MIL–B–13656B
18 MARCH 1964
SUPERSEDING
MIL–B–13656A
13 MARCH 1956

MILITARY SPECIFICATION

# BINOCULARS, M15A1 AND M17A1

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

## 1. SCOPE

1.1 This specification covers 7 x 50 binoculars. These binoculars are essentially identical except for a reticle in Binocular M17A1, which is used for the approximate measurement of small angles.

## 2. APPLICABLE DOCUMENTS

2.1 The following documents, of the issue in effect on date of invitation for bids or request for proposal, form a part of this specification to the extent specified herein.

### SPECIFICATIONS

FEDERAL

UU–T–106 —Tape, Masking; Paper (Pressure - Sensitive)
UU–T–111 —Tape, Paper Gummed (Sealing and Securing)
PPP–B–621 —Boxes; Wood, Nailed and Lock-Corner
PPP–B–636 —Boxes; Fiber
PPP–P–291 —Paperboard, Wrapping, Cushioning
PPP–T–76 —Tape, Pressure-Sensitive, Adhesive, Paper, Water Resistant

MILITARY

MIL–P–116 —Preservation, Methods of
MIL–B–117 —Bags and Sleeves, Interior Packaging
MIL–C–13459 —Cases, Binocular: M62A1 and M63A1
MIL–O–13830 —Optical Components for Fire Control Instruments, General Specification Governing the Manufacture, Assembly and Inspection of
MIL–F–13926 —Fire Control Materiel; General Specification Governing the Manufacture and Inspection of
MIL–P–13988 —Paper, Lens, Tissue, Antitarnish, Wrapping
MIL–P–14232 —Parts, Equipment and Tools for Ordnance Materiel, Packaging of
MIL–I–45208 —Inspection System Requirements
MIL–I–45607 —Inspection Equipment, Supply and Maintenance for Ordnance
MIL–C–52078 —Cap-Plug, Cap, and Plug, Protective, Plastic Dust And Moisture Seal

### STANDARDS

MILITARY

MIL–STD–105 —Sampling Procedures and Tables for Inspection by Attributes

FSC 6650

MIL–STD–109 —Quality Assurance Terms and Definitions
MIL–STD–129 —Marking for Shipment and Storage

**DRAWINGS**

U.S. ARMY MUNITIONS COMMAND

22–390 —Binocular M15A1
22–396 —Binocular M17A1
IEL–22–390–2 —Inspection Equipment List for Binocular M15A1
IEL–22–396–2 —Inspection Equipment List for Binocular M17A1

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

**2.2 Other publications.** The following document forms a part of this specification. Unless otherwise indicated, the issue in effect on date of invitations for bids shall apply.

NATIONAL BUREAU OF STANDARDS
NBS Resolution Test Chart of 1952 (High Contrast) (Number 25X)

(Application for copies should be addressed to the Superintendent of Documents, Government Printing Office, Washington 25, D. C.)

## 3. REQUIREMENTS

**3.1 Materials.** Materials shall be in accordance with drawings, material specifications and general specifications forming a part of this specification.

**3.2 Construction.** The binoculars shall be manufactured in accordance with the applicable drawing listed in Section 2 and drawings pertaining thereto. The requirements of this specification are detailed only to the extent considered necessary to obtain the desired optical and mechanical characteristics to insure inherent quality and performance capabilities.

**3.3 General specifications.** The contractor shall be responsible for adherence to and compliance with the following requirements of Specification MIL–F–13926 and MIL–O–13830.

3.3.1 *MIL–F–13926.*

(a) Order of precedence.
(b) Dimensions and tolerances.
(c) Inorganic protective surface finishes.
(d) Part identification and marking.
(e) Workmanship.

3.3.2 *MIL–O–13830.*
Cleanliness.

**3.4 Environmental.**

3.4.1 *Storage temperature.* The binocular shall show no evidence of glass breakage or other physical failure and shall meet all requirements of this specification at standard ambient temperature (60 to 90 degrees Fahrenheit) after having been exposed and thermally stabilized at ambient temperatures of minus 80 degrees Fahrenheit and plus 160 degrees Fahrenheit.

