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GENERAL SUPPORT AND
DEPOT MAINTENANCE MANUAL
RADAR SET AN/APN-158

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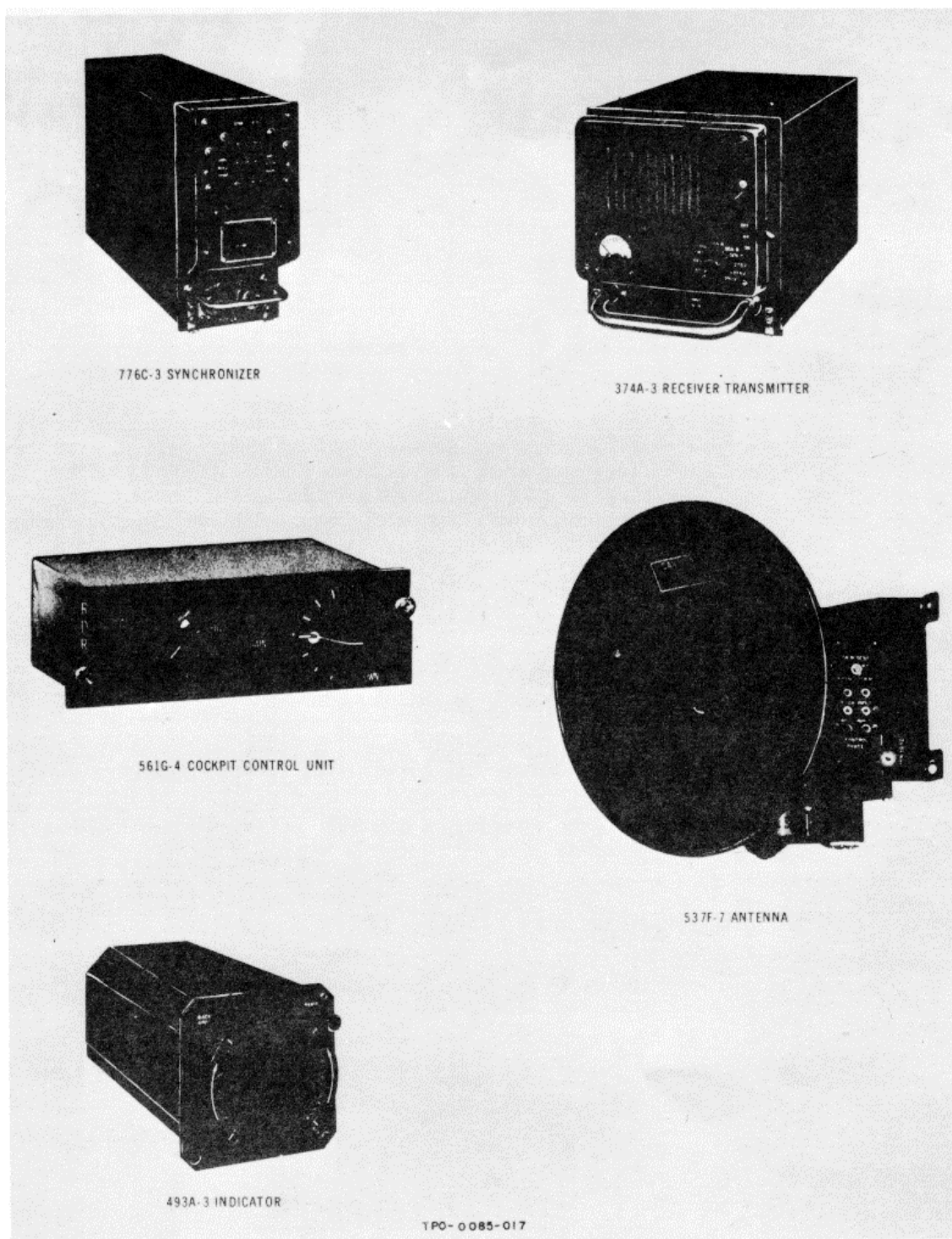
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*Radar Set AN/APN-158
Figure 1-1*

CHAPTER 1

RADAR SET AN/APN-158 SYSTEM

Section I. INTRODUCTION

1-1. SCOPE.

This manual provides the overall functioning of Radar Set AN/APN-158 and describes direct support, general support, and depot maintenance of the system. Chapter 1 contains information on the overall system functioning, troubleshooting, testing, aligning, and repair on a system level. Chapters 2 through 6 contain similar information on each of the five individual units of the system. Chapter 7 contains depot overhaul standards for the system.

1-2. INDEXES OF PUBLICATIONS.

