

# TM 11-5821-204-12

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

---

OPERATOR'S AND ORGANIZATIONAL  
MAINTENANCE MANUAL

**RADIO SET AN/ARC-44**

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*HEADQUARTERS, DEPARTMENT OF THE ARMY*  
*30 NOVEMBER 1960*

**WARNING**

DANGEROUS VOLTAGES EXIST IN THIS EQUIPMENT

**DON'T TAKE CHANCES!**

DANGEROUS VOLTAGES **EXIST IN THE FOLLOWING UNITS:**

RECEIVER-TRANSMITTER, RADIO RT-294(\*)/ARC-44 300-volt circuits,  
DYNAMOTOR DY-107(\*) /AR 300-volt circuits.

Do not make contact with exposed wires or connectors. Be safe.  
Turn all power supplies **OFF** before making any connections or  
disconnections.

CHANGE }  
No. 5 }

HEADQUARTERS  
DEPARTMENT OF THE ARMY  
WASHINGTON, D. C., 10 May 1974

**Operator's and Organizational Maintenance Manual  
RADIO SET AN/ARC-44**

TM 11-5821-204-12, 30 November 1960, is changed as follows:

*Page 5.* Delete paragraphs 2, 2.1, and 2.2 and substitute:

**2. Indexes of Publications**

*a. DA Pam 310-4.* Refer to the latest issue of DA Pam 3104 to determine whether there are new editions, changes, or additional publications pertaining to the equipment.

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

**2.1. Forms and Records**

*a. Reports of Maintenance and Unsatisfactory Equipment.* Maintenance forms, records, and reports which are to be used by maintenance personnel at all maintenance levels are listed in and prescribed by TM 38-750.

*b. Report of Packaging and Handling Deficiencies.* Fill out and forward DD Form 6 (Report of Packaging and Handling Deficiencies) as prescribed in AR 700-58/NAVSUP PUB 378/AFR 71-4/MC0 P4030.29, and DSAR 4145.8.

*c. Discrepancy in Shipment Report (DISREP ) (SF 361).* Fill out and forward Discrepancy in Shipment Report (DISREP) (SF 361) as prescribed in AR 55-38/NAVSUPINST 4610.33/AFM 75-18/MCO P4610.19A, and DSAR 4500.15.

**2.2. Reporting of Equipment Publication Improvements**

The Reporting 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 Publications and Blank Forms), and forwarded direct to Commander, US Army Electronics Command, ATTN: AMSEL-MA-C Fort Monmouth, NJ 07703.

**2.3 Handling, Storage, and Disposal of Radioactive Material**

Follow the procedures for safe handling, storage, and disposal of radioactive material as directed by TB 750-249.

*Page 8.* Delete paragraph 5 and substitute:

## 5. Items Comprising an Operable Equipment

FSN	QTY	Nomenclature, part No., and infr code	Fig No.	Dimensions (in)			Unit Weight(lb)
				Height	Depth	Width	
		<b>NOTE</b>					
		The part number is followed by the applicable 5-digit Federal supply code for manufacturers (FSCM) identified in SB 708-42 and used to identify manufacturer, distributor, or Government agency, etc.					
5821-543-0760		Radio Set AN/ARC-44					
5821-543-0547	1	consisting of: Antenna AT-454A/ARC	8				
		consisting of: Coupler, Antenna CU-361(*)/ARC	8	1.61	3.06	2.04	0.63
		Antenna Element AT-455(*)/ARC		91.86			0.75
		Base, Antenna AB-340(*)/ARC	8	4.36	3.18	5.80	1.50
5935-201-7935	1	Connector, Receptacle, Electrical: 20 cont rd female, 5 amp; SM-C-134605; 80063	1	0.359	1.562	0.438	
5935-642-5387	3	Connector, Receptacle, Electrical: 34 cont, 1 connector mating end; 34 female, rd; 5 amp cont; GB2100; 29173	1	1.66	2.50	2.16	
5935-643-6904	1	Connector, Receptacle, Electrical: 34 cont, 1 connector mating end; cont, female rd; 5 amp current rating; GC2103; 29173	1	2.11	2.96	1.04	
6125-563-5821	1	Dynamotor DY-107A/AR	6	5.37	9.22	3.40	6
5821-699-0010	1	Mounting MT-1267A/AR	7	1.31	9.31	3.31	0.81
5821-092-1140	1	Mounting MT-1268/AR	3	1.73	11.80	6.00	0.87
5821-092-1047	1	Panel, Control SB-327/ARC-44	4	3.00	6.06	5.75	2.19
5820-537-4524	2	Panel, Signal Distribution Radio SB-329/AR	5	2.625	5.30	5.75	1.63
	2	Headset-Microphone H-101(*)/U	1				
5821-503-1519	1	Receiver-Transmitter, Radio RT-294/ARC-44; RT-294A/ARC-44; RT-294B/ARC-44	3	7.24	13.90	5.13	14

Page 51. Delete appendix III.

By Order of the Secretary of the Army:

CREIGHTON W. ABRAMS  
*General, United States Army*  
*Chief of Staff*

Official:

VERNE L. BOWERS  
*Major General, United States Army*  
*The Adjutant General*

Distribution:

To be distributed in accordance with DA Form 12-36 (qty rqr block no. 88), Organizational maintenance requirements for avionics literature, AN/ARC-44.

U.S. GOVERNMENT PRINTING OFFICE : 1992 O - 309-442

Change }  
No. 4 }

HEADQUARTERS  
DEPARTMENT OF THE ARMY  
Washington, D. C., 26 May 1971

**Operator's and Organizational Maintenance Manual  
RADIO SET AN/ARC-44**

TM 11-5821-204-12,30 November 1960, is changed as follows:

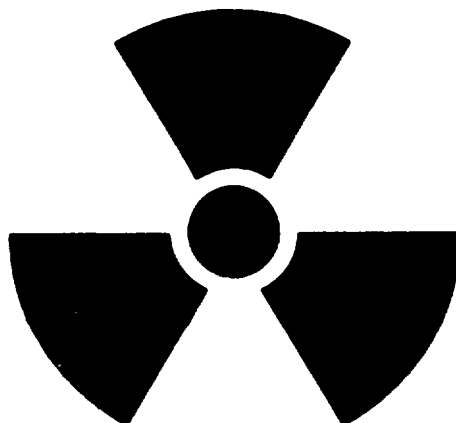
Change "DA Pam 310-4" to "DA Pam 310-7" in the following places:

**Page 25**, paragraph 30.4. Item No. 3 MODIFICATION WORK ORDERS. Item column and References column. Item No. 14 MODIFICATION

WORK ORDERS, *Item* column and *References* column.

Add the following Warning Notice to the inside of the front cover.

RADIATION HAZARD



Co 60

# WARNING

Tube types 5829/WA and 5787/WA used in this radio set contain radioactive material (See TB 750-249). The tubes present no radiation hazard to personnel unless broken. See qualified medical personnel and contact the Radiological Protection Officer if you are exposed to or cut by broken tubes. Follow the first aid instructions contained in TB 750-249. Use extreme care in replacing these tubes and follow safe procedures in their handling, storage, and disposal (See TB 750-249). A beta-gamma radiac meter AN/PDR-27 (\*) or equivalent may be used to measure radiation levels.

Never place radioactive tubes in your pocket.

Use extreme care not to break radioactive tubes while handling them.

Never remove radioactive tubes from cartons until ready to use them.

Page 5. Delete paragraph 2 and substitute.

## 2. Forms and Records

a. *Reports of Maintenance and Unsatisfactory Equipment.* Use equipment forms and records in accordance with instructions in TM 38-750.

b. *Report of Packaging and Handling Deficiencies.* Fill out and forward DD Form 6 (Report of Packaging and Handling Deficiencies) as prescribed in AR 700-58 (Army), NAVSUP Pub 378 (Navy), AFR 71-4 (Air Force), and MCO P4030.29 (Marine Corps).

c. *Discrepancy in Shipment Report (DISREP) (SF 361).* Fill out and forward Discrepancy in Shipment Report (DISREP) (SF 361) as prescribed in AR 55-38 (Army), NAVSUP Pub 459 (Navy), AFM 75-34 (Air Force), and MCO P4610.19 (Marine Corps).

d. *Report of Equipment Publication Improvements.* The reporting 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 Publications) and forwarded direct to Commanding General, U.S. Army Electronics Command, ATTN: AMSEL-ME-NMP-EM, Fort Monmouth, N. J. 07703.

Delete paragraph 2.1 and substitute.

## 2.1 Indexes of Equipment 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 DA Pam 310-7 to determine whether there are modification work orders (MWO's) pertaining to the equipment.

Add paragraph 2.2 after paragraph 2-1.

## 2.2 Handling, Storage, and Disposal of Radioactive Material

Follow the procedures for safe handling, storage, and disposal of radioactive material as directed by TB 750-249.

Page 37. Appendix. Change "TM 38-750 The Army Equipment Record Systems and Procedures" to "TM 38-750 The Army Maintenance Management System (TAMMS). "

Add the following to the appendix.

TB 750-249      Instructions for Safe Handling and Identification of U.S. Army Electronics Command Managed Radioactive Items in the Army Supply System.

TECHNICAL MANUAL

OPERATOR'S AND ORGANIZATIONAL MAINTENANCE MANUAL  
RADIO SET AN/ARC-44

TM 11-5821-204-12 }  
CHANGES No. 3 }

HEADQUARTERS,  
DEPARTMENT OF THE ARMY  
Washington 25, D. C., 15 February 1963

TM 11-5821-204-12, 30 November 1960, is changed as follows:

Note. The parenthetical reference to previous Changes (example: "page 5 of C 2" ) indicate that pertinent material was published in that Changes.

Change "DD Form 781-2" to: "DA Form 2408-13" in the following places:

Page 23, paragraph 24b, last line.

Page 25, paragraph 27, lines 6 and 7. Paragraph 31a, line 12.

Page 26, paragraph 3 la, line 6.

Page 5. Delete paragraph 2 and substitute.

## 2. Forms and Records

a. *Reports of Maintenance* and *Unsatisfactory Equipment*. Use equipment forms and records in accordance with instructions in TM 38-750.

b. *Report of Damaged or Improper Shipment*. Fill out and forward DD Form 6 (Report of Damaged or Improper Shipment) as prescribed in AR 700-58 (Army), NAVSANDA Publication 378 (Navy), and AFR 714 (Air Force).

c. *Comments on Manual*. Forward all comments on this publication direct to: Commanding Officer, U.S. Army Electronics Materiel Support Agency, ATTN: SELMS-MP, Fort Monmouth, N.J. (DA Form 1598 (Record of Comments on Publications), DA Form 2496 (Disposition Form), or letter may be used.)

Add paragraph 2.1 after paragraph 2.

### 2.1 Index of Publications

Refer to the latest issue of DA Pam 310-4 to determine whether there are new editions, changes or additional publications pertaining to your equipment. Department of the Army Pamphlet No. 310-4 is a current index of technical manuals, technical bulletins, supply bulletins, lubrication orders, and modification work orders that are available through publications supply channels. The index lists the individual parts (-10, -20, -35P, etc. ) and the latest changes and revisions of each equipment publication.

Page 6, figure 2. Make the following changes:

Below "H-101 (\*)/U," add: (NOTE 3).

Add the following to the notes:

3. H-101 (\*)/U IS CONNECTED THROUGH THE AIRCRAFT JUNCTION BOX TO THE SB-329/AR.

Page 25, paragraph 28. Make the following changes:

Subparagraph b. Delete subparagraph b and substitute.

b. Tool Kit TK-115/U.

Add subparagraph d after subparagraph c.

d. Tool Kit TK-105/G.

Delete paragraph 30 and substitute.

## 30. Preventive Maintenance

a. Preventive maintenance is the systematic care, inspection, and servicing of equipment to maintain it in a serviceable condition, prevent breakdowns, and assure maximum operational capability. Preventive maintenance is the responsibility of all echelons concerned with the equipment and includes the inspection, testing, and repair or replacement of parts, subassemblies, or units that inspection and tests indicate would probably fail before the next scheduled periodic service. Preventive maintenance service and inspection of Radio Set AN/ARC-44 at the second echelon level are made at daily (ch. 3), intermediate (par. 30.1), and periodic (par. 30.4) intervals unless otherwise directed by the commanding officer. The maintenance services should be scheduled concurrently with the periodic service schedule of the aircraft for all aircraft installations.

b. Maintenance forms and records to be used and maintained on this equipment are specified in TM 38-750. Paragraph 2 contains additional information concerning submission of specified forms.

Add paragraphs 30.1 through 30.4 after paragraph 30.

### 30.1 Intermediate Maintenance

Perform the maintenance functions indicated in the intermediate maintenance and inspection chart (par, 30.2) at the time intermediate inspections are scheduled for the aircraft. Equipment maintained in a standby (ready for immediate operation)

condition must have intermediate maintenance performed on it. Equipment in limited storage (requires service before operation) does not require intermediate maintenance. The item numbers in the chart are not consecutive; they are taken from the complete periodic maintenance service and inspection chart (par. 30.4).

### 30.2 Intermediate Maintenance Service and Inspection Chart

**Note.** Omit items 12, 15, 16, and 18 if the AN/ARC-44 does not have the auxiliary equipments AN/ARA-31 and SA-474/AR.

Item No.	Item	Normal condition or result	References
4	FUSES: Check for proper fuses (F101 and F102) in Dynamotor DY-107(*)/AR.	There should be two 1/2-ampere, MO-volt, 3AG type fuses.	Fig. 6.
5	BRUSHES: Inspect Dynamotor DY-107(*)/AR brushes and brush caps.	Brushes not chipped, broken, or worn to brush wear line.	Par 32.
7	CONNECTIONS: Check the connections of all cables interconnecting the components of the equipment, including the headset-microphone and antenna connections.	Connections not loose and connectors properly fitted into their respective receptacles and clean. Cables not frayed.	a. Fig. 2. b. Configuration manual of applicable aircraft.
9	ANTENNA: Inspect Antenna AT-454(*)/ARC.	Antenna is complete with whip, base, and coupler. Whip is securely attached to base and tilted 15°, and base is secured to aircraft surface. No kinks in whip.	Par. 12.
11	SQUELCH ADJUSTMENT: Check SQUELCH control operation on the fm receiver-transmitter for proper operation.	Background noise in headset is at a comfortable level.	Para. 34.
12	AUXILIARY EQUIPMENT: Inspect Antenna Group AN/ARA-31 and Switch Assembly SA-474/AR for— a. Completeness. . . . . b. Cleanliness- - - - - c. Preservation . . . . .	a. Equipment must be complete. b. Units must be clean and dry inside and out: free of grease, dirt, rust, corrosion, and fungus. c. Pointed surfaces must be free of bare spots, rust, and corrosion.	a. TM 11-5985-200-12
15	MOUNTING: Inspect for seating, stability, and loose or missing hardware of AN/ARA-31 and SA-474/AR mountings.	All components securely mounted in place. No nuts, bolts, or other fasteners loose or broken on mountings.	a. TM 11-5985-200-12. b. Configuration manual of applicable aircraft.
16	CONNECTIONS: Check the connections of all cables interconnecting the components of Antenna Group AN/ARA-31, Switch Assembly SA-474/AR, and Radio Set AN/ARC-44.	Connections not loose and connectors properly fitted into their respective receptacles and clean. Cables not frayed.	Configuration manual of applicable aircraft.
18	ANTENNA: Inspect Antenna Element AT-624(“) /AR on the aircraft.	The antenna elements are firmly attached to the antenna element connectors and the plastic coating of the antenna elements is unbroken.	a. TM 11-5985-200-12. b. Configuration manual of applicable aircraft.

### 30.3 Periodic Maintenance

Periodic maintenance of Radio Set AN/ARC-44 will be scheduled in accordance with the requirements of TM 38-750. The equipment will normally be part of an aircraft installation. The periodic

maintenance inspection should be scheduled concurrently with the periodic maintenance service schedule of the aircraft in which the equipment is installed to reduce out-of-service time to a minimum. All deficiencies or shortcomings will be immediately



SECTION II MAINTENANCE ALLOCATION CHART (AN/ARC-44)

(1) PART OR COMPONENT	(2) MAINTENANCE FUNCTION	(3) 1ST ECH	(4) 2ND ECH	(5) 3RD ECH	(6) 4TH ECH	(7) 5TH ECH	(8) TOOLS REQUIRED	(9) REMARKS
RADIO SET AN/ARC 44	service adjust		X X			X	22, 9, 18 20, 11, 7, 2, 18, 1, 14, 4, 5, 6, 8	
	inspect test		X	X		X	2, 11, 3, 7, 10, 13, 15 18, 17, 20, 23, 14 1, 2, 11, 4, 5, 6, 7, 8, 10, 12, 15, 18, 17, 20, 21, 23, 24	
	replace repair align calibrate rebuild overhaul		X	X	X	X	1, 2, 11, 4, 5, 6, 7, 10, 12, 16, 13, 8, 15, 18, 17, 20, 23, 14, 3, 19 22 20, 21 20, 18, 11, 3, 14 20, 18 20, 21 20, 21	Use codes 4, 5, 6 at 4th and 5th etch Use code 6 at 4th and 5th etch
MOUNTING MT-1268/AR	service inspect test replace overhaul		X X X X			X	9 22 20, 21	
PANEL, CONTROL SB-327/ARC-44	service adjust  inspect test test replace repair repair align rebuild overhaul		X X X X X	X X	X X	X X X	22 20 20, 11, 23 20, 11, 12, 23 22 21 20 20, 21 20, 21	Knobs, lamps, lens

(1) PART OR COMPONENT	(2) MAINTENANCE FUNCTION	(3) 1ST ECH	(4) 2ND ECH	(5) 3RD ECH	(6) 4TH ECH	(7) 5TH ECH	(8) TOOLS REQUIRED	(9) REMARKS
AN/ARC-44 (continued)								
PANEL, SIGNAL DISTRIBUTION, RADIO SB-329/AR	service inspect test  replace repair  rebuild overhaul		X X	X		X   X  X	2, 11, 10, 18, 20, 23 17 1, 2, 11, 10, 12, 18, 20, 23, 17 1, 2, 11, 10, 12, 18, 20 23, 16 22 21 20, 21 20, 21 20, 21	Knobs, lamps, lens
RECEIVER-TRANSMITTER RT-294/ARC-44; RT-294A/ARC-44 RT-294B/ARC-44	service adjust  inspect    replace repair align rebuild overhaul		X X	X	X	X   X   X  X	22, 9 4, 5, 6, 20, 11, 7, 2, 18, 1, 14, 15 22 2, 11, 3, 7, 10, 13, 15, 18, 17, 20, 23, 14 1, 2, 11, 4, 5, 6, 7, 10, 14, 12, 15, 18, 17, 20 23, 19 1, 2, 11, 4, 5, 6, 7, 10, 14, 12, 15, 18, 16, 20, 23, 14, 19 22 20 20, 18, 6, 11, 3, 4, 14 20, 21 20, 21	
AMPLIFIER, AUDIO FREQUENCY	service inspect replace repair rebuild		X X	X	X	X   X	20 20, 21 20, 21	

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
PART OR COMPONENT	MAINTENANCE FUNCTION	1ST ECH	2ND ECH	3RD ECH	4TH ECH	5TH ECH	TOOLS REQUIRED	REMARKS
AN/ARC-44 (continued)								
AMPLIFIER, INTERMEDIATE FREQUENCY	service			X				
	inspect			X				
	replace			X			20	
	repair			X			20	
	rebuild					X	20,21	
	overhaul				X		20,21	
RECEIVER-TRANSMITTER SUB-ASSEMBLY (HOMING AMPLIFIER)	service			X				
	adjust			X				
	replace			X			20	
	repair				X		20,21	
	rebuild					X	20,21	
	overhaul				X		20,21	
RECEIVER-TRANSMITTER SUB-ASSEMBLY (LIMITER DISCRIMINATOR)	service		X					
	inspect			X				
	replace			X			20	
	repair				X		20,21	
	rebuild					X	20,21	
	overhaul				X		20,21	
RECEIVER-TRANSMITTER SUB-ASSEMBLY (NOISE RECTIFIER)	service			X				
	inspect			X				
	replace			X			20	
	repair				X		20,21	
	rebuild					X	20,21	
	overhaul				X		20,21	

(1) PART OR COMPONENT	(2) MAINTENANCE FUNCTION	(3) 1ST ECH	(4) 2ND ECH	(5) 3RD ECH	(6) 4TH ECH	(7) 5TH ECH	(8) TOOLS REQUIRED	(9) REMARKS
AN/ARC-44 (continued)								
RECEIVER-TRANSMITTER SUB-ASSEMBLY (RF HEAD)	service inspect replace repair rebuild overhaul			X X X	X	X	20 20, 21 20, 21 20, 21	
RECEIVER-TRANSMITTER SUB ASSEMBLY (SIDE-STEP OSC)	service inspect replace repair rebuild overhaul			X X X	X	X	20 20, 21 20, 21 20, 21	
RECEIVER-TRANSMITTER SUB-ASSEMBLY (TUNING DRIVE)	service inspect replace repair rebuild overhaul			X X X X	X	X	20 20 20, 21 20, 21	

## SECTION III ALLOCATION OF TOOLS FOR MAINTENANCE FUNCTIONS (AN ARC 44)

(1) TOOLS REQUIRED FOR MAINTENANCE FUNCTIONS	(2) 1ST ECH	(3) 2ND ECH	(4) 3RD ECH	(5) 4TH ECH	(6) 5TH ECH	(7) TOOL CODE	(8) REMARKS
AN/ARC-44 (continued)							
ANALYSER SPECTRUM TS-723/U					+	1	
AUDIO OSCILLATOR TS 382/U			+	+	+	2	
FREQUENCY METER AN/URM-32			+			3	
FREQUENCY METER AN/URM-79				+	+	4	
FREQUENCY METER AN/URM-80				+	+	5	
GAGE TL 559/U				+	+	6	
GENERATOR, SIGNAL AN/URM-48			+	+	+	7	
INDICATOR, PANORAMIC IP-173/U				+	+	8	
MULTIMETER AN/URM 105		+				9	
MULTIMETER TS-352/U			+	+	+	10	
MULTIMETER, METER MF 26/U			+	+	+	11	
OHMMETER ZM-21/U				+	+	12	
POWER SUPPLY PP-1243/U			+			13	
RF WATTMETER AN/URM-120			+	+	+	14	
TEST OSCILLATOR SET AN/PRM-10				+	+	15	
TEST SET, ELECTRON TUBE TV-2/U					+	16	
TEST SET, ELECTRON TUBE TV-7/U			+	+		17	
TEST SET, RADIO AN/ARM-8			+	+	+	18	
TEST SET, RADIO TS-1458/U			+	+	+	19	
TOOL KIT TK-87/U			+	+	+	20	
TOOL KIT TK 88/U				+	+	21	
TOOL KIT TK-115/U		+				22	
VOLTMETER, METER ME-30/U				+	+	23	

## APPENDIX III (Superseded)

### BASIC ISSUE ITEMS FOR RADIO SET AN/ARC-44

#### Section 1. INTRODUCTION

##### 1. Scope

This appendix lists items supplied for initial operation. The list includes tools, parts, and material issued as part of the major end item. The list includes all items authorized for basic operator maintenance of the equipment. End items of equipment are issued on the basis of allowances prescribed in equipment authorization tables and other documents that are a basis for requisitioning.

##### 2. Columns

*a. Source, maintenance, and recoverability code.* Not used.

