

MIL-F-50548A (AR)
9 November 1978
SUPERSEDING
MIL-F-50548 (PA)
30 June 1970

MILITARY SPECIFICATION

FUZES, ROCKET, M423 AND M427 LESS BOOSTER AND BOOSTER LEAD

This specification is approved for use by the US Army Armament Research and Development Command, and is available for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 This specification contains requirements not covered by the drawings and provides quality assurance provisions for two point detonating fuzes designated as Fuzes, Rocket, M423 and M427, Less Booster and Booster Lead.

2. APPLICABLE DOCUMENTS

2.1 The following documents of the issue in effect on date of invitation for bids or request for proposals form a part of this specification to the extent specified herein.

SPECIFICATIONS

MILITARY

- MIL-A-8625 - Anodic Coatings, for Aluminum and Aluminum Alloys
- MIL-P-48077 - Primer, M104, Parts for Loading, Assembling and Packing
- MIL-A-48078 - Ammunition, Standard Quality Assurance Provisions, General Specifications for
- MIL-D-50868 - Detonator M85
- MIL-P-60412 - Packaging, Packing and Marking for Shipment of Artillery Type and Rocket Fuzes, General Specification for

STANDARDS

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commander, US Army Armament Research and Development Command, Attn. DRDAR-QA, Dover, New Jersey 07801 by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

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MIL-STD-331 - Fuze and Fuze Components, Environmental and Performance Tests for

DRAWINGS (See 6.5)

US Army Armament Research and Development Command (ARRADCOM)

PRODUCT AND PACKAGING DRAWINGS

- 8886810 - Box, Packing, Ammunition, for Warhead, 2.75 Inch Rocket, HE, M151, Smoke, WP, M156 and Practice XM230
- 8886811 - Container, Ammunition, Fiber, M523, for Warhead, 2.75 Inch Rocket, HE, M151, Smoke WP, M156 and Practice XM230
- 9204391 - Fuze, Rocket, Less Booster and Booster Lead
- 9254707 - Fuze, Rocket, Less Booster and Booster Lead

INSPECTION EQUIPMENT DRAWINGS

- 9201212 - Envelope Drawing, Safety and Arming Inspection Equipment

(Copies of specifications, standards, drawings, and publications required by suppliers in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer).

3. REQUIREMENTS

3.1 Materials.—Materials shall be in accordance with the applicable drawings and specifications.

3.2 Fuze Assemblies and Parts.—The fuze assemblies and parts shall comply with all requirements specified on drawing (dwg.) 9204391 or dwg. 9254707 and with all requirements specified in applicable specifications and standards.

3.2.1 Spring Embrittlement.--None of the springs used in the fabrication of the fuze shall break when extended or distorted to the point of minimum permanent distortion.

3.2.2 Spring Set.--The setback weight spring shall return within .015 inch of the original free length when compressed and heat treated.

3.2.3 Arming and Detent Functioning.--The rotor assembly in the loaded Safety and Arming Device (S&A) shall rotate from the fully safe position to the fully armed position and the detent shall lock the rotor in the fully armed position.

3.2.4 Rotor Reset Capability. - The rotor assembly shall be capable of returning to the unarmed position on its own after the S&A device has been partially armed.

3.3 M423 S&A

3.3.1 Arming Time.--The rotor assembly in the loaded S&A shall rotate from the fully safe position to the fully armed position in not less than 0.67 sec. and not more than 0.81 sec. when subjected to arming acceleration of 27.00 plus or minus 0.25 g's.

3.3.2 Non-Arming Test.--The rotor assembly in the loaded S&A shall not arm when subjected to acceleration of 11.25 g's minimum for a minimum of three (3) seconds. This test shall be conducted just prior to insertion of the S&A into the fuze body, and always subsequent to the Arming Time Test.

3.4 M423 Fuze

3.4.1 Arming Time.--The fuze assembly shall arm in not less than 0.63 sec. or more than 0.82 sec. when subjected to arming acceleration of 27.00 plus or minus 0.25 g's and the detent shall lock the rotor in the fully armed position, as determined by radiographic inspection.

3.4.2 Non-Arming Test.--The fuze assembly shall not arm when subjected to acceleration of 11.50 g's plus or minus 0.25 g's for a minimum of three (3) seconds.

3.5 M427 S&A

3.5.1 Arming Time.--The rotor assembly in the loaded S&A shall rotate from the fully safe position to the fully armed position in not less than 1.13 sec. and not more than 1.30 sec. when subjected to arming acceleration of 40.00 plus or minus 0.25 g's.

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3.5.2 Non-Arming.--The rotor assembly in the loaded S&A shall not arm when subjected to an acceleration of 12.75 g's minimum for a minimum of three (3) seconds. This test shall be performed just prior to insertion of the S&A into the fuze body, and always subsequent to the Arming Time Test.

3.6 M427 Fuze

3.6.1 Arming Time.--The fuze assembly shall arm in not less than 1.07 sec. and not more than 1.36 sec. when subjected to arming acceleration of 40.00 plus or minus 0.25 g's and the detent shall lock the rotor in the fully armed position, as determined by radiographic inspection.

3.6.2 Non-Arming.--The fuze assembly shall not arm when subjected to an acceleration of 13.00 g's plus or minus 0.25 g's for a minimum of three (3) seconds.

3.7 S&A Position.--The safe position of the S&A shall be verified after insertion into the fuze body assembly. After insertion of the S&A, fuze handling shall be positively controlled to preclude any chance of inadvertent arming or substitution of the S&A until assembly of the booster housing.

3.8 Jolt and Jumble.--The fuze assembly shall be subjected to and must withstand the Jolt Test specified in MIL-STD-331, with the exception that the fuze shall not be disassembled and inspected after the Jolt Test. After completion of the Jolt Test, the same fuze shall be subjected to and must withstand the Jumble Test specified in MIL-STD-331.

3.9 Forty-Foot Drop.--The complete fuze assembly shall withstand the Forty-Foot Drop Test specified in MIL-STD-331. To satisfy the requirements of MIL-STD-331, the disassembled fuze must display the following conditions:

- a. No loose explosive shall be present in the fuze body assembly.
- b. The lock roller pin on the rotor shall not be broken.
- c. The rotor shall be in the safe position, secured such that it cannot be turned to the armed position with finger pressure.
- d. the g-weight shall be in the fully safe position.

3.10 Fuze Assembly Operational Test.--The unarmed fuzes shall be subjected to and must withstand the following operational tests: Five Foot Drop

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Test as specified in MIL-STD-331; Non-Environmental Test - Non-Arm and Arming Times only; Functional Test - Aircraft Vibration

See Appendix A. The vibration conditioning shall be continuously performed until completed. After completion of the Five Foot Drop Test and the Functional Test, including the acceptance criteria for these tests (Leak Test, Non-Arming Test and Arming Time Test), the same fuzes shall be tested for high order functioning.

3.11 Seal Leakage Test.—The leakage in the fuze shall not cause a pressure drop greater than 0.00072 psi in 10 sec.

3.12 Fuze Firing.—The fuze assembly shall function the explosive elements high order when a weight is dropped onto the nose of the fuze as evidenced by the lead cup being blown out.

3.13 Detonators.—All detonators, prior to assembly, shall have been subjected to and passed all requirements of MIL-D-50868.

3.14 Data Requirements.—The contractor shall generate data in accordance with the requirements of the data item description cited in 4.5.3.4.

3.15 First Article Inspection.—This specification makes provisions for first article inspection. Requirements for the submission of first article samples by the contractor shall be as specified in the contract.

3.16 Workmanship.—All parts and assemblies shall be free from burrs, chips, sharp edges, cracks, unblended radii, surface defects, dirt, grease, rust, porosity, warpage, burn marks, checks, blisters, excess flash, corrosion products and other foreign matter. The cleaning method used shall not be injurious to any part nor shall the parts be contaminated by the cleaning agents. Surface coating shall be continuous except for a few slight scratches not exposing base material. The loading and assembly operations shall be performed in a thorough, workmanlike manner consistent with the best practices of the industry. All required markings shall be neat and sharply defined.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for Inspection and Standard Quality Assurance Provisions.—Unless otherwise specified herein or in the contract, the provisions of MIL-A-48078 shall apply and are hereby made part of this detail specification.

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4.2 Classification of Inspection.-The following types of inspection shall be conducted on this item:

- a. First Article Inspection
- b. Quality Conformance Inspection

4.3 First Article Inspection

4.3.1 Submission.-The contractor shall submit a first article sample as designated by the contracting officer for evaluation in accordance with provisions of 4.3.2. The first article sample shall consist of the following items in sample quantities as indicated.

| <u>Part Description</u> | <u>Drawing</u> | <u>Quantity</u> |
|--|-----------------|-----------------|
| Body, Striker Pin | 8883734 | 25 |
| Body, Firing Pin | 8883741 | 25 |
| Washer, Anti-setback | 8883737 | 25 |
| Sleeve, Firing Pin | 8883738 | 25 |
| Pin, Firing | 8883739 | 25 |
| Nut, Firing Pin | 8883740 | 25 |
| Hammer, Firing Pin | 8883742 | 25 |
| Housing, Booster | 8883682 | 25 |
| Striker Pin Assembly | 8883733 | 25 |
| Firing Pin Body Assembly | 8883736 | 25 |
| Device, Safety and Arming | 9215619-1 or -2 | 25 |
| Device, Safety and Arming (Detonator only) | 9215617-1 or -2 | 10 |
| Device, Safety and Arming | 9215617-1 or -2 | 25 |
| Rotor Housing Assembly | 8883719 | 10 |
| Fuze, Body Assembly | 9215611 | 25 |
| Fuze, Rocket, Less Booster and Booster Lead | 9204391-1 or -2 | 253 |
| Pin, Firing | 9254702 | 10 |
| Body, Firing Pin | 9254703 | 25 |
| Body | 9254704 | 25 |
| Firing Pin and Body Assembly | 9254705 | 25 |
| Fuze Body Assembly | 9254706 | 25 |
| Booster Lead | | |
| Spring, Detent | 8883713 | 10 |
| Spring, Setback Weight | 8883718 | 10 |
| Gear and Pinion Assembly No. 1 | 8883703 | 25 |

| | | |
|-------------------------------------|---------|----|
| Gear and Pinion Assembly No. 2 | 8883700 | 25 |
| Escapement Gear and Pinion Assembly | 8883710 | 25 |
| Lever Assembly | 8883706 | 30 |
| Rotor Assembly | 8883744 | 20 |
| Inner Plate Assembly | 8883693 | 20 |
| Escapement and Gear Assembly | 8883692 | 20 |

4.3.2 Inspections to be Performed.—See MIL-A-48078 and Table I specified herein.

4.3.3 Rejection.—See MIL-A-48078.

TABLE 1 - FIRST ARTICLE INSPECTION

CLASSIFICATION OF DEFECTS & TESTS

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| PARAGRAPH | TITLE | | SHEET 1 OF 9 | | DRAWING NUMBER |
|-----------|---|---------------------|--------------|-----------------------|---|
| | Fuze, Rocket, Less Booster and Booster Lead and Components | | | | See Below |
| | | | | | NEXT HIGHER ASSEMBLY |
| CATEGORY | EXAMINATION OR TEST | NO. OF SAMPLE UNITS | AQL OR 100% | REQUIREMENT PARAGRAPH | PARAGRAPH REFERENCE / INSPECTION METHOD |
| | <u>Body, Striker Pin</u> (Dwg. 8883734) Examination for defects | 25 | - | 3.2 | 4.4.2.1 |
| | <u>Body, Firing Pin</u> (Dwg. 8883741) Examination for defects | 25 | - | 3.2 | 4.4.2.2 |
| | <u>Anti-Setback Washer</u> (Dwg. 8883737) Examination for defects | 25 | - | 3.2 | 4.4.2.3 |
| | <u>Sleeve, Firing Pin</u> (Dwg. 8883738) Examination for defects | 25 | - | 3.2 | 4.4.2.4 |
| | <u>Pin, Firing</u> (Dwg. 8883739) Examination for Defects | 25 | - | 3.2 | 4.4.2.5 |
| | <u>Nut, Firing Pin</u> (Dwg. 8883740) Examination for defects | 25 | - | 3.2 | 4.4.2.6 |
| NOTES: | | | | | |

TABLE 1 - FIRST ARTICLE INSPECTION

CLASSIFICATION OF DEFECTS & TESTS

MIL-F-50548A (AR)

| PARAGRAPH | TITLE | | SHEET 2 OF 9 | | DRAWING NUMBER |
|-----------|---|---------------------|--------------|-----------------------|---|
| | Fuze, Rocket, Less Booster and Booster Lead and Components | | | | See Below |
| | | | | | NEXT HIGHER ASSEMBLY |
| CATEGORY | EXAMINATION OR TEST | NO. OF SAMPLE UNITS | AQL OR 100% | REQUIREMENT PARAGRAPH | PARAGRAPH REFERENCE / INSPECTION METHOD |
| | <u>Hammer, Firing Pin</u> (Dwg. 8883742) Examination for defects | 25 | - | 3.2 | 4.4.2.7 |
| | <u>Housing, Booster</u> (Dwg. 8883682) Examination for defects | 25 | - | 3.2 | 4.4.2.8 |
| | <u>Striker Pin Body Assembly</u> (Dwg. 8883733) Examination for defects | 25 | - | 3.2 | 4.4.2.9 |
| | <u>Firing Pin Body Assembly</u> (Dwg. 8883736) Examination for defects | 25 | - | 3.2 | 4.4.2.10 |
| | <u>Device, Safety and Arming</u> (Dwg. 9215619-1 or 9215619-2) Examination for defects | 25 | - | 3.2 | 4.4.2.11 or 4.4.2.12 |
| | <u>Device, Safety and Arming (Detonator only)</u> (Dwg. 9215617-1 or 9215617-2) Detonator Push Test | 10 | - | 3.2 | 4.4.2.13 or 4.4.2.14 |
| | <u>Device, Safety and Arming</u> | | | | |
| NOTES: | | | | | |

TABLE 1 - FIRST ARTICLE INSPECTION

CLASSIFICATION OF DEFECTS & TESTS

MIL-F-50548A (AR)

| PARAGRAPH | TITLE | | SHEET 3 OF 9 | | DRAWING NUMBER |
|-----------|--|---------------------|--------------|-----------------------|---|
| | Fuze, Rocket, Less Booster and Booster Lead and Components | | | | NEXT HIGHER ASSEMBLY |
| CATEGORY | EXAMINATION OR TEST | NO. OF SAMPLE UNITS | AQL OR 100% | REQUIREMENT PARAGRAPH | PARAGRAPH REFERENCE / INSPECTION METHOD |
| | (Dwg. 9215617-1 or 9215617-2) Examination for defects | 25 | - | 3.2 | 4.4.2.13 or 4.4.2.14 |
| | <u>Device, Safety and Arming</u> (Dwg. 9216717-1 or 9215617-2) Examination for Defects | 25 | - | 3.2 | 4.4.2.13 or 4.4.2.14 |
| | Arming Time | 25 | - | 3.3.1 | 4.5.15 or 4.5.16 |
| | Arming and detent functioning | 25 | - | 3.2.3 | 4.5.12 |
| | Setback weight | 25 | - | 3.2 | 4.5.13 |
| | Rotor reset Capability | 25 | - | 3.2 | 4.5.14 |
| | Non-Arming | 25 | - | 3.3.2 | 4.5.17 or 4.5.18 |
| | <u>Rotor Housing Assembly</u> (Dwg. 8883719) Examination for defects | 10 | - | 3.2 | 4.5.2.33 |
| | Load Test of spring stud | 10 | - | 3.2 | 4.5.7.10 |
| NOTES: | | | | | |

