

INCH-POUND

MIL-F-50548A (AR)  
AMENDMENT 5  
05 May 1994  
SUPERSEDING  
AMENDMENT 4  
18 May 1990

MILITARY SPECIFICATION

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

This amendment forms a part of MIL-F-50548A (AR), dated 9 November 1978, and is approved for use by the US Army Armament, Munitions, and Chemical Command, and is available for use by all Departments and Agencies of the Department of Defense.

PAGE 1

- \* Add distribution statement at bottom of Page 1 as follows:

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

PAGE 2

2.1, Add to Inspection Equipment Drawings the following:

"9221050-1 - Warhead, 2.75 Inch Rocket, Practice, M230".

Delete:

"9204391 - Fuze Rocket, Less Booster and Booster Lead".

3.2: Delete "9204391 or Dwg."

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PAGE 3

3.3.1: Delete in its entirety, and substitute the following:

"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 0.88 sec. when subjected to the arming acceleration of  $27.00 \pm 0.25$  g's. The S&A shall meet this requirement at any temperature between  $-65^{\circ}\text{F}$  and  $+165^{\circ}\text{F}$ ."

\* 3.4.1: Delete in its entirety, and substitute the following:

"3.4.1 Arming time. The arming time shall arm in not less than 0.63 sec. or more than 0.92 sec. when subjected to arming acceleration of  $27.00 \pm 0.25$  g's and the detent shall lock the rotor in the fully armed position. The fuze assembly shall meet this requirement at any temperature between  $-65^{\circ}\text{F}$  and  $+165^{\circ}\text{F}$ ."

3.5.1: Delete in its entirety, and substitute the following:

"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 1.37 sec. when subjected to the arming acceleration of  $40.00 \pm 0.25$  g's. The S&A shall meet this requirement at any temperature between  $-65^{\circ}\text{F}$  and  $+165^{\circ}\text{F}$ ."

PAGE 4

\* 3.6.1: Delete in its entirety, and substitute the following:

"3.6.1 Arming time. The fuze assembly shall arm in not less than 1.07 sec. and not more than 1.46 sec. when subjected to arming acceleration of  $40.00 \pm 0.25$  g's and the detent shall lock the rotor in the fully armed position. The fuze assembly shall meet this requirement at any temperature between  $-65^{\circ}\text{F}$  and  $+165^{\circ}\text{F}$ ."

Add new paragraph "3.9 Drop tests".

3.9: Delete paragraph number "3.9" and substitute "3.9.1".

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PAGE 4 (continued)

Add new paragraph as follows:

"3.9.2 Five-foot drop. The fuze shall be safe to handle, fire, or dispose of following the five-foot drop test as specified in MIL-STD-331. The fuze need not be operable but shall not arm below the minimum time requirement."

3.10: Delete "Five Foot Drop Test as specified in MIL-STD-331;".

PAGE 5

3.10: Delete "the Five Foot Drop Test and".

4.1: Delete in its entirety and substitute the following:

"4.1 Responsibility for inspection. Unless otherwise specified in the contract, the contractor is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements. Unless otherwise specified herein or in the contract, the provisions of MIL-A-48078 shall apply and are hereby made a part of this detail specification."

PAGE 6

4.3.1: Delete the following:

"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
Striker Pin Assembly	8883733	25
Firing Pin Body Assembly	8883736	25
Fuze, Body Assembly	9215611	25"

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**PAGE 6 (continued)**

Delete:

"Fuze, Rocket, Less Booster and Booster Lead	9204391-1 or-2	253"
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and substitute the following:

"Fuze, Rocket, Less Booster and Booster Lead	9254707-1 or-2	376".
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**PAGE 7**

4.3.1: Delete "8883706" and substitute "8883706 (M423) or 9260776 (M427)".

Delete "8883693" and substitute "9260804".

Delete "8883692" and substitute "8883692 (M423) or 9260774 (M427)".

Add: "Stud, Spring	8883721	10"
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**PAGE 8**

Table 1: Delete in its entirety.

**PAGE 9**

Table 1: Delete "Hammer, Firing Pin" in its entirety.

Delete "Striker Pin Body Assembly" in its entirety.

Delete "Firing Pin Body Assembly" in its entirety.

Delete last line, "Device, Safety and Arming".

**PAGE 10**

Table 1: Delete first two lines under Examination or Test:

"(Dwg. 9215617-1 or 9215617-2) Examination for defects	25	3.2	4.4.2.13 or 4.4.2.14".
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\* Table 1: Delete "Arming Time 25" and substitute "Arming Time 25a".

