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INCH -POUND

MIL-DTL-32048A (OS)
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SUPERSEDING
MIL-DTL-32048
28 March 2000

DETAIL SPECIFICATION

CARTRIDGE, IMPULSE, CCU-107/B

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 Department of Defense.

1. SCOPE

1.1 Scope. This specification covers the requirements for the manufacture and acceptance of the Cartridge, Impulse, CCU-107/B, referred to in this document as cartridge (see 6.1).

1.2 Application. The cartridges covered by this specification are used in various racks and launchers to provide gas pressure to activate the gas actuated pistons in the racks and launchers to eject various stores from aircraft.

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 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 documents specified in Sections 3 and 4 of this specification, whether or not they are listed.

2.2 Government documents.

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to the Commander, Indian Head Division, Naval Surface Warfare Center, Technical Information Division (Code 840), 101 Strauss Avenue, Indian Head, Maryland 20640-5035, by using the Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by sending a letter.

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2.2.1 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.

DRAWINGS

NAVAL SEA SYSTEMS COMMAND (53711)

DL 6260802	Cartridge, Impulse, CCU-107/B
6260802	Cartridge, Impulse, CCU-107/B
6261107	Cartridge Case, and Ignition Element Assembly (Modified)
6261108	Header, Glass Sealed
6261109	Header and Bridge Assembly
6261110	Ignition Element Loaded Assembly

NAVAL AIR SYSTEMS COMMAND (30003)

DL 838AS123	Closed Bomb Assembly
834AS207	Smokeless Powder
838AS206	Propellant Charge, Double Base
844AS801	Vibration Test Fixture

(Application for copies should be addressed to the Commander, Indian Head Division, Naval Surface Warfare Center, Documentation Branch (Code 8410P), 101 Strauss Avenue, Indian Head, Maryland 20640-5035.)

2.3 Non-Government publications and drawings. 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 DODISS are the issues of the documents cited in the solicitation (see 6.2).

AMERICAN SOCIETY FOR TESTING MATERIALS

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ASTM E 1742	Standard Practice for Radiographic Inspection (DoD adopted)

(Application for copies of ASTMs should be sent to the American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959)

AMERICAN SOCIETY FOR QUALITY CONTROL

ASQC Z1.4	Sampling Procedures and tables for Inspection by Attributes (DoD adopted)

(Application for copies should be addressed to the American Society for Quality Control, P. O. Box 3005, 611 E Wisconsin Ave., Milwaukee, WI 53201-4606.)

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 (see 6.2), a sample shall be subjected to first article inspection as specified in sections 4.2.2 and 6.3. A first article inspection shall be required if:

a. Two or more years has passed since the CCU-107/B or similar items have been manufactured,
b. There has been a major turn over in personnel,
c. There have been major changes to the production facility or
d. There has been a transfer of production to a new facility or site.

3.2 Item Description. The cartridge case is made of aluminum and contains a propellant that is ignited by an integral, glass sealed, electric ignition element. The burning propellant produces the gases necessary to make the pistons actuate to eject stores beyond the slipstream of the aircraft.

3.3 Cartridge production. The cartridge shall be manufactured in a continuous process. For the purposes of this specification, the header glass seal (Drawing 6261108), the ignition element (Drawing 6261110), and the main propellant charges, (Drawings 834AS207 and 838AS206) are defined as primary components. Only one lot of a primary component shall be used in the manufacture of a single lot of cartridges.

3.3.1 Header Glass Seal. The Header Glass Seal shall be manufactured in accordance with the drawing 6261108 and undergo the tests listed in 4.2.2.2.

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3.3.1.1 Header Integrity test. The Header Glass Seal shall be capable of withstanding 30,000 ± 500 psi hydrostatic pressure test as prescribed in drawing 6261108.

3.3.1.2 Dead load test. The Header Glass Seal shall be capable of withstanding the 300 pound force dead load with no movement or breakage of component parts.

3.3.1.3 Insulation resistance. The Header Glass Seal shall be capable of an insulation resistance greater than 50 megohms.