3.4.2 *Operating temperatures.* The binocular shall meet the applicable requirements of 3.10.3.1 and 3.11.1 while exposed and thermally stabilized at ambient temperatures of minus 40 degrees Fahrenheit and plus 150 degrees Fahrenheit.

3.4.3 *Vibration.* There shall be no visible damage or loosening of assembled parts as a result of vibration in a vertical plane at a constant frequency of 30 cycles per second with an amplitude of $\frac{1}{16}$ inch ($\frac{1}{8}$ inch total excursion) for a period of 5 minutes plus or minus 15 seconds. Subsequent to vibration, the binocular shall meet all of the following requirements of this specification.

**3.5 Sealing.** The binocular shall show no evidence of leakage when subjected to an external pressure of 5 psi gage pressure for a period of five minutes afer having been exposed to the requirements of 3.4.

**3.6 Resolution.** The resolution of each monocular on the optical axis for a parallel bar test target shall be 6.5 seconds of arc or less.

3.7 **Magnification.** Magnification of each of the two telescopic systems shall be as specified in the drawings within a tolerance of 2 percent.

3.8 **Collimation.** When two parallel rays are projected into the two objectives respectively, the conjugate rays emerging from the two eyepieces shall be parallel within the following limits of the infinity focus of the eyepiece, and for any setting of the interpupillary distance scale between 58 and 72 mm as follows:

(a) There shall be no more than 15 minutes of arc in dipvergence
(b) They shall not diverge more than 24 minutes of arc
(c) There shall be no convergence

3.8.1 *Image tilt and parallelism of images.* The images of a plumb line formed by the two optical systems shall be vertical within 1 degree and parallel within 0.5 degrees.

3.9 **Reticle (M17A1).** The horizontal reticle line shall be parallel to the line of centers of the right and left objective for a setting of 63 plus or minus 1 millimeter interpupillary distance adjustment.

3.9.1 *Dioptic difference.* The eyepiece focus difference between the image of an infinity target and the reticle graduation nearest the center of the field shall not exceed plus or minus ¼ diopter.

3.9.2 *Reticle angle.* The reticle in the finished instrument shall indicate the correct angular values within 3 percent.

3.10 **Eyepiece.**

3.10.1 *Diopter scale.* Each diopter scale index shall indicate zero within a tolerance of plus or minus ¼ diopter when the image of an infinite target near the center of the field is brought into sharp focus with the aid of a dioptometer or an auxiliary telescope. Other graduations shall be accurate within plus or minus ¼ diopter.

3.10.2 *Diopter setting.* With the same diopter setting on each eyepiece, one eyepiece shall not extend beyond the other by more than $\frac{1}{16}$ inch.

3.10.3 *Torque.* The torque required to adjust the eyepiece from minus 4 to plus 4 diopters shall be between 3 and 10 ounce inches when the eyepiece is rotated from minus 4 to plus 4 diopters in 5 seconds at standard ambient temperature (60 to 90 degrees Fahrenheit). The torque in any one eyepiece shall not vary more than 5 ounce inches.

3.10.3.1 *Operability.* The eyepiece shall be operable at the temperatures specified in 3.4.2.

3.11 **Interpupillary adjustment.** The interpupillary distance indicated by the scale shall be correct to within 1 mm.

3.11.1 *Torque.* The torque required to adjust the interpupillary setting between 58 and 72 mm shall be between 15 and 22 pound inches at standard ambient temperature (60 to 90 degrees Fahrenheit). The torque in any one instrument shall not vary more than 3 pound inches. The maximum torque required at the temperatures specified in 3.4.2 shall not exceed 45 pound inches.

## 4. QUALITY ASSURANCE PROVISIONS

4.1 **Responsibility for inspection.** Unless otherwise specified in the contract or purchase order the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified, the supplier may utilize his own or any other inspection facilities and services acceptable to the Government. Inspection records of the examinations and tests shall be kept complete and available to the Government as specified in the contract or order. 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 *General provisions.* The quality assurance provisions of this specification and of other documents referenced herein form the basis for inspection to be performed by the supplier. Inspection shall be in accord-

ance with the requirements of Specification MIL–I–45208 and the component inspection requirements of Specification MIL–F–13926. Definitions of inspection terms not otherwise defined herein shall be as listed in Standard MIL–STD–109.