TABLE 1 - FINAL ARTICLE INSPECTION

CLASSIFICATION OF DEFECTS & TESTS

MIL-F-50548A (AR)

| PARAGRAPH | TITLE | SHEET 4 OF 9 | | | DRAWING NUMBER See Below |
|-----------|--|---------------------|-------------|-----------------------|---|
| | Fuze, Rocket, Less Booster and Booster Lead and Components | | | | NEXT HIGHER ASSEMBLY |
| CATEGORY | EXAMINATION OR TEST | NO. OF SAMPLE UNITS | AQL OR 100% | REQUIREMENT PARAGRAPH | PARAGRAPH REFERENCE / INSPECTION METHOD |
| II | <u>Fuze, Body Assembly</u> (Dwg. 9215611) | | | | |
| | Examination for defects | 25 | - | 3.2 | 4.4.2.15 |
| | Corrosion resistance of Anodic Coating | 25 | - | 3.2 | 4.5.10 |
| | <u>Fuze, Rocket, Less Booster and Booster Lead</u> (Dwg. 9204391-1) | | | | |
| | Examination for defects | 253 | - | 3.2 | 4.4.2.16 |
| | S&A position check | | 100% | 3.7 | 4.5.19 |
| | Jolt - MIL-STD-331, Test 101 | 12 | | 3.8 | 4.5.27 |
| | Jumble - MIL-STD-331, Test 102 | | | 3.8 | 4.5.27 |
| | Five Foot Drop - MIL-STD-331, Test III | 45 | | 3.10 | 4.5.28 |
| | Aircraft Vibration - MIL-STD-810, Method 514, Curve - See Appendix 1 | 96 | | 3.10 | 4.5.30 |
| | Non-environmental test | 219 | | 3.10 | 4.5.29 |
| | Non-arm | a | | 3.4.2 | 4.5.23 |
| | Arming time (under minimum) | a | | 3.4.1 | 4.5.21 |
| | Forty-Foot Drop | 4b | | 3.9 | 4.5.26 |
| | Arming time (over max or fail to arm) | | a | 3.4.1 | 4.5.21 |
| | Leak test | | 9b | 3.11 | 4.5.20 |
| | Fuze firing test | | c | 3.12 | 4.5.25 |
| NOTES: | | | | | |

TABLE 1 - FIRST ARTICLE INSPECTION

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CLASSIFICATION OF DEFECTS & TESTS

| PARAGRAPH | TITLE | SHEET 5 OF 9 | | | DRAWING NUMBER |
|-----------|---|---------------------|-------------|-----------------------|---------------------------------------|
| | Fuze, Rocket, Less Booster and Booster Lead and Components | | | | See Below |
| | | | | | NEXT HIGHER ASSEMBLY |
| CATEGORY | EXAMINATION OR TEST | NO. OF SAMPLE UNITS | AQL OR 100% | REQUIREMENT PARAGRAPH | PARAGRAPH REFERENCE INSPECTION METHOD |
| | <u>Fuze, Rocket, Less Booster and Booster Lead</u> (Dwg. 9204391-2) Examination for defects | 253 | - | 3.2 | 4.4.2.16 |
| | S&A position check | | 100% | 3.7 | 4.5.19 |
| | Jolt - MIL-STD-331, Test 101 | 12 | | 3.8 | 4.5.27 |
| | Jumble - MIL-STD-331, Test 102 | | | 3.8 | 4.5.27 |
| | Five Foot Drop - MIL-STD-331, Test III | 45 | | 3.10 | 4.5.28 |
| | Aircraft Vibration - MIL-STD-810, Method 514, Curve - See Appendix 1 | 96 | | 3.10 | 4.5.30 |
| | Non-environmental test | 219 | | 3.10 | 4.5.29 |
| | Non-Arm | a | | 3.4.2 | 4.5.24 |
| | Arming time (under minimum) | a | | 3.4.1 | 4.5.22 |
| | Forty-Foot Drop | 4b | | 3.9 | 4.5.26 |
| | Arming time (over max of fail to arm) | | a | 3.4.1 | 4.5.22 |
| | Leak test | | 9b | 3.11 | 4.5.20 |
| | Fuze firing test | | c | 3.12 | 4.5.25 |
| | <u>Pin, Firing</u> (Dwg. 9254702) Examination for defects | 10 | - | 3.2 | 4.4.2.18 |
| NOTES: | | | | | |

TABLE 1 - FIRST ARTICLE INSPECTION

CLASSIFICATION OF DEFECTS & TESTS

MIL-F-50548A (AR)

| PARAGRAPH | TITLE | | SHEET 6 OF 9 | | DRAWING NUMBER |
|-----------|---|---------------------|--------------|-----------------------|---------------------------------------|
| | | | | | See Below |
| CATEGORY | EXAMINATION OR TEST | NO. OF SAMPLE UNITS | AQL OR 100% | REQUIREMENT PARAGRAPH | NEXT HIGHER ASSEMBLY |
| | | | | | PARAGRAPH REFERENCE INSPECTION METHOD |
| 13 | <u>Fuze, Rocket, Less Booster and Booster Lead and Components</u> | | | | |
| | <u>Body, Firing Pin</u> (Dwg. 9254703) Examination for defects | 25 | - | 3.2 | 4.4.2.19 |
| | Inside radius at bottom of nose section | 20 | - | 3.2 | 4.5.9 |
| | <u>Body</u> (Dwg. 9254704) Examination for defects | 25 | - | 3.2 | 4.4.2.20 |
| | <u>Firing Pin and Body Assembly</u> (Dwg. 9254705) Examination for defects | 25 | - | 3.2 | 4.4.2.21 |
| | <u>Fuze Body Assembly</u> (Dwg. 9254706) Examination for defects | 25 | - | 3.2 | 4.4.2.22 |
| | Leak Test | 25 | - | 3.2 | 4.5.8 |
| | Corrosion resistance of anodic coating | 25 | - | 3.2 | 4.5.10 |
| | <u>Fuze, Rocket, Less Booster and Booster Lead</u> (Dwg. 9254707-1) Examination for defects | 253 | - | 3.2 | 4.4.2.23 |
| | NOTES: | | | | |

TABLE 1 - FIRST ARTICLE INSPECTION

MIL-F-50548A (AR)

CLASSIFICATION OF DEFECTS & TESTS

| PARAGRAPH | TITLE | | SHEET 7 OF 9 | | DRAWING NUMBER |
|--|--|---------------------|--------------|-----------------------|---|
| | Fuze, Rocket, Less Booster and Booster Lead and Components | | | | See Below |
| | | | | | NEXT HIGHER ASSEMBLY |
| CATEGORY | EXAMINATION OR TEST | NO. OF SAMPLE UNITS | AQL OR 100% | REQUIREMENT PARAGRAPH | PARAGRAPH REFERENCE / INSPECTION METHOD |
| 14 | See Note (a) | | | | |
| | <u>Fuze, Rocket, Less Booster and Booster Lead</u> (Dwg. 9254707-2) | | | | |
| | Examination for defects | 253 | - | 3.2 | 4.4.2.24 |
| | See Note (b) | | | | |
| | <u>Spring, Detent</u> (Dwg. 8883713) | | | | |
| | Examination for defects | 10 | - | 3.2 | 4.4.2.25 |
| | Spring embrittlement | 10 | - | 3.2.1 | 4.5.5 |
| | <u>Spring, Setback Weight</u> (Dwg. 8883718) | | | | |
| | Examination for defects | 20 | - | 3.2 | 4.4.2.26 |
| | Spring embrittlement | 10 | - | 3.2.1 | 4.5.5 |
| | Spring set | 10 | - | 3.2.2 | 4.5.6 |
| NOTES: (a) See tests and quantities listed under Fuze, Rocket, Less Booster and Booster Lead (Dwg. 9204391-1) above. (b) See tests and quantities listed under Fuze, Rocket, Less Booster and Booster Lead (Dwg. 9204391-2) above. | | | | | |

TABLE 1 - FIRST ARTICLE INSPECTION

CLASSIFICATION OF DEFECTS & TESTS

MIL-F-50548A (AR)

| PARAGRAPH | TITLE | | SHEET 8 OF 9 | | DRAWING NUMBER See Below |
|-----------|--|---------------------|--------------|-----------------------|---------------------------------------|
| | Fuze, Rocket, Less Booster and Booster Lead and Components | | | | NEXT HIGHER ASSEMBLY |
| CATEGORY | EXAMINATION OR TEST | NO. OF SAMPLE UNITS | AQL OR 100% | REQUIREMENT PARAGRAPH | PARAGRAPH REFERENCE INSPECTION METHOD |
| 15 | <u>Gear and Pinion Assembly No. 1</u> (Dwg. 8883703) | | | | |
| | Examination for defects | 25 | - | 3.2 | 4.4.2.27 |
| | Load Test of No. 1 gear and pinion assembly | 25 | - | 3.2 | 4.5.7.1 |
| | <u>Gear and Pinion Assembly No. 2</u> (Dwg. 8883700) | | | | |
| | Examination for defects | 25 | - | 3.2 | 4.4.2.28 |
| | Load Test of No. 2 gear and pinion assembly | 25 | - | 3.2 | 4.5.7.2 |
| | <u>Escapement Gear and Pinion Assembly</u> (Dwg. 8883710) | | | | |
| | Examination for defects | 25 | - | 3.2 | 4.4.2.29 |
| | Load Test of escapement gear and pinion assembly | 25 | - | 3.2 | 4.5.7.3 |
| | <u>Lever Assembly</u> (Dwg. 8883706) | | | | |
| | Examination for defects | 30 | - | 3.2 | 4.4.2.30 |
| | Load Test of lever shaft | 10 | - | 3.2 | 4.5.7.4 |
| | Load Test of lever pallet | 10 | - | 3.2 | 4.5.7.5 |
| | Torque Test of lever shaft | 10 | - | 3.2 | 4.5.7.8 |
| NOTES: | | | | | |

TABLE 1 - FIRST ARTICLE INSPECTION

CLASSIFICATION OF DEFECTS & TESTS

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| PARAGRAPH | TITLE | | SHEET 9 OF 9 | | DRAWING NUMBER |
|-----------|--|---------------------|--------------|-----------------------|---------------------------------------|
| | Fuze, Rocket, Less Booster and Booster Lead and Components | | | | See Below |
| | | | | | NEXT HIGHER ASSEMBLY |
| CATEGORY | EXAMINATION OR TEST | NO. OF SAMPLE UNITS | AQL OR 100% | REQUIREMENT PARAGRAPH | PARAGRAPH REFERENCE INSPECTION METHOD |
| 16 | <u>Rotor Assembly</u> (Dwg. 8883744) | | | | |
| | Examination for defects | 20 | - | 3.2 | 4.4.2.31 |
| | Load Test of annular gear | 10 | - | 3.2 | 4.5.7.6 |
| | Lead Test of Lock Roller Pin | 10 | - | 3.2 | 4.5.7.7 |
| | <u>Inner Plate Assembly</u> (Dwg. 8883693) | | | | |
| | Examination for defects | 20 | - | 3.2 | 4.4.2.32 |
| | Load Test of bridgerivet | 20 | - | 3.2 | 4.5.7.9 |
| | <u>Escapement and Gear Assembly</u> (Dwg. 8883692) | | | | |
| | Examination for defects | 20 | - | 3.2 | 4.4.2.34 |
| | Load Test of Pillars | 20 | - | 3.2 | 4.5.7.11 |
| | <u>Pin, Striker</u> (Dwg. 8883735) | | | | |
| | Examination for defects | 25 | - | 3.2 | 4.4.2.35 |
| | <u>Seal, Square-cut</u> (Dwg. 9254737) | | | | |
| | Examination for defects | 25 | - | 3.2 | 4.4.2.36 |
| NOTES: | | | | | |

4.4 Quality Conformance Inspection

4.4.1 Inspection Lot Formation.-Inspection lots shall comply with the lot formation provisions of MIL-A-48078. In addition, each inspection lot of loaded fuzes shall contain:

a. Detonators from one interfix lot number from not more than three lots from one manufacturer.

b. Primers from one interfix lot number from not more than three lots from one manufacturer.

c. Metal parts from one interfix lot number from one manufacturer for each type fuze.

d. Safety and Arming devices from not more than two inspection lots for each type fuze.

4.4.2 Examination.-See MIL-A-48078.

a. Sampling Plans.-Unless otherwise specified in the Classification of Defects and Test tables, sampling plans for major and minor defects shall be in accordance with MIL-STD-105, Inspection Level II.

