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DEPARTMENT OF THE ARMY TECHNICAL MANUAL

OPERATOR AND ORGANIZATIONAL MAINTENANCE MANUAL RADIO SET AN/ARC-102

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GOVERNMENT DOCUMENTS

Headquarters, Department of the Army, Washington 25, D.C.
27 November 1963

WARNING

Be careful when working on the power connections. Serious injury or death may result from contact with these terminals.

DON'T TAKE CHANCES!
EXTREMELY DANGEROUS VOLTAGES EXIST IN THE FOLLOWING COMPONENT OF RADIO SET AN/ARC-102:

RECEIVER-TRANSMITTER, RADIO RT-698/ARC-102 1,500 volts

DANGEROUS VOLTAGES EXIST AT THE ANTENNA TERMINALS

Be careful when working around the antenna or the antenna terminals. Radiofrequency high voltages exist at these points.

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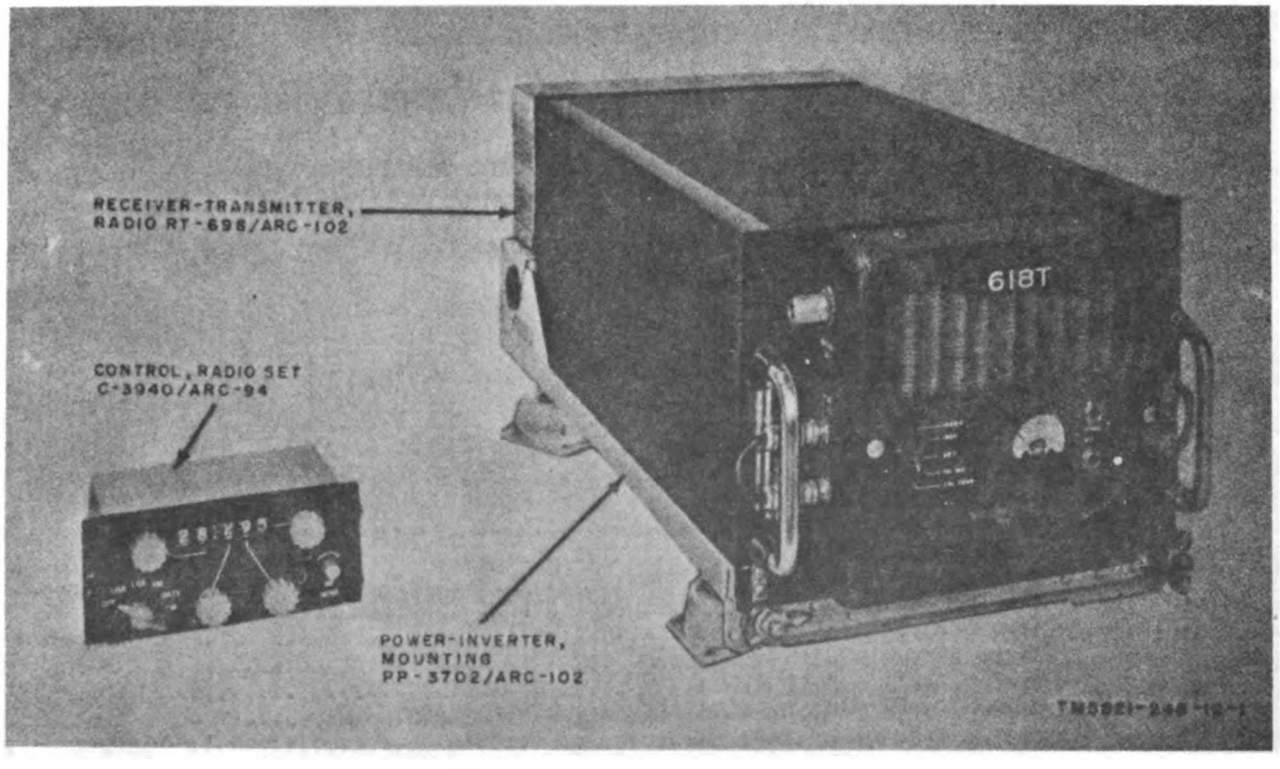


Figure 1. Radio Set AN/ARC-102.

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CHAPTER 1
INTRODUCTION

Section I. GENERAL

1. Scope

This manual describes Radio Set AN/ARC-102 (fig. 1) and covers its operation and second echelon maintenance. It includes operation, cleaning and inspection of the equipment, and replacement of parts available to second echelon maintenance.

2. 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 the equipment. Department of the Army Pamphlet No. 310-4 is an index of current technical manuals, technical bulletins, supply manuals, supply bulletins, lubrication orders, and modification work orders which are available through publications supply channels. The index lists the individual parts (-10, -20, -35P, etc) and the latest changes to and revisions of each equipment publication.

3. 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 No. 378 (Navy), and AFR 71-4 (Air Force).

c. Reporting of Equipment Manual Improvements. The direct reporting, by the individual user, of errors, omissions, and recommendations for improving this equipment manual is authorized and encouraged. DA Form 2028 will be used for reporting these improvement recommendations. This form may be completed by the use of pencil, pen, or typewriter. DA Form 2028 will be completed in triplicate and forwarded by the individual using the manual. The original and one copy will be forwarded direct to: Commanding Officer, U. S. Army Electronics Materiel Support Agency, ATTN: SELMS-MP, Fort Monmouth, New Jersey 07703. One information copy will be furnished to the individual's immediate supervisor (officer, noncommissioned officer, supervisor, etc).

Section II. DESCRIPTION AND DATA

4. Purpose and Use (fig. 1)

a. Purpose. Radio Set AN/ARC-102 is a lightweight airborne radio set. It provides transmission and reception of amplitude-modulated (am.), single-sideband (ssb), and continuous-wave (cw) signals within the high frequency (hf) range of 2.000 to 29.999 megacycles (mc) on any of its 28,000 channels.

b. Use. Radio Set AN/ARC-102 is used in aircraft for air-to-air and air-to-ground two-way communications. The operating range of Radio Set AN/ARC-102 varies according to the terrain, atmospheric conditions, and the altitude of the aircraft.

5. Technical Characteristics

a. General.

Frequency range	2.000 to 29.000 mc.
Frequency channels	28,000 at 1-kilocycle intervals

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Time required to change channels	8 seconds maximum (excluding time required for external antenna coupling unit).
Types of transmission	Voice and cw.
Range	Line-of-sight.
Surrounding Temperature	-40° to +55° C (30-minute operation at +70° C).
Surrounding humidity range	Up to 95-percent relative humidity at 50° C for 48 hours.
Power requirement	27.5 volts direct current, at 950 watts.

b. Receiver-Transmitter, Radio RT-689/ARC-102.

(1) *Transmitter characteristics.*

Radiofrequency power output	Ssb: 400 watts peak-envelope-power (PEP); Am.: 100 watts average; Cw.: 100 watts average.
Radiofrequency output impedance	52 ohms.
Audio input Impedance:	
Balanced	600 ohms.
Unbalanced	100 ohms.
Audiofrequency response	5 decibels peak to valley from 300 to 3,000 cycles per second.
Distortion	Ssb: Third order distortion products down at least 30 decibels. Am.: Less than 15 percent at 80-percent modulation.

(2) *Receiver characteristics.*

Sensitivity	Ssb: 1 microvolt for 10-decibel signal-plus-noise to noise ratio. Am.: 3 microvolts modulated 30 percent, with 1,000 cycles per second, for 6-decibel signal-plus-noise to noise ratio.
Selectivity	Ssb: 2.85 kilocycles at 6 decibels down; 6.0 kilocycles at 60 decibels down. Am.: 5.5 kilocycles at 6 decibels down; 14.0 kilocycles at 60 decibels down.
Automatic gain control characteristics	Maximum variation of audio output is 6 decibels for input signals from 10 to 100,000 microvolts. No overload below 1-volt signal input.
Intermediate frequency and image rejection	80 decibels minimum.
Audio output power	100 milliwatts into 300-ohm load.
Audio distortion	Less than 10 percent.
Audio response	5-decibel peak-to-valley ratio from 300 to 3,000 cycles per second.

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c. Power-Inverter, Mounting PP-3702/ARC-102.

Input voltage . . . . . 27.5 volts dc.
Output voltage . . . . . 115 volts alternating current, single phase.
Volt-ampere rating . . . 250 volt-amperes.
Output waveform . . . . Sine wave.
Harmonic distortion . . 10 percent.

d. Control, Radio Set C-3940/ARC-94.

Input voltage . . . . . 27.5 volts dc.

6. Components of Radio Set AN/ARC-102 (fig. 1)

Note: This listing is based on the original shipment by the contractor on Order No. 20875-PP-63. For the current official listing of components, see the basic issue items list, appendix III.

Quantity	Item	Height (in.)	Depth (in.)	Width (in.)	Unit weight (lb)
1	Receiver-Transmitter, Radio RT-698/ARC-102	7-5/8	22-3/16	10-1/8	50
1	Control, Radio Set C-3940/ARC-94	2-5/8	4-7/8	5-3/4	2
1	Power-Inverter, Mounting PP-3702/ARC-102	8-5/8	23-1/2	11	13.5

7. Common Names

A list of the nomenclature assignments for Radio Set AN/ARC-102 and its components is given below. A common name is indicated after each item.

Nomenclature	Common name
Radio Set AN/ARC-102	Radio set.
Receiver-Transmitter, Radio RT-698/ARC-102.	Receiver-transmitter.
Control, Radio Set C-3940/ARC-94.	Control unit.
Power-Inverter, Mounting PP-3702/ARC-102.	Mounting.

8. Description of Radio Set

a. The radio set (fig. 1) consists of a receiver-transmitter, a control unit, and a mounting. The interconnecting cables to which the components are connected are supplied as part of the aircraft in which the equipment is installed.

b. The components of the radio set are secured to mounting surfaces within the aircraft. From the mounting and panel connectors, connections are made to the aircraft power source and the components of the radio set. The coaxial cable connection to the antenna is made either direct from the front panel of the receiver-transmitter (fig. 2) or through an antenna coupling unit (not part of the radio set; paragraph 12*f*). The control unit is normally located in the radio control panel of the aircraft, within easy reach of the pilot and copilot. For the location of the other components, refer to the aircraft technical manual in which the radio set is installed.

