

MIL-C-85625 (AS)

11 August 1983

MILITARY SPECIFICATION

CARTRIDGE, 25 mm, HIGH EXPLOSIVE INCENDIARY

SELF-DESTRUCT, PGU-22/U

This specification is approved for use by the Naval Air 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 establishes the requirements for the test and acceptance of the percussion primed Cartridge, 25 millimeter (mm), PGU-22/U High Explosive Incendiary (HEI) Self-Destruct, herein referred to as the Cartridge.

2. APPLICABLE DOCUMENTS.

2.1 Government documents.

2.1.1 Specifications, standards, and handbooks. Unless otherwise specified, the following specifications and standards of the issue listed in that issue of the Department of Defense Index of Specifications and Standards (DoDISS) specified in the solicitation, form a part of this specification to the extent specified herein.

STANDARDS

MILITARY

MIL-STD-105

Sampling Procedures and Tables for
Inspection by Attributes.

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commanding Officer, Naval Air Engineering Center, Engineering Specifications and Standards Department (ESSD), Code 93, Lakehurst, NJ 08733, by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document, or by letter.

FSC 1305

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MIL-STD-109	Quality Assurance Terms and Definitions.
MIL-STD-129	Marking for Shipment and Storage.
MIL-STD-644	Visual Inspection Standards and Inspection Procedures for Inspection of Packaging, Packing and Marking of Small Arms Ammunition.
MIL-STD-651	Visual Inspection Standards for 20 mm Ammunition and Components.
MIL-STD-1167	Ammunition Data Cards.
MIL-STD-1168	Lot Numbering of Ammunition.
MIL-STD-1235	Single and Multilevel Continuous Sampling Procedures and Tables for Inspection by Attributes.

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.

DRAWINGS

Naval Air Systems Command
(Code Ident 30003)

1397AS290 Cartridge, 25 mm, HEI, PGU-22/U.

PUBLICATIONS

Code of Federal Regulations (CFR)

49 CFR 100-199 Hazardous Materials Regulations,
Department of Transportation.

(Applications for copies should be addressed to the Superintendent of Documents, Government Printing Office, Washington, DC 20402.)

REPORTS

U.S. Army Armament Research and Development Command
(Code Ident 19200)

AS12013566 25 mm Ammunition Ballistic Test
Methods.

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AS12003667

Special Ammunition Requirements.

(Copies of specifications, standards, and drawings required by manufacturers in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting officer.)

2.2 Order of precedence. In the event of a conflict between the text of this specification and the references cited herein, the text of this specification shall take precedence.

3. REQUIREMENTS.

3.1 General. The cartridge shall comply with Drawing 1397AS290 and other requirements specified herein.

3.2 Manufacturing process. All parts and assemblies shall be manufactured by a process approved by the procuring activity, and no deviations from that process shall be made without his prior approval (see 6.4.1).

3.3 First article sample. This specification makes provisions for a first article sample. Unless otherwise specified by the contracting officer, a first article sample is required (see 4.4 and 6.3).

3.4 Projectile extraction. The force required to extract the projectile from the case shall be not less than 8,000 newtons (N) and not greater than 16,900 N as specified on Drawing 1397AS290 (see 4.6.1).

3.5 Projectile torque. The projectile shall not rotate in the case when subjected to a minimum torque of 3.4 newton meters (Nm) (see 4.6.3).

3.6 Velocity. The average muzzle velocity of the sample cartridges, conditioned at 18 to 24 degrees Celsius ($^{\circ}\text{C}$), shall be 1,100 \pm 25 meters per second (mps). The sample standard deviation shall not exceed 13 mps (see 4.6.4).

3.7 Pressure. The average, plus 0.72 standard deviation of peak chamber pressure, shall not exceed 402 megapascals (mPa) at 18 to 24 $^{\circ}\text{C}$. (Pressure shall be measured with a piezoelectric type pressure transducer or equivalent) (see 4.6.4).

3.8 Waterproofness. The average velocity (wet) of projectiles of the sample cartridges, conditioned at 18 to 24 $^{\circ}\text{C}$, shall not vary from the average velocity (dry) by more than 30.5 mps (see 4.6.4).

