all firings is accept on one (1), reject on two (2) defectives.

Table II: Test requirements.

Tests	Quantity for Each Temperature Range			Paragraph References	
	-15°F to -20°F	65°F to 75°F	160°F to 165°F	Requirement	Verification
CARTRIDGE BALLISTICS TESTS:					
Cumulative Sample Size ^{(1) (2)}		520-880			
1. Primed Case Sensitivity	See 4.5.5			3.5.5	4.5.5
2. Velocity / Chamber Pressure ^{(3) (4) (5)}	20	20	20	3.6.1 through 3.6.3.2	4.5.6, 4.5.7
3. Accuracy ⁽⁶⁾		100		3.6.4	4.5.8
4. Function and Casualty ⁽²⁾	120	120	120	3.6.5	4.5.9
<p>(1) The results of all ballistics tests, including examination of misfired cartridges, fired cartridge cases and primers, shall be used to determine compliance with the requirements of Table I. The occurrence of any critical defects attributable to the cartridges (including during firing of warm and foul cartridges from the test lot) shall result in rejection of the lot and no further testing shall be conducted.</p> <p>(2) If the firing of a second Function and Casualty sample is required due to the occurrence of a misfire as specified by Table I, the second sample shall consist of 360 cartridges, and shall be fired in accordance with Appendix C. This second sample shall be tested only for misfires and critical defects in determining acceptance/rejection.</p> <p>(3) Unless otherwise substantiated that the applicable chamber pressure requirements are met, chamber pressure testing shall be completed and the applicable requirements shall be met prior to conducting any other ballistic tests. Acceptable methods of substantiating that the chamber pressure requirements have been met are in-process chamber pressure checks, or propellant checks, or propellant acceptance tests. These acceptable methods do not eliminate the requirement to perform chamber pressure testing as part of the First Article Sample or final acceptance testing. The Contractor shall submit substantiating documentation to and receive approval from the Contracting Officer for each lot that will not be subjected to chamber pressure testing prior to other ballistics test.</p> <p>(4) For production lot acceptance (or First Article acceptance if required) 20 samples shall be fired with the propellant positioned at the primer end of the cartridge per SCATP-7.62. Reference cartridges and all other velocity / chamber pressure test samples shall be fired with the propellant at the primer end of the cartridge per SCATP-7.62. Each 20 round sample shall meet the requirements of 3.6.1 through 3.6.3.2.</p> <p>(5) The velocity tests shall be conducted concurrently with the chamber pressure tests.</p> <p>(6) Accuracy testing at 600 yards is to be conducted as part of the First Article Sample or first production lot if a First Article Sample is not part of the contract.</p>					

3.7 Workmanship.

3.7.1 Defects. Metallic components and the completed cartridge shall be free from folds, wrinkles, deep draw scratches, scaly metal, dents, burrs and other defects.

3.7.2 Foreign material. All components and the completed cartridge shall be free of foreign material including, but not limited to, corrosion, stains, dirt, oil, grease, smears of lacquer and metal chips.

3.7.3 Visual standards. The cartridge and components shall meet the visual standards requirements of MIL-STD-636 for caliber .30 cartridges. Classification of individual visual and workmanship characteristics shall be as defined by MIL-STD-636.

3.7.4 Mixed ammunition types. For mixed ammunition types, the occurrence of a high pressure test, dummy or blank cartridge shall be classed as a critical defect. Occurrence of any other type shall be classed as a major defect.

3.8 Lot formation.

3.8.1 Cartridges. The cartridges shall be assembled into identifiable lots. Each lot shall consist of units of product of a single type, grade, class, size and composition, manufactured under the same conditions, by the same manufacturer, and at the same time (continuous production run). Each cartridge lot shall contain no more than one lot of primers, one lot of propellant, one lot of cartridge cases and one lot of projectiles. Unless otherwise specified in the solicitation, the lot size shall be no more than 750,000 cartridges. Lot numbers shall be assigned in accordance with MIL-STD-1168. Each lot shall be identified as to type, caliber, model and lot number.

3.8.2 Primers. The size of any lot of primers used in the cartridges shall be 200,000 units minimum and 750,000 units maximum. A primer lot shall consist of a specific product, made on consecutive work shifts, with no break in the production of that specific product.

3.9 Safety precautions.

3.9.1 Contractor. Work performed in support of this specification and solicitation, when performed by contractors, shall comply with the safety precaution requirements of DOD 4145.26M.