**4.2 Inspection provisions.**

4.2.1 *Inspection lot.* Unless otherwise specified by the contracting officer, inspection lot size, formation, and presentation of lots shall be in accordance with "Submission of Product" as specified in Standard MIL–STD–105.

4.2.2 *Examination and tests.* Components and subassemblies shall be inspected in accordance with the inspection provisions contained in Specification MIL–F–13926, and the examination and tests related to Section 3 herein shall be performed on a defect (individual characteristic) basis in accordance with Standard MIL–STD–105, and the inspection level and sampling plans specified in Table I titled "Classification of Defects". Examinations and tests for Packaging, Packing and Marking shall be in accordance with Specification MIL–P–14232 and Section 5 herein. The tabulated classification of defects shall constitute the minimum inspection to be performed by the supplier prior to Government acceptance or rejection by lot. The Government reserves the right to inspect for any applicable requirement, and to reject individual non-conforming items.

TABLE I. *Classification of Defects*

Use Inspection Level II of Table I with Sampling Plan Table II–A of Standard MIL–STD–105

*Critical:* None defined.

| | | *Requirement* | *Test procedure* |
|---|---|---|---|
| *Major:* AQL 0.65 percent defective. | | | |
| 101. | Vibration | 3.4.3 | 4.5.3 |
| 102. | Leakage | 3.5 | 4.5.4 |
| 103. | Resolution | 3.6 | 4.5.5 |
| 104. | Magnification | 3.7 | 4.5.6 |
| 105. | Collimation | 3.8 | 4.5.7 |
| 106. | Dipvergence | 3.8 | 4.5.7.1 |
| 107. | Divergence-convergence | 3.8 | 4.5.7.2 |
| 108. | Image tilt and parallelism | 3.8.1 | 4.5.7.3 |
| 109. | Reticle plumb | 3.9 | 4.5.8 |
| 110. | Dioptric difference | 3.9.1 | 4.5.8.1 |
| 111. | Reticle angle | 3.9.2 | 4.5.8.2 |
| 112. | Diopter scale readings | 3.10.1 | 4.5.9 |
| 113. | Diopter setting | 3.10.2 | 4.5.10 |
| 114. | Eyepiece torque | 3.10.3 | 4.5.11 |
| 115. | Interpupillary adjustment | 3.11 | 4.5.12 |
| 116. | Interpupillary torque | 3.11.1 | 4.5.12.1 |

*Minor:* None defined.

4.2.3 *Disposition of non-conforming product.* Rejected lots shall be screened for all defective characteristics. Removal or correction of defective units and resubmittance of rejected lots shall be in accordance with "Acceptance and Rejection" as specified in Standard MIL–STD–105.

**4.3 Control tests, general.** One each binocular of the type being procured shall be selected at random from each 50 produced, or from each month's production, whichever occurs first. Control samples shall have successfully met all other acceptance tests specified herein prior to conducting the following examination and tests:

| *Control test* | *Requirement* | *Test procedure* |
|---|---|---|
| Construction | 3.2 | 4.5.1 |
| General specifications | 3.3 | Visual, MIL–F–13926 and MIL–O–13830 |

4.3.1 *Control tests, environmental.* Three each binoculars of the type being procured shall be selected at random from each 100

produced, or from each month's production, whichever occurs first. Control samples shall have successfully met all other acceptance tests specified herein prior to conducting the following examination and tests.

| *Control test* | *Requirement* | *Test procedure* |
|---|---|---|
| Storage temperature | 3.4.1 | 4.5.2 |
| Operating temperature | 3.4.2 | 4.5.2 |

4.3.2 *Control test failure.* Should the control test sample fail to meet the specified test requirements, acceptance of the product will suspended by the Government until necessary corrections have been made by the contractor and the resubmitted samples have been approved.

4.4 **Inspection equipment.** Except as otherwise provided for by the contract, the contractor shall furnish and maintain all required measuring and testing equipment in accordance with the "Measuring and Test Equipment" requirement of Specification MIL–I–45208 and all applicable requirements specified in Specification MIL–I–45607. The Government reserves the right to use the test equipment for its own independent inspections to the extent that such use will not unduly interfere with the contractor's delivery schedule.

