INCH POUND

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DETAIL SPECIFICATION
FUZE, ARTILLERY, ELECTRONIC TIME, M762A1
AND
FUZE, ELECTRONIC TIME, M767A1 LESS BOOSTER

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

1. SCOPE

1.1 This specification covers the fabrication of parts, and assembling M762A1and M767A1 Electronic time fuzes for Artillery Ammunition.

1.2 Classification. The fuze is described as follows:

1.2.1 Fuze M762A1. The M762A1 fuze can be used on all 105mm and 155mm artillery cargo projectiles not requiring a booster.

1.2.2 Fuze M767A1. The M767A1 fuze can be used on all 105mm and 105mm artillery projectiles requiring a booster.

Comments, suggestions, or questions on this document should be addressed to the commander, U.S.Army ARDEC, ATTN: AMSRD-AAR-QES-E, Picatinny, NJ 07806-5000 or emailed to ardec-stdzn@pica.army.mil. Since contact information can change, you may want to verify the currency of this address information using the ASSIST online database at http://assist.daps.dla.mil .

AMSC N/A FSC 1390

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2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3 and 4 of this specification. This section does not include documents in other sections of this specification or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all requirements documents cited in sections 3 and 4 of this specification, whether or not they are listed.

2.2 Government documents.

2.2.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

INTERNATIONAL STANDARDIZATION AGREEMENT

STANAG 4369 - Design Requirements for Inductive Setting of Electronic Projectile Fuzes

AOP-22 - Design Criteria and Test Methods for Inductive Setting of Electronic Projectile Fuzes.

DEPARTMENT OF DEFENSE STANDARDS

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

MIL-STD-1168 - Ammunition Lot Numbering and Ammunition Data Card

MIL-STD-1916 - DOD Preferred Methods for Acceptance of Product

(Unless otherwise indicated, copies of these documents are available online at http://assist.daps.dla.mil/quicksearch/ or https://assist.daps.dla.mil or from the Standardization Document Order Desk, 700 Robbins Avenue, Bldg. 4D Philadelphia, PA 19111-5094.)

2.2.2 Other Government documents, drawings, and publications. The following other Government documents, drawings and publications form a part of this document to the extent specified herein. Unless otherwise specified, the issues are those cited in the solicitation.

U.S. ARMY ARMAMENT RESEARCH, DEVELOPMENT AND ENGINEERING CENTER (ARDEC) DRAWINGS.

8861213	Box, Wirebound, Packing Ammunition for Artillery or Rocket Fuzes
8864492	Box, ammo, metal for artillery type and rocket fuzes
12991640	Foil seal, end cap
12991642	Cap, end
12991643	End cap assembly
12991645	Contact, battery primer
12991646	Block, battery primer
12991647	Battery primer assembly
12991649	Rod, actuating
12991653	Block, stab
12991654	Stab block sub-assembly
12991655	Pin, stab
12991656	Stab assembly
12991662	Lens, liquid crystal
12991663	Retainer, button
12991664	Button, Level advance
12991665	Washer, button
12991667	Housing, fuze
12991668	Housing assembly
12991670	Ogive
12991671	Ogive assembly
12991681	Cover, battery housing and spin switch
12991683	EOD weight
12991687	Contact, negative
12991688	Insulator, battery
12991689	Support, battery
12991691	Battery assembly
12991693	Contact, battery
12991694	Contact, spin switch
12991695	Shield, protective ESD
12991696	Gear, stab actuator
12991702	Bezel, liquid crystal display
12991703	Plate, guide
12991707	Housing, LCD
12991708	LCD housing assembly
12991713	Crush shield
12991715	Coil form
12991717	Inductive coil assembly
12991751	Pin, contact
12991752	Pin interface
12991753	Contact, button

12991755 Printed wiring board assembly
12991758 Housing, power supply
12991759 Power supply module assembly
12991760 Fuze final level II assembly
12991762 Fuze assembly, M762A1
12991767 Fuze assembly M767A1
12991766 Fuze assembly, M767A1 less booster
12991780 Cover, safe and arm
12991785 Safe and arm contact plate assembly
12991791 Contact plate, piston actuator
12991792 Contact plate, detonator
12991793 Insulator, slider
12991794 Contact, sleeve, detonator
12991795 Slider, S&A
12991796 Slider assembly
12991797 Spring, spin lock
12991798 Lock, spin
12991801 Spring, setback lock
12991803 Lock, setback
12991804 Setback lock assembly
12991805 Lock, slider
12991807 Insulator, piston actuator
12991808 Housing, safe and arm
12991809 Safe and arm assembly
8864492 Box, ammo
12991712 Contact shield
12991816 Inductive Setting Requirements for M762A1/M767A1 E.T. Fuze

(Copies of these documents may be requested online at Drawing-request@pica.army.mil or from U.S. Army ARDEC, ATTN: AMSRD-AAR-AIS-TD, Picatinny, NJ 07806-5000.)

INTERNATIONAL TEST OPERATING PROCEDURES

ITOP 1-2-601 - Laboratory Vibration Schedules
ITOP 4-2-602 - U.S. Army Test and Evaluation Command International Test Operations Procedure, Rough Handling Tests

(Copies of these documents may be ordered from the US Army Developmental Test Command, ATTN: Publications, 314 Longs Corner Road, Aberdeen Proving Ground, MD 21005-5005 or online at http://www.dtc.army.mil/publications/topsindex.aspx.)

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

3. REQUIREMENTS

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

3.2 Lot acceptance. A sample shall be subjected to lot acceptance inspection in accordance with 4.3.

3.3 Components and assemblies. The components and assemblies shall comply with all drawings cited in 4.4.1

3.3.1 Die-cast and molded components. Cast and molded components shall be of uniform quality, free of coldshuts, blowholes, shrinkage defects, voids, cracks, and foreign inclusions. Casting must be clean, dry and free of chips. Cast and molded plastic parts are permitted to display surface color variations due to flow pattern and filler content.

3.3.2 Stamped components. Stamped components shall be of uniform quality, free of cracks, burrs, deformation, contaminants and chips.

3.4 Functional requirements.

3.4.1 Time setting (air burst) mode. The fuze shall be capable of being activated and set manually or inductively for functioning times from 0.5 to 199.9 seconds in 0.1 second increments. When the set time is reached, the fuze shall cause the projectile to function in an air burst mode within ± 0.1 seconds of the set time in the temperature range -45 degrees F to +145 degrees F.

3.4.2 Impact mode. The fuze shall be capable of being activated and set manually or inductively to an impact mode and shall be functional in the impact mode no earlier than 500 ms after muzzle exit. When set to the Point Detonation (PD) mode, the fuze shall cause the projectile to function on impact with a six inch minimum thick plywood target if impact occurs after a flight time of 500 ms or more after muzzle exit. When fired at this target so that impact occurs at 400 calibers of muzzle exit, the fuze shall not function when impacting the target.

3.4.3 Inductively (autoset) set. The fuze shall be capable of being inductively (electronically) set and shall provide electronic talkback to the inductive fuze setter so that the setter can verify that the fuze received the correct mission data (PD mode and set time). The inductive data link shall conform to STANAG 4369 and AOP-22.

3.4.4 Safe and arm device (S&A). The S&A assembly 12991809 shall be tested for locking and unlocking.

3.5 Safety requirements.

3.5.1 Proper no-arm (point detonating mode non-functioning). When set point detonating and fired in the non-function phase, the fuze shall not function upon target impact.

3.5.2 Premature or early bursts. There shall be no premature bursts or early burst in the gun tube or in-flight.

3.6 Environmental requirements.

3.6.1 Storage. The fuze, in its standard packing container, shall be capable of being stored in a -60 degree F to +160 degree F environment and remain safe and operable in a -45 degree F to +145 degree F environment

3.6.2 Logistic vibration. The fuze, after logistic vibration, shall be safe to handle and meet the functional requirements.

3.6.3 Twenty-eight day hot. The fuze, after twenty eight days hot, shall be safe to handle and meet the functional requirements.

3.6.4 Fourteen day humidity. The fuze, after fourteen days humidity, shall be safe to handle and meet the functional requirements.

3.6.5 Tactical vibration. The fuze, after tactical vibration, shall be safe for transportation, storage, handling and meet the functional requirements.

3.6.6 Salt fog. The fuze, after salt fog exposure, shall be safe to handle and meet the functional requirements.

3.6.7 Seven foot drop - boxes. The fuze, after seven foot drop in boxes, shall be safe to handle and meet the functional requirements.

3.6.8 Bounce (loose cargo). The fuze, after bounce shall be safe to handle and meet the functional requirements.

3.6.9 Seven foot drop - cans. The fuze, after seven foot drop in cans, shall be safe to handle.

3.6.10 Five foot drop - bare. The bare fuze, after being dropped five feet, shall be safe to handle.

3.6.11 Long term environmental stress. The fuze, packaged in M2A1 ammunition can, shall be capable of storage, transportation, and handling in all environmental conditions (protected, controlled, unprotected, uncontrolled) as specified in this specification.

3.7 Electrical performance.

3.7.1 Printed wiring board electrical tests. The printed wiring board assembly shall meet the requirements of dwg 12991755 when tested in accordance with 4.4.1.38.

3.7.2 Level II test

3.7.2.1 Level II electrical tests. The Level II assembly (dwg. 12991760) shall meet the requirements of 4.4.1.41.

3.7.2.2 Level II and housing tests. The Level II assembly inserted into a fuze housing assembly shall meet 4.4.1.42 for the M762A1 and 4.4.1.43 for the M767A1 with out booster.

3.7.3 Battery assembly. The battery assembly shall meet the non-activated voltage and resistance requirements of dwg. 12991691.

3.7.4 Explosive resistance.

a. Actuator, piston. The piston actuator (through the device) shall meet the resistance requirements of dwg. 12991809.

b. Detonator, electric. The detonator (lead to case) shall meet the resistance requirements of dwg.12991796.

c. Battery primer assembly. The battery primer (through the device) shall meet the resistance requirements of dwg. 12991647.

d. S&A assembly, detonator to ground resistance. The S&A assembly detonator contact to ground socket resistance of dwg. 12991809 shall be greater than 10 megohms.

e. S&A assembly, battery primer socket to ground socket resistance. The S&A assembly battery primer socket to ground socket resistance of dwg. 12991809 shall be greater than 10 megohms.

f. S&A assembly, detonator electrode to ground socket resistance. The S&A assembly detonator electrode to ground socket resistance of dwg. 12991809 shall be less than 0.30 ohm.

g. S&A ground socket to S&A housing resistance. The S&A assembly ground socket to S&A housing resistance of dwg 12991809 shall be less than .30 ohm.

h. S&A EOD socket to ground socket resistance. The S&A assembly EOD socket to ground socket resistance of dwg. 12991809 shall be greater than 10 mega ohms.

3.7.5 Inductive coil assembly. The inductive coil assembly shall meet the requirements of 4.4.1.35.

3.8. Ammunition lot number and item nomenclature. The ammunition lot number and item nomenclature shall be marked on each fuze in accordance with MIL-STD-1168 and dwg. 12991762 and dwg. 12991766.

3.9. Workmanship All parts shall be fabricated and finished in a thorough, workmanlike manner and all manufacturing, processing and assembly operations shall be correctly performed. The parts shall be clean and free of burrs, sharp edges, unblended radii, surface defects, cracks, chips, dirt, grease, and oil (except where specifically required), rust and other foreign matter. The cleaning method used shall not be injurious to any part, nor shall the parts be contaminated by the cleaning agent. All required markings shall be neat, legible and sharply defined.

4. VERIFICATION

TABLE I. Requirements/verification cross reference matrix

METHODS OF VERIFICATION

N/A - Not Applicable
1 - Analysis
2 - Demonstration
3 - Examination
4 - Test

CLASSES OF VERIFICATION

A - First Article Verification
B - Conformance Inspection

Section 3 requirements	Verification methods					Verification Class		Verification
		1	2	3	4	A	B	
3.1	First Article			X	X	X		4.2
3.2	Lot Acceptance			X	X		X	4.3
3.3	Components & Assy's			X	X	X	X	4.4
3.3.1	Die-cast & molded parts			X	X	X	X	4.5.6
3.3.2	Stamped components			X	X	X	X	4.5.7
3.4.1	Time setting (air burst)				X	X	X	4.5.4
3.4.2	Impact mode				X	X	X	4.5.5
3.4.3	Inductive set				X	X	X	4.5.4.3
3.4.4	Safe and arm device			X	X	X	X	4.4.1.59
3.5.1	Proper no-arm				X	X	X	4.5.4.1
3.5.2	Premature or early				X	X		4.5.4
3.6.1	Storage			X	X	X	X	4.5.3
3.6.2	Logistic vibration			X	X	X	X	4.5.3.1
3.6.3	Twenty-eight day hot			X	X	X		4.5.3.2
3.6.4	Fourteen day humidity			X	X	X		4.5.3.3
3.6.5	Tactical vibration			X	X	X		4.5.3.4
3.6.6	Salt fog			X	X	X		4.5.3.5
3.6.7	Seven foot drop – boxes.			X	X	X		4.5.3.6
3.6.8	Bounce (loose cargo)			X	X	X		4.5.3.7
3.6.9	Seven foot drop - cans			X	X	X		4.5.3.8
3.6.10	Five foot drop - bare			X	X	X		4.5.3.9
3.6.11	Long term stress			X	X	X		4.2.4.2.3
3.7.1	Printed wiring board test				X	X	X	4.4.1.38
3.7.2.1	Level II electrical tests				X	X	X	4.4.1.41
3.7.2.2	Level II and housing tests				X	X	X	4.4.1.42, 4.4.1.43
3.7.3	Battery assembly				X	X	X	4.4.1.24
3.7.4	Explosive resistance				X	X	X	4.5.1.5 thru 4.5.1.11
3.7.5	Inductive coil assembly			X	X	X	X	4.4.1.35
3.8	Ammunition lot number			X		X	X	4.3.1
3.9	Workmanship			X	X	X	X	4.5.8

4.1. Classification of inspection. The verification requirements specified herein are classified as follows:

a. First article inspection (see 4.2).

b. Conformance inspection (see 4.3).

4.1.1 Verification conditions. Unless otherwise specified, all verifications shall be performed in accordance with the test conditions specified in section 4.5 of this specification.

4.2 First article. When specified, a sample of assemblies, components and fuzes shall be subjected to a first article verification in accordance with 4.2.2.

4.2.1 First article quantity. First article verification quantity is as follows:

a. Ten (10) each of every component, subassembly and assembly listed in 4.4.1.1 through 4.4.1.61 herein, except for cast, molded and stamped components five (5) each, shall be submitted from every die/mold cavity or stamping tool from which each component was made.

b. Two hundred sixty (260) complete fuze assemblies for M762A1. One hundred and ninety five (195) complete fuze assemblies for M767A1, less booster.

4.2.2 First article inspections to be performed. The first article verification shall be performed as follows:

a. The first article quantity specified in 4.2.1.a is subjected to inspection in accordance with test or examinations listed in the Classification of characteristics paragraphs 4.4.1.1 through 4.4.1.61.

b. The first article quantity specified in 4.2.1.b is subjected to inspection in accordance with the criteria in 4.2.3.

4.2.3 First article criteria

4.2.3.1 Examination and static test. The first article samples submitted in accordance with 4.2.1.a shall be subjected to all of the inspections listed in 4.4.1.1 through 4.4.1.61 and to any or all of the applicable drawing requirements

4.2.3.2 Functioning performance tests. The fuze assemblies submitted in accordance with 4.2.1.b shall be submitted to the following tests:

a. Cold temperature sequential operational and safety tests per Figure 1.

b. Hot temperature sequential operational and safety tests per Figure 2.

c. Long term stress test per Figure 3.

d. Reliability test per Tables II and III.

4.2.4 First article rejection

4.2.4.1 Examinations and static tests. If any component, subassembly or assembly fails to comply with any of the requirements of 4.4.1.1 through 4.4.1.61, the first article sample shall be rejected.