3.9.2 Government activity. Work performed in support of this specification and solicitation, when performed by a Government

activity, shall comply with the safety precaution requirements of NAVSEA OP 5 Volume 1.

4. VERIFICATION

4.1 Responsibility for inspection. Unless otherwise specified herein, in the contract, or in the purchase order, the supplier is responsible for the performance of all inspection and test requirements as specified herein. Except as otherwise specified, the supplier may utilize his/her own facilities or any commercial facility acceptable to the Government. The Government reserves the right to perform any of the inspections and tests set forth in this specification where such inspections and tests are deemed necessary to ensure that supplies and services conform to prescribed requirements. Unless otherwise specified herein, in the contract, or in the purchase order, all test and inspection equipment (including test barrels) shall be supplied and maintained by the Contractor in accordance with MIL-I-45607.

4.1.1 Quality assurance terms and definitions. Reference shall be made to ANSI/ASQC-A8402 for definitions of quality assurance terms.

4.1.2 Classification of inspections. The inspection requirements specified herein are classified as follows.

4.2 First Article inspection. When specified in the solicitation (see 6.2g), First Article inspection of cartridges and cartridge components shall be performed on a First Article sample. The First Article inspection shall include the nondestructive inspections in Section 4.4 and the tests in Section 4.5. The First Article quantity (sample size) of cartridges and cartridge components shall be as specified in the solicitation.

4.3 Conformance inspection. Conformance inspection of production cartridges and cartridge components shall include the inspections in Section 4.4 and the tests in Section 4.5.

4.4 Nondestructive inspections.

4.4.1 Inspection provisions. Unless otherwise specified herein or in the solicitation, Tables III and IV shall be used for nondestructive acceptance inspection. Inspection shall be by characteristic. Acceptance criteria shall be accept on zero defects and reject on one or more defects for all inspection levels. In Table IV the number under each inspection level indicates sample size. An asterisk under the inspection level indicates 100% inspection. If the sample size exceeds lot size, the lot shall be 100% inspected. 100% inspection shall be used for all critical characteristics. Unless otherwise specified, Inspection Level V shall be used for major characteristics and Inspection Level VII for minor characteristics. Section 3.0

requirements that are not annotated as critical or major shall be classified as minor. Classification of characteristics shall be defined in accordance with DOD-STD-2101.

4.4.2 Material requirements. The Contractor shall maintain certificates and test results showing compliance with all material requirements of Section 3.0. Certifications and test results shall be included in each First Article Test Report (or Lot Acceptance Test Report of the first production lot of a new contract if no First Article is required) and shall be available upon request for each production lot.

Table III: Inspection level.

Referenced AQL	Inspection Level
0.040	I
0.065	II
0.100	III
0.150	IV
0.250	V
0.400	VI
0.650	VII
1.000	VIII
1.500	IX
2.500	X
4.000	XI
6.500	XII

4.4.3 Workmanship. Cartridges and components shall be visually inspected to determine compliance with the requirements of 3.4.2 and 3.7.1 through 3.7.4.

4.4.4 Dimensional and weight requirements. All dimensional and weight requirements in Section 3.0 shall be verified by contractor gages or by Standard Measuring Instruments (SMI).

4.4.5 Vent hole and propellant presence. The Contractor shall verify the presence of a primer pocket vent hole (see 3.4.2) and

the presence of a propellant charge (see 3.4.4) by visual inspection or by automated equipment using probes or other sensing devices.

4.4.6 Lot formation. The Contractor shall maintain records on lot formation. Lot formation records shall be made available upon request for review to verify that lot formation complies with 3.8.1 and 3.8.2 and that lot numbering is in accordance with MIL-STD-1168.

Table IV: Sample size.