QUALITY CONFORMANCE INSPECTION

CLASSIFICATION OF DEFECTS & TESTS

MIL-F-50548A (AR)

| | | | | | |
|---|---|----------------------------|---|--|--|
| PARAGRAPH 4.4.2.1 | TITLE Body, Striker Pin | | SHEET 1 OF 1 | | DRAWING NUMBER 8883734 NEXT HIGHER ASSEMBLY 8883733 |
| CATEGORY | EXAMINATION OR TEST | NO. OF SAMPLE UNITS | AQL OR 100% | REQUIREMENT PARAGRAPH | PARAGRAPH REFERENCE INSPECTION METHOD |
| <u>Critical</u> <u>Major</u> 101 102 <u>Minor</u> 201 202 203 204 | None defined Wall thickness, min Inside radius at bottom of nose section Depth of striker pin body cavity, max. Diameter of striker pin body cavity, max. Concentricity of nose with diameter of striker pin body cavity Evidence of poor workmanship | 20 | 0.40% 0.65% 0.65% 0.65% 0.65% | 3.2 3.2 3.2 3.2 3.16 | Gage 4.5.9 Gage Gage Gage Visual |
| NOTES: NOTE: Sectioning to be performed after dimensional examinations. | | | | | |

QUALITY CONFORMANCE INSPECTION
CLASSIFICATION OF DEFECTS & TESTS

MIL-F-50548A (AR)

| | | | | | |
|------------------|---|------------------------------------|----------------------------|----------------------------------|--|
| PARAGRAPH | TITLE | | SHEET 1 OF 2 | | DRAWING NUMBER 8883741 |
| 4.4.2.2 | Body, Firing Pin | | | | NEXT HIGHER ASSEMBLY 8883736 |
| CATEGORY | EXAMINATION OR TEST | NO. OF SAMPLE UNITS | AQL OR 100% | REQUIREMENT PARAGRAPH | PARAGRAPH REFERENCE INSPECTION METHOD |
| <u>Critical</u> | None defined | | | | |
| <u>Major</u> | | | | | |
| 101 | Thickness at nose wall | | 0.40% | 3.2 | Gage |
| 102 | Concentricity of minor diameter of firing pin nut thread with hammer cavity diameter | | 0.40% | 3.2 | Gage |
| 103 | Concentricity of hammer cavity diameter with striker pin assembly mating diameter | | 0.40% | 3.2 | Gage |
| 104 | Concentricity of booster cavity diameter with hammer cavity diameter | | 0.40% | 3.2 | Gage |
| 105 | Concentricity of booster cavity pitch diameter with warhead mounting pitch diameter | | 0.40% | 3.2 | Gage |
| 106 | Pitch diameter of warhead mounting thread | | 0.40% | 3.2 | Gage |
| 107 | Length from aft face to warhead mounting shoulder, max. | | 0.40% | 3.2 | Gage |
| 108 | Depth of booster cavity | | 0.40% | 3.2 | Gage |
| 109 | Diameter of S&A cavity | | 0.40% | 3.2 | Gage |
| 110 | Concentricity of S&A cavity with booster cavity | | 0.40% | 3.2 | Gage |
| 111 | Minor diameter of booster cavity thread, max. | | 0.40% | 3.2 | Gage |
| 112 | Diameter of "O" ring seat | | 0.40% | 3.2 | Gage |
| 113 | Concentricity of "O" ring seat to booster cavity pitch diameter | | 0.40% | 3.2 | Gage |
| 114 | Length of "O" ring seat from aft face | | 0.40% | 3.2 | Gage |
| 115 | Length from nose to shoulder | | 100% | 3.2 | Gage |
| NOTES: | | | | | |

QUALITY CONFORMANCE INSPECTION

CLASSIFICATION OF DEFECTS & TESTS

MIL-F-50548A (AR)

| | | | | | |
|-----------|---|---------------------------|-------------------|--------------------------|---|
| PARAGRAPH | TITLE | | SHEET 2 OF 2 | | DRAWING NUMBER 8883741 |
| 4.4.2.2 | Body, Firing Pin | | | | NEXT HIGHER ASSEMBLY 8883736 |
| CATEGORY | EXAMINATION OR TEST | NO. OF SAMPLE UNITS | AQL OR 100% | REQUIREMENT PARAGRAPH | PARAGRAPH REFERENCE /INSPECTION METHOD |
| Minor | | | | | |
| 201 | Major diameter of warhead mounting thread min. | | 0.65% | 3.2 | Gage |
| 202 | Width of wrench slots, min. | | 0.65% | 3.2 | Gage |
| 203 | Width across wrench slots, max. | | 0.65% | 3.2 | Gage |
| 204 | Width of machine service groove, min. | | 0.65% | 3.2 | Gage |
| 205 | Diameter of machine service groove | | 0.65% | 3.2 | Gage |
| 206 | Length from warhead mounting shoulder to machine service groove | | 0.65% | 3.2 | Gage |
| 207 | Evidence of poor workmanship | | 0.65% | 3.16 | Visual |
| NOTES: | | | | | |

QUALITY CONFORMANCE INSPECTION

CLASSIFICATION OF DEFECTS & TESTS

MIL-F-50548A (AR)

| | | | | | |
|--|---|---------------------------|----------------------------------|---------------------------|---|
| PARAGRAPH 4.4.2.3 | TITLE Anti-Setback Washer | | SHEET 1 OF 1 | | DRAWING NUMBER 8883737 |
| | | | | | NEXT HIGHER ASSEMBLY 8883736 |
| CATEGORY | EXAMINATION OR TEST | NO. OF SAMPLE UNITS | AQL OR 100% | REQUIREMENT PARAGRAPH | PARAGRAPH REFERENCE /INSPECTION METHOD |
| <u>Critical</u> | None defined | | | | |
| <u>Major</u> | None defined | | | | |
| <u>Minor</u> 201 202 203 204 | Distance between tabs Width of tabs, min. Thickness Evidence of poor workmanship | | 0.65% 0.65% 0.65% 0.65% | 3.2 3.2 3.2 3.16 | Gage Gage Gage Visual |
| NOTES: | | | | | |

CLASSIFICATION OF DEFECTS & TESTS

MIL-F-50548A (AR)

| | | | | | |
|----------------------|---|---------------------------|-------------------|--------------------------|--|
| PARAGRAPH 4.4.2.4 | TITLE Sleeve, Firing Pin | SHEET 1 OF 1 | | | DRAWING NUMBER 8883738 |
| | | | | | NEXT HIGHER ASSEMBLY 8883736 |
| CATEGORY | EXAMINATION OR TEST | NO. OF SAMPLE UNITS | AQL OR 100% | REQUIREMENT PARAGRAPH | PARAGRAPH REFERENCE / INSPECTION METHOD |
| <u>Critical</u> | None defined | | | | |
| <u>Major</u> | None defined | | | | |
| <u>Minor</u> 201 | Concentricity of outside diameter with inside diameter | | 0.65% | 3.2 | Gage |
| 202 | Evidence of poor workmanship | | 0.65% | 3.16 | Visual |
| NOTES: | | | | | |

QUALITY CONFORMANCE INSPECTION

CLASSIFICATION OF DEFECTS & TESTS

MIL-F-50548A (AR)

| | | | | | |
|-----------------|---|---------------------------|-------------------|--------------------------|---|
| PARAGRAPH | TITLE | | SHEET 1 OF 1 | | DRAWING NUMBER |
| 4.4.2.5 | Pin, Firing | | | | 8883739 |
| | | | | | NEXT HIGHER ASSEMBLY |
| | | | | | 8883736 |
| CATEGORY | EXAMINATION OR TEST | NO. OF SAMPLE UNITS | AQL OR 100% | REQUIREMENT PARAGRAPH | PARAGRAPH REFERENCE /INSPECTION METHOD |
| <u>Critical</u> | None defined | | | | |
| <u>Major</u> | | | | | |
| 101 | Overall length, min. | | 0.40% | 3.2 | Gage |
| 102 | Small outside diameter | | 0.40% | 3.2 | Gage |
| 103 | Radius of firing pin point, max. | | 0.40% | 3.2 | Gage |
| 104 | Concentricity of diameter at basic point with large outside diameter | | 0.40% | 3.2 | Gage |
| 105 | Length of firing pin head, min. | | 0.40% | 3.2 | Gage |
| 106 | Diameter of point at basic length | | 0.40% | 3.2 | Gage |
| 107 | Damaged or incomplete point | | 0.40% | 3.2 | Gage |
| <u>Minor</u> | | | | | |
| 201 | Inside diameter, max. | | 0.65% | 3.2 | Gage |
| 202 | Distance from tip of firing pin to bottom of cavity | | 0.65% | 3.2 | Gage |
| 203 | Large outside diameter, min. | | 0.65% | 3.2 | Gage |
| 204 | Evidence of poor workmanship | | 0.65% | 3.16 | Gage |
| NOTES: | | | | | |

QUALITY CONFORMANCE INSPECTION

CLASSIFICATION OF DEFECTS & TESTS

MIL-F-50548A (AR)

| | | | | | |
|----------------------|---|---------------------------|-------------------|--------------------------|---|
| PARAGRAPH 4.4.2.6 | TITLE Nut, Firing Pin | | SHEET 1 OF 1 | | DRAWING NUMBER 8883740 |
| | | | | | NEXT HIGHER ASSEMBLY 8883736 |
| CATEGORY | EXAMINATION OR TEST | NO. OF SAMPLE UNITS | AQL OR 100% | REQUIREMENT PARAGRAPH | PARAGRAPH REFERENCE /INSPECTION METHOD |
| <u>Critical</u> | None defined | | | | |
| <u>Major</u> | | | | | |
| 101 | Inside diameter, min. | | 0.40% | 3.2 | Gage |
| 102 | Concentricity of inside diameter with major diameter of thread | | 0.40% | 3.2 | Gage |
| <u>Minor</u> | | | | | |
| 201 | Outside diameter (at top of firing pin nut) | | 0.40% | 3.2 | Gage |
| 202 | Evidence of poor workmanship | | 0.65% | 3.16 | Visual |
| NOTES: | | | | | |

DRDAR-QA Form 160 Jul 77 Replaces SARPA-QA Form 2567 Feb 74 Which is Obsolete

QUALITY CONFORMANCE INSPECTION

CLASSIFICATION OF DEFECTS & TESTS

MIL-F-50548A (AR)

| | | | | | |
|----------------------|------------------------------|---------------------------|-------------------|--------------------------|---|
| PARAGRAPH 4.4.2.7 | TITLE Hammer, Firing Pin | | SHEET 1 OF 1 | | DRAWING NUMBER 8883742 |
| | | | | | NEXT HIGHER ASSEMBLY 8883736 |
| CATEGORY | EXAMINATION OR TEST | NO. OF SAMPLE UNITS | AQL OR 100% | REQUIREMENT PARAGRAPH | PARAGRAPH REFERENCE /INSPECTION METHOD |
| <u>Critical</u> | None defined | | | | |
| <u>Major</u> | | | | | |
| 101 | Total length, min. | | 0.40% | 3.2 | Gage |
| 102 | Large outside diameter, min. | | 0.40% | 3.2 | Gage |
| 103 | Small outside diameter, min. | | 0.40% | 3.2 | Gage |
| <u>Minor</u> | | | | | |
| 201 | Evidence of poor workmanship | | 0.65% | 3.16 | Visual |
| NOTES: | | | | | |

QUALITY CONFORMANCE INSPECTION

CLASSIFICATION OF DEFECTS & TESTS

MIL-F-50548A (AR)

| | | | | | |
|-----------------|--|---------------------------|-------------------|--------------------------|---|
| PARAGRAPH | TITLE | | SHEET 1 OF 2 | | DRAWING NUMBER 8883682 |
| 4.4.2.8 | Housing, Booster | | | | NEXT HIGHER ASSEMBLY 9204391/9254707 |
| CATEGORY | EXAMINATION OR TEST | NO. OF SAMPLE UNITS | AQL OR 100% | REQUIREMENT PARAGRAPH | PARAGRAPH REFERENCE /INSPECTION METHOD |
| <u>Critical</u> | None defined | | | | |
| <u>Major</u> | | | | | |
| 101 | Diameter of lead cavity | | 0.40% | 3.2 | Gage |
| 102 | Thickness at end of lead cavity | | 0.40% | 3.2 | Gage |
| 103 | Total length | | 0.40% | 3.2 | Gage |
| 104 | Location of counterbore from bottom of booster cavity | | 0.40% | 3.2 | Gage |
| 105 | Diameter of booster cavity | | 0.40% | 3.2 | Gage |
| 106 | Depth of lead cavity | | 0.40% | 3.2 | Gage |
| 107 | Height of lead | | 0.40% | 3.2 | Gage |
| 108 | Width of "O" ring groove | | 0.40% | 3.2 | Gage |
| 109 | Diameter of "O" ring groove | | 0.40% | 3.2 | Gage |
| 110 | Concentricity of thread pitch diameter with booster cavity | | 0.40% | 3.2 | Gage |
| 111 | Concentricity of lead cavity with booster cavity | | 0.40% | 3.2 | Gage |
| 112 | Major diameter of threads | | 0.40% | 3.2 | Gage |
| 113 | Concentricity of "O" ring groove with pitch diameter | | 0.40% | 3.2 | Gage |
| 114 | Finish of "O" ring groove | | 0.40% | 3.2 | Gage |
| 115 | Perpendicularity of bottom lead cavity with side wall of lead cavity | | 0.40% | 3.2 | Gage |
| 116 | Evidence of tooling indentations | | 0.40% | 3.2 | Visual |
| NOTES: | | | | | |

QUALITY CONFORMANCE INSPECTION

CLASSIFICATION OF DEFECTS & TESTS

MIL-F-50548A (AR)

| | | | | | |
|---|---|---------------------------|--|---|--|
| PARAGRAPH 4.4.2.8 | TITLE Housing, Booster | | SHEET 2 OF 2 | | DRAWING NUMBER 8883682 |
| | | | | | NEXT HIGHER ASSEMBLY 9204391/9254707 |
| CATEGORY | EXAMINATION OR TEST | NO. OF SAMPLE UNITS | AQL OR 100% | REQUIREMENT PARAGRAPH | PARAGRAPH REFERENCE /INSPECTION METHOD |
| Minor 201 202 203 204 205 206 | Width across wrench flats Symmetry of wrench flats Inside diameter at crimp section Wall thickness at crimp section Protective finish missing or incomplete Evidence of poor workmanship | | 0.65% 0.65% 0.65% 0.65% 0.65% 0.65% | 3.2 3.2 3.2 3.2 3.2 3.16 | Gage Gage Gage Gage Gage Visual |
| NOTES: | | | | | |

QUALITY CONFORMANCE INSPECTION

CLASSIFICATION OF DEFECTS & TESTS

MIL-F-50548A (AR)

| | | | | | |
|----------------------|---|---------------------------|-------------------|--------------------------|---|
| PARAGRAPH 4.4.2.9 | TITLE Striker Pin Body Assembly | | SHEET 1 OF 1 | | DRAWING NUMBER 8883733 |
| | | | | | NEXT HIGHER ASSEMBLY 9204391 |
| CATEGORY | EXAMINATION OR TEST | NO. OF SAMPLE UNITS | AQL OR 100% | REQUIREMENT PARAGRAPH | PARAGRAPH REFERENCE /INSPECTION METHOD |
| <u>Critical</u> | None defined | | | | |
| <u>Major</u> 101 | Concentricity of striker pin with diameter of firing pin body cavity | | 0.40% | 3.2 | Gage |
| 102 | Striker pin loose | | 0.40% | 3.2 | Visual/Manual |
| 103 | Striker pin body assembly length from point of striker pin to end of striker pin body | | 100% | 3.2 | Gage |
| <u>Minor</u> 201 | Evidence of poor workmanship | | 0.65% | 3.16 | Visual |
| NOTES: | | | | | |

QUALITY CONFORMANCE INSPECTION

CLASSIFICATION OF DEFECTS & TESTS

MIL-F-50548A (AR)

| | | | | | |
|----------------------------|--|---------------------------|-------------------|--------------------------|---|
| PARAGRAPH | TITLE | | SHEET 1 OF 1 | | DRAWING NUMBER 8883736 |
| 4.4.2.10 | Firing Pin Body Assembly | | | | NEXT HIGHER ASSEMBLY 9204391 |
| CATEGORY | EXAMINATION OR TEST | NO. OF SAMPLE UNITS | AQL OR 100% | REQUIREMENT PARAGRAPH | PARAGRAPH REFERENCE /INSPECTION METHOD |
| <u>Critical</u> | None defined | | | | |
| <u>Major</u> | | | | | |
| 101 | Depth of S&A cavity, min. (after staking)* | | 0.40% | 3.2 | Gage |
| 102 | Anti-setback washer improperly centered in firing pin cavity | | 0.40% | 3.2 | Visual |
| 103 | Firing pin improperly aligned | | 0.40% | 3.2 | Visual |
| 104 | Torque test of firing pin nut (prior to staking) | | 0.40% | 3.2 | 4.5.4 |
| 105 | Firing pin nut improperly staked | | 0.40% | 3.2 | Visual |
| <u>Minor</u> | | | | | |
| 201 | Evidence of poor workmanship | | 0.65% | 3.16 | Visual |
| NOTES: *SEE DWG 8883741 | | | | | |