*b. Federal stock number.* This column lists the n-digit Federal stock number.

*c. Designation by model.* Not used.

*d. Description.* Nomenclature or the standard item name and brief identifying data for each item are listed in this column. When req-

uisioning, enter the nomenclature and description.

*e. Unit of issue.* The unit of issue is each unless otherwise indicated and is the supply term by which the individual item is counted for procurement, storage, requisitioning, allowances, and issue purposes.

*f. Expendability.* Nonexpendable items are indicated by NX. Expendable items are not annotated.

*g. Quantity authorized.* Under "Items comprising on Operable Equipment," the column lists the quantity of items supplied for the initial operation of the equipment.

*h. Illustration.* The "Item No." column lists the reference designations that appear on the part in the equipment. These same designations are also used on any illustrations of the equipment. The numbers in the "Figure No. " column refer to the illustrations where the part is shown.

## SECTION II FUNCTIONAL PARTS LIST

(1) SOURCE MAINTENANCE AND COVERABILITY CODE	(2) FEDERAL STOCK NUMBER	(3) DESIGNATION BY MODLL	(4) DESCRIPTION	(5) UNIT OF ISSUE	(6) EXPENDABILTY	(7) QUANTITY AUTHORIZED	(8) ILLUSTRATIONS		(9)
							FIGURE NO	ITEM NO	
	5821-543-0760		RADIO SET AN/ARC-44: 8 w max power output; 24.0 to 51.9 mc freq range; 1 band, 280 channels; 27.5 vdc oper power reqmts; A grouping of components with facilities for frequency modulated communications for aircraft and for the attachment of homing device		NX		1		
			ITEMS COMPRISING AN OPERABLE EQUIPMENT						
	Ord thru AGC		TECHNICAL MANUAL TM 11-5821 204-12			2			
	5821-543-0547		ANTENNA AT-454A/ARC		NX	1	8		
	5935-201-7935		CONNECTOR, RECEPTACLE, ELECTRICAL: 20 cont rd, female, 5 amp; 1.562 in lg x 0.438 in w x 0.359 in h o/a; Sig Corps Dwg No. SM C 134605			1	1	P101	
	5935-642-5387		CONNECTOR, RECEPTACLE, ELECTRICAL: 34 cont, 1 connector mating end; 34 female, rd; 5 amp cont; 2.50 in lg x 2.16 in w x 1.66 in h o/a excl protruding terms; Admiral Corp part No. GB2100			3	1	P201 P301 P1801	
	5935-643-6904		CONNECTOR, RECEPTACLE, ELECTRICAL: 34 cont, 1 connector mating end; cont, female rd; 5 amp current rating; 2.96 in lg x 1.04 in w x 2.11 in h o/a incl hood; Admiral Corp part No. GC2103			1	1	P815	
	6125-563-5821		DYNAMOTOR DY-107A/AR		NX	1	6		
	5821-699-0010		MOUNTING MT-1267A/AR			1	7		
	5821-092-1140		MOUNTING MT-1268/AR		NX	1	3		
	5821-092-1047		PANEL, CONTROL SB-327/ARC-11		NX	1	4		
	5820-537-4524		PANEL, SIGNAL DISTRIBUTION, RADIO SB 329/AR		NX	2	5		
	5821-503-1519		RECEIVER-TRANSMITTER, RADIO RT-291/ARC-44; RT-291A/ARC-44; RT-291B/ARC-44		NX	1	3		
			RUNNING SPARES AND ACCESSORY ITEMS						
			NO PARTS AUTHORIZED FOR STOCKAGE AT FIRST ECHELON.						

## APPENDIX VI (Added)

### MAINTENANCE ALLOCATION FOR DYNAMOTOR DY-107/AR; DY-107A/AR

#### Section 1. INTRODUCTION

##### 1. General

a. This appendix assigns maintenance functions to be performed on Components, assemblies, and subassemblies by the lowest appropriate maintenance echelon.

b. Columns in the maintenance allocation chart are as follows:

- (1) **Component.** This column shows only the nomenclature or standard item name. Additional descriptive data is included only where clarification is necessary to identify the component. Components, assemblies, and subassemblies are listed in top-down order. That is, the assemblies which are part of a component are listed immediately below that component and the subassemblies which are part of an assembly. Each generation breakdown (components, assemblies, or subassemblies) are listed in disassembly order or alphabetical order.
- (2) **Maintenance function.** This column indicates the various maintenance functions allocated to the echelons.
  - (a) **Service.** To clean, to preserve, and to replenish lubricants.
  - (b) **Adjust.** To regulate periodically to prevent malfunction.
  - (c) **Inspect.** To verify serviceability and to detect incipient electrical or mechanical failure by scrutiny.
  - (d) **Test.** To verify serviceability and to detect incipient electrical or mechanical failure by use of special equipment such as gages, meters, etc.
  - (e) **Replace.** To substitute serviceable components, assemblies, or subassemblies, for unserviceable components, assemblies, or subassemblies.
  - (f) **Repair.** To restore an item to serviceable condition through correc-

tion of a specific failure or unserviceable condition. This function includes but is not limited to welding, grinding, riveting, straightening, and replacement of parts other than the trial and error replacement of running spare type items such as fuses, lamps, or electron tubes.

- (g) **Align.** To adjust two or more components of an electrical system so that their functions are properly synchronized.
  - (h) **Calibrate.** To determine, check, or rectify the graduation of an instrument, weapon, or weapons system, or components of a weapons system.
  - (i) **Overhaul.** To restore an item to *completely serviceable* condition as prescribed by serviceability standards developed and published by heads of technical services. This is accomplished through employment of the technique of "Inspect and Repair Only as Necessary" (IROAN). Maximum utilization of diagnostic and test equipment is combined with minimum disassembly of the item during the overhaul process.
  - (j) **Rebuild.** To restore an item to a standard as near as possible to original or new condition in appearance, performance, and life expectancy. This is accomplished through the maintenance technique of complete disassembly of the item, inspection of all parts or components, repair or replacement of worn or unserviceable elements using original manufacturing tolerances and/or specifications and subsequent reassembly of the item.
- (3) **1st, 2d, 3d, 4th, 5th echelon.** The symbol X indicates the echelon responsible for performing that particular maintenance operation, but does not neces-



sarily indicate that repair parts will be stocked at that level. Echelons higher than the echelon marked by X are authorized to perform the indicated operation.

- (4) **Tools required.** This column indicates codes assigned to each individual tool equipment, test equipment, and maintenance equipment referenced. The grouping of codes in this column of the maintenance allocation chart indicates the tool, test, and maintenance equipment required to perform the maintenance function.
- (5) **Remarks.** Entries in this column are used to clarify any of the data cited in the preceding column.

c. Columns in the allocation of tools for maintenance functions are as follows:

- (1) **Tools required for maintenance functions.** This column lists tools, test, and maintenance equipment required to perform the maintenance functions.
- (2) **1st, 2d, 3d, 4th, 5th echelon.** The dagger (~) symbol in these columns indicates the echelons normally allocated the facility.
- (3) **Tool code.** This column lists the tool code assigned.

## 2. Maintenance by Using Organizations

When this equipment is used by signal services organizations organic to theater headquarters or communication zones to provide theater communications, those maintenance functions allocated up to and including fourth echelon are authorized to the organization operating this equipment.

**SECTION II. MAINTENANCE ALLOCATION CHART FOR DYNAMOTOR DY-107/AR; DY-107A/AR**

1  
2

(1) PART OR COMPONENT	(2) MAINTENANCE FUNCTION	(3) 1ST ECH	(4) 2ND ECH	(5) 3RD ECH	(6) 4TH ECH	(7) 5TH ECH	(8) TOOLS REQUIRED	(9) REMARKS
DYNAMOTOR DY-107/AR; DY-107A/AR	service		X				7	Replacement of fuses and caps
	inspect		X				7	
	test		X				1,7	
	replace			X			2,5	
	repair		X			X	2,3,4,5	
	rebuild			X			7	
DYNAMOTOR SUB-ASSEMBLY	repair		X				7	Replacement of brushes and caps
	repair		X				7	
	rebuild			X			5	
						X	5,6	

**SECTION III. ALLOCATION OF TOOLS FOR MAINTENANCE FUNCTIONS**

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
TOOLS REQUIRED FOR MAINTENANCE FUNCTIONS	1ST ECH	2ND ECH	3RD ECH	4TH ECH	5TH ECH	TOOL CODE	REMARKS
DY-107/AR; DY-107A/AR (continued)							
MULTIMETER AN/URM-105		+				1	
MULTIMETER TS-352/U			+	+	+	2	
TEST SET I-199(C)				+	+	3	
TEST SET AN/GSM-6: INSULATION BREAKDOWN					+	4	
TOOL KIT TK-87/U			+	+	+	5	
TOOL KIT TK-88/U				+	+	6	
TOOL KIT TK-105/G		+				7	

## APPENDIX VII (Added)

### BASIC ISSUE ITEMS LIST FOR DYNAMOTOR DY-107/AR; DY-107A/AR

#### Section L INTRODUCTION

##### 1. Scope

This appendix lists items supplied for initial operation. End items of equipment are issued on the basis of allowances prescribed in equipment authorization tables and other documents that are a basis for requisitioning.

##### 2. Columns

*a. Source, Maintenance and Recoverability Code.* Not used.

*b. Federal Stock Number.* This column lists the n-digit Federal stock number.

*c. Designation By Model.* Not used.

*d. Description.* Nomenclature or the standard item name and brief identifying data for each

item are listed in this column. When requisitioning, enter the nomenclature and description.

*e. Unit of Issue.* The unit of issue is each unless otherwise indicated and is the supply term by which the individual item is counted for procurement, storage, requisitioning, allowances, and issue purposes.

*f. Expendability.* Nonexpendable items are indicated by NX. Expendable items are not annotated.

*g. Quantity Authorized.* Under "Items Comprising an Operable Equipment," the column lists the quantity of items supplied for the initial operation of the equipment.

*h. Illustration.* The "Figure No." column lists the figure and reference numbers used for identification of the items in the illustration.

(1)				(2)	(3)				(4)	(5)	(6)	(7)	(8)		(9)
SOURCE MAINTENANCE AND RECOVERABILITY CODE				FEDERAL STOCK NUMBER	DESIGNATION BY MODEL				DESCRIPTION	UNIT OF ISSUE	EXCHANGEABILITY	QUANTITY AUTHORIZED	ILLUSTRATIONS		
													FIGURE NO	ITEM NO	
				6125-568-5821					DYNAMOTOR DY-107 AR; DY-107A AR: 27.5 vdc, 3.6 amp continuous operation, 5.25 amp, intermittent operation, 9.22 in lg x 3.40 in w x 5.37 in h o/a; Sig Corps dwg No. SC-DL-134064		XX		1		
ITEMS COMPRISING AN OPERABLE EQUIPMENT															
				Ord thru AGC					TECHNICAL MANUAL TM 11 5821-204 12				2		
RUNNING SPARES AND ACCESSORY ITEMS															
NO PARTS AUTHORIZED FOR STOCKAGE AT FIRST ECHELON															

BY ORDER OF THE SECRETARY OF THE ARMY:

G. H. DECKER,  
General, *United States Army*,  
*Chief of Staff*.

Official:

J. C. LAMBERT,  
*Major General, United States Army,*  
*The Adjutant General.*

Distribution:

Active Army & USAR:

To be distributed in accordance with DA Form 12-31 requirements for Operator and Crew Maintenance Instructions for all Fixed and Rotor Wing Aircraft.

NG: None.

TECHNICAL MANUAL

Operator's and Organizational Maintenance Manual  
RADIO SET AH/ARC-44

TM 11-5821-204-12 }  
CHANGES No. 2 }

HEADQUARTERS,  
DEPARTMENT OF THE ARMY  
WASHINGTON 25, D. C., 25 May 1962

TM 11-5821-204-12, 30 November 1960, is changed as follows:

**Page 5**, paragraph 2. (as changed by C 1, 27 Jun 61) Delete subparagraph d and substitute the following:

*al. Comments or Suggestions.* Any comments concerning omissions and discrepancies in appendixes II thru VII will be prepared on DA Form 2028 and forwarded direct to Commanding Officer, U. S. Army Signal Materiel

Support Agency, ATTN: SIGMS-ML, Fort Monmouth, N. J.

**Page 37**, (as deleted by C 1, 27 Jun 61). Delete all reference to TM 11-5965-215-15P.

Change TM 11-6125-204-12P to read: TM 11-6125-207-12P, (as changed by C 1, 27 Jun 61).

APPENDIX II (Superseded)

MAINTENANCE A11 LOCATION RADIO SET AN/ARC-44

Section 1. INTRODUCTION

1. General

*a.* This appendix assigns maintenance functions to be performed on components, assemblies, and subassemblies by the lowest appropriate maintenance echelon.

*b.* Columns in the maintenance allocation chart are as follows:

- (1) **Component.** This column shows only the nomenclature or standard item name. Additional descriptive data is included only where clarification is necessary to identify the component. Components, assemblies, and subassemblies are listed in topdown order. That is, the assemblies which are part of a component are listed immediately below that component and the subassemblies which are part of an assembly. Each generation breakdown (com-

ponents, assemblies, or subassemblies) are listed in disassembly order or alphabetical order.

- (2) **Maintenance function.** This column indicates the various maintenance functions allocated to the echelons.

- (a) **Service.** To clean, to preserve, and to replenish lubricants.
- (b) **Adjust.** To regulate periodically to prevent malfunction.
- (c) **Inspect.** To verify serviceability and to detect incipient electrical or mechanical failure by scrutiny.
- (d) **Test.** To verify serviceability and to detect incipient electrical or mechanical failure by use of special equipment such as gages, meters, etc.

---

• These changes supersede C1, 27 June 1961.

- (e) **Replace.** To substitute serviceable components, assemblies, or subassemblies, for unserviceable components, assemblies, or subassemblies.
  - (f) **Repair.** To restore an item to serviceable condition through correction of a specific failure or unserviceable condition. This function includes but is not limited to welding, grinding, riveting, straightening, and replacement of parts other than the trial and error replacement of running spare type items such as fuses, lamps, or electron tubes.
  - (g) **Align.** To adjust two or more components of an electrical system so that their functions are properly synchronized.
  - (h) **Calibrate.** To determine, check, or rectify the graduation of an instrument, weapon, or weapons system, or components of a weapons system.
  - (i) **Overhaul.** To restore an item to *completely serviceable* condition as prescribed by serviceability standards developed and published by heads of technical services. This is accomplished through employment of the technique of "Inspect and Repair Only as Necessary" (IROAN). Maximum utilization of diagnostic and test equipment is combined with minimum disassembly of the item during the overhaul process.
  - (j) **Rebuild.** To restore an item to a standard as near as possible to original or new condition in appearance, performance, and life expectancy. This is accomplished through the maintenance technique of complete disassembly of the item, inspection of all parts or components, repair or replacement of worn or unserviceable elements using original manufacturing tolerances and/or specifications and subsequent reassembly of the item.
- (3) **1st, 2d, 3d, 4th, 5th echelon.** The symbol X indicates the echelon responsible for performing that particular maintenance operation, but does not necessarily indicate that repair parts will be stocked at that level. Echelons higher than the echelon marked by X are authorized to perform the indicated operation.
  - (4) **Tools required.** This column indicates codes assigned to each individual tool equipment, test equipment, and maintenance equipment referenced. The grouping of codes in this column of the maintenance allocation chart indicates the tool, test, and maintenance equipment required to perform the maintenance function.
  - (5) **Remarks.** Entries in this column will be utilized when necessary to clarify any of the data cited in the preceding column.
- c. Columns in the allocation of tools for maintenance functions chart are as follows:
- (1) **Tools required for maintenance functions.** This column lists tools, test, and maintenance equipment required to perform the maintenance functions.
  - (2) **1st, 2d, 3d, 4th, 5th echelon.** The dagger ( † ) symbol in these columns indicates the echelons normally allocated the facility.
  - (3) **Tool code.** This column lists the tool code assigned.

## 2. Maintenance by Using Organizations

When this equipment is used by signal services organizations organic to theater headquarters or communication zones to provide theater communications, those maintenance functions allocated up to and including fourth echelon are authorized to the organization operating this equipment.



**RADIO SET AN/ARC44**

		Paragraph	Page
<b>CHAPTER 1 . INTRODUCTION</b>			
Section I.	<b>General</b>		
	Scope .....	1	5
	Forms and records .....	2	5
Section II.	<b>Description and data</b>		
	Purpose and use .....	3	5
	Technical characteristics .....	4	7
	Components of Radio Set AN/ARC-44 .....	5	8
	Nomenclature and common names .....	6	8
	Description of Radio Set AN/ARC-44 .....	7	9
	Description of Receiver-Transmitter, Radio RT-294(*)/ARC-44 .....	8	9
	Description of Panel, Control SB-327/ARC-44 .....	9	9
	Description of Panel, Signal Distribution, Radio SB-329/AR .....	10	13
	Description of Dynamotor DY-107(*)/AR .....	11	13
	Description of Antenna AT-454(*)/ARC .....	12	14
	Description of Headset-Microphone H-101(*)/U .....	13	14
	Description of connectors .....	14	15
	Additional equipment required .....	15	16
	Differences in models .....	16	17
 <b>CHAPTER 2. OPERATING INSTRUCTIONS</b>			
Section I.	<b>Controls</b>		
	INT signal distribution panel .....	17	19
	FM control panel .....	18	20
	Power switches and controls .....	19	20
Section II.	<b>Operating instructions</b>		
	Types of operation . . . . .	20	21
	Starting procedure . . . . .	21	21
	<b>Interphone operation</b>	22	21
	Fm liaison set operation . . . . .	23	21

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\*TM 11-5821-204-12 supersedes the following publications: TM 11-517, 4 December 1956, including Cl, 1 July 1957; C2, 22 July 1957, C3, 21 January 1958, and C4, 7 April 1959, as applies to operator's and organizational maintenance. TM 11-5821-204-12P, 23 July 1959, including Cl, 28 June 1960. **TM 11-5821-200-15P**, 2 December 1958 as applies to the first echelon portion and the maintenance allocation chart.

	<b>Paragraph</b>	<b>Page</b>
<b>C H A P T E R 3 .</b>	<b>PREFLIGHT (DAILY) INSPECTION</b>	
	General .....	24 23
	Inspections for all flights .....	25 23
	Preflight inspection, power on .....	26 23
<b>C H A P T E R 4 .</b>	<b>ORGANIZATIONAL MAINTENANCE</b>	
	Scope of organizational maintenance .....	27 25
	Tools and test equipment required .....	28 25
	Preventive maintenance techniques .....	29 25
	Preventive maintenance instructions .....	30 25
	Equipment performance checklist .....	31 25
	Maintenance of dynamotor .....	32 29
	Removal and replacement of fm liaison set .....	33 29
	Fm receiver-transmitter squelch adjustment .....	34 31
<b>C H A P T E R 5 .</b>	<b>AUXILIARY EQUIPMENT</b>	
	Introduction .....	35 32
	Switch Assembly SA-474/AR .....	36 33
	Antenna Group AN/ARA-31 .....	37 37
<b>Chapter 6 .</b>	<b>DEMOLITION OF MATERIEL TO PREVENT ENEMY USE</b>	
	Authority for demolition .....	38 36
	Methods of destruction .....	39 36
<b>A P P E N D I X I .</b>	<b>REFERENCES .....</b>	<b>37</b>
	<b>II. MAINTENANCE ALLOCATION CHART FOR RADIO SET</b>	
	AN/ARC-44 .....	38
	<b>111. BASIC ISSUE ITEMS LIST FOR RADIO SET AN/ARC-44 .....</b>	<b>51</b>
	<b>Iv. BASIC ISSUE ITEMS LIST FOR ANTENNA AT-454/ARC .....</b>	<b>55</b>
	<b>v. MAINTENANCE ALLOCATION CHART FOR ANTENNA</b>	
	AT-454/ARC .....	57

reported to a higher echelon using forms and procedures specified by TM 38-750. Equipment that has a deficiency that cannot be corrected by second echelon maintenance should be deadlined in accordance with TM 38-750. Perform all the services

listed in the periodic maintenance inspection chart (par. 30.4) in the sequence listed. Whenever a *normal condition* or result is not observed, take corrective action in accordance with the paragraph listed under references.

### 30.4 Periodic Maintenance Service and Inspection Chart

*Note.* Omit items 12 through 19 if the AN/ARC-44 does not have the auxiliary equipments AN/ARA-31 and SA-474/AR.

Item No.	Procedure		Reference
	Item	Normal condition or result	
1	SET: Inspect the equipment for- u. Completeness . . . . . b. Proper installation . . . . .  c. Cleanliness . . . . . d. Preservation . . . . .	a. Equipment must be complete. . . . . <b>b.</b> Installation is in accordance with the manual covering the aircraft in which the set is installed. c. Units must be clean and dry inside and out; free of grease, dirt, rust, corrosion, and fungus. d. Painted surfaces must be free of bare spots, rust, and corrosion.	a. Par. 5. <b>b.</b> Configuration manual of applicable aircraft. c. Par. 29.
2	PUBLICATIONS: Check to see that pertinent publications are available (app. I).	<b>a. Operator's</b> and organizational maintenance manual must be complete and in usable condition without missing pages. <b>b.</b> All Changes pertinent to the equipment are on hand (DA Pam 310-4).	<b>a.</b> App. I.  b. DA Pam 310-4 for requirements. DA Pam 310-4.
3	MODIFICATION WORK ORDERS: Check DA Pam 310-4 to determine if new applicable MWO'S have been published.	ALL URGENT MWO'S have been applied to the equipment. ALL ROUTINE MWO'S have been scheduled.	Fig. 6.
4	FUSES: Check for proper fuses (F101 and F102) in Dynamotor <b>DY-107(*)/AR.</b>	There should be two 1/2-ampere, 250-volt, 3AG type fuses.	Par. 32.
5	<b>BRUSHES: Inspect dynamotor brushes and brush caps.</b>	Brushes not chipped, broken, or worn to brush wear line.	Par. <b>33b.</b>
6	<b>MOUNTING: Inspect</b> for seating, stability, loose or missing hardware of all mountings.	All components securely mounted in place. No nuts, bolts, <b>or</b> other fasteners loose or broken on mountings. All bonding straps properly grounded and units properly safety wired.	a. Fig. 2. b. Configuration manual of applicable aircraft. Pars, 17-23.
7	<b>CONNECTIONS:</b> Check the connections of all cables interconnecting the components of the equipment, including the headset-microphone and antenna connections.	Connections not loose and connectom properly fitted into their respective receptacle and clean. Cables not frayed.	Par. 12.
8	<b>KNOBS, DIALS, AND SWITCHES:</b> Check for proper mechanical action by setting each control to each of its possible settings.	Action is positive without backlash, binding, <b>or</b> scraping. Note: Knobs that require frequent tightening should have <b>setscrews</b> replaced if they show signs of wear.	a. Par. 31. <b>b.</b> Organizational maintenance manual of applicable aircraft. Par. 34.
9	ANTENNA: Inspect, Antenna AT-454(*)/ARC.	Antenna is complete with whip, base, and coupler, Whip is securely attached to base and tilted 15°, and base is secured to aircraft surface. No kinks in whip.	
10	OPERATIONAL CHECK: Perform complete operational check of the AN/ARC-44 in accordance with paragraph 31.	Equipment operates normally from the pilot and copilot positions.	
11	SQUELCH ADJUSTMENT: Adjust SQUELCH control on the fm receiver-transmitter in accordance with paragraph 34.	Background noise in the headset is adjusted to a comfortable level.	

