

INCH-POUND

MIL-DTL-82889A (OS)
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 SUPERSEDING
 MIL-DTL-82889 (OS)
 22 August 1996

DETAIL SPECIFICATION

DETONATING CORD ASSEMBLY (DCA)

This specification is approved for use by the Naval Sea Systems Command, Department of the Navy, and is available for use by all Departments and Agencies of the Departments of Defense.

1. SCOPE

1.1 Scope. This specification covers the requirements for two types of detonating cord assemblies (see 6.1).

1.2 Classification. Detonating cord assemblies will be of the following types, as specified (see 6.2):

Type I	Standard TLX line. This line has a high explosive fitting on each end.
Type II	Referred to as "High flexure TLX line". It is the same as a standard TLX line, except the outer surface of the assembly, between then end fittings, is covered with a protective layer of material to prevent chaffing during flexure.

2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3, 4 or 5 of this specification. This section does not include documents cited in other sections of this specification or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements of documents cited in sections 3, 4 or 5 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.

SPECIFICATIONS

Comments, suggestions, or questions on this document should be addressed to Commander, Indian Head Division, Naval Surface Warfare Center, Technical Information Branch (Code 4230), 101 Strauss Avenue, Indian Head, Maryland 20640-5035, or emailed to pennlf@ih.navy.mil. Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at www.dodssp.daps.mil.

AMSC N/A

FSC 1377

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FEDERAL

A-A-59281	Cleaning Compound, Solvent Mixtures
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DEPARTMENT OF DEFENSE

MIL-I-8500	Interchangeability and Replaceability of Component Parts for Aerospace Vehicles
MIL-L-14758	Lead Azide (Special Purpose) (For Use in Ammunition)
MIL-PRF-46010	Lubricant, Solid Film, Heat Cured, Corrosion Inhibiting
MIL-C-83125	Cartridge for Cartridge Actuated/Propellant Actuated Devices, General Design Specification for

STANDARDS

Department of Defense

MIL-STD-810	Environmental Engineering Considerations and Laboratory Tests
MIL-STD-1168	Ammunition Lot Numbering and Ammunition Data Card
DOD-STD-2101	Classification of Characteristics

(Copies of these documents are available online at <http://assist.daps.dla.mil/quicksearch/> or www.dodssp.daps.mil or from the Standardization Document Order Desk, 700 Robbins Avenue, Building 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 or contract.

SPECIFICATIONS

Naval Sea Systems Command (Code Ident 53711)

WS 5003	Hexanitrostilbene (HNS), Explosive
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DRAWINGS

Naval Air Systems Command (Code 30003)

841AS801	Fitting, Sensitivity Test
841AS802	Connector, Tee
841AS803	Block, Dent
841AS804	Holder, Dent Block
850AS875	RAU-2/A Detonating Cord Assembly

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(Application for copies should be addressed to: Commander, Indian Head Division, Naval Surface Warfare Center, Attn: Technical Information Branch (Code 4230), Indian Head, MD 20640-5035.)

2.3 Non-Government publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

American Society for Testing and Materials (ASTM)

ASTM B 117	Standard Practice for Operating Salt Spray (Fog) Apparatus
ASTM E 748	Standard Practices for Thermal Neutron Radiography of Materials
ASTM D 1141	Standard Practices for the Preparation of Substitute Ocean Water
ASTM E 1742	Standard Practices for Radiographic Examination

(Copies of this document are available online at <http://www.astm.org/cgi-bin/SoftCart.exe/STORE/standardsearch.shtml?L+mystore+afpt6301+1062008944> or from the American Society for Testing and Materials Customer Service, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.)

2.4 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 in the contract or purchase order, a sample shall be subjected to first article inspection (see 4.3, 4.6, and 6.3).

3.2 Conformance to documents. All materials used in the manufacture of the DCA shall conform with the specifications referenced unless specific approval in writing covering a departure therefrom has been obtained from the Naval cognizant field activity for DCAs prior to manufacture. TLX design and construction shall be identical to that approved for service use by the Navy. Any design changes affecting the interchangeability or performance of these items shall be subject to approval by the cognizant governmental design activity.