3.4 Inspection.

3.4.1 Ignition element loaded assembly inspection. The ignition element shall be manufactured in accordance with the drawing 6261110 and shall meet the following inspections and tests as specified in 4.2. For ballistic testing, the element shall be pressed into the modified cartridge case conforming to drawing 6261107.

3.4.1.1 Visual. Ignition elements shall be free of visual defects such as, but not limited to, burrs, dents, deep scratches, split or cracked crimp, wrinkled or creased mylar closure, defective seal or other defects which may prevent proper assembly or environmental stability of the element (see 4.2.3.2).

3.4.1.2 Resistance. The resistance of the bridge circuit of each ignition element, when tested electrically, shall not be less than .95 ohms nor more than 1.25 ohms when tested as specified in 4.2.3.3.

3.4.1.3 Radiographic. Ignition elements in the first article sample shall be free of imperfections in components or assembly as verified by radiographic examination of all first article samples (see 4.2.3.5).

3.4.1.4 Leakage. Ignition elements, when tested in a dry gas leak tester shall produce no leaks (see 4.2.3.4).

3.4.1.5 Power–current test. The ignition elements of the first article sample shall be subjected to the power–current test (see 4.2.2.3.1).

3.4.1.6 Ignition element. The ignition element shall be manufactured in accordance with drawing 6261110 and shall meet the following requirements when tested as specified in 4.2.2.3.2.

3.4.1.6.1 Ignition delay. The maximum allowable ignition delay shall not exceed ten milliseconds (see 6.6.5).

3.4.1.6.2 Maximum pressure. The minimum allowable value for maximum pressure shall be 2,000 pounds per square inch (psi).

3.4.2 Cartridge inspection.

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3.4.2.1 Visual inspection. All cartridges manufactured under contract shall be visually inspected and screened for defects (see 4.2.1.3).

3.4.2.2 Bridge circuit resistance. The resistance of each completely assembled cartridge, when tested electrically, shall not be less than 0.95 ohms nor more than 1.25 ohms when tested as specified in 4.2.3.3.

3.4.2.3 Radiographic inspection. Cartridges shall be free of imperfections in components or assembly as verified by radiographic examination of all first article and production lot test samples (see 4.2.3.5). Defects identified in the samples may result in 100% screening of the lot at contractor expense depending on the nature of the defect(s).

3.4.2.4 Six-foot drop test. Each cartridge shall be capable of passing the six-foot drop test, unprotected, without impairing its ability to perform its intended function (see 4.2.2.1.1).

3.4.2.5 Fifteen G shock. Each cartridge shall be capable of withstanding ten shocks of 15 G maximum acceleration when mounted in the text fixture. The 15 G maximum acceleration shall be reached within eight milliseconds and the acceleration shall exceed 8 G for a minimum of 11 milliseconds (see 4.2.2.1.2).

3.4.2.6 Temperature and humidity cycling. Each cartridge shall be capable of passing the temperature and humidity cycling test, section 4.2.2.1.3. and be free from visible damage, section 4.2.1.3 and meet functional requirement, section 3.5.

3.4.2.7 Vibration. Each cartridge shall be capable of passing the vibration test, section 4.2.2.1.4 and meet functional requirement, section 3.5.

3.4.2.8 Gage test. Each cartridge shall be inspected in a 1.00 inch minimum length class XX receiver gage to verify the 1.078 inch maximum diameter requirement per drawing 6260802.

3.5 Ballistic requirements. Cartridges from each first article lot and production lot samples shall be capable of propelling a 480 ±5 pound mass horizontally when fired in the variable volume test fixture at an initial volume of 3.7 cubic inches and shall meet the requirements listed below when subjected to the tests prescribed in 4.2.

3.5.1 Ignition delay. Ignition delay time shall not exceed ten milliseconds (see 6.6.5).

3.5.2 Time to maximum thrust. The time to maximum thrust shall not exceed 30 milliseconds (see 6.6.6).

3.5.3 Thrust. The upper limit of thrust shall be 12,200 pounds force (lbf) (see 6.6.8)

3.5.4 Velocity. The lower limit for velocity shall not be less than 22 feet per second (see 6.6.7).

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3.5.5 Maximum pressure. The cartridge shall not exceed a maximum pressure of 9,800 psi nor exhibit a maximum pressure less than 7,300 psi respectively. This information will be recorded for information only (see 6.6.9).