9. Description of Receiver-Transmitter (fig. 2)

The receiver-transmitter is a separately housed unit containing the receiver and transmitter circuits of the radio set. Two carrying handles are mounted on the front panel. A front panel dust cover covers the blower fan and air filter which are mounted on the front panel. Two hold-down studs are provided on the lower corners of the front panel to secure the receiver-transmitter to the mounting when it is installed. Electrical connections are made through the 60-pin connector on the rear panel. A grounding jack is also mounted on the rear panel to guide and provide a ground for the receiver-transmitter when it is mounted on the mounting (para 10). An AUX RCVR ANT. connector is mounted on the right for the front panel to connect the auxiliary data equipment to the receiver-transmitter. An ANT. connector mounted on the left side of the front panel connects the receiver-transmitter to the antenna coupling unit. A PHONE jack and a MIC jack are mounted on the front panel so that a microphone and a headset may be connected direct to the

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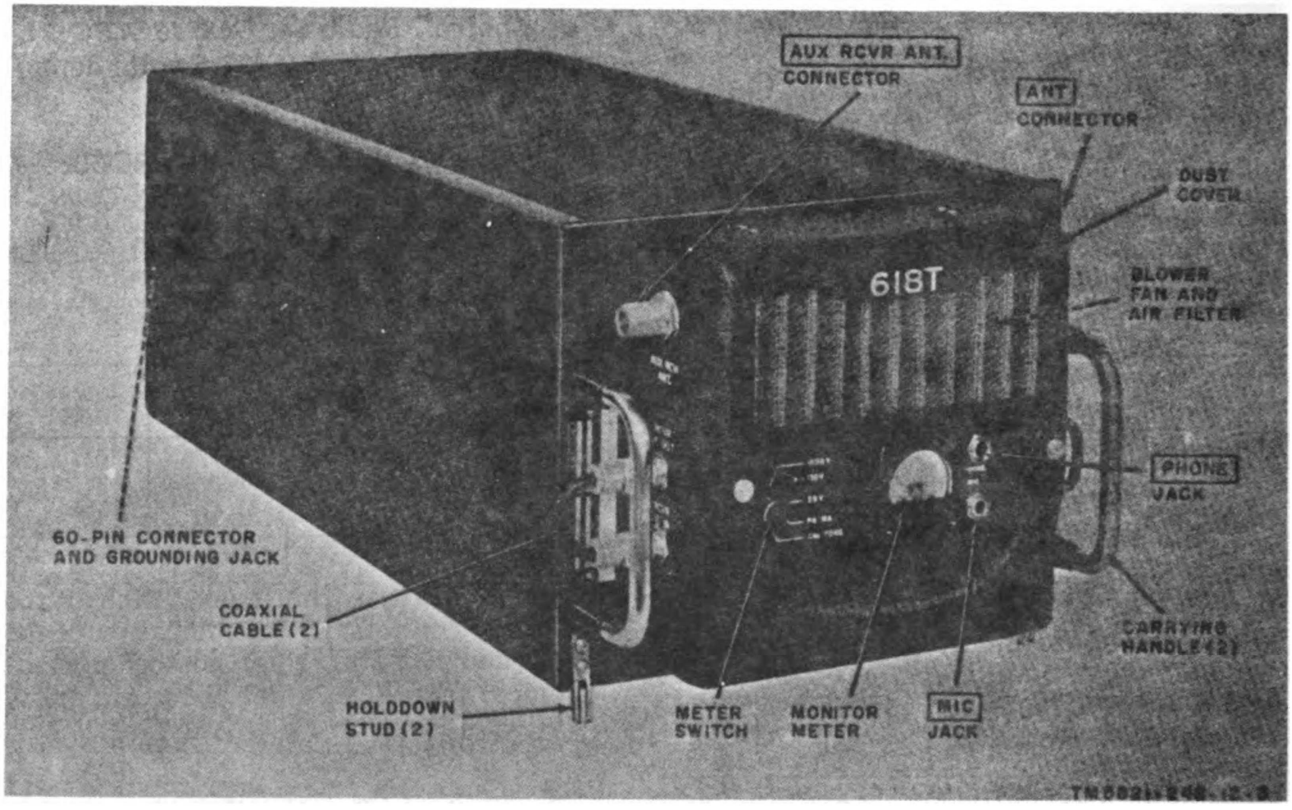


Figure 2. Receiver-transmitter.

receiver-transmitter. A monitor meter and a meter switch are located on the front panel for checking the receiver-transmitter. A coaxial cable connects the REC. IF OUT connector to the REC. IF IN connector on the right side of the front panel. A coaxial cable connects the 500 KC STD. connector to the 500 KC REF connector on the left side of the front panel. These coaxial cables and connectors enable the receiver-transmitter circuits to be checked when the receiver-transmitter is installed in the aircraft.

10. Description of Control Unit (fig. 3)

The control unit is an edge-lighted, console-type unit. The front panel of the control unit contains all the controls necessary for operation of the radio set. The control unit is held in place by four quick-disconnect fasteners on the corners of the front panel. The electrical connector is mounted on the rear panel.

11. Description of Power-Inverter, Mounting PP-3702/ARC-102 (fig. 4)

The mounting is installed on a flat surface within the aircraft. The mounting consists of four resilient mountings with grounding straps, a flanged bed, an inverter, and two holddown clamps. The wingnuts on the holddown clamps have holes which are used to safety-wire the clamps when the receiver-transmitter is installed. The inverter, which supplies the 115 volts alternating current (ac) 400 cycles per second (cps) to the receiver-transmitter, is attached to the rear of the mounting. The rear of the mounting also contains the 60-pin jack, the guide pin, the holddown pin, and the grounding pin. The aircraft electrical wiring is connected to the mounting through a wiring access hole in the rear of the mounting.

12. Additional Equipment Required

The following equipment is not supplied

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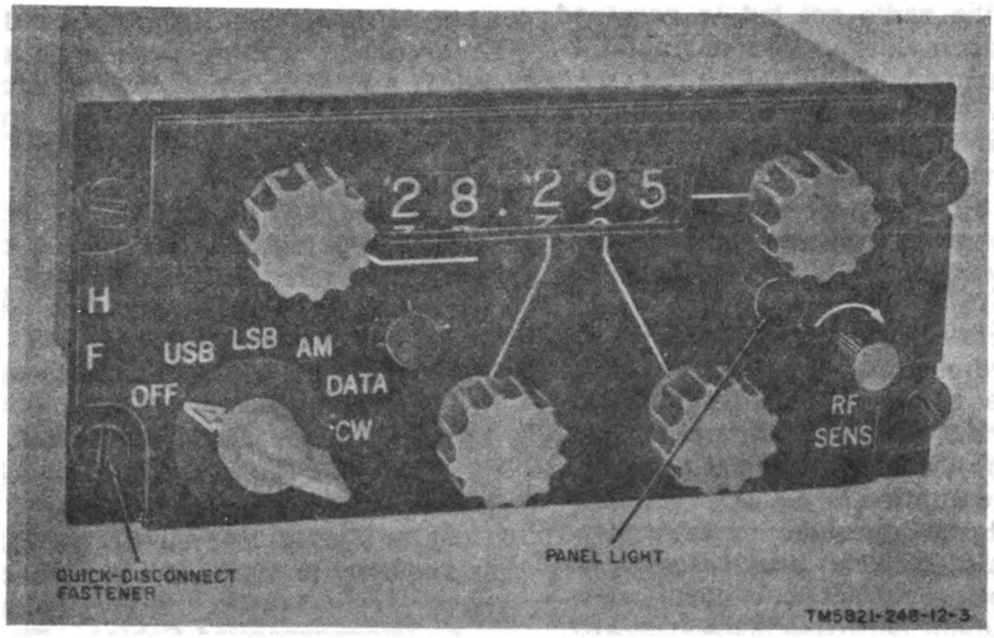


Figure 3. Control unit.

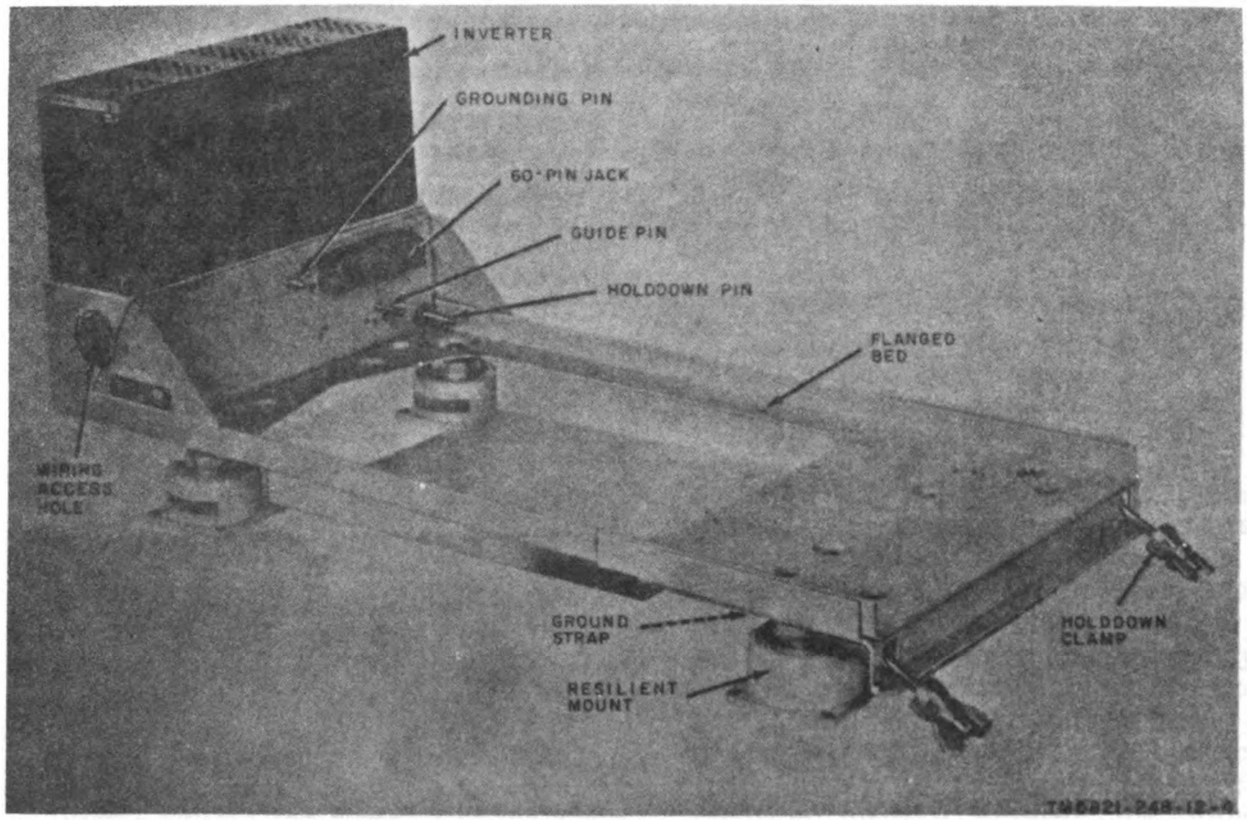


Figure 4. Power-Inverter, Mounting PP-3702/ARC-108.

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as part of the radio set but is required to provide a complete operational installation in an aircraft:

a. Primary Power. A source of 28 volts direct current (dc) at 34 amperes is required as primary power for operation of circuits within the radio set components. Primary power is obtained from the 28-volt dc power of the aircraft electrical system.

b. Headsets or Speakers. Headsets or speakers are required for the operator to monitor the received audio signals obtained from the radio set. In most aircraft installations, the audio signals from the radio set are applied to the aircraft electronic configuration audio or interphone facility. This facility usually provides audio selection (between various electronic equipment facilities in the aircraft), amplifiers, and headsets or speakers.