3.3 Primary components. For the purpose of this specification, the thin layer explosive (HMX and Aluminum), the booster tip explosive (HNS, WS5003), and transfer charge (Lead Azide, MIL-L-14758) are considered primary components.

3.4 Design and construction. The design and construction of the DCAs shall meet all requirements of this specification with special effort to ensure inherent reliability so that the equipment will consistently perform as specified. The requirements of MIL-C-83125 shall apply as requirements of this specification for manufacturing, testing, and procurement with the exceptions and additions specified herein. The cord, end fittings and booster tip shall form a continuous metallic enclosure, i.e. faraday cage, around the explosive elements such that they are protected from the affects of Electrostatic Discharge (ESD). The cord shall be annealed to stabilize cord length prior to use. All parts with the same dash number shall be dimensionally and functionally interchangeable per MIL-I-8500. Aluminum end fittings shall withstand 90 inch-pounds minimum

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assembly torque without deformation and stainless steel end fittings shall withstand 120 inch-pounds. DCAs shall be configured such that the energy stimulus shall be contained and shall not emit shrapnel when fired in the "as-installed" condition. DCA end fittings shall remain intact in the port. Out-gassing of the DCA and fraying of the stainless steel overbraid are permissible provided that some of the overbraid remains intact and the aforementioned criteria is met. DCAs shall be constructed such that the portion of the assembly between end fittings shall not separate or disengage from the end fittings when fired in the installed condition at the temperatures specified herein.

3.5 Item definition. DCAs are the explosive stimulus used to provide for the transfer of explosive stimulus from one pyrotechnic device to another.

3.6 Item configuration. Each individual DCA shall conform to the configuration of the appropriate slash sheet and satisfy any additional tests or inspections therein.

3.7 DCA processing line inspections.

3.7.1 Length Stabilization. The cord shall be annealed to stabilize cord length prior to use. The minimum percent shrinkage achieved when first annealed shall not be less than 1.25% of the cord total length. When retested in accordance with 4.7.1, the minimum shrinkage shall be .2% of the sample length.

3.7.2 Visual inspection. DCAs shall be free of visual defects such as, but not limited to, burrs, deep scratches, defective ferrules and fittings, corrosion, chipped surfaces, or other defects which may prevent assembly or affect the environmental stability of the line. The threads of the DCA end fittings shall be dry film lubricated with MIL-PRF-46010. The dash number tape, identification tape, clamp point tape and identification plate shall be verified to be in compliance with 850AS875.

3.7.3 Radiographic inspection.

3.7.3.1 X-ray examination. Each DCA end assembly and approximately 3 inches of line behind the tips shall be X-rayed. All defects shall be identified on the film and defective DCAs removed from the lot (see 4.6.9).

3.7.3.2 N-ray examination. Each DCA shall be N-rayed along the full length of the longitudinal axis. All defects shall be identified on the film and the defective DCAs removed from the lot (see 4.6.9).

3.7.4 Halar tubing. Each roll of Halar tubing shall be internal pressure tested to " 1 atmosphere and inspected to assure no leakage before coating with HMX and Al (see 4.2.2).

3.7.5 DCA cord. The spool of cord proposed for use in production shall be tested on each end and every 500 feet to meet the detonation velocity requirements of 1400 to 2500 meters per second (see 4.2.3).

3.7.6 Corrosion. All components scheduled for use in production shall be free of corrosive products (see 4.2.5).

3.7.7 End fittings leakage. Each end fitting will be leak tested in a dry gas leak tester. End fittings which exhibit a leak rate in excess of 10^{-5} cc/sec of air at a pressure differential of 1 ± 0.1 atmosphere, when tested

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in accordance with paragraph 4.2.6, shall be considered defective. End fittings which exhibit a leak rate in excess of that specified above shall be rejected.

3.7.8 Explosive weight. Every 1,000 feet a 1-meter section of cord shall be taken to verify the requirement of 20 " 10 mg of HMX and Al per meter (see 4.2.7).

