

DEPARTMENT OF THE ARMY  
TECHNICAL MANUAL

DEPARTMENT OF THE AIR  
FORCE TECHNICAL ORDER

TM 9-1580  
TO 38-1-1

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**ORDNANCE MAINTENANCE**

**BINOCULARS M3, M7**

**M8, M9, M13, M13A1**

**M15, M15A1, M16**

**M17 AND M17A1 AND**

**BC TELESCOPE M65**

This copy is a reprint which includes current  
pages from Change 1.

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*DEPARTMENTS OF THE ARMY AND THE AIR FORCE*

*11 FEBRUARY 1953*

**TM 9-1580**  
**C1**

**TECHNICAL MANUAL**

**ORDNANCE MAINTENANCE:**  
**BINOCULARS M3, M7, M8, M9, M13A1, M13A1, M15, M15A1, M16,**  
**M17, AND M17A1 AND BC TELESCOPE M65**

TM 9-1580 }  
CHANGES No. 1}

DEPARTMENT OF THE ARMY  
WASHINGTON 25, D. C., 16 November 1955

TM 9-1580, 11 February 1953 is changed as follows:

The dimension of the center post in figure 30, RA PD 87039A, Special Fixture for Collimating BC Telescope M65, page 47, is changed as follows:

Change	To
<b>9</b>	<b>7</b>
<b>16</b>	<b>18</b>

[AG 413.74 (20 Oct 55)]

By ORDER OF THE SECRETARY OF THE ARMY:

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*Chief of Staff.*

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USAR: *None.*

For explanation of abbreviations used, see SR 320-50-1.

TM 9-1580/TO 38-I-1

*This manual supersedes TM 9-1580, 15 March 1945, TB 9-1580-1, 13 March 1952; and those portions of TB ORD 331, 23 November 1945, and TB ORD 394, 10 October 1950, pertaining to the material covered herein.*

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## **ORDNANCE MAINTENANCE**

# **BINOCULARS M3, M7 M8, M9, M13, M13A1 M15, M15A1, M16, M17 AND M17A1 AND BC TELESCOPE M65**



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*This manual supersedes TM 9-1580, 15 March 1945; TB 9-1580-1, 13 March 1952; and those portions of TB ORD 331, 23 November 1945 and TB ORD 394, 10 October 1950 pertaining to the materiel covered herein*

# CHAPTER 1

## INTRODUCTION

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### Section I. GENERAL

#### 1. Scope

*a.* This manual is published for the information and guidance of personnel responsible for field and depot maintenance of binoculars M3, M7, M8, M9, M13, M13A1, M15, M15A1, M16, M17, and M17A1, and BC telescope M65. It contains information on maintenance beyond the scope of the tools, equipment, or supplies normally available to using organizations. This manual does not contain information which is intended primarily for the using organization, since such information is available to ordnance maintenance personnel in the pertinent operator's technical manual.

*b.* This manual contains a description of and procedures for inspection, disassembly, repair, rebuild, and assembly of binoculars, BC telescope, and equipment.

*c.* The appendix contains a list of current references, including supply catalogs, technical manuals, and other available publications applicable to the binoculars, BC telescope, and equipment.

*d.* Operation, lubrication, and all maintenance operations allocated to using organizations in performing maintenance work within their scope for the binoculars and BC telescope are contained in TM 9-575.

*e.* This manual differs from TM 9-1580, 15 March 1945, as follows :

- (1) Adds information on: Binoculars M13A1 and M17A1.
- (2) Revises information on; Binoculars M3, M7, M8, M9, M13, M15, M15A1, M16, and M17, and BC telescope M65.
- (3) Deletes information on: Binoculars M2 and M6, field glasses type EE, and BC telescopes M1915 and M1917 series.

#### 2. Field and Depot Maintenance Allocation

The publication of instructions for complete disassembly and rebuild is not to be construed as authority for the performance

by field maintenance units of those functions which are restricted to depots and arsenals. In general, the prescribed maintenance responsibilities will apply as reflected in the allocation of maintenance parts listed in the appropriate columns of Department of the Army Supply Catalogs ORD 8 SNL F-210 (for binoculars M3, M8, M9, M13, and M13A1), ORD 8 SNL F-238 (for binoculars M7, M15, M15A1, M16, M17, and M17A1), ORD 8 SNL F-259 (BC telescope M65), and tool sets for maintenance of sighting and fire control equipment listed in ORD 6 SNL F-272, and ORD 6 SNL J-10, Section 13, 14. Instructions for depot maintenance are to be used by maintenance companies in the field only when the tactical situation makes the repair functions imperative. Provisions of parts listed in the depot stock guide column of the applicable ORD 8 SNL's will be made to field maintenance only when the emergency nature of the maintenance to be performed has been certified by a responsible officer of the requisitioning organization.