4.4.1 *Government furnished inspection equipment.* Where the contract provides for Government furnished test equipment, care and maintenance of test equipment shall be in accordance with "Measuring and Test Equipment" and "Government Furnished Material requirements of Specification MIL–I–45208 and all applicable requirements specified in Specification MIL–I–45607.

4.4.2 *Contractor furnished inspection equipment.*

4.4.2.1 *Government design.* All inspection equipment required by drawings forming a part of the contract and not provided by the Government shall be supplied by the contractor in accordance with the requirements of 4.4 and the Lists of Inspection Equipment Documents IEL–22–390–2 and 22–396–2. Alternate designs may be substituted only as provided by "Inspection Provisions" of Specification MIL–I–45208.

4.4.2.2 *Contractor design.* The contractor shall design and supply inspection equipment compatible with the "Test Methods and Procedures" specified in 4.5. and with the "Component Inspection" requirements of Specification MIL–F–13926. Concept, construction, materials, dimensions, and tolerances used in design of test equipment shall be so selected and controlled as to insure that the test equipment will permit positive rejection of a product which exceeds the prescribed tolerance limit, and will reliably indicate acceptability of a product which does not exceed 90% of the prescribed tolerance limit. Construction shall be such as to facilitate routine calibration of the equipment.

4.4.2.3 *Devices used for environmental testing.* All environmental testing devices used to determine conformance of the environmental requirements (listed below) shall conform to the "Test Facilities" requirements outlined in Specification MIL–F–13926.

(a) Vibration (4.5.3).
(b) Temperature (4.5.2) (4.5.11.1) (4.5.12.1).
(c) Sealing (4.5.4).

**4.5 Test methods and procedures.**

4.5.1 *Construction.* The binocular shall be subjected to a visual, tactile, and dimensional inspection for conformance to the applicable drawings and requirements of this specification. Dimensional inspection shall be performed using standard measuring equipment.

4.5.2 *Storage and operating temperatures.* This test shall be conducted in accordance with Procedure I of Specification MIL–F–13926. While stabilized at each temperature extreme specified in 3.4.2 the binocular shall be subjected to the tests specified in 4.5.11.1 and 4.5.12.1 and shall conform to the requirements specified. Upon completion of the specified exposures and return to standard ambient temperature (60 to 90 degrees Fahrenheit) the binocular shall be inspected and shall show no evidence of glass breakage or

other physical failure in accordance with 3.4.1.

4.5.3 *Vibration.* The binocular shall be mounted on a suitable adapter and vibrated by means of a vibration test fixture capable of vibrating the binocular in a vertical plane at the frequency, amplitude and duration as indicated in 3.4.3. After vibration, the binocular shall be visually inspected for damage, and shall then be subjected to the tests specified in 4.5.4 to 4.5.12.1 inclusive and shall conform to the requirements specified therein.

4.5.4 *Sealing.* The binocular shall be placed in a suitable container connected to a pressure test fixture which shall include a sensitive pressure gage capable of testing the requirements of 3.5. The container, with the binocular, shall then be charged with 5 psi gage pressure, stabilized, and the source cut off. Evidence of leakage can be determined by observing the gage for pressure drop for the time interval specified in 3.5.

4.5.5 *Resolution.* Resolution test is accomplished with the binocular positioned as specified in the collimation test of 4.5.7. The "56" pattern of the National Bureau of Standards Test Chart 25X is attached to the central area of the wall chart located 46 feet from the objectives of the binocular. The test chart shall be illuminated by a sixty (60) watt light located one foot from the chart. With the telescope focused on the "56" numeral, the test patterns on either side of the "56" numeral are observed through a three-power dioptometer or equivalent placed in front of each eyepiece of the binocular. The test pattern shall be resolved within the arc specified in 3.6. The test pattern shall be considered resolved when the observer can determine the direction in which the lines lay.

4.5.6 *Magnification.* The magnification test shall be in accordance with Specification MIL–O–13830 for the requirements of 3.7.

