TM 11-1520-228-34

TECHNICAL MANUAL

DIRECT SUPPORT AND GENERAL SUPPORT
MAINTENANCE MANUAL

ELECTRONIC EQUIPMENT CONFIGURATION ARMY MODEL OH-58A HELICOPTER (NSN 1520-00-169-7137)

HEADQUARTERS, DEPARTMENT OF THE ARMY
31 DECEMBER 1975

Technical Manual
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*This manual supersedes TM 11-1520-228-35, dated 6 May 1969, including all changes.

LIST OF ILLUSTRATIONS

CHAPTER 1
INTRODUCTION

1-1. Scope

a. This manual covers direct support and general support maintenance of the electronic equipment configuration for Army Model OH-58A Helicopter, serial numbers 68-16687 through 68-16986, 69-16080 through 69-16876, 70-15050 through 70-15649, 71-20340 through 71-20476, 71-20879 through 71-20939, 72-21061 and subsequent, and helicopters that have been retrofitted in accordance with MWO 55-1520-228-50-4. This manual includes instructions appropriate to direct and general maintenance personnel for troubleshooting electronic equipment when the equipment is installed in a helicopter. Tools, test equipment, and materials necessary to maintain the helicopter electronic equipment configuration are listed in this manual, which also includes complete maintenance instructions for direct and general support maintenance personnel.

b. Bench maintenance of many of the electronic equipment configuration components is covered in other technical manuals. Pertinent technical manuals for the electronic equipments are listed in appendix A. When servicing the equipments, refer to the pertinent technical manuals for detailed troubleshooting, testing, aligning, and replacing or repairing maintenance parts.

c. Block diagram analysis of the entire electronic configuration and the individual facilities in the electronic configuration is covered in TM 11-1520-228-20. Analysis of the electronic configuration intermit circuits is covered in chapter 2 of this manual. Block diagrams and detailed circuit analysis of electronic equipment components and ancillary electronic equipment not covered in separate technical manuals are covered in chapter 3. For electronic equipment covered by separate technical manuals, refer to the pertinent technical manual (listed in app A) for block diagram and detailed circuit analysis.

d. Throughout this manual, electronic equipment components are referred to by common names. For a list of equipment nomenclature and the assigned common names, refer to TM 11-1520-228-20.

e. Maintenance of Army aircraft is changing to three categories of maintenance. These maintenance categories are Aviation Unit Maintenance (AVUM} Aviation Intermediate Maintenance (AVIM); and Depot Maintenance. AVUM will replace organizational, AVIM will replace direct and general support maintenance. In the interim, as maintenance units are reorganized into three categories of maintenance activities, this publication will be used by personnel for the maintenance of the electronic equipment configuration. The maintenance allocation chart (MAC) is configured to the three-category maintenance concept where the code O represents AWM; the code F represents AVIM and D represents depot maintenance. Those organizations not yet assigned complete AVUM responsibilities should use caution in utilization of this publication. Whatever maintenance is performed must consider available skills, tools, test equipment, and time required to perform the maintenance.

NOTE

For applicable forms and records, refer to paragraph 1-3, TM 11-1520-228-20.

1-2. Indexes of Publications

a DA Pam 310-4. Refer to DA Pam 310-4 to determine if there are new editions, changes, or additional publications pertaining to the electronic equipment configuration for Helicopter, Observation OH-58A.

b. DA Pam 310-7. Refer to DA Pam 310-7 to determine if there are modification work orders (MWO'S) pertaining to the equipment.

1-3. Reporting of Errors

The reporting of errors, omissions, and recommendations for improving this manual by the individual user is encouraged. Reports should be submitted on DA Form 2028 (Recommended Changes to Publications and Blank Forms) or DA Form 2028-2 located in the back of the manual, and forwarded direct to Commander, US Army Communications and Electronics Materiel Readiness Command, ATTN DRSEL-MA-Q, Fort Monmouth, NJ 07703. To use the form in the back of the manual, cut it out, fill it out as shown on the sample, fold it where shown, and drop it in the mail. A reply will be furnished direct to you.

1-3.1. Reporting Equipment Improvement Recommendations (EIR)

EIR's will be prepared using DA Form 2407, Maintenance Request. Instructions for preparing EIR's are provided in TM 38-750, the Army Maintenance Management System. EIR's should be mailed direct to Commander, US Army Communications and Electronics Materiel Readiness Command, ATTN DRSEL-MA-Q, Fort Monmouth, NJ 07703. A reply will be furnished direct to you.

1-4. Reference Designations

a General Reference designations consist of groups of letters and numbers that identify units, assemblies, subassemblies, and parts. Each reference designation used throughout this manual on applicable illustrations and in the text to identify a particular item is also used in the parts list to identify the same item. Some of

the electronic equipment within the overall configuration has reference designations assigned to items according to the unit numbering system, and some equipments use the block numbering system. For the reference designation system and grouping of items within a particular electronic equipment, refer to the applicable technical manuals for that equipment. For those equipments that do not have separate technical manuals refer to c below. For reference designations assigned to items of the overall electronic equipment configuration and the particular facility with which the items are associated, refer to the chart in b below.

b. Electronic Configuration. The following chart lists the facilities, the applicable electronic equipments, and the reference designation grouping of all installation hardware items and parts associated with the facilities.