### **3. Forms, Records, and Reports**

*a. General.* Responsibility for the proper execution of forms, records, and reports rests upon the officers of all units maintaining this equipment. However, the value of accurate records must be fully appreciated by all persons responsible for their compilation, maintenance, and use. Records, reports, and authorized forms are normally utilized to indicate the type, quantity, and condition of materiel to be inspected, to be repaired, or to be used in repair. Properly executed forms convey authorization and serve as records for repair or replacement of materiel in the hands of troops and for delivery of materiel requiring further repair to ordnance shops in arsenals, depots, etc. The forms, records, and reports establish the work required, the progress of the work within the shops, and the status of the materiel upon completion of its repair.

*b. Authorized Forms.* The forms, records, and reports generally applicable to units maintaining the binoculars and BC telescope are listed in the appendix. No forms other than approved Department of the Army forms will be used. For a current and complete listing of all forms, see current SR 310-20-6. For instructions on the use of these forms, see FM 9-10 and TM 9-1100.

*c. Field Reports of Accidents.* The reports necessary to comply with the requirements of the Army safety program are prescribed in detail in the SR 385-10-40 series of special regulations. These reports are required whenever accidents involving injury to personnel or damage to materiel occur.

*d. Report of Unsatisfactory Equipment or Materials.* Any suggestions for improvement in design and maintenance of equipment, safety and efficiency of operation, or pertaining to the application of prescribed lubricants, and/or preserving materials, will be reported through technical channels, as prescribed in SR 700-45-5, to the Chief of Ordnance, Washington 25, D. C., ATTN: ORDFM, using DA Form 468, Unsatisfactory Equipment Report. Such suggestions are encouraged so that other organizations may benefit.

*Note.* Do not report all failures that occur. Report only REPEATED or RECURRENT failures which indicate unsatisfactory design or material. See also SR 700-45-5 and the printed instructions on DA Form 468.

*e. Report of Negligence.* Report to the responsible officer any persistent carelessness, or negligence in the observance of preventive maintenance procedures and safety precautions. This report should be accompanied by recommendations for correcting the unsatisfactory conditions.

*f. Inspection of Record Forms.* At each inspection the inspector will examine the organization's record forms to make sure that these records have been kept up-to-date and that all entries have been properly made. (Previous repairs, work performed in connection with technical bulletins, and modification work orders are some records which are usually required. ) Refer to chapter 3 for details.

## Section II. DESCRIPTION AND DATA

### 4. Description

*a. General.* Figures 1 through 8 illustrate the binoculars, BC telescope M65, and equipment.

*b. Binoculars* (fig. 9).

- (1) The binoculars consist of two prismatic telescopes pivoted about a common hinge so as to permit adjustment of the distance between the eyepieces (interpupillary distance). The hinge holds the axes of the two telescopes in parallel alignment. The prism system in each telescope erects the image (which would otherwise appear inverted) and provides an offset line of sight which increases stereoscopic vision. The prism system also increases the effective optical length of the two telescopes without increasing their actual size, thus providing a more compact instrument. The left telescope of many models (par. 6b) contains a reticle with a scale pattern calibrated in roils (1/6400 part of a circle) for the measurement of small horizontal and vertical angles.