4.5.7 *Collimation.* The test for collimation is made by means of a special testing device for collimation. The device shall consist of three collimating telescopes with reticles for observing wall or collimator targets through the binocular at the 58 and 72 interpupillary positions. A mounting support shall be designed to position the binocular set at 72 mm so that the line of sight of two telescopes will pass through the line of sight of the binoculars and focus on two of the wall targets or collimators. The third telescope will be located so the line of sight will pass through the right eyepiece and focus on the third target when the binocular is set at 58 mm. With the binocular set at the seventy-two (72) mm interpupillary distance, it is clamped in the holder of the device and positioned to coincide the horizontal line of the binocular (in the left eyepiece) with the lower horizontal line of the target at the zero mark. In this position, any error in collimation can be read on the right target of the device at both the 58 mm and 72 mm interpupillary distances. The binocular shall be inspected in accordance with the following procedures to determine compliance with 3.8.

4.5.7.1 *Dipvergence.* Dipvergence is indicated by the comparison of vertical displacement of the target on the grid of the collimator as viewed at both 58 mm and 72 mm interpupillary distances, and shall not exceed 3.8.

4.5.7.2 *Divergence and convergence.* Divergence is indicated when the target appears in the right half of the grid and convergence when in the left half as viewed in the right hand collimating telescopes. Divergence shall not exceed the tolerance in 3.8. There shall be no convergence.

4.5.7.3 *Image tilt and parallelism of images.* The images are checked for plumb and parallelism through the two optical systems by means of the vertical lines of the collimating telescope and the vertical lines of the target. A tolerance block on the target will be used to determine conformance with 3.8.1.

4.5.8 *Reticle.* With the binocular set at 63 mm interpupillary distance and mounted on a fixture with the line of centers parallel to the target horizontal line, the horizontal reticle line shall coincide with the target horizontal line within the tolerance of 3.9.

4.5.8.1 *Dioptric difference.* The dioptric difference shall be determined with the aid of a dioptometer of at least three (3X) power. With the line of sight directed at an infinity target, the eyepiece of each monocular shall be adjusted for sharp focus and shall not exceed the tolerance in 3.9.1.

4.5.8.2 *Reticle angle.* The angular subtense of the reticle markings shall be measured with the aid of a calibrated target and shall be within the limits in 3.9.2.

4.5.9 *Diopter scale.* The eyepiece focus adjustment shall be performed with the aid of a dioptometer of at least three (3X) power. The image of an infinity target shall be brought into sharp focus on each eyepiece and the zero and other readings shall coincide within the tolerance of 3.10.1.

4.5.10 *Diopter setting.* The diopter scale of each monocular shall be adjusted to the same settings. A straight edge is then placed across the rings of both eyepiece and neither shall extend beyond the other more than the tolerance in 3.10.2.

4.5.11 *Eyepiece torque.* The torque required to rotate each eyepiece shall be measured with a torque wrench with an adapter and shall be within the limits in 3.10.3.

4.5.11.1 *Operability.* While the binocular is exposed to the extreme operating temperatures specified in 3.4.2, the eyepiece shall be rotated to insure correct operation in 3.10.3.1.

4.5.12 *Interpupillary adjustment.* The interpupillary setting shall be measured by means of a metric scale between the inside and outside edges of the eyepieces and this measurement shall coincide with the scale of the binocular within the tolerance of 3.11.

4.5.12.1 *Torque.* The torque required to adjust the interpupillary setting within the limits specified in 3.11.1 shall be measured by means of a standard measuring equipment at the specified temperatures. With one side of the binocular held rigid, a direct pull is applied to the other side to determine that movement is within the torque limits in 3.11.1.

## 5. PREPARATION FOR DELIVERY

**5.1 Packaging, packing and marking.** Packaging, packing and marking shall be in accordance with Figures 1 through 4.

## 6. NOTES

**6.1 Intended use.** The binoculars covered by this specification are used basically for observation but the Binocular M17A1 which incorporates a reticle may also be utilized for the approximate measurement of small angles such as is required for direct gun direction.

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

(a) Title, number and date of this specification.

(b) Applicable stock number.

(a) Selection of applicable levels of packaging and packing required.

