

INCH-POUND

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	Referred to simply as DCAs; manufactured in accordance with individual slash sheets to this specification.
Type II	Referred to as RAU-2/A Detonating Cord Assemblies; manufactured in accordance with Drawing 850AS875.

**2. APPLICABLE DOCUMENTS****2.1 Government documents.**

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

## SPECIFICATIONS

MIL-I-8500	Interchangeability and Replaceability of Component Parts for Aerospace Vehicles
MIL-L-14758	Lead Azide (Special Purpose) (For Use in Ammunition)
MIL-C-38736	Cleaning Compound, Solvent Mixtures (Metric)
MIL-L-46010	Lubricant, Solid Film, Heat Cured, Corrosion Inhibiting
MIL-C-83125	Cartridge for Cartridge Actuated/Propellant Actuated Devices, General Design Specification for

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commander, Indian Head Division, Naval Surface Warfare Center, Standardization Branch (Code 8420), 101 Strauss Avenue, Indian Head, MD 20640-5035, by using the Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by sending a letter.

AMSC N/A

FSC 1377

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

## MIL-DTL-82889(OS)

## STANDARDS

## Military

MIL-STD-453	Inspection, Radiographic
MIL-STD-810	Environmental Test Methods and Engineering Guidelines
MIL-STD-1168	Ammunition Lot Numbering
DOD-STD-2101	Classification of Characteristics

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

**2.1.2 Other Government documents, drawings and publications.** The following other Government documents, drawings, and publications form a part of this specification to the extent specified herein. Unless otherwise specified the issues are those cited in the solicitation (see 6.2).

## SPECIFICATIONS

Naval Sea Systems Command (Code Ident 53711)

WS 5003	Hexanitrostilbene (HNS), Explosive
---------	------------------------------------

## DRAWINGS

Naval Air Systems Command (Code 30003)

841AS801	Fitting, Sensitivity Test
841AS802	Connector, Tee
850AS875	RAU-2/A Detonating Cord Assembly

(Application for copies of WS's, drawings, or instructions should be addressed to Commander, Naval Surface Warfare Center, Data Control Branch (Code 8410), 101 Strauss Avenue, Indian Head Division, Indian Head, MD 20640-5035.)

**2.2 Non-Government publications.** The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents which are DOD adopted are those listed in the issue of the DODISS cited in the solicitation. Unless otherwise specified, the issues of documents not listed in the DODISS are the issues of the documents cited in the solicitation (see 6.2).

American Society for Testing and Materials (ASTM)

ASTM B 117	Salt Spray (Fog) Testing
ASTM E 748	Standard Practices for Thermal Neutron Radiographs of Materials
ASTM D 1141	Substitute Ocean Water

(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103-1187.)

## MIL-DTL-82889(OS)

(Non-Government standards and other publications are normally available from the organizations that prepare or distribute the documents. These documents also may be available in or through libraries or other informational services.)

**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 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.** Type I DCAs shall be manufactured in accordance with the drawings and documents listed on the appropriate slash sheet; Type II DCAs shall be manufactured in accordance with Drawing 850AS875. All materials used in the manufacture of the DCA shall conform with the specifications referenced on the respective slash sheet unless specific approval in writing covering a departure therefrom has been obtained from the Naval cognizant field activity for DCAs prior to manufacture.

**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. 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 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 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

## MIL-DTL-82889(OS)

assembly or affect the environmental stability of the line. The threads of the DCA end fittings shall be dry film lubricated with MIL-L-46010. The following shall be verified.

- a. Dash number tape. A white dash number tape, 0.37 inch wide shall be attached to both ends of the line with the closest edge of the tape located  $2.25 \pm 0.25$  inch from the booster tips. Bulkhead fittings shall also have a dash number 1 inch from each side of the fitting. The maximum distance between tapes shall not exceed 48 inches. Tapes shall not be applied at clamp points.
- b. Identification tape. Identification tape, orange and green tape with "Pyrotechnic" printed thereon, shall be located  $2.75 \pm 0.25$  inch from each booster tip unless there is interference with a clamp point. In those cases the tape shall be located next to the clamp point.
- c. Clamp point tape. A 0.37 inch wide, orange, clamp point tape shall be located as indicated on the appropriate slash sheet.
- d. Identification plate. Each line shall have an identification plate containing the following information: Item nomenclature, government part number, vendor part number, serial number and lot number per MIL-STD-1168, DODIC, and National Stock Number. The identification plate shall be attached to a silver, polyester tape attached either to the line or to a nylon tube over the line.

