

INCH-POUND
MIL-G-14451C(AR)
7 September 1993
SUPERSEDING
MIL-G-14451B(WC)
17 April 1973

MILITARY SPECIFICATION
GUN, SUBCALIBER .30: M9

This specification is approved for use by the Department of the Army and is available for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification supports for training purposes the acquisition of the Gun, Subcaliber, Caliber .30: M9 consisting of the barrel, nose, case and door assembly. This specification includes the minimum essential Engineering and Packaging Requirements and the necessary Quality Assurance Provisions to determine that these requirements have been met.

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

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commander, Armament Research, Development and Engineering Center, US Army Armament, Munitions and Chemical Command, ATTN: SMCAR-CCB-SC, Watervliet, NY 12189-4050 by using the self-addressed Standardization Document Improvement Proposal (DDForm 1426) appearing at the end of this document or by letter.

AMSC N/A

FSC 1005

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

SPECIFICATIONS

Military

- MIL-M-11472 - Magnetic-Particle Inspection Process, for Ferromagnetic Materials
- MIL-C-13931 - Cannon, General Specification for
- MIL-P-14232 - Parts, Equipment and Tools for Army Materiel, Packaging of
- MIL-I-45607 - Inspection Equipment, Acquisition, Maintenance and Disposition of

STANDARDS

Military

- MIL-STD-109 - Quality Assurance Terms and Definitions
- MIL-STD-129 - Marking for Shipment and Storage
- MIL-STD-1190 - Minimum Guidelines for Level C Preservation, Packing and Marking

(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 specification to the extent specified herein. Unless otherwise specified, the issues are those cited in the solicitation.

DRAWINGS (see 6.7)

US Army Armament Research, Development and Engineering Center

- EPL 7307568 - Engineering Parts List for Gun, Subcaliber, Caliber .30:M9
- PDS P7307568 - Packaging Data Sheet for Gun, Subcaliber, Caliber .30:M9

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PUBLICATIONS

QAP-APPENDIX - General Quality Assurance Provisions
-WVA

(Copies of drawings, 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 Procuring Contracting Officer.)

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

American Society for Testing and Materials (ASTM)

ASTM D 3951 - Commercial Packaging, Practice for

(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, Pennsylvania 19103-1137.)

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

2.3 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 General requirements. Subcaliber guns and component parts shall be in accordance with the applicable drawing EPL 7307568, this specification, MIL-C-13931, and all referenced documents. Any conflicts are to be resolved by means of the order of precedence (see 2.3).

3.2 First article. The contractor shall submit a first article unless it is specifically waived in the contract (see 4.3 and 6.2). No first article requirements shall be waived without review and approval by the Procuring Contracting Officer (see

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6.4).

3.3 Parts produced by modification of Government-furnished items.

3.3.1 Defective items. No Government-furnished item shall be modified that contains defects which will result in non-compliance of the finished part with the requirements of this specification.

3.3.2 Protective coatings. Any protective coating shall be removed from Government-furnished items and the finished modified parts shall be coated as specified on the applicable drawing.

3.4 Proof-firing. Subcaliber guns shall be subject to proof-firing.

3.4.1 Material soundness. All parts shall be free from cracks and fractures, as evidenced by visual and magnetic-particle inspection.

3.4.2 Exterior surfaces. Exterior surfaces of the subcaliber gun and the surfaces of the chamber and the bore in the major weapon shall be free from all foreign matter prior to insertion of the subcaliber gun.

3.5 Marking. Marking shall be as required in MIL-C-13931 and applicable drawings. Marking shall be complete, correct, and legible.

3.6 Workmanship. Subcaliber guns shall be completely assembled, free from discontinuities of coating, foreign material, and any visible defects. Workmanship shall also be as required in MIL-C-13931.

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 (examinations and tests) 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 this specification where such inspections are deemed necessary to ensure supplies and services conform to prescribed requirements.

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4.1.1 Responsibility for compliance. All items shall 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 ensuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling inspection, as part of manufacturing operations, is an acceptable practice to ascertain conformance to requirements, however, this does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to accept defective material.

4.2 Quality assurance terms and definitions. Quality assurance terms and definitions shall be as specified in MIL-STD-109.

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 inspection. A first article shall be submitted for inspection in accordance with the contract requirements. The first article shall be representative of the production processes to be used during quantity production. The first article shall be subjected to the quality conformance inspections specified herein and such other inspection as is necessary to determine compliance with the requirements of the contract.

4.5 Quality conformance inspection

4.5.1 Examinations.

4.5.1.1 Inspection provisions. All subcaliber guns shall be inspected for conformance to requirements of the provisions of this specification, MIL-C-13931, applicable Quality Assurance Provisions (QAPs) and QAP-APPENDIX-WVT.

4.5.1.2 Parts and modified parts. Parts and modified parts shall be examined prior to assembly in the end item to determine compliance with applicable drawings and specifications.