Lot Size	Inspection Levels											
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
2 - 8	*	*	*	*	*	*	*	*	*	5	3	2
9 - 15	*	*	*	*	*	*	*	13	8	5	3	2
18 -25	*	*	*	*	*	*	20	13	8	5	3	2
26 - 50	*	*	*	*	*	32	20	13	8	5	4	3
51 - 90	*	*	*	80	50	32	20	20	20	13	8	6
91 - 150	*	*	125	80	50	32	20	20	20	13	10	8
151 - 280	*	200	125	80	50	32	32	32	20	15	13	9
281 - 500	315	200	125	80	50	50	49	33	24	19	14	11
501 - 1200	315	299	200	125	80	74	49	39	31	23	18	14
1201 - 3200	315	299	200	169	129	96	59	49	36	28	22	17
3201 - 10000	315	299	200	169	149	124	74	56	45	35	27	19
10001 - 35000	498	315	299	229	199	142	99	72	56	43	31	19
35001 - 150000	748	498	373	299	213	175	99	87	69	49	31	19
150001 - 500000	748	598	498	332	271	213	142	110	74	49	31	19
500000 - OVER	998	748	598	427	332	299	149	124	74	49	31	19

4.4.7 100% examination of cartridges. During or immediately prior to the packaging operation, 100% examination of the cartridges shall be performed to ascertain that the cartridge type conforms to the requirements of 3.7.1 through 3.7.4. All nonconforming cartridges shall be rejected.

4.4.8 Packaging, packing and marking inspection. Inspection for packaging, packing and marking shall be in accordance with MIL-STD-644. The requirements of Section 5.0 shall be met.

4.5 Tests.

4.5.1 Test conditions. Unless otherwise specified herein or in the solicitation, all testing shall be conducted with samples conditioned at $70^{\circ}\text{F} \pm 5^{\circ}\text{F}$ for a minimum of two hours.

4.5.2 Test provisions. Unless otherwise specified herein or in the solicitation, each lot of components and each lot of cartridges shall be tested in accordance with the requirements stated in the specification, drawings and contract documents. Cartridges shall be randomly selected in such a manner that the sample is representative of the lot. The cartridges shall be thoroughly mixed before being divided into sample groups for each test. Appendices A, B, and C provide more detailed ballistics test requirements.

4.5.3 Equipment/weapon failure. If an equipment/weapon failure occurs which prevents the obtaining of a reliable test result, then the equipment/weapon shall be replaced or repaired, the individual test cartridge result shall be disregarded and another sample cartridge shall be fired for the record. If the equipment/weapon failure prevented the obtaining of reliable results for the entire test series, then the entire test series results shall be disregarded and another complete sample shall be fired for record. If a firing defect occurs which is not attributable to the test conditions, and which prevents obtaining a reliable result for the test, an additional cartridge shall be fired in its place. The test shall not be penalized, but the defect shall be counted in the cumulative ballistics sample for Table I.

4.5.4 Reference cartridges. Unless otherwise specified in the solicitation (6.2e), reference cartridges shall be supplied by the Contractor. Reference cartridges shall be used in accordance with ANSI/SAAMI Z299.4-1992 for chamber pressure and muzzle velocity tests during First Article inspections (if First Article is required) and conformance inspections. The reference lot number used by the Contractor shall be recorded and all reference firing and resulting correction factor data will be considered part of all chamber pressure and muzzle velocity test data.

4.5.5 Primed Case Sensitivity. Using empty primed cases, the test shall be conducted in accordance with SAAMI specifications.

4.5.6 Velocity. The Velocity Test shall be conducted in accordance with Appendix A. The lot shall be rejected if the corrected average muzzle velocity of the projectiles does not meet the requirements of 3.6.1 or if the standard deviation of the velocities does not meet the requirements of 3.6.1 when temperature conditioned at 70°F . The lot shall also be rejected if one or more

of the samples conditioned at -20°F or $+165^{\circ}\text{F}$ fail to meet the requirements of 3.6.3.1.

4.5.7 Chamber Pressure. The test shall be performed in accordance with Appendix A. Unless otherwise specified in the solicitation, the Contractor shall provide the test barrel for pressure testing. The lot shall be rejected if the corrected average peak chamber pressure of any test sample at the 70°F temperature range fails to meet the requirements of 3.6.2 or if one or more cartridges fail the individual sample requirements of 3.6.2. The lot shall also be rejected if one or more of the samples temperature conditioned at -20°F or 165°F fails to meet the requirements of 3.6.3.2.

4.5.8 Accuracy. The Accuracy Test shall be conducted in accordance with Appendix B. The requirements of 3.6.4 shall be met. The lot shall be rejected if the average extreme spread of all 10-shot groups exceeds the specified requirement or if one or more 10-shot groups exceed the individual group requirement.

4.5.9 Function and Casualty. The Function and Casualty Test shall be conducted in accordance with Appendix C. The misfire requirement of 3.6.5 shall be met. The acceptance/rejection criteria are shown in Table V below.