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PAGE 10 (continued)

Add note to notes block as follows:

"a. Prior to testing, the fuze sample shall be x-rayed and the location of the G-weight shall be marked on the outer surface of the fuze."

PAGE 11

Table 1: Delete "Fuze, Body Assembly" in its entirety.

Delete "9204391-1" and substitute "9254707-1".

Delete "253" and substitute "376".

Delete "4b" and substitute "4".

Delete "9b" and substitute "9".

Add:

"Low Temperature MIL-STD-810, Procedure 1, Method 502	73	3.4.1	4.5.35
High Temperature MIL-STD-810, Procedure 1, Method 501	73	3.4.1	4.5.36"

Add notes to notes block as follows:

"(a) Samples taken from 5 foot drop, aircraft vibration, nonenvironmental (including low temperature and high temperature).

(c) Samples taken from 5 foot drop and aircraft vibration test."

\* Table 1: Delete:

"Arming Time (under minimum) a"

and substitute:

"Arming Time (under minimum) a,d".

Delete:

"Arming Time (over max or fail to arm) a"

and substitute:

"Arming Time (over max or fail to arm) a,d".

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PAGE 11 (continued)

\* Table 1: (Continued)

Delete "73	3.4.1	4.5.35" and substitute
"73d	3.4.1	4.5.35".

Delete "73	3.4.1	4.5.36" and substitute
"73d	3.4.1	4.5.36".

Add "Pin, Firing  
(Dwg. 9254704)  
Examination for Defects                    10 - 3.2 . 4.4.2.18".

Add note d to notes block as follows:

"d. Prior to testing, the fuze sample shall be x-rayed and the location of the G-weight shall be marked on the outer surface of the fuze."

PAGE 12

Table 1: Delete "9204391-2" and substitute "9254707-2".

Delete "253" and substitute "376".

Delete "4b" and substitute "4".

Delete "9b" and substitute "9".

Add:

"Low Temperature MIL-STD-810, Procedure 1, Method 502	73	3.6.1	4.5.35
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High Temperature MIL-STD-810, Procedure 1, Method 501	73	3.6.1	4.5.36"
----------------------------------------------------------	----	-------	---------

Add notes to notes block as follows:

"(a) Samples taken from 5 foot drop, aircraft vibration, nonenvironmental (including low temperature and high temperature).

(c) Samples taken from 5 foot drop and aircraft vibration test."

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PAGE 12 (continued)

\* Table 1: Delete "Arming Time (under minimum) a" and substitute "Arming Time (under minimum) a,d".

Delete "Arming Time (over max or fail to arm) a" and substitute "Arming Time (over max or fail to arm) a,d".

Delete "73 3.4.1 4.5.35" and substitute  
"73d 3.4.1 4.5.35".

Delete "73 3.4.1 4.5.36" and substitute  
"73d 3.4.1 4.5.36".

Add note d to notes block as follows:

"d. Prior to testing, the fuze sample shall be x-rayed and the location of the G-weight shall be marked on the outer surface of the fuze."

PAGE 13

Table 1: Delete "Fuze, Rocket, Less Booster and Booster Lead (Dwg. 9254707-1)" in its entirety.

Delete notes "a" and "c" in their entirety.

PAGE 14

Table 1: Delete "Fuze, Rocket, Less Booster and Booster Lead (Dwg. 9254707-2)" in its entirety.

Delete notes "a" and "b" in their entirety.

PAGE 15

Table 1: Delete "(Dwg. 8883706)" and substitute "(Dwg. 8883706 or 9260776)".

PAGE 16

Table 1: Delete "8883693" and substitute "9260804".

Delete "(Dwg. 8883692)" and substitute "(Dwg. 8883692 or 9260774)".

Add the following:

"Stud, Spring  
(Dwg. 8883721)  
Examination for defects 10 3.2 4.4.2.37"

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**PAGE 18**

4.4.2.1: Delete in its entirety.

**PAGE 19**

4.4.2.2: Delete in its entirety.

**PAGE 20**

4.4.2.2: Delete in its entirety.

**PAGE 21**

4.4.2.3: Delete in its entirety.

**PAGE 22**

4.4.2.4: Delete in its entirety.

**PAGE 23**

4.4.2.5: Delete in its entirety.

**PAGE 24**

4.4.2.6: Delete in its entirety.