4.2.4.2 Functioning performance tests. Defect categories and rejection criteria for these tests are as follows:

4.2.4.2.1 Reliability and sequential operational tests.

a. Safe position - critical defect. Any fuze found with the S&A module not in the safe position (see 6.6.8) prior to gunfire shall be cause for rejection. The S&A module shall be examined using X-ray techniques.

b. Premature burst - critical defect - Any premature burst (see 6.6.1) shall be cause for rejection.

c. Function - critical defect - Any function (see 6.6.4) in a non-function test shall be cause for rejection.

d. Early burst - critical defect - Any early burst (see 6.6.2) shall be cause for rejection.

e. Point detonating dud - major defect – For the M762A1 more than one point detonating dud (see 6.6.10) per PD functioning ballistic test phase or more than two PD duds for all functional ballistic test phases shall be cause for rejection. For the M767A1 more than one PD dud per ballistic test phase shall be cause for rejection.

f. Off time - major defect - More than two early improper off time total (see 6.6.5), or more than one late improper off time in any one time set ballistic test phase shall be cause for rejection.

g. Fuze unsettable at the proving ground – major defect - More than two fuzes total, or more than one fuze in any environmentally preconditioned subgroup which cannot be activated and set as required, shall be cause for rejection.

h. Time mode dud - more than one time dud in a ballistic test phase shall be cause for rejection.

i. Total duds – For the M762A1, more than five fuze duds in the entire Reliability and Sequential Operational Test Matrix shall be cause for rejection. For the M767A1, more than two PD duds or more than three time duds in the entire Reliability and Sequential Operational test matrix shall be cause for rejection.

4.2.4.2.2 Safety sequential tests.

a. Safe position - critical defect - Any fuze found with the S&A module not in the safe position (see 6.6.8) prior to gunfire shall be cause for rejection. The S&A module shall be examined using x-ray techniques.

b. Premature burst - critical defect - Any premature burst (see 6.6.1) shall be cause for rejection.

c. Function - critical defect - Any function (see 6.6.4) in the PD non-function test shall be cause for rejection.

d. Early burst - critical defect - Any early burst (see 6.6.2) shall be cause for rejection.

4.2.4.2.3 Long-term environmental stress test. A test sample of 20 fuzes shall be subjected to a test temperature of +160 degrees F and 85 percent relative humidity. Tolerance of test conditions should be in accordance with paragraph 4.5.2 of MIL-STD-331. One fuze shall be removed after 54 hours, 135 hours, and 270 hours after starting the conditioning, and be disassembled and tested according to Figure 3**.** After 540 hours the remaining 17 fuzes shall be removed, disassembled, and tested according to Figure 3. Any fuze found with the S&A module not in the safe position (see 6.6.8) prior to S&A spin tests shall be cause for rejection.

4.2.4.2.4 Spin fire test. A test sample of 3 modified fuzes per Figure 3**,** from the long term environmental stress of 4.2.4.2.3 shall be subjected to a spin fire test. The fuzes shall be manually set to 10.0 seconds and spun at approximately 3000 rpm's. The fuzes shall show evidence of proper S&A function, with the Slider in the armed position with Electric Detonator function. Any fuze found with the S&A module not in the safe position (see 6.6.8) prior to spin-fire testing shall be cause for rejection. Any test unit which fails to funcion shall be cause for rejection.

4.3 Conformance verification.

4.3.1 Lot formation . Lot formation shall be in accordance with the lot formation requirement of MIL-STD-1916 or approved alternate. Fuze lot numbering and item nomenclature shall be in accordance with MIL-STD-1168, dwg. 12991762 and dwg. 12991767. In addition, inspection lots shall contain:

a. Electric detonators with the same interfix number from one manufacturer.

b. Piston actuators with the same interfix number from one manufacturer.

c. lead charges with the same interfix number from one manufacturer.

d. Battery primers with the same interfix number from one manufacturer.

4.3.2 Lot acceptance. A sample of fuzes shall be subjected to lot acceptance verification in accordance with Requirements/Verification cross reference matrix and Tables IV.

4.3.3 Lot acceptance quantity. The lot sample size for the M762A1 and M767A1 (less booster) shall be according to Table IV. For the M762A1 the lot sample size shall be 116 fuzes, for the M767A1 (less booster) the lot sample size shall be 45 fuzes. For any lot acceptance test quantity, including the reduced sample of 4.3.3.1, ten additional fuzes randomly selected from each lot shall be subjected to logistic vibration of 4.5.3.1, torn down in accordance with 4.5.4.6, and meet the criteria of 4.3.5.4.

4.3.3.1 Switching criteria for M762A1 reduced sample. The sample size shall be 116 fuzes unless the criteria of 4.3.3.3.1.1 or 4.3.3.1.2 are met. After three consecutive lots are passed, the sample shall be reduced to 45 fuzes as shown in note 2 of Table IV with the criteria of reintroduction of the large sample size if one reduced sample fails to meet the criteria of 4.3.5.2.

4.3.4 Lot acceptance inspections to be performed. The lot acceptance quantity specified in 4.3.3. is subjected to inspections in accordance with the acceptance criteria in 4.3.5.

4.3.5 Lot rejection criteria. The lot shall be rejected according to the following criteria:

4.3.5.1 M762A1 lot sample rejection criteria, ballistic.

a. Safe and arm fails x-ray - critical defect. Any S&A module found not in the safe condition shall be cause for rejection.

b. Premature burst - critical defect - Any premature Burst (see 6.6.1) in the entire ballistic test.

c. Early burst - critical defect - Any early burst (see 6.6.2) in the entire ballistic test.

d. Function - critical defect - Any function in a non-function test (see 6.6.4) shall be cause for rejection.

e. Point detonating dud - major defect. - More than one PD dud per PD functioning ballistic test phase or more than two point detonating duds (see 6.6.10) for all PD functioning ballistic test phases shall be cause for rejection.

f. Time dud - major defect - More than two time duds (see 6.6.3) per test phase or more than three time duds for all configurations and temperatures.

g. Off time - major defect - More than one early improper off time or one late improper off time (see 6.6.5) in the entire ballistic test.

h. Fuze unsettable - major defect - More than two fuzes which fails to activate or subsequent to activation fail to be set to the setting required by the ballistic test (see 6.6.12).

i. Total duds - More than four fuze duds in the entire ballistic test.

4.3.5.2 M762A1 reduced lot sample reject criteria, ballistic. The subsequent lot sample shall be rejected according to the following criteria.

a. Safe and arm fails x-ray - critical defect. Any S&A module found not in the safe condition shall be cause for rejection.

b. Premature burst - critical defect - Any premature Burst (see 6.6.1) shall be cause for rejection.

c. Early burst - critical defect - Any early burst (see 6.6.2) shall be cause for rejection.

d. Function - critical defect - Any function (see 6.6.4) in a non-function test.

e. Off time - major defect - More than one early improper off time or late improper off time (see 6.6.5) in the entire ballistic test.

f. Fuze unsettable - major defect - More than one fuze which fails to activate or subsequent to activation fail to be set to the setting required by the ballistic test (see 6.6.12).

g. Total duds - More than two fuze duds (see 6.6.3 and 6.6.10) in the entire ballistic test with no more than one per ballistic test phase, except for the 155mm/M198/M232/+70 and 155mm/M198/M232/+145 phases which allows two duds.

4.3.5.3 M767A1 lot sample reject criteria, ballistic.

a. Safe and arm fails x-ray - critical defect. Any S&A module found not in the safe condition shall be cause for rejection.

b. Premature burst - critical defect - Any premature Burst (see 6.6.1) shall be cause for rejection.

c. Early burst - major defect - Any early burst (see 6.6.2) shall be cause for rejection.

d. Function - critical defect - Any function (see 6.6.4) in a non-function test.

e. Off time - major defect - More than one early improper off time or late improper off time (see 6.6.5) in the entire ballistic test.

f. Fuze unsettable - major defect - More than one fuze which fails to activate or subsequent to activation fail to be set to the setting required by the ballistic test (see 6.6.12).

g. Total duds - More than two fuze duds (see 6.6.3 and 6.6.10) in the entire ballistic test.

4.3.5.4 M762A1/M767A1 lot rejection criteria, teardown samples. If any fuze fails to meet the criteria below, the lot shall be rejected. If the fuzes are not found to be defective, the ballistic sample shall be forwarded to the proving grounds for ballistic testing. After disassembling the end cap assembly (dwg. 12991643), and the Safe and Arm assembly (dwg. 12991809), the following criteria must be met.

a. The resistance outlined in the test parameter 21 of Table VIII shall be accepted.

b. No part of the explosive train shall be functioned.

c. The slider in the S&A shall be located and locked in the safe position by both safety features.

d. The setback lock and spin lock shall be secure and in the safe position.

e. The setback lock shall not be broken and the spin lock shall be secure and restrained by the spring lock.

4.4 Examinations and tests. Conformance examinations and tests are specified in 4.4.1.1 through 4.4.1.61. Sampling shall be conducted in accordance with MIL-STD-1916. Unless otherwise specified herein. See 6.5.

4.4.1 Classification of characteristics.

Conformance inspection by classification of characteristics

PARAGRAPH 4.4.1.1	TITLE Foil seal, end cap	SHEET 1 OF 1		DRAWING NUMBER 12991640
				NEXT HIGHER ASSEMBLY 12991643
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	INSPECTION METHOD REFERENCE
Critical	None defined			
Major 101	Holes in material	Level IV	3.3	Visual
Minor 201	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:

Conformance inspection by classification of characteristics

PARAGRAPH 4.4.1.2	TITLE Cap, end	SHEET 1 OF 1		DRAWING NUMBER 12991642
				NEXT HIGHER ASSEMBLY 12991643
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	INSPECTION METHOD REFERENCE
Critical	None defined			
Major				
101	Location of intermediate cavity	Level IV	3.3	Gage
102	Diameter of intermediate cavity	Level IV	3.3	Gage
103	Location of small cavity	Level IV	3.3	Gage
104	Diameter of small cavity	Level IV	3.3	Gage
105	Location of large cavity	Level IV	3.3	Gage
106	Diameter of large cavity	Level IV	3.3	Gage
107	Pitch diameter of large thread	Level IV	3.3	Gage
108	Major diameter of large thread	Level IV	3.3	Gage
109	Pitch diameter of small thread	Level IV	3.3	Gage
110	Major diameter of small thread	Level IV	3.3	Gage
Minor				
201	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:

Conformance inspection by classification of characteristics

PARAGRAPH 4.4.1.3	TITLE End cap assembly	SHEET 1 OF 1		DRAWING NUMBER 12991643
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY 12991762/12991767 INSPECTION METHOD REFERENCE
Critical	None defined			
Major				
101	Improper lead orientation per note 2 of the drawing	Level IV	3.3	Visual
Minor				
201	Improper lead push out force per note 3 of the drawing	(a)	3.3	Gage
202	Foil seal missing per note 5 of the drawing	Level II	3.3	Visual
203	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:

(a) Three (3) per lot

Conformance inspection by classification of characteristics

PARAGRAPH	TITLE	SHEET 1 OF 1		DRAWING NUMBER
4.4.1.4	Contact, battery primer			12991645
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY 12991647 / INSPECTION METHOD REFERENCE
Critical	None defined			
Major				
101	Leg width	(a)	3.3	Gage
Minor				
201	Leg bend radius	(a)	3.3	Gage
202	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:

(a) See 4.5.7

Conformance inspection by classification of characteristics

PARAGRAPH 4.4.1.5	TITLE Block, battery primer	SHEET 1 OF 1		DRAWING NUMBER 12991646
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY 12991647 INSPECTION METHOD REFERENCE
Critical	None defined			
Major				
101	Diameter of larger inner radius	(a)	3.3	Gage
102	Diameter of smallest radius	(a)	3.3	Gage
Minor				
201	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:

(a) See 4.5.6

Conformance inspection by classification of characteristics

PARAGRAPH	TITLE	SHEET 1 OF 1		DRAWING NUMBER
4.4.1.6	Battery primer assembly			12991647
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY 12991762/12991767 INSPECTION METHOD REFERENCE
Critical	None defined			
Major				
101	Resistance of battery primer assembly per note 4 of the drawing	100%	3.7.4.c	4.5.1.7
Minor				
201	Incorrect seating of contact per note 2 of the drawing	Level II	3.3	Gage
202	Incorrect seating of battery primer per note 3 of the drawing	Level II	3.3	Gage
203	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:

Conformance inspection by classification of characteristics

PARAGRAPH 4.4.1.7	TITLE Rod, actuating	SHEET 1 OF 1		DRAWING NUMBER 12991649
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY 12991656 INSPECTION METHOD REFERENCE
Critical	None defined			
Major				
101	Thickness	(a)	3.3	Gage
102	Straightness	(a)	3.3	Gage
103	Overall length	(a)	3.3	Gage
Minor				
201	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:

(a) see 4.5.7

Conformance inspection by classification of characteristics

PARAGRAPH	TITLE	SHEET 1 OF 1		DRAWING NUMBER
4.4.1.8	Block, stab			12991653
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY 12991654 / INSPECTION METHOD REFERENCE
Critical	None defined			
Major				
101	Large inside diameter	(a)	3.3	Gage
102	Small inside diameter	(a)	3.3	Gage
103	Overall depth of small diameter	(a)	3.3	Gage
104	No flash where indicated per note 10 of the drawing	(a)	3.3	Gage
Minor				
201	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:

(a) see 4.5.6

Conformance inspection by classification of characteristics

PARAGRAPH	TITLE	SHEET 1 OF 1		DRAWING NUMBER
4.4.1.9	Stab block sub-assembly			12991654
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY 12991656 INSPECTION METHOD REFERENCE
Critical	None defined			
Major	None defined			
Minor				
201	Depth of block pin, min	Level II	3.3	Gage
202	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:

Conformance inspection by classification of characteristics

PARAGRAPH	TITLE	SHEET 1 OF 1		DRAWING NUMBER
4.4.1.10	Pin, stab			12991655
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY 12991656 INSPECTION METHOD REFERENCE
Critical	None defined			
Major				
101	Shoulder to point	Level IV	3.3	Gage
102	Point	Level IV	3.3	Gage
Minor				
201	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:

Conformance inspection by classification of characteristics

PARAGRAPH	TITLE	SHEET 1 OF 1		DRAWING NUMBER
4.4.1.11	Stab assembly			12991656
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY 12991762/12991767 INSPECTION METHOD REFERENCE
Critical	None defined			
Major				
101	Total length, max.	Level IV	3.3	Gage
102	Compression spring missing	Level IV	3.3	Visual
Minor				
201	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:

Conformance inspection by classification of characteristics

PARAGRAPH 4.4.1.12	TITLE Lens, liquid crystal	SHEET 1 OF 1		DRAWING NUMBER 12991662
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY 12991668 INSPECTION METHOD REFERENCE
Critical	None defined			
Major				
101	Optical quality per note 6 of the drawing	Level IV	3.3	Visual
Minor				
201	Flange profile	(a)	3.3	Gage
202	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:

(a) See 4.5.6

Conformance inspection by classification of characteristics

PARAGRAPH 4.4.1.13	TITLE Retainer, button	SHEET 1 OF 1		DRAWING NUMBER 12991663
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY 12991668 INSPECTION METHOD REFERENCE
Critical	None defined			
Major				
101	Size of largest diameter	(a)	3.3	Gage
102	Protective finish per note 9 of the drawing	(a)	3.3	Visual
103	Size of smallest diameter	(a)	3.3	Gage
104	Flash per note 4 of the drawing	(a)	3.3	Visual
Minor				
201	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:

(a) See 4.5.6

Conformance inspection by classification of characteristics

PARAGRAPH	TITLE	SHEET 1 OF 1		DRAWING NUMBER
4.4.1.14	Button, Level advance			12991664
				NEXT HIGHER ASSEMBLY 12991668
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	INSPECTION METHOD REFERENCE
Critical	None defined			
Major				
101	No flash where indicated	(a)	3.3	Visual
102	Largest diameter	(a)	3.3	Gage
Minor				
201	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:

(a) See 4.5.6

Conformance inspection by classification of characteristics

PARAGRAPH	TITLE	SHEET 1 OF 1		DRAWING NUMBER
4.4.1.15	Washer, button			12991665
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY 12991668 / INSPECTION METHOD REFERENCE
Critical	None defined			
Major	None defined			
Minor				
201	Outer diameter	(a)	3.3	Gage
202	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:

(a) See 4.5.7

Conformance inspection by classification of characteristics

PARAGRAPH 4.4.1.16	TITLE Housing, fuze	SHEET 1 OF 1		DRAWING NUMBER 12991667
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY 12991668 INSPECTION METHOD REFERENCE
Critical	None defined			
Major				
101	Zone of surface finish	(a)	3.3	Gage
102	Third inside diameter	(a)	3.3	Gage
103	Size of smallest diameter along axis	(a)	3.3	Gage
104	Location of smallest diameter along axis	(a)	3.3	Gage
105	Dimension across wrench flats	(a)	3.3	Gage
106	Protective finish per note 15 of the drawing	(a)	3.3	Visual
107	Pitch diameter of threads	(a)	3.3	Gage
108	Location of threads	(a)	3.3	Gage
109	Largest inside hole diameter	(a)	3.3	Gage
110	Radius of ribs datum	(a)	3.3	Gage
Minor				
201	Lens area length	(a)	3.3	Gage
202	Lens area width	(a)	3.3	Gage
203	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:

(a) See 4.5.6

Conformance inspection by classification of characteristics

PARAGRAPH	TITLE	SHEET 1 OF 1		DRAWING NUMBER
4.4.1.17	Housing assembly			12991668
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY 12991762/12991767 INSPECTION METHOD REFERENCE
Critical	None defined			
Major				
101	Button washer missing per note 6 of the drawing	Level IV	3.3	Visual
Minor				
201	Push-off requirement	Level II	3.3	Gage
202	Leak test requirement	(a)	3.3	Gage
203	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:

(a) Three (3) samples per lot

Conformance inspection by classification of characteristics

PARAGRAPH 4.4.1.18	TITLE Ogive	SHEET 1 OF 1		DRAWING NUMBER 12991670
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY 12991671 INSPECTION METHOD REFERENCE
Critical	None defined			
Major				
101	Large diameter	(a)	3.3	Gage
102	Intermediate diameter	(a)	3.3	Gage
103	Intermediate diameter	(a)	3.3	Gage
104	Shoulder length	(a)	3.3	Gage
105	Compression test to failure per note 12 of the drawing	(b)	3.3	Gage
Minor				
201	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:
(a) See 4.5.6
(b) Three (3) samples per lot

Conformance inspection by classification of characteristics

PARAGRAPH	TITLE	SHEET 1 OF 1		DRAWING NUMBER
4.4.1.19	Cover, battery housing and spin switch			12991681
				NEXT HIGHER ASSEMBLY 12991760
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	INSPECTION METHOD REFERENCE
Critical	None defined			
Major				
101	Overall length	(a)	3.3	Gage
102	Overall width	(a)	3.3	Gage
103	Profile of depth and width of notch	(a)	3.3	Gage
104	Stepped feature	(a)	3.3	Gage
105	Location of holes	(a)	3.3	Gage
Minor				
201	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:

(a) See 4.5.6

Conformance inspection by classification of characteristics

PARAGRAPH	TITLE	SHEET 1 OF 1		DRAWING NUMBER
4.4.1.20	EOD weight			12991683
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY 12991760 / INSPECTION METHOD REFERENCE
Critical	None defined			
Major	None defined			
Minor				
201	Large diameter	(a)	3.3	Gage
202	Large end chamfer	(a)	3.3	Gage
203	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:

(a) See 4.5.7

Conformance inspection by classification of characteristics

PARAGRAPH 4.4.1.21	TITLE Contact, negative	SHEET 1 OF 1		DRAWING NUMBER 12991687
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY 12991691 INSPECTION METHOD REFERENCE
Critical	None defined			
Major				
101	Location of spoke center	(a)	3.3	Gage
102	Size of spoke center	(a)	3.3	Gage
Minor				
201	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:

(a) See 4.5.7

Conformance inspection by classification of characteristics

PARAGRAPH 4.4.1.22	TITLE Insulator, battery	SHEET 1 OF 1		DRAWING NUMBER 12991688
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY 12991691 INSPECTION METHOD REFERENCE
Critical	None defined			
Major				
101	Dimensions across ribs	(a)	3.3	Gage
102	Flange thickness	(a)	3.3	Gage
Minor				
201	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:

See 4.5.6

Conformance inspection by classification of characteristics

PARAGRAPH	TITLE	SHEET 1 OF 1		DRAWING NUMBER
4.4.1.23	Support, battery			12991689
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY 12991691 / INSPECTION METHOD REFERENCE
Critical	None defined			
Major				
101	Thickness of bottom	(a)	3.3	Gage
102	Diameter across ribs	(a)	3.3	Gage
Minor				
201	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:

See 4.5.6

Conformance inspection by classification of characteristics

PARAGRAPH 4.4.1.24	TITLE Battery assembly	SHEET 1 OF 1		DRAWING NUMBER 12991691
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY 12991760 INSPECTION METHOD REFERENCE
Critical	None defined			
Major				
101	Voltage and resistance test	100%	3.7.3	4.5.1.4
102	Weld pull test, contact, negative (destructive test)	(a)	3.3	Gage
Minor				
201	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:

(a) Three (3) samples per lot

Conformance inspection by classification of characteristics

PARAGRAPH 4.4.1.25	TITLE Contact, battery	SHEET 1 OF 1		DRAWING NUMBER 12991693
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY 12991760 INSPECTION METHOD REFERENCE
Critical	None defined			
Major 101	Contact width	(a)	3.3	Gage
Minor 201	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:

(a) See 4.5.7

Conformance inspection by classification of characteristics

PARAGRAPH	TITLE	SHEET 1 OF 1		DRAWING NUMBER
4.4.1.26	Contact, spin switch			12991694
				NEXT HIGHER ASSEMBLY 12991760
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	INSPECTION METHOD REFERENCE
Critical	None defined			
Major				
101	Contact width	(a)	3.3	Gage
102	Beam offset dimension	(a)	3.3	Gage
103	Part thickness after plating	(a)	3.3	Gage
Minor				
201	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:

(a) See 4.5.7

Conformance inspection by classification of characteristics

PARAGRAPH	TITLE	SHEET 1 OF 1		DRAWING NUMBER
4.4.1.27	Shield, protective ESD			12991695
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY 12991760 INSPECTION METHOD REFERENCE
Critical	None defined			
Major	None defined			
Minor				
201	Inside diameter	(a)	3.3	Gage
202	Overall length	(a)	3.3	Gage
203	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:

(a) See 4.5.7

Conformance inspection by classification of characteristics

PARAGRAPH	TITLE	SHEET 1 OF 1		DRAWING NUMBER
4.4.1.28	Gear, stab actuator			12991696
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY 12991760 / INSPECTION METHOD REFERENCE
Critical	None defined			
Major				
101	Shaft diameters 2X	(a)	3.3	Gage
Minor				
201	Overall height of body	(a)	3.3	Gage
202	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:

(a) See 4.5.6

Conformance inspection by classification of characteristics

PARAGRAPH	TITLE	SHEET 1 OF 1		DRAWING NUMBER
4.4.1.29	Bezel, liquid crystal display			12991702
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY 12991708 INSPECTION METHOD REFERENCE
Critical	None defined			
Major				
101	None defined			
Minor				
201	Length to snap features	(a)	3.3	Gage
202	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:

(a) See 4.5.6

Conformance inspection by classification of characteristics

PARAGRAPH	TITLE	SHEET 1 OF 1		DRAWING NUMBER
4.4.1.30	Plate, guide			12991703
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY 12991708 / INSPECTION METHOD REFERENCE
Critical	None defined			
Major				
101	No flash per note 4 of the drawing	(a)	3.3	Visual
102	Diameter of through hole 2x	(a)	3.3	Gage
103	Location of through hole 2x	(a)	3.3	Gage
Minor				
201	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:

(a) See 4.5.6

Conformance inspection by classification of characteristics

PARAGRAPH 4.4.1.31	TITLE Housing, LCD	SHEET 1 OF 1		DRAWING NUMBER 12991707
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY 12991708 INSPECTION METHOD REFERENCE
Critical	None defined			
Major				
101	Overall part width	(a)	3.3	Gage
102	Length of shoulder	(a)	3.3	Gage
103	Cavity depth	(a)	3.3	Gage
104	Flash not permitted per note 11 of the drawing	(a)	3.3	Gage
105	Body flange	(a)	3.3	Gage
106	Location of width of two small slots	(a)	3.3	Gage
107	Width of two small slots	(a)	3.3	Gage
108	Location of length of two small slots	(a)	3.3	Gage
109	Length of two small slots	(a)	3.3	Gage
110	Height of two small slots	(a)	3.3	Gage
111	Width across two small slots	(a)	3.3	Gage
Minor				
201	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:

(a) See 4.5.6

Conformance inspection by classification of characteristics

PARAGRAPH	TITLE	SHEET 1 OF 1		DRAWING NUMBER
4.4.1.32	LCD housing assembly			12991708
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY 12991760 / INSPECTION METHOD REFERENCE
Critical	None defined			
Major	None defined			
Minor 201	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:

Conformance inspection by classification of characteristics

PARAGRAPH	TITLE	SHEET 1 OF 1		DRAWING NUMBER
4.4.1.33	Crush shield			12991713
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY 12991717 INSPECTION METHOD REFERENCE
Critical	None defined			
Major	None defined			
Minor				
201	Intermediate outside diameter	(a)	3.3	Gage
202	Overall height from –A-	(a)	3.3	Gage
203	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:

(a) See 4.5.7

Conformance inspection by classification of characteristics

PARAGRAPH	TITLE	SHEET 1 OF 1		DRAWING NUMBER
4.4.1.34	Coil form			12991715
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY 12991717 / INSPECTION METHOD REFERENCE
Critical	None defined			
Major				
101	Intermediate internal diameter	(a)	3.3	Gage
102	Largest outside diameter	(a)	3.3	Gage
Minor				
201	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:

(a) See 4.5.6

Conformance inspection by classification of characteristics

PARAGRAPH	TITLE	SHEET 1 OF 1		DRAWING NUMBER
4.4.1.35	Inductive coil assembly			12991717
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY 12991760 INSPECTION METHOD REFERENCE
Critical	None defined			
Major				
101	Inductance and Q of the shielded coil assembly per note 5 of the drawing	Level IV	3.3	4.5.1.2
Minor				
201	Winding diameter, max.	Level II	3.3	Gage
202	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:

(a) Accept on 0 failure / reject on 1 or more failures

Conformance inspection by classification of characteristics

PARAGRAPH	TITLE			DRAWING NUMBER
4.4.1.36	Pin interface	SHEET 1 OF 1		12991752
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY 12991755 / INSPECTION METHOD REFERENCE
Critical	None defined			
Major				
101	Material thickness	(a)	3.3	Gage
102	Smaller pin width across diagonal	(a)	3.3	Gage
103	Smaller pin location	(a)	3.3	Gage
104	Large pin width across diagonal	(a)	3.3	Gage
105	Large pin width across diagonal	(a)	3.3	Gage
106	Large pin location 2x	(a)	3.3	Gage
Minor				
201	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:

(a) See 4.5.7

Conformance inspection by classification of characteristics

PARAGRAPH	TITLE	SHEET 1 OF 1		DRAWING NUMBER
4.4.1.37	Contact, button			12991753
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY 12991751 / INSPECTION METHOD REFERENCE
Critical	None defined			
Major	None defined			
Minor				
201	Tab width	(a)	3.3	Gage
202	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:

(a) See 4.5.6

Conformance inspection by classification of characteristics

PARAGRAPH 4.4.1.38	TITLE Printed wiring board assembly	SHEET 1 OF 1		DRAWING NUMBER 12991755
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY 12991759 INSPECTION METHOD REFERENCE
Critical	None defined			
Major				
101	Electrical performance:			
	Ambient temperature	100%	3.7.1	4.5.1.1 Note 1
	Hot temperature	Level IV	3.7.1	4.5.1.1 Note 2
	Cold temperature	Level IV	3.7.1	4.5.1.1 Note 2
102	Evidence of poor solder workmanship	100%	3.3	Visual/Gage
Minor				
201	PWB pins height	Level II	3.3	Gage
202	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:

1. Prior to ambient temperature test all units shall receive a temperature stress conditioning soak at -60 degrees F and +155 degrees F for a time sufficient to allow the ASIC (P/N 12991743) in the PWB Assembly to reach the conditioned temperature.
2. Any Failure shall require 100% screening at the failed environment and parameter.

Conformance inspection by classification of characteristics

PARAGRAPH 4.4.1.39	TITLE Housing, power supply	SHEET 1 OF 1		DRAWING NUMBER 12991758
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY 12991759 INSPECTION METHOD REFERENCE
Critical	None defined			
Major				
101	Largest diameter	(a)	3.3	Gage
102	Length to shoulder	(a)	3.3	Gage
103	Shoulder height	(a)	3.3	Gage
104	Flange hole	(a)	3.3	Gage
105	Slot surface mismatch per note 12 of the drawing	(a)	3.3	Gage
106	Bottom slot	(a)	3.3	Gage
107	Body flange	(a)	3.3	Gage
108	Location of 8 holes	(a)	3.3	Gage
109	Depth of cavity	(a)	3.3	Gage
110	Depth of opening	(a)	3.3	Gage
111	Flash not permitted per note 13 of the drawing	(a)	3.3	Visual
112	Small slot diameter	(a)	3.3	Gage
113	Width of EOD slot	(a)	3.3	Gage
114	EOD hole offset	(a)	3.3	Gage
115	Flash not permitted per note 17 of the drawing	(a)	3.3	Visual
Minor				
201	Cavity width	(a)	3.3	Gage
202	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:

(a) See 4.5.6

Conformance inspection by classification of characteristics

PARAGRAPH 4.4.1.40	TITLE Power supply module assembly	SHEET 1 OF 1		DRAWING NUMBER 12991759
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY 12991760 INSPECTION METHOD REFERENCE
Critical	None defined			
Major 101	Crystal pad missing 2x	Level IV	3.3	Visual
Minor 201	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:

Conformance inspection by classification of characteristics

PARAGRAPH 4.4.1.41	TITLE: Fuze final level II assembly	SHEET 1 OF 1		DRAWING NUMBER 12991760
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY 12991762/12991767 INSPECTION METHOD REFERENCE
Critical				
1	PA time (arm time) [1]	100%[2]	3.7.2.1	4.5.1.3.1
Major				
101	Electrical performance	100%	3.7.2.1	4.5.1.3.1
102	Spin test	100%	3.7.2.1	4.5.1.3.2
103	Evidence of poor solder workmanship	100%	3.3	Visual/Gage
104	Clip missing	100%	3.3	Visual
Minor				
201	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:
1. Parameter 11 d of Table VIII
2. Verification level VII not required

Conformance inspection by classification of characteristics

PARAGRAPH 4.4.1.42	TITLE Fuze assembly, M762A1	SHEET 1 OF 1		DRAWING NUMBER 12991762
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY Final INSPECTION METHOD REFERENCE
Critical				
1	Electrical performance, fuze housing Resistance[1,2]	100%[3]	3.7.2	4.5.1.3.3.d
Major				
101	Liquid crystal display not blank	100%	3.3	Visual/Gage
102	End cap assembly depth	100%	3.3	Gage
103	Hatch mark of housing not aligned within a rib of ogive	100%	3.3	Visual/Gage
104	Incorrect installation of S&A and Cushion[2]	100%	3.3	Visual/Gage
105	Incorrect torque on end cap	100%	3.3	Gage
106	O-ring or stab gear missing[2]	Level IV	3.3	Visual/Gage
107	Large outside threads damaged	100%	3.3	Visual
108	Level advance switch test[2]	100%	3.7.2	4.5.1.3.3.a
109	Count advance switch test[2]	100%	3.7.2	4.5.1.3.3.b,c
110	Small outside threads damaged	100%	3.3	Visual
111	Presence of battery[2]	100%	3.3	Gage
Minor				
201	Foil seal damaged	Level II	3.3	Visual/Gage
202	Marking incorrect or illegible	Level II	3.3	Visual/Gage
203	Total fuze length	Level II	3.3	Gage
204	Improper application of adhesive on end cap per note 3 of the drawing	Level II	3.3	Visual/Gage
205	Evidence of poor workmanship	Level II	3.9	Visual/Gage