4.5.1.3 Government-furnished items. Government-furnished items, which will be modified as specified by applicable drawings, shall be inspected to determine that there are no defects which will

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result in non-compliance of the finished parts with the requirements of applicable drawings and specifications.

4.5.1.4 Protective coatings. Examinations and tests of coating shall be in conformance with the specifications referenced on the applicable drawings.

4.5.1.5 Marking. Guns shall be examined to determine compliance with the marking requirements.

4.5.1.6 Material soundness. All parts shall be inspected visually to determine freedom from cracks and fractures. In addition, each barrel shall be magnetic particle inspected using the wet, continuous method in accordance with MIL-M-11472 after finishing machining. Evidence of cracks or fractures shall be cause for rejection.

4.5.1.7 Workmanship. Workmanship shall be examined visually in accordance with MIL-C-13931.

4.5.1.8 Final examination. Final examination of each subcaliber gun shall be completed after testing and prior to preservation and packaging to determine compliance with this specification, MIL-C-13931, and as specified in the contract.

4.5.1.9 Inspection of preparation for delivery.

4.5.1.9.1 Packaging inspection. Unless otherwise specified, inspection to determine compliance with cleaning, preservation, packaging, packing and marking requirements of the applicable packaging data sheets for the level designated in the contract shall be as specified in MIL-P-14232.

4.5.2 Tests.

4.5.2.1 Materials. Materials used in the manufacture of the gun shall be tested in accordance with material specifications referenced in the part drawings.

4.5.2.2 Proof-function firing. Firing tests shall be conducted under the surveillance of the government representative. The first 24 subcaliber guns manufactured under any contract or order shall be fired 25 rounds each, without misfire, using Caliber .30, M2 service loaded cartridges. Two out of every 50 subcaliber guns subsequently manufactured under the same contract or order shall be fired 25 rounds each without misfire using the same type cartridge.

4.5.2.2.1 Prefiring inspections. Inspection and release records

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shall be verified prior to firing to assure that all subcaliber guns have been examined for material soundness and are acceptable. Exterior surfaces of the subcaliber gun and the surfaces of the chamber and bore in the major weapon shall be visually examined to assure that they are free from all foreign matter, prior to insert of the subcaliber gun.

4.5.2.2.2 Postfiring Inspection. After firing tests, each subcaliber gun tested shall be examined visually for freedom from cracks, fractures, and other defects. Furthermore, the outer surfaces of all barrels tested shall be magnetic particle inspected using the wet, continuous method in accordance with MIL-M-11472. Barrel bores shall be examined by means of a borescope. Any evidence of cracks or fractures shall be cause for rejection and shall be considered a failure.

4.5.2.2.3 Failures. Any subcaliber gun, of the first 24 fired as above, which fails the test shall be rejected. Should failures occur in any of the 2 which are fired as representative of each lot of 50, the remaining 48 or 49 in that lot shall be fired the required 25 rounds and all that fail shall be rejected.

4.5.2.2.4 Records. Subcaliber guns that pass the firing test shall have the applicable data entered on DA Form 2408-4, "Weapon Record Data" card, by the proving ground. Subcaliber guns accepted on a proof sampling plan shall have the applicable data recorded on DA Form 2408-4 by the contractor and approved by the Government representative.

4.5.3 Inspection equipment.

4.5.3.1 Acquisition, maintenance, and disposition. Unless otherwise specified, responsibility for acquisition, maintenance, and disposition of acceptance inspection and test equipment shall be in accordance with MIL-I-45607.

4.5.3.2 Accuracy of standard measuring equipment. When commercial and modified-commercial inspection and test equipment is used, it shall be capable of repetitive measurements to an accuracy of 10 percent of the total tolerance of the characteristic being inspected.

4.5.4 Inspection approval stamp. The application of the inspection approval stamp shall be as specified in MIL-C-13931.

5. PACKAGING

5.1 Subcaliber Gun - Levels A, B and C. Cleaning, drying, preservation, unit packaging and packing of subcaliber guns shall

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be in accordance with the requirements of Packaging Data Sheet (PDS) P7307568 and MIL-P-14232 for the level of protection specified in the contract (see 6.2).

5.2 Repair parts - Level A, B and C. Cleaning, drying, preservation, unit packaging and packing of repair parts, shall be in accordance with the applicable repair part PDS and MIL-P-14232 for the level of protection specified in the contract (see 6.2). When Level C requirements are not shown on the PDS, Level C packaging shall be in accordance with MIL-STD-1190.

5.2.1 Level X - Industrial packaging. Cleaning, drying, preservation, unit packaging and packing of repair parts shall be in accordance with ASTM D 3951 when industrial packaging is specified in the contract (see 6.2).

5.2.1.1 Quantity in unit package (QUP). When Level C packaging in accordance with MIL-STD-1190 or industrial packaging of repair parts is specified in the contract, the QUP shall be the same as specified in the contract (see 6.2).