Table V: Function and Casualty accept-reject criteria.

Type of Stoppage	Number of Stoppages	
	Accept (AC)	Reject (RE)
Failure to extract	1	2
Failure to chamber	1	2
All other stoppages	1	2

4.6 Safety precautions. Compliance with the safety precautions of 3.9.1 (Contractor) or 3.9.2 (Government activity) shall be verified as part of the safety survey conducted during solicitation pre-award.

5. PACKAGING

For acquisition purposes, packaging requirements shall be as specified in the solicitation (see 6.2c). When actual packaging of material is to be performed by DOD personnel, DOD personnel need to contact the responsible packaging activity to ascertain requisite packaging requirements. Packaging requirements are maintained by

the Inventory Control Point's packaging activity within the Military Department or Defense Agency, or within the Military Department's System Command. 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. The MK 248 MOD 1 cartridge covered by this specification is for use in the Remington 700 family of weapons (bolt action only) chambered for .300 Winchester Magnum cartridges.

6.2 Acquisition requirements. Acquisition documents include the solicitation, quotation, contract and/or purchase order and are herein referred to as "solicitation". Acquisition documents must specify the following:

- a. Title, number and date of the specification.
- b. The issue of DODISS to be cited in the solicitation and, if required, the specific issue of individual documents referenced (see 2.2 through 2.3).
- c. Packaging, packing, palletizing, marking and labeling requirements: See Section 5.0. Solicitation must specify that packaging, packing, palletizing, marking and labeling shall be in accordance with MIL-P-15011, MIL-STD-644, and the drawings listed in 53711-8330265.
- d. Item designators (Department of Defense Identification Code/Naval Ammunition Logistic Code (DODIC/NALC) Index, National Item Identification Number (NIIN), National Stock Number (NSN), and nomenclature).
- e. Government Furnished Equipment (GFE):
 - (1) Identification of Government-owned property to be loaned to the Contractor for use under this specification only, to include quantities and test weapon serial numbers.
 - (2) Method by which Contractor shall receive, account for during use, and return GFE to the Government upon termination or completion of the solicitation.

- (3) Record of test rifles used and the number of cartridges expended in each weapon used shall be included as data in the test report(s).
- f. Data Item Descriptions (DIDs) that are to be substituted for canceled and superseded DIDs, with reference to the appropriate Contract Data Requirements List (CDRL) (DD Form 1423).
- g. **First Article:** The solicitation must specify if First Article inspection is required. If First Article inspection is required, the solicitation must specify the sample size of cartridges and identification and quantity of each cartridge component to be subjected to First Article inspection. The solicitation must also include clauses that require the following: First Article sample shall be representative of the manufacturing methods and processes to be used for quantity production. First Article sample shall be tested and the First Article report submitted prior to the beginning of production. Further production of cartridges prior to acceptance of First Article sample and written approval by the Contracting Officer shall be at the risk of the Contractor. Additionally, any change in a component type or manufacturer after approval of the First Article sample shall require an additional First Article sample (including certification of propellant reactivity stability) to be submitted and accepted prior to further production. If any cartridge in the First Article sample fails to comply with any of the applicable requirements, the First Article sample shall be rejected. The Government may require that sample cartridges be delivered to the Government and may subject sample cartridges to any or all of the inspections and tests specified in this specification, the applicable documents referenced herein or in the solicitation. The increased quantity shall be for informational purposes and will not affect the accept/reject criteria.

6.3 Definitions.

- a. **Misfire:** Failure of a cartridge to fire after the initiating impulse has been applied to the primer, normally due to:
 - (1) Primer fails to fire when struck by firing pin.
 - (2) Propellant does not ignite when primer fires.

- b. Hangfire: Any perceptible delay (one second or more) in the functioning of a cartridge after the initiating impulse has been applied to the primer.
- c. Blown primer: A primer that falls out when the cartridge case is ejected and both the head of the case and the primer pocket are enlarged and deformed.
- d. Longitudinal split: A longitudinal separation of the metal in the cartridge case wall produced by firing.
- e. Circumferential rupture: A circumferential separation of the cartridge case wall produced by firing. A partial rupture is one that extends less than 360 degrees around the case. A complete rupture is one that extends entirely around the case, separating the case into two parts.
- f. Premature cartridge function: When the cartridge functions prior to intentional initiation of the firing mechanism of the weapon. Such failures usually occur during cycling of the weapon mechanism and prior to complete locking of the weapon's bolt.
- g. Loose primer: Independent movement of the primer in the cartridge case primer pocket or the primer falls out of the cartridge case primer pocket.

