INCH-POUND

MIL-C-63108B(AR)
27 February 1995
SUPERSEDING
MIL-C-63108A(AR)
19 August 1983

# MILITARY SPECIFICATION

# CARTRIDGE, IMPULSE: M796

This specification is approved for use within the U.S. Army Armament, Munitions and Chemical Command, and is available for use by all Departments and Agencies of the Department of Defense.

## 1. SCOPE

1.1 Scope. The specification covers the parts for, loading assembling and packing for one type of electrically initiated cartridge, designated as Cartridge, Impulse: M796.

## 2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 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 listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation.

SPECIFICATIONS

MILITARY

MIL-A-48078 - Ammunition, Standard Quality Assurance Provisions, General Specification For.

STANDARDS

MILITARY

MIL-STD-810- Environmental Test Methods.

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use to improving this document should be addressed to: Commander, U.S. Army ARDEC, ATTN: AMSTA-AR-EDE-S, Picatinny Arsenal, New Jersey 07806-5000 by using the Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

**AMSC N/A** FSC 1377

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

(Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the Standardization Documents Order Desk, Bldg. 4D, 700 Robbins Avenue, 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 document to the extent specified herein. Unless otherwise specified, the issues are those cited in the solicitation.

DRAWINGS (See 6.4)

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

| | | |
|---|---|---|
| 9311660 | - | Cartridge, Impulse: M796 |
| 9313890 | - | Packing and Marking for Box, Exterior for Impulse Cartridge: M796 |
| 9313891 | - | Packing and Marking for CAN, Metal for Impulse Cartridge: M796 |
| 12561412 | - | Packing and Marking for CAN, Metal for Impulse Cartridge: M796 |
| 12561420 | - | Packing and Marking for Box, Exterior for Impulse Cartridge: M796 |

U.S. ARMY ARMAMENT MUNITIONS AND CHEMICAL COMMAND (AMCCOM)

| | | |
|---|---|---|
| 19-48-4116/115E | - | Cartridge, Impulse, XM796 on 4-way Entry Pallets |

INSPECTION EQUIPMENT DRAWINGS

| | | |
|---|---|---|
| 9311451 | - | Payload Module Assembly |
| 9311402 | - | Countermeasure, Chaff: M1 |
| 9311428 | - | Breech Plate Assembly |
| 9311434 | - | Dispenser Assembly |
| 9311464 | - | Printed Wiring Board Assembly, Sequencer Switch |
| 9311478 | - | Retaining Plate Assembly |
| 9311488 | - | Plate Assembly, Sequencer |
| 9311551 | - | Chaff, Glass |
| 9311611 | - | Cable Assembly |
| 9335632 | - | Payload Module |
| 9354498 | - | Inert Flare for the M130 Aircraft General Purpose Dispenser |

(Copies of drawings, publications and other Government documents required by contractors in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting activity).

2.2 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 Materials. Materials shall be in accordance with the applicable drawings and specifications.

3.2 Assembly. The assembly shall comply with all requirements specified on drawing 9311660 and with all requirements in applicable specifications.

3.3 Bridgewire resistance. The resistance of the bridge circuit of the cartridge (between the contact pin and the case) shall be 1.0 ± 0.15 ohms when measured at 75 ± 15 degrees Fahrenheit with maximum test current of 10 milliamperes (ma) direct current (dc).

3.4 No-fire sensitivity. The cartridge shall not fire when subjected to a minimum of 1 ampere dc with a ripple current not to exceed 5 percent. For First Article Inspection, test current shall be applied for 300 seconds minimum. For Quality Conformance Inspection, test current shall be applied for 10 seconds minimum, 15 seconds maximum.

3.5 Environmental requirements. The cartridges shall remain functional after being subjected to the environment tests as specifed in 4.5.3.

3.5.1 Transportation vibration. See 4.5.3.1

3.5.2 Shock. See 4.5.3.2

3.5.3 Humidity. See 4.5.3.3

3.5.4 Aircraft vibration. See 4.5.3.4

3.5.5 Temperature-altitude. See 4.5.3.5

3.5.6 Water immersion. See 4.5.3.6

3.6 All-fire sensitivity. The cartridge shall fire when no more than 4.25 amps dc is applied for a maximum of 15 milliseconds (ms) to the bridge circuit.