3.7.9 End fitting tensile test. The end fitting joint between the outer ferrule and the braided stainless steel casing shall be capable of withstanding a tensile load of 150 pounds minimum (see 4.2.4).

3.8 First article environmental exposure. The first article test (FAT) samples shall be environmentally conditioned in accordance with MIL-D-83125 and the test matrix of table II herein, with the exception of using an upper temperature limit of 350°F for pressure cycling and temperature cycling.

3.8.1 Shock. DCAs shall meet the performance requirements of 3.9 after being exposed to the shock environment (see 4.6.1).

3.8.2 Temperature, humidity, shock, and altitude. DCAs subjected to temperature, humidity, shock, and altitude environments shall meet the performance requirements of 3.9 (see 4.6.2).

3.8.3 Vibration. DCAs shall meet the performance requirements of 3.9 after being exposed to random sinusoidal vibration environments (see 4.6.3).

3.8.4 Pressure cycling. DCAs shall meet the performance requirements of 3.9 after pressure cycling from 3 inches of mercury to 29.92 inches of mercury at temperatures of -65°F to 350°F (see 4.6.4).

3.8.5 Temperature cycling. DCAs shall meet the performance requirements of 3.9 after temperature cycling between -65°F and 350°F (see 4.6.5).

3.8.6 Minimum bend/flex. Six lines shall be wrapped a minimum of four turns on a 1-inch-diameter helix along the centerline for 4 hours minimum and meet the requirements of 3.9 (see 4.6.6).

3.8.7 Flexure Type II only. Lines shall be capable of 3,000 cycles of flexure with degradation or damage when installed between the F-18 fuselage and the canopy (see 4.6.7).

3.8.8 Salt fog. DCAs shall meet the performance requirements of 3.9 after exposure to salt/fog environments (see 4.6.7).

3.8.9 Solvent resistance. DCAs shall meet the performance requirements of 3.9 after exposure to a general purpose cleaner per A-A-59281, type I, according to table I. Each exposure requires the line to be fully submerged in the cleaner for 10 seconds minimum, then allowed to air dry completely (see 4.6.8).

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TABLE I. Exposures for each line number.

DCA Line Number	Number of Exposures
1	35
2	40
3	45
4	50
5	60
6	70

3.9 Ballistic requirements. The ballistic sample shall meet the requirements of 3.9.1.

3.9.1 Sensitivity. DCAs shall be fired through a sensitivity connector (Drawing 841AS801) into a sensitivity fixture from a tee (Drawing 841AS802) that is fired from one of two SMDC test tips. Each assembly shall have a 1-inch-diameter loop in the assembly when tested. The assembly, when conditioned at -65°F or 200°F , shall propagate and produce an indent of at least 0.040 inch in a 6061-T6 aluminum dent block (Drawing 841AS803) secured in a dent block holder (drawing 841AS804).

3.10 Workmanship. DCAs shall be constructed and finished in a manner to assure compliance with all requirements of this specification. Particular attention shall be directed to dimensions, finishes, crimping, sealing, and assembly operations.

4. VERIFICATION

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

- a. First article inspection (see 4.3)
- b. Lot acceptance inspection (see 4.5)

4.2 Inspection conditions. Unless otherwise specified (see 6.2), all inspections shall be performed in accordance with the test conditions specified in 4.6 and 4.7.

4.2.1 Interchangeability. The contractor shall conduct inspections of the production lot to verify total interchangeability of the lines and fittings.

4.2.2 Halar integrity. One end of the tube will be sealed and a + 1 atmosphere of air pressure applied to the other end for 5 minutes with no pressure loss.

4.2.3 Cord velocity. Each end and every 500 feet of planned cord production shall be tested for velocity measurement prior to actually producing any DCAs.