Item No.	Item	Procedure	
			Normal condition or result
12	AUXILIARY EQUIPMENT: <b>Inspect Antenna Group AN/ARA-31 and Switch Assembly SA-474/AR</b> for- a. Completeness ----- b. Proper installation ----- c. Cleanliness . . . . . d. Preservation -----	a. Equipment must complete----- b. Installation is in accordance with organizational maintenance manual covering the aircraft in which set is installed. c. Units must be clean and dry inside and out; free of grease, dirt, rust, corrosion, and fungus. d. Painted surface must be free of hare spots, rust, and corrosion.	a. TM 11-5985-200-12. b. Configuration manual of applicable aircraft.
13	PUBLICATIONS: Check to see that pertinent publication for the AN/ARA-31 and SA-474/AR arc available.	a. Operator's and organizational maintenance manual (TM 11-5985-200-12) must be complete and in usable condition without miming pages. b. All Changes pertinent to the equipment are on hand (DA Pam 310-4).	a. App. I, TM 11-598-200-12. b. DA Pam 310-4 for requirements DA Pam 310-4.
14	MODIFICATION WORK ORDERS: Check DA Pam 310-4 to determine whether new applicable MWO's have been published covering the AN/ARA-31 and SA-474/AR.	ALL URGENT MWO'S have been applied to the equipment. ALL ROUTINE MWO'S have been scheduled.	
15	MOUNTING: Inspect for seating, stability, loose or missing hardware of all mountings.	.411 components securely mounted in place. No nuts, bolts, or other fasteners loose or broken on mountings.	a. TM 11-5985-200-12. b. Configuration manual of applicable aircraft.
16	CONNECTIONS: Check the connections of all cables interconnecting the components of Antenna Group AN/ARA-31, Switch Assembly SA-474/AR, and Radio Set AN/ARC-44.	Connections not loose and connectors properly fitted into their respective receptacles and clean. Cables not frayed.	Configuration manual of applicable aircraft.
17	SWITCHES: Check the toggle switches on Switch Assembly SA-474/AR for proper mechanical action by setting each switch to each of its positions.	Action is positive, without binding or sticking.	Par. 36.
18	ANTENNA: Inspect installation of Antenna Element AT-624 (•)/AR on aircraft.	The two Antenna Elements AT-624(*)/AR are properly installed and complete with Network, Impedance Matching CU-459/AR. Fiberglass whip of Antenna Element AT-624A/AR is not loose or detached from metal base or conductor.	a. TM 11-5985-200-12. b. Configuration manual of applicable aircraft.
19	OPERATIONAL CHECK: Perform complete operational check of the AN/ARA-31, SA-474/AR, and AN/ARC-44, as a homing facility in accordance with paragraph 37b.	Equipment operates normally as a homing facility.	Par. 37b.

Page 32, figure 13, caption. Change "SA-464/AR" to: SA-474/AR.

Page 39, paragraph 35c. After "AN/ARA-31," add: and Switch Assembly SA-474/AR.

Page 37. Add the following to the appendix. TM 38-750 The Army Equipment

Record System and Procedures.

TM 11-5985-200-12 operator's and Organizational Maintenance Manual: Antenna Group AN/ARA-31 and Switch Assembly SA474/AR.

By Order of the Secretary of the Army:

Official:

VERNE L. BOWERS,  
*Major General, United States Army,*  
*The Adjustment General*

W. C. WESTMORELAND,  
*General, United States Army,*  
*Chief of Staff*

**Distribution:**

To be distributed in accordance with DA Form 12-36, (qty rqr block no. 377) Operator maintenance requirements for all Fixed and Rotor Wing aircrafts.

\*U.S. GOVERNMENT PRINTING OFFICE : 1992-311-831 (44820)



By Order of the Secretary of the Army:

EARLE G. WHEELER,  
*General, United States Army,*  
*Chief of Staff.*

Official:

J. C. LAMBERT,  
*Major General, United States Army,*  
*The Adjutant General*

**Distribution:**

**To be distributed in accordance with DA Form 12-31 requirements for Operator and Organizational Maintenance Instructions for All Fixed and Rotor Wing aircraft.**

\* U.S. GOVERNMENT PRINTING OFFICE: 1992 - 311-831 (43948)







*Figure 1. Components of Radio Set AN/ARC-44.*



CHAPTER 1  
INTRODUCTION

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Section 1. GENERAL

1. Scope

a. This manual describes Radio Set AN/ARC-44 (fig. 1 ) and covers the operating instructions to be used by the aircraft pilot, operator's preflight inspections, and organizational maintenance procedures to be performed by the organizational repairman or the crew chief.

b. Nomenclature followed by (\*) is used to indicate all models of the equipment covered in this manual. Thus, Receiver-Transmitter, Radio RT-294(\*)/ARC-44 represents Receiver-Transmitters, Radio RT-294/ARC-44, RT-294A/ARC-44, and RT-294B/ARC-44. Mounting MT-1267(\*)/AR represents Mountings MT-1267/AR and MT-1267A/AR. Antenna AT-454 (\*)/ARC represents Antennas AT-454/ARC and AT-454A/ARC. Base, Antenna AFL-340(\*) ARC represents Base, Antenna AB-340/ARC and Base, Antenna Support AB-340A/ARC. Antenna Element AT-455(\*)/ARC represents Antenna Elements AT-455/ARC and AT-455A/ARC. Antenna Elements AT-624/(\*)/AR represents Antenna Elements AT-624/AR and AT-624A/AR. Coupler, Antenna CU-361(\*) ARC represents Couplers, Antenna CU-361/ARC, CU-361A/ARC, CU-361B/ARC, CU-361C/ARC, and CU--361D/ARC. Headset-Microphone H-101(\*)/U represents Headset-Microphones H-101/U and H-101A/U. Dynamotor DY-107(\*)/AR represents Dynamotors DY-107/AR and DY-107A/AR. Keyer KY-

149(\*) AR represents Keyers KY-149/AR and KY-149A AR.

2. Forms and Records

a. *Unsatisfactory Equipment Reports.* Fill out and forward DD Form 787-1 (Electronic Failure Report-Signal Equipment) to the Commanding officer, U. S. Army Signal Materiel Support Agency, ATTN: SIGMS-ML, Fort Monmouth, N. J., as prescribed in AR 700-39.

b. Report of Damaged or Improper Shipment. Fill out and forward DD Form 6 (Report of Damaged or improper Shipment), as prescribed in AR 700-58.

c. Maintenance Forms. Prepare DD Form 781-2 (Aircraft Flight Report and Maintenance Record, Aircraft Inspection and Maintenance) in accordance with the instructions on the form. All preflight and postflight inspections of Radio Set AN ARC-44 will be recorded on this form.

d. Parts List Form. Forward DA Form 2028 (Recommended Changes to DA Technical Manual Parts Lists or Supply Manuals 7, 8, and 9) direct to the Commanding Officer, U. S. Army Signal Materiel Support Agency, ATTN : SIGMS-ML. Fort Monmouth, N. J., with any comments concerning omissions and discrepancies in appendixes II through V.

e. Comments on Manuals. Forward all other comments concerning this publication directly to the Commanding Officer, U. S. Army Signal Materiel Support Agency, ATTN: SIGMS-PA2d, Fort Monmouth, N. J.

**Section II. DESCRIPTION AND DATA**

3. Purpose and Use  
(fig. 2)

a. Radio Set AN/ARC-44 provides the pilot and copilot with two-way communication between aircraft and ground stations and aircraft to aircraft within the tactical military frequency-modulation channels. The frequency

range of Radio Set AN ARC-44 permits the pilot or copilot of the aircraft to communicate with armored, artillery, and infantry units in the field, Radio Set AN/ARC-44 provides these communication facilities within the frequency range of 24 to 51.9 megacycles (me) on 280 preset channels. The distance range is limited

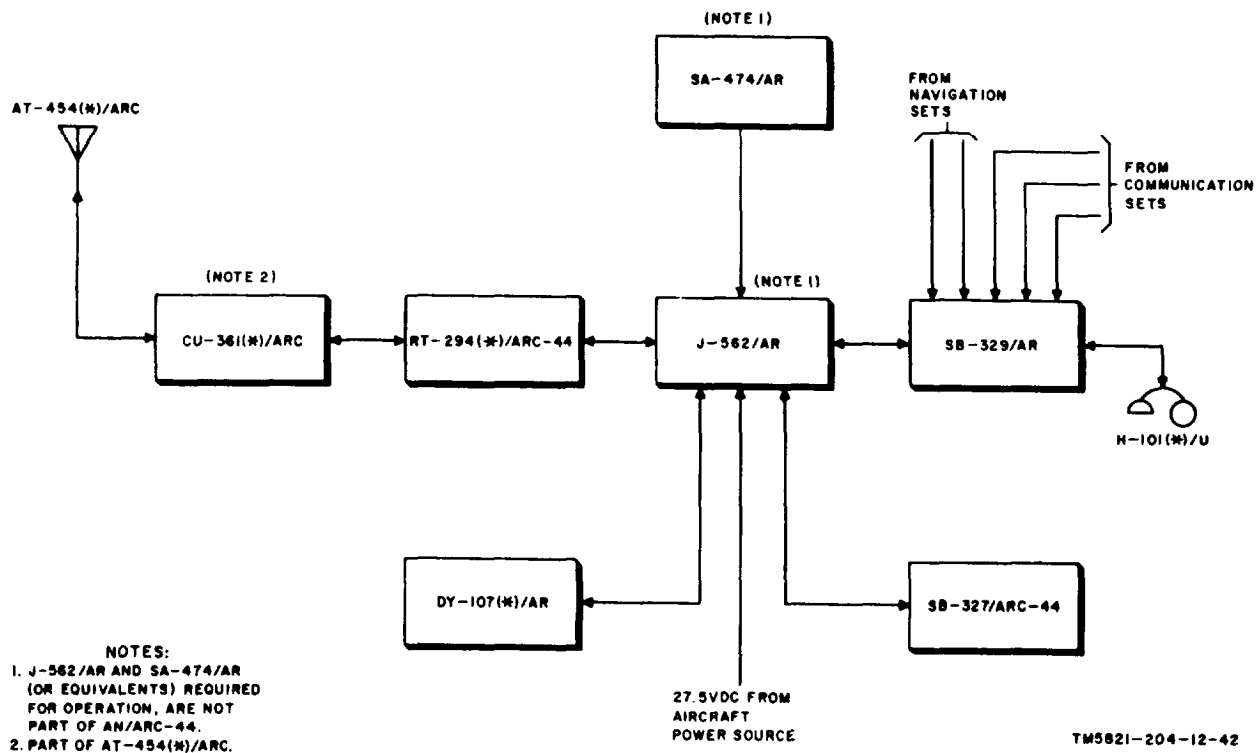


Figure 2. Radio Set AN/ARC-44, functional block diagram.

to line of sight up to distances of approximately 50 miles.

b. When used with Antenna Group AN/ARA-31 (para 37), Radio Set AN/ARC-44 provides the pilot with a homing facility which will allow the pilot to home on any keyed unmodulated signal transmitted within the frequency range of 24 to 49 mc.

c. Panel, Signal Distribution, Radio SB-329/AR amplifies and controls the routing and distribution of audio signals applied to or from Headset-Microphone H-101 (\*) /U from the navigational sets and other communication sets as well as the Radio Set AN/ARC-44 audio. From Panel, Signal Distribution, Radio SB-329/AR the user may select any one of five receivers, singly or in combination, the aircraft interphone channel, or Radio Set AN/ARC-44 frequency modulation (fro) facility or any of two other radio communication facilities that may be installed in the aircraft.

Note. Two separate Panels, Signal Distribution, Radio SB-329/AR are used to provide intercommunication and allow the pilot and copilot to use the electronic facilities of the aircraft at their discretion.

d. Panel, Control SB-327 ARC-44 pro-

vides for remote control of Receiver-Transmitter, Radio RT-294 ( \* )/ARC-44. It allows the pilot or copilot to turn on Receiver-Transmitter, Radio RT-294 ( \* ) /ARC-44, select its frequency of operation, and adjust the audio volume level.

e. Receiver-Transmitter, Radio RT-294 ( \* ) ,ARC-44 converts the audio generated by the H-101(\*)/U to a radiofrequency (rf) signal and vice versa. It receives and transmits on a common antenna, Antenna AT-454 ( \* )/ ARC, Coupler, Antenna CU-361 ( \* ) /ARC matches the impedance of Antenna AT-454 ( \* ) ,/ARC to that of Receiver-Transmitter, Radio RT-294 ( \* ) /ARC-44.

f. Dynamotor DY-107 ( \* ) /AR generates the high-voltage, direct-current (de) and 400-cycle-per-second (cps) alternating-current (at) power for operation of Receiver-Transmitter, Radio RT-294 ( \* ) /ARC-44 and Panel, Signal Distribution, Radio SB-329/AR.

g. Switch Assembly SA-474/AR (para 36), although not part of Radio Set AN/ARC-44, is generally supplied with it. The SA-474/AR, or its equivalent, is used to turn on and off the squelching action of Receiver-Transmitter,

Radio RT-294(\*)/ARC-44. If Radio Set AN/ARC-44 is used with Antenna Group AN/ARA-31, Switch Assembly SA-474/AR is also used to control the application of power to Antenna Group AN/ARA-31.

h. Terminal Box J-562/AR, or its equivalent, is used to interconnect the operating components of Radio Set AN/ARC-44 and provides for the distribution of primary power, dynamotor power, and interconnection of audio facilities.

**Note.** Radio Set AN/ARC44 is installed in aircraft of which the signal configuration may vary and, therefore, the components and interconnecting cabling will not always be the same. For data on the individual aircraft wiring and cabling, reference should be made to the organizational maintenance manual covering the aircraft.

#### 4. Technical Characteristics of Radio Set AN/AR-44

##### a. Receiver-Transmitter, Radio RT-294(\*)/ARC-44 and Mounting MT-1268/AR.

Frequency range.....	280 preset channels, 24.0 to 51.9 mc; channel separation, 100 kc.
Number of tubes.....	29.
Power source.....	27.5 vdc aircraft electrical system and Dynamotor DY-107(*)/AR.
Power input from battery to RT-294(*)/ARC-44.	27.6 vdc, 3 amp.
Power input from Dynamotor DY-107(*)/AR to Receiver-Transmitter, Radio RT-294(*)/ARC-44.....	150 vdc (B+), 85 ma. 300 vdc (B+), 125 ma. 27 vac at 400 cps.

##### (1) Transmitter.

Type of modulation....	Fm, using reactance-tube modulation.
Type of signals transmitted.....	Voice.
Distance range.....	50 miles. <sup>1</sup>
Power output:	
RT-294/ARC-44..	6 watts, 62 ohms resistive load.
RT-294A /ARC-44.	8 watts, 52 ohms resistive load.

<sup>1</sup> The range will vary considerably according to the terrain, atmospheric conditions, and the altitude of the aircraft.

RT-294B/ARC-44.	8 watts, 52 ohms <i>resistive</i> load.
Audio preemphasis.....	With input voltage to pre-emphasis network constant, output voltage increases linearly (within $\pm 2$ db) at a 2-db-per-octave rate from 1,000 to 6,000 cps. The output voltage does not decrease more than 4 db at 500 cps nor more than 6 db at 250 cps from the measurement at 1,000 cps.
Frequency deviation....	+20 kc at 1,000 cps (nominal) ; +35 kc (maximum).
Sidetone output level..	10 mw to 40 mw (150 ohms load).

##### (2) Receiver.

Receiver type.....	Double-conversion super-heterodyne.
Types of signals that can be received.....	Fm voice, squelch control, and when used as a homing receiver, keyed unmodulated signals.
Sensitivity.....	1 # v for 10-db signal-plus-noise to noise; 10 # v for 40-db signal-plus-noise to noise, using 62 ohms signal generator.
Selectivity.....	Minimum, 75-kc bandwidth at 6 db. Maximum, 300-kc bandwidth at 60 db.
Audio power output....	60 .nw across 160 ohms.
Image rejection.....	60 db minimum.
First if.....	6.55 to 7.45 mc (variable in 0.1-mc steps).
Second if.....	2.9876 mc (fixed).
Audio deemphasis.....	With input voltage to deemphasis network constant, output voltage decreases linearly (within $\pm 2$ db) at a 2-db-per-octave rate from 1,000 to 6,000 cps. The output voltage does not increase by more than 4 db at 600 cps nor more than 6 db at 250 cps from the measurement at 1,000 Cps.

##### b. Panel, Signal Distribution, Radio SB-329/AR.

Number of tubes.....	5.
Power input from dynamotor.....	150 vdc (B+) 23 ma.
Power input from battery.....	27.5 vdc (filament) 360 ma.

Headset amplifier output ..... 200 mw into 8-ohms resistive load (2.5-volt input).

Headset amplifier frequency response ..... +1 to -3 db from 1,000-cps reference signal in the 300 to 6,000-cps range.

Microphone amplifier output ..... 3 volts across 2,700 ohms (0.6-mv input).

Microphone amplifier frequency response . . . + 1 to - 3 db from 1,000-cps reference signal in the 300 to 6,000-cps range.

Interphone sidetone output ..... 50 mw.

**c. Dynamotor DY-107(\*)AR and Mounting MT-1267(\*)/AR.**

Power input from battery ..... 4.75 amp maximum at 27.5 vdc.

Power output ..... 140 ma at 150 vdc; 125 ma at 300 vdc; 27 vac at 400 cps.

Average operating speed ..... 8,000 rpm.

**d. Antenna AT-454(\*)/ARC.**

Type ..... Whip ( transmitting and receiving).

Frequency range of operation ..... 24.0 to 51.9 mc.

Length (overall) ..... 8.2 feet.

Maximum VSWR ..... 4 to 1.

**5. Components of Radio Set AN/ ARC-44 (fig. 1)**

The components of Radio Set AN/ARC-44 are listed in the following chart:

Quantity		Height (in.)	Depth (in.)	Width (in.)	Unit weight (lb)
1	Receiver-Transmitter, Radio RT-294(*)/ARC-44 .....	7.24	13.90	5.13	14
1	Panel, Control SB-327/ARC-44 .....	3.00	6.06	5.75	2.19
2	Panel, Signal Distribution, Radio SB-329/AR .....	2.625	5.30	5.75	1.63
1	Dynamotor DY-107(*)/AR .....	5.37	9.22	3.40	6
2	Headset-Microphone H-101 (*)/U				
	Antenna AT-454(*)/ARC, consisting of:				
1	Coupler, Antenna CU-361 (*)/ARC .....	1.61	3.06	2.04	0.63
1	Antenna Element AT-455(*)/ARC .....	91.86			0.75
1	Base, Antenna AB-340 (*)/ARC .....	4.36	3.18	5.80	1.50
1	Mounting MT-1268/AR .....	1.73	11.80	6.00	0.87
1	Mounting MT-1267(*)/AR .....	1.31	9.31	3.31	0.81
1	Connector, receptacle, electrical FSN 5935-201-7935				
3	Connector, receptacle, electrical FSN 5935-642-5387				
1	Connector, receptacle, electrical FSN 5935-643-6904				

**6. Nomenclature and Common Names**

To simplify textual references, common names are frequently used in place of the complete nomenclature. A list of the common name assignments is given below.

Nomenclature	Common names
Radio Set AN/ARC-44 . . .	Fm liaison set
Receiver-Transmitter, Radio RT-294 (●)/ARC-44	Fm receiver-transmitter
Mounting MT-1268/AR . .	Receiver-transmitter mounting

Nomenclature	Common names
Panel, Control SB-327/ARC-44	FM control panel
Dynamotor DY-107(*)/AR	Dynamotor
Mounting MT-1267(*)/AR	Dynamotor mounting
Panel, Signal Distribution Radio SB-329/AR	INT signal distribution panel
Terminal Box J-562/AR ..	Terminal box

Nomenclature	Common names
Antenna AT-454(*)/ARC consisting of: Coupler, Antenna CU-361(*)/ARC Antenna Element AT-455 (*) / ARC Base, Antenna AB-340(*)/ARC	<b>Communication antenna:</b>  <b>Coupler</b>  <b>Whip</b>  <b>Base</b>
Headset-Microphone H-101(*)/U	<b>Headset-microphone</b>
Switch Assembly SA-474/AR	<b>Switch panel</b>
Antenna Group AN/ARA-31	<b>Antenna group</b>
Connector, Receptacle, Electrical FSN 5935- 643-6904	<b>Receiver-transmitter con- nector</b>
Connector, Receptacle, Electrical FSN 5935- 642-6387	<b>Panel connector</b>
Connector, Receptacle, Electrical FSN 5935- 201-7935	<b>Dynamotor connector</b>

#### 7. Description of Radio Set AN/ARC-44

a. The fm liaison set (fig. 1) includes an fm receiver-transmitter and its mounting, two INT signal distribution panels, an FM control panel, a dynamotor and its mounting, a switch panel, an antenna system, and a headset-microphone. The interconnecting cables and terminal box to which all the components are connected are supplied as part of the aircraft in which the set is installed.

b. The components of the fm liaison set are secured to mounting surfaces within the aircraft. From the mountings and panel connectors, connections are made to the aircraft battery and components of the fm liaison set. The coaxial-cable connection to the antenna is made either directly from the front panel of the fm receiver-transmitter or through the keyer if Antenna Group AN/ARA-31 is used. For location of equipment, refer to the applicable aircraft signal electronic configuration technical manual.

#### 8. Description of Receiver-Transmitter, Radio RT-294(\*)/ARC-44 (fig. 3)

a. The fm receiver-transmitter is a sepa-

rately housed unit containing the receiver and transmitter circuits of the fm liaison set. A handle is attached to the unit to provide convenient handling. Behind the handle is a hinged door that covers carrier test switch S807 and test jack J809. SQUELCH and HOMING controls are externally accessible and are located above the handle on the left side of the front panel. These two controls are protected by a sliding panel that can be manually raised by moving the slide button adjacent to the controls.

b. The outlet for the fm receiver-transmitter exhaust fan is located at the rear of the unit on the rear cover. When installed, the fm receiver-transmitter is secured in place on its mount. The receiver-transmitter connector (Federal stock No. 5935-643-6904 (fig. 1)), is fastened to the rear of the MT-1268 / AR. Mating plug P815 on the rear of the fm receiver-transmitter (fig. 3) is attached to the receiver-transmitter connector when the fm receiver-transmitter is placed on the MT-1268/AR.

c. The fm receiver-transmitter (fig. 3) is held in place on the MT-1268/AR by two guide pins and two mounting screws. The ground straps provide an electrical connection between the mounting shelf and the bottom plate of the MT-1268/AR. This assures a good ground connection in an installation. The vibration isolators (shock mounts) on the MT-1268/AR protect the fm receiver-transmitter from vibration and shock.

#### 9. Description of Panel, Control SB-327/ARC-44 (fig. 4)

a. The FM control panel is a separately housed unit containing a VOL control, a REM-LOCAL selector switch, an ON-OFF switch, and concentrically mounted frequency selector switches (ring and knob), combined with a FREQ indicator window. An escutchen plate covers the frequency selector ring and knob and provides the viewing window for the frequency selected. It is held in place by two escutchen mounting screws. The outer ring of the frequency selector switch rotates to show, one at a time, the whole numbers from 24 through 51 in the top of the FREQ window. The center frequency selector switch (knob)

rotates to show decimals of a megacycle from 0.0 through 0.9 in the bottom of the **FREQ** window.

b. Three panel lights, located across the top of the panel, are covered by red translucent

plastic covers. They edge-light the clear plastic panel so that the letters and numerals light up red and appear clearly visible and contrasted against the dark background.