**6.3 Definitions.** Words, terms, and expressions used in this specification, which are peculiar to the general field of optics, are defined in Standard MIL–STD–1241, Optical Terms and Definitions.

**Custodians:**
Army—MU
Navy—MC
Air Force—67

**Other Interests**
**Review:**
Army—MU
Navy—WP, MC
Air Force—67
**User:**
Army—MO, EL
Navy—SH, YD, CG

**Preparing activity:**
Army—MU

**Project No. 6650–0131**

| FEDERAL ITEM NAME | | | | PART NO. | FEDERAL STOCK NO. |
|---|---|---|---|---|---|
| BINOCULAR: M15A1 W/E | | | | *6702513 | *6650-530-0959 |
| COMPOSITION | | FINISH | | SNL OR CLASS | TECH/SVC STOCK NO. |
| Plastic, Glass, Aluminum, Rubber & Steel | | Black coated surfaces and paint | | | |

| LOGISTICS DATA | LEVEL A MILITARY | | | | LEVEL B LIMITED MILITARY | | | |
|---|---|---|---|---|---|---|---|---|
| | QTY PER PACK | EXTERIOR SIZE | GR WT | CUBE | QTY PER PACK | EXTERIOR SIZE | GR WT | CUBE |
| ITEM | | 9¼ x 8-5/8 x 4½ | 5.26 | .208 | | Same as Level A | | |
| UNIT PACKAGE | 1 | 10½ x 9½ x 5¼ | 6.54 | .304 | | Same as Level A | | |
| INTERMEDIATE PKG. | | NONE | | | | NONE | | |
| EXTERIOR PACK | 12 | 34½ x 20½ x 12 | 120. | 4.9 | | | | |

| PACKAGING REQUIREMENTS | MIL-P-116 UNIT PROTECTION: METHOD IA-8 CLEANING (A) DRYING (A) | | | | | | MIL-P-116 UNIT PROTECTION: METHOD CLEANING DRYING | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | DWG. OR SPEC. | SIZE | STYLE | TYPE | GRADE | CLASS | DWG. OR SPEC. | SIZE | STYLE | TYPE | GRADE | CLASS |
| TISSUE 1,3 | MIL-P-13988 | 182 Sq. in. (B)** | | | | | | | | | | |
| TAPE 2,4,5,6 | UU-T-106 | 46 x 1 (B,C,D) | | I-II | | | | Same | | | | |
| BAG 9 | MIL-B-117 | 12 x 15½ (F) | | I | | e | | | | | | |
| CUSHIONING 7 | PPP-P-291 | 14 x 25 (E) | | I | | 1 | | As | | | | |
| TAPE 8 | UU-T-111 | 21 x 2 (E) | | | | 2 | | | | | | |
| CONTAINER 10 | PPP-B-636 | 10¼ x 9¼ x 4-3/4 | RSC | | W6c | 2 | | Level A | | | | |
| CLOSURE 11 | PPP-T-76 | 32 x 2 (G) | | | | | | | | | | |
| | | | | | | | | Mark Level A | | | | |

| | INTERMEDIATE PACKAGE | | | | | | INTERMEDIATE PACKAGE | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | DWG. OR SPEC. | SIZE | STYLE | TYPE | GRADE | CLASS | DWG. OR SPEC. | SIZE | STYLE | TYPE | GRADE | CLASS |
| CONTAINER | | NONE | | | | | | NONE | | | | |
| CLOSURE | | | | | | | | | | | | |

| PACKING REQUIREMENTS | EXTERIOR PACK TYPE OF LOAD JAN-P-100 | | | | | | EXTERIOR PACK TYPE OF LOAD JAN-P-100 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | DWG. OR SPEC. | INSIDE DIMENSIONS | STYLE | TYPE | GRADE | CLASS | DWG. OR SPEC. | INSIDE DIMENSIONS | STYLE | TYPE | GRADE | CLASS |
| CASE LINER | | | | | | | | | | | | |
| CONTAINER | PPP-B-621 | 31⅓ x 19 x 10⅓(H) | | | | 2 | | Same as Level | | | | |
| CLOSURE | | (J) | | | | | | C | | | | |

| MEASUREMENTS SIZES IN INCHES WEIGHT IN LBS. CUBAGE IN FT. | LEVEL C MINIMUM MILITARY PACKAGE | LEVEL C MINIMUM MILITARY PACK |
|---|---|---|
| | As specified in MIL-P-14232 | As specified in MIL-P-14232 |

NOTES: *This data sheet is applicable to Binocular M15A1 and M17A1. See Figure 2 for applicable part number and stock number. See Figures 2 and 3 for explanation of Notes (A) through (J) and Marking Notes. See sheet 16 for Figure 4.