3.6.1 Petaling. After functioning the cartridge, the disc shall show visual evidence of petaling on over half of the visible area (i.e., the pie-sections of the disc shall be folded or melted. Burn-through without visual petaling is not acceptable.).

3.6.2 Integrity of crimp. After functioning, the cartridge shall exhibit a secure crimp for 360° between the case and closure washer.

3.7 Pressure-time traces. The cartridge shall produce a pressure vs. time output response with the following characteristics when tested in a closed bomb having a net volume of 43.5 ± 1.5 cc with the impulse cartridge in place. Firing current shall be in accordance with 3.6.

| | | |
|---|---|---|
| a. | Rise Time (ms) | 25 maximum |
| b. | Peak Pressure (psi) | 450 minimum<br>750 maximum |
| c. | Slope (psi/ms) | 150 maximum |
| d. | Total Function Time (ms) | 50 maximum |

NOTES:

1. Rise time shall be the elapsed time between 10% of peak pressure and peak pressure.

2. Slope shall be determined by that portion of the pressure-time trace between 10% and 90% of peak pressure.

3. Total Function Time shall be the elapsed time from First Application of Firing Current (zero time) to max peak pressure.

3.8 Evacuation test. After firing, not more than 5% by weight of the chaff shall remain in the cartridge. Firing current shall be in accordance with 3.6.

3.9 Velocity test. Upon ejection, the inert pellet shall have an initial velocity of 90 to 200 feet per second as measured between four and twelve feet from the test firing fixture. Firing current shall be in accordance with 3.6.

3.10 First article inspection. This specification contains technical provisions for first article inspection. Requirements for the submission of first article samples by the contractor shall be as specified in the contract.

3.11 Workmanship. All parts and assemblies shall be fabricated and loaded in a thorough workmanlike manner, and all manufacturing, processing, and assembly operations shall be correctly performed. They shall be clean and free of burrs, sharp edges, unblended radii, surface defects, chips, dirt, grease and oil (except where specifically required), corrosion products and other foreign matter. The cleaning method used shall not be injurious to any part or assembly nor shall they be contaminated by the cleaning agent. Exterior surface coatings shall be continuous except for a few light scratches not exposing base material. All required markings and stampings shall be neat and sharply defined. Required packing shall be dry.

4. QUALITY ASSURANCE PROVISIONS.

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or purchase order, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

4.1.1 Responsiblity for compliance. All items must meet all requirements of sections 3 and 5. The inspection set forth in this specification shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility of assuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling in quality conformance does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to acceptance of defective material.

4.2 Classification of inspections. The following types of inspection shall be conducted on this item.

a. First Article Inspection.

b. Quality Conformance Inspection.

4.3 First article inspection.

4.3.1 Submission. The contractor shall submit a first article sample as designated by the Contracting Officer for evaluation in accordance with provisions of 4.3.2 and 4.3.3. The first article sample shall consist of the following items in sample quantities as indicated in Table I.

4.3.2 Inspections to be performed. See MIL-A-48078 and Table I specified herein.

4.3.3 Rejection. (See MIL-A-48078).

TABLE I. First article inspection

CLASSIFICATION OF CHARACTERISTICS



| PARAGRAPH | TITLE<br>Cartridge, Impulse: M796 | SHEET 1 OF 3 | DRAWING NUMBER<br>See below<br>NEXT HIGHER ASSEMBLY<br>--- |
|---|---|---|---|
| CLASSIFICATION | EXAMINATION OR TEST | CONFORMANCE CRITERIA | REQUIREMENT PARAGRAPH | INSPECTION METHOD REFERENCE |
| | Disc, Closure (Dwg. 9311662)<br>Examination for defects | 30 | 3.2 | Gage-Inspect to dwg. |
| | Washer, Closure (Dwg. 9311663)<br>Examination for defects | 30 | 3.2 | Gage-Inspect to dwg. |
| | Pin, Contact (Dwg. 9311666)<br>Examination for defects | 30 | 3.2 | Gage-Inspect to dwg. |
| | Pin, Contact Assembly (Dwg. 9311668)<br>Examination for defects | 30 | 3.2 | Gage-Inspect to dwg. |
| | Eyelet (Dwg. 9311667)<br>Examination for defects | 30 | 3.2 | Gage-Inspect to dwg. |
| | Case (Dwg. 9311669)<br>Examination for defects | 30 | 3.2 | Gage-Inspect to dwg. |
| | (Examination/Test Cont'd on page 2) | | | |