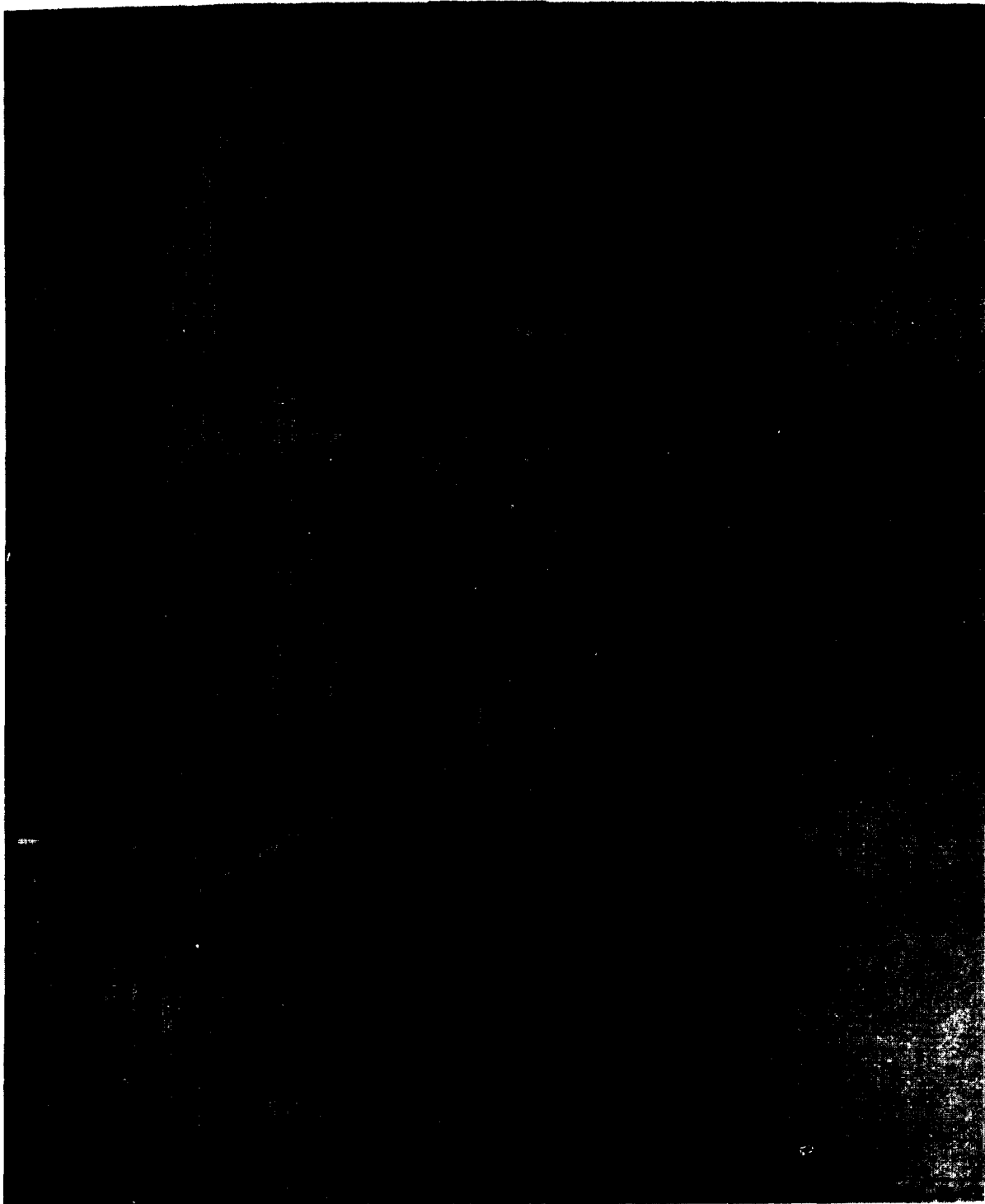
c. The **FM** control panel is flush mounted



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Figure 3. Receiver-Transmitter, Radio RT-294(\*)/ARC-44 and Mounting MT-1268/AR.

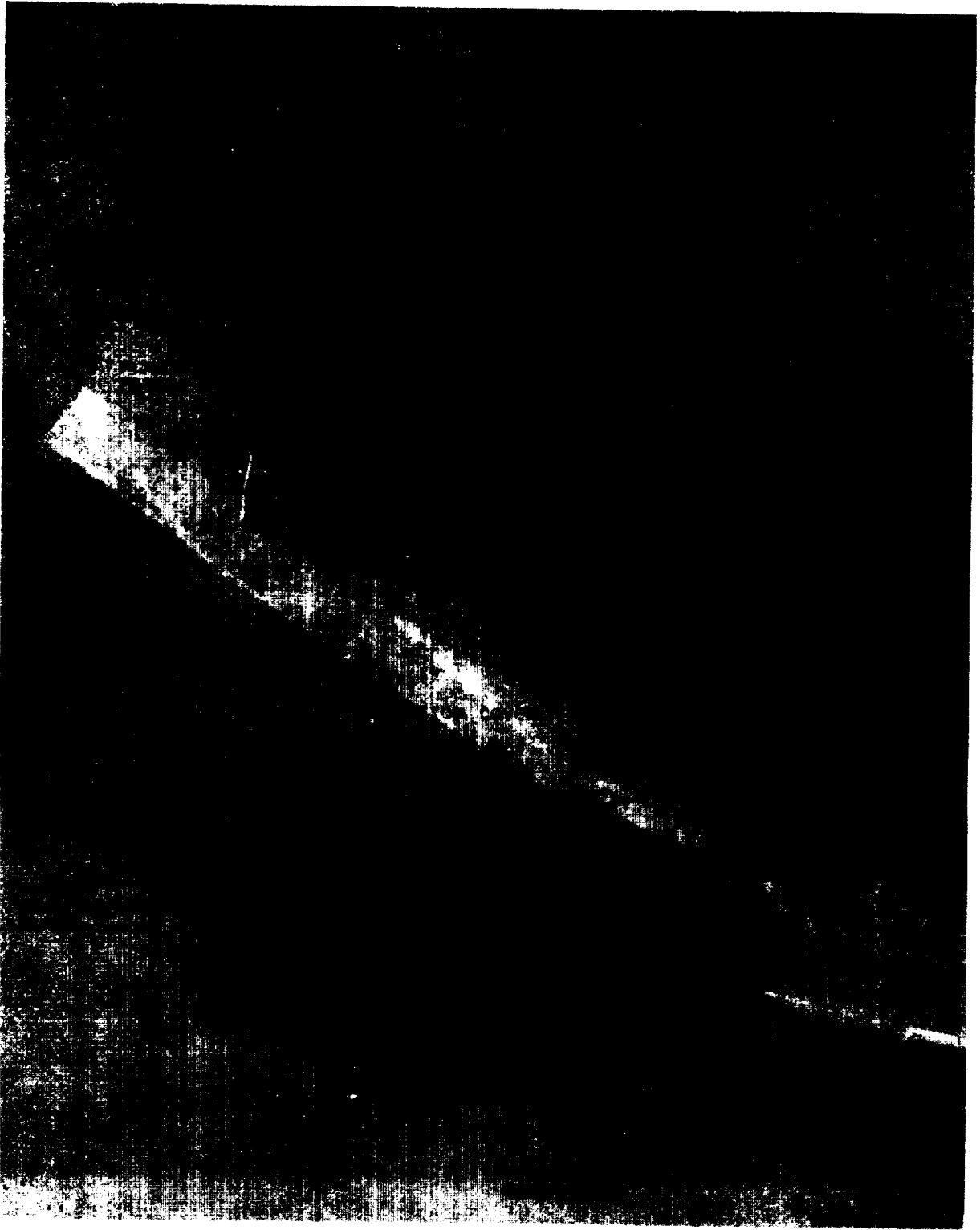




*Figure 4. Panel, Control SB-327 / ARC-44.*

by four Dzus (quick-disconnect) fasteners at the corners of the front panel. The cover is held in place by a spring lock cover fastener. All external connections are made to the rear of the FM control panel through jack J201.

The spring lock fasteners on the panel connector (fig. 1) secure the panel connector (Federal stock No. 5935-642-5387 ) to springlock receptacles on the rear of the FM control panel (fig. 4).



*Figure 5. Panel, Signal Distribution, Radio SB-329/AR.*

10. Description of Panel, Signal Distribution,  
Radio SB-329/AR

(fig. 5)

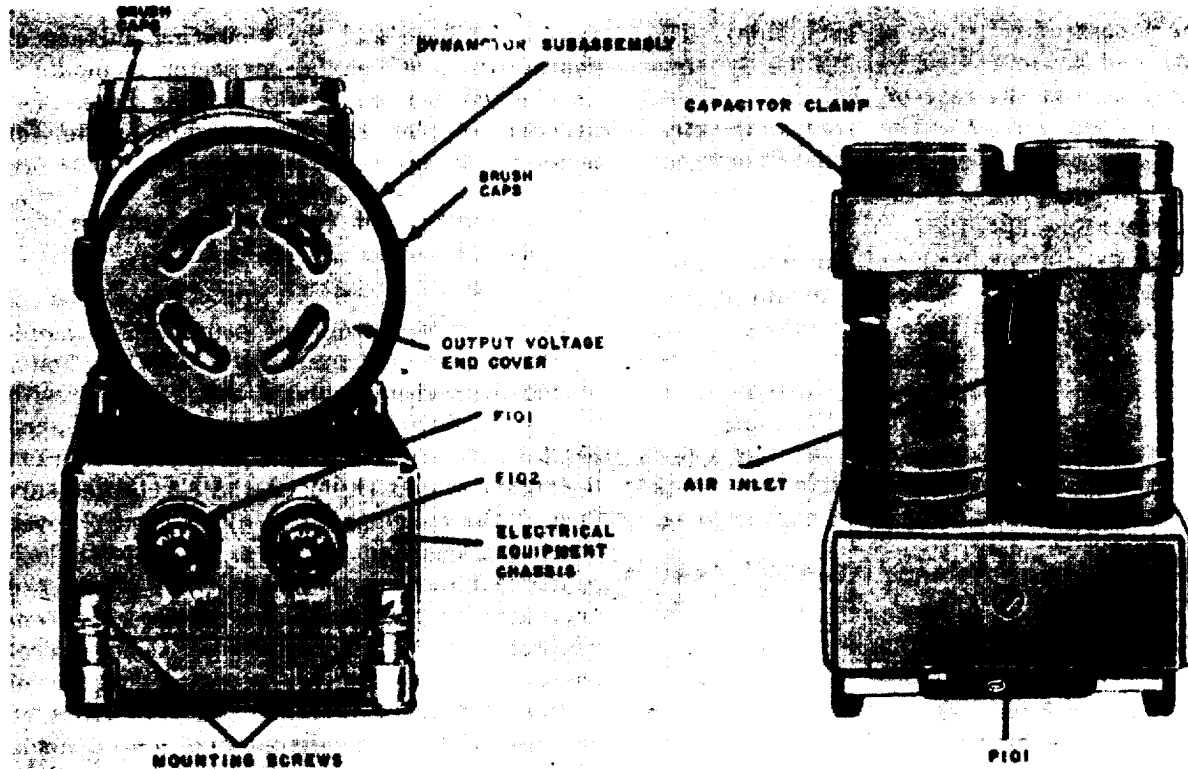
a. The INT signal distribution panel is a separately housed unit which has five receiver selection switches, marked RECEIVERS 1, 2, 3, MB, and NAV, and a TRANS selector switch. The TRANS selector switch is a four-position switch marked INT, 1, 2, and 3. These appear one at a time in the window above the TRANS selector switch. The position numbers correspond to the numbers on the RECEIVERS switches. An escutcheon plate, mounted on the front panel, provides a viewing window for the TRANS selector switch.

b. Panel lights edge-light the clear plastic panel so that the numerals light up red and are clearly visible and well-contrasted against a dark background. All electrical wiring is made through J301 located at the rear of the INT signal distribution panel.

c. The INT signal distribution panel is flush mounted by four quick-disconnect fasteners on the sides of the front panel. The spring lock receptacles mate with the spring lock fasteners on the panel connector (Federal stock No. 5935-642-5387 (fig. 1) ) that secure the panel connector to the rear of the INT signal distribution panel (fig. 5). The top and bottom covers are secured to the INT signal distribution panel by mounting screws.

11. Description of Dynamotor  
DY-107(\*)/AR

a. The dynamotor (fig. 6) consists of a dynamotor subassembly mounted on an electrical equipment chassis. The chassis contains the various line filter components, fuses, and a voltage booster relay. Two output circuit fuses are readily accessible at the front of the chassis. Three pairs of dynamotor brushes are mounted at accessible positions on the dynamotor



NOTES:

1. ON SOME MODELS THE DYNAMOTOR IS MARKED 1/2 AMP. INSTEAD OF .5 AMP.
2. THE OUTPUT VOLTAGE END COVER IS SLIGHTLY DIFFERENT ON DYNAMOTOR DY-107A/AR

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Figure 6. Dynamotor DY-107(\*)/AR

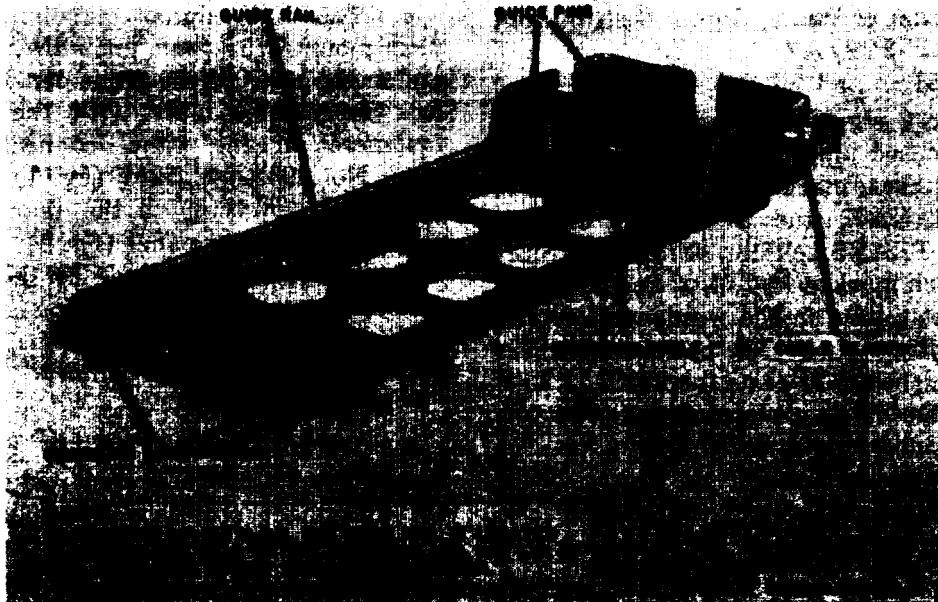


Figure 7. Mounting MT-1267(\*)/AR.

motor subassembly (three on each side). The control and power connections to the dynamotor are made at the rear of the unit at P101. Two mounting screws at the front of the electrical equipment chassis secure the dynamotor to its mounting.

b. Mounting MT-1267(\*)/AR (fig. 7) secures the dynamotor in place in an installation. The dynamotor slides onto the mount guided by the guide rail and is secured into place on the mounting shelf by the guide pins. The dynamotor is held in place by fastening the mounting screws (a above) so that they lock into the mounting screw inserts. The cable clamp on the dynamotor mounting prevents the dynamotor power cable from pulling loose.

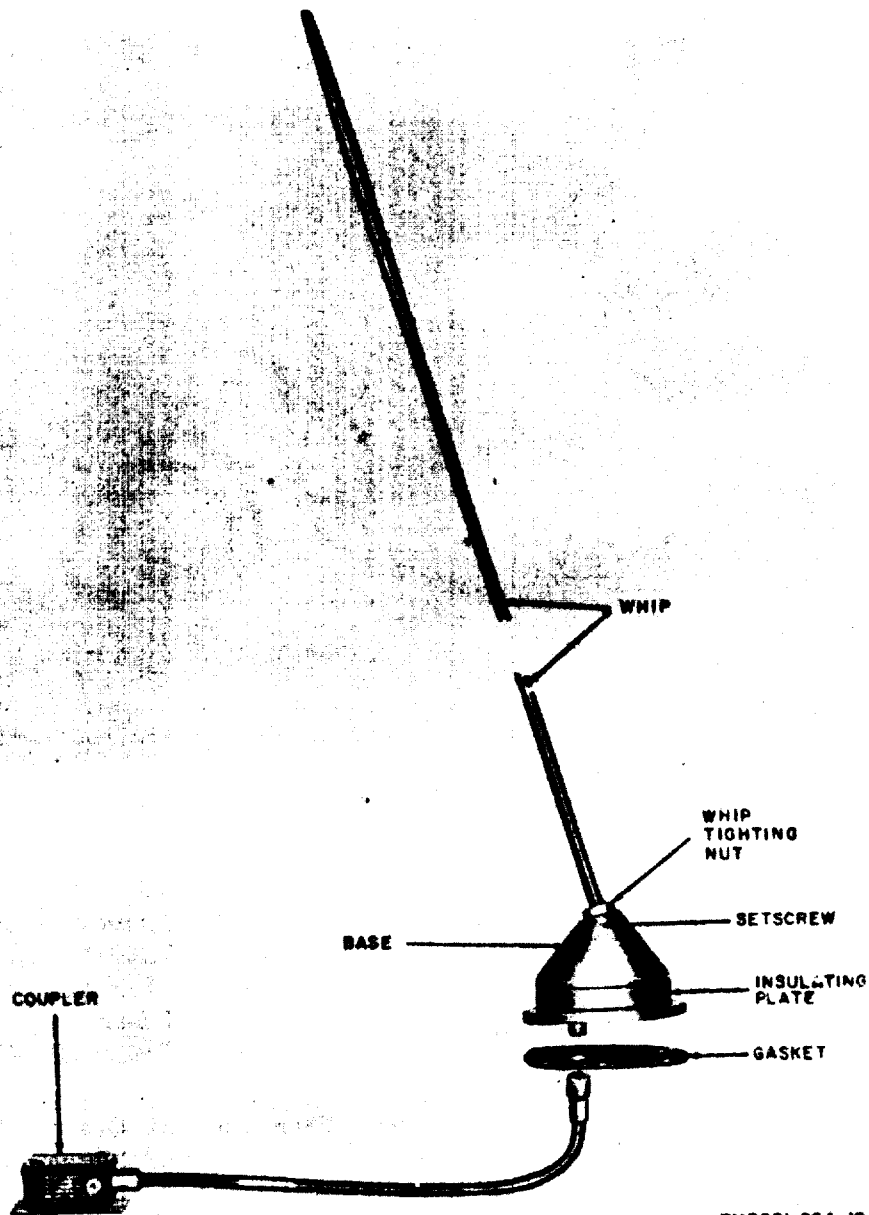
12. Description of Antenna AT454(\*)/ARC (fig. 8)

The communication antenna consists of a whip, a base, and a coupler. The coupler is connected to the base by a coaxial cable. The tapered whip is approximately 7 1/2 feet long. The whip screws into the antenna base and is secured by a setscrew and whip tightening nut. The base mounts the whip in a rigid position and in such a manner that the whip is tilted 15°. An insulating plate electrically separates the base from the aircraft mounting surface, and a gasket provides a watertight seal be-

tween the base and the mounting surface of the aircraft. A coaxial connector is mounted on the flat bottom portion of the base. The antenna coupler has a removable plate for access to the internal components.

13. Description of Headset-Microphone H-101(\*)/U (fig. 9)

The headset-microphone provides for hand-free low-noise communication. The earphones of the headset-microphone are provided with neoprene-covered padded cushions, designed for the left and right ear, which are marked R (right) and L (left) on the rear outer surface of the cushions. The nylon earcap cover holds the cushion in place. A polyethylene moisture barrier and black nylon guard are provided over the microphone to protect it from moisture and physical damage. The microphone with nylon guard is mounted on a swivel so that it may be placed directly in front of the lips when transmitting and moved aside when not in use. A nylon headband cover protects the user's hair from the headband. The position of the microphone with respect to the lips is adjusted with the swivel bracket adjusting screw. The headset-microphone plugs into the communication system with Telephone Plug U-93 U or U-93A U.



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Figure 8. Antenna AT-454(\*)/ARC.

#### 14. Description of Connectors (fig. 1)

a. *Receiver-Transmitter Connector.* The receiver-transmitter connector is a female, 34-contact, 5-ampere, arc-resistant, plastic dielectric connector. It has two mounting studs of the friction-locking type. The connector is environment resistant.

b. *Panel Connectors.* The panel connectors are female, 34-contact, 5-ampere, arc-resistant,

plastic dielectric connectors. The base of the connectors is corrosive-resistant aluminum. The panel connectors are equipped with spring lock fasteners, two on each connector. These secure the panel connectors to the unit with which they are used.

c. *Dynamotor Connectors.* The dynamotor connector is a female, 20-contact, 5-ampere, arc-resistant, plastic dielectric connector. It has an aluminum, corrosive-resistant base and is of the friction-locking type.



Figure 9. Headset-Microphone H-101(\*)/U.

#### 15. Additional Equipment Required

The following items are not supplied as part of the fm liaison set but are required for operation. The items are supplied as part of the aircraft in which the fm liaison set is installed.

a. Switch Assembly SA-474/AR (fig. 13) or equivalent is used with Antenna Group AN/ARA-31.

b. Terminal Box J-562/AR (fig. 10) or equivalent is required for interconnecting the components of the fm liaison set.

c. The following cord and cable assemblies are required for interconnection or operation of the indicated components:

- (1) Electrical Cord Assembly CX-2555/U with a separately installed transmit-receive switch, or Electrical Cord Assembly CX-2556/U with a transmit-receive switch, as part of the cable assembly.
- (2) Cables from the HOME switch on the switch panel to Keyer KY-149 (\*) /AR and the terminal box if Antenna Group AN/ARA-31 is installed.

(3) Cable RG-58C/U for connection between the fm receiver-transmitter and Keyer KY-149 ( \* ) /AR, coupler and Keyer KY-149/AR, and homing antennas and Keyer KY-149(\*) /AR if Antenna Group AN/ARA-31 is installed.

d. When Antenna Group AN/ARA-31 is not part of the installation, a separate squelch switch is required. A single-pole, double-throw switch mounted on the aircraft instrument control panel may be used for this purpose.

e. A source of power capable of supplying +27.5 volts dc at 10 amperes and provided with a means of switching the power on and off is required to operate the fm liaison set. This power is supplied by the aircraft in which the equipment is installed.

f. Circuit breakers (push-to-reset type) are required to protect the aircraft electrical system from overload.

g. Interconnecting cabling is required to interconnect the operating components of the AN/ARC-44 within the aircraft. For the pertinent details concerning this cabling, refer

to the applicable aircraft organizational maintenance manual.