3.9 Accuracy. The standard deviation of impacts in both the horizontal and the vertical directions of the sample cartridge projectiles shall meet the requirements specified in AS12013667 (see 4.6.5).

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3.10 Action time. The action time of the cartridge shall not exceed 6.0 milliseconds when conditioned at 18 to 24°C (see 4.6.6).

3.11 Projectile function.

3.11.1 Projectile impact nonfunction. The projectile shall not function upon impact with a target of 0.063-inch nominal thickness aluminum plate 2024 T3 at 0 ±5 degrees obliquity, at a distance of 10.00 to 10.25 meters (see 4.6.7).

3.11.2 Projectile impact function. The projectile shall function upon impact with a target of 0.063-inch nominal thickness aluminum plate 2024 T3 at 0 ±10 degrees obliquity, at a distance of 99 to 100 meters (see 4.6.7).

3.11.3 Target sensitivity function. The projectile shall function upon impact with a target of 0.040-inch nominal thickness aluminum plate 2024 T3 at 0 ±10 degrees obliquity, at a distance of 180 to 220 meters (see 4.6.7).

3.11.4 Projectile self-destruct function. The projectile shall function at not less than 6.2 seconds and not greater than 19.0 seconds of uninterrupted flight from the weapon (see 4.6.7).

3.12 Function and casualty. The cartridge shall function at 20 ±10°C without firing defects and casualties (see 4.6.8).

3.13 Workmanship. All parts and assemblies shall be fabricated, loaded, and assembled in a thorough workmanlike manner. They shall be free of burrs, sharp edges, cracks, scratches, dents, folds, wrinkles, buckles, dirt, grease, oil, rust and other foreign matter. The cleaning method used shall not be injurious to any parts, nor shall the parts be contaminated by the cleaning agents. Exterior surface coatings shall be continuous. Light scratches shall not exceed the defect criteria defined in 6.4. All required marking and stamping shall be neat and clearly defined.

4. QUALITY ASSURANCE PROVISIONS.

4.1 Terms and definitions. Quality assurance terms and definitions shall be in accordance with MIL-STD-109.

4.2 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, the contractor may use his own or

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any 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.

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

- a. First article inspection (see 4.4).
- b. Quality conformance inspection (see 4.5).

4.4 First article sample inspection.

4.4.1 First article sample. Prior to regular production, a sample shall be submitted in accordance with contract requirements and shall consist of 804 cartridges, 125 primed cases and 125 projectiles (see 6.3). The sample shall be manufactured using similar equipment, processes and procedures as will be used in regular production. Identification shall be in accordance with MIL-STD-1168.

4.4.1.1 Examination and test. The tests of Table I shall be performed on the first article sample in accordance with the test methods prescribed in 4.6. Except as otherwise specified herein, the tests shall be conducted with samples at $20 \pm 10^{\circ}\text{C}$. Approval will be based upon examination of the complete sample for visual and dimensional characteristics listed in 4.5.3 and the tests of Table I. The combining of tests is permitted provided that the test results are not affected by this procedure.

4.4.1.2 First article sample rejection. Failure of the sample to comply with the requirements of the drawings and specifications specified herein shall result in sample disapproval. Determination as to acceptability of any first article sample shall be based upon results of initial test only and no second tests shall be permitted on that first article. The acceptance/rejection criteria for the first article sample shall be as specified in Table I. All first article units shall be inspected 100 percent for critical defects.

4.5 Quality conformance inspection.

4.5.1 Submission of product. The product shall be submitted in accordance with MIL-STD-105 or MIL-STD-1235, as applicable.

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TABLE I. First article inspection.