- A. DA Pam 310-4. Refer to the latest issue of DA Pam 310-4 to determine whether there are new editions, changes, or additional publications pertaining to the equipment.
- B. DA Pam 310-7. Refer to the latest issue of DA Pam 310-7 to determine whether there are modification work orders (MWO's) pertaining to the equipment.

1-3. REPORTING OF EQUIPMENT MANUAL IMPROVEMENTS.

Report of errors, omissions, and recommendations for improving this publication by the individual user is encouraged. Reports should be submitted on DA Form 2028 (Recommended Changes to DA Publication) and forwarded direct to Commanding General, U.S. Army Electronic Command, ATTN: AMSEL-ME-NMP-EM Fort Monmouth, N.J. 07703

NOTE: For applicable forms and records refer to TM 11-5841-241-12.

1-4. LIST OF COMPONENTS. (Refer to figure 1-1.)

The components of Radar Set AN/APN-158 (WP-103 Weather Radar System) are referred to in this manual by their commercial nomenclature. The system components are listed below with their commercial designations and associated military nomenclature.

COMMERCIAL NOMENCLATURE.

Weather Radar System WP-103
Receiver-Transmitter 374A-3
Synchronizer 776C-3
Indicator 493A-3
Antennas 537F-7 and 537F-8
Control Unit 561G-4

MILITARY NOMENCLATURE

Radar Set AN/APN-158
Receiver-Transmitter RT-711/APN-158
Synchronizer, Electrical SN-358/APN-158
Indicator, Azimuth-Range IP-724/APN-158
Antennas AS-1520/APN-158 and AS-1642/
APN-158
Control, Radar Set C-4881/APN-158

Figure 1-2 is a list of equipment covered in this manual.

EQUIPMENT	DESCRIPTION	COLLINS PART NUMBER
374A-3 Receiver Transmitter	X-band pulse transmitter and receiver	522-6113-006
776C-3 Synchronizer	Generates synchronous sweep signal with antenna azimuth, provides line-of-sight stabilization to compensate for roll and pitch of aircraft	522-6114-006
493A-3 Indicator	Provides a high intensity visual output of the radar information including range and azimuth.	522-6104-005
537F-7 Antenna	Radiates the rf energy pulses and receives the reflected signals (12-inch reflector).	522-6117-005
* 537F-8 Antenna	Same as 537F-7 with 18-inch reflector.	522-6118-005
561G-4 Cockpit Control Unit	Provides system control functions.	522-5883-004
349B-4 Shockmount	Provides mounting facilities for the 776C-3 Synchronizer.	522-6116-004
349A-6/7 Shockmount	Provides mounting facilities for the 374A-3 Receiver-Transmitter.	772-5135-001/ 522-6115-004

* Optional equipment

Equipment Covered

Figure 1-2

1-5. MAINTENANCE CONCEPT.**A. General.**

This manual contains maintenance instructions for use at the direct support level, general support level, and depot level. Maintenance capabilities are determined by the test equipments allocated to the different categories of maintenance as listed in the Maintenance Allocation Chart (appendix C of TM 11-5841-241-12). Maintenance personnel should refer to the MAC prior to performing any maintenance. In many instances, some of the maintenance procedures contained in this manual may be performed at the direct support, general support, or depot level. The nature and extent of maintenance for each category is described in the following paragraphs.

B. Direct Support Maintenance.

Maintenance personnel at this category of maintenance perform maintenance on the components and subassemblies of Radar Set AN/APN-158 and return the repaired item directly to the user. Maintenance at this level consists of troubleshooting, repair of conventional circuits, such as replacement of parts and subassemblies, and alignment and adjustments. Functional tests of system components are performed at this level as required.

C. General Support Maintenance.

Maintenance personnel at this category of maintenance repair components, subassemblies, modules, etc. and return the repaired item to the user. This level of maintenance is similar to that described in the preceding paragraph except that maintenance is extended to more complex circuitry and replacement of detail parts within the components and modules of the AN/APN-158.

D. Depot Level Maintenance.

Maintenance personnel at this level perform complete major overhaul of the equipment. Repair of components containing gear trains, synchros, etc. are performed at this level only by maintenance personnel possessing the necessary specialized skills.

Section II. SYSTEM DESCRIPTION AND OPERATION**1-6. GENERAL.**

This section presents purpose, specifications, general description, and general theory of operation of the WP-103 Weather Radar System. Refer to figure 1-1 for an overall view of the WP-103 Weather Radar System. All units, except the 561G-4 Cockpit Control Unit, are shown in approximately true relative size. For clarity, the 561G-4 is shown approximately twice relative size.