16. Differences in Models

a. **Receiver-Transmitter, Radio RT-294 (\*)/ARC-44.** The external appearances of Receiver-Transmitter, Radio RT-294/ARC-44, RT-294A/ARC-44, and RT-294B/ARC-44 are identical. Operational procedures and organizational maintenance described in this manual apply equally to all models unless otherwise noted.

b. **Antenna AT-454(\*)/ARC.** The modified Antenna AT-454A/ARC consists of Base, Antenna Support AB-340A/ARC, Antenna Ele-

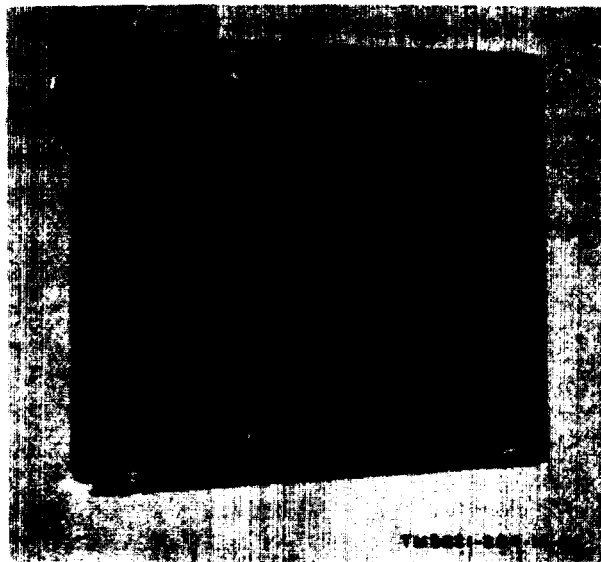


Figure 10. Terminal Box J-562/ AR.

ment AT-455A/ARC, and Coupler, Antenna CU-361A/ARC. Couplers, Antenna CU-361 B/ARC, CU-361C/ARC, and CU-361D/ARC may also be used with Antenna AT-454A/ARC. Differences in models of these components are given below.

(1) Base, **Antenna AB-340(\*)/ARC.**

AB-340/ARC	AB-340A/ARC
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(2) **Antenna Element AT-455(\*)/ARC.**

AT-43S/ARC	AT-455A/ARC
Requires a 1-inch wrench to unscrew the element from the base. Threaded ferrule is <b>1 1/2 inches long.</b>	Requires a 5/8-inch wrench to unscrew the element from the base. Base of element is tapered. Threaded ferrule base is 3 1/2 inches long.

(3) **Coupler, Antenna CU-361(\*)/ARC.** Couplers, Antenna CU-361/ARC, CU-361A/ARC, CU-361B/ARC, CU-361C/ARC, and CU-361D/ARC are similar in appearance and vary only in certain mechanical details of mounting electrical component. Differences, where significant, and the interchangeability of models are given in the chart below:

CU-361/ARC	CU-361A/ARC	CU-361B/ARC	CU-361C/ARC	CU-361D/ARC
Does not have provisions for safety wiring.	Has provisions for safety wiring.  <b>One-way interchangeable with CU-361/ARC.</b>	Has <b>provisions for safety wiring.</b>  Two-way interchangeable with CU-361A/ARC.	Has provisions for safety wiring.  <b>Interchangeable with CU-361/ARC, CU-361A/ARC, and CU-361B/ARC.</b>	Has provisions for safety wiring.  <b>One-way interchangeable with all models of the coupler. This model is capable of withstanding greater vibration as encountered in helicopters.</b>

c. **Dynamotor DY-107(\*)/AR.** The external differences between Dynamotors DY-107/AR and DY-107A/AR are given in the chart below.

DY-107/AR	DY-107A/AR
Output voltage end cover has four elongated circular slots for ventilation ports.	Output voltage end cover has two rows of holes on the outer circumference to provide additional ventilation for cooling of dynamotor.
150 V.D.C. and 300 V.D.C. fuses marked or rated on chassis as .5 AMP fuses.	150 V.D.C. and 300 V.D.C. fuses marked or rated on chassis as 1/2 AMP fuses.

d. **Headset-Microphone H-101(\*)/U.** Differences between Headset-Microphones H-101/U and H-101A/U are listed below.

H-101/U	H-101A/U
Headset cord terminated with Plug, Telephone U-93/U.	Headset cord terminated with Plug, Telephone U-93A/U.

H-101/U	H-101A/U
Microphone operating and rest (up) position pre-determined by detent stops; position of detent stops determined by setting of swivel bracket adjusting screw.	One adjustment of swivel bracket thumb nut permits microphone to be placed in any position.
Microphone cord terminated in junction box on headband.	Microphone cord provided with a quick-disconnect plug on headband.
Headband not readily hung on hook.	Headband provided with stowing grommet to permit hanging on hook.

e. **Mounting MT-1267(\*)/AR.** Mounting MT-1267A/AR differs from Mounting MT-1267/AR only in the position and length of the guide rail (fig. 7). On the MT-1267A/AR, the guide rail is located closer to the rear of the mounting, and the lip of the guide rail has been cut back approximately one-half inch. This decreases the distance required to slide the dynamotor forward before it can be released from the mounting.



# CHAPTER 2

## OPERATING INSTRUCTIONS

### Section 1. CONTROLS

#### 17. INT Signal Distribution Panel (fig. 11)

Two INT signal distribution panels are usually installed in an aircraft: one for the pilot and the other for the copilot. The two panels are identical and provide the pilot and copilot with identical facilities. The operating controls and their functions are listed in the chart below.

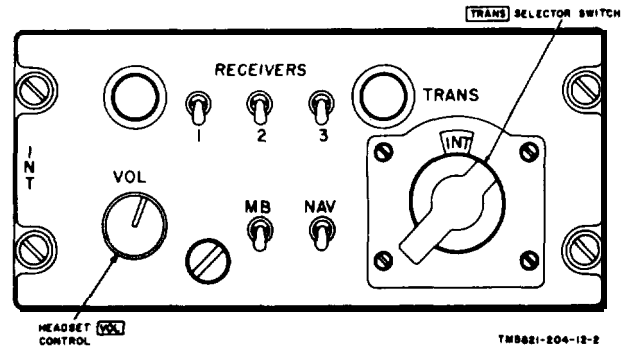


Figure 11. INT Signal distribution panel, front view

Control	Function
<b>RECEIVERS, receiver selection switches.</b>	<p>Selects receiver, the output of which will be applied to headsets.</p> <p>1—In the up position, the switch connects the output of the fm liaison set to the headset-microphone associated with the INT signal distribution panel. In the down position, it disconnects the fm liaison set receiver output from the headset-microphone. (See note 1.)</p> <p>2—In the up position, the switch connects the output of a second receiver to the headset-microphone associated with the INT signal distribution panel. In the down position, it disconnects the second receiver from the headset-microphone. (See note 1.)</p> <p>3—in the up position, the switch connects the output of a third receiver to the headset-microphone associated with the INT signal distribution panel. In the down position, it disconnects the third receiver from the headset microphone. (See note 1.)</p> <p><b>MB</b>—In the up position, the switch connects the audio output of the marker beacon receiver to the headset-microphone associated with the INT signal distribution panel. In the down position, it disconnects the marker beacon receiver from the headset-microphones.</p> <p><b>NAV</b>—In the up position, the switch connects the audio output of the navigational receiver or automatic direction finder receiver to the headset-microphone</p>

Control	Function
<b>TRANS selector switch.</b> (See note 1.)	<p>associated with the INT signal distribution panel. (See note 2.)</p> <p>Selects fm liaison set, receiver-transmitter number 2, receiver-transmitter number 3, or interphone facility.</p> <p><b>INT position</b>—Connects the INT signal distribution panels together for interphone operation. At the same time, the operator will hear his own transmission as a sidetone signal in his headset-microphone. The other crew-member will hear the interphone message regardless of the position of his INT signal distribution panel TRANS selector switch.</p> <p>1, 2, and 3 positions—Selects the receiver-transmitter to be used to receive or transmit, regardless of the positions of the RECEIVERS 1, 2, or 3 switches.</p>
<b>Headset VOL control.</b>	<p>Adjusts the volume level of the audio applied to the headset-microphone associated with the INT signal distribution panel. (See note 2.)</p>

**Notes.**

1. The number selections of the TRANS selector switch correspond to the numbers of the RECEIVERS switches. For this manual, it is assumed that the function of each position of the TRANS switch is as indicated below.

TRANS selector switch:

- Position 1: FM transmitter
- Position 2: Transmitter number 2
- Position 3: Transmitter number 3

2. The receiver VOL control has no effect on the audio level of the navigational receivers. Their level is adjusted by the control panel associated with that equipment.

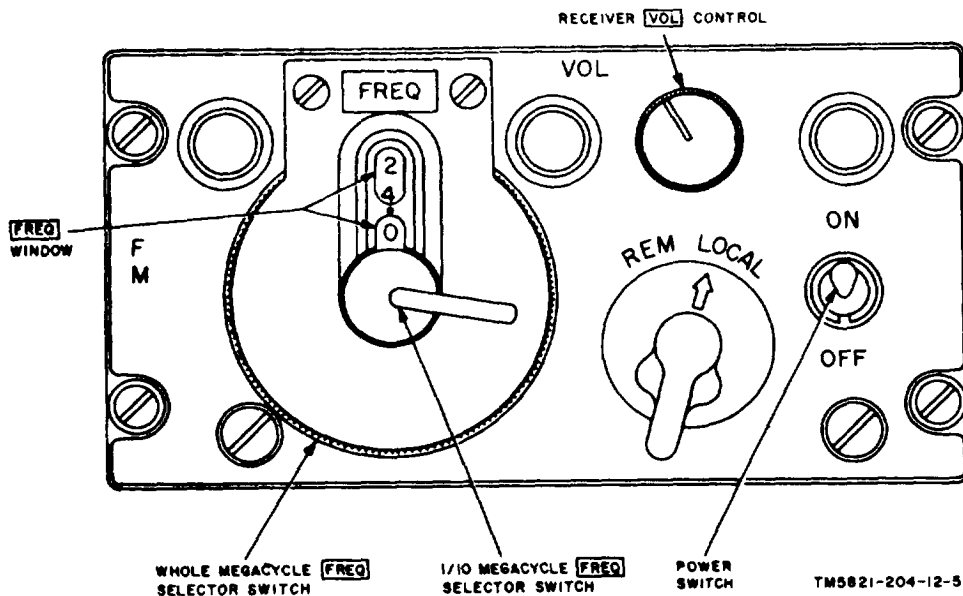


Figure 12. FM control panel, front view.

18. FM Control Panel  
(fig. 12)

The FM control panel provides for remote control of the fm liaison set. The following chart lists the controls on the FM control panel and their functions.

Control	Function
Power ON-OFF switch.	In the ON position, applies power to the fm receiver-transmitter. In the OFF position, removes power from the fm receiver-transmitter.
REM-LOCAL switch.	Must <i>always be in LOCAL position</i> . Used only when two or more FM control panels are used.
1/10 and whole megacycle FREQ selector switches.	Selects the receiving and transmitting frequency of the fm receiver-transmitter. Outside knurled ring ( whole-megacycle FREQ selector), selects first two numbers of receiver and transmitter operating frequencies. Inside knob (1/10-megacycle FREQ selector), selects third number of transmitter and receiver operating frequencies.
Receiver VOL control.	Provides volume control for the fm receiver-transmitter <i>receiver</i> audio. Turn clockwise to increase the audio output.

19. Power Switches and Controls

The following controls, although not part of the fm liaison set, are directly related to the operation of the equipment. These controls are not supplied as part of the fm liaison set but are supplied as part of the aircraft in which tn. set is installed:

Control	Function
Master power on-off switch.	When actuated (in), applies power to the dynamotor and INT signal distribution panels. Also makes power available for use by the fm liaison set.
FM push-pull circuit breaker.	When in the on position, power is made available to the fm push-pull circuit breaker.
Microphone switch.	Normally a two-position switch. In one position, it energizes the transmitter; in the other position, it deenergizes the transmitter,
Lights control . . .	Varies the brilliance of the panel lamps on the control panels.
Squelch switch--	Permits squelching of the fm liaison set.
Homing switch--	Activates the homing circuits in the fm receiver-transmitter and permits homing operation; deactivates the transmitting facility.

\* Installed as part of the airframe only when Switch Assembly SA-474/AR is not included in the aircraft.

## Section II. OPERATING INSTRUCTIONS

### 20. Types of Operation

a. The fm liaison set is operated remotely from the aircraft cockpit through the use of the FM control panel and the INT signal distribution panel. Depending on the setting of the various controls, the fm liaison set can be operated as an fm receiver-transmitter, an fm homing receiver, or as an interphone system.

b. The RECEIVERS 2, 3, NAV, and MB switches on the INT signal distribution panel are used to connect additional receivers through the INT signal distribution panels. For the application of these switches, refer to the applicable aircraft electronic communication configuration manual that covers the other facilities that are used with the AN/ARC-44.

c. To operate the equipment for any particular type of operation, perform the following:

- (1) Starting procedure (para 21).
- (2) Procedure for interphone operation (para 22).
- (3) Procedure for fm liaison set operation (para 23).
- (4) Procedure for fm homing (para 37b).
- (5) Stopping procedure (para 23c).

### 21. Starting Procedure

a. *Preliminary.* Set the various controls as follows :

Control	Position
Master power on-off switch . . . . .	off .
Fm push-pull circuit breaker <sup>a</sup> . . . . .	off .
Squelch switch <sup>b</sup> . . . . .	off.
Homing switch <sup>b</sup> . . . . .	Communication position.
RECEIVERS switches (fig. 11) . . . . .	All in down (off) positions.
Headset and receiver VOL controls (figs. 11 and 12).	Full counter-clockwise.
TRANS selector switch (fig. 11) . . . . .	INT.
Power ON-OFF switch (fig. 12) . . . . .	OFF.
REM-LOCAL switch (fig. 12) . . . . .	LOCAL.
1/10 and whole megacycle FREQ selector switches (fig. 12).	Rotate for desired frequency.
HOME, SQUEL, and SPARE switches <sup>c</sup> (fig. 13).	All switches in the off (down) position.

a. Part of aircraft power circuitry.  
 b. Used only when Switch Assembly SA-474/AR is not installed in the aircraft.  
 c. Normally installed in aircraft when Antenna Group AN/ARA-31 is used with the fm liaison set.

### b. Starting.

- (1) Place the aircraft master power on-off switch to its on position.
- (2) Actuate the aircraft fm push-pull circuit breaker.
- (3) Set the squelch switch to off (down) position.
- (4) Set the homing switch to the communication position.
- (5) Allow the INT signal distribution panel to warm up for approximately 3 minutes.
- (6) Follow the procedures in paragraphs 22 and 23 for the desired type of operation.

### 22. Interphone Operation

a. From either the pilot or copilot positions, press the microphone switch.

b. Speak into the microphone; sidetone will be heard in the pilot and copilot headsets.

c. Adjust the INT signal distribution panel headset VOL controls for comfortable audio in the headset.

*Note.* It is not necessary for both INT signal distribution panels to be at INT. Sidetone and interphone communication will be heard at the other position whenever the operator place his switch in the INT position.

### 23. Fm Liaison Set Operation

*Note.* Refer to paragraph 21b for starting procedure.

#### a. Reception.

- (1) On the operator's INT signal distribution panel (fig. 11), place the RECEIVERS 1 switch at up.
- (2) Turn the VOL control on the INT signal distribution panel fully clockwise for maximum volume.
- (3) On the FM control panel (fig. 12), place the power switch at ON. Allow approximately 2 minutes for warmup. Cycling (automatic frequency selection ) may take place in the fm receiver-transmitter. This will be indicated by a 400-cycle-per-second signal heard in the headsets. The tone lasts approximately 6 seconds,

- (4) Be sure that the **REM-LOCAL** switch is at **LOCAL**.

*Note.* In a two FM control panel installation, the FM control panel not selected for LOCAL operation will automatically switch to REM when the power ON-OFF switch is set to ON. The FM control panel in the REM position will lose frequency control and frequency selection.

- (5) Select the required frequency with the 1/10 and whole megacycle **FREQ** selector switches. Set the whole-megacycle **FREQ** selector switch (outer perimeter knob of the **FREQ** control) until the number appearing corresponds to the whole-megacycle number of the operating frequency. Set the inner 1/10 megacycle **FREQ** selector switch to the exact 1/10 megacycle.
- (6) Turn the receiver **VOL** control on the FM control panel for maximum volume, and reduce the volume to a suitable listening level, if necessary, with the headset **VOL** control on the INT signal distribution panel (fig. 11).
- (7) To eliminate background noise when no signal is being received, place the squelch switch (fig. 13) to the on (squelched) position.
- (8) If the incoming signal is too weak, the reception can be improved by placing the squelch switch to the un-squelched (off) position to enable the reception of weak signals. Normally, the switch is on.

*b. Transmission.*

- (1) Operate the fm liaison set for reception as indicated in a above.
- (2) Check to be sure that the fm homing switch, if installed, is in the communication position.

*Note.* Refer to paragraph 37b for homing operation.

- (3) On the INT signal distribution panel (fig. 11) of the operator desiring to transmit, turn the **TRANS** selector switch so that 1 appears in the window just above the switch.

*Note.* With the **TRANS** selector switch in the 1 position, interphone operation is overridden during transmission.

- (4) Transmit by depressing the microphone switch to the communication position. Keep it depressed while speaking.
- (5) Release the microphone switch to receive the return transmission.

*c. Stopping.*

- (1) Set the power switch on the FM control panel (fig. 12) to OFF.
- (2) On the INT signal distribution panel (fig. 11), place the **RECEIVERS 1** switch to its down (off) position and the **TRANS** selector switch in the INT position.
- (3) If the entire communication facility is to be shut down completely, proceed as follows:
  - (a) Set the master power on-off switch to its off position.
  - (b) Pull the fm push-pull circuit breaker out.

## CHAPTER 3

### PREFLIGHT (DAILY) INSPECTION

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#### 24. General

*a.* The operator's inspections listed in paragraph 25 and 26 below supplement the inspection procedures in the pilot's preflight checklist. The operator's inspections consist of checking the fm liaison set for flight preparedness by performing a visual inspection (para 25*b*) to discover defects and an operational check (para 26) to verify serviceability. The inspections listed should be accomplished prior to the first flight of the day, as called for by local standard operating procedure, or as indicated in the flight manual covering the aircraft in which this equipment is installed.

*b.* The pilot or copilot should report any malfunction or failures noted in flight and any discrepancy noted in the preflight inspection on DD Form 781-2.

#### 25. Inspections for I II Flights

*a. Exterior Inspection.* While making the exterior walkaround inspection of the aircraft, check the communication antenna and the fm homing antennas (if installed) for cracked insulators, broken elements, loose mounting, damaged insulation, and frayed cabling.

*b. Interior Inspection.* The interior inspection indicated below is to be performed on a daily basis and in accordance with the "On Entering the Airplane" checklist contained in the applicable Pilot's Flight Handbook. This inspection ((1) through (4) below) is an extension of the tests given in the handbook.

- (1) Visually inspect the fm liaison set for completeness, evidence of damage, and security of mounting and safety wiring.
- (2) Check all control panels for loose or binding knobs.
- (3) Check shock mounts for cracks, corrosion, loose attaching bolts or rivets, deterioration of rubber, and loose or missing bonding.
- (4) Check operational controls for loose or missing knobs and for proper operation. Insure that all controls and

switches are in the positions indicated in paragraph 21*a*.

#### 26. Preflight Inspection, Power On

*a. General.* The following preflight tests should be made during engine warmup as an extension of the "Ground Tests" in the applicable Pilot's Flight Handbook. The pilot or copilot should perform the tests (*b* through *d* below) in the order given. While performing these tests, check for the following:

- (1) Clarity of sidetone (*c*(27) and *d* (6) below).
- (2) Clarity of received signal (*c*(2) and *d*(6) below).
- (3) Ease of tuning (*d*(3) and (6) below).
- (4) Accuracy of tuning (*d*(3) and (6)).
- (5) Operation of controls, smooth with no erratic indication of binding (*b*, *c* and *d* below).
- (6) Clarity of transmission (*d*(3) below).
- (7) Performance of homing facility, if installed (*d*(9) below).

#### *b. Preliminary.*

- (1) Place the aircraft master power on-off switch to its on position.
- (2) Actuate the aircraft fm push-pull circuit breaker.

#### *c. Interphone.*

- (1) Place the TRANS selector switch (fig. 11) on both INT signal distribution panels to the INT position.
- (2) Press the microphone switch to the interphone position and speak into the microphone. Sidetone should be heard in the headset-microphone. The test communication should also be heard at the other position.
- (3) Adjust the volume control of each INT signal distribution panel to a comfortable level.
- (4) Repeat the procedure in (2) above from the copilot's position. The test communication should now be heard at the pilot's position.

#### *d. Fm Liaison Set.*

- (1) On the FM control panel, (fig. 12),

- place the power ON-OFF switch to the ON position.
- (2) On the pilot's INT signal distribution panel, (fig. 11), place the RECEIVERS 1 switch to the on (up) position.
  - (3) Turn the FM control panel frequency selector switches to a known fm station transmission.
 

*Note.* A 400-cycle tone will be heard in the headsets when changing channels.
  - (4) On the INT signal distribution panel, turn the headset VOL control for maximum volume and use the receiver VOL control on the FM control panel to regulate the audio output. Readjust the INT signal distribution panel headset VOL control, if necessary.
  - (5) On the pilot's INT signal distribution panel, place the RECEIVERS 1 switch in the off (down) position, and place the TRANS selector switch in the 1 position.
  - (6) On the FM control panel, tune to a local fm station, and establish communication. While communicating with the station, check operation of the squelch circuit by operating the squelch switch back and forth. When no signal is being received and the squelch switch is placed in the on position, background noise will not be heard; in the off position, background noise is heard.
  - (7) Repeat the instruction in (6) above for several different frequencies. if possible.
  - (8) Repeat (2) through (6) above from the copilot's position.
 

*Note.* If Antenna Group AN/ARA-31 is not installed, omit (9) (a) through (c) below.
  - (9) To test the fm homing facility, proceed as follows:
    - (a) Place the homing switch (para 19) at the homing position.
    - (b) A steady tone, U (.-.) or D (-..), should be heard in the headset-microphones, depending on the location of the aircraft with respect to the transmitting station. (Refer to figure 15. )
    - (c) Return the homing switch ( (a) above ) to the off position.
  - (10) To shut down the fm liaison set, proceed as follows:
    - (a) Place the FM control panel power switch to its OFF position.
    - (b) Place the INT signal distribution panel TRANS selector switch to the INT position.
    - (c) Pull the aircraft fm push-pull circuit breaker out.
    - (d) Set the aircraft master power on-off switch to its off position.

## CHAPTER 4

### ORGANIZATIONAL MAINTENANCE

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#### 27. Scope of Organizational Maintenance

Organizational maintenance of the fm liaison set, as performed by the organizational repairman or crew chief, consists of preventive maintenance, including mechanical and electrical checks and cleaning. Report all deficiencies, malfunctions, or abnormal conditions on DD Form 781-2 (para 2c). For the interval and more specific details for performing preventive maintenance on this equipment, refer to the applicable aircraft organizational maintenance manual. Paragraphs 29 through 32 provide general organizational maintenance procedures that should be used when performing preventive maintenance on this equipment. Removal and replacement instructions are provided in paragraph 33; adjustments to be made when the equipment is reinstalled in the aircraft after repairs or after the scheduled periodic pullout checks are given in paragraph 34.

#### 28. Tools, Materials, and Test Equipment Required

The only tools, materials and test equipment required for performing organizational maintenance are as follows:

- a. Multimeter AN/URM-105 (TM 11-6625-203-12).
- b. Tool Equipment TE-41.
- c. Cleaning Compound, Federal stock No. 7930-395-9542.