Examination or test	No. of sample units	Acc/rej	Requirement paragraph	Paragraph reference/inspection method
<u>Projectile, Assembly, 25 mm, HEI</u>				
Examination for defects	125	Acc - 0 Rej - 1	3.1	4.5.3.1
<u>Case, cartridge, primed</u>				
Examination for defects	125	Acc - 0 Rej - 1	3.1	4.5.3.2
<u>Cartridge, 25 mm, PGU-22/U (Drawing 1397AS290)</u>				
Examination for defects	125	Acc - 0 Rej - 1	3.1	4.5.3.3
Projectile extraction	32 ^{3/}	Acc - 1 Rej - 2	3.4	4.6.1
Propellant contamination	32 ^{3/}	Acc - 0 Rej - 1	3.13	4.6.2
Projectile torque	32	Acc - 1 Rej - 2	3.5	4.6.3
Pressure	20 ^{1/}	Acc - 0 Rej - 1	3.7	4.6.4
Velocity	20 ^{1/}	Acc - 0 Rej - 1	3.6	4.6.4
Action time	45 ^{1/}	Acc - 0 Rej - 1	3.10	4.6.6
Waterproofness	50 ^{1/}	Acc - 0 Rej - 1	3.8	4.6.4
Accuracy	40	Acc - 0 Rej - 1	3.9	4.6.5

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TABLE I. First article inspection. (Continued).

Examination or test	No. of sample units	Acc/rej	Requirement paragraph	Paragraph reference/inspection method
Projectile function				
Impact nonfunction	20	Acc - 0 Rej - 1	3.11.1	4.6.7
Impact function	20	Acc - 0 Rej - 1	3.11.2	4.6.7
Target sensitivity function	20	Acc - 0 Rej - 1	3.11.3	4.6.7
Self destruct function	80	Acc - 0 Rej - 1	3.11.4	4.6.7
Function/casualty	150 ^{2/}	-----	3.12	4.6.8
Function/casualty AV-8/25mm Gun System	150 ^{2/}	-----	3.12	4.6.9

^{1/} Ammunition shall be conditioned at 18 to 24°C.

^{2/} The sample shall be rejected if malfunctions or firing casualties in excess of the "Acc" number on Table III occur.

^{3/} Quantity combined for tests.

4.5.1.1 Production lot. The production lot shall be not less than 25,000 cartridges and not greater than 100,000 cartridges. A lot shall consist of:

- a. Cartridges loaded by one manufacturer, in one unchanged process, in accordance with referenced drawings and specifications.
- b. Like parts and assemblies (cases; primers; projectiles; fuzes; tracer and ignition systems) having one manufacturer's symbol and one interfix number.
- c. Propellant from one lot.

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4.5.1.2 Lot identification. Each cartridge and each packed ammunition lot shall be identified in accordance with applicable drawings and MIL-STD-1168. Each packed lot shall further be identified by a national stock number assigned by the procuring activity.

4.5.2 Quality conformance inspection sampling. One hundred percent examination shall be performed by the contractor for all critical defects. Examination for major and minor defects shall be performed as specified herein. Each part and each assembly found to be defective shall be rejected and removed from the lot for disposition (see 6.2.1).

4.5.2.1 Sampling and acceptance criteria. The sampling plans and procedures shall be in accordance with MIL-STD-105 or MIL-STD-1235 or approved contractor sampling plans. To determine product acceptability, major or minor defects as listed herein may be considered collectively on a class basis or they may be considered individually. However, where major defects are considered collectively on a class basis, the acceptance number for any individual defect of the class shall be limited by the assigned Acceptable Quality Level (AQL) for individual defect associated with the class (see 4.5.2.1.1c). In addition, where three or less defects appear in a classification or where MIL-STD-1235 is used, sampling plans applicable to a class shall not be used for major defects (see 6.5).

4.5.2.1.1 AQLs. The following AQLs are assigned to major and minor defects:

a. Individuals:	<u>AQL (%)</u>
Major:	0.25
Minor:	0.40
b. Class basis:	
Major	1.50
Minor	1.50
c. Individual defects associated with the class basis:	
Major	0.40

4.5.2.2 Machine inspection. Subject to procuring activity approval, inspection of critical, major and minor characteristics may be performed 100 percent by a qualified and periodically verified inspection probe in lieu of sampling the product utilizing the sampling procedures defined in 4.5.3.