**See Alternate Method on Figure 3

FIGURE 1.

| FEDERAL ITEM NAME | | PART NO. | FEDERAL STOCK NO. |
|---|---|---|---|
| BINOCULAR: M15A1 W/E | | *6702513 | *6650-530-0959 |
| COMPOSITION: Plastic, Glass, Aluminum, Rubber and Steel | FINISH: Black coated surfaces & Paint | SNL OR CLASS | TECH/SVC STOCK NO. |

| ITEM | PART NO. | FEDERAL STOCK NO. | WEIGHT | PACKAGED WEIGHT |
|---|---|---|---|---|
| Binocular M15A1 W/E | 6702513 | 6650-530-0959 | 5.26 | 6.54 |
| Binocular M17A1 W/e | 6702518 | 6650-530-0974 | 5.25 | 6.53 |
| Case, Carrying M63A1 | 7694281 | 6650-769-4281 | 2.10 | |

NOTES:

(A) Optics shall be cleaned and dried as specified in MIL-P-14232. Process C-1 of MIL-P-116 shall be followed to clean other surfaces. Except for optics, surfaces shall be dried by any procedure specified in MIL-P-116 that will not damage the items.

(B) Two pieces of tissue (9 x 3) shall be folded to form 2 pads 3 x 2¼. A pad shall be placed over each eyepiece. The tissue over the eyepieces shall then be secured in place with tape (2 pcs, ea 5 x 1). Two pieces of tissue (16 x 4) shall be folded to form 2 pads 4 x 4. A pad shall be placed over each objective end of the binocular. The tissue shall then be secured in place with tape (2 pcs., ea 9½ x 1).

(C) The shoulder straps on the case shall be folded and secured to the case with tape (5 pcs., ea 3 x 1) as shown in figure 4.

(D) The binocular shall be placed in the case. The neck strap shall be coiled and tape (3 x 1) shall be applied over the coil as shown in figure 4 to prevent it from uncoiling. The coiled strap shall be placed between the two objective ends of the binocular as shown in figure 4. The lid shall be closed and secured with the latch provided on the case.

(E) The carrying case containing the binocular shall be wrapped with paperboard cushioning (25 x 14) in such a manner that two thicknesses of paperboard cushioning is over the latch. The wrap shall be secured in place with tape (3 pcs., ea 7 x 2).

(F) The bag shall be heat sealed, exhausting entrapped air prior to final closure.

(G) Tape shall be applied over the top and bottom seams and extend at least 3 inches onto each end panel. If the bottom of the container is closed with staples or adhesive, only a single strip of tape shall be applied over the top seam.

FIGURE 2.

| FEDERAL ITEM NAME | | PART NO. | FEDERAL STOCK NO. |
|---|---|---|---|
| BINOCULAR: M15A1 W/E | | *6702513 | *6650-530-0959 |
| COMPOSITION | FINISH | SNL OR CLASS | TECH/SVC STOCK NO. |
| Plastic, Glass, Aluminum, Rubber and Steel | Black coated surfaces and Paint | | |

(H) Only binoculars with the same stock number shall be packed in the shipping container.

(J) The container shall be closed as specified in PPP-B-621.

MARKING NOTES:

The serial number shall be included in the identification data for Level A packaging. Serial numbers of the binoculars in a Level A or B shipping container shall be included in the identification data. The nomenclature shall be omitted on all shipping containers. MIL-P-14232 shall be used in conjunction with MIL-STD-129 for marking.