3.5.6 Misfire. There shall be no misfires (see 6.6.10).

3.6 Change in propellant lot(s). Whenever a change occurs in the propellant lot, test firings shall be conducted, in accordance with 4.2. No cartridges shall produce results outside of the limits specified in 3.5.

3.7 Packaging, packing and marking. The packaging and packing of cartridges and the container markings shall be in accordance with Section 5.1.

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

4. VERIFICATION

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

a. In-process inspections (see 4.2.1).

b. First article inspection (see 4.2.2).

c. Conformance inspection (see 4.2.3).

4.2 Inspections.

4.2.1 In-process Inspections.

4.2.1.1 Leakage. Each ignition element produced under contract shall be leak tested in a dry gas leak tester to determine conformance with 3.4.1.4. Units, which exhibit a leak rate in excess of 1×10^{-5} standard centimeters per second of gas at a pressure differential of $1.0 \pm .1$ atmospheres, shall be rejected.

4.2.1.2 Resistance examination. The contractor shall conduct inspections of the production lot to verify proper resistance readings for the header assembly (6261109), ignition element loaded assembly (6261110) and all up round, (6260802).

4.2.1.3 Cartridge visual examination. Examine all cartridges and reject those with: inadequate or illegible markings or serial numbers, color coding, dents, deep scratches, split or cracked edges, chipped surfaces, don’t fit size gauge or other defects which may prevent proper installation or function.

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4.2.2 First article inspection. Before entering into quantity production, an acceptable first article sample of 70 cartridges shall be prepared using the same procedures and methods proposed for manufacture of the production lot. An acceptable sample is one that has passed all the tests and examinations in table I. In addition 25 header glass assemblies, 25 loaded ignition elements mounted in modified cartridges cases per drawing 6261107 shall also be submitted for examination and tests.

TABLE I. First article tests and conditions.

ITEM	Nature of Test	Requirement	Verification	Sample Quantity
Cartridge	Six-foot drop	3.4.2.4	4.2.2.1.1	6
Cartridge	Fifteen G shock	3.4.2.5	4.2.2.1.2	12
Cartridge	Temperature and Humidity cycling	3.4.2.6	4.2.2.1.3	18
Cartridge	Vibration	3.4.2.7	4.2.2.1.4	12
Cartridge	Gage	3.4.2.8	4.2.1.3	70
Cartridge	Ballistic test. @ -65°F	3.5	4.2.2.1.5	33
Cartridge	Ballistic test. @ +200°F	3.5	4.2.2.1.5	33
Cartridge	Investigative Sample		4.2.2.1.5	4
Header Glass Seal	Visual	3.3.1	4.2.2.2	25
Header Glass Seal	Dead load	3.3.1.1	4.2.2.2.1	25
Header Glass Seal	Header integrity	3.3.1.2	4.2.2.2.2	25
Header Glass Seal	Insulation resistance	3.3.1.3	4.2.2.2.3	25
Ignition element	Visual	3.4.1.1	4.2.2.3	25
Ignition element	Resistance	3.4.1.2	4.2.2.3	25
Ignition element	Radiographic	3.4.1.3	4.2.2.3	25
Ignition element	Leakage	3.4.1.4	4.2.2.3	25
Ignition element	Power-Current test	3.4.1.5	4.2.2.3.1	25
Ignition element	Ballistic test @ +70°F	3.4.1.6	4.2.2.3.2	25

4.2.2.1 First article environmental test.

4.2.2.1.1 Six-foot drop test. A sample of 12 cartridges shall be selected at random from the first article lot. Four cartridges shall be dropped in each of the following positions; (1) Ignition Element side up, (2) Ignition Element side down, and (3) Ignition Element horizontal. A new cartridge shall be used for each drop and no cartridge shall fire during this test. It is required that cartridges perform in functional tests after this test. Each cartridge shall function as specified in section 3.5.