CLASSIFICATION OF DEFECTS & TESTS

MIL-F-50548A (AR)

| | | | | | |
|----------------------|--|---------------------|-------------|-----------------------|---|
| PARAGRAPH | TITLE | SHEET 1 OF 1 | | | DRAWING NUMBER |
| 4.4.2.11 | Device, Safety and Arming | | | | 9215619-1 |
| | | | | | NEXT HIGHER ASSEMBLY |
| | | | | | 9204391-1/9254707-1 |
| CATEGORY | EXAMINATION OR TEST | NO. OF SAMPLE UNITS | AQL OR 100% | REQUIREMENT PARAGRAPH | PARAGRAPH REFERENCE / INSPECTION METHOD |
| <u>Critical</u> 1 | Distance between annular gear and No. 2 gear,max. | | 100% | 3.2 | Gage |
| <u>Major</u> 101 | Alignment of detonator cavity with the outside diameter across the rotor housing posts | | 0.40% | 3.2 | Gage |
| 102 | Torque test or rotor stop stud | | 0.40% | 3.2 | 4.5.7.12 |
| <u>Minor</u> 201 | Evidence of poor workmanship | | 0.65% | 3.16 | Visual |
| NOTES: | | | | | |

DRDAR-QA Form 160 Jul 77 Replaces SARPA-QA Form 2567 Feb 74 Which is Obsolete

QUALITY CONFORMANCE INSPECTION
CLASSIFICATION OF DEFECTS & TESTS

MIL-F-50548A (AR)

| | | | | | |
|---|--|---------------------------|---|---------------------------------------|---|
| PARAGRAPH 4.4.2.12 | TITLE Device, Safety and Arming | | SHEET 1 OF 1 | | DRAWING NUMBER 9215619-2 |
| | | | | | NEXT HIGHER ASSEMBLY 9204391-2/925470-2 |
| CATEGORY | EXAMINATION OR TEST | NO. OF SAMPLE UNITS | AQL OR 100% | REQUIREMENT PARAGRAPH | PARAGRAPH REFERENCE /INSPECTION METHOD |
| <u>Critical</u> 1 <u>Major</u> 101 102 <u>Minor</u> 201 | Distance between annular gear and No. 2 gear,max. Alignment of detonator cavity with the outside diameter across the rotor housing posts Torque test of rotor stop stud Evidence of poor workmanship | | 100% 0.40% 0.40% 0.65% | 3.2 3.2 3.2 3.16 | Gage Gage 4.5.7.12. Visual |
| NOTES: | | | | | |

QUALITY CONFORMANCE INSPECTION
CLASSIFICATION OF DEFECTS & TESTS

MIL-F-50548A (AR)

| 4.4.2.13 | Device, Safety and Arming | SHEET 1 OF 2 | | DRAWING NUMBER 9215617-1 | |
|---|--|---------------------|-------------|---|---|
| | | | | NEXT HIGHER ASSEMBLY 9204391-1/9254707-1 | |
| PARAGRAPH | TITLE | | | | |
| CATEGORY | EXAMINATION OR TEST | NO. OF SAMPLE UNITS | AQL OR 100% | REQUIREMENT PARAGRAPH | PARAGRAPH REFERENCE / INSPECTION METHOD |
| <u>Critical</u> | | | | | |
| 1 | Setback weight return capability | | 100% | 3.2 | 4.5.13 |
| 2 | Rotor reset capability | | 100% | 3.2 | 4.5.14 |
| 3 | Non-arming | | 100% | 3.3.2 | 4.5.17 |
| <u>Major</u> | | | | | |
| 101 | Height from forward face of base to top of rotor, max. | | 0.40% | 3.2 | Gage |
| 102 | Distance from rotor flat to edge of base min. | | 0.40% | 3.2 | Gage |
| 103 | Primer inverted (red disc should be observed through the top) | | 0.40% | 3.2 | Visual |
| 104 | Primer not securely staked | | 0.40% | 3.2 | Visual |
| 105 | Primer perforated or deformed by staking | | 0.40% | 3.2 | Visual |
| 106 | Detonator inverted (yellow disc should be observed through aft end) | | 0.40% | 3.2 | Visual |
| 107 | Detonator perforated or damaged by staking | | 0.40% | 3.2 | Visual |
| 108 | Foreign matter present | | 0.40% | 3.2 | Visual |
| 109 | Lubricant missing | | 0.40% | 3.2 | Visual |
| 110 | Diameter across posts of rotor housing min. | | 0.40% | 3.2 | Gage |
| 111 | Protective finish missing or incomplete | | 0.40% | 3.2 | Visual |
| 112 | Markings missing or incomplete | | 0.40% | 3.2 | Visual |
| 113 | Distance from detonator disc to bottom of S&A rotor housing (armed position) | | 0.40% | 3.2 | Gage |
| 114 | Detonator push test (detonator only) | | 0.40% | 3.2 | 4.5.11 |
| 115 | Arming and detent functioning | | 100% | 3.2.3 | 4.5.12 |
| 116 | Arming time | | 100% | 3.3.1 | 4.5.15 |
| NOTES: (a) Primers and detonators are to be tested in accordance with para. 4.5.2 and 4.5.3. | | | | | |

QUALITY CONFORMANCE INSPECTION
CLASSIFICATION OF DEFECTS & TESTS

MIL-F-50548A (AR)

| | | | | | |
|------------------|------------------------------|------------------------------------|----------------------------|----------------------------------|--|
| PARAGRAPH | TITLE | | SHEET 2 OF 2 | | DRAWING NUMBER 9215617-1 |
| 4.4.2.13 | Device, Safety and Arming | | | | NEXT HIGHER ASSEMBLY 9204391-1/9254707-1 |
| CATEGORY | EXAMINATION OR TEST | NO. OF SAMPLE UNITS | AQL OR 100% | REQUIREMENT PARAGRAPH | PARAGRAPH REFERENCE /INSPECTION METHOD |
| Minor 201 | Evidence of poor workmanship | | 0.65% | 3.16 | Visual |
| NOTES: | | | | | |

QUALITY CONFORMANCE INSPECTION

CLASSIFICATION OF DEFECTS & TESTS

MIL-F-50548A (AR)

| PARAGRAPH | TITLE | SHEET 1 OF 2 | | | DRAWING NUMBER 9215617-2 |
|---|--|---------------------------|-------------------|--------------------------|--|
| CATEGORY | EXAMINATION OR TEST | NO. OF SAMPLE UNITS | AQL OR 100% | REQUIREMENT PARAGRAPH | NEXT HIGHER ASSEMBLY 9204391-2/9254707-2 PARAGRAPH REFERENCE /INSPECTION METHOD |
| <u>Critical</u> | | | | | |
| 1 | Setback weight return capability | | 100% | 3.2 | 4.5.13 |
| 2 | Rotor retest capability | | 100% | 3.2 | 4.5.14 |
| 3 | Non-arm | | 100% | 3.4.2 | 4.5.18 |
| <u>Major</u> | | | | | |
| 101 | Height from forward face of base to tip or rotor, max. | | 0.40% | 3.2 | Gage |
| 102 | Distance from rotor flat to edge of base, min. | | 0.40% | 3.2 | Visual |
| 103 | Primer inverted (red disc should be observed through the top) | | 0.40% | 3.2 | Visual |
| 104 | Primer not securely staked | | 0.40% | 3.2 | Visual |
| 105 | Primer perforated or deformed by staking | | 0.40% | 3.2 | Visual |
| 106 | Detonator inverted (yellow disc should be observed through aft end) | | 0.40% | 3.2 | Visual |
| 107 | Detonator perforated or damaged by staking | | 0.40% | 3.2 | Visual |
| 108 | Foreign matter present | | 0.40% | 3.2 | Visual |
| 109 | Lubricant missing | | 0.40% | 3.2 | Visual |
| 110 | Diameter across posts of rotor housing, min. | | 0.40% | 3.2 | Gage |
| 111 | Protective finish missing or incomplete | | 0.40% | 3.2 | Visual |
| 112 | Markings missing or incomplete | | 0.40% | 3.2 | Visual |
| 113 | Distance from detonator disc to bottom of S&A rotor housing (armed position) | | 0.40% | 3.2 | Gage |
| 114 | Detonator push test (detonator only) | | 0.40% | 3.2 | 4.5.11 |
| 115 | Arming and detent functioning | | 100% | 3.2.3 | 4.5.12 |
| 116 | Arming time | | 100% | 3.4.1 | 4.5.16 |
| NOTES: (a) Primers and detonators are to be tested in accordance with para. 4.5.2 and 4.5.3. | | | | | |

QUALITY CONFORMANCE INSPECTION

CLASSIFICATION OF DEFECTS & TESTS

MIL-F-50548A (AR)

| | | | | | |
|-----------------------|------------------------------------|---------------------------|-------------------|--------------------------|---|
| PARAGRAPH 4.4.2.14 | TITLE Device, Safety and Arming | | SHEET 2 OF 2 | | DRAWING NUMBER 9215617-2 |
| | | | | | NEXT HIGHER ASSEMBLY 9204391-2/9254707-2 |
| CATEGORY | EXAMINATION OR TEST | NO. OF SAMPLE UNITS | AQL OR 100% | REQUIREMENT PARAGRAPH | PARAGRAPH REFERENCE / INSPECTION METHOD |
| Minor 201 | Evidence of poor workmanship | | 0.65% | 3.16 | Visual |
| NOTES: | | | | | |

QUALITY CONFORMANCE INSPECTION

CLASSIFICATION OF DEFECTS & TESTS

MIL-F-50548A (AR)

| | | | | | |
|--|--|---------------------------|-------------------|--------------------------|---|
| PARAGRAPH | TITLE | | SHEET 1 OF 1 | | DRAWING NUMBER 9215611 |
| 4.4.2.15 | Fuze, Body Assembly | | | | NEXT HIGHER ASSEMBLY 9204391-1, -2 |
| CATEGORY | EXAMINATION OR TEST | NO. OF SAMPLE UNITS | AQL OR 100% | REQUIREMENT PARAGRAPH | PARAGRAPH REFERENCE /INSPECTION METHOD |
| <u>Critical</u> | None defined | | | | |
| <u>Major</u> | | | | | |
| 101 | Crimp not complete | | 0.40% | 3.2 | Visual |
| 102 | Depth of crimp | | 0.40% | 3.2 | Gage |
| 103 | Corrosion resistance of anodic coating | a | | 3.2 | 4.5.10 |
| <u>Minor</u> | | | | | |
| 201 | Evidence of poor workmanship | | 0.65% | 3.16 | Visual |
| NOTES: a. MIL-STD-105 Level S-2 based on no more than 40 hours production. Should one or more samples fail the requirements the lot shall be rejected. | | | | | |

QUALITY CONFORMANCE INSPECTION

CLASSIFICATION OF DEFECTS & TESTS

MIL-F-50548A (AR)

| PARAGRAPH | TITLE | SHEET 1 OF 1 | | | DRAWING NUMBER 9204391-1 |
|---|---|---------------------------|-------------------|--------------------------|---|
| 4.4.2.16 | Fuze, Rocket, Less Booster and Booster Lead | | | | NEXT HIGHER ASSEMBLY Final |
| CATEGORY | EXAMINATION OR TEST | NO. OF SAMPLE UNITS | AQL OR 100% | REQUIREMENT PARAGRAPH | PARAGRAPH REFERENCE /INSPECTION METHOD |
| <u>Critical</u> | | | | | |
| 1 | S&A position check | 12 | 100% | 3.7 | 4.5.19 |
| 2 | Jolt - MIL-STD-331, Test 101 | | | 3.8 | 4.5.27 |
| 3 | Jumble - MIL-STD-331, Test 102 | | | 3.8 | 4.5.27 |
| 4 | Five Foot Drop - MIL-STD-331, Test III | 45 | | 3.10 | 4.5.28 |
| 5 | Aircraft Vibration - MIL-STD-810, Method 514, See Appendix A | 96 | | 3.10 | 4.5.30 |
| 6 | Non-environmental test | 219 | | 3.10 | 4.5.29 |
| 7 | Non-arm | a | | 3.4.2 | 4.5.23 |
| 8 | Arming time (under minimum) | a | | 3.4.1 | 4.5.21 |
| 9 | Forty-Foot Drop | 4b | | 3.9 | 4.5.26 |
| <u>Special</u> | | | | | |
| a | Booster housing improperly torqued | | 0.40% | 3.2 | Gage |
| <u>Major</u> | | | | | |
| 101 | Length from aft face to end of booster housing max. | | 0.40% | 3.2 | Gage |
| 102 | Arming time (over max or fail to arm) | | a | 3.4.1 | 4.5.21 |
| 103 | Leak test | | 9b | 3.11 | 4.5.20 |
| 104 | Fuze firing test | | c | 3.12 | 4.5.25 |
| <u>Minor</u> | | | | | |
| 201 | Stamping missing | | 0.65% | 3.2 | Visual |
| 202 | Poor workmanship | | 0.65% | 3.16 | Visual |
| NOTES: a. Samples taken from 5 Foot Drop, Aircraft Vibration, and Non-Environmental: Note 5' Drop not done on every lot. b. First Article Only. c. Samples taken from 5' Drop Test and Vibration. | | | | | |

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| PARAGRAPH | TITLE | SHEET 1 OF 1 | | | DRAWING NUMBER |
|---|--|---------------------|-------------|-----------------------|---|
| 4.4.2.17 | Fuze, Rocket, Less Booster and Booster Lead | | | | 9204391-2 |
| | | | | | NEXT HIGHER ASSEMBLY |
| | | | | | Final |
| CATEGORY | EXAMINATION OR TEST | NO. OF SAMPLE UNITS | AQL OR 100% | REQUIREMENT PARAGRAPH | PARAGRAPH REFERENCE / INSPECTION METHOD |
| <u>Critical</u> | | | | | |
| 1 | S&A position check | | 100% | 3.7 | 4.5.19 |
| 2 | Jolt - MIL-STD-331, Test 101 | 12 | | 3.8 | 4.5.27 |
| 3 | Jumble - MIL-STD-331, Test 102 | | | 3.8 | 4.5.27 |
| 4 | Five-Foot Drop - MIL-STD-331, Test III | 45 | | 3.10 | 4.5.25 |
| 5 | Aircraft Vibration - MIL-STD-810, Method 514, See Appendix A | 96 | | 3.10 | 4.5.30 |
| 6 | Non-Environmental Test | 219 | | 3.10 | 4.5.29 |
| 7 | Non-Arm | a | | 3.6.2 | 4.5.24 |
| 8 | Arming Time (Under Minimum) | a | | 3.6.1 | 4.5.22 |
| 9 | Forty-Foot Drop | 4b | | 3.9 | 4.5.26 |
| <u>Special</u> | | | | | |
| a | Booster housing improperly torqued | | 0.40% | 3.2 | Gage |
| <u>Major</u> | | | | | |
| 101 | Length from aft face to end of booster housing, max. | | 0.40% | 3.2 | Gage |
| 102 | Arming Time (over max. or fail to arm) | a | | 3.6.1 | 4.5.22 |
| 103 | Leak test | 9b | | 3.11 | 4.5.20 |
| 104 | Fuze firing test | c | | 3.12 | 4.5.25 |
| <u>Minor</u> | | | | | |
| 201 | Stamping missing | | 0.65% | 3.2 | Visual |
| 202 | Poor workmanship | | 0.65% | 3.16 | Visual |
| NOTES: a. Samples taken from 5' Drop Test, non-environmental and Aircraft Vibration b. First Article only c. Samples taken from 5' Drop Test and Vibration | | | | | |