Note: For test purposes, the headset and microphone may be plugged direct into the jacks on the front of the receiver-transmitter.

c. Microphones. A hand-held carbon microphone with a push-to-talk switch, cord, and plug, or a carbon microphone with a separate push-to-talk switch is required for radiotelephone transmission.

d. Telegraph Key. For cw transmissions, a telegraph key with a cord and plug is required. The length of the cord will depend on the aircraft in which the radio set is installed.

e. Antenna. A long wire antenna, the minimum length of which is 45 feet, is required to operate the radio set.

f. Antenna Coupling Unit. Network, Impedance Matching CU-991/AR, Antenna Coupler Group AN/AR-41, or equivalent, is required to match the impedance of the receiver-transmitter to the antenna.

g. Interconnecting Cables. The interconnecting cables are required and are supplied as part of the aircraft configuration.

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CHAPTER 2

OPERATING INSTRUCTIONS

Section I. OPERATION

13. General

Radio Set AN/ARC-102 is controlled from a position convenient to both the pilot and copilot of the aircraft. With the exception of certain controls unique to the aircraft for controlling the microphone and headset control circuits, all operating controls are located on the front panel of the control unit.

14. Controls (fig. 5)

The operating controls and their functions are described in the following chart:

Control	Function
Mode selector switch-----	Turns the radio set on or off and selects the mode of operation. *Position* — *Action* OFF------- Turns the radio set off. USB-------- Selects the upper-sideband mode of operation. LSB-------- Selects the lower-sideband mode of operation. AM--------- Selects the amplitude-modulated mode of operation. DATA ------ Permits use of auxiliary data equipment. CW--------- Selects (cw) mode of operation.
Frequency select knobs (4)	Select the frequency to which the radio set is to be tuned. *Knob* — *Action* Megacycle select knob--- Selects a megacycle point from 2 to 29 mc, in 1-mc steps. One hundred kilocycle select knob ---------- Selects a hundred kilocycle point from 0-9, in 0.1-mc steps. Ten kilocycle select knob ---------- Selects a ten kilocycle point from 0-9, in 0.01-mc steps. One kilocycle select knob ---------- Selects a one kilocycle point from 0-9, in 0.001-mc steps.
RF SENS knob ----------	Adjusts the volume in the headsets or speakers.
Frequency indicator------	Indicates the frequency to which the radio set is tuned.

15. Modes of Operation

The radio set may be operated as a receiver and transmitter in the following modes:

a. Voice communication (para 17*a*).

b. Cw communication (para 17*b*).

c. Data information communication (para 17*c*).

16. Starting Procedures

Before setting the controls of the radio set, check the settings of the controls that pertain to communication equipment in the aircraft in which the equipment is installed. For applications of primary power, these controls may include a radio or communication master power switch, a push-to-reset circuit breaker, and an intercommunication switch. Controls necessary to operate the microphone may be located on the control column, the floorboard, handwheel, or microphone. For proper operation and settings of these controls, refer to the applicable aircraft technical manual; however, the following procedures are standard in most aircraft.

a. Place the aircraft master power switch on.

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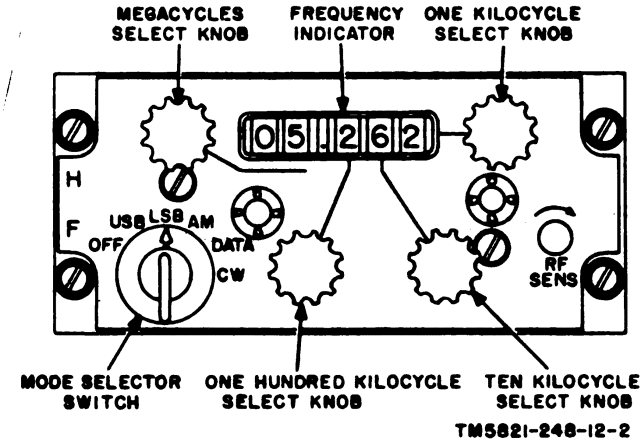


Figure 5. Operating controls.

b. Place the aircraft interphone power *on.*

c. Place the applicable aircraft receiver switch *on.*

d. See that the push-to-reset circuit breaker which applies power to the equipment is depressed.

17. Operating Procedures (fig. 5)

Note: In the procedures listed below, it is assumed that the microphone, telegraph key, and headset are plugged into the proper receptacles installed in the aircraft.

a. Voice Transmission and Reception.

(1) Perform the starting procedures (para 16).

(2) Depending on the mode of transmission desired, set the mode selector to USB, LSB, or AM.

(3) Refer to the voice communication frequency chart (usually located adjacent to the control panel) and set the proper frequency with the frequency select knobs.

Note: When the control unit is already set to the frequency to which the radio set is to be set prior to setting the mode selector switch from off, turn the ten kilocycle select knob one digit above or below the desired frequency setting and, after approximately 8 seconds, back to the original frequency. This action will retune the receiver-transmitter.

(4) When background noise is heard in the headset (receiver-transmitter is no longer tuning), depress the microphone control until a 1,000-cps tone is heard in the headset. This indicates that the receiver-transmitter is tuned to the frequency selected by the control unit and the set is ready to receive and transmit on that frequency.

(5) Adjust the RF SENS knob until the background noise in the headset is barely audible.

(6) To transmit, press the microphone control or switch and speak into the microphone. Sidetone will be heard in the headset.

(7) To receive, release the microphone control or switch, and adjust the RF SENS knob to a suitable audio level in the headset.

(8) To turn the equipment off, set the mode selector switch to OFF. Place the pertinent aircraft switches *off.*

b. Cw Transmission and Reception.

(1) Perform the starting procedures (para 16).

(2) Set the mode selector switch to CW.

(3) Using the frequency select knobs, set the frequency 1 kilocycle below the frequency to which the radio set is to be tuned.

Note: The receiver-transmitter is tuned 1 kilocycle above the frequency selected by the control unit. Also refer to the note in *a*(3) above.

(4) When background noise is heard in in the headset (receiver-transmitter is no longer tuning), depress the telegraph key momentarily until a 1,000-cps tone is heard in the headset. This indicates that the receiver-transmitter is tuned to the desired frequency, and that the set is ready to receive and transmit.

(5) Adjust the RF SENS knob until the background noise in the headset is barely audible.

(6) To transmit, operate the telegraph key. Sidetone will be heard in the headset.

(7) For cw reception, release the key and adjust the RF SENS knob for a suitable level of audio in the headset.

(8) To turn the equipment off, set the

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mode selector switch to OFF and place the pertinent aircraft power switches *off*.

c. Data Information Reception and Transmission.

(1) Perform the starting procedures (para 16).
(2) Set the mode selector switch to DATA.
(3) Using the frequency select knobs, set the radio set to the proper frequency.
(4) Operate the auxiliary data equipment in accordance with the instructions in the auxiliary equipment technical manuals.
(5) To turn the equipment off, set the mode selector switch to OFF. Place the pertinent aircraft switches *off*.

Section II. PREFLIGHT (DAILY) INSPECTION

18. General

a. The operator's inspections listed in paragraph 19 supplement the inspection procedures in the aircraft operator's condensed checklist. The operator's inspections consist of checking the radio set for serviceability by performing an operational check. The inspection listed should be accomplished prior to flight.

b. The pilot or copilot should report any malfunction or failure noted in flight, or any discrepancy noted in preflight inspection. Refer to TM 38-750 for reporting deficiencies or malfunction.

19. 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 aircraft operator's condensed checklist. The pilot or copilot should perform the test (*b* and *c* below) in the order given. While performing these tests, check for the following:

(1) Loose or binding knobs on control panel.
(2) Clarity of sidetone (*c*(4) below).
(3) Clarity of received signal (*c*(4) below).
(4) Ease of tuning.
(5) Accuracy of tuning.
(6) Smooth operation of controls with no erratic indication of binding.
(7) Clarity of transmission.

b. Preliminary.

(1) Place the aircraft master power switch *on*.
(2) Place the aircraft interphone power *on*.
(3) Place the applicable aircraft receiver swith *on*.
(4) Check to see that the push-to-reset circuit breaker which applies power to the radio set is pushed in.

c. Radio Set Operation.

(1) Set the mode selector switch to LSB, USB, or AM.
(2) Set the frequency select knobs to a local control tower frequency.
(3) Depress the microphone control until a 1,000-cps tone is heard in the headset.
(4) Adjust the RF SENS knob so that the background noise in the headset is barely audible.
(5) Establish two-way communication with the local control tower.
(6) If cw is to be used, follow the procedures given in (2) through (5) above, placing the mode selector switch at CW, substituting the telegraph key for the microphone, and tuning the radio set to the frequency of a local cw communication station.

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CHAPTER 3

ORGANIZATIONAL MAINTENANCE

Section I. GENERAL

20. Scope of Maintenance

The maintenance duties assigned to the organizational electronic equipment repairman or the crew chief are listed below together with a reference to the paragraphs covering the specific maintenance functions. The duties include instructions for performing preventive and corrective maintenance and do not require tools or test equipment other than those allocated (para 21).

Note: The pilot will not perform preventive or corrective maintenance.

a. Intermediate preventive maintenance checks and services (para 23 and 24).

b. Cleaning (para 25).

c. Periodic preventive maintenance checks and services (para 26 and 27).

d. Troubleshooting (para 28 and 29).

e. Removal and replacement of control unit panel lamps (para 30).

f. Removal and replacement of control unit (para 31).

g. Removal and replacement of receiver-transmitter (para 32).

21. Tools, Test Equipment, and Materials

The tools, test equipment, and materials required are listed below:

a. Tool Kit, Radio Repair TK-115/G.

b. Multimeter AN/URM-105.

c. Fine sandpaper, No. 0000.

d. A soft-bristle brush.

e. A clean lint-free cloth.

f. Cleaning compound, Federal stock No. 7930-395-9542.

g. Safety wire, annealed corrosion-resistant, steel, spool; 0.032 in., Federal stock No. 9505-554-1421.

Section II. PREVENTIVE MAINTENANCE PROCEDURES

22. Preventive Maintenance

Preventive maintenance is the systematic care, servicing, and inspection of equipment to prevent the occurrence of trouble, to reduce out-of-service time, and to maintain equipment serviceability.

a. Systematic Care. The procedures given in paragraphs 23 through 27 cover routine systematic care and cleaning essential to proper upkeep and operation of the equipment.

b. Preventive Maintenance Checks and Services. The preventive maintenance checks and services charts (para 24 and 27) outline the functions to be performed at specific intervals. These checks and services are designed to maintain Army equipment in a combat-serviceable condition; that is, in good general (physical) condition and in good operating condition. To assist organizational maintenance repairmen and crew chiefs in maintaining combat serviceability, the charts indicate what to check, how to check, the normal conditions; the *References* column lists the paragraphs or technical manuals that contain detailed repair or replacement procedure. If the defect cannot be remedied by the organizational maintenance repairman or crew chief, higher echelon maintenance is required. Records and reports of these checks must be made in accordance with TM 38-750.

23. Intermediate Preventive Maintenance Checks and Services

Perform the maintenance functions indicated in the intermediate preventive main-

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tenance checks and services chart (para 24) once each intermediate interval. An intermediate interval is defined as approximately 25 flying hours. The intermediate preventive maintenance checks and services should be performed concurrently with the intermediate preventive maintenance checks and services scheduled on the aircraft in which the equipment is installed. Adjustments of the maintenance interval must be made to compensate for any unusual operating conditions. Equipment maintained in a standby (ready for immediate operation) condition must have intermediate maintenance performed on it at least once every 30 days. Equipment in limited storage (requires service before operation) does not require intermediate maintenance.