### 3.7.2 Radiographic inspection.

**3.7.2.1 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).

**3.7.2.2 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).

**3.7.3 In-process inspections.** The following are minimum in-process inspections required for product integrity.

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

**3.7.3.2 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).

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

**3.7.3.4 End fittings leakage.** During the production process, each assembled end fitting shall be helium leak tested and not exhibit a leakage rate in excess of  $1 \times 10^{-5}$  cc of air or gas per second when tested in accordance with 4.2.6.

## MIL-DTL-82889(OS)

**3.7.3.5 Explosive weight.** Every 100 feet a 1-meter section of cord shall be taken to verify the requirement of  $20 \pm 10$  mg of HMX and Al per meter (see 4.2.7).

**3.7.4 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 for 5 minutes (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 where specified.

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

**3.8.8 Solvent resistance.** DCAs shall meet the performance requirements of 3.9 after exposure to a general purpose cleaner per MIL-C-38736, 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).

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

## MIL-DTL-82889(OS)

**3.9 Ballistic requirements.** The ballistic sample shall meet the requirements of 3.9.1 and 3.9.2.

**3.9.1 End fitting tensile test.** DCAs shall be subjected to a 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. Each line in the test sample shall be held at  $150 \pm 10$  pounds for 60 seconds minimum and then released.

**3.9.2 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  $-65^{\circ}\text{F}$  or  $200^{\circ}\text{F}$ , shall propagate and produce an indent of at least 0.040 inch in a 6061-T6 aluminum dent block.

**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.** The complete 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 rate of 6 pounds per second. The load shall be maintained for 5 minutes 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 is no corrosion products on the hardware and that the threads are coated with dry film lubricant.

## MIL-DTL-82889(OS)

**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	Group Number						Total
	I	II	III	IV	V	VI	
X-ray/N-ray	5	5	3	3	3	3	22
Visual	5	5	3	3	3	3	22
20 G Shock	5	5					10
Temperature, humidity, shock, and altitude	5	5					10
Vibration	5	5					10
Pressure cycling	5	5					10
Temperature cycling	5	5					10
Minimum bend/flex			3	3			6
Salt fog	5	5					10
Solvent resistance					3	3	6
Ballistics - 65° F	5		3		3		11
Ballistics 200° F		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.

**4.3.2.1 Detonating cord assemblies.** The samples shall undergo the non-destructive examinations and tests of 4.6.9 prior to environmental exposure as described in MIL-D-83125. The tolerance on temperatures shall

## MIL-DTL-82889(OS)

be  $\pm 5^{\circ}\text{F}$ . The environmental exposures shall be sequential as follows: Temperature, Humidity, Shock, Altitude, Shock, Sinusoidal Vibration, Pressure Cycling, Temperature Cycling, Minimum Bend/Flex Test, Salt Fog, and Solvent Exposure. The upper limit of temperature for the environments is  $200^{\circ}\text{F}$ . The conditioning temperatures for ballistic testing are  $-65^{\circ}\text{F}$  and  $200^{\circ}\text{F}$  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.

Item	Requirement	Applicable Paragraph	Classification
Visual inspection	Lubricant	3.7.1	(M101)
Primary components		3.3	(M102)
Radiographs	Constancy	3.7.2	(M103)
Core loading	Single Lot	3.6	(M104)
End fittings	Leakage	3.7.3.4	(M105)
DCA assemblies	Ballistic	3.9, 4.7.2	(M106)
DCA assemblies	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 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.

## MIL-DTL-82889(OS)

TABLE IV. Sample selection.