**PAGE 25**

4.4.2.7: Delete in its entirety.

**PAGE 26**

4.4.2.8: Delete "9204391/".

**PAGE 27**

4.4.2.8: Delete "9204391/".

\* 4.4.2.8, Category 205: Delete "gage" and substitute "visual".

**PAGE 28**

4.4.2.9: Delete in its entirety.

**PAGE 29**

4.4.2.10: Delete in its entirety.

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PAGE 30

4.4.2.11: Delete "9204391-1/".

PAGE 31

4.4.2.12: Delete "9204391-2/925470-2" and substitute "9254707-2".

PAGE 32

4.4.2.13: Delete "9204391-1/".

Add Majors 117 and 118 as follows:

"117	Wrong lubricant	100%	3.2	Certification
118	Excessive lubricant(a)	.40%	3.2	Visual"

Add note to notes block as follows:

"(a) Excessive lubricant is defined as evidence of non-uniform coating or collection of fluids in visible areas."

PAGE 33

4.4.2.13: Delete "9204391-1/".

PAGE 34

4.4.2.14: Delete "9204391-2/".

Add Majors 117 and 118 as follows:

"117	Wrong lubricant	100%	3.2	Certification
118	Excessive lubricant(a)	.40%	3.2	Visual"

Add note to notes block as follows:

"(a) Excessive lubricant is defined as evidence of non-uniform coating or collection of fluids in visible areas."

\* 4.4.2.14, Category 101: Delete "tip or" and substitute "top of".

Delete "Arming time 100%" and substitute "Arming time b 100%".

Add note b to notes block as follows:

"b. Prior to testing, the fuze sample shall be x-rayed and the location of the G-weight shall be marked on the outer surface of the fuze."

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PAGE 35

4.4.2.14: Delete "9204391-2/".

PAGE 36

4.4.2.15: Delete in its entirety.

PAGE 37

4.4.2.16: Delete "9204391-1" and substitute "9254707-1".

Add the following:

"10	Low Temperature MIL-STD-810 Procedure 1, Method 502	73	3.4.1	4.5.35
11	High Temperature MIL-STD-810 Procedure 1, Method 501	73	3.4.1	4.5.36".

Delete note a in its entirety and substitute the following:

"(a) Samples taken from 5 foot drop, aircraft vibration, and non-environmental (including low temperature and high temperature). Note: 5' drop not done on every lot".

\* 4.4.2.16: Delete "Arming Time (under minimum) a" and substitute "Arming Time (under minimum) a,d".

Delete "73 3.4.1 4.5.35" and substitute  
"73d 3.4.1 4.5.35".

Delete "73 3.4.1 4.5.36" and substitute  
"73d 3.4.1 4.5.36".

Delete "Arming Time (over max or fail to arm) a" and substitute "Arming Time (over max or fail to arm) a,d".

Delete in note c, "5 foot drop test and".

Add note d to notes block as follows:

"d. Prior to testing, the fuze sample shall be x-rayed and the location of the G-weight shall be marked on the outer surface of the fuze."

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PAGE 38

4.4.2.17: Delete "9204391-2" and substitute "9254707-2".

Add the following:

"10	Low Temperature MIL-STD-810 Procedure 1, Method 502	73	3.4.1	4.5.35
11	High Temperature MIL-STD-810 Procedure 1, Method 501	73	3.4.1	4.5.36".

Delete note a in its entirety and substitute the following:

"(a) Samples taken from 5 Foot Drop, Aircraft Vibration, and Non-Environmental (including low temperature and high temperature). Note: 5' drop not done on every lot".

\* 4.4.2.17: Delete "Arming Time (under minimum) a" and substitute "Arming Time (under minimum) a,d".

Delete "73 3.4.1 4.5.35" and substitute  
"73d 3.4.1 4.5.35".

Delete "73 3.4.1 4.5.36" and substitute  
"73d 3.4.1 4.5.36".

Delete "Arming Time (over max or fail to arm) a" and substitute "Arming Time (over max or fail to arm) a,d".

Delete in note c, "5 foot drop test and".

Add note d to notes block as follows:

"d. Prior to testing, the fuze sample shall be x-rayed and the location of the G-weight shall be marked on the outer surface of the fuze."

PAGE 40

4.4.2.19: Add Major 109 as follows:

"109	Corrosion resistance of Anodic coating	a	3.2	4.5.10".
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Add note to note block as follows:

"(a) MIL-STD-105 Level 5.2 based on no more than 40 hours production. Parts shall be rotated 180° every 24 hours. Should one or more samples fail to meet the requirements, the lot shall be rejected."