**ALTERNATE METHOD: Plastic caps conforming to type III, form A, class I of Specification MIL-C-52078 may be used to cover the eyepieces and objective ends of the binocular in lieu of taping tissue paper and cushioning over the optics.

FIGURE 8.

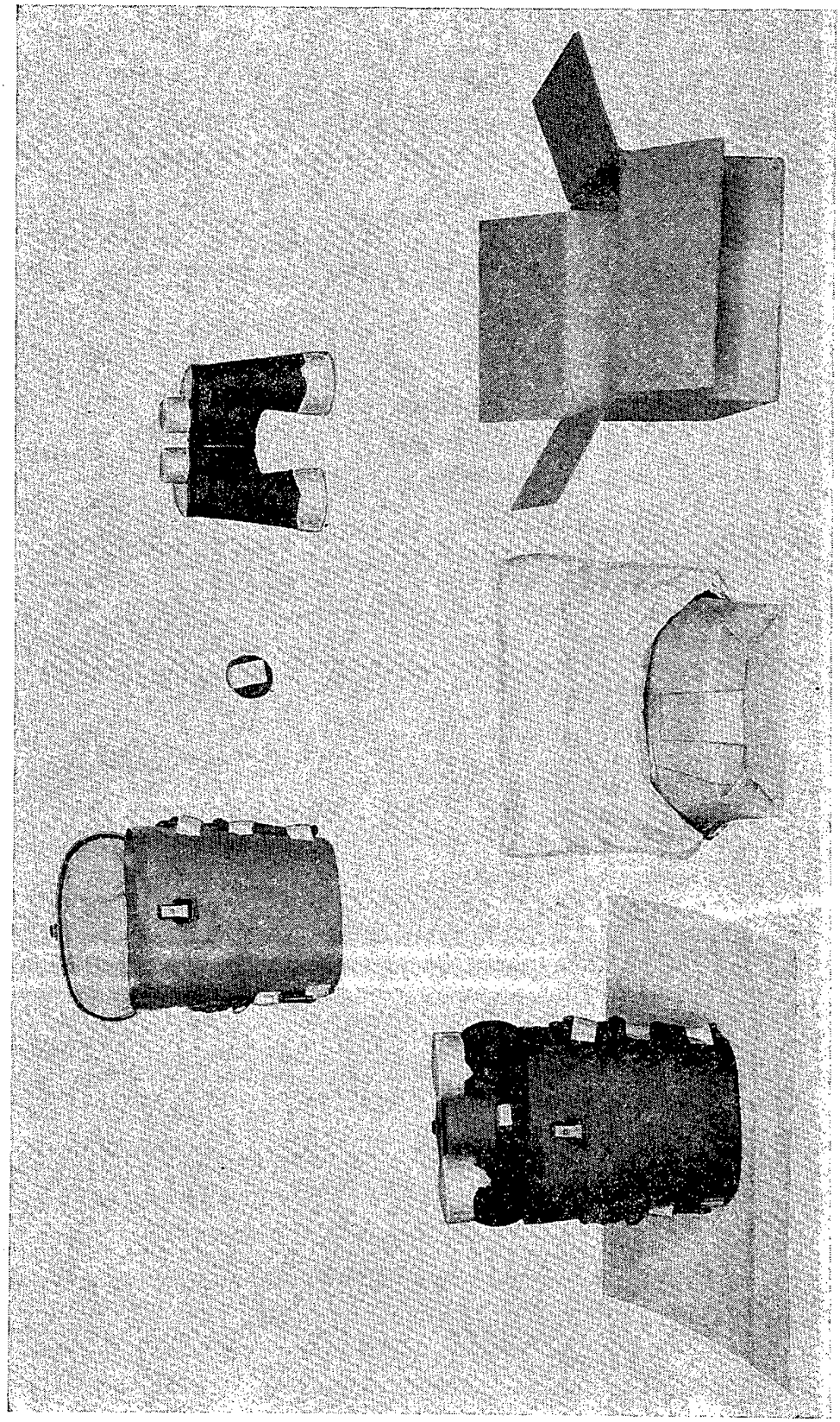

FIGURE 4.

*Binocular: M15A1 and M17A1 top view shows the prepackaged items bottom view shows the prepackaged items being packaged.*