6.4 Government-loaned property. Government-loaned property is defined as property "that the Government loans to the Contractor for testing or any other purpose and which does not lose its identity by becoming part of the commodity" (Reference MIL-STD-961E). The Contracting Officer should arrange to loan the property to the Contractor awarded the contract or purchase order.

Appendix A: Electronic Pressure and Velocity Test Procedures

A.1 SCOPE

A.1.1 Scope. The Electronic Pressure and Velocity Test (EPVAT) shall be performed to determine the chamber pressure level, velocity level and the uniformity of the cartridges. This test shall be performed prior to the conduct of other ballistic tests.

A.2 EQUIPMENT

A.2.1 Mount. A pier or mount of solid construction shall be utilized to mount the universal receiver and barrel assembly.

A.2.2 Barrel. The test barrel shall be 24.000 ± 0.010 inches long and shall be in accordance with the requirements of ANSI/SAAMI Z299.4-1992. The barrel and universal receiver assembly shall be headspaced in accordance with the requirements of ANSI/SAAMI Z299.4-1992. The barrel assembly shall be deemed acceptable provided the values obtained with the reference cartridges during the test are as described; i.e., the peak average chamber pressure and muzzle velocity are within the inclusion limits as reported for that lot.

A.2.3 Transducer. A conformal-type piezoelectric transducer shall be used in accordance with the requirements of ANSI/SAAMI Z299.4-1992 for the EPVAT. The transducer shall be calibrated in accordance with ANSI/SAAMI Z299.4-1992.

A.2.4 Measuring equipment. Equipment shall be in accordance with the requirements of ANSI/SAAMI Z299.4-1992 for the EPVAT, less the equipment required to measure action time. Instrumental velocity shall be measured at 15' in accordance with ANSI/SAAMI Z299.4-1992. One method of achieving this would be to place the velocity screens at 10' and 20' from the muzzle.

A.3 USE OF REFERENCE CARTRIDGES

A.3.1 Reference cartridges shall be used to establish range and equipment corrections prior to firing an ammunition lot for acceptance. A minimum of twenty (20) reference cartridges shall be fired for each test sample of forty (40) cartridges. If several EPVATs are grouped such that they may be fired in a common test barrel and within a period of time of 4 hours maximum, then a single twenty (20) cartridge reference firing may be performed. Reference cartridges shall be temperature conditioned at 65°F to 75°F.

A.3.2 After the required number of reference cartridges has been fired, the actual average chamber pressure and the actual average velocity of the reference cartridges shall be compared with the assessed values. If the assessed chamber pressure value is higher than the actual average chamber pressure of the reference cartridges, the difference is a plus correction and shall be added to the average chamber pressure of the test cartridges. If the assessed value is lower than the actual average chamber pressure of the reference cartridges, the difference is a minus correction and shall be subtracted from the average chamber pressure of the test cartridges. If the assessed value and the actual average chamber pressure of the reference cartridges are identical, then no correction is applied. The same methodology is applied when correcting the average velocity of the test cartridges.

A.4 PROCEDURES

A.4.1 Cartridge conditioning. The required number of test cartridges shall be placed in a vertical position, primer-end down, in recessed holding blocks. The cartridges shall be permitted to come to a temperature of 60°F to 80°F prior to being placed in the controlled temperature room or container. The recessed holding blocks containing the cartridges shall be placed in the controlled temperature room or container in such a manner that all the cartridges are subjected to a uniform temperature. Cartridges shall be temperature conditioned for a minimum of two hours prior to firing. Reference cartridges shall be temperature conditioned at 70°± 5°F for each temperature range of firing.

A.4.2 Barrel preparation The chamber and bore of the test barrel shall be thoroughly cleaned and wiped dry prior to firing, and shall be cleaned after firing each group of rounds for record.

A.4.3 Firing.

A.4.3.1 Two (2) warmer/fouling shots shall be fired after each cleaning of the test barrel. During warm and foul, chamber pressure shall be measured using transducer in accordance with paragraphs A.4.3.3 through A.4.3.6 below, but the readings shall not be included in the record of the sample.