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PAGE 40 (continued)

- \* 4.4.2.19, Category 203, under Examination or Test: Add  
"or chamfer".

PAGE 41

- 4.4.2.20, Major 114: Delete "Visual" and substitute "Visual,  
4x magnification, minimum".

Add Major 115 as follows:

- \*115 Corrosion resistance of  
Anodic coating a 3.2 4.5.10".

Add note to note block as follows:

"(a) MIL-STD-105 Level 5.2 based on no more than 40 hours  
production. Parts shall be rotated 180° every 24 hours.  
Should one or more samples fail to meet the requirements, the  
lot shall be rejected."

PAGE 44

- 4.4.2.22: Delete Major 101 in its entirety.

Delete note a in its entirety.

PAGE 45

- 4.4.2.23: Delete in its entirety.

PAGE 46

- 4.4.2.24: Delete in its entirety.

PAGE 48

- 4.4.2.26: Delete "9215619" and substitute "9215619-1 or -2".

PAGE 49

- 4.4.2.27: In Next Higher Assembly block add "or 9260774".

Under CATEGORY delete "1" and "2" and substitute "2" and  
"1", respectively.

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PAGE 50

4.4.2.28: In Next Higher Assembly block add "or 9260774".

Under CATEGORY delete "1" and "2" and substitute "2" and "1", respectively.

PAGE 51

4.4.2.29: In Next Higher Assembly block add "or 9260774".

Under CATEGORY delete "1" and "2" and substitute "2" and "1", respectively.

PAGE 52

4.4.2.30: Delete in its entirety and substitute included page 14 (52).

PAGE 53

4.4.2.31: Delete in its entirety and substitute included page 15 (53).

PAGE 54

4.4.2.32: Delete in its entirety and substitute included page 16 (54).

PAGE 55

4.4.2.33: Delete "8883686" and substitute "9215619-1 or -2".

PAGE 56

4.4.2.34: Delete "8883692" and substitute "8883692 (M423) or 9260774 (M427)".

Delete "9215619" and substitute "9215619-1 or -2".

PAGE 57

4.4.2.35: Delete in its entirety.

QUALITY CONFORMANCE INSPECTION  
**CLASSIFICATION OF CHARACTERISTICS**

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PARAGRAPH	TITLE	SHEET 1 OF 1		DRAWING NUMBER
4.4.2.30	Lever Assembly			8883706 or 9260776 (M422) (M427)
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMENT PARAGRAPH	INSPECTION METHOD REFERENCE
<u>Critical</u>				
1	Maximum gap between lever and shaft	100%	3.2	Gage
2	Load test of lever shaft	100%	3.2	4.5.7.4
3	Load test of lever pallet	100%	3.2	4.5.7.5
<u>Major</u>				
101	Torque test of lever shaft	100%	3.2	4.5.7.8
<u>Minor</u>				
201	Evidence of poor workmanship	0.65%	3.16	Visual
NOTES:				

14 (52)

QUALITY CONFORMANCE INSPECTION  
**CLASSIFICATION OF CHARACTERISTICS**

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PARAGRAPH	TITLE	SHEET 1 OF 1		DRAWING NUMBER
4.4.2.31	Rotor Assembly			8883744
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMENT PARAGRAPH	NEXT HIGHER ASSEMBLY
				INSPECTION METHOD REFERENCE
<u>Critical</u> 1	Load test of annular gear	100%	3.2	4.5.7.6
<u>Major</u> 101	Load test of lock roller pin	0.40%	3.2	4.5.7.7
<u>Minor</u> 201	Evidence of poor workmanship	0.65%	3.16	Visual
NOTES:				

15 (53)

QUALITY CONFORMANCE INSPECTION  
**CLASSIFICATION OF CHARACTERISTICS**

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PARAGRAPH	TITLE	SHEET 1 OF 1		DRAWING NUMBER
4.4.2.32	Inner Plate Assembly			9260804
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMENT PARAGRAPH	INSPECTION METHOD REFERENCE
<u>Critical</u>	None defined			
<u>Major</u> 101	Load test of bridge rivet	0.40%	3.2	4.5.7.9
<u>Minor</u> 201	Evidence of poor workmanship	0.65%	3.16	Visual
NOTES:				

16 (54)

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PAGE 58

Add paragraph 4.4.2.37 included as page 18 (58a)

PAGE 62

4.5.5: Add "One defective shall be cause for lot rejection."