4.2.4 End fitting strength. Five DCAs from the lot acceptance test sample shall be subjected to the 150-pound load test to verify the fitting strength. The 150-pound load shall be reached by applying the load at a

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rate of 6 pounds per second. The load shall be maintained for 60 seconds minimum. The lines shall be radiographed and any units showing a gap greater than 0.050 inch between the bottom center bore and the Halar shall reject the lot. If it is decided to ballistically test the rejects and they meet the requirements of 3.9.2 the lot may be considered for acceptance depending on the rest of the testing.

4.2.5 Corrosion. All parts shall be visually inspected to assure there are no corrosion products on the hardware and that the threads are coated with dry film lubricant.

4.2.6 End fitting leakage. Each end fitting shall be tested in a dry gas leakage tester to demonstrate that the requirement of 3.7.3.4 is met.

4.2.7 Explosive weight. The explosive shall be removed from the cord and the residue weighed to the nearest milligram to verify explosive weight.

4.3 First article inspection. First article inspection shall be performed after award of contract and prior to production at a location acceptable to the Government (see 6.3). First article inspection shall be performed, as specified in table II, on sample units which have been produced with equipment and procedures normally used in production. First article approval is valid only on the contract under which it is granted, unless extended by the Government to other contracts.

TABLE II. First article inspection.

Test	Reqmnt Para	Test Para	Group Number						Total per test
			I	II	III	IV	V	VI	
X-ray	3.7.3.1	4.6.10	5	5	3	3	3	3	22
N-ray	3.7.3.2	4.6.10	5	5	3	3	3	3	22
Visual	3.7.2 & 3.7.4.3	4.2.5	5	5	3	3	3	3	22
Temp Shock, Humidity and altitude	3.8.2	4.6.2	5	5					10
20 G Shock	3.8.1	4.6.1	5	5					10
Vibration	3.8.3	4.6.3	5	5					10
Pressure cycling	3.8.4	4.6.4	5	5					10
Temperature cycling	3.8.5	4.6.4	5	5					10
Minimum bend/flex	3.8.6	4.6.6			3	3			6
Flexure (Type II only)	3.8.7	4.6.7	5	5					10
Salt fog	3.8.8	4.6.8	5	5					10
Solvent resistance	3.8.9	4.6.9					3	3	6
Ballistics -65°F	3.9.1	4.6.11	5		3		3		11
Ballistics 200°F	3.9.1	4.6.11		5		3		3	11

4.3.1 Sample size. Unless otherwise specified (see 6.3), 23 DCA lines representative of the planned production shall be sequentially conditioned and ballistically tested with the exception that one shall be kept as a retain sample for investigative purposes.

4.3.2 Inspection routine.

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4.3.2.1 Detonating cord assemblies. The samples shall undergo the non-destructive examinations and tests of 3.7 prior to environmental exposure as described in Table II. The tolerance on temperatures shall be $\pm 5^\circ\text{F}$. The environmental exposures shall be sequential as follows: Temperature Shock and Humidity Altitude, Sinusoidal Vibration, Pressure Cycling, Temperature Cycling, Minimum Bend/Flex Test, Salt Fog, and Solvent Exposure. The conditioning temperatures for ballistic testing are -65°F and 200°F with half fired at each temperature. Temperature conditioning at the extremes shall be no less than 4 hours and no more than 24 hours.

4.3.2 Failures. The failure of any DCA to meet the requirements of 3.9 shall cause rejection of the first article sample.

4.4 Classification of characteristics. The characteristics verified by the tests and examinations herein are classified as critical, major or minor in accordance with DOD-STD-2101. Tests and examinations that verify critical characteristics are identified by the symbol (C) and major characteristics by the symbol (M). The number following the classification symbol indicates the serial number of test or examination. Tests and examinations which are not annotated with a classification code are classified minor.

4.5 Quality conformance inspection. Quality conformance inspection shall consist of verification of the characteristics listed in table III.

TABLE III. Quality conformance testing.