24. Intermediate Preventive Maintenance Checks and Services Chart

Seq. No.	Item	Procedure	References
1	Exterior surfaces-----	*a.* Clean control unit---------- *b.* Inspect exposed metal surfaces for rust, corrosion, and bare spots.	*a.* Para 25*a*, *b*, and *c*. *b.* Para 25*d*.
2	Cables and connectors	Check interconnecting cables for cuts, kinks, and frayed insulation. Repair as necessary. Refer to higher echelon for replacement.	None.
3	Mounting----------	*a.* Check equipment for proper installation-- *b.* All nuts, bolts, and washers are present and properly tightened. *c.* Mounting shows no sign of weakness or deformity. *d.* Receiver-transmitter is properly safety-wired.	*a.* None. *b.* None. *c.* None. *d.* TM 11-530.
4	Preliminary operation	Set aircraft communication as follows: *a.* Turn master power switch *on*. *b.* Turn applicable receiver switch *on*. *c.* Turn interphone power *on*. *d.* See that push-to-reset circuit breaker which applies power to AN/ARC-102 is depressed.	*a.* Applicable aircraft technical manual. *b.* Applicable aircraft technical manual. *c.* Applicable aircraft technical manual. *d.* Applicable aircraft technical manual.
5	Mode selector switch--	Set to LSB. Background noise is heard in headset.	Item 1, para 29.
6	Frequency select knobs	Set knobs to frequency with single-sideband and conventional am capabilities. Radio set will be mute while receiver-transmitter tunes to frequency.	Item 2, para 29.
7	Microphone control ---	Depress control until 1,000-cps tone is heard in headset.	Item 3, para 29.
8	RF SENS knob --------	Adjust knob so that background noise is barely audible.	Item 4, para 29.
9	Microphone control ---	Depress and establish two-way voice communication.	Item 5, para 29.
10	Mode selector switch--	Set to USB. Background noise is heard in headset. Perform steps in sequence No. 6 through 9.	None.
11	Mode selector switch--	Set to AM. Background noise is heard in headset. Perform steps in sequence No. 6 through 9.	None.
12	Mode selector switch--	Set to CW. Background noise is heard in headset.	Item 1, para 29.

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Seq. No.	Item	Procedure	References
13	Frequency select knobs	Set controls to frequency with cw capabilities. Radio set will be mute while receiver-transmitter is tuning. *Note:* Set frequency on control unit 1 kilocycle below desired frequency.	Item 2, para 29.
14	Telegraph key --------	Depress key until 1,000-cps tone is heard in headset.	Item 3, para 29.
15	RF SENS knob --------	Adjust knob so that background noise is barely audible.	Item 4, para 29.
16	Telegraph key --------	Establish two-way cw communication -------	Item 5, para 29.
17	Mode selector switch--	Set to OFF. No audio is heard in headset---	Item 7, para 29.
18	Stopping procedure----	Set aircraft communication panel as follows:	
		a. Turn applicable receiver switch *off.* ------	a. Applicable aircraft technical manual.
		b. Turn interphone power *off.* ----------	b. Applicable aircraft technical manual.
		c. Turn aircraft master power *off.* ----------	c. Applicable aircraft technical manual.

25. Cleaning

All exterior surfaces of the equipment should be free of dirt, grease, and fungus. Perform the following procedures as specified in the preventive maintenance checks and services charts.

a. Remove moisture and loose dirt with a clean soft cloth.

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

b. Remove grease, fungus, and ground-in dirt from the exterior surfaces with a clean cloth dampened (not wet) with cleaning compound. Wipe dry with a clean, dry, lint-free cloth.

c. Clean the front panel and controls; use a clean soft cloth. If dirt is difficult to remove, dampen the cloth with water; if necessary, use mild soap.

d. Remove rust and corrosion from metal surfaces by lightly sanding them with fine sandpaper. Brush two thin coats of paint on the bare metal to protect it from further corrosion. Refer to the applicable cleaning and refinishing practices specified in TM 9-213.

26. Periodic Preventive Maintenance Checks and Services

Perform the maintenance functions indicated in the periodic preventive maintenance checks and services chart (para 27) once each periodic interval in addition to the intermediate preventive maintenance checks and services. Periodic preventive maintenance will be scheduled in accordance with the requirements of TM 38-750. The periodic preventive 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. Refer to the applicable aircraft technical manual for the hours between service periods. Equipment with a deficiency that cannot be remedied at the organizational level should be deadlined in accordance with TM 38-750.

27. Periodic Preventive Maintenance Checks and Services Chart

Sequence No.	Item	Procedure	References
1	Publications----------	See that all publications pertinent to this equipment are on hand, complete, and usable. See that all applicable Changes are on hand.	DA Pam 310-4.

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Sequence No.	Item	Procedure	References
2	Modification work orders.	See that all URGENT MWO's have been applied and that all NORMAL MWO's have been scheduled. MWO stencils on equipment must be legible.	DA Pam 310-4.
3	Preliminary procedures	*a.* Set aircraft communication controls to *on* (para 16). *b.* Set radio set controls for voice communication transmission and reception (para 17*a*). *c.* Plug microphone and headset into MIC and PHONE jacks on front panel of receiver-transmitter. *d.* Remove coaxial connector which connects 500 KC STD. connector to 500 KC REF. connector on front panel of receiver-transmitter.	None.
4	Meter switch ---------	Place meter switch at each position below and observe indications. *Positions* — *Indication* 28V --------Monitor meter indicates in red area. 130V -------Monitor meter indicates in red area. PA MA -----Key the microphone; monitor meter indicates approximately 300 ma. 1500V ------Key the microphone; monitor meter indicates in red area. CAL TONE--1,000-cps tone is heard in headset.	Item 6, para 29.
5	Stopping procedures---	*a.* Replace coaxial cable which connects 500 KC STD. connector to 500 KC REF connector on front panel of receiver-transmitter. *b.* Remove microphone and headset from jacks on front panel of receiver-transmitter. *c.* Set mode selector switch on radio set control unit to OFF. *d.* Set aircraft communication controls *off*.----	*a.* None. *b.* None. *c.* Item 7, para 29. *d.* None.

Section III. TROUBLESHOOTING

28. General

Troubleshooting of the radio set is based on the operational checks in the intermediate and periodic preventive maintenance checks and services charts. To troubleshoot the radio set, perform all functions starting with sequence No. 4 in the intermediate preventive maintenance checks and services chart (para 24) and proceed through the items until an abnormal condition or result is observed; then note the reference in the *References* column and turn to the corresponding item No. in the troubleshooting chart (para 29). Perform the checks and and corrective measures indicated in the troubleshooting chart. If the corrective measures indicated do not result in correction of the trouble, higher echelon maintenance is required. Paragraphs 30, 31, and 32 contain additional information and step-by-step instructions for performing the corrective measures to be taken.

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29. Troubleshooting Chart

Item No.	Trouble symptom	Probable trouble	Checks and corrective measures
1	No background noise is heard in headset.	a. Aircraft communication panel controls are improperly set. b. Power source or power connections are defective. c. Headset is defective -------- d. Mode selector switch on control unit is defective. e. Receiver-transmitter is defective.	a. Check aircraft communication panel controls for proper settings. b. Check power source and power cabling connections. c. Check headset and headset cabling. Replace as necessary. d. Replace control unit (para 31). e. Replace receiver-transmitter (para 32).
2	Radio set is not mute after desired frequency has been set.	a. Interconnecting cabling or connector is defective. b. Frequency select knobs are defective. c. Tuning circuits in receiver-transmitter are defective.	a. Check interconnecting cable or connector. Refer to higher echelon for replacement of cable or connector. b. Replace control unit (para 31). c. Replace receiver-transmitter (para 32).
3	1,000-cps tone is not heard when microphone control or telegraph key is depressed.	a. Microphone or telegraph key is defective. b. Receiver-transmitter is improperly tuned. c. Antenna coupler is defective--	a. Check microphone or telephgraph key, microphone control, and microphone or telegraph key cable. Replace as necessary. b. Replace receiver-transmitter (para 32). c. Replace antenna coupler. (Refer to applicable aircraft technical manual.)
4	Volume cannot be controlled by adjusting RF SENS knob.	Defective RF SENS knob --------	Replace control unit (para 31).
5	Two-way communication cannot be established.	a. Defective microphone or telegraph key. b. Improper frequency setting--- c. Defective receiver-transmitter d. Defective antenna coupler ----	a. Check microphone or telegraph key. Replace if necessary. b. Check setting of frequency select knobs. c. Replace receiver-transmitter (para (para 32). d. Replace antenna coupler (applicable aircraft technical manual).
6	Meter does not indicate correct reading.	Defective receiver-transmitter--	Replace receiver-transmitter.
7	Audio is heard when mode selector switch is at OFF.	Defective mode selector switch--	Replace control unit (para 31).

30. Removal and Replacement of Control Unit Panel Lamps (fig. 3)

a. Removal.

(1) Unscrew the cap from the panel lamp assembly.

(2) Pull the panel lamp assembly out out of the socket.

b. Replacement.

(1) Insert the panel lamp assembly in the socket.

(2) Screw the cap into place in the control unit front panel.

31. Removal and Replacement of Control Unit (fig. 3)

a. Removal.

(1) Loosen the four Dzus fasteners on the front panel of the control unit.

(2) Slide the control unit forward until

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the interconnecting cable connector on the rear panel of the control unit is readily accessible.

(3) Remove the interconnecting cable connector from the control unit.

(4) Remove the control unit from the aircraft instrument control panel.

b. Replacement.

(1) Insert the control unit in the aircraft instrument control panel until the connecting cable reaches the receptacle on the rear of the control unit.

(2) Connect the connector of the interconnecting cable to the receptacle on the rear panel of the control unit.

(3) Slide the control unit into place in the aircraft instrument control panel.

(4) Tighten the four Dzus fasteners on the front panel of the control unit.

32. Removal and Replacement of Receiver-Transmitter (fig. 2)

a. Removal.

(1) Remove the antenna connector from the ANT connector on the front panel of the receiver-transmitter. If auxiliary data equipment is used, remove the auxiliary data receiver antenna connector from the AUX RCVR ANT. jack on the front panel of the receiver-transmitter (fig. 2).

(2) With a pair of diagonal pliers, cut and remove the safety wire from the two wingnuts located on the front corners of the mounting.

(3) Loosen the two wingnuts.

(4) Move the two compression rings of the mounting downward and slide the receiver-transmitter forward, carefully disengaging the plug at the rear.

(5) Lift the receiver-transmitter off the mounting.

b. Replacement.

(1) Place the receiver-transmitter on mounting.

(2) Slide the receiver-transmitter back on the mounting, carefully engaging the jack on the rear of the receiver-transmitter to the plug on the rear of the mounting.

(3) Place the two compression rings over the hooks on the bottom corners of the receiver-transmitter.

(4) Tighten the two wingnuts on the front corners of the mounting.

(5) Safety-wire the wingnuts to prevent them from being loosened by vibration.