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4.5.3 Classification of defects.^{1/} The classification of defects shall be as follows:

4.5.3.1 Projectile Assembly, 25 mm HEI.

<u>Categories and Defects</u>	<u>Method of inspection</u>	<u>AQL (%)</u>
CRITICAL:		
HEI Charge Depth	Gage	100 ^{2/}
MAJOR:		
None defined.		
MINOR:		
201. Workmanship (see 3.13)	Visual	1.5

4.5.3.2 Case, cartridge, primed.

<u>Categories and Defects</u>	<u>Method of inspection</u>	<u>AQL (%)</u>
CRITICAL:		
1. Ignition system is properly assembled	Visual or Gage	100 ^{2/}
2. Primer above flush	Gage	100 ^{2/}
MAJOR:		
101. Depth of primer seating oversize	Gage	0.25
102. Cocked, loose, missing or inverted primer	Manual/Visual	0.25
MINOR:		
201. Sealant missing around primer	Visual	0.40
202. Primer crimp missing	Visual	0.40
203. Workmanship (see 3.13)	Visual	1.5

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4.5.3.3 Cartridge (see Drawing 1397AS290).

<u>Categories and Defects</u>	<u>Method of inspection</u>	<u>AQL (%)</u>
CRITICAL:		
1. Split or perforated case	Visual	100 ^{2/}
2. Crack or split in projectile	Visual	100 ^{2/}
3. Fuze nose cap missing	Visual	100 ^{2/}
4. Crimp missing (case/projectile)	Visual	100 ^{2/}
MAJOR:		
101. Fuze loose	Gage ^{4/}	0.25
102. Overall length, max	Gage	100 ^{2/}
103. Improper or incomplete crimp (case/projectile)	Visual	0.25
104. Profile and alignment, max	Gage	100 ^{2/}
105. Crack, split or dent in fuze nose cap	Visual	0.25
MINOR:		
201. Marking incorrect, incomplete illegible or missing	Visual	1.5
202. Scratch, dent, buckle, bulge, wrinkle or fold in case	Visual	0.40
203. Incorrect type cartridge or components	Visual	0.40
204. Gap between fuze and projectile body . . .	Visual	0.40
205. Workmanship (see 3.13)	Visual	1.5

^{1/}MIL-STD-651 shall apply in defining and evaluating cartridge visual defects.

^{2/}If machine inspection is not utilized, inspection verification of prior 100% inspections shall be performed in accordance with MIL-STD-105, minimum size = 315 with zero defects allowed.

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^{3/}A dead weight load not greater than 267 N may be used to insert the cartridge into the gage.

^{4/}The cartridge shall be classed defective, when the fuze turns with respect to the projectile body upon application of the required torque in a counterclockwise direction.

4.5.4 Test. The tests of Table II shall be performed on each cartridge lot in accordance with the test methods in 4.6. Unless otherwise indicated herein, tests shall be conducted with samples at $20 \pm 10^\circ\text{C}$. Sample size and acceptance criteria for each test shall be as specified herein. Only cartridges having met the visual and dimensional requirements and having been selected in such a manner that the sample is representative of the entire lot shall be used in the tests. The selected cartridges shall be thoroughly mixed before being divided into samples for the various tests. The combining of tests is permitted provided that the test results are not affected by this procedure.

4.5.4.1 Firing defects and casualties. Firing defects and associated criteria shall be as specified in Table III. For the defect definitions, see AS12013566.

4.5.4.2 Unlisted firing defects. The lot shall be suspended and referred to the procuring activity for disposition, if a malfunction or casualty not covered by this specification occurring in any firing test, indicates that the product is unsuited for the purpose intended.

4.5.5 Packing, packaging and marking inspection. MIL-STD-644 shall be used for the inspection of packaging, packing and marking as applicable to the drawing.

4.6 Test methods and procedures.

4.6.1 Projectile extraction. The method of test shall be as prescribed in AS12013566.

4.6.2 Propellant contamination. The propellant from each of the cartridges tested for projectile extraction shall be examined visually for contamination, as prescribed in AS12013566.

4.6.3 Projectile torque. Each cartridge of the test sample shall be marked with a light scratch extending axially across the rotating band onto the case neck. Torque, to the specified requirement, shall be applied slowly to the projectile. Movement of the projectile with respect to the cartridge case detectable by misalignment in the scratch mark, shall be recorded.