NOTES:

TABLE I. First article inspection

CLASSIFICATION OF CHARACTERISTICS

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| PARAGRAPH | TITLE | SHEET | DRAWING NUMBER |
|---|---|---|---|
| | Cartridge, Impulse: M796 | 2 OF 3 | 9311660 |
| | | | NEXT HIGHER ASSEMBLY: --- |

| CLASSIFICATION | EXAMINATION OR TEST | CONFORMANCE CRITERIA | REQUIREMENT PARAGRAPH | INSPECTION METHOD REFERENCE | Samples Pulled |
|---|---|---|---|---|---|
| | Examinaton for Defects | 260 | 3.2 | 4.4.2.1 | None |
| | Bridgewire Resistance | 260 | 3.3 | 4.5.1 | 30 (NOTE 3) |
| | Transportation and Vibration | 230 | 3.5.1 | 4.5.3.1 | 10 (NOTE 4) |
| | Shock (NOTE 2) | 220 | 3.5.2 | 4.5.3.2 | 10 (NOTE 4) |
| | Humidity (NOTE 2) | 210 | 3.5.3 | 4.5.3.3 | 10 (NOTE 4) |
| | Aircraft Vibration (NOTE 2) | 200 | 3.5.4 | 4.5.3.4 | 10 (NOTE 4) |
| | Temperature-Altitude (NOTE 2) | 190 | 3.5.5 | 4.5.3.5 | 10 (NOTE 4) |
| | No Fire Sensitivity | 180 | 3.4 | 4.5.2 | None |
| | Water Immersion | 180 | 3.5.6 | 4.5.3.6 | None |
| | All Fire Sensitivity/Closed Bomb | 90 | 3.6, 3.6.1, 3.6.2, 3.7 | 4.5.4, 4.5.4.1, 4.5.4.2, 4.5.5 | --- |
| | All Fire/Evacuation Test | 45 | 3.6, 3.6.1, 3.6.2, 3.8 | 4.5.4, 4.5.4.1 4.5.4.2, 4.5.6 | --- |
| | (Examination/Test Cont'd on page 3) | | | | |

NOTES:







Previous editions are obsolete which may not be used.

TABLE I. First article inspection

## CLASSIFICATION OF CHARACTERISTICS



| PARAGRAPH | TITLE | SHEET | DRAWING NUMBER |
|---|---|---|---|
| | Cartridge, Impulse: M796 | 3 OF 3 | See below |
| | | | NEXT HIGHER ASSEMBLY: --- |

| CLASSIFICATION | EXAMINATION OR TEST | CONFORMANCE CRITERIA | REQUIREMENT PARAGRAPH | INSPECTION METHOD REFERENCE |
|---|---|---|---|---|
| | All Fire/Velocity Test | 45 | 3.6, 3.6.1, 3.6.2, 3.9 | 4.5.4, 4.5.4.1, 4.5.4.2, 4.5.7 --- |

NOTES: (1) Perform tests in order indicated. (2) Cartridges to be tested in M-1 Countermeasure Chaff (dwg. 9311402) and Payload Module Assembly (Dwg. 9311451) both G.F.E. Cartridges shall not be removed from the M-1 cartridge until Temperature-Altitude has been completed. (3) Of the 30 samples pulled, 10 will be All Fire/Closed Bomb tested, 10 will be All Fire/Evacuation tested, and 10 will be All Fire/Velocity tested. (4) Units will be All Fire/Closed Bomb tested.



AMSMC Form 1570a, 1 Jul 89 Replaces AMSMC Form 1570a, 1 Apr 85, which may not be used.

4.4 Quality conformance inspection.

4.4.1 Inspection lot formation. The term "inspection lot" is defined as a homogeneous collection of units of product from which a representative sample is drawn or which is inspected 100 percent to determine conformance with applicable requirements. Units of product selected for inspection shall represent only the inspection lot from which drawn and shall not be construed to represent any prior or subsequent quantities presented for inspection. Homogeneity shall be considered to exist provided the inspection lot has been produced by one manufacturer in one unchanged process, using the same materials, the same material batch, and the same methods, in accordance with the same drawing, same drawing revision, same specification, same specification revision and manufactured under essentially the same conditions, and at essentially the same time. All material submitted for inspection in accordance with this specification shall comply with the homogeneity criteria specified herein, regardless of the type of inspection procedure which is being applied to determine conformance with requirements. Each inspection lot of M796 Impulse Cartridge shall contain:

a. Inert parts from one interfix from one manufacturer.

b. Composition ingredients and HPC-1 Propellant from not more than one lot from one supplier.

c. Initiation and booster charge compositions of one or more batches produced under one continuous set of operating conditions, with each batch of composition having been subjected to the physical mixing process intended to make the batch homogeneous.