A.4.3.2 The cartridges shall be placed in an insulated box (five cartridges at a time) and the box placed at a point convenient to the technician. The cartridges are then removed singly from the insulated box immediately before firing. If an insulated box is not available, then the cartridges shall be removed singly from the controlled temperature room or container immediately before firing.

A.4.3.3 The cartridge shall be chambered very carefully.

A.4.3.4 The breech-block shall be closed gently.

A.4.3.5 The trip lever to which the lanyard is attached shall be carefully engaged to the hammer. If the technician encounters any difficulty closing the breech-block or engaging the trip lever, the test shall be discontinued until such difficulty is corrected. If any delay of approximately 1 minute or longer should occur after the cartridge is placed in the weapon chamber, that cartridge shall be extracted and another inserted in its place when firing is ready to continue.

A.4.3.6 The cartridge shall be fired. The breech-block shall be lowered and the cartridge case extracted.

A.4.3.7 The procedure prescribed in A.4.3.3 through A.4.3.6 is repeated until the required number of cartridges has been fired.

A.4.3.8 The average chamber pressure and average velocity of the reference cartridges shall be compared to their respective assessed values for the reference lot to assure that the test barrel meets the requirements of A.2.2.

A.4.3.9 The chamber pressure and velocity corrections shall be obtained as prescribed in A.3.2.

A.4.3.10 The test cartridges shall then be fired in accordance with A.4.3.1 through A.4.3.6 above.

A.4.3.11 The individual chamber pressure and the time of flight over the screens and/or the velocity shall be recorded for each cartridge.

A.4.3.12 The chamber pressure correction obtained with the reference cartridges shall be applied to the average chamber pressure and to the maximum individual chamber pressure obtained with the test cartridges as prescribed in A.3.2. Similarly, the velocity correction obtained with the reference cartridges shall be applied to the average velocity obtained with the test cartridges.

A.4.3.13 Continuous air cooling should be used on the barrel throughout the test. If air cooling is not available, firing should be regulated so that one cartridge is fired every 15 seconds. The barrel shall be allowed to cool to ambient temperature between each series of tests, or after a maximum of sixty (60) cartridges have been fired. At no time shall the exposed metal surface of the test barrel become too hot to grasp with the bare hands (approximately 140°F). After the barrel has cooled to ambient temperature, warmer/fouling shots shall be fired in accordance with A.4.3.1 prior to continuation of the test.

A.4.4 Examinations. All fired cartridge cases and primers shall be visually examined to determine compliance with the applicable requirements of Table I. In the event that fired case or primer defects are encountered, or if a misfire occurs, then the test weapon shall be examined to determine if the defect or misfire is attributable to the weapon. If the weapon is at fault, then the test shall be disregarded and the weapon shall be repaired or replaced prior to performing a retest. If the defect cannot be attributed to the weapon, then the defect shall be attributed to the cartridge. Misfired cartridges shall be disassembled to determine the cause of the misfire.

Appendix B: Accuracy Test Procedures

B.1 SCOPE

B.1.1 Scope. The Accuracy Test shall be performed to determine the uniformity and dispersion of the bullets at a specified distance from the test weapon.

B.2 EQUIPMENT

B.2.1 Range. The firing range shall be arranged such that a horizontal distance of 300 to 301 yards is maintained from the muzzle of the test weapon to the face of the test targets. If First Article Test (FAT) is required, or if this is the first lot undergoing Lot Acceptance Test (LAT) under a new contract, the range to target shall be 600 to 601 yards.

B.2.2 Weapon mount. The test weapon shall be supported during testing by mounting in the accuracy test fixture as described in drawing 19200-8649418 as required by SCATP-7.62 dated November 1992. The test fixtures shall be constructed and mounted so as to prevent fixture movement during testing.

B.2.3 Targets. All test targets shall be rigidly mounted at a distance of 300 to 301 yards from the muzzle of the test weapon (600 to 601 yards for FAT or initial LAT). An automated targeting system may be used in lieu of a rigid target if its accuracy has been verified with rigidly mounted targets.

B.2.4 Weapons. Test weapons shall consist of solid barrels (no piston or transducer port) with barrel dimensions in accordance with the requirements of 53711-7057696. A minimum of two test barrels shall be used, with a maximum of five targets being fired upon by each test barrel (ten shots per target).