NOTES:
1. Test parameter No. 21 of Table VII only
2. Inspect prior to endcap installation
3. Verification level VII not required

Conformance inspection by classification of characteristics

PARAGRAPH	TITLE	SHEET 1 OF 1		DRAWING NUMBER
4.4.1.43	Fuze assembly, M767A1 less booster			12991766
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY 12991767 / INSPECTION METHOD REFERENCE
Critical				
1	Electrical performance, fuze housing Resistance[2]	100%[3]	3.7.2	4.5.1.3.3.d[1]
Major				
101	Liquid crystal display not blank	100%	3.3	Visual/Gage
102	End cap assembly depth	100%	3.3	Gage
103	Hatch mark of housing not aligned within a rib of ogive	100%	3.3	Visual/Gage
104	Incorrect installation of S&A and Cushion[2]	100%	3.3	Visual/Gage
105	Incorrect torque on end cap	100%	3.3	Gage
106	O-ring or stab gear missing[2]	Level IV	3.3	Visual/Gage
107	Large outside threads damaged	100%	3.3	Visual
108	Level advance switch test[2]	100%	3.7.2	4.5.1.3.3.a
109	Count advance switch test[2]	100%	3.7.2	4.5.1.3.3.b,c
110	Small outside threads damaged	100%	3.3	Visual
111	Presence of battery[2]	100%	3.3	Gage
Minor				
201	Foil seal damaged	Level II	3.3	Visual/Gage
202	Marking incorrect or illegible	Level II	3.3	Visual/Gage
203	Total fuze length	Level II	3.3	Gage
204	Improper application of adhesive on end cap per note 3 of the drawing	Level II	3.3	Visual/Gage
205	Evidence of poor workmanship	Level II	3.9	Visual/Gage

NOTES:
1. Test parameter No. 21 of Table VII only
2. Inspect prior to endcap installation
3. Verification level VII not required

Conformance inspection by classification of characteristics

PARAGRAPH	TITLE	SHEET 1 OF 1		DRAWING NUMBER
4.4.1.44	Cover, safe and arm			12991780
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY 12991809 INSPECTION METHOD REFERENCE
Critical	None defined			
Major	None defined			
Minor				
201	Thickness	(a)	3.3	Gage
202	Greatest diameter	(a)	3.3	Gage
203	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:

(a) See 4.5.6

Conformance inspection by classification of characteristics

PARAGRAPH	TITLE	SHEET 1 OF 1		DRAWING NUMBER
4.4.1.45	Safe and arm contact plate assembly			12991785
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY 12991809 INSPECTION METHOD REFERENCE
Critical	None defined			
Major 101	Evidence of poor solder workmanship	100%	3.3	Visual/Gage
Minor 201	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:

Conformance inspection by classification of characteristics

PARAGRAPH	TITLE	SHEET 1 OF 1		DRAWING NUMBER
4.4.1.46	Contact plate, piston actuator			12991791
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY 12991796 / INSPECTION METHOD REFERENCE
Critical	None defined			
Major				
101	Finger width 2X	(a)	3.3	Gage
102	Finger location 2X	(a)	3.3	Gage
Minor				
201	Hole diameter	(a)	3.3	Gage
202	Hole location	(a)	3.3	Gage
203	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:

(a) See 4.5.7

Conformance inspection by classification of characteristics

PARAGRAPH	TITLE	SHEET 1 OF 1		DRAWING NUMBER
4.4.1.47	Contact plate, detonator			12991792
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY 12991796 / INSPECTION METHOD REFERENCE
Critical	None defined			
Major				
101	Contact width	(a)	3.3	Gage
102	Finger width	(a)	3.3	Gage
103	Finger location	(a)	3.3	Gage
Minor				
201	Through hole diameter	(a)	3.3	Gage
202	Through hole location	(a)	3.3	Gage
203	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:

(a) See 4.5.7

Conformance inspection by classification of characteristics

PARAGRAPH	TITLE	SHEET 1 OF 1		DRAWING NUMBER
4.4.1.48	Insulator, slider			12991793
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY 12991796 INSPECTION METHOD REFERENCE
Critical	None defined			
Major				
101	Height of rails	(a)	3.3	Gage
Minor				
201	Diameter of short bosses 4X	(a)	3.3	Gage
202	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:

See 4.5.6

Conformance inspection by classification of characteristics

PARAGRAPH	TITLE	SHEET 1 OF 1		DRAWING NUMBER
4.4.1.49	Contact, sleeve, detonator			12991794
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY 12991796 / INSPECTION METHOD REFERENCE
Critical	None defined			
Major				
101	Inside diameter across ribs	(a)	3.3	Gage
102	Length	(a)	3.3	Gage
Minor				
201	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:

(a) See 4.5.7

Conformance inspection by classification of characteristics

PARAGRAPH	TITLE	SHEET 1 OF 1		DRAWING NUMBER
4.4.1.50	Slider, S&A			12991795
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY 12991796 INSPECTION METHOD REFERENCE
Critical	None defined			
Major				
101	Insufficient shear pin strength	(a)	3.3	Gage
102	Width of part	(b)	3.3	Gage
103	Height of part	(b)	3.3	Gage
Minor				
201	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:
(a) Three (3) samples per lot
(b) 4.5.6

Conformance inspection by classification of characteristics

PARAGRAPH	TITLE	SHEET 1 OF 1		DRAWING NUMBER
4.4.1.51	Slider assembly			12991796
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY 12991809 / INSPECTION METHOD REFERENCE
Critical	None defined			
Major				
101	Detonator resistance after insertion	100%	3.7.4.b	Gage
102	Detonator and sleeve above slider surface	100%	3.3	Visual
Minor				
201	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:

Conformance inspection by classification of characteristics

PARAGRAPH 4.4.1.52	TITLE Spring, spin lock	SHEET 1 OF 1		DRAWING NUMBER 12991797
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY 12991809 INSPECTION METHOD REFERENCE
Critical	None defined			
Major 101	Confirm spring force per note 6 of the drawing	(a)	3.3	Gage
Minor 201	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:

(a) See 4.5.7

Conformance inspection by classification of characteristics

PARAGRAPH	TITLE	SHEET 1 OF 1		DRAWING NUMBER
4.4.1.53	Lock, spin			12991798
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY 12991809 / INSPECTION METHOD REFERENCE
Critical	None defined			
Major				
101	No flash on surface indicated	(a)	3.3	Visual
102	Shear test (destructive)	(b)	3.3	Gage
103	Greatest overall width	(a)	3.3	Gage
104	Greatest overall height	(a)	3.3	Gage
Minor				
201	Protective finish per note 10 of the drawing	(a)	3.3	Visual
202	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:
(a) See 4.5.6
(b) Three (3) samples per lot

Conformance inspection by classification of characteristics

PARAGRAPH	TITLE	SHEET 1 OF 1		DRAWING NUMBER
4.4.1.54	Spring, setback lock			12991801
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY 12991804 / INSPECTION METHOD REFERENCE
Critical	None defined			
Major				
101	Diameter of wire	Level IV	3.3	Gage
102	Direction of helix	Level IV	3.3	Visual
Minor				
201	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:

Conformance inspection by classification of characteristics

PARAGRAPH	TITLE	SHEET 1 OF 1		DRAWING NUMBER
4.4.1.55	Lock, setback			12991803
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY 12991804 INSPECTION METHOD REFERENCE
Critical	None defined			
Major				
101	Through hole diameter	(a)	3.3	Gage
102	Shear test	(b)	3.3	Gage
Minor				
201	No flash where indicated	(a)	3.3	Visual
202	Protective finish per note 11 of the drawing	(a)	3.3	Visual
203	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:
(a) See 4.5.6
(b) Three (3) samples per lot

Conformance inspection by classification of characteristics

PARAGRAPH 4.4.1.56	TITLE Lock, slider	SHEET 1 OF 1		DRAWING NUMBER 12991805
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY 12991809 INSPECTION METHOD REFERENCE
Critical	None defined			
Major				
101	Size of hole	(a)	3.3	Gage
102	Location of hole	(a)	3.3	Gage
Minor				
201	Leg angle	(a)	3.3	Gage
202	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:

(a) see 4.5.7

Conformance inspection by classification of characteristics

PARAGRAPH 4.4.1.57	TITLE Insulator, piston actuator	SHEET 1 OF 1		DRAWING NUMBER 12991807
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY 12991809 INSPECTION METHOD REFERENCE
Critical	None defined			
Major 101	Hole diameter	(a)	3.3	Gage
Minor 201	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:

(a) See 4.5.6

Conformance inspection by classification of characteristics

PARAGRAPH 4.4.1.58	TITLE Housing, safe and arm	SHEET 1 OF 1		DRAWING NUMBER 12991808
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY 12991809 INSPECTION METHOD REFERENCE
Critical	None defined			
Major				
101	Finish of large cavity wall and floors	(a)	3.3	Gage
102	Length of large cavity to centerline	(a)	3.3	Gage
103	Radius of large cavity from centerline	(a)	3.3	Gage
104	Width of large cavity	(a)	3.3	Gage
105	Through slot width	(a)	3.3	Gage
106	Raised slot width	(a)	3.3	Gage
107	Width of small cavity	(a)	3.3	Gage
108	Height from cavity wall to raised shelf	(a)	3.3	Gage
Minor				
201	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:

(a) See 4.5.6

Conformance inspection by classification of characteristics

PARAGRAPH 4.4.1.59	TITLE Safe and arm assembly	SHEET 1 OF 1		DRAWING NUMBER 12991809
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY 12991762/12991767 INSPECTION METHOD REFERENCE
Critical				
1	Locking test	100%[1]	3.4.4	4.5.2.2
Major				
101	Unlocking test	100%	3.4.4	4.5.2.1
102	Setback lock missing	100%	3.3	Visual/Gage
103	Spin lock missing	100%	3.3	Visual/Gage
104	Shear pin of slider assembly missing	100%	3.3	Visual/Gage
105	Actuator, piston resistance	100%	3.7.4.a	4.5.1.5
106	Detonator, electrical per note 4G of the drawing	100%	3.7.4.f	4.5.1.6
107	Resistance check across battery primer	100%	3.7.4.e	4.5.1.9
108	Resistance check across detonator electrical socket and ground	100%	3.7.4.d	4.5.1.8
109	Resistance check across ground socket and S&A housing	100%	3.7.4.g	4.5.1.10
110	Resistance check across EOD electrical socket and ground	100%	3.7.4.h	4.5.1.11
Minor				
201	Evidence of poor workmanship	Level II	3.9	Visual

NOTES:
1. Verification level VII not required

Conformance inspection by classification of characteristics

PARAGRAPH	TITLE	SHEET 1 OF 1		DRAWING NUMBER
4.4.1.60	Box, ammo, metal for artillery type and rocket fuzes (prior to closing)			8864492
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY: Final INSPECTION METHOD REFERENCE
Critical	None defined			
Major				
101	Polyethylene cushion missing	Level IV	3.3	Visual
102	Barrier bag damage or not sealed	Level IV	3.3	Visual
Minor	None defined			

NOTES:

Conformance inspection by classification of characteristics

PARAGRAPH	TITLE	SHEET 1 OF 1		DRAWING NUMBER
4.4.1.61	Contact shield			12991712
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMEN PARAGRAPH	NEXT HIGHER ASSEMBLY 12991717 / INSPECTION METHOD REFERENCE
Critical	None defined			
Major	None defined			
Minor				
201	Length	(a)	3.3	Gage
202	Workmanship	Level II	3.9	Visual

NOTES:

(a) See 4.5.7

4.5 Methods of inspection.

4.5.1 Electrical tests. For all electrical tests, maximum voltage on IC is 10.5V

4.5.1.1 PWB assembly tests. Attach the following load simulations and switches to the assembly:

a. EED simulators. Three 3.9 OHM, 1 percent, ¼ watt resistors from TP 3, 16, 17 to ground.

b. Spin switch simulator. Single pole double throw switch with common to TP13 normally closed contact to ground, and normally open contact to TP 109 spin power.

c. Impact switch simulator. Connect a single pole single throw normally open switch from ground to TP 18.

d. Level advance/count advance simulators. Connect single pole single throw normally open switches from ground to TP 20, 19, and 107.

e. VBAT simulator. Connect a power supply positive lead to TP 4 and negative lead TP 14. The power supply shall be capable of supplying 0.0 volt to 3.0 volts ± 1 percent with resolution of 0.01 volt. The VBAT is normally at 0.0 volts unless indicated in Table VIII.

4.5.1.1.1 Ambient tests. Perform the following Ambient tests listed below from Table V. Prior to the ambient temperature test, all units shall receive a temperature stress conditioning soak at -60 degrees F and +155 degrees F (both +/- 10 degrees F) for a time sufficient to allow the ASIC (dwg. 12991743) in the PWB Assembly to reach the conditioned temperature. The tests may be combined and measured within a simulated fuze mission or portion of a mission as long as they specified parameters for each set are measured.

4.5.1.1.2 Temperature tests. The following temperature tests listed below from Table VI are to be performed with the PWB assembly conditioned to -60°F and +155°F (both ± 10°F) for a time sufficient to allow ASIC, dwg. 12991743 in the assembly to reach the conditioning temperature. Any failure shall require 100% screening at the failed environment and parameter. The tests may be combined and measured within a simulated fuze mission or portion of a mission as long as they specified parameters for each set are measured.

4.5.1.2 Inductive coil assembly tests.

a. Measure the coil inductance of shielded coil assembly in accordance with dwg.12991717.

b. Measure the coil Q of shielded coil assembly in accordance with dwg.12991717.

4.5.1.3 Level II tests.

4.5.1.3.1 Level II electrical tests with out spin switch Perform the level II electrical tests at ambient as required by Table VII. Attach the following load simulations and switches to the assembly prior to installation of the spin switch.

a. EED simulators. Three 3.9 OHM, 1 percent, ¼ watt resistors from TP3, 16 and 17 to TP14 (ground).

b. Spin switch simulator. Connect a single pole double throw switch with common to TP13 normally closed contact to TP14, and normally open contact to TP4 (battery positive).

c. Impact switch simulator. Connect a single pole single throw normally open switch from TP18 to TP14.

d. Level advance/count advance simulators. Connect single pole single throw normally open switches from TP14 to TP19, TP107, and TP20.

e. VBAT simulator. Connect a power supply positive lead to TP4 and negative lead to TP14. The power supply shall be capable of supplying 0.0 volts to 3.0 volts ± 1 percent in 0.01 volt increments. VBAT is normally set at 0.0 volts unless indicated in Table V. After each test is completed, VBAT shall be returned to 0.0 volts.

4.5.1.3.2 Level II electrical tests with spin switch. Perform the tests listed below. The tests may be combined and measured within a simulated fuze mission or portions of a mission as long as the specified parameters for each set are measured.

a. Spin switch closure/nonclosure. The spin switch shall meet the closure requirements of dwg. 12991760 when monitoring Test Point 13. The test method may use techniques to simulate rotational forces.

b. EOD spin switch closure. The spin switch shall meet the closure requirements of dwg. 12991760 when monitoring between TP 101 and TP 4. The test method may use techniques to simulate rotational forces.

4.5.1.3.3 Level II and Housing. Perform the tests listed below

a. Level advance switch closure. After Level II Assembly (dwg. 12991760) has been assembled into fuze housing assembly (dwg. 12991668), with 3.0 volts applied between Test Point 4 and Test Point 14, and with the level advance switch not depressed, the voltage measured at Test Point 20 shall be a minimum of 2.85 volts. With the switch closed, the Test Point 20 voltage shall be .05 volts maximum.

b. Count 1 advance switch closure. After Level II assembly (dwg. 12991760) has been assembled into fuze housing assembly (dwg. 12991668), with 3.0 volts applied between Test Point 4 and Test Point 14, and with the digit advance switch not depressed, the voltage measured at Test point 19 shall be a minimum of 2.85 volts. With the switch closed, the Test Point 19 voltage shall be .05 volts maximum.

c. Count 2 advance switch closure. After Level II assembly (dwg. 12991760) has been assembled assembly(12991668), with 3.0 volts applied between Test Point 4 and Test Point 14, and with the digit advance switch not depressed, the voltage measured at Test point 19 shall be a minimum of 2.85 volts. With the switch closed, the Test Point 19 voltage shall be .05 volts maximum.

d. EA/Fuze Housing. After Level II assembly (dwg. 12991760) has been assembled into fuze housing assembly (12991168), the requirements of Table VIII parameter 21 shall be met.