#### 29. Preventive Maintenance Techniques

- a. Use No. 000 sandpaper to remove rust and corrosion.
- b. Use a clean, dry, lint-free cloth or a dry brush for cleaning. If necessary, wipe any parts, including electrical contacts by using a cloth moistened with cleaning compound; then wipe the cleaned parts dry with a clean dry cloth.

*Caution:* Cleaning compound is flammable and its fumes are toxic. Do not use near a flame; provide adequate ventilation.

#### 30. Preventive Maintenance Instructions

- a. Check for completeness and general con-

dition of the fm receiver-transmitter, FM control panel, INT signal distribution panel, dynamotor, communication antenna, and mountings. Make sure no knobs, screws, or lamps are missing. Check both fuses in the dynamotor to see that they are 0.5 ampere and in good condition.

- b. Remove dirt and moisture from the cases, component panels, antenna, mountings, air intake screen, wiring, cables, and connectors. Disconnect the plugs and jacks, clean their contacts, and reconnect them.

- c. Inspect all metal surfaces on the cases, component panels, mountings, antenna, and connectors for rust and corrosion. Remove the rust and corrosion by using fine sandpaper.

- d. Inspect the wiring, cords, cables, and shock mounts for cuts, kinks, breaks, fraying, and signs of excessive strain. Check all bonding straps and safety wire to assure that each component is properly grounded and properly safety wired.

- e. Check all controls and accessible items (switches, knobs, connectors, pilot lights, fuseholders, screws, nuts, and bolts) to make sure that they are properly tightened. Tighten any item that is loose.

- f. Inspect all controls for easy operation.

- g. Check for normal operation of the fm liaison set (para 31) from the pilot position and the copilot position.

#### 31. Equipment Performance Checklist

- a. *General.* The equipment performance checklist is used to systematically check the performance of the fm liaison set. All corrective measures which the organizational repairman can perform are given in the *Corrective measures* column. When using the checklist to verify serviceability of the equipment, start at the beginning and follow each step in sequence. Successful completion of the checklist indicates that the equipment is operating in a satisfactory manner. When using the performance checklist, first determine from DD Form 781-2 the cause or symptom of failure, Get firsthand information from the pilot or copilot on how

the equipment was operating just before failure. Perform the preparatory procedures given in c below before beginning. If trouble is found and the corrective measures indicated do not correct the cause, troubleshooting is required by a higher echelon. On DD Form 781-2 note the symptoms, how the equipment performed, and what corrective measures were taken.

1). *Auxiliary Power.* Before attempting to operate the fm liaison set, be sure that an external power supply is connected to the air-

craft. The receptacle for connecting the external power supply is normally on the left side of the fuselage; refer to the applicable aircraft technical manual for exact location, When the external power source is connected to the aircraft, the aircraft battery is isolated from the aircraft electrical system.

**Warning:** When an external power supply is connected, the aircraft electrical system is energized regardless of the position of the aircraft battery switch.

c. *Equipment Performance Checklist.*

Step	Unit	Action	Normal indication	Corrective measures
P R E P A R A T O R Y	1	Both FM control panels (fig. 12). <i>Note.</i> If aircraft uses one FM control panel apply subsequent procedure appropriate to one FM control panel.		
	2		Set power switch to OFF.	
	3		Rotate receiver VOL control fully counterclockwise.	
	4		Set REM-LOCAL switch to LOCAL position on one panel. <i>Note.</i> If aircraft uses only one FM control panel, leave REM-LOCAL switch in LOCAL throughout checklist and ignore further reference to it.	
	5	Both INT signal distribution panels (fig. 11).	Rotate frequency selector switches until desired frequency appears in FREQ window.	
	6		Set all RECEIVERS switches to their off (down) positions.	
	7		Rotate TRANS selector switch to INT.	
	8		Rotate headset VOL control fully counterclockwise.	
	9	Switch panel (fig. 13) or equivalent.	Set FM HOME switch or equivalent to off position and, FM SQUELCH switch or equivalent to off position. <i>Note.</i> If Aircraft does not contain the switch panel, squelch switch (squelch control) for the FM liaison set is mounted separately. Refer to applicable configuration manual for its location	



Step	Unit	Action	Normal indication	Corrective measures
10	Aircraft main power switch and appropriate circuit breakers. Refer to b above for application of auxiliary power.	Turn on main power switch and appropriate circuit breakers. Allow sufficient warmup time.	<p>Characters, numerals, and panel lights on control panel and distribution panels glow.</p> <p>Dynamotor rotates.</p> <p>Fan motor in fm receiver-transmitter operates.</p>	<p>Replace lamps.</p> <p>Check to see if aircraft power is available at main power switch and circuit breakers.</p> <p>Check for 27.5 volts dc at dynamotor terminals H, L, and J on P101 (fig. 6). If no voltage is present, check wiring leading to terminals. If voltage is present, replace dynamotor (para 33i and j).</p> <p>Check 27-volt ac supply from dynamotor at terminals V and X on P815 (fig. 3). <i>Note.</i> Fan in fm receiver-transmitter should exhaust air from rear of unit for proper air circulation. If fan draws in air at rear of unit, replace fm receiver-transmitter (para 33c and d).</p>
11	Either INT signal distribution panel (fig. 11). (Select either operating position in the aircraft.)	Press microphone switch from selected operating position and speak into microphone. Listen on this position's headset and adjust headset VOL control to comfortable audio level.	Sidetone heard in headset.	Check fuse F101 in dynamotor and replace if defective (fig. 6). Check headset-microphone by substitution. Replace INT signal distribution panel (para 336g and h). Check overall cabling between headset-microphone and INT signal distribution panel. Check microphone switch and associated circuitry.
12	Other INT signal distribution panel (fig. 11) (other operating position in the aircraft).	Press microphone switch from this operating position and speak into microphone. Listen on this position's headset and adjust headset VOL control to comfortable audio level.	Sidetone heard in headset.	Check headset-microphone by substitution. Replace INT signal distribution panel (para 33g and h). Check overall cabling between headset-microphone and INT signal distribution panel. Check microphone switch and associated circuitry.
13		From either operating position, press microphone switch and speak into microphone while listening to headset in other operating position.	Audio heard in headset.	First replace one INT signal distribution panel (para 33g and h). If audio is not heard in headset, then replace other INT signal distribution panel. Check cabling between distribution panels.
14		From other operating position, repeat step 13 above:	Same as step 13.	Same as step 13.

Step	Unit		Normal indication	Corrective measures
15	Both INT signal distribution panels (fig. 11).	Rotate TRANS selector switch to position 1 and RECEIVERS 1 switch to on (up) position. <i>Note.</i> It is assumed that fm receiver-transmitter is wired to 1 positions of INT signal distribution panels ; however, check aircraft frequency card to be sure.		
16	Either FM control panel (fig. 12) ( select either operating position corresponding to the FM control panels).	Set REM-LOCAL switch to LOCAL. Rotate frequency selector switches to frequency of local fm ground station. Set ON-OFF switch to ON position. Allow sufficient warmup time. Adjust receiver VOL control to comfortable audio level.	Characters, numerals, and panel lights glow.  400-cps cycling tone heard in headset while fm receiver-transmitter is cycling to frequency selected:  Noise or fm communications heard in headset.	Check cable connection to FM control panel, Replace defective lamps. If 400-cps cycling tone lasts longer than 10 seconds, turn ON-OFF switch to OFF. Check cable connections to fm receiver-transmitter and FM control panel. Replace fm receiver-transmitter (para 33c and d). Check cable connections between INT signal distribution panel, FM control panel, and fm receiver-transmitter. Replace FM control panel (para 33e and f). Replace fm receiver-transmitter (para 33c and d). Check overall wiring between these units.
17		From the operating position selected in step 16 above, press the microphone switch, speak into the microphone and establish fm communications.	Reliable fm communications established.	No transmission: Check fuse F102 in dynamotor and replace if defective. If second fuse blows, replace fm receiver-transmitter (para 33c and d). Check cable connections for fm control panel, INT signal distribution panel, and fm receiver-transmitter. Replace FM control panel (para 33e and f). Check overall wiring between these units. No reception: same as step 16 above.
18	Other FM control panel (fig. 12). <i>Note.</i> If aircraft has only one FM control panel installed, proceed to step 19 below.	Same as step 16 above.	Same as step 16 above.	Check cable connections to FM control panel. Replace FM control panel (para 33e and f). Check overall wiring to FM control panel.
19	Switch panel (fig. 13). <i>Note.</i> If aircraft does not have the homing facility Installed, proceed to step 21 below.	Set homing switch to (up) position, Select fm station, preferably one with a known relative bearing.	Keyer motor starts running. A coded D (- . .) or U (.. -) 400-cps signal or a continuous 400-cps signal is heard in headset, de-	If no 400-cps tone signal is heard, replace fm receiver-transmitter (para 33c and d). Replace the switch assembly. If no homing signal is heard, check for

Step	Unit	Action	Normal indication	Corrective measures
20		Set homing switch to off position. Set squelch to on position and then to off position.	pending on aircraft heading.  Considerable decrease in receiver noise when squelch is set to on position. Abrupt increase in receiver noise when set to off position.	fm communications by setting homing switch to off position. If fm communications is present, check homing antenna system; replace Keyer KY-149/AR.  Check FM SQUEL switch and switch assembly and connections to fm receiver-transmitter. Check squelch adjustment on fm receiver-transmitter (para 34).
21	Both FM control panels (fig. 12).	Set power ON-OFF switch to OFF position.		Check power ON-OFF switch and if defective, replace FM control panel (para 33e and f).
22	Aircraft main power switch and appropriate circuit breakers.	Turn off main power switch and appropriate circuit breakers.	Character, numerals, and panel lights cease to glow. Dynamotor stops operating and INT signal distribution panels are turned off. (Fan motor stops.)	Check for defective power switch and circuit breakers.

### 32. Maintenance of Dynamotor

a. *General* Organizational maintenance of the dynamotor consists of inspection, replacement of fuses, brushes, brush caps, and replacement of the dynamotor when it becomes defective. Instructions for the inspection and replacement of dynamotor brushes and brush caps are given in a below. Instructions for the removal and replacement of the dynamotor are given in paragraphs 33i and j.

b. *Inspection, Removal, and Replacement of Brushes and Brush Caps (fig. 6).*

*Note.* When removing the dynamotor brushes, observe the markings and relative position of each brush with respect to its holder. Each brush is marked with its polarity on one side and with a brush wear line on the other. Replace each brush in the same position and in the same brush holder from which it was removed. The polarity mark should always face up when the brush is in its holder. Proper replacement of brushes results in smoother operation of the dynamotor,

- (1) Unscrew the brush cap from its respective holder assembly and observe the brush spring tension. If the brush spring tension is weak, replace the brush assembly with a new one.
- (2) Remove the brush assembly from its

holder and observe the condition of the brush. If the brush is chipped, broken, or worn to brush wear line, replace it with a new brush assembly.

- (3) Before replacing the brush caps after inspection and replacement of brushes, note the condition of each cap. Replace the cap with a new one if it is nicked, broken, or damaged.

### 33. Removal and Replacement of Fm liaison Set

a. *General.* This paragraph contains general removal and replacement procedures of all the components of the fm liaison set authorized to be replaced in the aircraft at the organizational maintenance level. When it has been determined by troubleshooting that a major component is malfunctioning or inoperative, replace it with a serviceable unit. Since installations of this equipment may vary in different aircraft, it may be necessary to refer to the appropriate aircraft or configuration technical manuals to accomplish removal and replacement of these components.

b. *Safety Wiring.* When the components

are reinstalled, be sure that holddown bolts, mounting nuts, and appropriate plugs and connectors are properly safety wired.

*c. Removal of Fm Receiver- Transmitter (fig. 3).*

- (1) Disconnect antenna cable from plug P803A on the front of the fm receiver-transmitter.
- (2) Cut and remove the safety wire from the mounting screws.
- (3) Unscrew both mounting screws from their mounting blocks at the front of the fm receiver-transmitter; turn both screws simultaneously and at the same rate.
- (4) Slide the fm receiver-transmitter forward and upward and remove it from the receiver-transmitter mounting.

*d. Replacement of Fm Receiver- Transmitter (fig. 3).*

- (1) Carefully place the fm receiver-transmitter on the receiver-transmitter mounting.
- (2) Slide the fm receiver-transmitter to the rear of the shock mount until the guide pins mate and plug P815 and receptacle J815 properly engage.
- (3) Screw in the mounting screws and secure the fm receiver-transmitter to the shock mount. Safety-wire the two mounting screws.
- (4) Connect the antenna cable to plug P803A on the front of the fm receiver-transmitter.

*e. Removal of FM Control Panel (fig. 5).*

- (1) Unscrew the four Dzus fasteners that mount the FM control panel.
- (2) Withdraw the FM control panel far enough to reach the spring lock fasteners that secure the panel connector to the rear of the panel.
- (3) Unscrew the spring lock fasteners and disconnect the panel connector from receptacle J201.
- (4) Remove the FM control panel.

*f. Replacement of FM Control Panel (fig. 4).*

- (1) Connect the panel connector to receptacle J201 and tighten the spring lock fasteners that secure the connector to the rear of the FM control panel.
- (2) Set the FM control panel in place and

tighten the four Dzus fasteners that mount the panel.

*g. Removal of INT Signal Distribution Panels (fig. 5).* Each panel is removed in the same manner as follows:

- (1) Unscrew the four Dzus fasteners that mount the INT signal distribution panel.
- (2) Withdraw the INT signal distribution panel far enough to reach the spring lock fasteners that secure the panel connector to the rear of the INT signal distribution panel.
- (3) Unscrew the spring lock fasteners and disconnect the panel connector from receptacle J301.
- (4) Remove the INT signal distribution panel.

*h. Replacement of INT Signal Distribution Panel (fig. 5).*

- (1) Connect the panel connector to receptacle J301 and tighten the spring lock fasteners that secure the connector to the rear of the INT signal distribution panel.
- (2) Set the INT signal distribution panel in place and tighten the four Dzus fasteners that mount the INT signal distribution panel.

*i. Removal of Dynamotor (fig. 6 and 7).*

- (1) Cut and remove the safety wire from the mounting screws.
- (2) Unscrew the mounting screws.
- (3) Slide the dynamotor forward to disconnect the connectors and guide pins at the rear of the dynamotor mounting.
- (4) Slide the dynamotor forward and out of the guide rail to remove it from the mounting.

*j. Replacement of Dynamotor (fig. 6 and 7).*

- (1) Carefully place the dynamotor on its mount by sliding it to the rear until the connectors and guide pins properly engage.
- (2) Screw in the mounting screws to secure the dynamotor to the mounting.
- (3) Safety-wire the mounting screws to prevent them from loosening.

*k. Removal of Communication Antenna (fig. 8).*

- (1) Disconnect the coaxial connector from the base.
- (2) On the base, loosen the ¼-inch Allen setscrew and the 1-inch whip tightening nut (5/8-inch on A models).
- (3) Unscrew and remove the communication whip.
- (4) Remove the six screws that hold the base and gasket to the aircraft.
- (5) Remove the base and the gasket.

*l. Replacement of Communication Antenna* (fig. 8).

- (1) Replace the gasket and base and secure them to the aircraft with the six screws.
- (2) Screw the whip in the base and tighten the ¼-inch Allen setscrew and the 1-inch tightening nut (5/8-inch on A models).
- (3) Connect the coaxial connector to the base.

### **34. FM Receiver-Transmitter Squelch Adjustment**

The SQUELCH control for the fm receiver-transmitter is located above the handle on the left side of the front panel (fig. 3). The control is behind a sliding panel that can be manually raised by moving the slide button adjacent to the SQUELCH control. The SQUELCH control is adjusted as follows:

*a.* Place the fm receiver-transmitter in the receive condition (para 23) with no signal input by disconnecting the antenna cable from plug P803A.

*b.* Set the squelch switch on the switch panel (fig. 13) to its off position.

*Note.* When the squelch switch is in its on position, the receiver squelch circuits are used. When it is in the off position, an external bias voltage is applied to the receiver, disabling the receiver internal squelch circuits.

*c.* Adjust the background noise in the headsets to a comfortable level; use the headset VOL control on the INT signal distribution panel (fig. 11) or the receiver VOL control on the FM control panel (fig. 12).

*d.* Rotate SQUELCH control (fig. 3) on the fm receiver-transmitter to its maximum counterclockwise position.

*e.* Set the squelch switch on the switch panel (fig. 13) to its on position.

*f.* Rotate the SQUELCH control clockwise to the position where the background noise just cuts out. *Do not rotate the control beyond this point.*

*g.* Check the squelch setting on several other frequencies. If all frequencies selected are not fully squelched, turn the SQUELCH control slightly more clockwise.

*h.* Remove power from the fm liaison set and reconnect the antenna cable to plug P803A.

**CHAPTER 5**  
**AUXILIARY EQUIPMENT**

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**35. Introduction**

*a.* Antenna Group AN/ARA-31 and Switch Assembly SA-474/AR are used as auxiliary equipment to extend the operational use of the fm liaison set. This equipment respectively provides the fm liaison set with homing operation and remote switching operation for

homing and for squelch control of the fm receiver-transmitter.

*b.* The description and operation of SA-474/AR and Antenna Group AN/ARA-31 are covered in paragraphs 36 and 37. Removal and replacement instructions for Switch Assembly SA-474/AR are also included in paragraph 36c.



*Figure 13. Switch Assembly SA-464/AR.*

c. Complete description, operation, and organizational maintenance for Antenna Group AN/ARA-31 are covered in a separate Department of the Army publication.

### 36. Switch Assembly SA-474/AR

(fig. 13)

a. *Description.* The switch panel is a separately housed unit containing five front panel switches. All five switches are wired to receptacle J1801 on the rear of the switch panel. All switch functions are indicated on the front panel. Only two of these switches function as part of the fm liaison set; the other three are designated as spares. Two panel lights edge-light the front panel. The switch panel is flush mounted by means of four Dzus fasteners located on the sides of the panel mounting plate. Two panel mounting screws secure the plastic panel to the panel mounting plate. All external connections are made through receptacle J1801 on the rear of the switch panel.

b. *Control Function.* The following chart lists the switch panel controls and indicates their functions.

Control	Function
FM HOME toggle switch.	In the on position, this switch energizes the homing circuits, disconnects the communication antenna, connects the homing antennas through Keyer KY-149(•)/AR (para 37a(2)) to the fm receiver-transmitter input, and disables the microphone switch. In the off position, homing operation is disabled, and the fm liaison set returns to normal receiving operation.
FM SQUEL toggle switch.	In the off position, receiver output is unsquelched. In the on position, squelch circuits operate.
<b>SPARE toggle switches.</b>	Not used with the fm liaison set, tronic equipment installed in the <b>aircraft.</b>

*Note.* Refer to paragraph 37b for homing operation.

c. *Replacement and Removal of Switch Panel (fig. 13).*

(1) Removal.

(a) Unscrew the four Dzus fasteners that mount the switch panel.

(b) Withdraw the switch panel far enough to reach the spring lock

fasteners that secure the panel connector to the rear of the switch panel.

(c) Unscrew the spring lock fasteners and disconnect panel connector P1801 from receptacle J1801.

(d) Remove the switch panel,

(2) *Replacement.*

(a) Connect panel connector P1801 to receptacle J1801 and tighten the spring lock fasteners that secure the panel connector to the rear switch panel.

(b) Set the switch panel in place and tighten the four Dzus fasteners that mount the switch panel.

### 37. Antenna Group AN/ARA41

a. *Description (fig. 14).*

(1) Antenna Group AN/ARA-31 consists of Keyer KY-149(\*)/AR, Mounting MT-1620/AR, two Networks, Impedance Matching CU-459/AR, and four Antenna Elements AT-624(\*)/AR. Two Antenna Elements AT-624 (\*) /AR and one Network, Impedance Matching CU-459/AR make up a homing antenna. There are two identical homing antennas: one for the left side of the aircraft, and one for the right side.

(2) Keyer KY-149(•)/AR is a separately housed unit mounted on Mounting MT-1620/AR which is a flat mounting base. The keyer is enclosed by a sliding cover which is held in place by a single spring lock fastener on the rear of the cover. The front panel of the keyer contains four coaxial connectors and a two-pin connector for a 28-volt power input. The keyer is secured to the mounting by two mounting screws located at the front of the unit.

(3) Network, Impedance Matching CU-459/AR has a bullet-shaped, black nylon shell. Two antenna connectors are mounted on the outer surface of the bullet, one on each side. All the components within the bullet housing are permanently sealed to prevent changes in impedance characteristics



Figure 14. Antenna Group AN/ARA-31.

which might be caused by a shifting of the components' positions.

*b. Operation.* Place the fm liaison set in operation as instructed in paragraphs 21 through 23.

- (1) Set the FM HOME toggle switch on the switch panel to its on position (fig. 13).
- (2) Rotate the frequency selector switches on the FM control panel to the desired operating frequency. The coded D and U signals or steady 400-cps on-course tone should be present in the operator's' headset-microphone (or both operators' headset-microphones in a two-position installation).
- (3) Three types of signals that are heard when using the homing facility are given below. Each signal has a specific meaning to the pilot. Figure 15 gives an illustrative example of homing signal use.

Signal	Meaning
A keyed 400-cps tone with the code character D — "dah-dit-dit" predominant.	The transmitting station to which I am tuned is on the left (port-side ) of the course that I am heading. I must turn to the left until my headset-microphone signal changes to a steady 400-cps tone.
A keyed 400-cps tone with the code character U — "dit-dit-dab" predominant.	The transmitting station to which I am tuned is on the right (starboard side) of the course that I am heading. I must turn to the right until my headset-phone signal changes to a steady 400-cps tone.
A steady 400-cps tone <sup>a</sup> .	I am heading directly toward the transmitting station to which I am tuned.

<sup>a</sup> it is possible that, when a steady 400-cps tone is heard, the aircraft is heading directly away from the station. By flying to the right or left of the on-course heading, the error may be corrected by following the directions for reception of D and U signals.

- (4) Turn off the equipment as instructed in the stopping procedure (para 23c).