4.4.2 Examination and tests.

a. Classification of characteristics. Quality conformance examinations and tests are specified in the following Classification of Characteristics paragraphs. The contractor's quality program or detailed inspection plan shall provide assurance of compliance of all characteristics with the applicable drawing and specification requirements utilizing as a minimum the conformance criteria specified herein. Where specified herein, attributes sampling inspection shall be conducted in accordance with Table II below. Samples shall be selected at random.

TABLE II Sampling

| Lot size | Inspection Level I | II | III | IV | V | VI |
|---|---|---|---|---|---|---|
| 2 to 8 | * | * | * | * | 5 | 3 |
| 9 to 15 | * | * | * | 13 | 5 | 3 |
| 16 to 25 | * | * | * | 13 | 5 | 3 |
| 26 to 50 | * | * | 32 | 13 | 5 | 3 |
| 51 to 90 | * | * | 32 | 13 | 12 | 4 |
| 91 to 150 | * | 125 | 32 | 13 | 12 | 5 |
| 151 to 280 | * | 125 | 32 | 30 | 14 | 6 |
| 281 to 500 | * | 125 | 32 | 30 | 17 | 7 |
| 501 to 1200 | * | 125 | 74 | 35 | 20 | 9 |
| 1201 to 3200 | 1250 | 125 | 74 | 43 | 24 | 10 |
| 3201 to 10000 | 1250 | 125 | 87 | 50 | 30 | 10 |
| 10001 to 35000 | 1250 | 296 | 109 | 61 | 36 | 10 |
| 35001 to 150000 | 1250 | 296 | 124 | 74 | 40 | 10 |
| 150001 to 500000 | 1250 | 346 | 156 | 91 | 40 | 10 |
| 500001 and over | 1250 | 431 | 187 | 102 | 40 | 10 |

Numbers under inspection levels indicate sample size; * indicates one hundred percent inspection. If sample size exceeds lot size, perform one hundred percent inspection. Accept on zero and reject on one or more for all inspection levels.

TABLE III

Acceptance Testing

| Inspection Lot Size | Sample Size | Accept | Reject |
|---|---|---|---|
| 0-1,000 | 30 | 0 | 1 |
| 1,001-3,000 | 60 | 1 | 2 |
| 3,001-10,000 | 90 | 2 | 3 |
| 10,001-35,000 | 120 | 3 | 4 |
| 35,001-150,000 | 210 | 5 | 6 |
| 150,001-500,000 | 315 | 7 | 8 |

b. Alternative inspection provisions. Alternative inspection procedures, methods, or equipment, such as statistical process control, tool control, other types of sampling procedures, etc., may be used by contractor when they provide, as a minimum, the level of quality assurance required by the provisions specified herein. Prior to applying such alternative procedures, methods, or equipment, the contractor shall describe them in a written proposal submitted to the Government for evaluation and approval (see 6.9). When required, the contractor shall demonstrate that the effectiveness of each proposed alternative is equal to or

better than the specified quality assurance provisions herein. In cases of dispute as to whether the contractor's proposed alternative provides equal assurance, the provisions of this specification shall apply. All approved alternative inspection provisions shall be specifically incorporated into the contractor's quality program plan or detailed inspection system, as applicable.