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TABLE II. Quality conformance inspection.

Test ^{1/}	Sample size prod. lot	Reqmt para.	Test para.	Combined		
				Pass	Fail	Retest
Projectile extraction ^{2/}	20	3.4	4.6.1	1 1	2(min) 4(max)	20
Propellant contamination ^{3/}	20	3.13	4.6.2	0	1	...
Projectile torque ^{4/}	20	3.5	4.6.3	0	2	20
Velocity ^{5/, 12/}	20	3.6	4.6.4			40
Pressure ^{6/, 12/}	20	3.7	4.6.4			40
Waterproofness ^{7/}	20	3.8	4.6.4			40
Accuracy ^{8/}	40	3.9	4.6.5			80
Action time ^{9/, 12/}	20	3.10	4.6.6	0	1	...
Projectile function ^{10/}		3.11	4.6.7			
Impact non-function	20	3.11.1				
Impact function	20	3.11.2				
Target sensitivity function	20	3.11.3				
Function and casualty ^{11/}	150	3.12	4.6.8			} 300
Function and casualty ^{11/} AV-8/25 mm Gun System	150	3.12	4.6.9			

^{1/}The lot shall be rejected if in any firing test, one or more of the following malfunctions or the casualties of Table III occur:

- a. Premature functioning of the projectile (see 6.4.3).
- b. Projectile remaining in bore.
- c. Metal parts separation, except rotating band separation (see NOTE 4/ of Table III).
- d. Accept or reject criteria for firing casualties are shown in Table III.

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TABLE II. Quality conformance inspection. (Continued.)

An additional shot shall be fired except as otherwise specified herein, and in the function and casualty test where the occurrence of a firing defect listed in Table III prevents the obtaining of a reliable result for the characteristics being tested.

2/ Projectile extraction.

- a. Failure of 2 or more sample cartridges to comply with minimum requirements shall cause rejection of the lot. If one cartridge of the sample fails to comply with the minimum requirement, a second sample of 20 cartridges shall be tested. The lot shall be rejected if two or more cartridges of the combined samples fail to comply with the minimum requirement.
- b. Failure of four or more cartridges to comply with the maximum requirement shall cause rejection of the lot. If more than one, but less than four cartridges fail to comply with the maximum requirement, a second sample of 20 cartridges shall be tested. The lot shall be rejected if five or more cartridges of the combined samples fail to comply with the maximum requirement.

3/ Propellant contamination. The presence of foreign matter in the propellant of any of the test cartridges shall cause rejection of the lot (see 3.13).4/ Projectile torque. Failure of two or more of the sample cartridges to comply with the specified torque requirement shall cause rejection of the lot. If one cartridge of the sample fails to comply, a second sample of 20 cartridges shall be tested. The lot shall be rejected if two or more cartridges of the combined sample fail to comply with the applicable requirements.5/ Velocity. If the sample fails to comply with either or both requirements, a second sample of 40 cartridges shall be tested for the failing parameter(s) (average, standard deviation). The lot shall be rejected if the second sample fails to comply with the applicable requirements (see 4.6.4).6/ Pressure. If the sample fails to comply with the requirements, a second sample of 40 cartridges shall be tested. The lot shall be rejected if the second sample fails to comply with the applicable requirements.7/ Waterproofness. If the average velocity (wet) of the sample fails to comply with the applicable requirement, a second sample of 40 cartridges shall be tested. The lot shall be rejected if the average velocity (wet) differs by more than 30.5 mps from the average velocity (dry) of 40 additional sample cartridges fired to establish a new base of comparison. The lot shall not be penalized for failure of the last named sample cartridges to comply with the requirement of 3.6.

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TABLE II. Quality conformance inspection. (Continued.)