(6) Connect the antenna connector to the ANT connector on the front panel of the receiver-transmitter. If auxiliary data equipment is used, connect the auxiliary data receiver antenna connector to the AUX RCVR ANT. jack on the front panel of the receiver-transmitter.

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CHAPTER 4

DEMOLITION TO PREVENT ENEMY USE

33. Authority for Demolition

Demolition of the equipment will be accomplished only upon the order of the commander. The destruction procedures outlined in paragraph 34 will be used to prevent further use of the equipment.

Note: The standard procedures for destruction of the aircraft include destruction of the radio set when it is installed.

34. 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 interconnecting cables; use axes, handaxes, or machetes.

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

d. Bend. Bend the panels and cases.

***Warning:* Be extremely careful with explosives and incendiary devices. Use these items only when the need is urgent.**

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

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

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APPENDIX I

REFERENCES

Following is a list of applicable references available to the operator and organizational maintenance repairman of Radio Set AN/ARC-102.

DA Pamphlet 310-4	Index of Technical Manuals, Technical Bulletins, Supply Manuals (Types 4, 6, 7, 8, and 9), Supply Bulletins, Lubrication Orders, and Modification Work Orders.
TM 9-213	Painting Instructions for Field Use.
TM 11-530	Installation Practices for Aircraft Electric and Electronic Wiring.
TM 11-6625-203-12	Operator and Organizational Maintenance: Multimeter AN/URM-105, including Multimeter ME-77/U.
TM 38-750	The Army Equipment Record System and Procedures.

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APPENDIX II
MAINTENANCE ALLOCATION

Section I. 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) *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 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 are listed immediately below that assembly. Each generation breakdown (components, assemblies, or subassemblies) is 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 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

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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 echelons.* 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 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 (†) 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.

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Section II. FUNCTIONAL PARTS LIST

PART OR COMPONENT	MAINTENANCE FUNCTION	ECHELON 1	2	3	4	5	TOOLS REQUIRED	REMARKS
RADIO SET AN/ARC-102								
RADIO SET AN/ARC-102	service		✓					Preventive Maintenance
	inspect		✓					Verify serviceability
	repair		✓				17	Replacement of black box components
CONTROL UNIT C-4626/ARC-102	service			✓				Lubricate
	inspect		✓					
	test			✓			5,7	
	repair			✓			15	
	overhaul				✓		5,7,15,16	
INVERTER, POWER, STATIC PP-3702/ARC-102	service			✓				
	inspect		✓					
	test			✓			5,7,14	
	repair			✓			15	
	overhaul				✓		5,7,14,15,16	
RECEIVER TRANSMITTER RT-698/ARC-102	service		✓					
	inspect		✓					
	test		✓				6	Continuity of cables which interconnect the black boxes. Front panel voltages & PAMMA Test
				✓			2,3,4,5,7,8,10,12,13,18	
	repair			✓			15	
	calibrate		✓					CAL tone to/www
	overhaul				✓		1,2,3,4,5,7, 8,9,10,12,13,14,15,16,18	
						✓	11	

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Section III. ALLOCATION OF TOOLS FOR MAINTENANCE FUNCTIONS

PART OR COMPONENT	ECHELON 1	2	3	4	5	TOOL CODE	REMARKS
RADIO SET AN/ARC-102 (continued)							
ANALYZER SPECTRUM TS-723/U				✓	✓	1	
AUDIO OSCILLATOR TS-382/U			✓	✓	✓	2	
FREQ METER AN/URM-79			✓	✓	✓	3	
FREQ METER AN/URM-80			✓	✓	✓	4	
MAINT KIT, ELECTRONIC EQUIP MK-722( )/ARC-102			✓	✓	✓	5	
MULTIMETER AN/URM-105		✓				6	
MULTIMETER TS-352/U			✓	✓	✓	7	
MULTIMETER ME-26/U			✓	✓	✓	8	
OSCILLOSCOPE AN/USM-81				✓	✓	9	
RF SIG GEN SET AN/URM-25			✓	✓	✓	10	
TEST SET, ELECTRON TUBE TV-2/U					✓	11	
TEST SET, ELECTRON TUBE TV-7/U			✓	✓		12	
TEST SET, RADIO AN/ARM-73( )			✓	✓	✓	13	
TEST SET TRANSISTOR TS-1836/U				✓	✓	14	
TOOL KIT,RADAR & RADIO REPAIRMAN TK-87/U			✓	✓	✓	15	
TOOL KIT, SUPPLEMENTARY RADAR & RADIO REPAIRMAN TK-87/U				✓	✓	16	
TOOL, KIT, RADIO REPAIR TK-115/G		✓				17	
VOLTMETER, METER ME-30/U			✓	✓	✓	18	

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APPENDIX III

BASIC ISSUE ITEMS LIST

Section I. INTRODUCTION

1. General

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

Columns are as follows:

a. Federal Stock Number. This column lists the 11-digit Federal stock number.

b. Designation by Model. Not used.

c. 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.

d. 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.

e. Expendability. Nonexpendable items are indicated by NX. Expendable items are not annotated.

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

g. Illustration. Not used.

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Section II. MAINTENANCE ALLOCATION CHART

FEDERAL STOCK NUMBER	...ATION BY MODEL	DESCRIPTION	UNIT OF ISSUE	SUP	QTY AUTH	ILLUSTRATION	
						FIGURE NO.	ITEM NO.
5821-690-8295		RADIO SET AN/ARC-102: A1,A3a and compatible A3 emission, 400 w max power output; freq data: 2 to 29.999 mc, 28 bands, 28,000 channels oper power requirements, 115v AC 400 cps single phase; 27.5 vdc		HK			
		ITEMS COMPRISING AN OPERABLE EQUIPMENT					
OTHER THAN ACC		TECHNICAL MANUAL TM 11-5821-698-12			2		
5821-953-8809		CONTROL, RADIO SET C-3540/ARC-94: Collins P/N 522-8457-00, Type 71AR-3		HK	1		
5821-690-8168		POWER INVERTER-MOUNTING PP-3702/ARC-102: Collins Radio Co. P/N 522-3353-015 type 390J-2		HK	1		
5821-954-0853		RECEIVER-TRANSMITTER RT-698/ARC-102: Collins Radio Co. P/N 522-1660-00, type 618T-3		HK	1		
		RUNNING SPARE ITEMS NO PARTS AUTHORIZED FOR STOCKAGE AT 1ST ECHELON					

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By Order of 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 crew maintenance instructions for all fixed wing and all rotor wing aircraft.

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TM 11-5821-248-12
*C5

Change No. 5

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, 12 December 1983

OPERATOR'S AND ORGANIZATIONAL MAINTENANCE MANUAL RADIO SET AN/ARC-102 (NSN 5821-00-050-8255)

TM 11-5821-248-12, 27 November 1963, is changed as follows:

Page 3. Paragraph 2. Paragraph 2 is superseded as follows:

2. Consolidated Index of Army Publications and Blank Forms

Refer to the latest issue of DA Pam 310-1 to determine whether there are new editions, changes or additional publications pertaining to the equipment.

Page 3. Paragraph 3. Paragraph 3 is superseded as follows:

3. Maintenance Forms, Records, and Reports

a. Reports of Maintenance and Unsatisfactory Equipment. Department of the Army forms and procedures used for equipment maintenance will be those prescribed by TM 38-750, The Army Maintenance Management System.

b. Report of Packaging and Handling Deficiencies. Fill out and forward SF 364 (Report of Discrepancy (ROD)) as prescribed in AR 735-11-2/DLAR 4140.55/NAVMATINST 4355.73A/AFR 400-54/MCO 4430.3F.

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 4610.33C/AFR 75-18/MCO P4610.19D/DLAR 4500.15.

Page 3. Paragraphs 3-1 through 3-4 are added as follows:

3-1. Reporting Errors and Recommending Improvements

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter or DA Form 2028 (Recommended Changes to Publications and Blank Forms) direct to: Commander, US Army Communications-Electronics Command and Fort Monmouth, ATTN: DRSEL-ME-MP, Fort Monmouth, New Jersey 07703. In either case, a reply will be furnished direct to you.

3-2. Reporting Equipment Improvement Recommendations (EIR)

If your Radio Set needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design. Put it on an SF 368 (Quality Deficiency Report). Mail it to Commander, US Army Communications-Electronics Command and Fort Monmouth, ATTN: DRSEL-ME-MP, Fort Monmouth, New Jersey 07703. We'll send you a reply.

3-3. Administrative Storage

Administrative Storage of equipment issued to and used by Army activities will have preventive maintenance performed in accordance with the PMCS charts before storing. When removing the equipment from administrative storage the PMCS should be performed to assure operational readiness. Disassembly and repacking of equipment for shipment or limited storage are covered in TM 740-90-1.

3-4. Destruction of Army Electronics Materiel

Destruction of Army electronics materiel to prevent enemy use shall be in accordance with TM 750-244-2.

Page 3. Paragraph 5*a*, "frequency range." Change the upper limit given in the frequency range from 29.000 mc to 29.999 mc.

*This change supersedes changes C1, 19 July 1965; C2, 20 Sept 1971 and C3, 7 May 1974.

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Page 5. Paragraph 6. Paragraph 6 is superseded as follows:

6. Items Comprising an Operable Equipment

NSN	Qty	Nomenclature, part No. and mfr code	Fig. No.	Dimensions (in.)			Weight (lb.)
				Height	Depth	Width	
5820-00-050-8255		Radio Set AN/ARC-102, consisting of: **NOTE** 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.	1				
5821-00-019-8405	1	Control, Radio Set C-3940/ARC-94: 522-2457-00; 95104 (Type 714E-3)	1	2 5/8	4 7/8	5 3/4	2
5821-00-050-8168	1	Power-Inverter-Mounting PP-3702/ARC-102; 522-3353-015; 95104 (Type 3905-2)	1	8 5/8	23 1/2	11	13.5
5821-00-604-3307	1	Receiver-Transmitter RT-698/ARC-102: 522-1660-00; 95104 (Type 618T-3)	1	7 5/8	22 3/16	10 1/8	50

Page 8, paragraph 12. Make the following changes: Subparagraph *f*, line 3. Change AN/AR—41 to AN/ARA—41.

Add the following note after subparagraph *f*

NOTE

When the CU-991/AR is used, do not tune the radio set to frequencies above 25 mc.

Page 10, paragraph 17. Make the following changes: Subparagraph *a*(3), note. After the last sentence of the note, add:

The receiver-transmitter will be muted while it tunes to the frequency selected. Upon completion of tuning, the receiver-transmitter will no longer be muted, and background noise will be heard in the headset.

Subparagraph *a*(4). Delete subparagraph *a*(4) and substitute:

(4) After the desired operating frequency has been selected ((3) above), depress the microphone button and wait for the receiver-transmitter and antenna coupling unit to tune. A 1,000-cps tone will be heard in the headset, indicating that the receiver-transmitter and antenna coupling unit are tuning. When the tuning cycle is completed, the 1,000-cps tone ceases. Release the microphone button when the 1,000-cps tone is no longer heard in the headset. The receiver-transmitter and antenna coupling unit are now tuned to the frequency selected by the control unit, and the radio set is ready to receiver and transmit on that frequency.

Subparagraph *b*(4). Delete subparagraph *b*(4) and substitute:

(4) The tuning procedure for cw operation is the same as that described in *a*(4) above except that a telegraph key is used in place of the microphone button.