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MIL-F-50548A (AR)

| | | | | | |
|------------------|--|----------------------------|---------------------|------------------------------|--|
| PARAGRAPH | TITLE | | SHEET 1 OF 1 | | DRAWING NUMBER 9254702 |
| 4.4.2.18 | Pin, Firing | | | | NEXT HIGHER ASSEMBLY 9254705 |
| CATEGORY | EXAMINATION OR TEST | NO. OF SAMPLE UNITS | AQL OR 100% | REQUIREMENT PARAGRAPH | PARAGRAPH REFERENCE / INSPECTION METHOD |
| <u>Critical</u> | None defined | | | | |
| <u>Major</u> | | | | | |
| 101 | Outside diameter of knurl, min. | | 0.40% | 3.2 | Gage |
| 102 | Concentricity of diameter at basic point with shaft diameter | | 0.40% | 3.2 | Gage |
| 103 | Profile of point | | 0.40% | 3.2 | Gage |
| <u>Minor</u> | | | | | |
| 201 | Evidence of poor workmanship | | 0.65% | 3.16 | Visual |
| NOTES: | | | | | |

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CLASSIFICATION OF DEFECTS & TESTS

MIL-F-50548A (AR)

| PARAGRAPH | TITLE | | SHEET 1 OF 1 | | DRAWING NUMBER |
|-----------------|---|---------------------|--------------|-----------------------|---|
| 4.4.2.19 | Body, Firing Pin | | | | 9254703 |
| | | | | | NEXT HIGHER ASSEMBLY |
| | | | | | 9254705 |
| CATEGORY | EXAMINATION OR TEST | NO. OF SAMPLE UNITS | AQL OR 100% | REQUIREMENT PARAGRAPH | PARAGRAPH REFERENCE / INSPECTION METHOD |
| <u>Critical</u> | None defined | | | | |
| <u>Major</u> | | | | | |
| 101 | Length to basic diameter | | 0.40% | 3.2 | Gage |
| 102 | Diameter to body guide | | 0.40% | 3.2 | Gage |
| 103 | Concentricity between firing pin cavity and body guide | | 0.40% | 3.2 | Gage |
| 104 | Wall thickness | | 0.40% | 3.2 | Gage |
| 105 | Concentricity of nose with body guide | | 0.40% | 3.2 | Gage |
| 106 | Diameter of firing pin cavity, max. | | 0.40% | 3.2 | Gage |
| 107 | Length of body guide to spot face | | 0.40% | 3.2 | Gage |
| 108 | Perpendicularity of body guide spot face to inside diameter | | 0.40% | 3.2 | Gage |
| <u>Minor</u> | | | | | |
| 201 | Inside diameter, max. | 20 | 0.65% | 3.2 | Gage |
| 202 | Length of body cavity | | 0.65% | 3.2 | Gage |
| 203 | Inside radius at bottom of nose section | | | 3.2 | 4.5.9/Gage |
| 204 | Evidence of poor workmanship | | 0.65% | 3.16 | Visual |
| NOTES: | | | | | |

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| | | | | | |
|-----------------|--|---------------------|--------------|-----------------------|---|
| PARAGRAPH | TITLE | | SHEET 1 OF 2 | | DRAWING NUMBER |
| 4.4.2.20 | Body | | | | 9254704 |
| | | | | | NEXT HIGHER ASSEMBLY |
| | | | | | 9254706 |
| CATEGORY | EXAMINATION OR TEST | NO. OF SAMPLE UNITS | AQL OR 100% | REQUIREMENT PARAGRAPH | PARAGRAPH REFERENCE / INSPECTION METHOD |
| <u>Critical</u> | None defined | | | | |
| <u>Major</u> | | | | | |
| 101 | Diameter of S&A cavity | | 0.40% | 3.2 | Gage |
| 102 | Length of S&A cavity | | 0.40% | 3.2 | Gage |
| 103 | Length of booster cavity | | 0.40% | 3.2 | Gage |
| 104 | Concentricity of booster pitch diameter with warhead mounting pitch diameter | | 0.40% | 3.2 | Gage |
| 105 | Pitch diameter of warhead mounting thread | | 0.40% | 3.2 | Gage |
| 106 | Length from aft face to warhead mounting shoulder | | 0.40% | 3.2 | Gage |
| 107 | Concentricity of booster cavity with S&A cavity | | 0.40% | 3.2 | Gage |
| 108 | Minor diameter of booster cavity thread, max. | | 0.40% | 3.2 | Gage |
| 109 | Seal ring groove diameter | | 0.40% | 3.2 | Gage |
| 110 | Seal ring groove width | | 0.40% | 3.2 | Gage |
| 111 | Crimp groove diameter | | 0.40% | 3.2 | Gage |
| 112 | Crimp groove radius | | 0.40% | 3.2 | Gage |
| 113 | Concentricity of seal ring groove to S&A cavity | | 0.40% | 3.2 | Gage |
| 114 | Finish of seal ring groove | | 0.40% | 3.2 | Visual |
| <u>Minor</u> | | | | | |
| 201 | Major diameter of warhead mounting thread,min. | | 0.65% | 3.2 | Gage |
| 202 | Width of wrench slots, min. | | 0.65% | 3.2 | Gage |
| 203 | Width across wrench slots, max. | | 0.65% | 3.2 | Gage |
| 204 | Diameter of machine service groove | | 0.65% | 3.2 | Gage |
| 205 | Width of machine service groove, min. | | 0.65% | 3.2 | Gage |
| 206 | Length from warhead mounting shoulder to machine service groove | | 0.65% | 3.2 | Gage |
| NOTES: | | | | | |

CLASSIFICATION OF DEFECTS & TESTS

MIL-F-50548A (AR)

| | | | | | |
|----------------------------------|------------------------------|----------------------------|---------------------|------------------------------|--|
| PARAGRAPH 4.4.2.20 | TITLE Body | | SHEET 2 OF 2 | | DRAWING NUMBER 9254704 |
| | | | | | NEXT HIGHER ASSEMBLY 9254706 |
| CATEGORY | EXAMINATION OR TEST | NO. OF SAMPLE UNITS | AQL OR 100% | REQUIREMENT PARAGRAPH | PARAGRAPH REFERENCE / INSPECTION METHOD |
| 207 | Evidence of poor workmanship | | 0.65% | 3.16 | Visual |
| NOTES: | | | | | |

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MIL-F-50548A (AR)

| | | | | | |
|---------------------------|--|---------------------------|-------------------|--------------------------|---|
| PARAGRAPH 4.4.2.21 | TITLE Firing Pin and Body Assembly | | SHEET 1 OF 1 | | DRAWING NUMBER 9254705 |
| | | | | | NEXT HIGHER ASSEMBLY 0254706 |
| CATEGORY | EXAMINATION OR TEST | NO. OF SAMPLE UNITS | AQL OR 100% | REQUIREMENT PARAGRAPH | PARAGRAPH REFERENCE /INSPECTION METHOD |
| <u>Critical</u> | None defined | | | | |
| <u>Major</u> 101 | Length from firing pin point to body guide face, max. | | 0.40% | 3.2 | Gage |
| 102 | Firing pin loose | | 0.40% | 3.2 | Manual |
| <u>Minor</u> 201 | Evidence of poor workmanship | | 0.65% | 3.16 | Visual |
| NOTES: | | | | | |

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MIL-F-50548A (AR)

| | | | | | |
|---|--|---------------------|--------------|-----------------------|---|
| PARAGRAPH | TITLE | | SHEET 1 OF 1 | | DRAWING NUMBER |
| 4.4.2.22 | Fuze Body Assembly | | | | 9254706 |
| | | | | | NEXT HIGHER ASSEMBLY |
| | | | | | 9254707 |
| CATEGORY | EXAMINATION OR TEST | NO. OF SAMPLE UNITS | AQL OR 100% | REQUIREMENT PARAGRAPH | PARAGRAPH REFERENCE / INSPECTION METHOD |
| <u>Critical</u> | None defined | | | | |
| <u>Major</u> | | a | | | |
| 101 | Corrosion resistance of anodic coating | | | 3.2 | 4.5.10 |
| 102 | Leak test | | 0.40% | 3.2 | 4.5.8 |
| 103 | Depth of S&A cavity, min. | | 0.40% | 3.2 | Gage |
| 104 | Depth of crimp, min. | | 0.40% | 3.2 | Gage |
| <u>Minor</u> | | | | | |
| 201 | Evidence of poor workmanship | | 0.65% | 3.16 | Visual |
| NOTES: a. MIL-STD-105 Level 5.2 based on no more than 40 hours production. Should one or more samples fail to meet the requirements the lot shall be rejected. | | | | | |

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MIL-F-50548A (AR)

| | | | | | |
|-----------|---|---------------------------|-------------------|--------------------------|---|
| PARAGRAPH | TITLE | | SHEET 1 OF 1 | | DRAWING NUMBER 9254707-1 |
| 4.4.2.23 | Fuze, Rocket, Less Booster and Booster Lead | | | | NEXT HIGHER ASSEMBLY Final |
| CATEGORY | EXAMINATION OR TEST | NO. OF SAMPLE UNITS | AQL OR 100% | REQUIREMENT PARAGRAPH | PARAGRAPH REFERENCE /INSPECTION METHOD |
| | See 4.4.2.16 | | | | |
| NOTES: | | | | | |

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MIL-F-50548A (AR)

| | | | | | |
|-----------------------|--|---------------------------|-------------------|--------------------------|--|
| PARAGRAPH 4.4.2.24 | TITLE Fuze, Rocket, Less Booster and Booster Lead | | SHEET 1 OF 1 | | DRAWING NUMBER 9254707-2 NEXT HIGHER ASSEMBLY Final |
| CATEGORY | EXAMINATION OR TEST | NO. OF SAMPLE UNITS | AQL OR 100% | REQUIREMENT PARAGRAPH | PARAGRAPH REFERENCE /INSPECTION METHOD |
| | See 4.4.2.17 | | | | |
| NOTES: | | | | | |

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| | | | | | |
|-----------------------|------------------------------|---------------------------|-------------------|--------------------------|---|
| PARAGRAPH 4.4.2.25 | TITLE Spring, Detent | | SHEET 1 OF 1 | | DRAWING NUMBER 8883713 |
| | | | | | NEXT HIGHER ASSEMBLY 8883692 |
| CATEGORY | EXAMINATION OR TEST | NO. OF SAMPLE UNITS | AQL OR 100% | REQUIREMENT PARAGRAPH | PARAGRAPH REFERENCE /INSPECTION METHOD |
| <u>Critical</u> | None defined | | | | |
| <u>Major</u> 101 | Spring embrittlement | 10 | | 3.2.1 | 4.5.5 |
| <u>Minor</u> 201 | Evidence of poor workmanship | | 0.65% | 3.16 | Visual |
| NOTES: | | | | | |

| PARAGRAPH | TITLE | | SHEET 1 OF 1 | | DRAWING NUMBER 8883718 |
|-----------------|------------------------------|---------------------------|-------------------|--------------------------|---|
| CATEGORY | EXAMINATION OR TEST | NO. OF SAMPLE UNITS | AQL OR 100% | REQUIREMENT PARAGRAPH | NEXT HIGHER ASSEMBLY 9215619 |
| | | | | | PARAGRAPH REFERENCE /INSPECTION METHOD |
| 4.4.2.26 | Spring, Setback Weight | | | | |
| <u>Critical</u> | None defined | | | | |
| <u>Major</u> | | | | | |
| 101 | Spring embrittlement | 10 | | 3.2.1 | 4.5.5 |
| 102 | Spring set | 10 | | 3.2.2 | 4.5.6 |
| <u>Minor</u> | | | | | |
| 201 | Evidence of poor workmanship | | 0.65% | 3.16 | Visual |

NOTES:

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| | | | | | |
|----------------------|--|---------------------------|-------------------|--------------------------|---|
| PARAGRAPH | TITLE | | SHEET 1 OF 1 | | DRAWING NUMBER 8883703 |
| 4.4.2.27 | Gear and Pinion Assembly No. 1 | | | | NEXT HIGHER ASSEMBLY 8883692 |
| CATEGORY | EXAMINATION OR TEST | NO. OF SAMPLE UNITS | AQL OR 100% | REQUIREMENT PARAGRAPH | PARAGRAPH REFERENCE /INSPECTION METHOD |
| <u>Critical</u> 1 | Load test of No. 1 gear and pinion assembly Maximum gap between gear and pinion | | 100% | 3.2 | 4.5.7.1 |
| 2 | | | 100% | 3.2 | Gage |
| <u>Major</u> | None defined | | | | |
| <u>Minor</u> 201 | Evidence of poor workmanship | | 0.65% | 3.16 | Visual |
| NOTES: | | | | | |

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| | | | | | |
|-----------------|---|---------------------|--------------|-----------------------|---|
| PARAGRAPH | TITLE | | SHEET 1 OF 1 | | DRAWING NUMBER |
| 4.4.2.28 | Gear and Pinion Assembly No. 2 | | | | 8883700 |
| | | | | | NEXT HIGHER ASSEMBLY |
| | | | | | 8883692 |
| CATEGORY | EXAMINATION OR TEST | NO. OF SAMPLE UNITS | AQL OR 100% | REQUIREMENT PARAGRAPH | PARAGRAPH REFERENCE / INSPECTION METHOD |
| <u>Critical</u> | | | | | |
| 1 | Load test of No. 2 gear and pinion assembly | | 100% | 3.2 | 4.5.7.2 |
| 2 | Maximum gap between gear and pinion | | 100% | 3.2 | Gage |
| <u>Major</u> | None defined | | | | |
| <u>Minor</u> | | | | | |
| 201 | Evidence of poor workmanship | | 0.65% | 3.16 | Visual |
| NOTES: | | | | | |