Facility	Equipment	Grouping
Intercommunication and Audio [a]	Control, Communication System C-6533/ARC (three installed) and associated installation items.	1-99
	Network, avionics, electrical, and armament and associated installation items.	1-99
Liaison [ab]	Radio Set AN/ARC-114 and associated installation items.	101-199
	Antenna, Fm Homing 206-075.523-1 and 206-075-523-2 and associated installation items.	101-199
	Antenna, Fm No. 2 and associated installation items.	101-199
Vhf command l	Radio Set AN/ARC-115 and associated items.	201-299
Uhf command [d]	Radio Set AN/ARC-51BX and associated installation items.	301-399
Automatic direction finder [a]	Direction Finder Set AN/ARN-89.	401-499
	Receiver, Radio R-1496/ ARN-89 and associated instillation items.	401-499
	Control, Radio Set C-7392/ ARN-89 and associated installation items.	401-499
	Amplifier, Impedance. Matching AM-48591/ARN-89 and associated installation items.	401-499
	Antenna AS-2108/ARN-89 and associated installation items.	401-499
	Antenna 206-032-310	401-499
Compass [4]	Gyromagnetic Compass Set AN/ASN-43.	501-599
	Transmitter, Induction Compass T-611/ASN and associated installation items.	501-599
	Compensator, Magnetic Flux CN-405/ASN and associated installation items.	501-599
	Gyro, Directional CN-998/ ASN-43 and associated installation items.	501-599
	Heading-Radio Bearing Indicator ID-1351/A and associated installation items.	501-599
	Switch, compass slaving and associated installation items.	S101
	Inverter, Static 8062-2 and associated installation items.	501-599
Identification [a]	Transponder Set AN/APX-72.	601-699
	Receiver-Transmitter, Radio RT-859/APX-72 and associated installation items.	601-699
	Control, Transponder C-6280 (P)/APX-72 and assorted installation items.	601-699
	Computer, Transponder KIT- 1A/TSEC and assorted installation items.	601-699
	Antenna AT-8641APX-72 and associated installation items.	601-699
	Test Set TS-1843A/APX-72 and associated installation items.	601-699
	Light, code hold and associated installation items.	DS51
	Switch, code hold and associated installation items.	S102
Voice security [ac]	Computer, Voice Security TSEC/KY-28 and associated installation items.	701-799
	Control Indicator, Voice Security C-8157/ARC and associated installation items.	701-799
	Light, remote cipher and associated installation items.	701-799
Battery	Battery, storage and associated installation items.	801-899
Antenna	Antenna, vhf/fro 206-075-518-1 and associated installation items.	901-999
Antenna	Antenna, uhf 206-075-551-1 ‘and associated installation items.	1001-1999
Proximity warning [e]	Proximity Warning YG-1054	1101-1199
	Receiver, Transponder and associated installation items,	1101-1199
	Antenna and associated installation items.	1101-1199
Radar warning	Radar Warning AN/APR-39	1201-129
	Control Panel, Radar Warning C-9326()/APR-39	1201-1299
	Indicator, Radar Warning ID-1150()/APR-39	1201-1299
	Comparator, Radar Warning CM-440()/APR-39	1201-1299
	Dual Receiver, Radar Warning R-1838()/APR-39	1201-1299
	Antenna, Blade AS-2890 ( )/APR-39	1201-1299
	Antenna, Spiral AS-2891	1201-1299

Facility	Equipment	Grouping
	()JAPR-39	
	Antenna, Spiral AS-2892 ()/APR-39	1201-1299

l Refer to TM 11-1520-228-20 for a breakdown listing of installation items.

[b] One installed complete provisions included for a second.

[c] Complete provisions only.

[d] Provisions are supplied for Radio Set AN/ARC-116 and associated installation items which use the same grouping as Radio Set AN/ARC-51BX.

'Provisions for Proximity Warning Facility YG-1054 are accomplished at designated training commands by the application of MWO 55-1520-228-30/22.

When MWO 55-1520-228-50-4 has been accomplished.

c. Electronic Equipment The following lists the electronic equipment used in the electronic configuration that is not covered in separate technical manuals, and the applicable reference designation grouping of each electronic equipment.

(1) Inverter, Static 8062-3.

(2) Network, Avionics, Electrical Armament 206-075-483.

(3) Antenna 206-075-518 vhf/fro.

(4) Antenna 206-075-543 No. 2 Fm.

(5) Antenna Fm Homing 206-075-523-1 and 206-075-523-2.

(6) Antenna 206-075-551 uhf.

(7) Audio Threshold Device 206-075-597.

1-5. Proximity Warning Facility Installation Proximity Warning Facility YG-1054 (PWS) is primarily intended for use by training commands in high density aircraft areas to avoid mid-air collisions. The PWS installation is accomplished by applying MWO 55-1520-228-30/22 and change 1 to that MWO, which achieves dual fm communication capability to all aircraft based on Department of Army allocation. The proximity warning facility can be applied to all aircraft.

1-5.1. Radar Warning System Installation

Radar Warning System, AN/APR-39, is installed o helicopters having MWO 55-1520 -228-50-4 ac. complished. This system provides both visual and audible warning when a high threat radar environment is encountered. It can sort out, identify and display threat radar signals.

1-6. Use of Term Hertz

The National Bureau of Standards has officially adopted the term hertz (Hz) to replace cycles per second. The chart below provides the equivalents of the unit/quantity terms and the list of approved abbreviations that will be used throughout the manual.

Unit quantity	old term	old abbreviation	New term	New abbreviation
Frequency	Cycles per second	Cps	hertz	Hz
10^3 cycles per second	Kilocycles per second	Kc	kilohertz	kHz
10^6 cycles per second	Megacycles per second	Mc	megahertz	MHz
10^9 cycles per second	Gigacycles per second	Gc	gigahertz	GHz