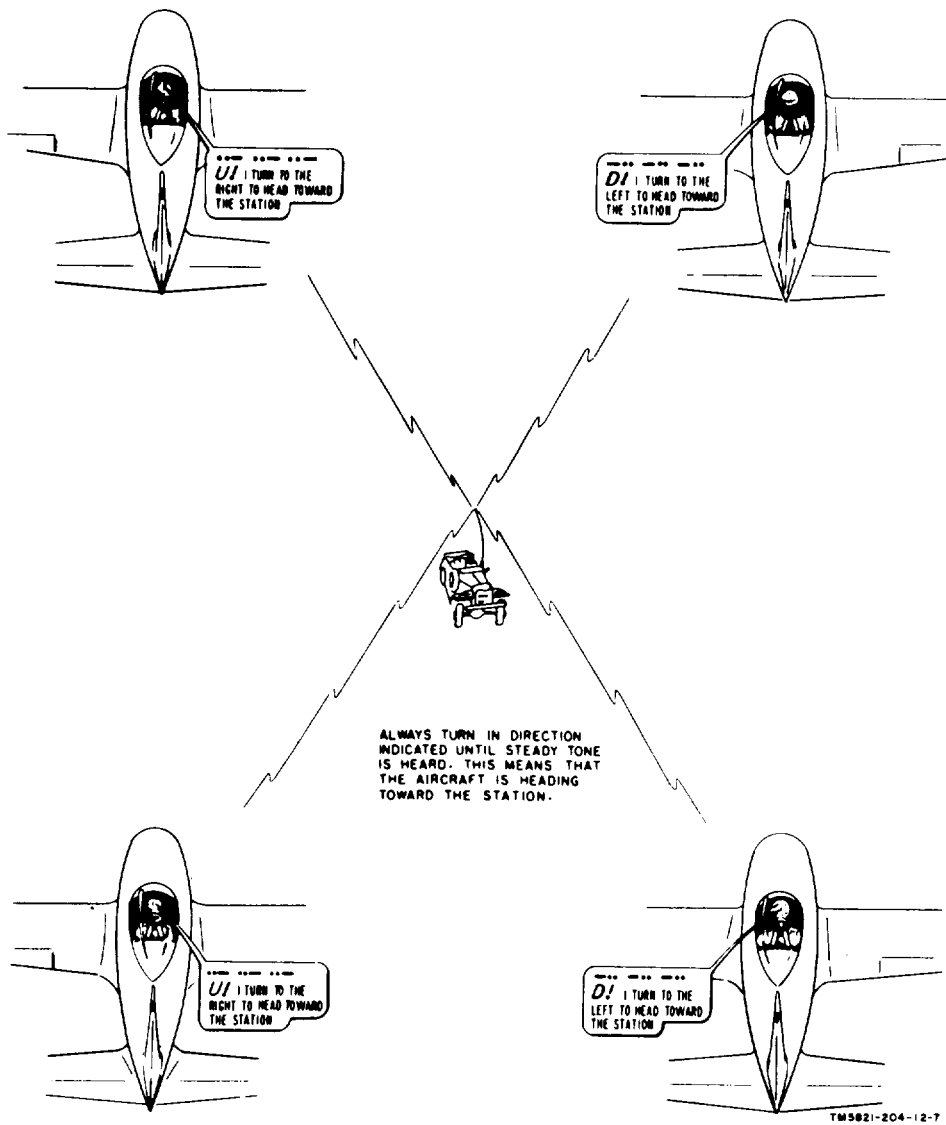


Figure 15. Identifying homing signals.

## CHAPTER 6

### DEMOLITION OF MATERIEL TO PREVENT ENEMY USE

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#### 38. Authority for Demolition

Demolition of the equipment will be accomplished only upon the order of the commander. The destruction procedures outlined in paragraph 39 will be used to prevent further use of the equipment.

#### 39. Methods of Destruction

Use any of the following methods to destroy the equipment.

*a. Smash.* Smash the controls, tubes, coils, switches, capacitors, and transformers; use sledges, axes, handaxes, hammers, or crowbars.

*b. Cut.* Cut the output and power cord and slash the rf shield; use axes, handaxes, or machetes.

*c. Burn.* Burn cords and technical manuals; use gasoline, kerosene, oil flamethrowers, or incendiary grenades.

*d. Bend.* Bend panels and cases.

*e. Explode.* If explosives are necessary, use firearms, grenades, or TNT.

*f. Dispose.* Bury or scatter the destroyed parts in slit trenches, foxholes, or throw them into streams.

**APPENDIX I**  
**REFERENCES**

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- TM 11-5965-215-15P      Repair Parts and Special Tools List and Maintenance Allocation Chart: Headset-Microphones H-101/U and H-10/A/U.
- TM 11-6125-204-12P      Operator's and Organizational Maintenance Repair Parts and Special Tools List and Maintenance Allocation Chart: Dynamotor DY-107/AR, DY-107A/AR.
- TM 11-6626-203-12      Operation and Organizational Maintenance: Multimeter AN/URM-105, including Multimeter ME-77/U.

## APPENDIX II

### MAINTENANCE ALLOCATION CHART FOR RADIO SET AN/ARC-44

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#### 1. General

a. This appendix assigns maintenance functions and repair operations to be performed by the lowest appropriate maintenance echelon.

b. Columns in the maintenance allocation chart are as follows:

- (1) *Part or component.* This column shows only the nomenclature or standard name. Additional descriptive data are included only where clarification is necessary to identify the part. Components and parts comprising a major end item are listed alphabetically. Assemblies and subassemblies are in alphabetical sequence with their components listed alphabetically immediately below the assembly listing.
- (2) *Maintenance function.* This column indicates the various maintenance functions allocated to the echelon capable of performing the operations.
  - (a) *Service.* To clean, to preserve, and to replenish fuel and lubricants.
  - (b) *Adjust.* To regulate periodically to prevent malfunction.
  - (c) *Inspect.* To verify serviceability and to detect incipient electrical or mechanical failure by scrutiny.
  - (d) *Test.* To verify serviceability and to detect incipient electrical or mechanical failure by use of special equipment such as gages, meters, etc.
  - (e) *Replace.* To substitute serviceable assemblies, subassemblies, and parts for unserviceable components.
  - (f) *Repair.* To restore an item to serviceable condition through correction of a specific failure or unserviceable condition. This function includes but is not limited to, inspecting, cleaning, preserving, adjusting, replacing, welding, grinding, riveting, and straightening,
  - (g) *Align.* To adjust two or more components of an electrical system so

that their functions are properly synchronized.

- (h) *Calibrate.* To determine, check, or rectify the graduation of an instrument, weapon, or weapons system, or components of a weapons system.
- (i) *Rebuild.* To restore an item to a standard as near as possible to original or new condition in appearance, performance, and life expectancy. This is accomplished through the maintenance technique of complete disassembly of the item, inspection of all parts or components, repair or replacement of worn or unserviceable elements using original manufacturing tolerances and/or specifications, and subsequent reassembly of the item,
- (3) *1st, 2d, 3d, 4th, 5th echelon.* The symbol X indicates the echelon responsible for performing that particular maintenance operation, but does not necessarily indicate that repair parts will be stocked at that level. Echelons higher than the echelon marked by X are authorized to perform the indicated operation.
- (4) *Tools required.* This column indicates codes assigned to each individual tool equipment, test equipment, and maintenance equipment referenced. The grouping of codes in this column of the chart indicate the tool, test, and maintenance equipment required to perform the maintenance function.
- (5) *Remarks.* Entries in this column will be utilized when necessary to clarify any of the data cited in the preceding columns.

c. Columns in the section allocation of tools for maintenance functions are as follows:

- (1) *Tools required for maintenance functions.* This column lists tools, test, and maintenance equipment required to perform the maintenance functions.
- (2) *1st, 2d, 3d, 4th, 5th echelon.* A dagger

(†) indicates the echelons allocated the facility.

- (3) *Tool code.* This column lists the tool code assigned.
- (4) *Remarks.* Entries in this column are used to clarify data in the other columns.

## **2. Maintenance by Using Organizations**

When this equipment is used by signal service organizations organic to theater headquar-

ters or communication zones to provide theater communications, those maintenance functions allocated up to and including fourth echelon are authorized to the organization operating this equipment.

## **3. Mounting Hardware**

The basic entries of the maintenance allocation chart do not include mounting hardware such as screws, nuts, bolts, washers, brackets, and clamps.

## MAINTENANCE ALLOCATION CHART FOR RADIO SET AN/ARC-44

(1) PART OR COMPONENT	(2) MAINTENANCE FUNCTION	(3) 1ST ECH	(4) 2ND ECH	(5) 3RD ECH	(6) 4TH ECH	(7) 5TH ECH	(8) TOOLS REQUIRED	(9) REMARKS	
RADIO SET AN/ARC-44	service		X				22		
	adjust		X	X			21, 25, 11, 17 22, 3, 8, 17, 2, 24, 9, 4, 14, 16		
	inspect		X			X	22, 3, 8, 2, 17, 1, 24, 10, 9, 5, 6, 7		
	test			X			22		
					X		2, 3, 4, 8, 9, 12, 14, 15, 16, 17, 19, 22, 23, 24		
						X	1, 2, 3, 5, 6, 7, 8, 9, 10, 12, 13, 15, 16, 17, 19, 20, 22, 23, 24		
							X	1, 2, 3, 5, 6, 7, 8, 9, 10, 12, 13, 15, 16, 17, 18, 20, 22, 23, 24	
	replace			X			21		
	repair					X	22		
	align				X		22, 17, 3, 4, 24, 9	Use codes 5, 6, and 7 at 4th and 5th echelons	
calibrate				X		22, 17, 9	Use code 7 at 4th and 5th echelon		
rebuild						X	22		
MOUNTING MT-1268/AR	service		X						
	inspect		X						
	test		X				11		
	replace		X				21		
CONNECTOR	replace			X					
LEAD, ELECTRICAL	replace			X					
PIN, COTTER	replace			X					
RACK ASSEMBLY	replace			X				Fabricate at 5th echelon	
	repair				X				
SHIELD, ELECTRICAL CONNECTOR	replace			X					
SPRING	replace			X					

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
PART OR COMPONENT	MAINTENANCE FUNCTION	1ST ECH	2ND ECH	3RD ECH	4TH ECH	5TH ECH	TOOLS REQUIRED	REMARKS
AN/ARC-44 (continued)								
PANEL, CONTROL SB-327/ARC-44	service		X					
	adjust			X			22	
	inspect		X	X			21	
	test			X			22, 9	
	replace		X				22, 9	
	repair				X		22, 3, 23, 9	
	align			X			22, 3, 13, 23, 9	
	rebuild					X	21	
ARMATURE ADJUSTMENT ASSEMBLY	replace			X				
ARMATURE, RELAY	replace			X				
ARM, SWITCH ACTUATOR	replace			X				
BALL, BEARING	replace			X				
BEARING, SLEEVE	replace			X				
BLOCK, SPACING	replace			X				Fabricate at 5th echelon
BRACKET	replace			X				Fabricate at 5th echelon
	repair				X			
BUSHING, SLEEVE	replace			X				Fabricate at 5th echelon
CAM ASSEMBLY	replace			X				Fabricate at 5th echelon
CASE, CONTROL PANEL	replace			X				Fabricate at 5th echelon
	repair				X			
CLAMP, LOOP	replace			X				Fabricate at 5th echelon
COIL, ELECTROMAGNETIC ACTUATOR	replace			X				
CONNECTOR	replace			X				
DIAL	replace			X				
DIAL, SCALE	replace			X				
ESCUTCHEON PLATE	replace			X				Fabricate at 5th echelon
	repair				X			
FELT, MECHANICAL PREFORMED	replace			X				Fabricate at 5th echelon
HUB	replace			X				Fabricate at 5th echelon
	repair				X			
GASKET	replace			X				Fabricate at 5th echelon
KNOB	replace		X					
LAMPHOLDER	replace			X				

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
PART OR COMPONENT	MAINTENANCE FUNCTION	1ST ECH	2ND ECH	3RD ECH	4TH ECH	5TH ECH	TOOLS REQUIRED	REMARKS	
AN/ARC-44 (continued)									
LAMP, INCANDESCENT	replace		X						
LINK ASSEMBLY	replace			X				Fabricate at 5th echelon	
PANEL	replace			X				Fabricate at 5th echelon	
	repair				X				
PIN	replace			X				Replace at 5th echelon	
PLATE ASSEMBLY	replace			X				Fabricate at 5th echelon	
	repair				X				
POST, MOUNTING	replace			X				Fabricate at 5th echelon	
RESISTOR	replace			X					
RING, RETAINING	replace			X					
SCREW, MACHINE (SPECIAL): H-238, H-239 and H-240	replace			X					
SHAFT	replace			X				Fabricate at 5th echelon	
SHIM	replace			X				Fabricate at 4th echelon	
SPACER, SLEEVE	replace			X				Fabricate at 5th echelon	
SPRING	replace			X					
SPRING ASSEMBLY	replace			X				Fabricate at 5th echelon	
STUD ASSEMBLY, TURNLOCK, FASTENER	replace			X					
SWITCH ASSEMBLY	replace			X					
SWITCH HUB AND PLATE ASSEMBLY	replace			X				Fabricate at 5th echelon	
SWITCH, SECTION, ROTARY	replace			X					
SWITCH	replace			X					
TURNLOCK FASTENER ASSEMBLY	replace			X					
WASHER, FLAT H-251	replace			X					
PANEL, SIGNAL DISTRIBUTION, RADIO SB-329/AR	service		X						
	inspect		X	X			22		
	test				X			22	
					X			2, 3, 9, 12, 17, 22, 23, 19	
						X		1, 2, 3, 9, 12, 13, 17, 22, 23, 19	
						X	1, 2, 3, 9, 12, 13, 17, 22, 23, 18		
	replace		X				21		
repair				X		22			
rebuild					X	22			
CAPACITOR	replace			X					



(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
PART OR COMPONENT	MAINTENANCE FUNCTION	1ST ECH	2ND ECH	3RD ECH	4TH ECH	5TH ECH	TOOLS REQUIRED	REMARKS
AN/ARC-44 (continued)								
CHASSIS, ELECTRICAL EQUIPMENT	replace repair rebuild			X	X	X		
CLAMP, LOOP	replace			X				Fabricate at 5th echelon
CONNECTOR	replace			X				
COVER	replace repair			X	X			Fabricate at 5th echelon
ELECTRON TUBE	replace			X				
ESCUTCHEON PLATE	replace repair			X	X			Fabricate at 5th echelon
FUSE, CARTRIDGE	replace		X					
FUSEHOLDER	replace			X				
GASKET	replace			X				Fabricate at 5th echelon
KNOB	replace		X					
KNOB ASSEMBLY	replace			X				
LAMP, INCANDESCENT	replace		X					
LAMPHOLDER	replace			X				
PANEL	replace repair			X	X			Fabricate at 5th echelon
POST, MOUNTING	replace			X				Fabricate at 5th echelon
RESISTOR	replace			X				
RETAINER, ELECTRON TUBE	replace			X				
SCREW, MACHINE (SPECIAL): H322	replace			X				
SHIM	replace			X				Fabricate at 5th echelon
SOCKET ASSEMBLY, ELECTRON TUBE	replace			X				Fabricate at 5th echelon
SOCKET, ELECTRON TUBE	replace			X				
STRAP, RETAINING	replace			X				Fabricate at 5th echelon
SWITCH	replace			X				
TERMINAL BOARD	replace			X				Fabricate at 5th echelon
TERMINAL LUG	replace			X				
TERMINAL, STUD	replace			X				
TRANSFORMER, AUDIO FREQUENCY	replace			X				
TURNLOCK FASTENER, ASSEMBLY	replace			X				

(1) PART OR COMPONENT	(2) MAINTENANCE FUNCTION	(3) 1ST ECH	(4) 2ND ECH	(5) 3RD ECH	(6) 4TH ECH	(7) 5TH ECH	(8) TOOLS REQUIRED	(9) REMARKS
AN/ARC-44 (continued)								
RECEIVER-TRANSMITTER, RADIO RT-294/ARC-44; RT-294A/ARC-44; RT-294B/ARC-44	service		X				22	
	adjust		X	X			21, 25, 11	
					X			22, 3, 8, 2, 17, 24, 9, 4, 14, 16
	inspect					X		22, 3, 8, 2, 17, 1, 24, 9, 16, 5, 6, 7
				X				21
	test				X			22
					X			2, 3, 4, 8, 9, 12, 14, 15, 16, 17, 19, 22, 23, 24
	replace					X		1, 2, 3, 5, 6, 7, 8, 9, 10, 12, 13, 15, 16, 17, 19, 20, 22, 23, 24
				X			X	1, 2, 3, 5, 6, 7, 8, 9, 10, 12, 13, 15, 16, 17, 18, 20, 22, 23, 24
	repair			X				21
align				X	X		22	
calibrate				X			22, 17, 9, 7, 3, 4, 5, 24	
rebuild						X	22, 17, 9, 7	
							22	
AMPLIFIER, AUDIO FREQUENCY	service			X				
	inspect			X				
	replace			X			22	
	repair				X		22	
	rebuild					X		
CAPACITOR	replace				X			
CHASSIS ASSEMBLY	service			X				
	inspect			X				
	replace				X		22	
	repair				X		22	
	rebuild					X		
ELECTRON TUBE	replace				X			
CONNECTOR, PLUG, ELECTRICAL	replace				X			
CONNECTOR, RECEPTACLE, ELECTRICAL	replace				X			
RESISTOR	replace				X			

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
PART OR COMPONENT	MAINTENANCE FUNCTION	1ST ECH	2ND ECH	3RD ECH	4TH ECH	5TH ECH	TOOLS REQUIRED	REMARKS
AN/ARC-44 (continued)								
AMPLIFIER, INTERMEDIATE FREQUENCY	service inspect replace repair rebuild			X X X		X	22 22	
CAPACITOR	replace				X			
COIL, ASSEMBLY, RADIO FREQUENCY	replace				X			
CONNECTOR	replace				X			
ELECTRON TUBE	replace				X			
RESISTOR	replace				X			
SHIELD, ELECTRON TUBE	replace				X			
ARM, SWITCH ACTUATOR	replace				X			
BALL, BEARING	replace				X			
BASE, CHASSIS	replace repair				X X			Fabricate at 5th echelon
BLOCK, SHOCK SUPPORT	replace			X				Fabricate at 5th echelon
BRACKET	replace repair				X X			Fabricate at 5th echelon
BUSHING	replace			X				
BUTTON, SLIDE	replace			X				Fabricate at 5th echelon
BUTTON, THRUST	replace				X			Fabricate at 5th echelon
CABLE ASSEMBLY, RADIO FREQUENCY	replace			X				
CONNECTOR, PLUG, ELECTRICAL	replace			X				
CAM ASSEMBLY	replace				X			Fabricate at 5th echelon
CAPACITOR	replace				X			
CHASSIS SUB-ASSEMBLY	replace repair				X X			Fabricate at 5th echelon
CLAMP, LOOP	replace			X				Fabricate at 5th echelon
CLIP, SPRING TENSION	replace			X				
COIL, RADIO FREQUENCY	replace				X			
COLLAR	replace				X			Fabricate at 5th echelon
CONNECTOR, PLUG; ELECTRICAL	replace				X			
CONNECTOR, RECEPTACLE, ELECTRICAL	replace				X			
CONTACT ASSY, ELECTRICAL	replace				X			
COVER	replace repair				X X			Fabricate at 5th echelon
CRYSTAL UNIT, QUARTZ	replace			X				

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
PART OR COMPONENT	MAINTENANCE FUNCTION	1ST ECH	2ND ECH	3RD ECH	4TH ECH	5TH ECH	TOOLS REQUIRED	REMARKS
AN/ARC-44 (continued)								
DOOR, SUB-ASSEMBLY	replace repair				X X			Fabricate at 5th echelon
ELECTRON TUBE	replace				X			Ref Symbol V901,V902
FILTER, ASSY, OUTPUT	replace			X				
FILTER ELEMENT, AIR	replace			X				
GEAR, BEVEL	replace				X			
GEAR, SPUR	replace				X		Gear Puller	
HINGE	replace				X			
HOUSING, FAN	replace repair				X X			Fabricate at 5th echelon
IMPELLER, FAN	replace			X				
MOTOR, FAN	replace			X				
PARTITION SUB-ASSEMBLY	replace repair				X X			Part of Rebuilding set, Fabricate at 5th ech.
PIN	replace				X			Fabricate at 5th echelon
PLATE	replace repair				X X			Fabricate at 5th echelon
POST, MOUNTING	replace				X			Fabricate at 5th echelon
PUSH ON NUT	replace			X				
RECEIVER-TRANSMITTER SUB-ASSEMBLY (Limiter Discriminator)	service inspect replace repair rebuild			X X X		X	22 22	
CAPACITOR	replace				X			
COIL ASSEMBLY, RADIO FREQUENCY	replace				X			
CONNECTOR	replace				X			
ELECTRON TUBE	replace				X			
RESISTOR	replace				X			
SHIELD, ELECTRON TUBE	replace				X			
SUPPRESSOR, PARASITIC	replace				X			
RECEIVER-TRANSMITTER SUB-ASSEMBLY (Noise Rectifier)	service inspect replace repair rebuild			X X X	X	X	22 22	

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
PART OR COMPONENT	MAINTENANCE FUNCTION	1ST ECH	2ND ECH	3RD ECH	4TH ECH	5TH ECH	TOOLS REQUIRED	REMARKS
AN/ARC-44 (continued)								
CAPACITOR	replace				X			
CONNECTOR	replace				X			
DETECTOR, RADIO FREQUENCY	replace				X			
ELECTRON TUBE	replace				X			
RESISTOR	replace				X			
SHIELD, ELECTRON TUBE	replace				X			
RECEIVER-TRANSMITTER, SUB-ASSEMBLY (Side-step osc.)	service			X				
	inspect			X				
	replace			X			22	
	repair				X		22	
	rebuild					X		
CAPACITOR	replace				X			
CONNECTOR	replace				X			
ELECTRON TUBE	replace				X			
POINTER, DIAL	replace				X			
RESISTOR	replace				X			
SHIELD, ELECTRON TUBE	replace				X			
SUPPRESSOR, PARASITIC	replace				X			
TRANSFORMER, RADIO FREQUENCY	replace				X			
RECEIVER-TRANSMITTER, SUB-ASSEMBLY (RF Head)	service			X				
	inspect			X				
	replace				X		22	
	repair				X		22	
	rebuild					X		
CAPACITOR	replace				X			
CONNECTOR	replace				X			
ELECTRON TUBE	replace				X			
RESISTOR	replace				X			
SHIELD, ELECTRON TUBE	replace				X			
TRANSFORMER, AUDIO FREQUENCY	replace				X			
RECEIVER-TRANSMITTER, SUB-ASSEMBLY (Howing Amplifier)	service			X				
	inspect			X				
	replace			X			22	
	repair				X		22	
	rebuild					X		
CAPACITOR	replace				X			
COIL ASSEMBLY, RADIO FREQUENCY	replace				X			

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
PART OR COMPONENT	MAINTENANCE FUNCTION	1ST ECH	2ND ECH	3RD ECH	4TH ECH	5TH ECH	TOOLS REQUIRED	REMARKS
AN/ARC-44 (continued)								
CONNECTOR	replace				X			
ELECTRON TUBE	replace				X			
RESISTOR	replace				X			
SHIELD, ELECTRON TUBE	replace				X			
RECEIVER-TRANSMITTER SUB-ASSEMBLY (Tuning Drive)	service inspect replace repair rebuild			X X	X X		22 22	
CLUTCH, FRICTION	replace				X			
CRYSTAL ASSEMBLY	replace				X			
GEAR ASSEMBLY	replace				X		Gear puller	
MOTOR, D.C.	replace				X			
MOUNTING, MOTOR	replace				X			Fabricate at 5th echelon
MOUNTING PLATE	replace repair				X X			Fabricate at 5th echelon
PIN	replace				X			Fabricate at 5th echelon
RELAY	replace				X			
SWITCH SECTION, ROTARY	replace				X			
SWITCH, SENSITIVE	replace				X			
RECEPTACLE, TURNLOCK FASTENER	replace				X			
RELAY, ARMATURE	replace			X				
RESISTOR	replace				X			
RETAINER	replace			X				
RING, RETAINING	replace				X			
ROLLER, CAM	replace				X			Fabricate at 5th echelon
SHAFT	replace				X			Fabricate at 5th echelon
SHIM	replace				X			Fabricate at 5th echelon
SOLENOID, ELECTRICAL	replace			X				
SPACER, FLANGED	replace				X			Fabricate at 5th echelon
SPACER	replace				X			
SPRING	replace			X				
STUD, HEX HEAD	replace				X			
STUD, TURNLOCK FASTENER	replace			X				
STRAP	replace				X			Fabricate at 4th echelon