4.5.6: Add "One defective shall be cause for lot rejection."

4.5.7.1: Delete "Apply an" and substitute "Apply the required".  
Delete last "." and substitute "and removed from the lot."

4.5.7.2: Delete "Apply an" and substitute "Apply the required".  
Delete last "." and substitute "and removed from the lot."

PAGE 63

4.5.7.3: Delete "Apply an" and substitute "Apply the required".  
Delete last "." and substitute "and removed from the lot."

4.5.7.4: Delete "Apply the" and substitute "Apply the required".  
Delete last "." and substitute "and removed from the lot."

4.5.7.5: Delete "Apply an" and substitute "Apply the required".  
Delete last "." and substitute "and removed from the lot."

4.5.7.6, Line 5: Delete "to the outside face of the annular gear" and substitute "to the outside face of the annular gear studs".

4.5.7.8: Delete last "." and substitute "and removed from the lot."

QUALITY CONFORMANCE INSPECTION  
**CLASSIFICATION OF CHARACTERISTICS**

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PARAGRAPH	TITLE	SHEET 1 OF 1		DRAWING NUMBER
4.4.2.37	Stud, Spring			8883721
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMENT PARAGRAPH	INSPECTION METHOD REFERENCE
<u>Critical</u>	None defined			
<u>Major</u> 101	Diameter of stud, min	0.40%	3.2	Gage
<u>Minor</u> 201	Evidence of poor workmanship	0.65%	3.16	Visual
NOTES:				

18 (58a)

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PAGE 64

4.5.8: Delete in its entirety and substitute the following:

"4.5.8 Fuze body assembly seal leakage. The fuze body assembly shall be checked for leakage past the seal ring into the assembly body. The fuze body assembly shall be assembled to a test fixture, sealed, and submerged completely in water. A 5.0 psig  $\pm$  0.25 psig shall be applied through the test fixture into the fuze body assembly. The integrity of the seal shall be verified by observation after 10 seconds up to a minimum of 30 seconds for the presence of a stream or recurring successions of small bubbles. Any steady stream or recurring bubbles shall be classified as leakers and rejects. The test equipment calibration and equipment sensitivity shall be in accordance with paragraph 4.4.4."

PAGE 65

\* 4.5.13: Delete "4.4.4.4" and substitute "4.4.4.2".

PAGE 66

\* 4.5.15: Add after "weight in downward position" the following:

"(in safe position and closest to earth)"

\* 4.5.16: Add after "weight in downward position" the following:

"(in safe position and closest to earth)"

\* 4.5.17: Add after "weight in downward position" the following:

"(in safe position and closest to earth)"

PAGE 67

\* 4.5.18: Add after "weight in downward position" the following:

"(in safe position and closest to earth)"

\* 4.5.19: Delete "4.4.4.4" and substitute "4.4.4.2".

4.5.20: Delete in its entirety and substitute the following:

"4.5.20 Seal leakage test. The fuze shall be checked for leakage:

a. Load fuze onto a moveable platform in an airtight bell jar.

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PAGE 67 (continued)

b. Draw a vacuum slowly (1 or 2 inches of mercury/minute) until the vacuum tube is equal to or slightly greater than the water pressure head on the fuze at its deepest depth.

c. Quickly submerge fuze by lowering platform in the water.

d. Further reduce vacuum to 10 inches of mercury and maintain constant by regulator for a minimum of 1 minute.

e. The integrity of the seal shall be verified by observation after 10 seconds up to a minimum of 30 seconds for the presence of a steady stream or recurring succession of bubbles. Any steady stream or recurring bubbles shall be classified as leakers/rejects.

f. If big bubbles are seen, immediately lift fuze from the water to prevent entry into the fuze.

g. After the observation period, lift the fuze above the water and vent the vacuum through the regulator valve thus bleeding the bubble tester back to atmospheric pressure.

h. A leaker shall reject the fuze. The test equipment calibration and equipment sensitivity shall be in accordance with 4.4.4."