## CLASSIFICATION OF CHARACTERISTICS



| PARAGRAPH | TITLE | SHEET | DRAWING NUMBER |
|---|---|---|---|
| 4.4.2.1 | Cartridge, Impulse: M796 | 1 OF 2 | 9311660 |
| | | | NEXT HIGHER ASSEMBLY: --- |

| CLASSIFICATION | EXAMINATION OR TEST | CONFORMANCE CRITERIA | REQUIREMENT PARAGRAPH | INSPECTION METHOD REFERENCE |
|---|---|---|---|---|
| Critical | None defined | | | |
| Major | | | | |
| 101 | Sealant missing/color not visible or inadequate | Table II, Level II | 3.2 | Visual |
| 102 | Crimp missing or inadequate | Table II, Level II | 3.2 | Visual |
| 103 | Barrel diameter (see 9311669) | Table II, Level II | 3.2 | Gage |
| 104 | Base diameter (see 9311669) | Table II, Level II | 3.2 | Gage |
| 105 | Bridgewire resistance test | 100% | 3.3 | 4.5.1 |
| 106 | No-fire sensitivity test | (a) | 3.4 | 4.5.2 |
| 107 | Water immersion | (b) | 3.5.6 | 4.5.3.6 |
| 108 | All-fire sensitivity test/Closed Bomb Test | (b) | 3.6/3.7 | 4.5.4/4.5.5 |
| 109 | Petaling (Disc) | (b) | 3.6.1 | 4.5.4.1 |
| 110 | Integrity of crimp | (b) | 3.6.2 | 4.5.4.2 |
| 111 | Depth of firing pin below base surface | Table II, Level II | 3.2 | Gage |

NOTES:

| PARAGRAPH 4.4.2.1 | TITLE Cartridge, Impulse: M796 | SHEET 2 OF 2 | DRAWING NUMBER 9311660 |
|---|---|---|---|
| | | | NEXT HIGHER ASSEMBLY --- |

| CLASSIFICATION | EXAMINATION OR TEST | CONFORMANCE CRITERIA | REQUIREMENT PARAGRAPH | INSPECTION METHOD REFERENCE |
|---|---|---|---|---|
| Minor | | | | |
| 201 | Overall length | Table II, Level IV | 3.2 | Gage |
| 202 | Marking incorrect, illegible or missing | Table II, Level IV | 3.2 | Visual |
| 203 | Poor workmanship | Table II, Level V | 3.11 | Visual |

NOTES:
a. Select sample in accordance with Table III.
b. Use sample from previous test.

## CLASSIFICATION OF CHARACTERISTICS



| PARAGRAPH | TITLE | SHEET | DRAWING NUMBER |
|---|---|---|---|
| 4.4.2.2 | Packing and Marking for Can, Metal for Impulse Cartridge: M796 | 1 OF 1 | 9313891 or 12561412 |
| | | | NEXT HIGHER ASSEMBLY: 9313890 or 12561420 |

| CLASSIFICATION | EXAMINATION OR TEST | CONFORMANCE CRITERIA | REQUIREMENT PARAGRAPH | INSPECTION METHOD REFERENCE |
|---|---|---|---|---|
| Critical | None defined | | | |
| Major | | | | |
| 101 | Any packaging component missing | Table II, Level II | 5.1 | Visual |
| 102 | Incorrect number of impulse cartridges | Table II, Level II | 5.1 | Visual |
| 103 | Marking missing, incomplete or illegible | Table II, Level II | 5.1 | Visual |
| 104 | Can incorrectly sealed | Table II, Level II | 5.1 | Visual |
| Minor | | | | |
| 201 | Poor workmanship | Table II, Level V | 3.11 | Visual |

NOTES:

## CLASSIFICATION OF CHARACTERISTICS

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| PARAGRAPH | TITLE | SHEET | DRAWING NUMBER |
|---|---|---|---|
| 4.4.2.3 | Packing and Marking for Box, Exterior for Impulse Cartridge: M796 | 1 OF 1 | 9313890 or 12561420 |
| | | | NEXT HIGHER ASSEMBLY: --- |

| CLASSIFICATION | EXAMINATION OR TEST | CONFORMANCE CRITERIA | REQUIREMENT PARAGRAPH | INSPECTION METHOD REFERENCE |
|---|---|---|---|---|
| Critical | None defined | | | |
| Major | | | | |
| 101 | Any packing component missing | Table II, Level II | 5.2, 5.3 | Visual |
| 102 | Number of metal cans incorrect | " | 5.2, 5.3 | Visual |
| 103 | Exterior marking missing, incomplete or illegible | " | 5.2, 5.3 | Visual |
| Minor | | | | |
| 201 | Contents not packed tightly | Table II, Level IV | 5.2, 5.3 | Visual |
| 202 | Poor workmanship | Table II, Level V | 3.11 | Visual |

NOTES:

4.4.3 Testing. Testing is described in the First Article and Quality Conformance Inspection tables.

4.4.4 Inspection equipment. The inspection equipment required to perform the inspections and tests prescribed in this specification are identified in the "Paragraph Reference/Inspection Method" column in the tables starting with 4.4.2.1 and in the test method paragraphs (see 4.5). The contractor shall submit for approval, inspection equipment designs in accordance with the terms of the contract. See section 6 of MIL-A-48078, and 6.3 herein.