B.3 PROCEDURES

B.3.1 Cartridge conditioning. The required number of test cartridges shall be placed in a controlled temperature room or container in such a manner that all cartridges are subjected to a uniform temperature for a minimum of two hours prior to firing. The container or room shall be maintained at $70^{\circ} \pm 5^{\circ}\text{F}$ and be of sufficient capacity to allow free circulation of air.

B.3.2 Barrel preparation. The chamber and the bore of the test barrel shall be thoroughly cleaned and wiped dry prior to firing.

B.3.3 Firing.

B.3.3.1 A minimum of three unrecorded cartridges of the type of ammunition under test shall be fired to assure that the test weapon is correctly sighted on the target, to warm and foul the weapon, to settle the weapon in the test fixture, and to verify the equipment is functioning properly.

B.3.3.2 After the warmer/fouling cartridges have been fired, the target shall be changed so as to present a fresh surface for the succeeding rounds. Thereafter, the target shall be changed after each group of ten cartridges has been fired.

B.3.3.3 For accuracy testing, all cartridges shall be singly loaded into the chamber of the test barrel. The required number of cartridges are removed from the controlled temperature room or container and placed at a point convenient to the technician, provided the temperature of the firing room is $70^{\circ} \pm 5^{\circ}\text{F}$. Otherwise the cartridges shall be placed in an insulated box (five cartridges at a time) which has been conditioned at $70^{\circ} \pm 5^{\circ}\text{F}$, and the box placed at a point convenient to the technician. The cartridges are then removed singly from the insulated box immediately before firing. If an insulated box is not available, then the cartridges shall be removed singly from the controlled temperature room or container immediately before firing.

B.3.3.4 Ten cartridges shall be fired for record. The target shall be changed and a second ten shot group shall be fired in the same manner. This sequence shall be repeated until the specified number of cartridges has been fired from the first test barrel (50 cartridges maximum, plus warm and foul rounds).

B.3.3.5 The temperature of the test barrel should be controlled so that the exposed metal surface of the barrel does not become too hot to grasp with the bare hands (approximately 140°F). If the barrel becomes too hot to use, it shall be cooled to ambient temperature before the test is continued. The chamber and bore shall be cleaned and wiped dry and the warmer/fouling cartridges shall again be fired prior to continuation of the test.

B.3.3.6 The second test barrel shall then be placed in the test fixture and the cartridges shall be tested using the procedures of B.3.3.1 through B.3.3.5 above. If more than two test barrels are used, then the number of targets to be fired shall be divided among the number of weapons used.

B.3.3.7 Misfired cartridges and fired cartridge cases and primers shall be retained for further examination.

B.3.3.8 Each target shall be measured to determine the maximum extreme spread of each ten-shot group. This shall be accomplished by measuring the center-to-center distance between the two bullet holes which are farthest apart. Measurements shall be accurate within plus or minus 0.1 inch and results shall be recorded to the nearest one-tenth of an inch.

B.3.4 Examinations. All fired cartridge cases and primers shall be visually examined to determine compliance with the applicable requirements of Table I. In the event that fired case or primer defects are encountered, or if a misfire occurs, then the test weapon shall be examined to determine if the defect or misfire is attributable to the weapon. If the weapon is at fault, then the test shall be disregarded and the weapon shall be repaired or replaced prior to performing a retest. If the defect cannot be attributed to the weapon, then the defect shall be attributed to the cartridge. Misfired cartridges shall be disassembled to determine the cause of the misfire.

Appendix C: Function and Casualty Test Procedures

C.1 SCOPE

C.1.1 Scope. The purpose of the Function and Casualty Test is to determine if the ammunition will function satisfactorily in the weapons for which it has been designed.

C.2 EQUIPMENT

C.2.1 Test weapons. Test weapons shall be two each sniper rifles and suppressors as specified in the solicitation. No alterations to the test weapons, beyond the requirements and specifications of the original manufacturer or supplier, shall be permitted, except for the installation of the suppressor.

C.3 PROCEDURES

C.3.1 Cartridge examination. If visual defects are found in the test cartridges prior to testing, the defective cartridge(s) shall be replaced. Table C1 below shows the number of rounds to be fired at each temperature range.

TABLE C1. Round count for Function and Casualty Test.

Test Weapon	Firing Mode	Temperature Ranges		
		-20°F + 5°F	70°F ± 5°F	+165°F - 5°F
#1	Unsuppressed	30	30	30
	Suppressed	30	30	30
#2	Unsuppressed	30	30	30
	Suppressed	30	30	30
Total Rnds Each Temp.Range		120	120	120

C.3.2 Cartridge conditioning. Test cartridges shall be conditioned at the specified temperatures for two hours minimum and shall be fired within two minutes after removal from the controlled temperature room or container.

