

MIL-P-20102A

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SUPERSEDING

MIL-P-20102

12 SEPTEMBER 1951

MILITARY SPECIFICATION**PROJECTOR, PYROTECHNIC, HAND, M9**

This specification has been approved by the Department of Defense for use of the Departments of the Army, the Navy and the Air Force.

1. SCOPE

1.1 This specification covers one type of single action, single loading pyrotechnic projector known as Projector, Pyrotechnic, Hand, M9.

2. APPLICABLE DOCUMENTS

2.1 The following specifications, standards, and drawings, of the issue in effect on date of invitation for bids, form a part of this specification:

SPECIFICATIONS**FEDERAL**

- NN-B-591 — Boxes; Wood-Cleated; Fiberboard.
- NN-B-621 — Boxes, Wood, Nailed and Lock-Corner.
- NN-B-631 — Boxes; Wood, Wire-bound (for Domestic Shipment).
- UU-T-116 — Tape, Paper Gummed, Water-Resistant.
- PPP-B-601 — Boxes, Wood, Cleated-Plywood.

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- JAN-P-106 — Boxes; Wood, Nailed (Overseas Type).
- MIL-B-107 — Boxes, Wood, Wire-bound (Military Type).
- JAN-P-108 — Boxes, Fiberboard, Corrugated and Solid (Military Type).

- MIL-P-116 — Preservation, Methods of.
- JAN-B-121 — Barrier - Materials, Greaseproof.
- MIL-B-131 — Barrier Material; Water Vaporproof, Flexible.
- JAN-C-372 — Cleaner, Rifle Bore.
- MIL-L-644 — Lubricating-Oil, Preservative, Special.
- MIL-P-3420 — Packaging Materials, Volatile Corrosion Inhibitor Treated.
- MIL-V-8574 — Volatile Corrosion Inhibitors in Preservation and Packaging; Use of.

U. S. ARMY

- 52-0-1 — General Specification Governing the Manufacture and Inspection of Small Arms Weapons, Spare and Replacement Parts, and Accessories.
- 57-0-2 — Finishes, Protective, for Iron and Steel Parts.

STANDARD**MILITARY**

- MIL-STD-129—Marking for Shipment and Storage.

DRAWINGS**ORDNANCE CORPS**

- 78-0-33 — Signal, Aircraft, Double-Star Assembly.

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78-0-34 — Signal, Aircraft, Single-Star Assembly.

78-0-64 — Signal, Aircraft, Tracer, Double-Star Assembly.

F-7265668 — Projector, Pyrotechnic, Hand, M9, List of Drawings and Specifications.

(Copies of specifications, standards, and drawings required by contractors in connection with specific procurement functions should be obtained from the procuring agency or as directed by the contracting officer.)

3. REQUIREMENTS**3.1 Design and manufacture.**

3.1.1 General. — Components and assemblies shall conform to the materials, dimensions, tolerance limits, heat treatment, and degree of surface roughness specified on the drawings. All surfaces shall be smooth and finished in accordance with Specification 52-0-1.

3.1.2 Final protective finishes.—Final protective finishes shall be as prescribed on the drawings and shall conform to the requirements of Specification 57-0-2.

3.1.3 Barrel.—Projector barrels shall be chambered to accommodate 1½-inch rimmed type cartridges conforming to Drawings 78-0-33, 78-0-34, and 78-0-64.

3.1.4 Marking. — Unless otherwise specified, each projector shall be clearly marked as follows:

- (a) "Projector, Pyrotechnic, Hand, M9."
- (b) Manufacturer's name or identification.
- (c) Serial number (see Spec. 52-0-1).
- (d) "U. S. Property."
- (e) Proof mark "P" (see 4.3.2).

3.1.5 Functioning. — Finished projectors shall function properly and movable components and assemblies shall operate freely and smoothly throughout their range of motion.

3.2 Proof firing.—Projectors shall withstand the proof firing test prescribed in 4.3.2. After proof firing, the head-space shall be as shown on the applicable drawing.

3.3 Interchangeability.—All components and assemblies on lists supplied by the procuring agency, which substantially contain those parts maintained for replacements, shall be interchangeable. (See 6.2).

3.4 Endurance.—Projectors shall withstand the endurance test specified in 4.3.4.

3.5 Workmanship.—Finished projectors shall be free of defects which may affect serviceability, functioning, operation, and appearance.

4. QUALITY ASSURANCE PROVISIONS**4.1 Sampling.**

4.1.1 Lot.—Unless otherwise specified, a lot shall consist of not more than 500 projectors.

4.1.2 Inspection sample. — The inspector may subject all or part of any lot of components or assemblies to such inspection as he deems necessary to determine compliance with this specification.