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| | | | | | |
|--|---|------------------------------------|----------------------------|----------------------------------|---|
| PARAGRAPH 4.4.2.29 | TITLE Escapement Gear and Pinion Assembly | | SHEET 1 OF 1 | | DRAWING NUMBER 8883710 |
| CATEGORY | EXAMINATION OR TEST | NO. OF SAMPLE UNITS | AQL OR 100% | REQUIREMENT PARAGRAPH | NEXT HIGHER ASSEMBLY 8883692 PARAGRAPH REFERENCE /INSPECTION METHOD |
| <u>Critical</u> 1 2 <u>Major</u> <u>Minor</u> 201 | Load test of escapement gear and pinion assembly Maximum gap between gear and pinion None defined Evidence of poor workmanship | | 100% 100% 0.65% | 3.2 3.2 3.16 | 4.5.7.3 Gage Visual |
| NOTES: | | | | | |

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| | | | | | |
|-----------------|--|---------------------|--------------|-----------------------|---|
| PARAGRAPH | TITLE | | SHEET 1 OF 1 | | DRAWING NUMBER |
| 4.4.2.30 | Lever Assembly | | | | 8883706 |
| | | | | | NEXT HIGHER ASSEMBLY |
| | | | | | 8883692 |
| CATEGORY | EXAMINATION OR TEST | NO. OF SAMPLE UNITS | AQL OR 100% | REQUIREMENT PARAGRAPH | PARAGRAPH REFERENCE / INSPECTION METHOD |
| <u>Critical</u> | | | | | |
| 1 | Load test of lever shaft | | 100% | 3.2 | 4.5.7.4 |
| 2 | Load test of lever pallet | | 100% | 3.2 | 4.5.7.5 |
| 3 | Maximum gap between lever and shaft | | 100% | 3.2 | Gage |
| <u>Special</u> | | | | | |
| A | Torque test of lever shaft (See Note) | | 0.040% | 3.2 | 4.5.7.8 |
| <u>Major</u> | None defined | | | | |
| <u>Minor</u> | | | | | |
| 20T | Evidence of poor workmanship | | 0.65% | 3.16 | Visual |
| | <p><u>NOTE:</u> The sampling plan for this test shall be in accordance with MIL-STD-105 using inspection Level II and an AQL of 0.040 per cent. Continuous sampling may be used in accordance with MIL-STD-1235 using inspection Level II, CSP-I and an AQL of 0.015 per cent.</p> | | | | |
| NOTES: | | | | | |

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MIL-F-50548A (AR)

| | | | | | |
|-----------------------|---|---------------------------|-------------------|--------------------------|--|
| PARAGRAPH 4.4.2.31 | TITLE Rotor Assembly | | SHEET 1 OF 1 | | DRAWING NUMBER 8883744 |
| | | | | | NEXT HIGHER ASSEMBLY 9215619 |
| CATEGORY | EXAMINATION OR TEST | NO. OF SAMPLE UNITS | AQL OR 100% | REQUIREMENT PARAGRAPH | PARAGRAPH REFERENCE / INSPECTION METHOD |
| <u>Critical</u> I | Load test of annular gear | | 100% | 3.2 | 4.5.7.6 |
| <u>Special</u> A | Load test of lock roller pin (see Note) | | 0.040% | 3.2 | 4.5.7.7 |
| <u>Major</u> | None defined | | | | |
| <u>Minor</u> 201 | Evidence of poor workmanship | | 0.65% | 3.16 | Visual |
| | NOTE: The sampling plan for this test shall be in accordance with MIL-STD-105 using inspection Level II and and AQL of 0.040 percent. Continuous sampling may be used in accordance with MIL-STD-1235 using inspection Level II, CSP-I and an AQL of 0.015 percent. | | | | |
| NOTES: | | | | | |

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| | | | | | |
|---|--|---------------------------|---|---|--|
| PARAGRAPH 4.4.2.32 | TITLE Inner Plate Assembly | | SHEET 1 OF 1 | | DRAWING NUMBER 8883693 NEXT HIGHER ASSEMBLY 8883692 |
| CATEGORY | EXAMINATION OR TEST | NO. OF SAMPLE UNITS | AQL OR 100% | REQUIREMENT PARAGRAPH | PARAGRAPH REFERENCE /INSPECTION METHOD |
| <u>Critical</u> <u>Special</u> <u>A</u> <u>Major</u> <u>Minor</u> <u>201</u> | None defined Load test of bridge rivet (See Note) None defined Evidence of poor workmanship NOTE: The sampling plan for this test shall be in accordance with MIL-STD-105 using inspection Level II and an AQL of 0.040 percent. Continuous sampling may be used in accordance with MIL-STD-1235 using inspection Level II, CSP-I and an AQL of 0.015 percent. | | 0.040% 0.65% | 3.2 3.16 | 4.5.7.9 Visual |
| NOTES: | | | | | |

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| | | | | | |
|--|---|---------------------------|--------------------------------|----------------------------|---|
| PARAGRAPH 4.4.2.33 | TITLE Rotor Housing Assembly | | SHEET 1 OF 1 | | DRAWING NUMBER 8883719 |
| | | | | | NEXT HIGHER ASSEMBLY 8883686 |
| CATEGORY | EXAMINATION OR TEST | NO. OF SAMPLE UNITS | AQL OR 100% | REQUIREMENT PARAGRAPH | PARAGRAPH REFERENCE /INSPECTION METHOD |
| <u>Critical</u> <u>Major</u> 101 102 <u>Minor</u> 201 | None defined Load test of spring stud Rotor housing arm width Evidence of poor workmanship | | 0.40% 100% 0.65% | 3.2 3.2 3.16 | 4.5.7.10 Gage Visual |
| NOTES: | | | | | |

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MIL-F-50548A (AR)

| | | | | | |
|---------------------|------------------------------|----------------------------|---------------------|------------------------------|--|
| PARAGRAPH | TITLE | | SHEET 1 OF 1 | | DRAWING NUMBER 8883692 |
| 4.4.2.34 | Escapement and Gear Assembly | | | | NEXT HIGHER ASSEMBLY 9215619 |
| CATEGORY | EXAMINATION OR TEST | NO. OF SAMPLE UNITS | AQL OR 100% | REQUIREMENT PARAGRAPH | PARAGRAPH REFERENCE / INSPECTION METHOD |
| <u>Critical</u> | None defined | | | | |
| <u>Major</u> 101 | Load test of pillars | | 0.40% | 3.2 | 4.5.7.11 |
| <u>Minor</u> 201 | Evidence of poor workmanship | | 0.65% | 3.16 | Visual |
| NOTES: | | | | | |

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| | | | | | |
|-----------------------|------------------------------|---------------------------|-------------------|--------------------------|--|
| PARAGRAPH 4.4.2.35 | TITLE Pin, Striker | | SHEET 1 OF 1 | | DRAWING NUMBER 8883735 |
| | | | | | NEXT HIGHER ASSEMBLY 8883733 |
| CATEGORY | EXAMINATION OR TEST | NO. OF SAMPLE UNITS | AQL OR 100% | REQUIREMENT PARAGRAPH | PARAGRAPH REFERENCE / INSPECTION METHOD |
| <u>Critical</u> | None defined | | | | |
| <u>Major</u> 101 | Length of Conical Section | | 0.40% | 3.2 | Gage |
| <u>Minor</u> 201 | Evidence of poor workmanship | | 0.65% | 3.16 | Visual |
| NOTES: | | | | | |

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| | | | | | |
|---|---|---------------------------|--|-----------------------------------|---|
| PARAGRAPH 4.4.2.36 | TITLE Seal, Square-Cut | | SHEET 1 OF 1 | | DRAWING NUMBER 9254737 |
| | | | | | NEXT HIGHER ASSEMBLY 9254707 |
| CATEGORY | EXAMINATION OR TEST | NO. OF SAMPLE UNITS | AQL OR 100% | REQUIREMENT PARAGRAPH | PARAGRAPH REFERENCE /INSPECTION METHOD |
| <u>Critical</u> <u>Major</u> 101 102 103 <u>Minor</u> 201 | None defined Width Inside diameter Thickness Evidence of poor workmanship | | 0.40% 0.40% 0.40% 0.65% | 3.2 3.2 3.2 3.16 | Gage Gage Gage Visual |
| NOTES: | | | | | |

4.4.3 Testing.—Testing is described in the First Article and Quality Conformance Inspection Tables.

4.4.4 Inspection Equipment.—The inspection equipment required to perform the examinations and tests prescribed herein is described in the "Paragraph Reference/Inspection Method" column in the tables starting with paragraph 4.4.2.1. The contractor shall submit for approval inspection equipment designs in accordance with the terms of the contract. See Section 6 of MIL-A-48078 and section 6.3 herein.

4.4.4.1 Contractor inspection system.—As part of contractor's approved quality procedure, there shall be a provision for checking the adequacy of inspections made in connection with listed critical or major defects. These procedures shall include the following provisions:

4.4.4.1.1 Handling Procedure.—A Design Agency approved procedure shall be instituted that shall preclude unauthorized handling of the S&A's and fuzes from the S&A position check until the booster housing has been installed. The procedure shall be fail safe to eliminate armed fuzes from being introduced into the lot. Fail safe is defined as follows: Any equipment failure shall operate to cause rejection of the part or otherwise prevent its subsequent use.

4.4.4.1.2 Identification of Rejected Material.—All material listed below, rejected as containing defects, shall be isolated to preclude its inclusion with acceptable material:

- a. All S&A's failing paragraphs 4.5.12, 4.5.13, 4.5.14, 4.5.15 or 4.5.16 and 4.5.17 or 4.5.18.
- b. All fuzes failing paragraphs 4.5.19, 4.5.20, 4.5.27, 4.5.26, 4.5.28, 4.5.30 and 4.5.31.
- c. All firing pin bodies and striker pin bodies failing paragraph 4.4.2.2, Major Defect 116 or 4.4.2.9 Major Defect 103.
- d. All fuse body assemblies failing 4.5.8.

4.4.4.2 Use of Simulated Defect Standards.—The following listed verified inspections shall be validated and inspection equipment verified hourly using Design Agency approved item facsimilies or standards containing the defects and supplied by the contractor. The contractor shall

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resupply the item facsimilies when it is determined by the Government that the facsimilies are no longer representative enough of the product to make it unidentifiable to the contractor inspection personnel, or it is not functioning in the necessary manner and cannot be corrected satisfactorily. These standards should be representative of defects actually found or anticipated. They should be inert and readily identifiable to the Government to ensure recovery should they be inadvertently introduced into production. Simulated defect standards used to verify the following verified inspections should be constructed and identified in such a manner that they are not readily recognizable to the contractor inspection personnel as defect standards. Standards should be used so that their number, time and sequence of introduction into the inspection cycle is known only to those personnel responsible for checking the accuracy of the operation. Adequacy of the standards shall be verified at least once each shift.

Verified Inspection

- Paragraph 4.5.13 - Setback weight return capability.
- Paragraph 4.5.19 - S&A position check.

NOTE: When there is automatic detection and automatic rejection of defective items to a controlled area or a controlled rejection of defective items, it is permissible for the defect standards to be identifiable and their introduction into production noticeable to contractor inspection personnel.

4.4.4.3 Undetected Defect Standards.—Provisions shall be established for the corrective action to be taken where the equipment or contractor inspection personnel fail to identify a standard as defective. These provisions shall include a reinspection of all acceptable material subsequent to the last acceptable verification check as a minimum.

4.5 Methods of Inspection

PRECAUTION: This specification covers sampling and testing of chemical, toxic or explosive materials which are potentially hazardous to personnel. Accordingly, it is emphasized that all applicable safety rules, regulations and procedures must be followed in handling and processing these materials.

4.5.1 Materials, Components and Processes.-Compliance with all requirements of Section 3 of this specification shall be ascertained by current and continuing examination of inspection and test data to determine that all components (parts, subassemblies, and materials) have been inspected and tested and found to comply with their respective drawing and specification requirements, and that all specified manufacturing processes have been followed.

4.5.1.1 Visual and Mechanical Inspection.-The visual, manual and mechanical inspections and tests shall verify compliance with the requirements of Sections 3 and 5 of this specification in accordance with 4.4.2 herein and Table I.

4.5.2 Check Test for Deterioration of Primers.-If the total time between original acceptance of any primer lot and the assembly of that lot into the fuzes exceeds two years, at any time since previous tests, the primer lot shall be subjected to and must satisfactorily pass the functioning and output tests specified in MIL-P-48077 immediately before the primer lot is assembled into the fuzes. This test shall be performed by the contractor on primers selected by the Government Inspector at the facility assembling the primers into the rotors. The test shall be conducted at Government expense without cost to the contractor who loaded the primers or the contractor who assembled the primers into the fuzes. The test shall not constitute a basis for rejection against either contractor except where deterioration has occurred as a direct result of carelessness in handling, storage, etc., permitted while the primer was under the jurisdiction of either contractor.

4.5.3 Check Test for Deterioration of Detonators.-If the total time between original acceptance of any detonator lot and the assembly of that lot into the fuzes exceeds two years, at any time since previous tests, the detonator lot shall be subjected to and must satisfactorily pass the functioning and output tests specified in MIL-D-50868 immediately before the detonator lot is assembled into the fuzes. The test shall be performed by the contractor on detonators selected by the Government Inspector at the facility assembling the detonators into the rotors. The test shall be conducted at Government expense without cost to the contractor who loaded the detonators or the contractor who is to assemble the detonators into the fuzes. The test shall not constitute a basis for rejection against either contractor except where deterioration has occurred as a direct result of carelessness in handling, storage, etc., permitted while the detonator lot was under the jurisdiction of either contractor.

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4.5.4 Torque Test of Firing Pin Nut (Prior to Staking).-

Torque shall be applied between the firing pin nut and the firing pin body. The required force shall act on the firing pin body. Any firing pin nut that fails the requirement shall be classed defective.

4.5.5 Spring Embrittlement.-The spring shall be stretched along its longitudinal axis in the case of a coil spring, or bent in the case of a flat spring until the spring no longer returns to its original position. When the spring no longer returns to its original length or profile, it shall be considered distorted permanently. Any spring that breaks prior to this point shall be classed defective.

4.5.6 Setback Weight Spring Set.-The springs shall be measured at their original free length, assembled in a restraining fixture in accordance with 4.4.4 and compressed to a normal height of .750 inches, placed in an oven and subjected to a temperature of not more than 180 degrees Fahrenheit (°F) or less than 175°F for 24 hours. The springs shall be removed from the oven and be cooled to ambient temperature. After cooling the springs for 24 hours minimum, the springs shall be measured and the measurement shall be compared to the original free length to ascertain compliance with the specified requirement. Any spring that fails the requirement shall be classed defective.

4.5.7 S&A Mechanical Tests

4.5.7.1 Load Test of No. 1 Gear and Pinion Assembly.-Apply an axial load perpendicular to the No. 1 gear and in such a direction as to test the assembly of the No. 1 gear and pinion. The required force shall act against the No. 1 gear. Upon removal of the required force, the maximum permissible gap shall be inspected for compliance with the drawing requirement. Any No. 1 gear and pinion assembly that fails the requirement shall be classed defective.