Requirement	Rqmnt Para	Test para	Classification
Length Stabilization	3.7.1	4.7.1	M101
Visual inspection	3.7.2		M102
X-ray	3.7.3.1	4.6.10	M103
N-ray	3.7.3.2	4.6.10	M104
Halar Tubing	3.7.4	4.2.2	
DCA Cord	3.7.5	4.2.3	
Corrosion	3.7.6	4.2.5	
End Fittings Leakage	3.7.7	4.2.6	M105
Explosive Weight	3.7.8	4.2.7	
End Fitting Tensile Test	3.7.9	4.2.4	
Ballistics	3.9	4.6.11	M106
Packaging and Marking		4.5.3	M107

4.5.1 Lot size. Unless otherwise specified in the contract (see 6.2), the DCA production lot size shall be from 91 minimum to 500 maximum. DCAs required for all test purposes shall be randomly selected from the

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production lot and shall not be applied as a part of the quantity specified for delivery by the contract. Only primary components from a single lot shall be used in a production lot of DCAs, however, one primary component production lot may be used in more than one DCA production lot. DCAs for the ballistic tests shall be delivered to the activity designated by the contracting agency (see 6.2).

4.5.2 Sampling. Unless otherwise specified in the contract, ballistic samples shall be randomly selected per table IV with two samples retained regardless of lot size.

TABLE IV. Sample selection.

Lot size range	Sample size	Ballistic Test Qty	End Fitting Tensile Test Qty
091 – 150	25	20	5
151 – 280	35	30	5
281 – 500	55	50	5

4.5.3 Packaging, packing and marking. Inspect to verify items are packaged and marked in accordance with SPI 520-174-0284 and 5.1.

4.6 First article tests.

4.6.1 20 G shock. The 20 G shock test shall be conducted on ten assemblies to ensure that the requirements of MIL-STD-810C, method 516, Procedure I is met. The shock pulse waveform shall be terminal peak sawtooth. The amplitude shall be 20 G and the duration 11 ms. Tips and centers of the lines shall be supported as in actual installation.

4.6.2 Temperature, humidity, shock and altitude. Ten assemblies shall be subjected to the 28-day exposure to temperature, humidity, shock, and altitude environments as detailed in MIL-C-83125.

4.6.3 Vibration (sinusoidal). This test shall be conducted on ten assemblies in accordance with the vibration test selection chart in table 514-1 of MIL-STD-810C (Aircraft category, procedure 1, parts 1, 2, and 3 and curve Z up to and including 2000 cps), except that for each resonant and cycling period the test specimen shall be divided equally for vibration at –65, 70, and 200°F. After testing, the DCA shall meet the requirements of 3.9.

4.6.4 Pressure cycling. Ten assemblies shall be subjected to a minimum of 100 pressure cycles with 50 cycles conducted at 350°F and 50 cycles at –65°F. One pressure cycle shall consist of the following sequence: the pressure shall be 29.92 inches mercury (Hg) and held for 5 minutes and then reduced to 3.00 inches Hg in less than 5 minutes. The absolute pressures shall be maintained at 3.00 inches Hg for 25 minutes then increased to 29.92 inches Hg in less than 5 minutes and maintained at 29.92 inches Hg for 25 minutes. One cycle shall have a 60 minute duration. There shall be no withdrawals during the pressure cycling. The requirements of 3.7 shall be met after exposure to pressure cycling.

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4.6.5 Temperature cycling. After pressure cycling the ten DCAs shall be subjected to a minimum of 100 temperature cycles. One temperature cycle shall consist of the following sequence: The temperature shall be stabilized at -65°F and maintained for 55 minutes. The temperature shall then be raised to 350°F in 5 minutes and maintained for 55 minutes and then lowered to -65°F in 5 minutes. One cycle shall have a 2 hour duration.

4.6.6 Minimum bend/flex. Six DCAs shall be wrapped in a 1-inch-diameter helix along the centerline for four complete revolutions and shall remain in that configuration for 2 hours. The assemblies shall meet the requirements of 3.9 when tested.

4.6.7 Flexure Type II only. Sample, in accordance with Table II, will be subjected to 3,000 cycles at a maximum rate of six cycles per minute. One Cycle shall consist of moving the canopy from the closed-locked position to the extreme open position and back to the closed and locked position. After cycling the lines will be x-rayed in accordance with paragraph 4.6.10, divided into two equal sized groups and test fired at the temperature extremes.