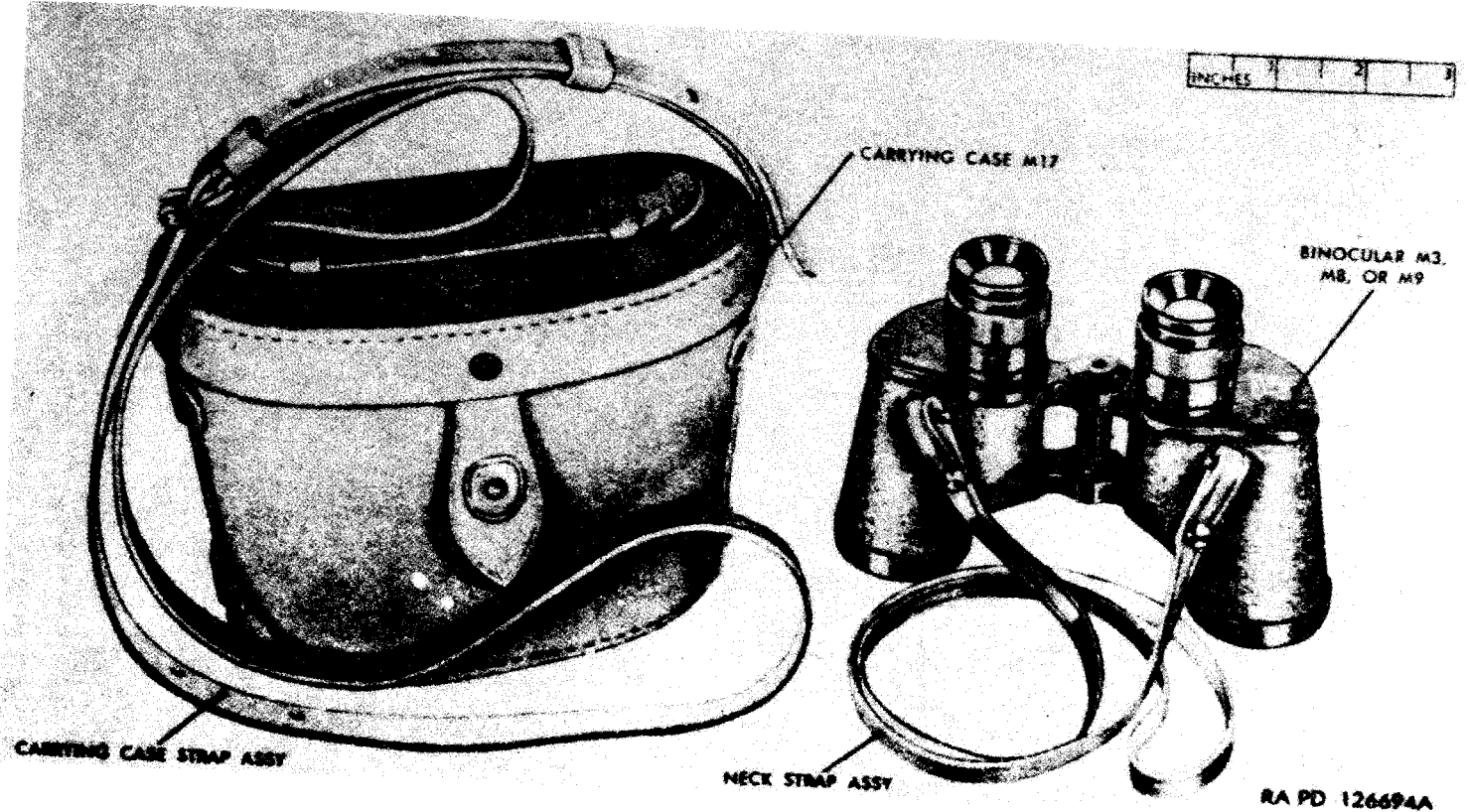


Figure 1. Binocular M3, M8, or M9 with carrying case M17.

RA PD 126694A



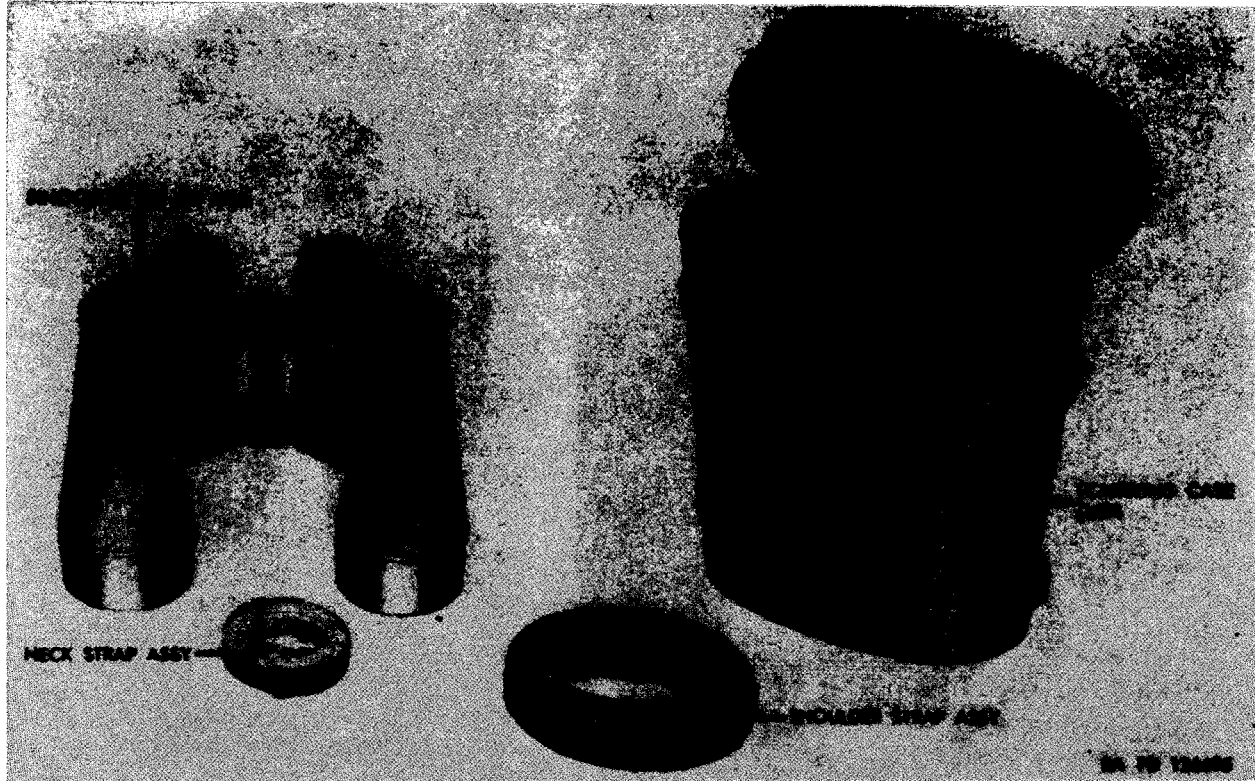


Figure 2. Binocular M7 or M16 with carrying case M24.