4.2.2.1.2 Fifteen G shock. A sample of 12 cartridges shall be selected at random from remaining first article lot after six foot drop test selection. Cartridges shall be mounted in test fixture drawing 844AS801 and subjected to ten shocks of 15 G maximum acceleration per section 3.4.2.5. Six cartridges each are to be tested in ignition element in the horizontal position and six in the ignition element in the up position. Cartridges shall be free from visible damage and shall meet all ballistic requirements of section 3.5.

4.2.2.1.3 Temperature and humidity cycling. This test provides for cycling between temperatures of –65°F, +70°F and +200°F (90 percent relative humidity) with additional storage

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at –80°F and +200°F for two periods of two weeks each. Provision has been made for withdrawal of cartridges at two times during the cycling, see schedule below. This is to provide opportunity to observe the extent of progressive deterioration, if such exits. Cartridges shall be supported on screen trays so that all areas are exposed to the prescribed atmospheric conditions at all times throughout the test. At the conclusion of the test, cartridges must be operable, free from visible damage, and free from leaks as determined by the leakage test. Cartridges will be conditioned at +70°F for functional tests. The schedule to be followed is provided in table II.

4.2.2.1.4 Vibration. Cartridges shall be mounted in test fixture 844AS801 and shall me requirements of section 3.4.2.7. A total of twelve cartridges shall subjected to a frequency cycling between 10 and 2000 cps in 15 minute cycles with an amplitude of 0.018 inch (total excursion 0.036 inch) or an applied acceleration of ± 10 G, whichever is the limiting value. Cartridges shall be vibrated first orientation ignition element up and second orientation shall be ignition element horizontal. Vibration times shall be according to table III. Resonant frequencies shall be determined by varying the frequency of applied vibration through the specified range at amplitudes or accelerations not exceeding those shown in Figure 1 for each position. If no resonant frequencies are found, the specimen shall be vibrated for twice the times shown in table III for resonance at a frequency of 55 cps and applied amplitude of 0.030 inch (total excursion of .060 inch).

4.2.2.1.5 Ballistic test. Thirty three Cartridges shall be tested at –65°F and meet the requirements of section 3.5. Thirty three cartridges shall be the following; three from six-foot drop, six from Fifteen G shock, nine from Temperature and Humidity cycling, six from vibration, and remaining nine units from cartridges not exposed to any environmental test. Four cartridges (not exposed to any environmental test) shall be removed from the lot and held for future investigations. The remaining thirty three Cartridges shall be tested at +200°F and meet the requirements of section 3.5.

4.2.2.2 Header glass seal. The header glass seal shall be inspected for conformance to the requirements of drawing 6261108. The header glass seal shall undergo the tests listed below and meet the requirements specified on drawing 6261108.

4.2.2.2.1 Dead load. The header glass seal shall be capable of supporting a 300-pound force dead load as detailed on drawing 6261108.

4.2.2.2.2 Header integrity test. The header glass seal shall be capable of withstanding 30,000 ± 500 psi hydrostatic pressure as detailed on drawing 6261108.

4.2.2.2.3 Insulation resistance. Insulation resistance between the electrode and header shall be greater than 50 megohms when tested at 500 volts DC.

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Table II. Temperature and humidity schedule.