4.5 Methods of inspection.

4.5.1 Bridge circuit resistance test. Using approved test equipment, the cartridges shall be tested for conformance to 3.3. If any cartridge fails to meet the requirements, it shall be classed defective. (Non-destructive test)

4.5.2 No-fire sensitivity test. Using approved test equipment, the cartridges shall be tested for conformance to 3.4. If any cartridge fails to meet the requirements, it shall be classed defective. (Non-destructive test)

4.5.3 Environmental tests. Approved test equipment shall be used throughout. Following each of the environmental conditions, the cartridges shall be examined for the visual defects in 4.4.2.1. Any defect shall be cause for rejection of the First Article Sample.

4.5.3.1 Transportation vibration. (First Article only) This test shall be performed in accordance with MIL-STD-810C, Method 514.2, Procedure X, using curve AW. The cartridge shall be tested bare in a hard mount fixture.

4.5.3.2 Shock. (First Article only) This test shall be performed in accordance with MIL-STD-810C, Test Method 516.2, Procedure I, Figure 516.2-2. In Figure 516.2-2 the Nominal Duration (D) and Peak Value shall be for Flight Vehicle Equipment. The tolerance for nominal duration shall be $\pm$ 1 ms. The cartridge shall be tested assembled to the Countermeasure Chaff: M-1 (Dwg. 9311402) and Payload Module Assembly (Dwg. 9311451), both G.F.E.

4.5.3.2.1 Shock test orientation. See 4.5.3.4.1 for axis orientation.

4.5.3.3 Humidity. (First Article only) The test shall be performed in accordance with MIL-STD-810C, Test Method 507.1, Procedure I, Omitting step 6. (10 days) The cartridge shall be tested assembled to the Countermeasure Chaff: M-1 (Dwg. 9311402) and Payload Module Assembly (Dwg. 9311451) both to be G.F.E.

4.5.3.4 Aircraft vibration. (First Article only) The cartridge shall be vibrated assembled to the Countermeasure Chaff: M-1 (Dwg. 9311402) and Payload Module Assembly (Dwg. 9311451) both to be G.F.E. This test shall be performed in accordance with MIL-STD-810C, Method 514.2, Procedure IIC and Procedure IA/Category b.2, employing the following supplementary data:

a. Table 514.2-IIA Figure 514.2-2A--"$W_o$" shall be $0.2G^2/Hz$.

b. Figure 514.2-2A--Random vibration envelope, the frequency "VAR" shall be 89.5 Hz., and the acceleration power spectral density at the 2000 Hz. cutoff point shall be $.05G^2/Hz$.

c. Table 514.2-IVA--The number of missions shall be 101.

d. Figure 514.2-4C--The number of missions shall be 100.

e. Figures 514.2-4D, 514.2-4E and 514.2-4F--The weight used for the test item shall be 50 pounds.

4.5.3.4.1 Vibration - axis orientation.

a. Payload Module/Item Assembly Test Axis Orientation should be as per Figure 1.

b. Orientations/Mounting of Payload Module Assembly to the vibration table for each of the three axis should be such that the open end of the Payload Module Assembly is at the top with the Chaff Cartridge in place and the Impulse Cartridge assembled at the bottom as shown in Figure 1.

c. To best meet the vibration requirements for the Longitudinal Axis and Transverse Axis it is recommended that a slip plate should not be used. In lieu of utilizing the slip plate, the vibrator should be turned 90° and the Payload Module Assembly attached/positioned to maintain orientation as indicated in para. b.

d. It is required that the stud nuts be replaced with high strength rods threaded on both ends in order to secure the Payload Module Assembly containing test items to the vibrating table attachment plate. Use a washer and two nuts on each rod.