- 8/ Accuracy. If the accuracy of the sample cartridges exceeds the applicable requirement, a second sample of 80 cartridges shall be tested. The lot shall be rejected if the accuracy exceeds the applicable requirements.
- 9/ Action time. If any sample cartridge fails to meet requirements for action time, the lot shall be rejected.
- 10/ Projectile function. The lot shall be suspended and referred to the contracting officer for disposition within 24 hours if malfunctions occur.
- 11/ Function and casualty. The lot shall be rejected if any malfunction or firing casualty of Table III occurs in number(s) equal to or greater than the applicable "Rej" number. Except as otherwise provided, if malfunctions or casualties occur in excess of the applicable "Rej" number, a second sample of 300 cartridges shall be selected. The lot shall be rejected if in the combined samples, malfunctions or casualties occur in numbers equal to or greater than the applicable "Rej" number.
- 12/ Ammunition shall be conditioned at 18 to 24°C.

4.6.4 Velocity, pressure, and waterproofness. The methods of test shall be as prescribed in AS12013566. Statistics necessary for testing of results against acceptance criteria shall be computed. A correction factor of 0.46 mps shall be applied to the recorded velocity at the measured range to obtain muzzle velocity. The method of computation will be:

$$S = \sqrt{\frac{\sum(X_i - \bar{X})^2}{(n - 1)}} \quad \text{or equivalent}$$

where:

X_i = each individual value

\bar{X} = sample arithmetic mean

n = sample size

4.6.5 Accuracy. The method of test and measurement of targets shall be as prescribed in AS12013566. The specified range may be shortened to a minimum range of 100 meters.

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TABLE III. Firing defects.

	<u>Acc</u>	<u>Rej</u>
Cartridge:		
Misfire _____	0	2
Failure to chamber _____	0	1
Failure to extract _____	0	1
Projectile remaining in bore _____	0	1
Premature projectile function _____	0	1 (see 6.4.3)
Primer:		
Primer leak _____	6	17
Primer perforation _____	1	4
Loose primer _____	0	1
Blown primer _____	0	1
Case:		
Longitudinal split ^{1/} _____		
H or S _____	7	22
G or J _____	2	7
K, L or M _____	0	1
Circumferential rupture, partial ^{1/} _____		
S, J or K _____	2	7
G or L _____	1	5
Circumferential rupture (complete) ^{1/} _____	0	1
Detached metal ^{2/} _____	0	1
Projectile:		
Rotating band separation ^{3/} _____		
Complete or partial separation _____	0	1
Metal parts separation ^{4/} _____	0	1

^{1/} See Figure 1 for classifying splits and ruptures in fired cartridge cases. If a longitudinal split or circumferential rupture (partial) extends into two or more defined areas, only the most severe defect criterion of Table III for the areas involved, shall apply. If a

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TABLE III. Firing defects. (Continued.)

- rupture results in separation of the cartridge case into two or more portions, the defect shall be classified as a complete circumferential rupture.
- 2/ Metal sheared or missing-from the fired cartridge case exterior, such as rim or neck shears, shall be classed as a defect. The lot shall not be penalized for shavings of metal from the interior wall of the case neck in the crimped area.
- 3/ For classification as a defect, there must be evidence either by recovery of the band, or portion thereof, or by hole(s) in the fragmentation screen(s). The lot shall not be penalized for normal band fringing.
- 4/ Separation or breakup of projectile part(s), as evidenced by recovery of the part(s) or fragment(s) or hole(s) in the fragmentation screen(s), shall be classed as a defect. The lot shall not be penalized for evidence of any individual fragment with a weight not greater than 0.10 grams.

4.6.6 Action time. The method of test shall be as prescribed in AS12013566.

4.6.7 Projectile function. The method of test shall be as prescribed in AS12013566. The aluminum target shall be supported on the outer edges and located as required from the gun muzzle normal to the line of fire. Observation of projectile functioning shall be made from a suitable position (see 3.11).

4.6.8 Function and casualty M242 or XM241 gun. The method of test shall be as prescribed by AS12013566. The test sample shall be assembled in belts, then fired in bursts of approximately 25 cartridges at a rate of 200 ± 50 rounds per minute. The weapon barrel shall be at ambient temperature at beginning of test and cooled to ambient after each 100 rounds. The test data shall be examined to verify that the requirements of 3.12 have been met.