4.5.1.4. Battery assembly voltage and resistance. Measure the voltage and resistance through the battery assembly. The voltage and resistance shall meet the requirements of dwg. 12991691.

4.5.1.5. Explosive resistance. Measure the following resistances:

a. Actuator, piston resistance. Measure the resistance through the piston actuator using a meter supplying no more than 1.0 ma. The resistance shall meet the requirements of dwg. 12991809.

b. Detonator, electric resistance. Measure the resistance between the detonator electrode and the ground socket using a meter supplying no more than 1.0 ma. The resistance shall meet the requirements of dwg.12991809.

c. Battery primer resistance. Measure the resistance between the pin and the contact using a meter supplying no more than 1.0 ma. The resistance shall meet the requirements of dwg. 12550990.

d. Detonator electric socket contact to ground socket resistance. Measure the resistance between the detonator socket of the S&A assembly and the ground socket using a meter supplying less than 1.0 ma. The resistance shall measure greater than 10 megohms.

e. Battery primer socket to ground resistance. Measure the resistance between the S&A assembly battery primer socket and the ground socket using a meter supplying less than 1 ma. The resistance shall measure greater than 10 megohms.

f. Ground socket to S&A housing resistance. Measure the resistance between the S&A ground socket and the S&A housing using a meter supplying less than 1 ma. The resistance shall measure less than .30 ohm.

g. EOD socket to ground socket resistance. Measure the resistance between the EOD socket and ground socket of the S&A using a meter supplying less than 1 ma. The resistance shall measure greater than 10 mega ohms.

4.5.2. Mechanical S&A tests.

4.5.2.1. S&A unlock test. The S&A will be spin tested per drawing 12991809, note4d, e.

4.5.2.2. S&A lock test. The S&A will be spin tested per drawing 12991809, note 4a, b, c.

4.5.3 Environmental. The following environmental tests shall apply to the applicable portion of Tables II, III and XV (First article acceptance test sequence), or Table IV (Lot acceptance test sequence).

4.5.3.1 Logistic vibration (safety and operational). The fuze shall be tested in accordance with ITOP-1-2-601, paragraph 4.1.1, Appendix B, TABLE B-1, Figures B1 through B15, with the exception that the power spectral density (PSD) values for lower frequency ranges in Figures B-1 through B-6 are clipped. A ten (10) hour minimum preconditioning temperature soak is required for M762A1 and M767A1 less booster packaged fuzes prior to the commencement of vibration testing at temperature. Following a change of test units, or the rotation of test units, the temperature in the vibration chamber must be re-stabilized at the specified test temperature before continuing with vibration testing. The modified PSD values for the corresponding breakpoint frequencies in the figures shall be per Table IX:

a. Hot operational/safety tests: +145 degrees F. (ITOP 1-2-601, B1 through B15).

b. Cold operational tests: -45 degrees F. (ITOP 1-2-601, B1 through B15).

c. Cold safety tests: -60 degrees F. (ITOP 1-2-601, B1 through B15).

4.5.3.2 Twenty-eight day hot (hot safety and operational). The fuze shall be packaged 8 fuzes to an M2A1 ammunition can, two cans per box as described in dwg. 8861213. The fuzes shall be subjected to 28 consecutive daily cycles of the temperature/relative humidity conditions specified in Figure 2 for the hot safety test and the hot operational test:

a. Hot operational tests: Table XI, Storage and Transit Conditions, except if the test chamber temperature controller cannot be programmed top produce the required relative humidity at each given temperature. Then it is acceptable if the relative humidity at each temperature in the cycle equals or exceeds the posted value, but does not exceed 80 percent.

b. Hot safety tests: Table X, Storage and Transit Conditions (Category B3), except if the temperature chamber's controls cannot be programmed to produce the required relative humidity at each given temperature. Then it is acceptable if the relative humidity at each temperature in the cycle equals or exceeds the posted value but does not exceed 95 percent relative humidity.

4.5.3.3 Fourteen day humidity (cold safety and operational). The fuze shall be packaged 8 fuzes to an M2A1 ammunition can, two cans per box as described in dwg. 8861213. The fuzes shall be subjected to 14 consecutive daily cycles of the temperature/relative humidity conditions specified in Table XIII for the cold safety test and Table XII for the cold operational test:

a. Cold operational tests: (Table XII), Storage and transit conditions.

b. Cold safety tests: (Table XIII), Storage and transit conditions.

4.5.3.4 Tactical vibration (safety and operational). The fuze shall be tested in accordance with ITOP 1-2-601. A four (4) hour minimum preconditioning temperature soak is required for M762A1 and M767A1 less booster bare fuzes prior to the commencement of vibration testing at temperature. Following a change of test units, the temperature in the vibration test chamber must be re-stabilized at the specified test temperature before continuing with vibration testing. The fuze may be held in the threaded socket of a rigid vibration test fixture. Vibration exposure per

fuze axis is intended to correspond to a transportation distance of 550 km, so that the total test time per axis shall be 20 to 25 minutes. Therefore, for any test phase, 4 to 5 minutes of testing are required, but not less than the time required to perform one ascending frequency sweep. The tests are to be conducted as follows:

a. Hot operational/safety tests: ITOP 1-2-601, Table C5, +145 degrees F.

b. Cold operational tests: ITOP 1-2-601, Table C-4, -45 degrees F.

c. Cold safety tests: ITOP 1-2-601, Table C-5, -60 degrees F.

4.5.3.5 Salt fog (safety and operational). The fuze shall be tested in accordance with MIL-STD-331, Test C3, paragraph 5.0, except fuze orientation to be 45 degrees (nose up) and 45 degrees (nose down). The following exposure times shall be used:

a. Hot/Cold Safety Tests: 96 hours.

b. Hot/Cold Operational Tests: 48 hours.

4.5.3.6 Seven foot drop - boxes (safety/operational). The fuze shall be tested in accordance with MIL-STD-331, Test A5, Figure A5-1, Notes 2 and 3, at the following test temperatures:

a. Hot safety/operational tests: +145 degrees F.

b. Cold safety tests: -60 degrees F.

4.5.3.7 Bounce loose cargo (safety/operational). The fuze shall be tested in accordance with ITOP 4-2-602, for Rough Handling Tests, per the first three paragraphs of paragraph 3.0, Appendix B of the ITOP. Bounce test shall be a packaged test consisting of M762A1 and M767A1 (less booster) fuzes packaged in the can configuration (M2A1 ammunition box). For inspection purposes the packaging will not include sealed moisture barrier bags. The cans will be tested on a 3/16 in. to 3/8 in. thick steel plate securely fastened to the surface of the package tester. The package tester will be preconditioned at test temperature for minimum of ten (10) hours prior to the commencement of testing. Testing will be conducted at five (5) minute intervals to allow inspection for component movement and to maintain test temperature. After each inspection, the test item will be reconditioned at temperature for a minimum of two (2) hours. The tests are to be conducted as follows:

a. Hot safety/operational tests: +145 degrees F.

b. Cold safety tests: -60 degrees F.

4.5.3.8 Seven foot drop - cans (safety/operational). The fuze shall be tested in accordance with MIL-STD-331, Test A5, Figure A5-1, Notes 2 and 3, one drop per can, with test temperatures as follows:

a. Hot safety/operational tests: +145 degrees F.

b. Cold safety tests: -60 degrees F.

4.5.3.9 Five foot drop - bare (safety/operational). The fuze shall be tested in accordance with MIL-STD-331, Test Method A4.1, two drop procedure per fuze, inert (empty) booster cups may be installed to protect the booster cup threads from damage, test temperatures as follows:

a. Hot safety/operational tests: +145 degrees F.

b. Cold safety tests: -60 degrees F.

4.5.3.10 Pre-ballistic temperature conditioning. Fuzes shall be conditioned for a minimum of 18 hours prior to removal from the temperature chamber for firing according to the requirements of Tables, II, III, and IV. The test temperature shall be maintained at ± 5 degrees F. Time from removal to firing shall be less than 15 minutes.

4.5.4 Ballistic testing.

4.5.4.1 PD non-functioning. The fuze shall not function when impacting a six inch thick minimum CDX grade plywood (or equivalent) target set at a distance corresponding to the gun/tube/propellant/zone designations for non-functioning testing as indicated in Table III requirements.

4.5.4.2 PD functioning. The fuze shall function when fired into a six inch thick minimum CDX grade plywood (or equivalent) target set at a distance corresponding to the gun/tube/propellant/zone designations for functioning testing as indicated in Table II, III, or IV requirements.

4.5.4.3 Activation and setting. For the M767A1 Time or PD activation and setting shall be performed manually or inductively so that 60 percent of the fuzes are activated and set manually, and 40 percent are activated and set inductively (round up test sample for manual set). For the M762A1 Time activation and setting shall be performed manually or inductively so that 60 percent of the fuzes are activated and set manually, and 40 percent are activated and set inductively (round up test sample for manual set). M762A1 PD activation and setting shall be performed manually 100 percent. In the event that the fuze does not properly activate and set inductively after the first attempt, two additional operator inductive setting attempts will be made. No more than three attempts shall be made to inductively activate and no more than one attempt will be allowed to manually active and set the fuze. Fuzes failing to activate manually or inductively, or subsequent to activation fail to set, will be counted against the unsettable category. See Tables II, III, IV or XIV.

4.5.4.4 Time set function. Fuze settings shall be photographed using an instant, self-processing camera. Three independent infrared sensing chronograph systems provided by the government shall be used to measure time to burst. If one time value is lost or considered invalid (see 4.5.4.5) the remaining two values shall be used. If the chronographs fail to pick-up fuze functions, the observations shall be used to determine if the round functioned airburst or on ground impact. See Tables II, III, IV or XIV.

4.5.4.5 Lost time. When a fuze is fired for an airburst function and is observed to have functioned, but a chronograph system used to determine the elapsed time to function fails for any

reason to capture the appropriate value, then an entry of lost time shall be used. The round shall be considered lost when the above occurs for 2 or more chronograph systems. See Tables II, III, IV or XIV. See 6.6.7.

4.5.4.6 Logistic vibration. M762A1 and M767A1 (less booster) fuze assemblies with lead charge shall be randomly selected from each lot and subjected to the Logistic Vibration Test specified in 4.5.3.1. See Figures 1 and 2 and Table IV. Ten (10) fuzes shall be disassembled to determine that the fuzes are safe. If the fuzes are not found to be defective, the ballistic lot samples shall be forwarded to the proving grounds for ballistic testing. After disassembling the End Cap Assembly dwg. 12991643 and the Safe and Arm Assembly dwg. 12991809, as a minimum, test or examine for the following:

a. The resistance outlined in the test parameter 21 of Table VIII.

b. No part of the explosive train shall be functioned.

c. The slider in the S&A located and locked in the safe position by both safety features.

d. The setback lock and spin lock secure and in the safe position.

e. The setback lock not broken and the spin lock secure and restrained by the spring lock.

4.5.5 Ammunition lot number and item nomenclature. Visually verify that the correct ammunition lot number and item nomenclature have been marked on fuzes. Unless otherwise specified, the sample size shall be accordance with MIL-STD-1916, level II.

4.5.6 Die check for cast and molded parts. Samples of at least three parts from each cavity shall be inspected in accordance with the applicable Classification of characteristics and Tests paragraph to qualify a new or reworked cavity for use in production. Individual cavity identification must be provided. If any defective parts are found during qualification of the cavity due to a defective cavity, the cavity producing the defective part shall not be used in production. All cavities formerly removed from production because of a fault may, after reworking, be returned to production, providing they pass the qualification test. In addition, a minimum sample of one part from each cavity shall be inspected for each lot acceptance in accordance with the applicable Classifications of characteristics Table. If the one piece inspected fails the inspection of the Classification of characteristics specified, the lot shall be rejected.

4.5.7 Die check for stamped parts. A sample of at least three parts from each die shall be inspected in accordance with the applicable Classification of characteristics. If any defective parts are found during qualification of the tool due to a defective tool, the tool producing the defective part shall not be used in production. All tools removed from production because of some fault may, after reworking, be returned to production, providing they pass the qualification test above. In addition, a minimum sample of one part from each cavity shall be inspected for each lot acceptance in accordance with the applicable Classifications of characteristics Table. If the one piece inspected fails the inspection of the Classification of characteristics specified, the lot shall be rejected.

4.5.8 Workmanship. Components shall be inspected visually in accordance with the applicable Classification of characteristics paragraphs (see 4.4.1.1 through 4.4.1.61).

4.5.9 Detailed Strip Inspection. Each fuze shall be disassembled to the lowest possible level for this inspection. See figure 3. During disassembly extreme care shall used so as not to introduce foreign materials or otherwise disturb the item. All disassembled parts and subassemblies shall be labeled for parent fuze identification. Inspect S&A and Level II assembly samples as follows:

a. Remove End Cap assembly.

b. Write S/N of fuze onto bottom of the S&A assembly.

c. Remove S&A assembly and cushion from the fuze and write S/N onto the bottom of the Level II assembly.

d. Verify that no part of the explosive train has functioned.

e. Verify that the slider in the S&A is located and locked in the safe position by both safety features. Verify that the Setback Lock and Spin Lock is secure and in the safe position.

f. Verify that the Setback Lock is not broken and the Spin Lock is secure and restrained by the Spring Lock.

g. Perform resistances tests per 4.5.1.5a, b, d, e, f, g.

h. Perform S&A spin test per 4.5.2.1.

i. Remove Stab Assembly and Battery Primer Assembly from the Fuze Assembly.

j. Measure resistance of Battery Primer per 4.5.1.5c

k. Measure resistance of Fuze Housing /Level II assembly between ground pin and the Housing Assembly as per 4.5.1.3.3d,

l. Remove Level II Assembly from Fuze Housing Assembly.

m. Perform Level II/EOD spin test per 4.5.1.3.2

n. Isolate spin switch from spin ground pin.

o. Perform Level II electrical test per 4.5.1.3.1.

5 PACKAGING

5.1 Packaging. For acquisition purposes, the packaging requirements shall be specified in the contract or order (see 6.2). When actual packaging of material is to be performed by DOD personnel, these personnel need to contact the responsible packaging activity to ascertain requisite packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activity within the Military Department or Defense Agency, or within the Military Department's System Command. Packaging data retrieval is available from the

managing Military Department's or Defense Agency's automated packaging files, CD-ROM products, or by contacting the responsible packaging activity.

6 NOTES

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

6.1 Intended use. The M762A1/M767A1 is a military unique artillery fuze is to be use on all existing and future howitzers (105mm and 155mm weapon systems) to provide time and point detonating functions.

6.2 Acquisition requirements. Acquisition documents must specify the following:

a. Title, number and date of this specification.

b. Issue of DODISS to be cited in the solicitation, and, if required, the specific issue of individual documents referenced (see 2.2.1).

c. Packaging requirements (see 5.1 and 6.9)

d. Requirements for submission of first article sample.

e. Requirements for submission of inspection equipment designs.

f. Certificate of conformance for each lot or shipment of product.

g. Applicable stock number.

6.3 Submission of contractor inspection equipment design for approval. Submit copies of designs as required to: Commander, US Army ARDEC, ATTN: AMSTA-AR-QAA-R, Picatinny Arsenal, New Jersey 07806-5000.

6.4 Drawings. Drawings listed in Section 2 of this specification under the heading U.S. Army Armament Research, Development, and Engineering Center (ARDEC) may also include drawings prepared by, and identified as U.S Army Armament, Research and Development Command (ARRADCOM), Rock Island Arsenal or Picatinny Arsenal drawings. Technical data originally prepared by these activities is now under the cognizance of ARDEC.

6.5 Submission of alternative quality conformance provisions. Alternative conformance procedures may be proposed by the contractor (See accpetance by contractor - proposed provisions of MIL-STD-1916). All contractor proposed alternative quality conformance provisions will be submitted to the Government for evaluation / approval as directed by the contracting activities.

6.6 Definitions.

6.6.1 Premature burst. A malfunction in which a fuze functions before the required safe separation distance (see 6.6.9) from the weapon. This includes functions in handling, loading and inside the barrel.