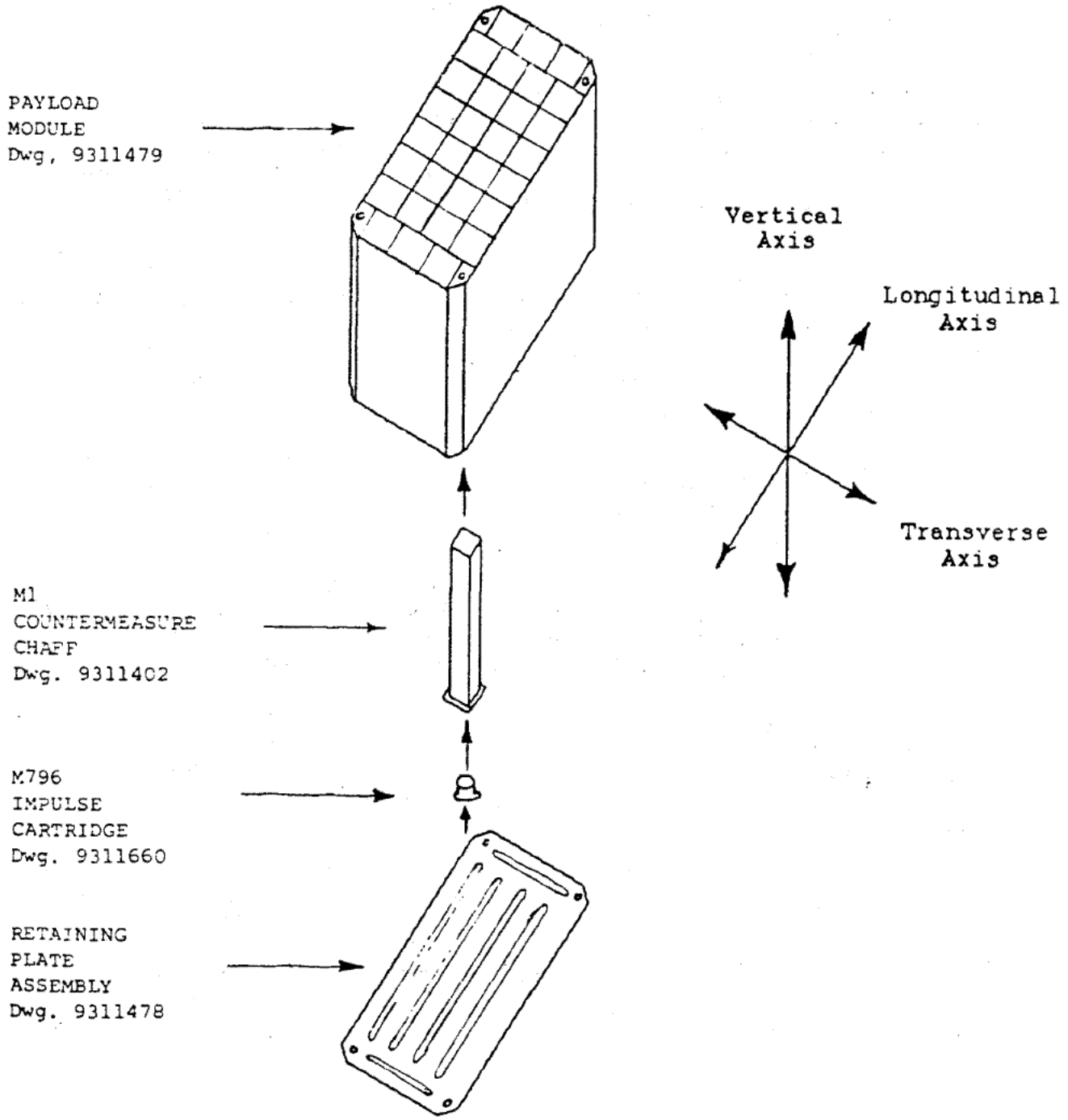


Figure 1: Axis Orientation

4.5.3.5 Temperature - altitude. (First Article only) This test shall be performed in accordance with MIL-STD-810C, Test Method 504.1, Procedure I, Table 504.1-II, Category 6, Omitting step 5. The cartridge shall be tested assembled to the Countermeasure Chaff: M-1 (Dwg. 9311402) and Payload Module Assembly (Dwg. 9311451), both to be G.F.E. The high temperature requirement shall be 85°C in lieu of 95°C listed in the referenced table.

4.5.3.6 Water immersion. Test cartridges shall be immersed in six inches of water minimum for fifteen minutes minimum. Within ten minutes after removal from the water the units shall be tested in accordance with 4.5.4 and 4.5.5. Prior to function testing, exterior surfaces of units must be dried. (Use a towel or compressed air).