DAY	TIME	CONDITION
Monday	1300	Place in cabinet or room maintained at –65°F;
	1600	Remove from –65°F room and place in room maintained at +200°F, 90 percent relative humidity and allow to remain overnight;
Tuesday	0800	Remove from +200°F and place in +70°F;
	1300	Remove from +70°F and place in –65°F;
	1600	Remove from –65°F and place in +200°F (90 percent relative humidity);
Wednesday	0800	Remove from +200°F and place in +70°F;
	1300	Remove from +70°F and place in –65°F;
	1600	Remove from –65°F and place in +200°F (90 percent relative humidity);
Thursday	0800	Remove from +200°F and place in +70°F;
	1300	Remove from +70°F and place in –65°F;
	1600	Remove from –65°F and place in +200°F (90 percent relative humidity);
Friday	0800	Remove from +200°F and place in +70°F;
	1300	Remove from +70°F and place in –65°F;
	1600	Remove from –65°F and place in +200°F (90 percent relative humidity);
Saturday and Sunday		Maintain in +200°F (90 percent relative humidity);
Monday	0800	Remove from +200°F and place in +70°F;
	1300	Remove from +70°F and place in –65°F;
	1600	Remove from –65°F and place in +200°F (90 percent relative humidity);
Tuesday	0800	Remove from +200°F and place in +70°F;
	1300	Remove from +70°F and place in –65°F;
	1600	Remove from –65°F and place in +200°F (90 percent relative humidity);
Wednesday	0800	Remove from +200°F and place in +70°F;
	1300	Remove from +70°F and place in –65°F;
	1600	Remove from –65°F and place in +200°F (90 percent relative humidity);
Thursday	0800	Remove from +200°F and place in +70°F;
	1300	Remove from +70°F and place in –65°F;
	1600	Remove from –65°F and place in +200°F (90 percent relative humidity);
Friday	0800	Remove from +200°F and place in +70°F;
	1300	Remove from +70°F and place in –80°F;
Saturday and Sunday		Maintain at –80°F
Monday	0800	Remove from –80°F and place in +70°F. Remove six cartridges and store at +70°F which are to be fired at the end of cycling program.
The second two-week period follows the same schedule of temperature and humidity cycling. Withdrawals of cartridges during second two-week period are to be as follows:		
Fourth Monday	0800	Remove from +200°F and place in +70°F. Remove six cartridges and store at +70°F, which shall be fired at the end of cycling program.

The completion of the two periods occurs at 0800 on the fifth Monday after starting. At this time the remaining six cartridges are to be removed, conditioned at +70°F, together with remainder of cartridges from two and three weeks cycling, and fired. Ballistic results shall meet requirements of section 3.5.

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4.2.2.3 Ignition element assembly. After visual, radiographic, resistance and leakage inspections the ignition element assembly shall undergo the tests listed below in the sequence given. The ignition elements, installed in modified cartridge cases, shall be conditioned at 70 ± 5 °F for a minimum of four hours prior to testing.

TABLE III. Vibration test schedule.

Type	Vibration at Room Temperature	Vibration at +200° F	Vibration at –65° F
	(Times at each position: up, horizontal)		
Cycling	60 minutes	15 minutes	15 minutes
Resonance	60 minutes	15 minutes	15 minutes

4.2.2.3.1 Power–current test. Each ignition element in the first article sample shall have a direct current of not less than one ampere, supplying a minimum of one watt, applied to the bridge circuit for a period of at least five minutes. The test current shall be regulated throughout the period of application to within two percent. The test temperature is ambient and the sample or lot is rejected if the unit fires within the five minute period.

4.2.2.3.2 Ballistic test. After conditioning, the sample shall be installed into the ignition element test chamber (DL 838AS123). The sample shall be fired by the application of 4.0 ± 0.1 amperes and shall meet the requirements of 3.4.1.6.

4.2.3 Quality conformance inspection. Quality conformance inspection shall consist of verification of the characteristics on the drawing of DL 6260802 and items in table IV.

4.2.3.1 Sampling. Cartridges for ballistic testing shall be selected from the production lot in accordance with the requirements of table I, general inspection level II of ASQC Z1.4 with the exception that the lot size is limited to 20,000 maximum exclusive of test cartridges. The ballistic sample size shall be 53 with 50 expended in testing and three retained for investigation purposes. Only primary components from a single lot shall be used in a production lot of cartridges, however, one primary component lot may be used in more than one cartridge production lot.

4.2.3.2 Visual inspection. Visually examine all cartridges. Reject those with inadequate or illegible descriptive marking, dents, deep scratches or other defects, which may prevent proper installation or impair function.

4.2.3.3 Bridge circuit resistance. Conformance with the bridge circuit resistance of 3.4.2.2 shall be ascertained on all completely assembled cartridges by means of a test circuit, which limits the bridge circuit current to 25 milliamperes maximum. A safety chamber shall be used to protect the operator during the test. A suitable instrument, which is known to be accurate within one percent in the range of resistance specified, shall be used to determine if the requirement is

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TABLE IV. Quality conformance tests and examinations.