4.6.8 Salt fog. The salt fog test shall be conducted in accordance with ASTM B 117 except that sea water per ASTM D 1141 shall be used in place of a 5 percent salt solution. The control of pH and salt impurity requirements per ASTM B 117 shall not apply. Test duration shall be 168 hours.

4.6.9 Solvent resistance. Six DCAs shall be subjected to repeated exposures of General Purpose Cleaner A-A-59281, Type I, according to table I.

4.6.10 Radiographic examination. All DCAs in the first article sample or production lot shall be radiographically examined in accordance with ASTM E1742 and ASTM E 748. Any observable imperfections in components or assembly of the DCA lines shall be cause for rejection. The DCAs shall be positioned on their sides for the most revealing exposure. DCAs shall be arranged on trays or boards in consecutive numerical order and each radiograph shall carry a permanent identification displayed thereon. The radiographic identification shall include the complete lot number, the contract number, drawing number, and the span of serial numbers displayed. Defective DCAs found by the vendor shall be clearly identified on the X-ray and those defective DCAs removed from the production lot. The serial numbers shall be located apart from other markings.

4.6.10.1 Serialization. All DCAs shall be identified with serial numbers prior to examination. The serial numbers shall be in consecutive numerical order beginning with the number 001. Assemblies shall be arranged on trays or boards in consecutive numerical order and each radiograph shall carry a permanent identification displayed thereon. The radiographic identification shall include the complete lot number, the contract number, drawing number, and the span of serial numbers displayed. Defective assemblies found by the vendor shall be clearly identified on the X-ray and those defectives removed from the production lot. The serial numbers shall be located apart from other markings.

4.6.11 Ballistic testing. After successfully completing the above examinations the assemblies shall be conditioned as specified in 4.3.2.1. Assemblies shall be removed from the conditioning chamber and tested per 3.9.1 within 5 minutes after removal from the conditioning chamber. If this time is exceeded, the test samples shall be removed from the test fixture and reconditioned for 1 hour minimum as the specified temperature.

4.7 Quality conformance tests.

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4.7.1 Length stabilization. The TLX cord, prior to its use in TLX manufacture, shall be annealed at a stabilized temperature of $300 \pm 5^\circ\text{F}$ for 60 to 65 minutes continuous. For every continuous length of cord annealed (approximately 1,000 ft max.), 3 samples ($36 \pm .10$ inches per sample) shall be cut from the cord. These samples shall be annealed to the time and temperature described above and shall meet the requirement of 3.7.1 for retest.

4.7.2 DCA inspections. The sample shall have met the requirements of 3.2 through 3.9.

4.7.3 Ballistic testing. The DCAs shall be grouped into two equal sections with one group conditioned at $-65 \pm 5^\circ\text{F}$ and the other group conditioned at $200 \pm 5^\circ\text{F}$ for 4 hours minimum to 24 hours maximum. The DCAs shall then be functionally tested in accordance with 3.9.1 using a number 8 blasting cap on the test tip. The lot shall be accepted if the requirements of 3.9.1 have been met with an accept of zero and a reject of one or more criteria.

4.7.3.1 Retest. There shall be no retests.

4.7.3.2 Test failure. If a test failure is attributable to an assignable cause, excluding the DCAs, the original test results shall be discarded and that portion of the test reconducted using a retain sample from the lot.

5. PACKAGING

5.1 Packaging. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When packaging of materiel is to be performed by DoD or in-house contractor personnel, these personnel need to contact the responsible packaging activity to ascertain packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activities within the Military Service or Defense Agency, or within the military service's system commands. 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. Generally, both Type I and Type II DCAs are intended as a rapid energy source to provide an explosive release signal in the aircraft emergency systems. Specifically Type II (CP) lines are used in areas requiring more flexure during their life cycle than Type I (standard) lines. Type II lines have a protective coating to prevent damage and are required to pass additional cycling tests. These items were specifically designed for use in these military aircraft, and thus have no commercial application.