4.5.7.2 Load Test of No. 2 Gear and Pinion Assembly.-Apply an axial load perpendicular to the No. 2 gear and in such a direction as to test the assembly of the No. 2 gear and pinion. The required force shall act against the No. 2 gear. Upon removal of the required force, the maximum permissible gap shall be inspected for compliance with the drawing requirement. Any No. 2 gear and pinion assembly that fails the requirement shall be classed defective.

4.5.7.3 Load Test of Escapement Gear and Pinion Assembly.-Apply an axial load perpendicular to the escapement gear and in such a direction as to test the assembly of the escapement gear and pinion. The required force shall act against the escapement gear. Upon removal of the required force, the maximum permissible gap shall be inspected for compliance with the drawing requirement. Any escapement gear and pinion assembly that fails the requirement shall be classed defective.

4.5.7.4 Load Test of Lever Shaft.-Apply the axial load perpendicular to the lever and in such a direction as to test the assembly of the lever and lever shaft. The required force shall act against the lever. Upon removal of the required force, the maximum permissible gap shall be inspected for compliance with the drawing requirement. Any lever shaft that fails the requirement shall be classed defective.

4.5.7.5 Load Test of Lever Pallet.-Apply an axial load perpendicular to the lever and in such a direction as to test the assembly of the lever and the lever pallet. The required force shall act against the lever. Upon removal of the required force, the height of the lever pallet above the lever shall be inspected for compliance with the drawing requirement. Any lever pallet that fails the requirement shall be classed defective.

4.5.7.6 Load Test of Annular Gear.-Apply a load perpendicular to the rotor and in such a direction as to test the assembly of the annular gear studs to the annular gear and the rotor. The required force shall act against the rotor. Upon removal of the required force, the distance from the face of the rotor to the outside face of the annular gear shall be inspected for compliance with the drawing requirement. Any annular gear that fails the requirement shall be classed defective.

4.5.7.7. Load Test of Lock Roller Pin.-Apply an axial load perpendicular to the rotor and in such a direction as to test the strength of the assembly of the lock roller pin to the rotor. The required force shall act against the rotor. Any lock roller pin that fails the requirement shall be classed defective.

4.5.7.8 Torque Test of Lever Shaft.-A torque shall be applied between the lever and the lever shaft. Any lever shaft that fails the requirement shall be classed defective.

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4.5.7.9 Load Test of Bridge Rivet.-Apply the required load perpendicular to the inner plate and into the bridge rivet from the side opposite the bridge. The required force shall act against the inner plate. Any bridge rivet that fails the requirement shall be classed defective.

4.5.7.10 Load Test of Spring Stud.-Apply an axial load perpendicular to the rotor housing and in such a direction as to test the assembly of the spring stud and the rotor housing. The required force shall act against the rotor housing. Any spring stud that fails the requirement shall be classed defective.

4.5.7.11 Load Test of Pillars.-Apply the required axial load perpendicular to the inner plate and in such a direction as to test the assembly of the pillars to the inner plate and outer plate. The required force shall act against the inner plate. Any pillars that fail the requirement shall be classed defective.

4.5.7.12 Torque Test of Rotor Stop Stud (Eccentric Pin).-The required torque shall be applied between the rotor stop stud and gear assembly. The required force shall act on the gear assembly. Any rotor stop stud that fails the requirement shall be classed defective.

4.5.8 Fuze Body Assembly Seal Leakage.-The fuze body assembly shall be checked for leakage past the seal ring into the body assembly. The fuze body assembly shall be secured into the test fixture and 5.0 psig plus or minus 0.25 psig applied to the exterior of the assembly. The integrity of the seal shall be verified by measuring the pressure drop per unit time. A leak into the body assembly in excess of 0.0003 psi in 10 seconds shall indicate excessive leakage and reject the fuze. The test equipment calibration and equipment sensitivity shall be in accordance with 4.4.4.

4.5.9 Dimensional Examination of Inside Radius at Bottom of Nose Section.-The component shall be sectioned through the longitudinal axis and the inside radius at bottom of nose section shall be measured. A cast of the radius may be made and gaged on an optical comparator in lieu of sectioning. Any nose section that fails the requirement shall be classed defective.

4.5.10 Corrosion Resistance of Anodic Coating.-The testing of the sample shall be in accordance with the procedures specified in MIL-A-8625 except that the salt spray test shall be conducted for 168 hours. The significant area for examination shall be the outside surface of the specimens.

a. The specimens shall show no more than five (5) spots or pits, none larger than 1/32 inch in diameter, except in those areas within 1/16 inch from the edges, corner, identification markings and holding during processing. Any sample that fails the requirement shall be classed defective.

b. Powdery areas or loose films in excess of ten percent of the examined surface shall be cause for rejection.

4.5.11 Load Test of Detonator.-Apply a five pound minimum axial load perpendicular to the rotor and in such a direction as to test the strength of the staking of the detonator in the rotor. Any staked detonator that fails the requirement shall be classed defective.

WARNING: This test may be dangerous and should be performed behind a suitable barricade.

4.5.12 Arming and Detent Functioning.-The S&A in the safe position shall be assembled to the test equipment in accordance with 4.4.4. The equipment shall accelerate the Safety and Arming Device to 20.75 g's maximum for a minimum of three plus one, minus zero seconds in a direction which simulates rocket launch. At the completion of acceleration, the equipment shall be halted and visual observation shall be made for the locking position of the detent. Finger tip pressure shall be applied to the rotor to rotate in the safe direction to ascertain positive arming. At the completion of the test, the Safety and Arming Device shall be returned to the safe position. Any S&A that fails the requirement shall be classed defective.

WARNING: This test may be dangerous and should be performed behind a suitable barricade.

4.5.13 Setback Weight Return Capability.-This test shall be performed as specified on drawing 9215617. S&A's failing to comply with the specified requirements shall be classed defective and removed from the lot. Defect standards for verification of the inspection process shall be in accordance with 4.4.4.3 and 4.4.4.4. Defect standards for use with automatic equipment shall be as follows:

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a. Units with setback weights which bind when depressed and remain in the depressed condition.

b. Units with setback weights which start to return but do not completely return to the original locking position.

c. Units with setback weights which return from the depressed condition at a slower than the normal rate causing rejection.

4.5.14 Rotor Reset Capability.-The loaded S&A shall be assembled to the test fixture in accordance with 4.4.4. The rotor shall be rotated to a position at least 26 degrees but not more than 35 degrees from the fully safe position and released. Observation shall be made for rotor return to the fully safe position. S&A's failing to comply with the specified requirement shall be classed defective and removed from the lot.

4.5.15 M423 S&A Arming Time Test.-The loaded S&A with the g-weight in the downward position shall be assembled to the test equipment in accordance with 4.4.4. The equipment shall accelerate the Safety and Arming Device in a clockwise direction to 27.00 g's plus or minus 0.25 g's and the arming time shall be recorded to the nearest hundredth of a second using a calibrated timer. S&A's failing to comply with the specified requirements shall be classed defective and removed from the lot.

4.5.16 M427 S&A Arming Time Test.-The loaded S&A with the g-weight in the downward position shall be assembled to the test equipment in accordance with 4.4.4. The equipment shall accelerate the Safety and Arming Device in a clockwise direction to 40.00 g's plus or minus 0.25 g's and the arming time shall be recorded to the nearest hundredth of a second using a calibrated timer. S&A's failing to comply with the specified requirements shall be classed defective and removed from the lot.

4.5.17 M423 S&A Non-Arming Test.-The loaded S&A with the g-weight in the downward position shall be assembled to the test equipment in accordance with 4.4.4. The equipment shall accelerate the Safety and Arming Device in a clockwise direction to 11.25 g's minimum for a minimum of three (3) seconds. Observation shall be made for rotor in the safe position. S&A's failing to comply with the specified requirement shall be classed defective and removed from the lot.

4.5.18 M427 S&A Non-Arming Test.-The loaded S&A with g-weight in the downward position shall be assembled to the test equipment in accordance with 4.4.4. The equipment shall accelerate the Safety and Arming Device in a clockwise direction to 12.75 g's minimum for a minimum of three (3) seconds. Observation shall be made for rotor in the safe position. S&A's failing to comply with the specified requirements shall be classed defective and removed from the lot.

4.5.19 S&A Position Check.-The S&A position, after insertion into the fuze body but prior to assembly of the booster housing, shall be inspected. Any armed fuze shall be considered defective and removed from the lot, and the assembly operation shall be halted until operation is corrected to Government satisfaction. The inspection shall be performed to the requirements of 3.7 using procedures in accordance with 4.4.4.3 and 4.4.4.4 and equipment in accordance with dwg. 9201212.

Defect standards with semi-armed and fully armed conditions shall be introduced at various times to verify test performance. The Design Agency approved handling procedure to preclude untested S&A's from being introduced into the fuze prior to the booster housing being installed shall also be assessed when the standards are introduced. If an improper procedure is being used as determined by the Government, all fuzes accepted subsequent to the last acceptable handling procedure assessment shall be screened as determined by the Government.

4.5.20 Seal Leakage Test.-The fuze assembly shall be checked for leakage into the S&A cavity.

a. Fuze assemblies in accordance with dwg. 9204391 shall be tested for the leakage rate past the "O" ring in the booster cavity with the application of 5.0 plus or minus 0.25 psig to the base of the fuze.

b. Fuze assemblies in accordance with dwg. 9254707 shall be tested for the leakage rate past the "O" ring in the booster cavity and the seal ring with the application of 5.0 plus or minus 0.25 psig to the exterior of the completed fuze assembly.

The integrity of the seal or seals shall be verified by measuring the pressure drop per unit time. A leak into the S&A cavity in excess of 0.00072 psi in ten seconds shall indicate excessive leakage and reject the fuze. The test equipment calibration and equipment sensitivity shall be in accordance with 4.4.4.

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4.5.21 M423 Fuze Assembly Arming Time Test.-The fuze assembly with the g-weight in the downward position shall be assembled to the test equipment in accordance with 4.4.4. The equipment shall accelerate the fuze in a clockwise direction to 27.00 g's plus or minus 0.25 g's and the arming time shall be recorded to the nearest hundredth of a second using a swing fixture and acoustic pick-up feeding the arming cycle noise signal to a design agency approved recorder. Any fuze assembly that fails the requirements of the arming time test shall be classed defective.

4.5.22 M427 Fuze Assembly Arming Time Test.-The fuze assembly with the g-weight in the downward position shall be assembled to the test equipment in accordance with 4.4.4. The equipment shall accelerate the fuze in a clockwise direction to 40.00 g's plus or minus 0.25 g's and the arming time be recorded to the nearest hundredth of a second using a swing fixture and acoustic pickup feeding the arming cycle noise signal to a design agency approved recorder. Any fuze assembly that fails the requirements of the arming time test shall be classed defective.

4.5.23 M423 Fuze Assembly Non-Arming Test.-The fuze assembly with the g-weight in the downward position shall be assembled to the test equipment in accordance with 4.4.4. The equipment shall accelerate the fuze assembly in a clockwise direction to 11.50 g's plus or minus 0.25 g's for a minimum of three (3) seconds. X-ray examination shall be made for rotor in the safe position. Any fuze assembly that fails the requirements of the non-arming test shall be classed defective.

4.5.24 M427 Fuze Assembly Non-Arming Test.-The fuze assembly with the g-weight in the downward position shall be assembled to the test equipment in accordance with 4.4.4. The equipment shall accelerate the assembly in a clockwise direction to 13.00 g's plus or minus 0.25 g's for a minimum of three (3) seconds. X-ray examination shall be made for the rotor in the safe position. Any fuze assembly that fails the requirements of the non-arming test shall be classed defective.

4.5.25 Firing of Fuze Assembly.-The armed fuze shall be installed in the test fixture in accordance with 4.3.4 and a mass impact of 50 to 51 lbs. shall be dropped from a height of 5.0 to 5.5 feet onto the nose of the fuze. Suitable stops shall be utilized to prevent crushing of the Safety and Arming Device. The weight shall be dropped only once. Any fuze assembly that fails to fire shall be classed defective.

4.5.26 Forty Foot Drop.--The fuze assembly with warhead assembly shall be subjected to the Forty Foot Drop Test as specified in MIL-STD-331 with the exception that the complete round shall be dropped base down only in a complete pack. The pack is as specified on dwg. 8886810 and 8886811. Any fuze assembly that fails the requirement shall be classed defective.

4.5.27 Jolt and Jumble.--The fuze assembly shall be subjected to the Jolt Test specified in Standard MIL-STD-331 with the exception that the fuze shall not be disassembled and inspected after the Jolt Test. After completion of the Jolt Test, the same fuze shall be subjected to and withstand the Jumble Test specified in MIL-STD-331. Any fuze assembly that fails the requirement shall be classed defective.

4.5.28 Five Foot Drop Test.--A random sample of forty-five (45) fuzes shall be selected and subjected to the test as specified in MIL-STD-331 with the following conditions:

a. The fuze assembly will be assembled to a M151 Warhead (the Government shall supply the warhead for the contractor's use), inert loaded, and with impact orientation of the warhead-fuze assemblies for the drop test as follows:

- (1) Major axis horizontal
- (2) Major axis 45 ° from vertical base down
- (3) Base down

Fifteen (15) fuzes each must be dropped in the above (1,2,3,) orientations. No fuze shall be subjected to more than one drop. The orientation of the Safety and Arming Device (specifically the g-weight) of the fuze shall be random.

b. The Five Foot Drop Test, as specified in MIL-STD-331, shall be performed until three (3) consecutive lots (a minimum lot size of one week's production) have complied with the acceptance criteria specified. After satisfying the above requirement, one lot (a minimum lot size of one week's production) per month shall be selected by the Government and subjected to and pass the Five Foot Drop Test. Should the one lot (per month) fail the acceptance criteria, the contractor shall be required to return to the three (3) consecutive lot procedures above for process qualification.

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c. The fuzes shall be subjected to the tests and acceptance or rejection criteria as specified in Table II.

TABLE II
SAMPLE SIZE - 45

| <u>TEST</u> | <u>ACCEPT</u> | <u>REJECT</u> | <u>TEST METHOD PARAGRAPH</u> |
|------------------------|---------------|---------------|--------------------------------------|
| Non-Arm Arming Time | 0 | 1 | 4.5.23 or 4.5.24 4.5.21 or 4.5.22 |
| Under Min. | 0 | 1 | |
| Over Max. | 2 | 3 | |
| Fail to Arm | 1 | 2 | |
| Firing | 1 | 2 | 4.5.25 |

If the sample fails the above acceptance criteria, the lot shall be rejected.

4.5.29 Non-Environmental Test.-A random sample of two hundred and nineteen (219) fuzes shall be selected and subjected to the test and acceptance or rejection criteria as specified in 4.5.31.

4.5.30 Vibration Test.-Ninety-six (96) fuzes shall be subjected to Aircraft Vibration as specified in Appendix 1. Vibration conditioning at resonance is not required. After vibration, the fuzes shall be subjected to the Seal Leakage Test, 4.5.20 and the lot shall be rejected if four (4) or more defects occur. Following seal leakage testing, the fuzes shall be subjected to the tests and acceptance or rejection criteria specified in 4.5.31.