4.1.3 Test samples. — Unless otherwise specified, the number of test samples shall be as specified for each test.

4.2 Inspection.

4.2.1 Place.—Unless otherwise specified, inspection and tests shall be performed at the plant of the prime contractor.

4.2.2 Contractor's inspection. — The contractor shall maintain an adequate system of processing, inspection, and lot identification. Only such lots which meet the requirements of this specification shall be submitted for final Government inspection.

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4.2.3 Procedure. — Projectors shall be visually inspected for completeness of manufacture, assembly, finish, and workmanship. Components shall be inspected as necessary to assure compliance with drawing requirements. The chamber shall be examined for rust, pits, powder fouling, burrs, and other defects. Each projector shall be dry snapped at least five times, and all working parts shall be operated by hand to ascertain that the final adjustments have been made to assure proper operation. Before final acceptance of any lot, the inspector shall make whatever final visual inspection deemed necessary to assure that the projectors have undergone all inspection and tests prescribed therefor, and that they have been thoroughly cleaned and prepared for shipment as required by Section 5.

4.3 Tests.

4.3.1 Contractor's responsibility.—Unless otherwise specified, all tests specified herein shall be performed by the contractor under the supervision of a Government inspector.

4.3.2 Proof firing test.—Each assembled projector shall be subjected to the firing of one of the double star signal cartridges, specified in 3.1.3, loaded to obtain 130 percent of its standard rated pressure. The person doing the proof firing shall place the prescribed proof mark on each accepted projector immediately after the test. (See 3.1.4.)

4.3.2.1 Cartridge fit.—The proof firing test specified in 4.3.2 may be used as a cartridge fit test.

4.3.3 Interchangeability test.

4.3.3.1 Sample. — Unless otherwise specified, 10 projectors, selected by the inspector from each lot, shall be tested for interchangeability of like components and assemblies which are likely to require replacement or repair.

4.3.3.2 Procedure. — Components and assemblies readily disassembled, as shown in

the list to be furnished by the procuring agency, shall be disassembled from the projectors. Components of each kind shall be placed together and mixed. The projectors shall be reassembled using components taken at random. At least eight of the projectors shall be assembled without fitting or altering any component. A small amount of hand fitting will be allowed in assembling not more than two of the projectors, provided no part is thereby rendered unsuitable for assembly in other projectors. The 10 assembled projectors shall operate and function properly.

4.3.3.3 Spare parts.—At least two projectors, from which all components listed as field spare parts have been removed, shall be assembled using components intended for use as spare parts. There shall be no hand fitting, and the projectors shall operate and function properly.

4.3.4 Endurance test.—At least one projector selected by the inspector from each lot, found satisfactory in other tests, shall be subjected to an endurance test by firing 50 double star signal cartridges of the type listed in 3.1.3. Each cartridge shall be loaded to obtain 130 percent of its standard rated pressure. Upon completion of the endurance test, the projector shall be cleaned and oiled and all worn and defective components replaced. Before acceptance, the projector shall be thoroughly conditioned at the expense of the contractor.

4.4 Reinspection and retests.

4.4.1 Defective ammunition. — Malfunctions in any test traceable to defective ammunition shall not be counted against the projector being tested.

4.4.2 Rejections. — Projectors rejected individually or by lots because of inspection or test shall be returned to the contractor. Before resubmitting, the contractor shall furnish full particulars to the inspector concerning previous rejections and action taken to correct the defects found in the original

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projectors. Projectors rejected after retest shall not be resubmitted without the specific approval of the procuring agency.

4.1.3 Interchangeability and endurance retests.—In a retest of a lot rejected for failure to meet the requirements of the interchangeability test or the endurance test, twice the number of projectors as in the original test shall be used.

5. PREPARATION FOR DELIVERY**5.1 Projectors.****5.1.1 Preservation.**

5.1.1.1 Cleaning.—Each projector shall be cleaned in accordance with method C-3 of Specification MIL-P-116. In addition, the barrel and breech shall be scrubbed clean with a bristle brush (not wire) saturated with rifle bore cleaner conforming to Specification JAN-C-372, followed by a solvent rinse.

5.1.1.2 Drying.—Projectors shall be dried in accordance with Specification MIL-P-116.

5.1.1.3 Preservative method. — Projectors shall be dipped in type P-9 preservative conforming to Specification MIL-P-116. After the excess preservative has been allowed to drain, projectors shall be individually wrapped in volatile corrosion inhibitor (VCI) treated material, conforming to Specification MIL-P-3420, that is laminated to grade C, type I, greaseproof barrier-material conforming to Specification JAN-B-121. All sharp edges of the projector shall be adequately cushioned with VCI material.

5.1.1.3.1 Not more than one chemical formulation of VCI material shall be used for each unit package. The VCI treated surface of the material shall be contiguous to the item being wrapped. The VCI material used shall be compatible with barrier-materials of Specification MIL-B-131.