4.6.9 Function and casualty AV-8/25mm Gun System. The test shall be conducted using the witness panel test setup specified in AS12013566 and the AV-8/25 mm Gun System mounted on a test stand approved by the procuring activity. The gun system shall be loaded with a compliment of 150 cartridges and fired in four 1-second bursts with a 5-minute cooling period between each burst. The fourth burst shall be a fire out. The firing sequence shall be accomplished at a firing rate of $3,600 \pm 400, -200$ rounds per minute. The test data shall be examined to verify that the requirements of 3.12 have been met.

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4.6.10 Defective weapon. If any test cartridge firing defect is found to have been caused by a defective test weapon, the firing defect shall not be valid for lot penalty. In such cases, the defective test weapon shall be corrected or replaced and the test repeated in whole or in part, as indicated. If such firing defect is not found to have been caused by the defective weapon, it shall be valid for lot penalty.

5. PACKAGING.

5.1 Preservation, packaging and packing. The cartridge shall be preserved and packed in accordance with the requirements of the Transportation Packaging Order (TPO) Drawing established by the Government (see 6.2.1). Packaging and packing shall conform to all the applicable requirements for the shipment of hazardous items as defined in 49 CFR 100-199.

5.2 Marking. Marking for shipment shall be in accordance with the instructions of the contract and shall comply with MIL-STD-129. In addition, exterior containers shall show the caution markings required by 49 CFR 100-199, indicating the appropriate classification of ammunition.

5.3 Documentation with shipment. Each shipment of ammunition shall contain data cards in accordance with MIL-STD-1167, lot number assignment in accordance with such items as case, primer, ignition system, propellants, charge weights, projectile, and lot identification (see 6.2.2).

6. NOTES.

6.1 Intended use. The cartridges are intended for use in 25 mm automatic weapons.

6.2 Ordering data.

6.2.1 Acquisition requirements. Acquisition documents should specify the following:

- a. Title, number, and date of this specification.
- b. Place of inspection, if not at place of manufacture.
- c. First article sample requirements (see 3.3, 4.4, and 6.3).
- d. Detailed packing and marking instructions (see 5.1 and 5.2).
- e. Provision for the supply, maintenance and disposition of Government furnished test equipment for acceptance inspection purposes.

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- f. Provisions for submission and approval of the manufacturing process (see 3.2).
- g. Disposition of rejected samples (see 4.5.2).

6.2.2 Data requirements. When this specification is used in an acquisition which incorporate a DD Form 1423, Contract Data Requirements List (CDRL), the data requirements identified below shall be developed as specified by an approved Data Item Description (DID) (DD Form 1664) and delivered in accordance with the approved CDRL incorporated into the contract. When the provisions of DAR 7-104.9(n)(2) are invoked and the DD Form 1423 is not used, the data specified below shall be delivered by the contractor in accordance with the contract or purchase order requirements. Deliverable data required by this specification is cited in the following paragraphs:

<u>Paragraph</u>	<u>Data requirements</u>	<u>Applicable DID</u>	<u>Option</u>
5.3	Ammunition Data Cards	DI-E-2001	---

(Copies of DIDs required by contractors in connection with specific acquisition functions should be obtained from the Naval Publications and Forms Center or as directed by the contracting officer.)

6.3 First article inspection sample. The procuring activity may waive the requirement for a first article inspection sample if the contractor has recently demonstrated his ability to produce this item.

6.4 Definitions.

6.4.1 Process deviation. A process deviation is defined as a change in the approved basic method of manufacture, or an operational change which may alter the metallurgical or physical properties of the item.

6.4.2 Projectile coating defect criteria. Projectiles indicating exposure of bare metal or underlying phosphate or organic pretreatment shall be considered unsatisfactory if any of the following conditions exist:

- a. Any area exceeding 0.090 square inches.
- b. More than one area exceeding 0.045 square inches.
- c. More than five areas of 0.021 square inches or less.

6.4.3 Premature functioning. Is defined as the occurrence of any of the following:

- a. Any function within the weapon.

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- b. Any function within 1 meter of the weapon.
- c. Any functions within 10 meters of uninterrupted flight from the weapon.