Page 11, paragraph 19*c*. Delete subparagraph (3) and substitute:

(3) Depress the microphone button and wait for the receiver-transmitter and antenna coupling unit to tune. A 1,000-cps tone will be heard in the headset while the receiver-transmitter and antenna coupling unit are tuning. When the tuning cycle is completed, the 1,000-cps tone ceases. Release the microphone button when the 1,000-cps tone is no longer heard in the headset. The radio set is now ready to receive and transmit on the selected frequency.

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Page 12, paragraph 21. Delete subparagraph *a* and *f* and substitute:

a. Tool Kit, Electronic Equipment TK-105/G.

f. Trichlorotrifluoroethane cleaning compound.

Page 12. Section II. Section II is superseded as follows:

Section II. ORGANIZATIONAL PREVENTIVE MAINTENANCE CHECKS AND SERVICES

22. Preventive Maintenance

NOTE

Refer to TM 750-244-2 for proper procedures for destruction of this equipment to prevent enemy use.

a. Organizational preventive maintenance procedures are designed to help maintain equipment in serviceable condition. They include items to be checked and how to check them. These checks and services, described in paragraph 23, outline inspections that are to be made at the periodic or Phased Maintenance interval. Periodic or phased maintenance is scheduled in accordance with the intervals established for the aircraft in which the equipment is used. These intervals will vary depending upon the aircraft maintenance schedule.

(1) PERIODIC or PHASED, perform your P PMCS to keep serious problems from suddenly happening.

(2) When an item of equipment is reinstalled after removal, for any reason, perform the necessary P PMCS to be sure the item meets the readiness reporting criteria.

(3) Use the ITEM NO. column in the PMCS table to get the number to be used in the TM ITEM NO. column on DA Form 2404 (Equipment Inspection and Maintenance Worksheet) when you fill out the form.

b. Routine checks like CLEANING, PRESERVATION, DUSTING, WASHING, CHECKING FOR FRAYED CABLES, STOWING ITEMS NOT IN USE, COVERING UNUSED RECEPTACLES, CHECKING FOR LOOSE NUTS AND BOLTS AND CHECKING FOR COMPLETENESS are not listed as PMCS checks. They are things that you should do any time you see they must be done. If you find a routine check like one of those listed in your PMCS, it is because other operators reported problems with this item.

NOTE

When you are doing any PMCS or routine checks, keep in mind the warnings and cautions.

WARNINGS

- Adequate ventilation should be provided while using TRICHLOROTRIFLUOROETHANE. Prolonged breathing of vapor should be avoided. The solvent should not be used near heat or open flame; the products of decomposition are toxic and irritating. Since TRICHLOROTRIFLUOROETHANE dissolves natural oils, prolonged contact with skin should be avoided. When necessary, use gloves which the solvent cannot penetrate. If the solvent is taken internally, consult a physician immediately.
- Compressed air is dangerous and can cause serious bodily harm if protective means or methods are not observed to prevent a chip or particle (of whatever size) from being blown into the eyes or unbroken skin of the operator or other personnel. Goggles must be worn at all times while cleaning with compressed air. Compressed air shall not be used for cleaning purposes except where reduced to less than 29 pounds per square inch gage (psig) and then only with effective chip guarding and personnel protective equipment. Do not use compressed air to dry parts when trichlorotrifluoroethane has been used.

NOTES

The PROCEDURES column in your PMCS charts instruct how to perform the required checks and services. Carefully follow these instructions and, if tools are needed or the chart so instructs, use the tools listed in the Maintenance Allocation Chart.

If your equipment must be in operation all the time, check those items that can be checked and serviced without disturbing operation. Make the complete checks and services when the equipment can be shut down.

c. Deficiencies that cannot be corrected must be reported to higher category maintenance per-

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sonnel. Records and reports of preventive maintenance must be made in accordance with procedures given in TM 38-750.

23. Phased or Periodic Preventive Maintenance Checks and Services Chart

P — Phased or Periodic Maintenance Check

Item No.	Interval P	Item to be Inspected	Procedures
1	*	Meter Switch	Remove coaxial cable between 500 KC STD and 500 KC REF. Place meter switch at each of the positions listed below. 1. 28V — Monitor meter to indicate in red area. 2. 130V — Monitor meter to indicate in red area. 3. PA MA — Key microphone. Monitor meter to indicate approximately 300 ma 4. 1500V — Key microphone. Monitor meter to indicate in red area. 5. CAL TONE — 1,000 cps is heard in headset. Replace radio set if meter does not indicate the correct reading. Replace coaxial cable between 500 KC STD and 500 KC REF.

*Phased or periodic maintenance interval will be that of the aircraft in which the radio set is used.

Page 13. Paragraph 24 deleted.

Page 14. Paragraphs 25, 26 and 27 deleted.

Page 18. Chapter 4 deleted.

Page 19. Appendix I is superseded as follows:

APPENDIX I
REFERENCES

DA Pam 310-1	Consolidated Index of Army Publications and Blank Forms.
TB 43-0118	Field Instructions for Painting and Preserving Electronics Command Equipment Including Camoflage Pattern Painting of Electrical Equipment Shelters.
TM 11-6625-203-12	Operator's and Organizational Maintenance Manual: Multimeter AN/URM-105 and AN/URM-105C (Including Multimeter ME-77/U and ME-77C/U).
TM 38-750	The Army Maintenance Management System (TAMMS)
TM 55-1500-323-25	Organizational, DS, GS, and Depot Maintenance Manual: Installation Practices for Aircraft Electric and Electronic Wiring.
TM 740-90-1	Administrative Storage of Equipment.
TM 750-244-2	Procedures for Destruction of Electronics Materiel to Prevent Enemy Use.

Page 24. Appendix III. Delete Appendix III.

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By Order of the Secretary of the Army:

JOHN A. WICKHAM JR.
General, United States Army
Chief of Staff

Official:

ROBERT M. JOYCE
Major General, United States Army
The Adjutant General

DISTRIBUTION:

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HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, DC, *20 December 1977*

Operator's and Organizational Maintenance Manual
RADIO SET AN/ARC-102
(NSN 5821-00-050-8255)

TM 11-5821-248-12, 27 November 1963, is changed as follows:

Change the title of the manual as shown above.

Page 3, paragraph 3. Paragraph 3 is superseded as follows:

3. 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 (Packaging Improvement Report) as prescribed in AR 700-58/NAVSUPINST 4030.29/AFR 71-13/MCO P4030.29A, and DLAR 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 4610.33B/AFR 75-18/MCO P4610.19C and DLAR 4500.15.

d. Reporting of Errors. 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: DRSEL-MA-Q, Fort Monmouth, NJ 07703.

e. Reporting Equipment Improvement Recommendations (EIR). EIR's will be prepared using DA Form 2407 (Maintenance Request). Instructions for preparing EIR's are provided in TM 38-750, The Army Maintenance Management system (TAMMS). EIR's should be mailed direct to Commander, US Army Electronics Command, ATTN: DRSEL-MA-Q, Fort Monmouth, NJ 07703. A reply will be furnished direct to you.

Page 20, appendix II. Appendix II is superseded as follows:

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APPENDIX II
MAINTENANCE ALLOWANCE

Section I. INTRODUCTION

II-1. General.

This appendix provides a summary of the maintenance operations for AN/ARC-102. It authorizes categories of maintenance for specific maintenance functions on repairable items and components and the tools and equipment required to perform each function. This appendix may be used as an aid in planning maintenance operations.

II-2. Maintenance Function.

Maintenance functions will be limited to and defined as follows:

a. Inspect. To determine the serviceability of an item by comparing its physical, mechanical, and/or electrical characteristics with established standards through examination.

b. Test. To verify serviceability and to detect incipient failure by measuring the mechanical or electrical characteristics of an item and comparing those characteristics with prescribed standards.

c. Service. Operations required periodically to keep an item in proper operating condition, i.e., to clean (decontaminate), to preserve, to drain, to paint, or to replenish fuel, lubricants, hydraulic fluids, or compressed air supplies.

d. Adjust. To maintain, within prescribed limits, by bringing into proper or exact position, or by setting the operating characteristics to the specified parameters.

e. Align. To adjust specified variable elements of an item to bring about optimum or desired performance.

f. Calibrate. To determine and cause corrections to be made or to be adjusted on instruments or test measuring and diagnostic equipments used in precision measurement. Consists of comparisons of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.

g. Install. The act of emplacing, seating, or fixing into position an item, part, module (component or assembly) in a manner to allow the proper functioning of the equipment or system.

h. Replace. The act of substituting a serviceable like type part, subassembly, or module (component or assembly) for an unserviceable counterpart.

i. The application of maintenance services (inspect, test, service, adjust, align, calibrate, replace) or other maintenance actions (welding, grinding, riveting, straightening, facing, remachining, or resurfacing) to restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, subassembly, module (component or assembly), end item, or system.

j. Overhaul. That maintenance effort (service/action) necessary to restore an item to a completely serviceable/operational condition as prescribed by maintenance standards (i.e., DMWR) in appropriate technical publications. Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to like new condition.

k. Rebuild. Consists of those services/actions necessary for the restoration of unserviceable equipment to a like new condition in accordance with original manufacturing standards. Rebuild is the highest degree of materiel maintenance applied to Army equipment. The rebuild operation includes the act of returning to zero those age measurements (hours, miles, etc.) considered in classifying Army equipments/components.

II-3. Column Entries.

a. Column 1, Group Number. Column 1 lists group numbers, the purpose of which is to identify components, assemblies, subassemblies, and modules with the next higher assembly.

b. Column 2, Component/Assembly. Column 2 contains the noun names of components, assemblies, subassemblies, and modules for which

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maintneance is authorized.

c. Column 3, Maintenance Functions. Column 3 lists the functions to be performed on the item listed in column 2. When items are listed without maintenance functions, it is solely for purpose of having the group numbers in the MAC and RPSTL coincide.

d. Column 4, Maintenance Category. Column 4 specifies, by the listing of a "worktime" figure in the appropriate subcolumn(s), the lowest level of maintenance authorized to perform the function listed in column 3. This figure represents the active time required to perform that maintenance function at the indicated category of maintenance. If the number or complexity of the tasks within the listed maintenance function vary at different maintenance categories, appropriate "worktime" figures will be shown for each category. The number of task-hours specified by the "worktime" figure represents the average time required to restore an item (assembly, subassembly, component, module, end item or system) to a serviceable condition under typical field operating conditions. This time includes preparation time, troubleshooting time, and quality assurance/quality control time in addition to the time required to perform the specific tasks identified for the maintenance functions authorized in the maintenance allocation chart. Subcolumns of column 4 are as follows:

C — Operator/Crew
O — Organizational
F — Direct Support
H — General Support
D—Depot

e. Column 5, Tools and Equipment. Column 5 specifies by code, those common tool sets (not individual tools) and special tools, test, and support equipment required to perform the designated function.

f. Column 6, Remarks. Not applicable.