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
PART OR COMPONENT	MAINTENANCE FUNCTION	1ST ECH	2ND ECH	3RD ECH	4TH ECH	5TH ECH	TOOLS REQUIRED	REMARKS
AN/ARC-11 (continued)								
SUPPORT SUB-ASSEMBLY	replace repair rebuild				X X	X		Fabricate at 5th echelon
SWITCH, RF	replace				X			
TERMINAL BOARD ASSEMBLY	replace				X		22	
TERMINAL, FEED-THRU, INSULATED	replace			X				
TERMINAL, STUD	replace				X			
TRANSFORMER, INTERMEDIATE FREQUENCY	replace				X			
WASHER, BEVEL	replace				X			
SWITCH ASSEMBLY SA-174/AR	service inspect test replace repair rebuild		X X X			X	11 21 22	
CONNECTOR, RECEPTACLE	replace			X				
GASKET	replace			X				
LAMP, INCANDESCENT	replace		X					
LENS, INDICATOR LIGHT	replace			X				
LIGHT, INDICATOR	replace			X				
PANEL, MOUNTING	replace repair			X	X			Fabricate at 5th echelon
SHIELD	replace			X				
SWITCH, TOGGLE	replace			X				

## ALLOCATION OF TOOLS FOR MAINTENANCE FUNCTIONS

50

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
TOOLS REQUIRED FOR MAINTENANCE FUNCTIONS	1ST ECH	2ND ECH	3RD ECH	4TH ECH	5TH FCH	TOOL CODE	REMARKS
AN/ARC-44 (continued)							
ANALYZER, SPECTRUM TS-723/U				+	+	1	
AUDIO OSCILLATOR TS-382			+	+	+	2	
ELECTRONIC MULTIMETER TS-505/U			+	+	+	3	
FREQUENCY METER AN/URM-32			+			4	
FREQUENCY METER AN/URM-79				+	+	5	
FREQUENCY METER AN/URM-80				+	+	6	
GAGE TL-559/G				+	+	7	
GENERATOR, SIGNAL AN/URM-48			+	+	+	8	
MAINTENANCE KIT, ELECTRONIC EQUIPMENT MK-402/ARC			+	+	+	9	
MODULATION METER ME-57/U				+	+	10	
MULTIMETER TS-297/U		+				11	To be used until AN URM-105 becomes available
MULTIMETER TS-352/U			+	+	+	12	To be used until Multimeter AN/URM-105 becomes available
OHMMETER ZM-21/U				+	+	13	
POWER SUPPLY PP-1243/U			+				
SHUNT, INSTRUMENT MULTI-RANGE MX-1471/U			+	+	+	15	
TEST OSCILLATOR SET AN/PPM-10			+	+	+	16	
TEST SET, RADIO AN/ARM-B		+	+	+	+	17	
TEST SET, ELECTRON TUBE TV-2/U					+	18	
TEST SET, ELECTRON TUBE TV-7/U			+	+		19	
TEST SET I-199				+	+	20	
TOOL EQUIPMENT TE-41		+				21	To be used until TK-87/U becomes available
TOOL EQUIPMENT TE-113			+	+	+	22	To be used until TK-88( )/U becomes available
VOLTMETER, METER ME-30/U			+	+	+	23	
WATTMETER AN/URM-43			+	+	+	24	
WATTMETER AN/USM-101		+				25	



**APPENDIX III**  
**BASIC ISSUE ITEMS LIST FOR RADIO SET AN/ARC-44**

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**Section 1. INTRODUCTION**

**1. Scope**

*a.* This appendix lists items supplied for initial operation and for running spares. The list includes tools, accessories, parts, and material issued as part of the major end item. End items of equipment are issued on the basis of allowance prescribed in equipment authorization tables and other documents that are a basis for requisitioning.

*b.* The columns are as follows:

- (1) *Source, maintenance, and recoverability code.* Not used.
- (2) *Federal stock number.* This column lists the n-digit Federal stock number.
- (3) *Designation by model.* Not used.
- (4) *Description.* Nomenclature or the standard item name and brief identifying data for each item are listed in this column. When requisitioning, enter the nomenclature and description on the requisition.

- (5) *Unit of issue.* The unit of issue is the supply term by which the individual item is counted for procurement, storage, requisitioning, allowances, and issue purposes.
- (6) *Expendability.* Expendable items are indicated by the letter X; nonexpendable items are indicated by NX.
- (7) *Quantity authorized.* Under "Items Comprising an Operable Equipment", the column lists the quantity of items supplied for the initial operation of the equipment.
- (8) *Illustrations.* The "Item No." column lists the reference designations that appear on the part in the equipment. These same designations are also used on any illustrations of the equipment.

**2. Stockage**

No parts authorized for stockage at first echelon.

## Section II. FUNCTIONAL PARTS LIST

52

(1)			(2)			(3)			(4)			(5)	(6)	(7)	(8)		(9)	
SOURCE MAINTENANCE AND RECOVERABILITY CODE			FEDERAL STOCK NUMBER			DESIGNATION BY MODEL			DESCRIPTION			UNIT OF ISSUE	EXPENDABILITY	QUANTITY AUTHORIZED	ILLUSTRATIONS		FIGURE NO	ITEM NO
ITEMS COMPRISING AN OPERABLE EQUIPMENT																		
RADIO SET AN/ARC 11																		
			5821	513	0760				RADIO SET AN/ARC 11				ea	XX				
			5821	513	0547				ANTENNA AY 151A/ARC				ea	XX	1			
			5935	201	7935				CONNECTOR, RECEPTACLE, ELECTRICAL: Bendix Hal part dwg No. DC293503 2				ea	X	1			
			5935	612	5387				CONNECTOR, RECEPTACLE, ELECTRICAL: Bendix Hal part dwg No. A287302 1				ea	X	3			
			5935	613	6901				CONNECTOR, RECEPTACLE, ELECTRICAL: Bendix Hal part dwg No. A287301 1				ea	X	1			
			6125	563	5821				DYNAMOTOR DY 107 AR; DY 107A AM				ea	XX	1			
			5965	296	2173				HEADSET MICROPHONE H 101 T				ea	XX	2			
			5821	699	0010				MOUNTING AM 1267A AR				ea	X	1			
			5820	092	1110				MOUNTING AM 1268 AM				ea	XX	1			
			5821	092	1017				PANEL, CONTROL SB 327 ARC 11				ea	XX	1			
			5820	537	1521				PANEL, SIGNAL DISTRIBUTION, RADIO SB 329 AR				ea	XX	1			
			5821	503	1519				RECEIVER TRANSMITTER, RADIO RT 291 ARC 11; RT 291A ARC 11; RT 291B ARC 11				ea	XX	1			
			5930	312	6071				SWITCH ASSEMBLY SA 171 AM				ea	XX	1			
PANEL, CONTROL SB 327/ARC 11																		
			6240	155	7336				LAMP, INCANDESCENT: AVA type AN4110 327				ea	X	3			1201 1202 1203
			6210	295	1973				LENS, INDICATOR LIGHT: Dialight part No. 11 51 2				ea	X	3			
PANEL, SIGNAL DISTRIBUTION, RADIO SB 329 AR																		
			5960	171	1862				ELECTRON TUBE: MIL type JAN 6217				ea	X	1			V301

(1) SOURCE MAINTENANCE AND RECOVERABILITY CODE	(2) FEDERAL STOCK NUMBER	(3) DESIGNATION BY MODEL	(4) DESCRIPTION	(5) UNIT OF ISSUE	(6) ELECTRICITY CONSUMPTION	(7) QUANTITY AS ORDERED	(8) ILLUSTRATIONS	
							FIGURE NO.	ITEM NO.
			AN ARC 11 (continued)					
	5960-220-5793		ELECTRON TUBE: MIL type JAN 577B Item Nos. V302, V303, V304, V305	ea	X	1		See desc column
	5920-220-1312		FUSE, CARTRIDGE: MIL type F02C062A	ea	X	1		F301
	6210-155-7036		LAMP, INCANDESCENT: ANA type No. AN3110-327	ea	X	2		I301 I302
	6210-295-1973		LENS, INDICATOR LIGHT: Dialco part No. TL 51-2	ea	X	2		
	5960-537-1657		RETAINER, ELECTRON TUBE: Bendix Radio part dwg No. C202250-1	ea	X	2		
			RECEIVER TRANSMITTER, RADIO RT 291 ARC 11; RT 291A, B ARC 11					
	5955-577-7791		CRYSTAL UNIT, Q'ARTZ: MIL type CR-51-T at 31,119,150 mc	ea	XX	1		Y801
	5955-667-1615		CRYSTAL UNIT, Q'ARTZ: MIL type CR-51-T at 32,119,150 mc	ea	XX	1		Y802
	5955-570-5191		CRYSTAL UNIT, Q'ARTZ: MIL type CR-51-T at 33,119,150 mc	ea	XX	1		Y803
	5955-577-7789		CRYSTAL UNIT, Q'ARTZ: MIL type CR-51-T at 34,119,100 mc	ea	XX	1		Y804
	5955-570-5192		CRYSTAL UNIT, Q'ARTZ: MIL type CR-51-T at 35,119,100 mc	ea	XX	1		Y805
	5955-577-7735		CRYSTAL UNIT, Q'ARTZ: MIL type CR-51-T at 36,119,100 mc	ea	XX	1		Y806
	5955-577-7781		CRYSTAL UNIT, Q'ARTZ: MIL type CR-51-T at 37,119,350 mc	ea	XX	1		Y807
	5955-577-7733		CRYSTAL UNIT, Q'ARTZ: MIL type CR-51-T at 38,119,350 mc	ea	XX	1		Y808
	5955-577-7789		CRYSTAL UNIT, Q'ARTZ: MIL type CR-51-T at 39,119,350 mc	ea	XX	1		Y809
	5955-577-7791		CRYSTAL UNIT, Q'ARTZ: MIL type CR-51-T at 40,119,300 mc	ea	XX	1		Y810
	5955-667-1620		CRYSTAL UNIT, Q'ARTZ: MIL type CR-51-T at 41,119,300 mc	ea	XX	1		Y811
	5955-570-5193		CRYSTAL UNIT, Q'ARTZ: MIL type CR-51-T at 42,119,300 mc	ea	XX	1		Y812
	5955-577-7781		CRYSTAL UNIT, Q'ARTZ: MIL type CR-51-T at 43,119,250 mc	ea	XX	1		Y813
	5955-570-5191		CRYSTAL UNIT, Q'ARTZ: MIL type CR-51-T at 44,119,250 mc	ea	XX	1		Y814
	5955-295-7132		CRYSTAL UNIT, Q'ARTZ: MIL type CR-18-T at 9,637.5 mc	ea	XX	1		Y1001
	5955-667-2502		CRYSTAL UNIT, Q'ARTZ: MIL type CR-18-T at 9,637.5 mc	ea	XX	1		Y1002
	5955-667-3261		CRYSTAL UNIT, Q'ARTZ: MIL type CR-18-T at 9,737.5 mc	ea	XX	1		Y1003
	5955-667-3257		CRYSTAL UNIT, Q'ARTZ: MIL type CR-18-T at 9,837.5 mc	ea	XX	1		Y1004
	5955-667-3250		CRYSTAL UNIT, Q'ARTZ: MIL type CR-18-T at 9,937.5 mc	ea	XX	1		Y1005
	5955-667-2704		CRYSTAL UNIT, Q'ARTZ: MIL type CR-18-T at 10,037.5 mc	ea	XX	1		Y1006
	5955-667-3256		CRYSTAL UNIT, Q'ARTZ: MIL type CR-18-T at 10,137.5 mc	ea	XX	1		Y1007
	5955-667-3262		CRYSTAL UNIT, Q'ARTZ: MIL type CR-18-T at 10,237.5 mc	ea	XX	1		Y1008

(1) SOURCE MAINTENANCE AND RECOVERABILITY CODE	(2) FEDERAL STOCK NUMBER	(3) DESIGNATION BY MODEL	(4) DESCRIPTION	(5) UNIT OF ISSUE	(6) EXFENCIBILITY	(7) QUANTITY AUTHORIZED	(8) ILLUSTRATIONS	
							FIGURE NO	ITEM NO
			AN ARC 11 (continued)					
	5955-667-2703		CRYSTAL UNIT, QUARTZ: MIL type CR 1811 at 10,000 kc	ea	XX	1		Y1009
	5955-667-3263		CRYSTAL UNIT, QUARTZ: MIL type CR 1811 at 10,137.5 kc	ea	XX	1		Y1010
	5960-230-5226		ELECTRON TUBE: MIL type JAN 5636	ea	X	1		
	5960-230-5231		ELECTRON TUBE: MIL type JAN 5617	ea	X	1		
	5960-223-3793		ELECTRON TUBE: MIL type JAN 5718	ea	X	1		
	5960-188-3915		ELECTRON TUBE: MIL type JAN 5763	ea	X	1		
	5960-272-8516		ELECTRON TUBE: MIL type JAN 5929WA	ea	X	1		
	5960-230-5211		ELECTRON TUBE: MIL type JAN 5810	ea	X	1		
	5960-218-3090		ELECTRON TUBE: MIL type JAN 5922	ea	X	1		
	5960-262-1831		ELECTRON TUBE: MIL type JAN 6017B	ea	X	1		
	5960-280-5585		ELECTRON TUBE: MIL type JAN 6112	ea	X	1		
	5960-501-1756		SHIELD, ELECTRON TUBE: Bendix Radio part Des No. C655293-1	ea	X	1		
	5960-296-4118		SHIELD, ELECTRON TUBE: Bendix Radio part Des No. 282553-1	ea	X	1		
			SWITCH ASSEMBLY SA 171 AR					
	6210-155-7836		LAMP, INCANDESCENT: AVA type AV3110-327	ea	X	12		
	6210-295-1973		LENS, INDICATOR LIGHT: Dialco part No. TT 51-2	ea	X	12		
			RUNNING SPARES AND ACCESSORY ITEMS					
			RADIO SET AN ARC 11					
			PANEL, CONTROL SB 327 ARC 11 PANEL, SIGNAL DISTRIBUTION, RADIO SB-329 AR RECEIVER TRANSMITTER, RADIO RT 291/ARC 11; RT 291A, B ARC-11 SWITCH ASSEMBLY SA-471 AR					
			NO PARTS AUTHORIZED FOR STOCKAGE AT FIRST ECHELON.					

**APPENDIX IV**  
**BASIC ISSUE ITEMS LIST FOR ANTENNA AT-454/ARC**

---

**Section 1. INTRODUCTION**

**1. Scope**

*a.* This appendix lists items supplied for initial operation and for running spares. The list includes tools, accessories, parts, and material issued as part of the major end item. End items of equipment are issued on the basis of allowances prescribed in equipment authorization tables and other documents that are a basis for requisiting.

*b.* The columns are as follows:

- (1) *Source, maintenance, and recoverability code.* Not used.
- (2) *Federal stock number.* This column lists the 11-digit Federal stock number.
- (3) *Designation by model.* Not used.
- (4) *Designation.* Nomenclature or the standard item name and brief identifying data for each item are listed in this column. When requisitioning, enter the nomenclature and description on the requisition.
- (5) *Unit of issue.* The unit of issue is the supply term by which the individual

item is counted for procurement, storage, requisitioning, allowances, and issue purposes,

- (6) *Expendability.* Expandable items are indicated by the letter X; nonexpandable items are indicated by NX.
- (7) *Quantity authorized.* Under "Items (comprising an Operable Equipment)", the column lists the quantity of items supplied for the initial operation of the equipment. Under "Running Spares and Accessory Items." the quantities listed are those issued initially with the equipment as spare parts. No parts are authorized to be kept on hand by the operator for maintenance of the equipment.
- (8) *Illustrations.* Not used.

**2. Critical Items**

A zero slash (Ø) in the "Description" column indicates items that are expected to fail during the first year, or items that will make the equipment inoperative if they fail.

## Section II. FUNCTIONAL PARTS LIST

56

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
SOURCE MAINTENANCE AND RECOVERABILITY CODE	FEDERAL STOCK NUMBER	DESIGNATION BY MODEL	DESCRIPTION	UNIT OF ISSUE	EXPENDIBILITY	QUANTITY AUTHORIZED	ILLUSTRATIONS	
							FIGURE NO	ITEM NO
			ITEMS COMPRISING AN OPERABLE EQUIPMENT					
			ANTENNA AT-151A/ARC					
	5821-543-0547		ANTENNA AT 151A/ARC	ea	XX			
	5821-552-0199		0 ANTENNA ELEMENT AT 155A/ARC	ea	X	1		
	5821-295-7061		0 BASE, ANTENNA AB 310A/ARC	ea	XX	1		
	5821-752-0019		COUPLER, ANTENNA CI 361D/ARC	ea	XX	1		
	5821-543-0577		COUPLER, ANTENNA CI 361A/ARC; CI 361B/ARC; CI 361C/ARC	ea	XX	1		
			RUNNING SPARES AND ACCESSORY ITEMS					
			ANTENNA AT 151A/ARC					
			NO PARTS AUTHORIZED FOR STOCKAGE FOR FIRST ECHELON.					

## APPENDIX V

### MAINTENANCE ALLOCATION CHART FOR ANTENNA AT-454/ARC

---

#### 1. General

a. This appendix assigns maintenance functions and repair operations to be performed by the lowest appropriate maintenance echelon.

b. Columns in the maintenance allocation chart are as follows:

- (1) *Part or component.* This column shows only the nomenclature or standard item name. Additional descriptive data are included only where clarification is necessary to identify the part. Components and parts comprising a major end item are listed alphabetically.
- (2) *Maintenance function.* This column indicates the various maintenance functions allocated to the echelon capable of performing the operation.
  - (a) *Service.* To clean, to preserve, and to replenish fuel and lubricants.
  - (b) *Inspect.* To verify serviceability and to detect incipient electrical or mechanical failure by scrutiny.
  - (c) *Test.* To verify serviceability and to detect incipient electrical or mechanical failure by use of special equipment such as gages, meters, etc.
  - (d) *Replace.* To substitute serviceable assemblies, subassemblies, and parts for unserviceable components.
  - (e) *Repair.* To restore an item to a serviceable condition through correction of a specific failure or unserviceable condition. This function includes but is not limited to inspecting, preserving, adjusting, replacing, welding, grinding, riveting, and straightening.
  - (f) *Rebuild.* To restore to a condition comparable to new by disassembling the item to determine the condition of its component parts and

reassembling it using serviceable, rebuilt, or new assemblies, subassemblies, and parts.

- (3) *1st, 2d, 3d, 4th, 5th echelon.* The symbol X indicates the echelon responsible for performing that particular maintenance operation, but does not necessarily indicate that repair parts will be stocked at that level. Echelons higher than the echelon marked by X are authorized to perform the indicated operation.
- (4) *Tools required.* This column indicates codes assigned each individual tool equipment, test equipment, and maintenance equipment referenced. The grouping of codes in this column of the chart indicate the tool, test, and maintenance equipment required to perform the maintenance function.
- (5) *Remarks.* Entries in this column will be utilized when necessary to clarify any of the data cited in the preceding columns.

c. Columns in the section allocation of tools for maintenance function are as follows:

- (1) *Tools required for maintenance functions.* This column lists tools, test, and maintenance equipment required to perform the maintenance functions.
- (2) *1st, 2d, 3d, 4th, 5th echelon.* A dagger (†) indicates the echelons allocated the facility.
- (3) *Tool code.* This column lists the tool code assigned.
- (4) *Remarks.* Entries in this column are used to clarify data in the other columns.

#### 2. Maintenance by Using Organizations

When this equipment is used by signal service organizations organic to theater headquar-

ters or communication zones to provide theater communications, those maintenance functions allocated up to and including fourth echelon are authorized to the organization operating this equipment.

### **3. Mounting Hardware**

The basic entries of the maintenance allocation chart do not include mounting hardware such as screws, nuts, bolts, washers, brackets, and clamps.



## MAINTENANCE ALLOCATION CHART FOR ANTENNA AT-454/ARC

(1) PART OR COMPONENT	(2) MAINTENANCE FUNCTION	(3) 1ST ECH	(4) 2ND ECH	(5) 3RD ECH	(6) 4TH ECH	(7) 5TH ECH	(8) TOOLS REQUIRED	(9) REMARKS
ANTENNA AT 151A/ARC	service inspect test  replace repair rebuild		X X X  X		X		3, 7 1, 4, 5, 6, 8 2, 4, 6 7 8 8	Plus Machine Shop Support
ANTENNA ELEMENT AT 155A/ARC	service inspect replace		X X X				7	
BASE, ANTENNA AB-310A/ARC	service inspect replace repair rebuild		X X X			X X	7 8 8	
BASE ANTENNA	replace repair			X	X			Fabricate at 5th echelon
CONNECTOR	replace			X				
GASKET	replace			X				
INSULATOR, BUSHING	replace			X				
PACKING, PREFORMED	replace			X				
PIN, TAPERED, PLAIN	replace			X				Fabricate at 5th echelon
PLATE, INSULATING	replace			X				Fabricate at 5th echelon
SCREW	replace			X				
SUPPORT, ANTENNA	replace repair			X		X		Fabricate at 5th echelon
TERMINAL, LUG	replace			X				
WASHER, LOCK	replace			X				

59

(1) PART OR COMPONENT	(2) MAINTENANCE FUNCTION	(3) 1ST ECH	(4) 2ND ECH	(5) 3RD ECH	(6) 4TH ECH	(7) 5TH ECH	(8) TOOLS REQUIRED	(9) REMARKS
AT-454A/ARC (continued)								
COUPLER, ANTENNA CU-361A/ARC; CU-361B/ARC; CU-361C/ARC; CU-361D/ARC	service		X					
	inspect		X					
	test			X			1, 1, 5, 6 2, 1, 6	
	replace		X				1	
	repair				X		8	
rebuild						X	8	
BRACKET	replace			X				Fabricate at 5th echelon
	repair				X			
CABLE ASSEMBLY, RF	replace			X				
CABLE, RF	replace			X				
CLAMP	replace			X				
CONNECTOR	replace			X				
CAPACITOR	replace			X				
CASE ASSEMBLY	replace			X				Fabricate at 5th echelon
	repair				X			
CLAMP	replace			X				Fabricate at 5th echelon
COIL, RADIO FREQUENCY	replace			X				
CONNECTOR	replace			X				
COVER ASSEMBLY	replace			X				Fabricate at 5th echelon
	repair				X			

## ALLOCATION OF TOOLS FOR MAINTENANCE FUNCTIONS

(1) TOOLS REQUIRED FOR MAINTENANCE FUNCTIONS	(2)	(3)	(4)	(5)	(6)	(7)	(8) REMARKS
	1ST ECH	2ND ECH	3RD ECH	4TH ECH	5TH ECH	TOOL CODE	
AT-451A/ARC (continued)							
FREQUENCY METER AN/URM 32			+			1	
FREQUENCY METER AN/URM 80				+	+	2	
MULTIMETER TS 297 U		+				3	To be used until Multimeter AN/URM 105 becomes available
MULTIMETER TS 352/U			+	+	+	1	To be used until Multimeter AN/URM 105 becomes available
POWER SUPPLY PP 1213 U			+			5	
TEST OSCILLATOR SET AN/PRM 10			+	+	+	6	
TOOL EQUIPMENT TE 11			+			7	To be used until TK B7 U becomes available
TOOL EQUIPMENT TE 113			+	+	+	8	To be used until TK BR ( ) U becomes available

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NC: State AG (3) Units same as Active Army except allowance is one copy to each unit.

USAR: None.

For explanation of abbreviations used, see AR 320-50.

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