6.6.2 Early burst. A malfunction in which a fuze functions prior to set time minus four seconds but later than safe separation (see 6.6.9) . For a PD-set fuze, a function prior to impact but later than safe separation.

6.6.3 Dud. A malfunction in which a ballistically fired fuze does not function at all, except where impact occurs prior to 500 ms after muzzle exit in the PD mode or prior to set time.

6.6.4 Ballistic function. A function is defined as initiation of the output lead charge, normally resulting in initiation of the projectile. For determining reliability, a function is proper only if the proper response (detonation or expulsion) of the projectile results. For determining safety, any function of the output lead charge prior to T-4 in the time mode or prior to 400 ms in the PD mode will be considered a safety failure, whether or not normal functioning of the projectile results.

6.6.5 Off time. A malfunction in which a time-set fuze functions later than set time minus four seconds, but not within ±.1 seconds of set time. Functions between set time minus four seconds and set time minus 0.1 seconds are early improper off times, and functions in the air later than set time plus 0.1 second are late improper off times.

6.6.6 Significant difference in chronograph. When the highest or lowest chronograph reading differs by more than 10 ms from the next closest chronograph reading, the first reading will be disregarded. If the remaining two chronograph readings do not agree within 10 ms then all three will be disregarded and the data considered lost.

6.6.7 Lost time. Whenever, for any reasons, including 6.6.6, there are not two good chronograph readings for the function time, the time data will be considered lost. This definition will not be used to invalidate the results of a test round in which the observers report a malfunction (premature, early, off time, impact or dud). Stopwatch times are acceptable for cargo carrying projectiles for cargo ejection.

6.6.8 Safe position. The safe position of an S&A assembly may be defined as follows:

a. The safe position of an S&A assembly consists of a slider located in the safe position with an intact shear pin, the spin lock in position locking the slider, and setback lock in the slider. The detonator lead will be shorted to ground.

b. For the purpose of X-ray verification, the spin lock will be in position engaging the slider, and the setback lock will be engaging the slider.

6.6.9 Safe separation distance. The safe separation distance is the projectile flight distance covered in 400 calibers measured from muzzle exit.

6.6.10 Point detonating dud. A malfunction in which a point detonating (PD) set fuze tested in accordance with the requirements does not function on impact, where impact occurs after 500 ms from muzzle exit.

6.6.11 Gage. Any calibrated aide used to perform examination or tests called out in the Classification of Characteristics paragraphs.

6.6.12 Unsettable fuze. The fuze will be considered unsettable if the following criteria are not met.

6.6.12.1 Manual set. Fuze that fails to activate on the first attempt or subsequent to activation on the first attempt fails to meet any of the following procedures:

a. Upon activation all display segments will be on.

b. The first depression of the level advance button will result in a display of only the four underline and the decimal point.

c. A second depression of the level advance button will cause each digit to show a zero character, with the most significant digit underlined.

d. Subsequent setting will not indicate an out of sequence or invalid character or symbol.

6.6.12.2 Autoset. Fuze that fail to activate after the three allowed operator setting attempts or subsequent to activation after the allowed three operator setting attempt fails to meet any of the following procedures:

a. Following autoset activation, the fuze will talkback in accordance with the Inductive Setting Requirement for M762 ET Fuze (dwg. 12991816).

b. The display should indicate the correct setting.

6.6.12.3 Unintended Change. Any change after intended fuze setting on the LCD display window prior to gun launch.

6.6.13 Ballistic test phase. A ballistic combination is defined as the grouping of Fuze type/Test mode/Caliber/Weapon/Tube/Projectile/Charge/Zone/Temperature as cited in the applicable tables. A grouping that contains both logistically vibrated and standard fuzes is considered one ballistic combination.

6.6.14 Subgroup. For sequential environmentally condition fuzes, each code number listed in Figure 1/, Figure 2 is a subgroup. For lot acceptance and First Article reliability testing, each different test configuration (including temperature) will be considered a subgroup.

6.7 Fuze autosetting. Fuze autosetting systems for ballistic test purposes will be Government Furnished Equipment (GFE).

6.8 Superseding Document. DTL12991782 specification is a ARDEC unique specification that is not in ASSIST. If a copy is required it may be requested online at Drawing-request@pica.army.mil or from U.S. Army ARDEC, ATTN: AMSRD-AAR-AIS-TD, Picatinny, NJ 07806-5000

6.9 Performance Oriented Packaging (POP). Prior to shipment, the manufacturer will make sure the container has been tested by a government approved Performance Oriented Packaging (pop) test Laboratory for compliance with POP requirements in accordance with Title 49 Code of Federal Regulations. Test will be to a weight at least 10% greater than the actual gross weight to be marked on the tested container. POP marking will not be applied to the container until verified by the government. The POP test report will be generated by the Manufacturer/Laboratory in accordance with DI-PACK-81059 (Data Item Description) following the test. The report must be kept on file by the contractor and must also be submitted in accordance DI-PACK-81059 to the U.S.Army Tank-automotive and Armaments Command – Armament Research, Development and Engineering Center, ATTN: AMSTA-AR-WEP, Picatinny Arsenal, New Jersey, 07806-5000. For multi-year contracts, the contractor will re-perform POP testing at a certified test laboratory if: (a) the initial POP test report expires before the end of the contract or (b) there is a change in container manufacturer or design of the exterior shipping container. No re-test is needed if all packaging is purchased while under an unexpired POP test.

6.10 Justification for critical characteristics.

6.10.1 Electrical Housing Resistance. Early M767 fuze development experianced downrange early functions. Improper electrical connection between fuze housing and electronics can result in increased sensitivity to external stimulus. An in-flight ESD event can generate a false signal at the impact switch. This may result in a fire command prior to intended which could create an unsafe condition for forward and surrounding troups. This production test is critical to ensure no down range early functions result from electrostatic discharge. For further information ESD events see ARDEC Technical Report ARCCD-TR-02001. Verification para 4.4.1.42 and 4.4.1.43.

6.10.2 Position of the S&A Setback and Spin Locks. When S&A locks are not engaged in the slider, an inadvertent piston actuator function or large side impact may cause the slider to move to the armed position with the electric detonator in line with the explosive train. A function of the detonator will then function the output lead and/or projectile. This is critical to ensure safety during handling, shipping and use. Verification para 4.4.1.59. X-ray verification of the lock positions will ensure the safety of the fuze for transportation and testing. Verification para 4.2.4.2.1.a, 4.2.4.2.2.a, 4.3.5.1.a, 4.3.5.2.a and 4.3.5.3.a

6.10.3 Piston Actuator Time. The piston actuator arms the fuze 450 milliseconds after after spin switch closure. This ensures no fuze function prior to or immediately after gunfire. If the piston actuator is fired sooner than 450 ms the round could cause a function close to the gun crew. This is critical to prevent functioning in-bore or near the gun crew. Verification para 4.4.1.41

6.10.4 Early Burst. For M762A1 only, doesn't apply to HE. An early burst would expel cargo over troops or terrain creating an unsafe condition for forward and surrounding troops. This check is needed to prevent a defective fuze lot from being fielded. Verification para 4.2.4.2. 1.d

6.10. 5 Premature Burst. A premature burst can cause an in-bore or near-by projectile function. This check is needed to prevent a defective fuze lot from being fielded. Verification para 4.2.4.2.1.b

6.10.6 Function in a non-function test. For first article only this test is used to verify the fuze will not function in-bore or close to the gun crew. This validates any changes in materials or processes. design or production line. Verification paragraphs 4.2.4.2.1.c and 4.2.4.2.2.c.

6.11 Subject term (key word) listing.

Ballistic Function
Dud
Early Burst
Lost Time
Off Time
Premature Burst
Safe Position
Safe Separation Distance

TABLE II. First Article Test (Reliability), 105MM

Fuze Type	Test [6, 7]	Weapon	Tube[3]	Projectile	Charge	Zone	Approx. quadrant (Mils)	Temp[1]	Sample size
M762A1 Fuze[9]	Time mode Functioning	M101A1	M2A2	M1	M67	1	1180	Cold/Hot	6/6
		M101A1	M2A2	M1	M67	5	985	Cold/Hot	6/6
		M119	M20A1	M760	M200	8	770	Cold/Hot	7/7
	PD Mode Functioning	M119	M20A1	M760 (inert)[8]	M200	8	Plywood[2,4]	Hot	6
		M101A1	M2A2	M1 (inert)[8]	M67	1	Plywood[2,5]	Hot	6
	Total								50
M767A1 Fuze [9]	PD Mode Functioning	M101A1	M2A2	M1 (inert)[8]	M67	1	Plywood[2,5]	Cold	10
		M119	M20A1	M760	M200	8	770 (ground impact)	Hot	10
	Time Mode Functioning	M119	M20A1	M760	M200	8	770 (time)	Hot	10
	Total								30

Notes:

1. Hot and Cold temperatures shall be at +145° F and –45° F respectively. Fuze/projectile/propellant shall be at the same temperature. Hot projectile temperature may be lowered to +125° F to avoid exudation. In this case, the propellant temperature shall also be lowered to +125° F.
2. See 4.5.4.2.
3. All tubes 25% remaining life or better.
4. Target distance to be 1200 ft. minimum.
5. Target distance to be 450 ft. minimum.
6. Setting per 4.5.4.3.
7. The time mode setting shall be so that a minimum of 75 percent range will be achieved using standard weapon quadrant elevations. The remaining fuzes shall be fired in the PD mode at a quadrant elevation between 800 and 900 mils.
8. All spotting charges to be T2 with inert projectiles.
9. The booster for fuzes shall be the M767A1 booster assembly. The M767A1 booster assembly shall not be subjected to sequential environments. The M767A1 booster assembly shall be installed at the test site for M762A1 and at the loading facility for M767A1.

TABLE III. First Article Test (Reliability), 155MM

Fuze type	Test [5,6]	Weapon	Tube [3]	Projectile	Charge	Zone	Approx. Quadrant (Mils)	Temp [1]	Sample size
M762A1 Fuze	Time Mode	M109A2/A3	M185	M107[8]	M231	1	575	Cold/Hot	5/5
		M109A2/A3	M185	M107[8]	M232	4	870	Cold/Hot	5/5
		M109A2/A3	M185	M483A1	M231	1	679	Cold/Hot	5/5
		M109A2/A3	M185	M483A1	M232	3	1170	Cold/Hot	10/10
		M198	M199	M864	M232	5	909	Hot	10
	PD Mode Functioning	M109A2/A3	185	M107(inert) [7,8]	M231	1	Plywood [2,4]	Cold	5
	PD Mode Non-Functioning	M109A2/A3	185	M107(inert) [7,8]	M231	1	Plywood [2,12]	Ambient	5[13]
	TOTAL								70
M767A1 Fuze	Time Mode	M198	M199	M549A1 [8,9,10]	M232	5	909	Cold/Hot	7/7
	PD Mode Functioning	M109A2/A3	M185	M107 [8]	M232	4	870 [11]	Hot	7
		M198	M199	M549A1 [8,9,1]	M232	5	909 [11]	Cold/Hot	7/7
		M109A2/A3	M185	M107(inert) [7,8]	M231	1	Plywood [2,4]	Cold	10
		M109A2/A3	M185	M107(inert) [7,8]	M231	3	Plywood [2,4]	Ambient	5
	PD Mode Non-Functioning	M109A2/A3	M185	M107(inert) [7,8]	M231	1	Plywood [2,12]	Ambient	5[13]
	Total								55

NOTES:

1. Hot and Cold temperature shall be at +145°F and -45°F respectively. Fuze/projectile/propellant shall be at the same temperature.
2. See 4.5.4.1 for non-function testing. See 4.5.4.2 for function testing.
3. All tubes 25% remaining life or better.
4. Target distance to be 1200 ft. min. for M232 charge 3 and 600 ft. min. for M231 charge 1.
5. Setting per 4.5.4.3.
6. The time mode setting shall be so that a minimum of 75 percent range will be achieved using standard weapon quadrant elevations. The remaining fuzes shall be fired in the PD mode at a quadrant elevation between 800 and 900 mils.
7. All spotting charges to be T2 with inert projectiles.
8. Booster assembly shall be installed at test site or at the loading facility. M767A1 booster assembly shall be used.
9. Projectile shall be fired in Rocket-ON mode.
10. Hot projectile temperature may be lowered to 125°F to avoid exudation.
11. Fired in the PD mode for function on ground impact.
12. Nonfunction target distance to be approximately 197 ft.
13. Logistic Vibration samples (per 4.5.3.1 of DTL 12991762)

TABLE IV. Ballistic Acceptance Test (BLAT) Operational and Safety test matrix

FUZE TYPE	Test[17]	Caliber	Weapon	Tube[6]	Projectile	Charge	Zone	Temp Notes 5,10	Sample Size	Sample size[2] (subsequent)
M762A1 Fuze Notes 7,11	PD Mode Non Functioning	105mm	M102	M137A1	M1[1,9]	M67	1	-45 F	5[13] /5[3,13]	-
		155mm	M109A5/A6	M284	M107[1,9]	M231	1	+70 F	5[13] /5[3,13]	-
	PD Mode Functioning	155mm	M109A5/A6	M284	M107[1,9]	M231 M232A1	1 3	-45 F +70 F	5[14] 5[14] /5[3,14]	5[3,14] -
	Time Mode Functioning Note 12	105mm	M101A1 M119	M2A2 M20A1	M1[1] M760[1]	M67 M200	1 8	-45 F +145 F	15 15	- 10
		155mm	M109A5/A6 M109A5/A6 M109A5/A6	M284 M284 M284	Notes 4,8 Notes 8,15 Notes 8,15	M231 M232 M232	1 5 5	-45 F +70 F +145 F	16 15 20	- 10 20
Total 45									116	45
dsz M767A1 Fuze Less Booster Notes 1,7,11	PD Mode Non Functioning	155mm	M109A5/A6	M284	M107[9]	M231	1	+145 F	5[3,13]	-
	PD Mode Functioning	155mm	M109A5/A6 M109A5/A6 M109A5/A6	M284 M284 M284	M107[9] M549A1[16] M549A1[16]	M231 M203A1 M203A1	1 8S 8S	-45 F -45 F +145 F	8[3,14] 7 (GI) 17 7 (GI) 17	- - -
	Time Mode Functioning Note 12	105mm	M119	M20A1	M760	M200	8	+145 F	5	-
		155mm	M109A5/A6 M109A5/A6 M109A5/A6	M284 M284 M284	M107 M549A1[16] M549A1[16]	M231 M232 M232	1 5 5	-45 F -45 F +145 F	- 5 8[3]	- - -
Total									45	

TABLE IV. Ballistic Acceptance Test (BLAT) Operational and Safety test matrix - Continued

NOTES:

1. Booster assembly shall be installed at test site or at the loading facility. M767A1 booster assembly shall be used.
2. See 4.3.3.1.
3. Logistic Vibration samples (per 4.5.3.1, except at ambient temperatures).
4. Use any cargo carrying projectiles as authorized by the government (inert cargo projectiles are acceptable), or use M107, HE, Projectile with boostered fuze.
5. Fuze/projectile/propellant shall be at the same temperature. Hot projectile temperature may be lowered to ambient to avoid exudation. In this case, the 105mm projectile and propellant shall be at the same temperature.
6. All tubes 25% remaining life or better.
7. Fuzes to be activated and set per 4.5.4.3.
8. Fuze shall be assembled with self registration charge, T2 spotter charge, APG charge or expulsion charge as required.
9. All spotting charges to be T2 or APG with inert projectiles.
10. All temperature preconditioning per 4.5.3.10.
11. Setting per 4.5.4.3.
12. The Quadrant Elevation (QE) and Setting (seconds) shall be selected so that a minimum of 75 percent range will be achieved.
13. Per 4.5.4.1 (Target distance to be approximately 115 feet for M67 zone 1 and 197 feet for M231 charge 1).
14. Per 4.5.4.2 (Target distance to be approximately 600 feet for M231 charge 1 and 1200 feet for M232 charge 3).
15. Use only cargo carrying projectiles as authorized by the government. Inert cargo projectiles are acceptable.
16, Projectiles shall be fired in rocket-on mode.
17. Fired in the PD mode for function on Ground Impact. The QE shall be selected so that a minimum of 75 percent range will be achieved.