Item	Nature of Test	Requirement	Verification	Classification
Primary components	Single lot	3.3	4.2.3.1	(M101)
Header glass seal	Acceptance	3.3.1	4.2.2.2	(M102)
Ignition element	Acceptance	3.4.1	4.2.2.3	(M103)
Propellant charge	Type and weight	3.3	---	(M104)
Cartridge	Gage	3.4.2.8	---	(M105)
Cartridge	Visual	3.4.2.1	4.2.3.2	(M106)
Cartridge	Resistance	3.4.2.2	4.2.3.3	(M107)
Ignition element	Leakage	3.4.1.4	4.2.3.5	(M108)
Cartridge	Power–current	3.4.2.3	4.2.3.4	(M109)
Cartridge	Radiograph	3.4.2.4	4.2.3.6	---
Cartridge	Ballistic	3.5	4.3	(M110)
Cartridge	Change in lot	3.6	4.3	(M111)
Cartridge	Packaging	3.7	5.1	(M112)

being met. The resistance of the test circuit and connector shall not affect the results of the bridge circuit resistance measurement. Units that fail to meet the requirements shall be removed from the lot and destroyed.

4.2.3.4 Leakage. Each ignition element in the first article sample and production lot shall be leak tested in a dry gas leak tester to determine conformance with 3.4.1.4. Units, which exhibit a leak rate in excess of 1 X 10^{-5} standard cc/sec of gas at a pressure differential of one atmosphere ± 0.1 atmosphere, shall be considered defective, removed from production and destroyed.

4.2.3.5 Radiographic inspection.

4.2.3.5.1 Radiographic procedures. The samples shall be arrayed on trays or boards in consecutive numerical order. Each radiograph shall carry a permanent identification of the cartridges displayed thereon. The cartridges shall be positioned to give the most revealing cross-section of each unit. All units shall be identified with serial numbers prior to radiographic inspection. The radiographic identification shall include the complete lot number and the span of serial numbers displayed. Discontinuities in serial numbers shall be identified on the plate. Defective cartridges shall be clearly identified on the plate and shall be removed. Radiographs or copies of the entire production lot shall accompany the ballistic sample to the activity conducting the production lot acceptance test.

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4.2.3.5.2 X-ray inspection. Each cartridge of the first article or lot ballistic sample shall be X-Rayed, in accordance with ASTM E 1742, to verify the presence, condition and proper installation of parts. Any observable imperfections shall be cause for rejection of the unit.

4.2.3.6 Ballistic tests. Cartridges shall be selected in accordance with paragraph 4.2.3.1. Half the sample shall be conditioned to –65 °F and the other half to +200 °F for a time period of not less than four hours or more than 24 hours. Units shall be fired, within three minutes of removal from conditioning, in the Universal Ejection Cartridge Test Fixture. If not fired within three minutes, reschedule the test and recondition for two hours minimum but not more than 24 hours.

4.2.3.6.1 Acceptance criteria. The lot shall be acceptable with respect to functional testing if the cartridges meet the requirements of 3.5. Accept on no defects, reject on one or more.

4.2.3.6.2 Misfire. A cartridge that does not fire under the conditions specified in 4.2 shall be considered unacceptable unless the misfire is clearly attributable to faulty test equipment or procedure.

4.2.3.6.3 Retest. There shall be no retest.

4.2.3.6.4 Test failure. If a test failure is attributed to an assignable cause, excluding the test sample, the original test results shall be discarded and that test reconducted.

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 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 of Defense Agency, or within the Military Department's System Command. Packaging data retrieval is available from the managing Military Department 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. CCU-107/B Cartridges, Impulse, covered by this specification are used in various racks and launchers to provide gas pressure to activate the gas actuated pistons in the racks and launchers to eject various stores from military aircraft. These impluse cartridges are military unique and there is no equivalent commercial application for this design.