6.5 AQLs. The optional use of AQL values for either individual defects or classes of defects, with individual major defect limitation, is intended to minimize inspection agency administrative burden which might result from an exclusive assignment of individual defect AQLs. The option also permits flexibility where continuous or sequential sampling inspection utilizing MIL-STD-1235 (Ord), Contractor Plan NB 502-1, or Contractors Sequential Ration Plan for acceptance is integrated into the manufacturing process.

Preparing activity:
NAVY (AS)

Project (1305-N002)

MIL-C-85625 (AS)

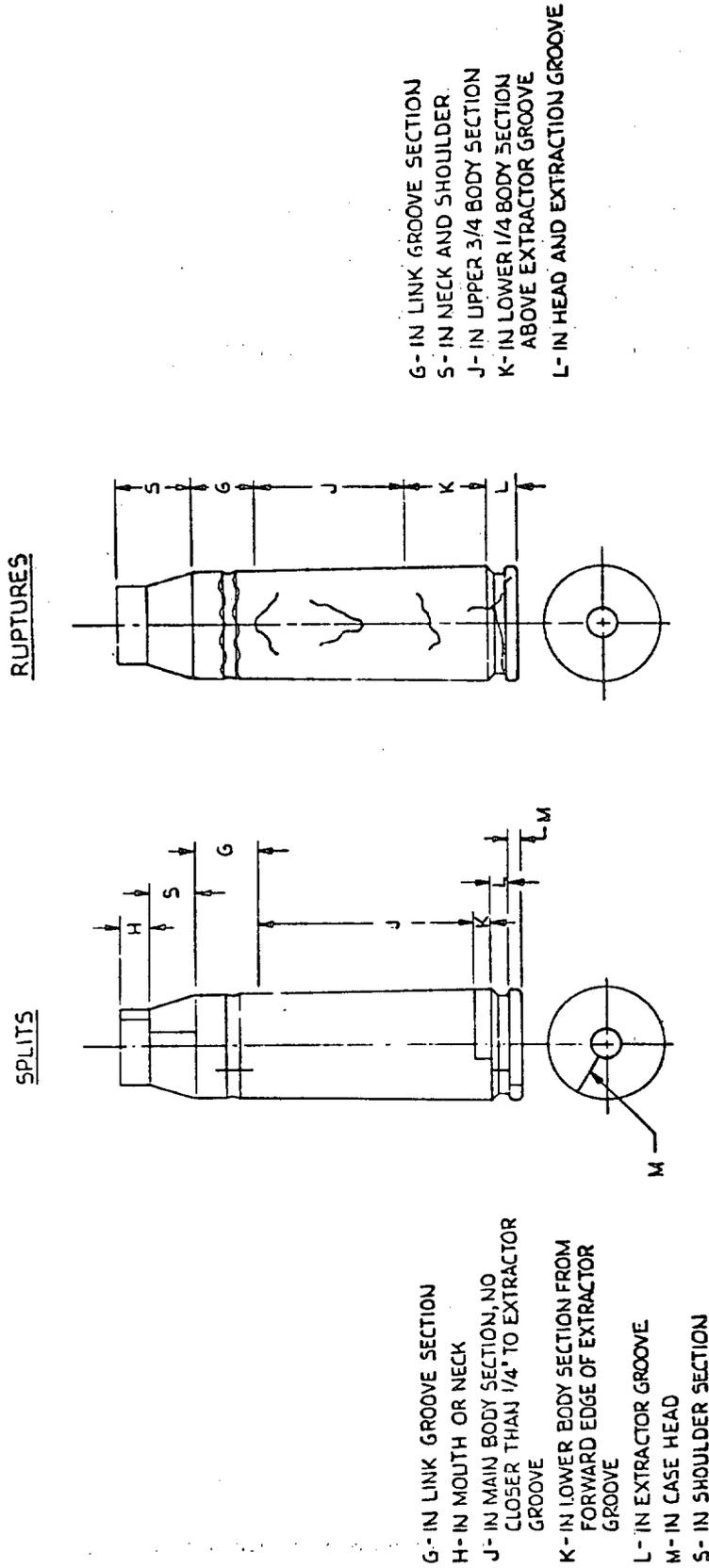


FIGURE 1. Classification of splits and ruptures.