TABLE V. PWB ambient tests[1]

Parameter[2]	Title
1	C1 Peak Voltage
2	Risetime
3	BP Peak Voltage
4	BP Energy
5	Battery Current, Spin Open
8	Initialize for Setting
9	Set-Manual
10	Set-Inductive
11	PA/Det Times, Energies
12	PA/Det times, Impact Set
13	Invalid Time Set
14	Shorted Spin Switch
15	Early Impact Closure
16	POR Release Time
17	Fast Clock
19	Backplane Voltage Check
22	Impact Risetime
notes 1. Fast clock per parameter 17 of Table VIII may be used for the above testing. 2. Parameters are defined in Table VIII	

TABLE VI. PWB temperature tests[1]

Parameter[2]	Title
3	BP Peak Voltage
4	BP Energy
5	Battery Current, Spin Open
8	Initialize for Setting
10	Set-Inductive
11	PA/Det Times, Energies
13	Invalid Time Set
14	Shorted Spin Switch
15	Early Impact Closure
20	Start-up time (cold only)
22	Impact Risetime
notes 1. Fast clock per parameter 17 of Table VIII may be used for the above testing. 2. Parameters are defined in Table VIII	

TABLE VII . Level II Electrical Tests[1]

Parameter[2]	Title
3	BP Peak Voltage
5	Battery Current, Spin Open
8	Initialize for Setting
11	PA/Det Times, Energies
13	Invalid Time Set
14	Shorted Spin Switch

notes
1. Fast clock per parameter 17 of Table VIII may be used for the above testing.
2. Parameters are defined in Table VIII

TABLE VIII. Electrical test parameter definitions

Parameters	Measurement Conditions	Ambient		-60°F		+155°F	
		LL	HL	LL	HL	LL	HL
1.0 C1 Peak Voltage	a. VBAT off (TP 4 = 0.0V) b. Autoset per 10.0 c. Measure Peak Voltage at TP 2	8.5V	10.5V	8.5V	10.5V	8.5V	10.5V
2.0 C1 Rise Time	a. VBAT off (TP 4 = 0.0V) b. Autoset per 10.0 c. 10% min. to 90% max. time at TP 2	N/A	450ms	N/A	450ms	N/A	450ms
3.0 BP Peak Voltage	a. Autoset per 10.0 b. Measure Peak Voltage at TP 3 when BP fire pulse occurs	4.5V	N/A	4.5V	N/A	4.5V	N/A
4.0 BP Energy	a. Autoset per 10.0 b. Integrate voltage pulse at TP 3 when BP fire pulse occur, calculate pulse energy to 0.20V	946 ergs	N/A	946 ergs	N/A	946 ergs	N/A
5.0 Battery Current, Spin Open	a. VBAT=3.0V (TP 4) b. Spin Switch set to unactivated position c. Measure average Battery Current	N/A	160uA	N/A	160uA	N/A	160uA
6.0 Oscillator Frequencies	a. VBAT = 3.0V (TP 4) b. TESTM = 3.0V (TP 104) c. Measure Oscillator_1 Frequency TP 115 d. Measure Oscillator_2 Frequency TP 116	163.800KHz	163.888 KHz	163.700 KHz	163.905 KHz	163.700 KHz	163.905 KHz

TABLE VIII. Electrical test parameter definitions - Continued

7.0 (Alternate) Oscillator Frequencies	a. VBAT=3.0V (TP 4) b. Tset=000.5 sec. Accordance 9.0 or 10.0 c. Activate Spin Switch (TP 109 connected to TP 13) d. Wait 0.10-0.20 or 0.4-0.5 seconds e. Open Spin Switch (TP 109 connected to ground) f. Pull Level Advance (TP 20) and Count1 Advance (TP 19) to Ground g. Measure Oscillator 1 frequency at TLKBK (TP 9) h. Open Count Advance (TP 19) i. Measure Oscillator 2 frequency at TLKBK (TP 9)	163.800KHz	163.888 KHz	163.700 KHz	163.905 KHz	163.700 KHz	163.905 KHz
8.0 Initialize for Setting	a. VBAT=3.0V (TP 4) b. Check for all LCD segments on c. Toggle Level Advance (TP 20) to ground for 125ms ± 10ms d. Check LCD on for only Lx, Ly (Underline) on e. Toggle Level Advance (TP 20) to ground for 125ms ± 10ms f. Check LCD displays 000.0 g. Toggle Level Advance (TP 20) to ground once. Toggle Level Advance to ground again and hold Level Advance at ground h. Increment count per A.0 i. Release Level Advance j. Check LCD displays 001.0 k. Toggle Level Advance (TP 20) to ground once. Toggle Level Advance to ground again and hold Level Advance at ground l. Increment count twice per A.0 m. Release Level Advance n. Check LCD displays _Pd.	N/A	N/A	N/A	N/A	N/A	N/A

TABLE VIII. Electrical test parameter definitions - Continued

9.0 Set - Manual	a. VBAT=3.0V (TP 4) b. Toggle Level Advance (TP 20) to ground for 125 ± 10ms twice to initialize for setting c. Increment or decrement count per A.0 or B.0 to advance digit count while holding Level Advance (TP 20) down	N/A	N/A	N/A	N/A	N/A	N/A
10.0 Set - Inductive	a. See 12991816 “Inductive Set Requirements for M762A1/M767A1 ET Fuze)						
11.0 PA and Det Times, Peak Voltages, & Energies - Time Set	a. VBAT=3.0V (TP 4) b. Tset to a valid time setting c. Activate Spin Switch (TP 13 connect to TP 109)						
	d Measure time from Spin Switch activation to PA pulse rising edge (Tpa)	Tset -50ms ±0.4% at All Temps					
	e Measure peak voltage at TP17	1.2V	N/A	1.2V	N/A	1.2V	N/A
	f. Integrate PA voltage wave form at TP 17 and calculate PA energy to 0.2V	815 ergs	N/A	815 ergs	N/A	815 ergs	N/A
	g. Measure time from spin switch activation to Det pulse rising edge (Tdet) at TP16	Tset ±0.4% at all Temps					
	h. Measure peak voltage at TP16	1.2V	N/A	1.2V	N/A	1.2V	N/A
	i. Integrate DET voltage waveform at TP16 and calculate detonator energy to 2.0V	815 ergs	N/A	815 ergs	N/A	815 ergs	N/A
	j. Measure TP16 voltage at TDET + 300ms	0.5V	1.25V	0.5V	1.25V	0.5V	1.25V

TABLE VIII. Electrical test parameter definitions - Continued

12.0 PA and Det Times - Impact Set	a. VBAT=3.0V (TP 4) b. Tset to PD per 9.0 or 10.0 c. Close Spin Switch (TP 13 shorted to TP 109) d. At Tspin+1.05 sec., -0, +10ms, close Impact Switch (TP 18) to Ground e. Measure time from spin close to PA pulse occurrence (TP 17) f. Measure time from spin closure to Det pulse occurrence (TP16)						
		0.450sec ±0.4% at all Temp					
		1.0sec	1.1sec	1.0sec	1.1sec	1.0sec	1.1sec
13.0 Invalid Set Time Tset	a. VBAT=3.0V (TP 4) b. Test per 9.0 or 10.0 to 000.4 c. Close Spin Switch d. Monitor PA (TP 17) and Det (TP16) for 500ms. No pulses should occur e. Check Dud Latch per 18						
14.0 Short Spin Switch	a. Close Spin Switch b. VBAT=3.0V (TP 4) c. Set to 0.5 sec. per 9.0 or 10.0 d. Monitor PA(TP 17) and Det(TP 16) for 500ms for pulse occurrence. No pulses should occur e. Check Dud Latch per 18.0						
15.0 Early Impact Closure	a. VBAT=3.0V b. Set to PD per 9.0 or 10.0 c. Close Spin Switch d. Wait 0.2 sec. e. Close the Impact Switch f. Monitor PA(TP 17) and Det(TP 16) for 500ms for pulse occurrence. No pulses should occur						

TABLE VIII. Electrical test parameter definitions - Continued

16.0 POR Release time	a. VBAT=0.0V (TP 4) b. Pull test (TP 104) to VDD c. Monitor POR on Batstat2 TP 113 d. Apply power at VBAT=3.0 (TP 4) e. Measure time from power application to POR rising edge on TP 113		N/A	25 ms	N/A	25 ms	N/A	25 ms
17.0 Fast Clock	a. VBAT=3.0V (TP 4) b. Pull test (TP 104) to Vdd (TP 110) c. Tset to 199.9 sec using 9.0 or 10.0 d. Close Spin Switch e. Wait 0.552-0.553 seconds f. Open Spin Switch g. Switch Inductive Data (TP 8) to Vdd (TP 110) h. Apply to 1994 square wave pulses to the Impact Input (TP 18) at a 150KHz maximum frequency i. Test that the Fire Cmd Line (TP 12) is low j. Apply one square wave pulse, 10us minimum duration, to the Impact Input (TP 18) k. Test that the Fire Cmd Line (TP 12) is high							
18.0 Dud Latch Clock	a. Pull inductive data (TP 8) to ground b. Pull Level Advance (TP 20) and Count 1 Advance (TP 19) to ground c. Monitor Talkback Line (TP 9) for presence of crystal frequency: if none, Dud Latch is set.							
19.0 Backplane Voltage Check	a. VBAT = 3.0V (TP 4) b. Check voltage levels of BP1(TP 46) and BP2(TP 36) at Max, Mid and Min levels	MAX MID MIN	3.0V 1.5V -0.4V	5.0V 2.5V 0.5V	3.0V 1.5V -0.4V	5.0V 2.5V 0.5V	3.0V 1.5V 0.5V	5.0V 2.5V 0.5V

TABLE VIII. Electrical test parameter definitions - Continued

20.0 Startup Time	a. VBAT = 3.0V (TP 4) b. Delay time depending on the test temperature: 1. Ambient – 410ms 2. -60°F = 1.13 sec. 3. +160°F = 260ms c. Measure frequency of BP1 (TP 46) d. Measure frequency of BP2 (TP 36)	39Hz	41Hz	39Hz	41Hz	39Hz	41Hz
21.0 EA/Fuze Housing	a. Check resistance between ground and the Housing Assembly	0	0.15ohm	N/A	N/A	N/A	N/A
22.0 Impact Rise Time Closure	a. VBAT = 3.0V (TP 4) b. Connect Impact Switch (TP 18) to ground c. Disconnect Impact Switch (TP 18) from ground, measure rise time of TP 18 from 0.3 to 2.7 volt d. Monitor PA(TP 17) and Det(TP 16) for 500ms for pulse occurrence. No pulses should occur.	400us	750us	350us	750us	350us	750us
A.0 Count Increment	a. COUNTADV1B (TP 19) and COUNTADV2B (TP 107) open b. Toggle COUNTADV1B (TP 19) to Ground for 125ms ± 10ms c. Wait 75ms ±ms after COUNTADV1B closes d. Toggle COUNTADV2B (TP 107) to Ground for 125ms ± 10ms	N/A	N/A	N/A	N/A	N/A	N/A
B.0 Count Decrement	a. COUNTADV1B (TP 19) and COUNTADV2B (TP 107) open b. Toggle COUNTADV2B (TP 107) to Ground for 125ms ± 10ms c. Wait 75ms ± 10ms after COUNTADV2B closes d. Toggle COUNTADV1B (TP 19) to Ground for 125ms ± 10ms	N/A	N/A	N/A	N/A	N/A	N/A

TABLE IX. Modified PSD values @ the corresponding breakpoint frequencies

ITOP 1-2-601 FIGURE	BREAKPOINT FREQ (Hz)	MODIFIED PSD VALUE
B1	5	0.001
B2	5	0.001
B2	9	0.001
B3	5	0.001
B4	5	0.001
B4	8	0.001
B5	5	0.001
B5	6	0.001
B5	7	0.001
B6	5	0.001
B6	6	0.001
B6	8	0.001

Note: A tolerance of ± 1 Hz is allowed when programming frequency breakpoints.

TABLE X. Hot climatic design type: hot humid daily cycle of temperature, solar radiation, and humidity.

Local time	Operational Conditions							Storage & Transit Conditions		
	Ambient Air		Solar Radiation		R.H.	Dewpoint		Induced Air Temp.		R.H.
	°F	°C	Bph	W/M^2	%	°F	°C	°F	°C	%
0100	88	31	0	0	88	84	29	95	35	67
0200	88	31	0	0	88	84	29	94	34	72
0300	88	31	0	0	88	84	29	94	34	75
0400	88	31	0	0	88	84	29	93	34	77
0500	88	31	0	0	88	84	29	92	33	79
0600	90	32	15	45	85	85	29	91	33	80
0700	93	34	100	315	80	86	30	97	36	70
0800	96	36	177	560	76	87	31	104	40	54
0900	98	37	251	790	73	88	31	111	44	42
1000	100	38	302	950	69	88	31	124	51	31
1100	102	39	328	1035	65	88	31	135	57	24
1200	104	40	343	1080	62	88	31	144	62	17
1300	105	41	317	1000	59	88	31	151	66	16
1400	105	41	280	885	59	88	31	156	69	15
1500	105	41	225	710	59	88	31	160	71	14
1600	105	41	147	465	59	88	31	156	69	16
1700	102	39	66	210	65	88	31	151	66	18
1800	99	37	4	15	69	87	31	145	63	21
1900	97	36	0	0	73	87	31	136	58	29
2000	94	34	0	0	79	86	30	122	50	41
2100	91	33	0	0	85	86	30	105	41	53
2200	90	32	0	0	85	85	29	103	39	58
2300	89	32	0	0	88	85	29	99	37	62
2400	88	31	0	0	88	84	29	95	35	63

TABLE XI. Basic climatic design type, variable high humidity daily cycle of temperature, solar radiation, and humidity

Local time	Operational Conditions							Storage and Transit Conditions		
	Ambient Air		Solar Radiation		R.H.	Dewpoint		Induced Air Temp		R.H.
	°F	°C	Bph	W/m^2	%	°F	°C	°F	°C	%
0100	80	27	0	0	100	80	27	91	33	69
0200	79	26	0	0	100	79	26	90	32	70
0300	79	26	0	0	100	79	26	90	32	71
0400	79	26	0	0	100	79	26	88	31	72
0500	78	26	0	0	100	78	26	86	30	74
0600	78	26	15	45	100	78	26	88	31	75
0700	81	27	73	230	94	79	26	93	34	64
0800	84	29	138	435	88	80	27	101	38	54
0900	87	31	200	630	82	81	27	107	42	43
1000	89	32	252	795	79	82	28	113	45	36
1100	92	33	286	900	77	83	28	124	51	29
1200	94	34	307	970	75	84	29	134	57	22
1300	94	34	307	970	74	84	29	142	61	21
1400	95	35	286	900	74	85	29	145	63	20
1500	95	35	252	795	74	86	30	145	63	19
1600	93	34	200	630	76	85	29	144	62	20
1700	92	33	138	435	79	84	29	140	60	21
1800	90	32	73	230	82	84	29	134	57	22
1900	88	31	15	45	81	83	28	122	50	32
2000	85	29	0	0	91	83	28	111	44	43
2100	83	28	0	0	95	82	28	101	38	54
2200	82	28	0	0	96	81	27	95	35	59
2300	81	27	0	0	100	81	27	93	34	63
2400	80	27	0	0	100	80	27	91	33	68

TABLE XII. Basic climatic design type; cold daily cycle of temperature, humidity, and solar radiation

Local time	Operational Conditions							Storage and Transit Conditions		
	Ambient Air		Solar Radiation		R.H.	Dewpoint		Induced Air Temp		R.H.
	°F	°C	Bph	W/M^2	%	°F	°C	°F	°C	%
0100	-24	-31						-27	-33	
0200	-25	-32						-28	-33	
0300	-25	-32						-28	-33	
0400	-25	-32						-28	-33	
0500	-25	-32						-28	-33	
0600	-25	-32						-28	-33	
0700	-22	-30						-27	-33	
0800	-18	-28						-27	-33	
0900	-15	-26						-26	-32	
1000	-12	-24						-24	-31	
1100	-8	-22						-22	-30	
1200	-5	-21						-19	-28	
1300	-5	-21						-17	-27	
1400	-6	-21						-15	-26	
1500	-6	-21						-13	-25	
1600	-8	-22						-15	-26	
1700	-11	-24						-18	-28	
1800	-13	-25						-20	-29	
1900	-15	-26						-22	-30	
2000	-17	-27						-24	-31	
2100	-19	-28						-26	-32	
2200	-21	-29						-27	-33	
2300	-22	-30						-27	-33	
2400	-24	-31						-27	-33	

TABLE XIII. Cold climatic design type; daily cycle of temperature, humidity, and solar radiation.