PAGE 68

\* 4.5.21: Add after "weight in downward position" the following:

"(in safe position and closest to earth)"

Add the following after last line:

"For the purpose of acceptance, the corrected arm time, i.e., measured arm time minus correlation factor (see 4.5.33), shall apply. The contractor shall delineate clearly as to how the corrected arm time is obtained for each arm time measurement. Actual tabulated data sheets shall be identified as either corrected arm time or not corrected arm time. Also, before first article test and each lot acceptance test, the contractor will make 5 consecutive tests with a fuze with an already armed, unloaded S&A to establish and report an average swing-out time base for the swing fixture for the impending

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PAGE 68 (continued)

test series. Do this for all nests in the equipment. If the average swing-out time changes by more than 10 percent, when compared to the average swing-out time reported during the establishment of the correlation factor, then a new correlation factor per 4.5.33 shall be established."

- \* 4.5.22: Add after "weight in downward position" the following:

"(in safe position and closest to earth)"

Add the following after last line:

"For the purpose of acceptance, the corrected arm time, i.e., measured arm time minus correlation factor (see 4.5.33), shall apply. The contractor shall delineate clearly as to how the corrected arm time is obtained for each arm time measurement. Actual tabulated data sheets shall be identified as either corrected arm time or not corrected arm time. Also, before first article test and each lot acceptance test, the contractor will make 5 consecutive tests with a fuze with an already armed, unloaded S&A to establish and report an average swing-out time base for the swing fixture for the impending test series. Do this for all nests in the equipment. If the average swing-out time changes by more than 10 percent, when compared to the average swing-out time reported during the establishment of the correlation factor, then a new correlation factor per 4.5.33 shall be established."

- 4.5.23: Add after "weight in downward position" the following:

"(in safe position and closest to earth)"

- 4.5.24: Add after "weight in downward position" the following:

"(in safe position and closest to earth)"

PAGE 69

- 4.5.26: In the first line, delete "The fuze assembly with warhead assembly" and substitute "The fuze assembly with M230 warhead assembly (9221050)".

- 4.5.28: In second paragraph, delete "M151" and substitute "M230".

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PAGE 70

Table II: Delete "Firing Test" in its entirety.

Delete "Arming time over maximum	2	3".
Delete "Fail to arm	1	2".

Add "Note: Following the drop test, the fuzes must remain safe in the out-of-line position but need not be operable."

4.5.29: Delete in its entirety and substitute the following:

"4.5.29 Non-environmental test. A sample of two hundred and nineteen (219) fuzes shall be selected and subjected to and pass the non-arm test and acceptance criteria specified in 4.5.31. If the test is successful, seventy-three (73) of the 219 fuzes shall be randomly selected and subjected to and pass the arming test and acceptance criteria specified in 4.5.31. The remaining 146 fuzes shall be equally divided into two groups of 73 each. One group shall be subjected to the low temperature test specified in 4.5.35 and the remaining group shall be subjected to the high temperature test specified in 4.5.36."

PAGE 71

4.5.32: Delete subparagraph a. in its entirety and substitute:

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

Delete subparagraph b. in its entirety and substitute:

"b. Times .93 seconds through 1.30 seconds for the M423 and 1.47 seconds through 1.52 seconds for the M427 are classed as arming time over the maximum."

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4.5.32: Delete subparagraph c. in its entirety and substitute:

"c. Times over 1.30 for the M423 and 1.52 for the M427 or fuzes which do not arm or fuzes which arm but do not detent are classified as failure to arm."

Delete subparagraph e. in its entirety and substitute:

"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 including hot and cold fuzes)."

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- \* 4.5.33: Delete "a. A new contract is issued.  
b. A change of fuze type.  
c. Fuze timing equipment is modified."

and substitute the following:

"(1) A new contract is issued.  
(2) A change of fuze type.  
(3) Fuze timing equipment is modified.  
(4) When the average fixture swing time changes by more than 10 percent."

In subparagraph a, delete "five (5) S&A's" and substitute "ten (10) S&A's"; delete "10 milliseconds" and substitute "20 milliseconds".

Delete subparagraph b in its entirety and substitute the following:

"b. The same S&A shall be placed in fuze housings and secured in place with a booster housing, less O-ring, with fingertip pressure only. The fuze shall be positioned with the G-weight in the downward position (in safe position and closest to earth). The assemblies shall then be timed five (5) times on the approved fuze timing equipment. Readings of the fuze arming traces, from setback weight bottoming to rotor detent, shall be recorded. The start time for the swing fixture shall be indicated by a discrete swing-out switch."

Add to subparagraph c. the following:

"The setback weight bottoming and the start of S&A arming should occur before swing-out is completed (point of full radial g's). Therefore, the fuze arm times will be slightly longer than the corresponding in-line S&A times and the correlation factor will have a minus value when applied to fuze arm time measurements to obtain the corrected arm times per 4.5.21 and 4.5.22."