4.5.31 Acceptance Criteria.-The sample fuzes from the Non-environmental and Vibration tests shall be combined into one sample and subjected to the following tests specified in Table III.

TABLE III
SAMPLE SIZE - 315

| <u>TEST</u> | <u>ACCEPT</u> | <u>REJECT</u> | <u>TEST METHOD PARAGRAPH</u> |
|---------------------------|---------------|---------------|------------------------------|
| Non-arm | 0 | 1 | 4.5.23 or 4.5.24 |
| Arming Time under min. | 0 | 1 | 4.5.21 or 4.5.22 |
| Point Assessment | | | |
| Arming Time Over max. | | 1 points | |
| Fail to arm | | 3 points | |

The fuze lot shall be rejected if the fuze assemblies do not meet the above criteria or have a total point accumulation of 6 points or more.

NOTE: An Arming time over max. failure is one point while a fail to arm failure is three points. The total points based on the failures determines the disposition of the lot (see 4.5.32).

Acceptable fuzes from the Vibration test shall be subjected to the firing test after the arming test is completed. If two (2) or more samples fail to fire the lot shall be rejected. If all tests are acceptable, the sample fuzes from the Non-environmental test may be returned to the lot after disassembly, resetting the S&A into the safe position and reassembly.

4.5.32 Fuze Arming and Non-Arming Definitions.-

a. Times under .63 seconds for the M423 and 1.07 seconds through 1.42 seconds for the M427 are classed as arming time under minimum.

b. Times .83 seconds through 1.20 seconds for the M423 and 1.37 seconds through 1.42 seconds for the M427 are classed as arming time over maximum.

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c. Times over 1.20 for the M423 and 1.42 for the M427 or fuzes which do not arm or fuzes which time but do not detent are classed as failures to arm.

d. Identification of defects as non-arm failures, arming time under minimum, arming time over maximum, and failures to arm will depend on both centrifuge testing and radiographic examination. In addition, these type failures shall be removed and not subjected to the firing test (vibrated fuzes) or be returned to the lot (non-environmental fuzes).

e. All fuzes which are not classed as a failure shall be radiographically inspected prior to firing (vibrated fuzes) or their return to the lot (non-environmental fuzes).

f. If the test equipment fails to produce an arming readout (i.e., recording paper skewes, audio pick-up or amplifier inoperative) during the arming time test as verified by the Government, the Safety and Arming Device shall be removed from the fuze body; and if found to be armed or partially armed, the Safety and Arming Device shall be reset into the unarmed position, reassembled into the same fuze body and retimed once as a fuze. The only handling action performed on the Safety and Arming Device shall be the reset of the device just prior to the arming time test. The timing record produced by the fuze on the approved fuze timing equipment shall be considered the timing record of the fuze under the applicable defect classification.

g. Fuze arming times, if recorded to the thousandth of a second shall be "rounded off" to the nearest hundredth of a second. Example:

- (1) 0.625 shall be 0.62
0.626 shall be 0.63
- (2) 0.825 shall be 0.82
0.826 shall be 0.83
- (3) 1.065 shall be 1.06
1.066 shall be 1.07
- (4) 1.365 shall be 1.36
1.366 shall be 1.37

4.5.33 Correlation Factor.—A correlation factor, which correlates the fuze arming time method (swing fixture) to the in-line S&A arming time method, shall be run for each type of fuze M423 and/or M427.

Correlation tests shall be performed by the contractor with DCAS verification. Correlation factors shall be validated at six month intervals (maximum) and re-established whenever:

- a. A new contract is issued
- b. A change of fuze type
- c. Fuze timing equipment is modified

For the correlation procedure a digital counter or an approval equivalent device shall be used, set to read milliseconds for S&A timing and set for oscillograph traces, to the nearest millisecond, for the fuze. The correlation shall be accomplished as follows:

a. Select five (5) S&A's demonstrating acceptable arming time. Each S&A shall have repeatable arming times within 10 milliseconds in five successive runs on the approved S&A timing equipment. S&A arming times readings shall be obtained from the first movement of the set-back weight to the detent locking in the rotor.

b. The same S&A's shall be placed in fuze housings and secured in place with a booster housing, less "O" ring, with fingertip pressure only. The assemblies shall then be timed five (5) times on the approved fuze timing equipment. Readings of the fuze arming time traces, from set back weight bottoming to rotor detent, shall be recorded.

c. The shift in average fuze time, if any, when compared with the average S&A time (taken as a standard) shall be used as the correlation correction and applied to the acceptance test results.

Data obtained in accordance with the above procedure shall be submitted to Commander, US Army Research and Development Command, Dover, NJ 07801, ATTN: DRDAR-QAR-M and DRDAR-QAR-I.

4.5.34 The contractor shall submit a quality inspection test, demonstration and evaluation report in accordance with Data Item Description DI-R-1721 and DI-R-1724 giving the detailed test results.

5. Preparation for Delivery

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5.1 Packaging and Marking.-Level C - The fuze, less booster pellet and booster lead shall be packed and marked in accordance with MIL-P-60412. Marking shall be on labels.

5.2 Packing and Marking.-Level C - The packaged fuzes shall be packed and marked in accordance with MIL-P-60412. Marking shall be on labels. The ICC nomenclature shall be "Percussion Fuzes".

6. Notes

6.1 Intended Use.-It is intended that the item of this specification shall be used in the 2.75 Inch Rocket System.

6.2 Ordering Data.-See MIL-A-48078.

6.3 Submission of Designs for Approval.-See 6.2.3 of MIL-A-48078. Submit equipment designs, as required, to: Commander, US Army Armament Research and Development Command, ATTN: DRDAR-QAR-I, Dover, NJ 07801.

6.4 Government Furnished Parts

6.4.1 Packing and Packaging.-The procuring agency will provide the packing and packaging for the Forty Foot Drop Test.

6.4.2 M151 Warhead.-The procuring agency will provide inert loaded M151 warheads for the Five Foot Drop Test and Forty Foot Drop Test.

6.5 Defect Reporting.-From each lot produced, the contractor shall submit two copies of the Metal Parts Lot Acceptance Test Data (See Appendix 2) to ARRADCOM, ATTN: DRDAR-QAR-M and DRDAR-LCF, within three (3) days after completion of acceptance testing of the lot. If fuzes and/or tests, in addition to acceptance requirements, are utilized to evaluate the lot, the results of these tests will also be submitted three (3) days after the additional tests are completed. The defective fuzes shall be saved pending review of the results. Recommended test data sheet is enclosed.

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6.6 Drawings.--Drawings listed in Section 2 of this specification under the heading US Army Armament Research and Development Command (ARRADCOM) may also include drawings prepared by, and identified as Edgewood Arsenal, Frankford Arsenal, Rock Island Arsenal or Picatinny Arsenal drawings. Technical data originally prepared by these activities is now under the cognizance of ARRADCOM.

6.7 Changes from Previous Issue.--Asterisks are not used in this revision to identify changes with respect to the previous issue, due to the extensiveness of the changes.

6.8 Data Requirements.--Deliverable data required by this specification in the following paragraphs:

| <u>Paragraph</u> | <u>Data Requirement</u> | <u>Applicable DID</u> |
|------------------|--|-----------------------|
| 4.5.34 | Quality Inspection Test, Demonstration and Evaluation Report | DI-R-1724 |
| 4.5.34 | Quality Inspection Defect Report | DI-R-1721 |

(Copies of data item description required by the contractor in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer).

Custodian:
Army-AR

Preparing Activity:
Army-AR

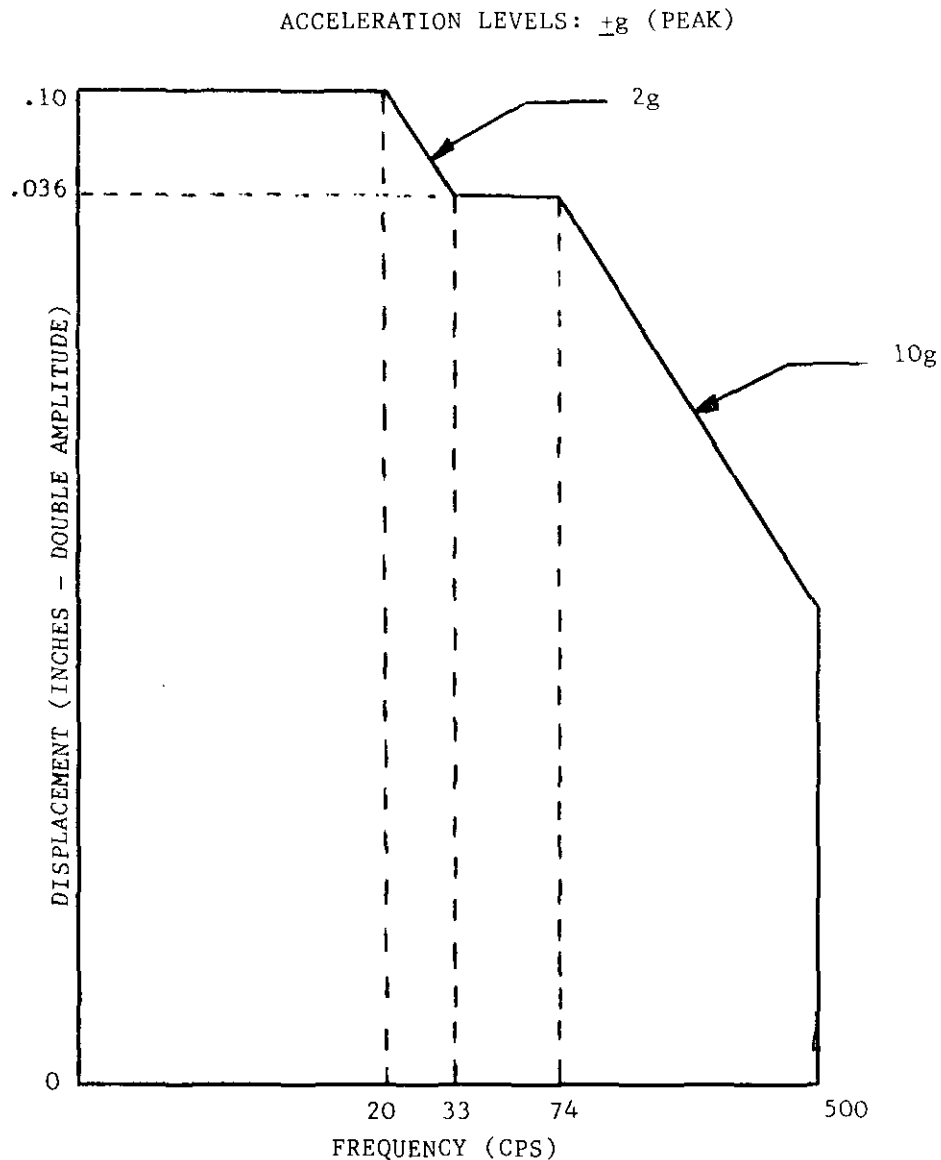
Project Number; 1340-A428

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APPENDIX 1

AIRCRAFT VIBRATION TEST

The 15 minute sinusoidal sweep (5-500-5 HZ) shall be performed for each of three axes. Sinusoidal cycling time for each axis shall be three hours. Total test time is nine hours. No dwell time shall be spent on any one frequency. A search for resonance shall not be done.



APPENDIX 2

MIL-F-50548A (AR)

M _____ METAL PARTS LOT ACCEPTANCE TEST DATA

Contractor: _____

Fuze Lot No: _____

Date of Test

Lot Quantity (Gross): _____

Start: _____

Sample Size (Total): _____

End: _____

Sample Size
Returned to Lot: _____

Date Shipped: _____

Lot Quantity (Net): _____

Five Foot Drop Test

5' Drop

| Sample Size | Serial No. of Defect | Failure Analysis |
|-------------|----------------------|------------------|
| | | |

Non-Arm

| Sample Size | Serial No. of Defect | Failure Analysis |
|-------------|----------------------|------------------|
| | | |

MIL-F-50548A (AR)

Arming Time

| Sample | Number Accepted | Serial No. of Short Times | Serial No. of Long Times | Timed But Failed to Arm | Not Timed and Failed Arm | Armed But Not Timed |
|--------|-----------------|---------------------------|--------------------------|-------------------------|--------------------------|---------------------|
| | | | | | | |

Attach list of fuze serial numbers and arming times.

Firing Test

| Sample Size | Serial No. of Defects | Failure Analysis |
|-------------|-----------------------|------------------|
| | | |

5' Drop Failure Analysis

| |
|--|
| |
|--|

Functional Test

Vibration Test

| Sample Size | Serial No. of Defects | Failure Analysis |
|-------------|-----------------------|------------------|
| | | |

MIL-F-50548A (AR)

Seal Leakage Test

| Sample Size | Serial No. of Defects | Failure Analysis |
|-------------|-----------------------|------------------|
| | | |

Operational TestNon-Arm Test

| Sample Size | Serial No. of Defects | Failure Analysis |
|-------------|-----------------------|------------------|
| | | |

Arming Time Test

| Sample Size | Number Accepted | Serial No. of Short Times | Serial No. of long Times | Timed But Failed to Arm | Not Timed And Failed to Arm | Armed But Not Timed |
|-------------|-----------------|---------------------------|--------------------------|-------------------------|-----------------------------|---------------------|
| | | | | | | |

Attach list of fuze serial numbers and arming times.

Total Defect Points: _____

MIL-F-50548A (AR)

Firing Test

| Sample Size | Serial No. of Defects | Failure Analysis |
|-------------|-----------------------|------------------|
| | | |

Failure Analysis

| |
|--|
| |
|--|

Correlation Factor applied to the arming time readings of the Five Foot Drop Test and the Operational Test samples was _____ seconds.

Jolt and Jumble

| Sample Size | Serial No. of Defects | Failure Analysis |
|-------------|-----------------------|------------------|
| | | |

Failure Analysis

If lot failure is due to other than test conditioning

| |
|--|
| |
|--|

Government Inspector Date

Contractor Representative Date

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

INSTRUCTIONS: This form is provided to solicit beneficial comments which may improve this document and enhance its use. DoD contractors, government activities, manufacturers, vendors, or other prospective users of the document are invited to submit comments to the government. Fold on lines on reverse side, staple in corner, and send to preparing activity. Attach any pertinent data which may be of use in improving this document. If there are additional papers, attach to form and place both in an envelope addressed to preparing activity. A response will be provided to the submitter, when name and address is provided, within 30 days indicating that the 1426 was received and when any appropriate action on it will be completed.

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DOCUMENT IDENTIFIER (Number) AND TITLE

MIL-F-50548A Fuzes Rocket, M423 and M427 Less Booster and Booster Lead

NAME OF ORGANIZATION AND ADDRESS OF SUBMITTER

☐ VENDOR ☐ USER ☐ MANUFACTURER

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DATE

DD FORM 1426
1 OCT 76

EDITION OF 1 JAN 72 WILL BE USED UNTIL EXHAUSTED.