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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. Inspection conditions, if other than as specified. (see 4.2)

d. Whether first article inspection is required and, if so, specify the test activity (see 3.1 and 4.2.2).

e. Production lot size (see 4.2.3.1) and test activity.

f. Safety requirements. (see 6.4).

g. Level A and Level B packaging and packing requirements, if different from 6.5. (see 5.1).

h. Special marking requirements, if different from 6.5.2.1 (see 5.1).

6.3 First article. When first article inspection is required, the contracting officer should provide specific guidance to offerors whether the item(s) should be a preproduction sample, a first article sample, a first production item, a sample selected from the first production items, or a standard production item from the contractor's current inventory (see 3.1), and the number of items to be tested (see 4.2.2). The contracting officer should also include specific instructions in acquisition documents regarding arrangements for examinations, approval of first article test results, and disposition of first articles.

6.3.1 Bids. 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 production or test, must furnish evidence with the bid that prior Government approval is presently appropriate for the pending contract. Bidders should not submit alternate bids unless specifically requested to do so in the solicitation.

6.4 Ammunition and explosive safety.

6.4.1 Contractor's responsibility. The safety requirements of the "Contractor's Safety Manual for Ammunition, Explosives and Related Dangerous Material" (DOD 4145.26M) are applicable when this specification is used for acquisition.

6.4.2 Government activity's responsibility. The safety precaution requirements of "Ammunition and Explosives Ashore", OP5 are applicable when this specification is used as part of a description of work to be accomplished by a government activity.

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

6.5.1 Packaging and packing. In addition to the following, Level A and Level C packaging and packing should be in accordance with 49 CFR 100-199. For an explanation of terms, see 6.6.

6.5.1.1 Level A. Level A packaging and packing should be used for packaging and packing of all production lots for service use.

6.5.1.2 Level C. Minimum packaging and packing is required for shipping those cartridges, which are intended for expenditure in production lot acceptance tests. A tight pack, is recommended.

6.5.2 Marking

6.5.2.1 Special marking. Marking of outer containers should be in accordance with CFR 49 171-199.

6.5.2.2 Normal marking. In addition to any special marking required by the contract or order, unit packages, intermediate packages and shipping containers should be marked in accordance with MIL-STD-129.

Inner container marking.

NSN: DODIC: MT95

Nomenclature: Cartridge, Impulse, CCU-107/B

Part Number: 30003-6260802

Lot Number: (In accordance with MIL-STD-1168)

ICC Explosive Class: C

Outer container marking.

NSN: DODIC: MT95

Nomenclature: Cartridge, Impulse, CCU-107/B

Part Number: 30003-6260802

Quantity:

Gross weight and cube:

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Lot number: (In accordance with MIL-STD-1168)

Contract or purchase order number:

" WARNING: EXPLOSIVE POWER DEVICE, CLASS C EXPLOSIVE, HANDLE WITH CARE, KEEP FIRE AWAY "

The above information shall be applied in accordance with the provisions of MIL-STD-129.

6.6 Definitions.

6.6.1 Level A packaging. The degree of preservation and packaging that will afford adequate protection against corrosion, deterioration and physical damage during shipment, handling, indeterminate storage and world wide redistribution.

6.6.2 Level C packaging. The degree of preservation and packaging that will afford adequate protection against corrosion, deterioration and physical damage during shipment form supply source to the first receiving activity for immediate use. This level may conform to contractors commercial practice when such meets the requirements of this level.

6.6.3 Level A packing. The degree of packing that will afford adequate protection during shipment, handling, indeterminate storage and worldwide distribution.

6.6.4 Level C packing. The degree of packing that will afford adequate protection against corrosion, deterioration and physical damage during shipment form supply source to the first receiving activity for immediate use. This level may conform to contractors commercial practice when such meets the requirements of this level.

6.6.5 Ignition delay. Ignition delay is the time from application of the current to first indication of continuous thrust or pressure on the thrust or pressure versus time curve.

6.6.6 Time to maximum thrust. Time to maximum thrust is the time from application of current to the point of maximum thrust on the thrust versus time curve.

6.6.7 Velocity. Velocity is defined as the time taken for the sled to travel one foot after separation from the barrel. The velocity is in feet per second.