Add subparagraph d. as follows:

"d. The same type of timing measuring equipment shall be used in both the in-line S&A testing and swing fuze testing. i.e., If the arm time is picked up by acoustic means in the S&A testing then the arm time for fuze testing must also be picked up using acoustic means."

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PAGE 73 (continued)

- \* 4.5.33: In last paragraph, delete "US Army Research and Development Command, Dover, NJ 07801, ATTN: DRDAR-QAR-M and DRDAR-QAR-I" and substitute "US ARDEC, Picatinny Arsenal, NJ 07806-5000, ATTN: SMCAR-QAF-A".

Add new paragraph 4.5.35 and 4.5.36 as follows:

"4.5.35 Low temperature test. A sample of 73 fuzes shall be selected as specified in 4.5.29 and subjected to low temperature environment in accordance with Low Temperature Procedure I at -65°F, Method 502 of MIL-STD-810 with the exception that the time of exposure to temperature shall be a minimum of 4 hours and temperature inside the chamber shall be maintained at  $\pm 5^\circ\text{F}$ . The fuzes shall then be subjected to and pass arming test and acceptance criteria specified in 4.5.31 within 5 minutes of removal from low temperature.

Note: Removing the fuze from the cold temperature environment prior to performing the centrifuge test may cause frost to form on metal parts. This may have an effect on the test results due to attenuation of the acoustic signal of the arming mechanism, thus making it difficult to distinguish the arm signal from background noise. The contractor shall take appropriate action to alleviate this potential problem. One effective method has been to seal each fuze in a plastic bag prior to temperature conditioning. Bagged fuzes are then subjected to the centrifuge test.

4.5.36 High temperature test. A sample of 73 fuzes shall be selected as specified in 4.5.29 and subjected to high temperature environment in accordance with High Temperature Procedure I, Method 501 of MIL-STD-810 with the exception that the time of exposure to temperature shall be a minimum of 4 hours and the relative humidity shall be maintained at less than 20%. The fuzes shall then be subjected to and pass arming test and acceptance criteria specified in 4.5.31 within 5 minutes of removal from high temperature.

Note: There is no requirement for humidity control of the 160°F chamber if the room ambient air which is heated is less than 100°F with a relative humidity below 95% and no water is added within the chamber during the test cycle. If these condition cannot be met, the test chamber must be controlled to insure that the relative humidity is maintained below 20 %."

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- \* Add new paragraph 4.5.37 as follows:

"4.5.37 Requirements for records. The contractor will measure and record the swing-out time (start to stop) of their swing equipment. When X-rays of the fuze sample are made to indicate the downward g-weight position (in the safe position and closest to earth), a permanent record shall be maintained. The aforementioned records will be made available to the Government upon request."

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- \* 6.3: Delete "US Army Research and Development Command, ATTN: DRDAR-QAR-I Dover, NJ 07801, and substitute "ARDEC, ATTN: SMCAR-QAF-I, Picatinny Arsenal, NJ 07806-5000".

6.4.2: Delete in its entirety and substitute the following:

"6.4.2 M151 Test Warhead. The contractor shall furnish inert loaded M151 Test Warhead in accordance with Appendix III for the Five Foot Drop Test and Forty Foot Drop Test."

Add included Figure 1 as page (75a).

- \* 6.5: Delete "ARRADCOM, ATTN: DRDAR-QAR-M and DRDAR-LCF" and substitute "ARDEC, ATTN: SMCAR-QAF-A and SMCAR-AEF-C".

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6.6: Delete last line in its entirety and substitute "Technical data originally prepared by ARRADCOM as well as these activities is now under the cognizance of ARDEC".

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PAGE 75 (continued)

6.8: Delete in its entirety and substitute:

"6.8 Data requirements. When this specification is used in an acquisition which incorporates a DD Form 1423, Contract Data Requirements List (CDRL), the data requirements identified below shall be developed as specified by an approved Data Item Description (DD Form 1664) and delivered in accordance with the approved CDRL incorporated into the contract. When the provisions of DAR 7-104.9(n) (2) are invoked and the DD Form 1423 is not used, the data specified below shall be delivered by the contractor in accordance with the contract or purchase order requirements. Deliverable data required by this specification is cited in the following paragraphs.