C.3.3 Weapon preparation. Test weapons shall be thoroughly cleaned prior to the beginning of testing and when switching to the next temperature range. The bore of each weapon shall be thoroughly cleaned after every 60 rounds. The test weapons shall be lubricated using Cleaner, Lubricant and Preservative (CLP, MIL-L-63460). The weapon shall be wiped with a cloth that was sprayed with CLP prior to assembly. The weapons shall be maintained at room temperature (55°F minimum) for a minimum of two hours prior to

the start of testing. The test sequence shall be unsuppressed, cold temperature condition first, hot temperature condition second and ambient temperature condition last, for each test weapon. Repeat cold, hot, ambient with suppressor installed.

C.3.4 Firing.

C.3.4.1 The firing procedure for each weapon shall be as follows:

- a. The bolt shall be retracted and three cartridges placed in the integral magazine. All cartridges shall be locked under the magazine lip.
- b. The bolt shall be pushed forward, feeding and chambering the cartridge.
- c. The rifle shall be fired, from the shoulder in a standing or bench rest position. A firing fixture may be utilized by the Contractor. Test fixtures shall be approved by the cognizant Government representative prior to use.
- d. After firing, the spent case shall be ejected by vigorously moving the bolt to the open position.
- e. Paragraphs C.3.4.1a through C.3.4.1d shall be repeated until all cartridges are expended.

C.3.4.2 The firing sequence of C.3.4.1 shall be repeated for each test weapon for each temperature range.

C.3.4.3 In the event of a weapon stoppage during the test, the test weapon shall be examined to determine if the stoppage is attributable to the weapon. If the weapon is at fault, then the test shall be disregarded and the weapon shall be repaired or replaced prior to performing a retest. If the stoppage cannot be attributed to the weapon, then the defect shall be attributed to the cartridges. Weapon stoppages attributable to the cartridge shall include but not be limited to:

- (1) Failure of the manually chambered cartridge to fully chamber in the barrel of the weapon.
- (2) Failure of any cartridge to completely chamber, fire and completely eject due to residue build-up in the weapon mechanism from previous firings.

C.3.4.4 Misfired cartridges and fired cartridge cases and primers shall be retained for further examination.

C.3.5 Examinations. All fired cartridge cases and primers shall be visually examined to determine compliance with the applicable

requirements of Table I. In the event that fired case or primer defects are encountered, or if a misfire occurs, then the test weapon shall be examined to determine if the defect or misfire is attributable to the weapon. If the weapon is at fault, then the test shall be disregarded and the weapon shall be repaired or replaced prior to performing a retest. If the defect cannot be attributed to the weapon, then the defect shall be attributed to the cartridge. Misfired cartridges shall be disassembled to determine the cause of the misfire.

C.3.6 Recording of data. Test data sheets shall include the following information:

- a. ALL MALFUNCTIONS AND WEAPONS STOPPAGES SHALL BE RECORDED AND THE CAUSE DESCRIBED, INCLUDING UNUSUAL OCCURRENCES IN WEAPON FUNCTION. The data shall include weapon identification (serial number), test round number and temperature conditioning range of the cartridges. In the event of misfires, the results of laboratory examination and disassembly of the misfired cartridge(s) shall be described in detail.
- b. All cartridge case and primer defects found during visual examination of fired cases shall be described in detail. The data shall include weapon identification (serial number) and temperature conditioning range of the cartridges.
- c. Test weapon serial numbers and number of cartridges fired through each test weapon prior to test.
- d. All cartridge defects found during visual examination of cartridges prior to testing shall be described in detail.

C.3.6.1 If Function and Casualty Test weapons are supplied as Government Furnished Equipment in accordance with the requirements of the contract or purchase order, then the Contractor shall maintain detailed records (log books) of all cartridges fired through each weapon. These records shall include type of ammunition, lot number, date of firing, personnel conducting the firing, brief summary of firing results, and any unusual occurrence or parts breakage. The log book record shall also include notations each time the weapon is cleaned, when parts are replaced, results of inspections, etc. The log book record shall remain with each weapon throughout the course of the contract and shall be returned to the Government with the weapon when the contract is completed (in accordance with the terms of the contract).