4.5.4 All-fire sensitivity test. Using approved test equipment and instrumentation, the cartridge sample (sized as per Table I or Table II as appropriate) shall be tested for conformance to the requirement of 3.6. Any cartridge failing to meet the applicable requirement shall be classed defective. (Destructive Test)

4.5.4.1 Petaling. Following all-fire sensitivity testing, each cartridge shall be examined for visual evidence of petaling as described in 3.6.1. Any cartridge failing to meet the applicable requirement shall be classed defective.

4.5.4.2 Integrity of crimp. Following all-fire sensitivity testing, the cartridge shall be visually examined for integrity of crimp as detailed in 3.6.2. Any cartridge failing to meet the applicable requirement shall be classed defective.

4.5.5 Pressure-time test. Using approved test equipment and instrumentation, the cartridge samples shall be tested for the output characteristics described in 3.7. Any cartridge failing to meet the applicable requirement shall be classed defective. (Destructive test)

4.5.6 Evacuation test. (First Article only) The M796 Impulse Cartridge shall be fitted into the M-1 Countermeasure Chaff (Dwg. 9311402) and Payload Module Assembly (Dwg. 9311451) attached to a Dispenser Assembly (Dwg. 9311434) all to be G.F.E., and fired from a suitable fixture approved in accordance with 4.4.4. Observation shall be made for conformance with the applicable requirement.

4.5.7 Velocity test. (First Article only) The M796 Impulse Cartridge shall be fitted into the Inert Flare for the M-130 Aircraft General Purpose Dispenser (Dwg. 9354498) and Payload Module Assembly (Dwg. 9311451, G.F.E.) mounted to a Dispenser Assembly (Dwg. 9311434, G.F.E.) and fired vertically at 90 degrees (elevation) from an approved test fixture with suitable instrumentation capable of sensing and recording ejection velocity in accordance with 4.4.4. Observations shall be made for conformance with applicable requirement.

5. Packaging.

5.1 Preservation.

5.1.1 Level A. Not applicable.

5.1.2 Level B. Level B preservation shall be in accordance with 9313891 or with Dwgs. 12561412 and 12561419.

5.1.3 Level C. Not applicable.

5.2 Packing.

5.2.1 Level A. Not applicable.

5.2.2 Level B. Level B packing shall be in accordance with 9313890 or with Dwg. 12561420.

5.2.3 Level C. Not applicable.

5.3 Marking.

5.3.1 Level A. Not applicable.

5.3.2 Level B. Level B marking shall be in accordance with 9313890 and 9313891 or with Dwgs. 12561412, 12561419 and 12561420.

5.3.3 Level C. Not applicable.

6. NOTES

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

6.1 Intended use. The components covered by this specification are intended for use on the M206 Flare, M-1 Chaff, and as part of the M839 Decoy Cartridge.

6.2 Acquisition requirements. See MIL-A-48078.

6.3 Submission of inspection equipment design approvals. (See MIL-A-48078). Submit equipment designs as required to: Commander, U.S. Army Armament Research, Development and Engineering Center, ATTN: AMSMC-QAT-I (D), Picatinny Arsenal, NJ 07806-5000. This address will be specified on the Contract Data Requirements List DD Form 1423 in the contract. Unless otherwise specified, data item DI-R-1714 will apply.

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

6.5 Distribution of ammunition data cards. Distribution of ammunition data cards shall include the following: Commander, U.S. Army Armament Research, Development and Engineering Center, ATTN: AMSMC-QAT-M (D), Picatinny Arsenal, NJ 07806-5000 and U.S. Army Armament Munitions and Chemical Command, ATTN: AMSMC-QAD, Rock Island, IL 61299.

6.6 Subject term (key word) listing.
Impulse Cartridge, M796
All-fire sensitivity
Pressure-time traces
Petaling
Evacuation test
Velocity test

6.7 Changes from previous issue. Asterisks (or vertical lines) are not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the changes.

6.8 Submission of alternative inspection provisions. Proposed alternative inspection provisions should be submitted by the contractor to the procuring contracting officer for evaluation and approval by the technical activity responsible for preparation of this specification.

Custodian:
Army-AR

Preparing activity:
Army-AR

(Project: 1377-A963)