6.6.8 Thrust. The value for thrust is the maximum value of pounds force registered on the thrust cell during sled movement.

6.6.9 Maximum pressure. Maximum pressure is that pressure recorded by the strain gauge during piston stroke.

6.6.10 Misfire. A misfire is any failure of a cartridge to ignite and move the sled.

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6.7 Explanation of terms. For the purposes of the specification, NAVSUPINST 4030.28A should be used to clarify terms.

6.8 Subject term (key word) listing.

Aircraft Ejection seat
Emergency egress
Gas Generator

6.9 Changes from previous issue. The margins of this specification are marked with vertical lines to indicate where changes from the previous issue were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous issue. The changes in this issue were authorized by ECP 035230B015.

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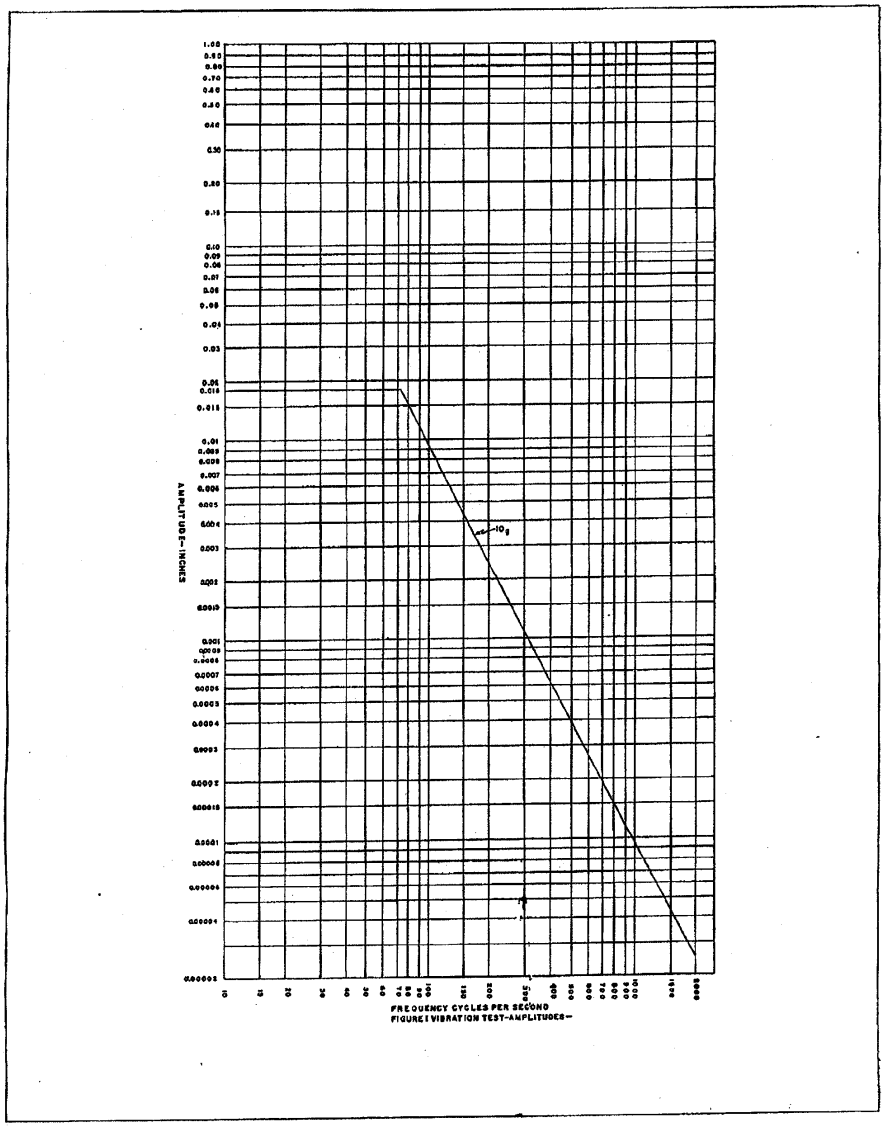

Figure I. Vibration test:-- amplitudes.

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