Lot size range	Sample size
91 - 151	20
152 - 280	32
281 - 500	50

**4.5.3 Packaging, packing and marking.** Quality conformance inspection shall be conducted in accordance with the requirements referenced in section 5 (also see 6.5).

#### **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  $-65^{\circ}\text{F}$ ,  $70^{\circ}\text{F}$ , and  $200^{\circ}\text{F}$ . 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  $200^{\circ}\text{F}$  and 50 cycles at  $-65^{\circ}\text{F}$ . 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.

**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  $-65^{\circ}\text{F}$  and maintained for 55 minutes. The temperature shall then be raised to  $350^{\circ}\text{F}$  in 5 minutes and maintained for 55 minutes and then lowered to  $-65^{\circ}\text{F}$  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.

## MIL-DTL-82889(OS)

**4.6.7 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.

**4.6.8 Solvent resistance.** Six DCAs shall be subjected to repeated exposures of General Purpose Cleaner MIL-C-38736, Type I, according to table I.

**4.6.9 Radiographic examination.** All DCAs in the first article sample or production lot shall be radiographically examined in accordance with MIL-STD-453 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 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 3.9.2 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.**

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

**4.7.2 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  $350 \pm 5^{\circ}\text{F}$  for 4 hours minimum to 24 hours maximum. The DCAs shall then be functionally tested in accordance with 3.9.2 using a number 8 blastic cap on the test tip. The lot shall be accepted if the requirements of 3.9.2 have been met with an accept of zero and a reject of one or more criteria.

**4.7.2.1 Retest.** There shall be no retests.

**4.7.2.2 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.

## MIL-DTL-82889(OS)

**5. PACKAGING**

**5.1 Packaging.** For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When actual packaging of materiel 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.** 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 I DCAs are used to provide ballistic transmission signals to devices during emergency egress from aircraft; Type II DCAs are used to provide ballistic transmission signals to search and rescue devices in the F/A-18 and AH-64 aircraft.

**6.2 Ordering data.** Acquisition documents should 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 2.1.1, 2.1.2, and 2.2).
- 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.

## MIL-DTL-82889(OS)

**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 conform to the applicable carrier rules and regulations and may be the supplies'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

## MIL-DTL-82889(OS)

- 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  
HNX  
Lead azide  
Shielded mild detonating cord (SMDC)

Preparing activity:  
Navy - OS  
(Project 1377-0050)

# STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

## INSTRUCTIONS

1. The preparing activity must complete blocks 1, 2, 3, and 8. In block 1, both the document number and revision letter should be given.
2. The submitter of this form must complete blocks 4, 5, 6, and 7.
3. The preparing activity must provide a reply within 30 days from receipt of the form.

NOTE: This form may not be used to request copies of documents, nor to request waivers, or clarification of requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

### I RECOMMEND A CHANGE:

1. DOCUMENT NUMBER

MIL-DTL-82889 (OS)

2. DOCUMENT DATE (YYMMDD)

960822

3. DOCUMENT TITLE

DETONATING CORD ASSEMBLY (DCA)

4. NATURE OF CHANGE (Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)

5. REASON FOR RECOMMENDATION

6. SUBMITTER

a. NAME (Last, First, Middle Initial)

b. ORGANIZATION

c. ADDRESS (Include Zip Code)

d. TELEPHONE (Include Area Code)

7. DATE SUBMITTED (YYMMDD)

(1) Commercial

(2) AUTOVON  
(If applicable)

8. PREPARING ACTIVITY

a. NAME

COMMANDER, INDIAN HEAD DIVISION  
NAVAL SURFACE WARFARE CENTER (CODE 8420)

b. TELEPHONE (Include Area Code)

(1) Commercial

301-743-4700

(2) AUTOVON

354-4700

c. ADDRESS (Include Zip Code)

101 STRAUSS AVENUE  
INDIAN HEAD, MD 20640-5035

IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT:

Defense Quality and Standardization Office  
5203 Leesburg Pike, Suite 1403, Falls Church, VA 22041-3466  
Telephone (703) 756-2340 AUTOVON 289-2340