Local time	Operational Conditions							Storage and Transit Conditions		
	Ambient Air		Solar Radiation		R.H.	Dewpoint		Induced Air Temp		R.H.
	°F	°C	Bph	W/M^2	%	°F	°C	°F	°C	%
0100	-50	-46						-50	-46	
0200	-50	-46						-50	-46	
0300	-50	-46						-50	-46	
0400	-50	-46						-50	-46	
0500	-50	-46						-50	-46	
0600	-50	-46						-50	-46	
0700	-49	-45						-49	-45	
0800	-47	-44						-47	-44	
0900	-45	-43						-45	-43	
1000	-42	-41						-42	-41	
1100	-39	-39						-39	-39	
1200	-35	-37						-35	-37	
1300	-35	-37						-35	-37	
1400	-35	-37						-35	-37	
1500	-35	-37						-35	-37	
1600	-36	-38						-36	-38	
1700	-38	-39						-38	-39	
1800	-39	-39						-39	-39	
1900	-41	-41						-41	-41	
2000	-43	-42						-43	-42	
2100	-45	-43						-45	-43	
2200	-47	-44						-47	-44	
2300	-48	-44						-48	-44	
2400	-49	-45						-49	-45	

Table XIV First article safety / sequential operational gunfire matrix

Code[1]	Caliber	Weapon	Tube[2]	Propellant	Zone[3]	Projectile[4]	Temp[5] Fuze	Temp[5] Proj	Temp[5] Prop
1	105MM	M119	M20A1	M200	8	M760	-45 F	+70 F	+70 F
(2)	155MM	M198	M199	M232	5	M864	-45 F	-45 F	+70 F
[2A]	155MM	M198	M199	M232	5	M549A1[6]	-45 F	-45 F	+70 F
3	105MM	M101A1	M2A2	M67	1	M1	-60 F	+70 F	+70 F
4	155MM	M109A2/A3	M185	M232	1	M107	-60 F	-60 F	+70 F
5	105MM	M119	M20A1	M200	8	M760	-60 F	+70 F	+70 F
(6)	155MM	M198	M199	M232	5	M864	-60 F	-60 F	+70 F
[6A]	155MM	M198	M199	M232	5	M549A1[6]	-60 F	-60 F	+70 F
7	105MM	M119	M20A1	M200	8	M760	+145 F	+145 F	+145 F
(8)	155MM	M198	M199	M232	5	M864	+145 F	+145 F	+145 F
[8A]	155MM	M198	M199	M232	5	M549A1[6]	+145 F	+145 F	+145 F
9	105MM	M101A1	M2A2	M67	1	M1	+145 F	+145 F	+145 F
10	155MM	M109A2/A3	M185	M231	1	M107	+145 F	+145 F	+145 F
11	105MM	M119	M20A1	M200	8	M760	+145 F	+145 F	+145 F
(12)	155MM	M198	M199	M232	5	M864	+145 F	+145 F	+145 F
[12A]	155MM	M198	M199	M232	5	M549A1[6]	+145 F	+145 F	+145 F

Notes:

1. Code numbers are from figure 1 and figure 2. Brackets ( ) apply to M762A1 fuze only while the code numbers enclosed by [ ] brackets shall apply to M767A1 fuze less booster only. Code numbers without brackets shall apply to both type of fuzes.
2. All tubes 25% remaining life or better..
3. For the M762A1, fire fuzes in 80 percent time/20 percent PD mode. For the M767A1, fire fuzes in 30 percent time/70 percent PD mode. The time mode setting shall be so that a minimum of 75 percent range will be achieved using standard weapon quadrant elevations. Time and point detonating mode settings shall be per 4.5.4.3. Fuzes fired in the point detonating mode shall be fired at a quadrant elevation between 800 and 900 mils.
4. The booster for fuzes shall be the M767A1 booster assembly. The M767A1 booster assembly shall not be subjected to sequential environments. The M767A1 booster assembly shall be installed at the test site for M762A1 and at the loading facility for M767A1.
5. Hot projectile temperature may be lowered to 125 F to avoid exudation. For the 105mm, projectile and charge shall be conditioned at the same temperature.
6. Projectiles shall be fired in the rocket-on mode.

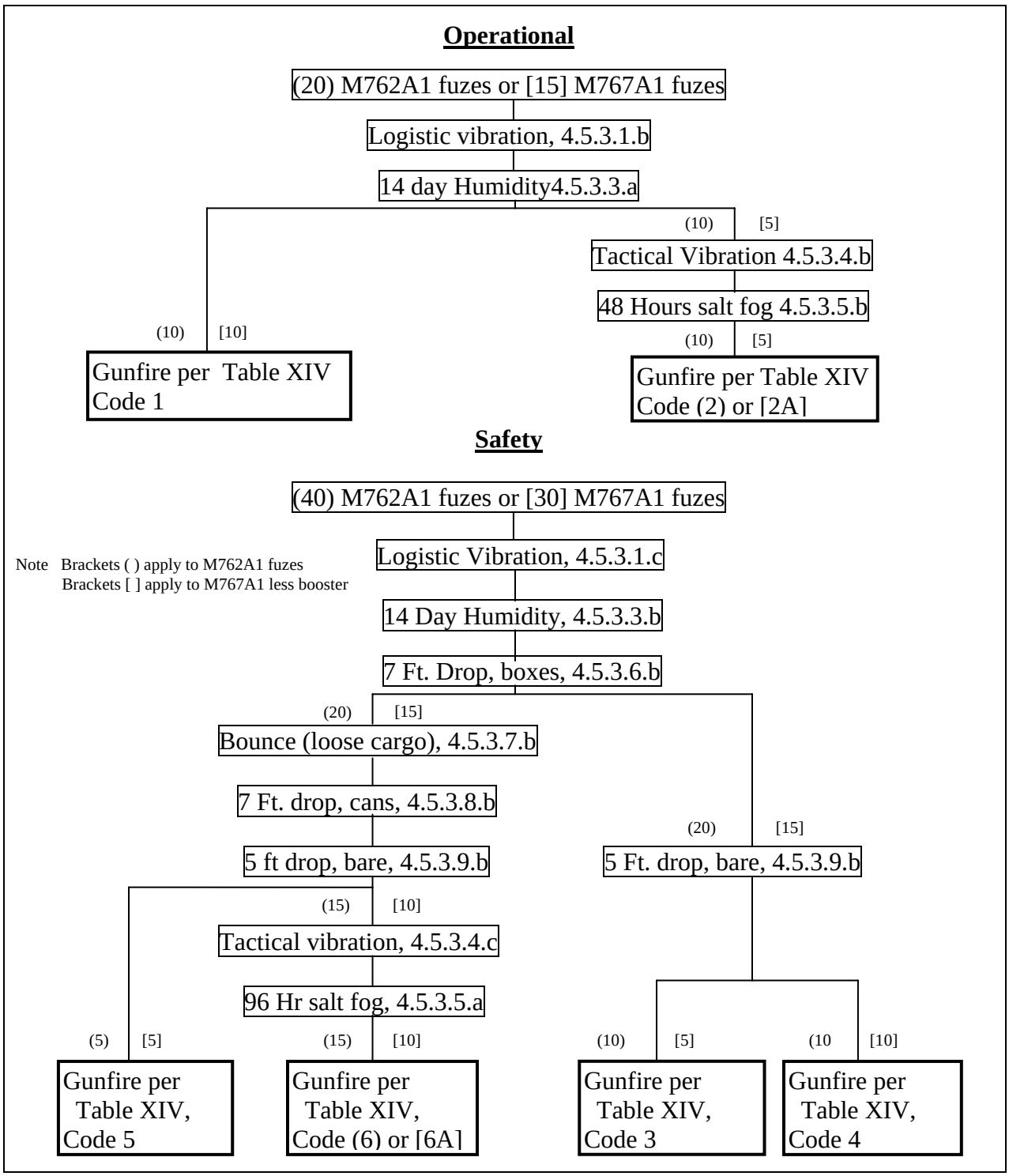

FIGURE 1. First article cold temperature sequential operational and safety tests

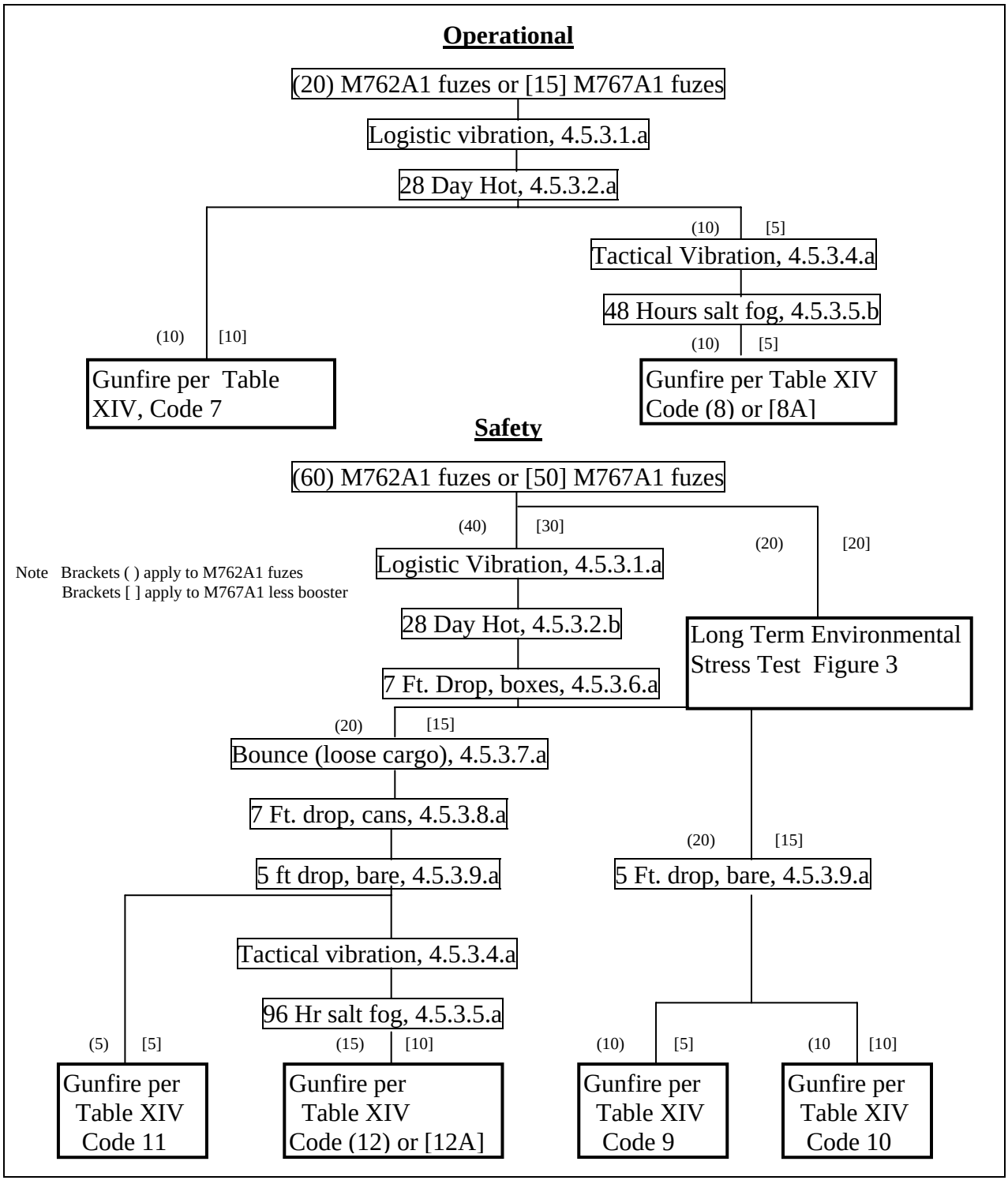

FIGURE 2. First article hot temperature sequential operational and safety tests

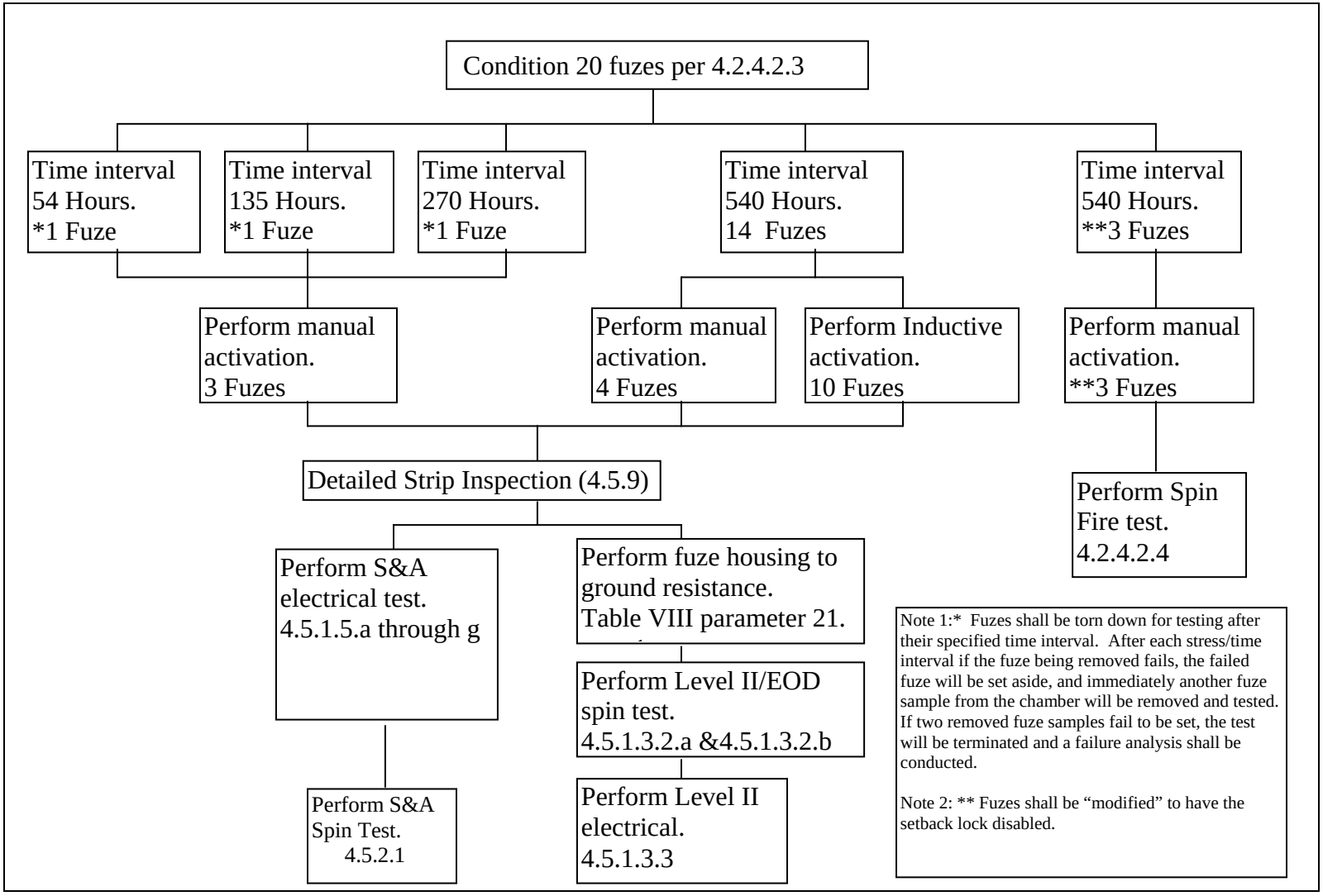

FIGURE 3. First article long term environmental stress test

Preparing activity:
Army – AR

(Project 1390-2007-002.)

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at http://assist.daps.dla.mil