5.1.2 Packaging.

5.1.2.1 Unit packages. — Each wrapped projector shall be packaged in accordance with method IA-8 of Specification MIL-P-116.

5.1.2.2 Intermediate packages.—Ten unit packages shall be packaged in a corrugated fiberboard box conforming to Specification JAN-P-108. The box shall be equipped with slotted fiberboard partitions so as to form an individual cell for each unit package. Closure of the intermediate package shall be made with 3-inch water-resistant, gummed tape conforming to Specification UU-T-116.

5.1.3 Packing.

5.1.3.1 For domestic shipment. — Unless otherwise specified, eight intermediate packages shall be packed in a shipping container conforming to Specification NN-B-591, PPP-B-601, NN-B-621, or NN-B-631.

5.1.3.2 For overseas shipment. — Unless otherwise specified, four intermediate packages shall be packed in a shipping container conforming to Specification PPP-B-601, JAN-P-106, or MIL-B-107.

5.1.4 Labeling and marking.

5.1.4.1 Interior packages.—Each unit and intermediate package shall be marked in accordance with Standard MIL-STD-129 to show the following information:

Stock number
Quantity and Nomenclature
Name of contractor
Contract or Order number
Date packaged
Method of preservation (including VCI code number)

Example:

B001-7265668
1 Projector, Pyrotechnic, Hand, M9
John Doe Co., Springfield, Mass.

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DA 19-058-ORD-67
 Late Pkgd. 2/54
 VCI-Code A1—MIL-L-644

5.1.4.2 *Shipping containers*.—Each shipping container shall be marked in accordance with Standard MIL-STD-129. The permanent marking shall be composed of the following information:

Stock number
 Quantity and Nomenclature
 Gross weight
 Cubage
 Date packed
 Method of preservation (including VCI code number)

Example:

B001-7265668
 40 Projector, Pyrotechnic, Hand, M9
 WT 48 CU 1.5
 Date Pkd. 2/54
 VCI-Code A1—MIL-L-644

5.2 *Spare parts*.—Unless otherwise specified, spare parts shall be prepared for delivery in accordance with applicable drawings and publications specified on Drawing F7265668.

6. NOTES

6.1 *Intended use*.—The M9 hand pyrotechnic projector is intended for use in projecting signals from the ground to aircraft in flight.

6.2 *Ordering data*.—Procurement documents should specify the following:

- (a) Title, number, and date of this specification.
- (b) List of interchangeable components and assemblies (see 3.3).
- (c) Whether domestic or overseas shipment is required (see 5.1.3).
- (d) List of VCI code designations (see 5.1.4).

6.3 *Storage and handling of VCI material*.—Storage and handling of volatile corrosion inhibitor (VCI) material should be in accordance with Specification MIL-V-8574.

Notice.—This specification, together with specifications and drawings pertaining to it and bearing a "Notice" or similar restrictions, is intended for use only in connection with procurement by the United States Government; and shall not be reproduced either wholly or in part except when authorized in connection with Government procurement, nor be used for any other purpose except when specifically authorized by the Chief of Ordnance.

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SPECIFICATION ANALYSIS SHEET		Form Approved M. S. Bureau No. 119-R004
INSTRUCTIONS		
This sheet is to be filled out by personnel either Government or contractor involved in the use of the specification in procurement of products for ultimate use by the Department of Defense. This sheet is provided for obtaining information on the use of this specification which will insure that suitable products can be procured with a minimum amount of delay and at the least cost. Comments and the return of this form will be appreciated. Fold on lines on reverse side, staple in corner, and send to preparing activity (as indicated on reverse hereof).		
SPECIFICATION		
ORGANIZATION (of submitter)		CITY AND STATE
CONTRACT NO.	QUANTITY OF ITEM PROCURED	DOLLAR AMOUNT \$
MATERIAL PROCURED UNDER A		
<input type="checkbox"/> DIRECT GOVERNMENT CONTRACT <input type="checkbox"/> SUBCONTRACT		
1. HAS ANY PART OF THE SPECIFICATION CREATED PROBLEMS OR REQUIRED INTERPRETATION IN PROCUREMENT USE?		
A. GIVE PARAGRAPH NUMBER AND WORDING.		
D. RECOMMENDATIONS FOR CORRECTING THE DEFICIENCIES.		
2. COMMENTS ON ANY SPECIFICATION REQUIREMENT CONSIDERED TOO RIGID		
3. IS THE SPECIFICATION RESTRICTIVE?		
<input type="checkbox"/> YES <input type="checkbox"/> NO IF "YES", IN WHAT WAY?		
4. REMARKS (Attach any pertinent data which may be of use in improving this specification. If there are additional papers, attach to form and place both in an envelope addressed to preparing activity)		
SUBMITTED BY (Printed or typed name and activity)		DATE

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