II-4. Tool and Test Equipment Requirements (Sec III).

a. Tool or Test Equipment Reference Code. The numbers in this column coincide with the numbers used in the tools and equipment column of the MAC. The numbers indicate the applicable tool or test equipment for the maintenance functions.

b. Maintenance Category. The codes in this column indicate the maintenance category allocated the tool or test equipment.

c. Nomenclature. This column lists the noun name and nomenclature of the tools and test equipment required to perform the maintenance functions.

d. National/NATO Stock Number. This column lists the National/NATO stock number of the specific tool or test equipment.

e. Tool Number. This column lists the manufacturer's part number of the tool followed by the Federal Supply Code for manufacturers (5-digit) in parentheses.

11-5. Remarks (Sec IV).

Not applicable.

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SECTION II MAINTENANCE ALLOCATION CHART FOR

RADIO SET AN/ARC-102

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY C	O	F	H	D	(5) TOOLS AND EQPT.	(6) REMARKS
00	RADIO SET AN/ARC-102	Inspect		0.3					
		Service		0.3				18	
		Test		0.5				6,22	
		Replace		0.3				18	
		Repair				1.0		1-5,7-17, 19-21, 23-26	
01	RECEIVER-TRANSMITTER RT-698/ARC-102	Inspect		0.3					
		Service		0.3				18	
		Test		0.5				6,18,22	
		Replace		0.3				18	
		Repair				1.0		1-5,7-17, 19-21, 23-26	
0101	TRANSCEIVER CHASSIS ASSY 544-9203-000 (13499)	Inspect		0.5					
		Service		0.5				18	
		Test				1.0		1-5,7-15	
		Replace				2.0		18	
		Repair				5.0		1-5,7-17, 19-21, 23-26	
010101	TRANSCEIVER-DELAY CIRCUIT 553-5786-003 (13499)	Inspect				0.3			
		Service				0.3		18	
		Test				0.5		1-5,7-15	
		Replace				2.0		17	
		Repair				3.0		1-5,7-15, 17,19-21	
010102	TRANSCEIVER CABLE ASSY (RF) 546-6899-002 (13499)	Inspect				0.2			
		Service				0.2		17	
		Test				0.3		1-5,7-15, 17	
		Replace				0.5		17	
		Repair				2.0		1-5,7-15, 17,19-21, 23-26	
0102	FREQUENCY DIVIDER 546-2142-005 (13499)	Inspect				0.2			
		Service				0.2		17	
		Test				0.3		1-5,7-15	
		Replace				0.5		17	
		Repair				2.0		1-5,7-15, 19-21	
010201	FREQUENCY DIVIDER 546-6328-004 (13499)	Inspect				0.2			
		Service				0.2		17	
		Test				0.3		1-5,7-15, 23-26	
		Replace				0.5		17	
		Repair				2.0		1-5,7-15, 23-26	
010202	PRINTED CIRCUIT BOARD 756-0476-002 (13499)	Inspect				0.2			
		Service				0.2		17	
		Test				0.4		5	
		Replace				0.5		17	
		Repair				2.0		5,17,25	
010203	FREQUENCY DIVIDER 546-6331-004 (13499)	Inspect				0.2			
		Service				0.2		17	
		Test				0.4		4,5,7,8, 11,24-26	
		Replace				0.5		17	
		Repair				2.0		5,7-15, 24-26	
010204	PRINTED CIRCUIT BOARD 756-0477-002 (13499)	Inspect				0.2			
		Service				0.2		17	
		Test				0.4		4,5,6,17	
		Replace				0.5		17	
		Repair				2.0			

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SECTION II MAINTENANCE ALLOCATION CHART
FOR

RADIO SET AN/ARC-102

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY C	O	F	H	D	(5) TOOLS AND EQPT.	(6) REMARKS
010205	FREQUENCY DIVIDER 756-0431-005 (13499)	Inspect				0.2			
		Service				0.2		17	
		Test				0.4		4,5,6-15, 24-26	
		Replace				0.5		17	
		Repair				2.0		4-15, 24-26	
010206	PRINTED CIRCUIT BOARD 756-0435-005 (13499)	Inspect				0.2			
		Service				0.2		17	
		Test				0.4		4-15, 24-26	
		Replace				0.5		17	
		Repair				2.0		4-15, 24-26	
0103	OSCILLATOR, RF 528-0251-005 (13499)	Inspect				0.3			
		Service				0.3		17	
		Test				0.4		3-5,7-15, 19,21,24, 26	
		Replace				0.5		17	
		Repair				2.0		7-15,19, 21,24,26	
010301	OSCILLATOR, RF 549-1680-004 (13499)	Inspect				0.3			
		Service				0.3		17	
		Test				0.4		3-5,7-15, 19,21,24, 26	
		Replace				0.5		17	
		Repair				2.0		3-5,7-15, 19-26	
0104	TRANSLATOR, INTERMEDIATE FREQ 544-9286-000 (13499)	Inspect				0.3			
		Service				0.2		17	
		Test				0.5		1-5,7-15, 19-21, 23-26	
		Replace				0.4		17	
		Repair				2.0		1-5,7-15, 19-21, 23-26	
010401	TRANSLATOR, INTERMEDIATE FREQ 549-0279-005 (13499)	Inspect				0.2			
		Service				0.2		17	
		Test				0.4		1-5,7-15, 19-21, 23-26	
		Replace				0.5		17	
		Repair				2.0		1-5,7-15, 19-21, 23-26	
010402	PRINTED CIRCUIT BOARD 549-0278-004 (13499)	Inspect				0.2			
		Service				0.3		17	
		Test				0.5		1-5	
		Replace				0.4		17	
		Repair				2.0		1-5	
010403	TRANSLATOR SUBASSEMBLY 549-0276-004 (13499)	Inspect				0.2			
		Service				0.3		17	
		Test				0.5		1-5,7-15	
		Replace				0.4		17	
		Repair				2.0		1-5,7-15, 23	
010404	TRANSLATOR, INTERMEDIATE FREQ 549-0282-003 (13499)	Inspect				0.2			
		Service				0.2		17	
		Test				0.4		1-5,7-15, 23	
		Replace				0.5		17	
		Repair				2.0		1-5,7-15, 23-26	

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SECTION II MAINTENANCE ALLOCATION CHART FOR

RADIO SET AN/ARC-102

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY C	O	F	H	D	(5) TOOLS AND EQPT.	(6) REMARKS
010405	PRINTED CIRCUIT BOARD 549-0281-003 (13499)	Inspect				0.3			
		Service				0.3		17	
		Test				0.5		1-5	
		Replace				0.4		17	
		Repair				2.0			
0105	FREQUENCY STABILIZER, KC 528-0112-005 (13499)	Inspect				0.2			
		Service				0.3		17	
		Test				0.4		1-5,7-15, 23	
		Replace				0.4		17	
		Repair				2.0		1-5,7-15, 23	
010501	PRINTED CIRCUIT BOARD 546-6753-004 (13499)	Inspect				0.2			
		Service				0.3		17	
		Test				0.5		1-5,7-15	
		Replace				0.3		17	
		Repair				2.0		1-5,7-15	
010502	OSCILLATOR, RADIO FREQUENCY 546-6748-004 (13499)	Inspect				0.2			
		Service				0.3		17	
		Test				0.5		1-5,7-15, 23-25	
		Replace				0.4		17	
		Repair				2.0		1-5,7-15, 23-25	
010503	OSCILLATOR, RADIO FREQUENCY 548-4138-004 (13499)	Inspect				0.2			
		Service				0.3		17	
		Test				0.5		1-5,7-15	
		Replace				0.4		17	
		Repair				2.0		1-5,7-15	
010504	AMPLIFIER, INTERMEDIATE FREQUENCY 548-4135-004 (13499)	Inspect				0.3			
		Service				0.2		17	
		Test				0.4		1-5,7-15, 23-25	
		Replace				0.5		17	
		Repair				3.0		1-5,7-15	
010505	AMPLIFIER, INTERMEDIATE FREQUENCY 546-6761-004 (13499)	Inspect				0.3			
		Service				0.2		17	
		Test				0.4		1-5,7-15, 23-25	
		Replace				0.5		17	
		Repair				3.0		1-5,7-15, 23-25	
010506	PRINTED CIRCUIT BOARD 548-4134-004 (13499)	Inspect				0.2			
		Service				0.3		17	
		Test				0.5		1-5,7-15	
		Replace				0.3		17	
		Repair				2.0		1-5,7-15	
010507	FILTER ASSEMBLY 546-6771-004 (13499)	Inspect				0.2			
		Service				0.3		17	
		Test				0.4		1-5,7-15	
		Replace				0.5		17	
		Repair				2.0		1-5,7-15	
010508	PRINTED CIRCUIT BOARD 546-6747-004 (13499)	Inspect				0.2			
		Service				0.3		17	
		Test				0.5		1-5,7-15	
		Replace				0.3		17	
		Repair				2.0			
010509	PRINTED CIRCUIT BOARD 548-4137-004 (13499)	Inspect				0.2			
		Service				0.3		17	
		Test				0.5		1-5,7-15	
		Replace				0.3		17	
		Repair				2.0		1-5,7-15	

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SECTION II MAINTENANCE ALLOCATION CHART
FOR

RADIO SET AN/ARC-102

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY C	O	F	H	D	(5) TOOLS AND EQPT.	(6) REMARKS
0106	POWER SUPPLY, LOW VOLTAGE 544-9292-000 (13499)	Inspect				0.3			
		Service				0.3		17	
		Test				0.4		1-5,7-15	
		Replace				0.5		17	
		Repair				2.0		1-5,7-15	
010601	POWER SUPPLY SUBASSEMBLY 546-6651-000 (13499)	Inspect				0.3			
		Service				0.3		17	
		Test				0.4		1-5,7-15	
		Replace				0.5		17	
		Repair				2.0		1-5,7-15	
010602	TERMINAL BOARD 546-6653-002 (13499)	Inspect				0.2			
		Service				0.2		17	
		Test				0.3		1-5	
		Replace				0.5		17	
		Repair				1.0		1-5	
010603	POWER SUPPLY SUBASSEMBLY 546-7324-003 (13499)	Inspect				0.3			
		Service				0.3		17	
		Test				0.4		1-5,7-15	
		Replace				0.5		17	
		Repair				2.0		1-5,7-15	
010604	TERMINAL BOARD 546-6659-002 (13499)	Inspect				0.2			
		Service				0.2		17	
		Test				0.3		1-5	
		Replace				0.5		17	
		Repair				1.0		1-5	
010605	CHASSIS, ELECTRICAL EQUIPMENT 546-6669-004 (13499)	Inspect				0.3			
		Service				0.3		17	
		Test				0.4		5	
		Replace				0.5		17	
		Repair				2.0		5	
010606	TERMINAL BOARD 546-662-002 (13499)	Inspect				0.2			
		Service				0.2		17	
		Test				0.3		5	
		Replace				0.5		17	
		Repair				1.0		5	
0107	AMPLIFIER 544-9290-005 (13499)	Inspect				0.2			
		Service				0.3		17	
		Test				0.5		1-5,7-15	
		Replace				0.4		17	
		Repair				2.0		1-5,7-15	
010701	AMPLIFIER, SUBASSEMBLY 546-6215-004 (13499)	Inspect				0.2			
		Service				0.3		17	
		Test				0.5		1-5,7-15	
		Replace				0.4		17	
		Repair				2.0		1-5,7-15	
0108	POWER SUPPLY HIGH VOLTAGE 545-4971-000 (13499)	Inspect				0.3			
		Service				0.3		17	
		Test				0.4		1-5,7-15	
		Replace				0.5		17	
		Repair				2.0		1-5,7-15	
010801	POWER SUPPLY SUBASSEMBLY 546-6631-003 (13499)	Inspect				0.3			
		Service				0.3		17	
		Test				0.4		1-5,7-15	
		Replace				0.5		17	
		Repair				2.0		1-5,7-15	
010802	POWER SUPPLY SUBASSEMBLY 546-6639-003 (13499)	Inspect				0.3			
		Service				0.3		17	
		Test				0.4		1-5,7-15	
		Replace				0.5		17	
		Repair				2.0		1-5,7-15	