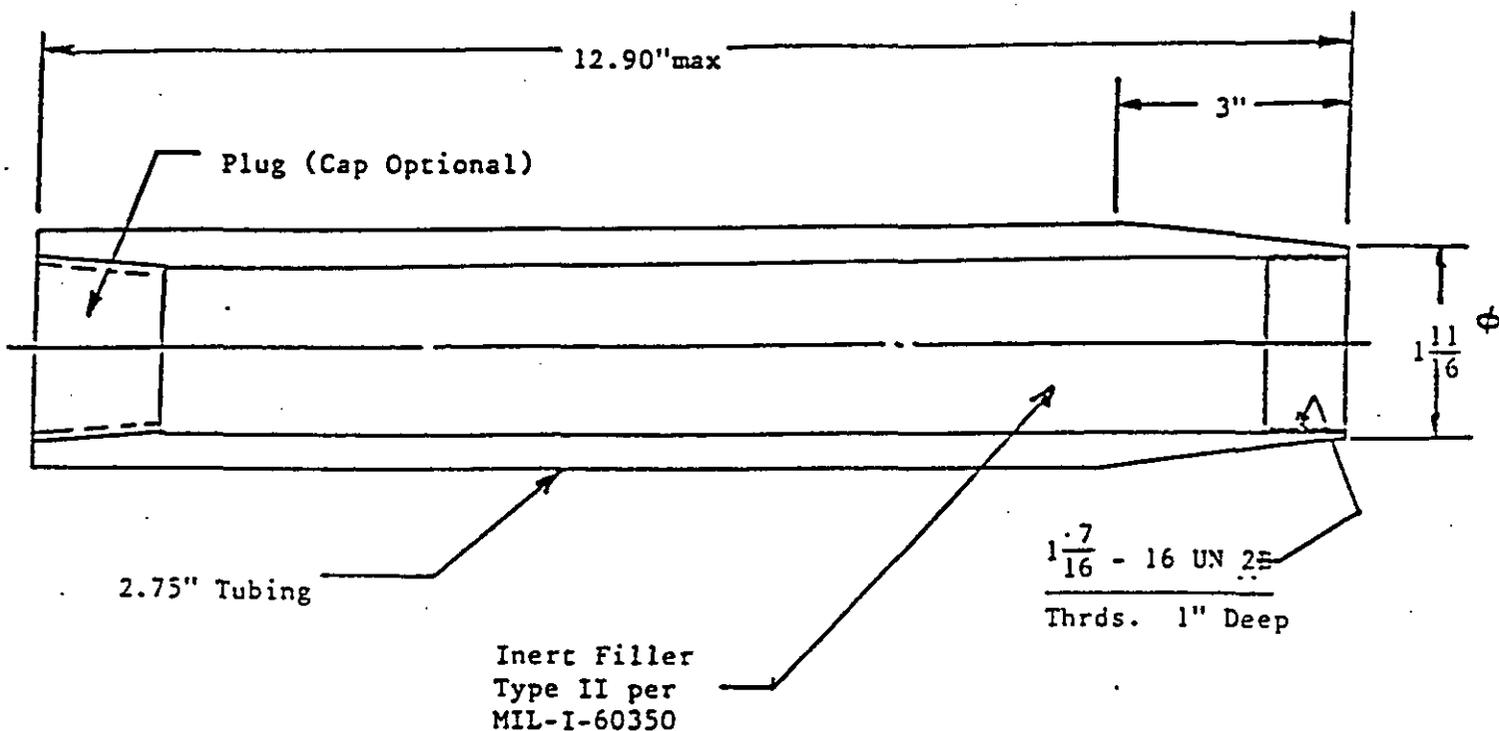
<u>Paragraph No.</u>	<u>Data Requirement Title</u>	<u>Applicable DID No.</u>
4.5.34	Quality Inspection Test, Demonstration and Evaluation Report	DI-R-1724
4.5.34	Quality Inspection Defect Report	DI-R-1721

(Data item descriptions related to this specification, and identified in Section 6 will be approved and listed as such in DoD 5000.19L., Vol. II AMSDL. Copies of data item descriptions required by the contractors in connection with specific acquisition functions should be obtained from the Naval Publications and Forms Center or as directed by the contracting officer.)"

Add new paragraph 6.9 as follows:

"6.9 Source control and specification control drawings. Certificates of conformance from the supplier certifying that the item complies with the drawing requirements shall be provided to the Government representative."

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TOTAL WEIGHT TO BE  $8.7 \pm .5$  LBS.

FIGURE 1. Inert warhead for M151.

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

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