5.3 Marking of packages.

5.3.1 Levels A, B, C and X. Marking (including bar code marking) of the unit package, intermediate packages, and exterior shipping containers shall be in accordance with MIL-STD-129 (see 6.2).

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 subcaliber gun specified herein is intended for insertion into the bore of the 105MM Recoilless Rifle M27A1 and the Cannon, 106MM Recoilless Rifle: M206 and M206A1 to enable the use of smaller caliber ammunition for training purposes.

6.2 Acquisition requirements. Acquisition documents must specify the following:

- a. Title, number and date of the specification.
- b. Issue of DODISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.1.1).
- c. Requirements for and the number of subcaliber gun,

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components thereof, or both to be submitted for first article by the contractor (see 3.2).

- d. The examinations and tests to be performed by the contractor and the examinations and tests to be performed by the Government.
- e. All inspection and test data that is required.
- f. At whose expense a retest may be performed.
- g. Any additional or extended examinations and tests beyond the scope of this specification.
- h. Serial numbers for the subcaliber gun and repair assemblies.
- i. Inspection equipment, responsibility for acquisition, maintenance, and disposition thereof, if other than as specified (see 4.5.3.1).
- j. Availability of inspection equipment from the Government.
- k. Extent of contractor's responsibility for Government furnished and for contractor-required final inspection equipment.
- l. Applicable acceptance test procedures.
- m. When a proof firing sampling plan is authorized, the proof firing sampling plan parameters: initial consecutive quantity (i), and sampling frequency (f) (see 4.5.2.2).
- n. The levels of preservation, packaging, and packing required for subcaliber gun assemblies (see 5.1) and repair parts (see 5.2).
- o. Marking and bar code marking requirements (see 5.3).
- p. When warranted, the application of MIL-Q-9858 or MIL-I-45208, as appropriate.
- q. Unless otherwise specified, the application of MIL-I-45607 and MIL-STD-45662.

6.3 Consideration of data requirements. The following data requirements should be considered when this specification is

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applied on a contract. The applicable Data Item Descriptions (DIDs) should be reviewed in conjunction with the specific acquisition to ensure that only essential data are requested/ provided and that the DIDs are tailored to reflect the requirements of the specific acquisition. To ensure correct contractual application of the data requirements, a Contract Data Requirements List (DD Form 1423) must be prepared to obtain the data, except where DOD FAR Supplement 227.475-1 exempts the requirement for a DD Form 1423.

<u>Reference Paragraph</u>	<u>DID Number</u>	<u>DID Title</u>
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The above DIDs were those cleared as of the date of this specification. The current issue of DOD 5010.12-L, Acquisition Management Systems and Data Requirements Control List (AMSDL), must be researched to ensure that only current, cleared DIDs are cited on the DD Form 1423.

6.4 First article. When first article inspection is required, the Procuring Contracting Officer should provide specific guidance to offerers whether the item(s) should be a preproduction sample, a first article sample, a first production item, a sample selected from the first lot of production items, a standard production item from the contractor's current inventory, and the number of items to be tested as specified in 4.3. The Procuring 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. 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.

6.5 Waivers and deviations. The Procuring Contracting Officer shall coordinate all requests for waiver or deviation to this specification with Benet Laboratories and the Product Assurance Directorate at Watervliet Arsenal.

6.6 Subject term (key word) listing.

Gun, Subcaliber, Caliber .30

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Gun, Subcaliber, Caliber .30: M9
Caliber .30
Caliber .30: M9
Rifle, Recoilless, 105MM M27A1
Cannon, 106MM Recoilless Rifle: M206
Cannon, 106MM Recoilless Rifle: M206A1

6.7 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 Watervliet Arsenal, Ordnance Corps, Weapons Command, or U.S. Army Armament Research and Development Command, U.S. Army Armament, Munitions and Chemical Command, etc. Technical data originally prepared by these activities are now under the cognizance of ARDEC.

6.8 Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the changes.

Custodian:

Army-AR

Preparing activity:

Army-AR

(Project 1005 - A707)

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

INSTRUCTIONS

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

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

RECOMMEND A CHANGE:	1. DOCUMENT NUMBER	2. DOCUMENT DATE (YYMMDD)
3. DOCUMENT TITLE		
4. NATURE OF CHANGE (Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets if needed.)		
5. REASON FOR RECOMMENDATION		
6. SUBMITTER		
a. NAME (Last, First, Middle Initial)	b. ORGANIZATION	
c. ADDRESS (Include Zip Code)	d. TELEPHONE (Include Area Code) (1) Commercial (2) AUTOVON (If applicable)	7. DATE SUBMITTED (YYMMDD)
8. PREPARING ACTIVITY		
a. NAME	b. TELEPHONE (Include Area Code) (1) Commercial (2) AUTOVON	
c. ADDRESS (Include Zip Code)	IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT: Defense Quality and Standardization Office 5203 Leesburg Pike, Suite 1403, Falls Church, VA 22041-3466 Telephone (703) 756-2340 AUTOVON 289-2340	