6.2 Ordering data. Acquisition documents should specify the following:

- a. Title, number and date of this specification.

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- b. Issue of DODISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.2.1, 2.2.2, and 2.4).
- c. Type of DCA required (see 1.2).
- d. Whether first article inspection is required and if so specify the test activity (see 3.1 and 4.3).
- e. Inspection conditions if other than as specified in 4.2.
- f. Sample size if other than as specified in 4.3.1.
- g. Production lot size and test activity (see 4.5.1).
- h. Marking if other than as specified in 5.1 and 6.5.1.
- i. That the safety precaution requirements of the "Contractors' Safety Manual for Ammunition, Explosives and Related Dangerous Material," DOD 4145.26M are applicable. NOTE: When this specification is used as a part of the description of work to be accomplished by a Government activity the safety precaution requirements of "Ammunition and Explosives," OP 5, are applicable.

6.3 First article. When a first article inspection is required the items should be a first article lot. The first article lot should consist of 23 DCAs. The contracting officer should include specific instructions in acquisition documents regarding arrangements for examinations, approval of first article test results and disposition of the lot. Invitations for bids should provide that the Government reserves the right to waive the requirement for samples for first article inspection to those bidders offering a product which has been previously acquired or tested by the Government and that bidders offering such products, who wish to rely on such previous production or tests, must furnish evidence with the bid that prior Government approval is presently appropriate for the pending contract.

6.4 Definitions. For the purpose of this specification the following definitions apply.

6.4.1 Level A packaging. The degree of preservation and packaging which will afford adequate protection against corrosion, deterioration and physical handling, shipment, indeterminate storage and world-wide redistribution.

6.4.2 Level C packaging. The degree of preservation and packaging which will afford adequate protection against corrosion, deterioration and physical damage during shipment from supply source to the first receiving activity for immediate use. This level may conform to supplier's commercial practice when such meets the requirements of this level and MIL-STD-129.

6.4.3 Level A packing. The degree of packing which will afford adequate protection during shipment, handling, indeterminate storage and world-wide distribution.

6.4.4 Level C packing. The degree of packing which will afford protection against damage during direct domestic shipment from the supply source to the first activity for immediate use. This level in general will

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conform to the applicable carrier rules and regulations and may be the supplier's commercial practice when such meets the requirement of this level.

6.5 Contract packaging and marking. The following marking requirements should be specified in the contract.

6.5.1 Markings.

6.5.1.1 Special markings. Marking of interior, intermediate and exterior containers should be in accordance with 49 CFR 171-178 and MIL-STD-129.

6.5.1.2 Normal markings. Unless otherwise specified in the contract or order, the marking information on unit packages and shipping containers should be as specified below: The specified marking information should be applied to the containers in accordance with the applicable provisions of MIL-STD-129.

Inner Container Marking

- a. National Stock Number and DODIC
- b. Nomenclature: Cord Assembly, Detonating
- c. Drawing Number
- d. Quantity: One
- e. Lot Number in accordance with MIL-STD-1168
- f. Dash Number
- g. Warning: Ammunition, Non-explosive

Outer Container Marking

- a. National Stock Number and DODIC
- b. Nomenclature: Cord Assembly, Detonating
- c. Drawing Number
- d. Quantity
- e. Lot Number in accordance with MIL-STD-1168
- f. Dash Number
- g. Gross weight and Cube
- h. Contract or Purchase Order
- i. Warning: Ammunition, Non-explosive

6.5.1.3 Explanation of terms. For the purpose of this specification, NAVSUPINST 4030.28B should be used to clarify terms.

6.6 Subject term (keyword) list.

Aluminum
Halar
HMX
HNS

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Lead azide

Shielded mild detonating cord (SMDC)

6.7 Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent of the changes. The changes from the previous issue were authorized by ECP number 035220V019.

Preparing activity:

Navy - OS

(Project 1377-0214)

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://www.dodssp.daps.mil>.