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SECTION II MAINTENANCE ALLOCATION CHART FOR

RADIO SET AN/ARC-102

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY C	O	F	H	D	(5) TOOLS AND EQPT.	(6) REMARKS
010803	POWER SUPPLY SUBASSEMBLY 546-6606-002 (13499)	Inspect				0.3			
		Service				0.3		17	
		Test				0.4		1-5,7-15	
		Replace				0.5		17	
		Repair				2.0			
010804	TERMINAL BOARD-PRESSED 546-6615-002 (13499)	Inspect				0.2			
		Service				0.2		17	
		Test				0.3		1-5,7-15	
		Replace				0.3		17	
		Repair				1.0			
010805	POWER SUPPLY SUBASSEMBLY 546-6608-002 (13499)	Inspect				0.3			
		Service				0.3		17	
		Test				0.4		1-5,7-15	
		Replace				0.5		17	
		Repair				2.0			
010806	TERMINAL BOARD 546-6613-002 (13499)	Inspect				0.2			
		Service				0.2		17	
		Test				0.3		5	
		Replace				0.3		17	
		Repair				1.0		5	
010807	POWER SUPPLY SUBASSEMBLY 546-7292-003 (13499)	Inspect				0.3			
		Service				0.3		17	
		Test				0.4		1-5,7-15	
		Replace				0.5		17	
		Repair				2.0		1-5,7-15	
010808	TERMINAL BOARD-PRESSED 546-6619-003 (13499)	Inspect				0.2			
		Service				0.2		17	
		Test				0.3		5	
		Replace				0.3		17	
		Repair				1.0		5	
010809	CHASSIS, ELECTRICAL 546-6635-003 (13499)	Inspect				0.3			
		Service				0.3		17	
		Test				0.4		1-5	
		Replace				0.5		17	
		Repair				2.0		1-5	
010810	TERMINAL BOARD, ROLLED 546-6600-002 (13499)	Inspect				0.2			
		Service				0.2		17	
		Test				0.3		5	
		Replace				0.3		17	
		Repair				1.0		5	
010811	TERMINAL BOARD, ROLLED 546-6617-002 (13499)	Inspect				0.2			
		Service				0.2		17	
		Test				0.3		5	
		Replace				0.3		17	
		Repair				1.0		5	
010812	POWER SUPPLY, SUBASSEMBLY 761-4966-001 (13499)	Inspect				0.3			
		Service				0.3		17	
		Test				0.4		1-5,7-15	
		Replace				0.5		17	
		Repair				2.0		1-5,7-15	
010813	ELECTRICAL COMPONENT ASSEMBLY 761-4968-001 (13499)	Inspect				0.2			
		Service				0.2		17	
		Test				0.3		5	
		Replace				0.5		17	
		Repair				1.0		5	
0109	AMPLIFIER, AUDIOFREQUENCY 546-6053-000 (13499)	Inspect				0.2			
		Service				0.3		17	
		Test				0.5		1-5,7-15	
		Replace				0.4		17	
		Repair				2.0		1-5,7-15	

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SECTION II MAINTENANCE ALLOCATION CHART FOR

RADIO SET AN/ARC-102

(1) GROUP NUMBER	(2) COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY C	O	F	H	D	(5) TOOLS AND EQPT.	(6) REMARKS
010901	AMPLIFIER, SUBASSEMBLY 546-7273-004 (13499)	Inspect				0.2			
		Service				0.3		17	
		Test				0.5		1-5,7-15	
		Replace				0.4		17	
		Repair				2.0		1-5,7-15	
010902	PRINTED CIRCUIT BOARD 546-7272-004 (13499)	Inspect				0.2			
		Service				0.3		17	
		Test				0.5		5	
		Replace				0.3		17	
		Repair				2.0		5	
010903	AMPLIFIER, SUBASSEMBLY 546-7268-004 (13499)	Inspect				0.2			
		Service				0.3		17	
		Test				0.5		1-5,7-15	
		Replace				0.4		17	
		Repair				2.0		1-5,7-15	
010904	AMPLIFIER, SUBASSEMBLY 546-7279-004 (13499)	Inspect				0.2			
		Service				0.3		17	
		Test				0.5		1-5,7-15	
		Replace				0.4		17	
		Repair				2.0		1-5,7-15	
010905	PRINTED CIRCUIT BOARD 546-7267-004 (13499)	Inspect				0.2			
		Service				0.3		17	
		Test				0.5		5	
		Replace				0.3		17	
		Repair				2.0		5	
010906	PRINTED CIRCUIT BOARD 546-7278-004 (13499)	Inspect				0.2			
		Service				0.3		17	
		Test				0.5		5	
		Replace				0.3		17	
		Repair				2.0		5	
010907	AMPLIFIER SUBASSEMBLY 546-7351-003 (13499)	Inspect				0.2			
		Service				0.3		17	
		Test				0.5		1-5,7-15	
		Replace				0.4		17	
		Repair				2.0		1-5,7-15	
010908	PRINTED CIRCUIT BOARD 546-7350-003 (13499)	Inspect				0.2			
		Service				0.3		17	
		Test				0.5		5	
		Replace				0.3		17	
		Repair				2.0		5	
010909	CHASSIS, ELECTRICAL EQUIPMENT 546-7258-002 (13499)	Inspect				0.2			
		Service				0.4		17	
		Test				0.5		1-5,7-15	
		Replace				0.3		17	
		Repair				2.0		1-5,7-15	
0110	FREQUENCY STABILIZER, MC 528-0329-005 (13499)	Inspect				0.3			
		Service				0.3		17	
		Test				0.5		1-5,7-15, 23-26	
		Replace				0.4		17	
		Repair				2.0		1-5,7-15, 23-26	
011001	AMPLIFIER-DETECTOR 548-5989-005 (13499)	Inspect				0.3			
		Service				0.3		17	
		Test				0.4		1-5,7-15, 23-26	
		Replace				0.4		17	
		Repair				2.0		1-5,7-15, 23-26	
011002	PRINTED CIRCUIT BOARD 756-0462-002 (13499)	Inspect				0.2			
		Service				0.3		17	
		Test				0.5		5	
		Replace				0.3		17	
		Repair				2.0		5	

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SECTION II MAINTENANCE ALLOCATION CHART FOR

RADIO SET AN/ARC-102

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY C	O	F	H	D	(5) TOOLS AND EQPT.	(6) REMARKS
011003	SPECTRUM GENERATOR 548-5985-003 (13499)	Inspect				0.3			
		Service				0.3		17	
		Test				0.5		1-5,7-15, 23	
		Replace				0.4		17	
		Repair				2.0		1-5,7-15, 23	
011004	CHASSIS, ELECTRICAL EQUIPMENT 548-5987-004 (13499)	Inspect				0.3			
		Service				0.3		17	
		Test				0.5		1-5,7-15	
		Replace				0.4		17	
		Repair				2.0		1-5,7-15	
0111	AMPLIFIER, RADIOFREQUENCY 544-9283-000 (13499)	Inspect				0.3			
		Service				0.3		17	
		Test				0.4		1-5,7-15, 23	
		Replace				0.4		17	
		Repair				2.0			
011101	AMPLIFIER, SUBASSEMBLY 546-6337-000 (13499)	Inspect				0.3			
		Service				0.3		17	
		Test				0.4		1-5,7-15, 23	
		Replace				0.4		17	
		Repair				2.0		1-5,7-15, 23	
011102	TERMINAL BOARD 546-6354-002 (13499)	Inspect				0.2			
		Service				0.2		17	
		Test				0.3		5	
		Replace				0.5		17	
		Repair				2.0		5	
011103	TERMINAL BOARD 756-3278-003 (13499)	Inspect				0.2			
		Service				0.2		17	
		Test				0.3		5	
		Replace				0.5		17	
		Repair				2.0		5	
011104	TERMINAL BOARD 546-6474-002 (13499)	Inspect				0.2			
		Service				0.2		17	
		Test				0.3		5	
		Replace				0.5		17	
		Repair				2.0		5	
011105	CHASSIS, ELECTRICAL EQUIPMENT 546-6522-005 (13499)	Inspect				0.2			
		Service				0.3		17	
		Test				0.5		1-5,7-15	
		Replace				0.5		17	
		Repair				2.0		1-5,7-15	
011106	DETECTOR SUBASSEMBLY 547-1478-003 (13499)	Inspect				0.3			
		Service				0.3		17	
		Test				0.4		1-5,7-15	
		Replace				0.4		17	
		Repair				2.0		1-5,7-15	
011107	TERMINAL BOARD 546-6403-002 (13499)	Inspect				0.2			
		Service				0.2		17	
		Test				0.3		5	
		Replace				0.5		17	
		Repair				2.0		5	
0112	TRANSLATOR, RADIO FREQUENCY 528-0113-013 (13499)	Inspect				0.3			
		Service				0.3		17	
		Test				0.5		1-5,7-15, 23,25	
		Replace				0.4		17	
		Repair				2.0		1-5,7-15, 23,25	

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SECTION II MAINTENANCE ALLOCATION CHART
FOR

RADIO SET AN/ARC-102

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY					(5) TOOLS AND EQPT.	(6) REMARKS
			C	O	F	H	D		
011201	AUTOPOSITIONER 546-6873-017 (13499)	Inspect				0.3			
		Service				0.3		17	
		Test				0.5		1-5,7-15	
		Replace				0.4		17	
		Repair				2.0		1-5,7-15	
011202	AUTOPOSITIONER SUBASSEMBLY 546-6866-004 (13499)	Inspect				0.3			
		Service				0.3		17	
		Test				0.5		1-5,7-15	
		Replace				0.4		17	
		Repair				2.0		1-5,7-15	
011203	TRANSLATOR, RADIOFREQUENCY 546-7114-003 (13499)	Inspect				0.2			
		Service				0.3		17	
		Test				0.4		1-5,7-15, 23,25	
		Replace				0.5		17	
		Repair				2.0		1-5,7-15, 23,25	
011204	OSCILLATOR, RADIOFREQUENCY 522-3552-005 (13499)	Inspect				0.2			
		Service				0.3		17	
		Test				0.4		1-5,7-15, 23-25	
		Replace				0.5		17	
		Repair				2.0		1-5,7-15, 23-25	
011205	SWITCH ASSEMBLY, RADIOFREQUENCY 546-6971-000 (13499)	Inspect				0.2			
		Service				0.2		17	
		Test				0.3		5	
		Replace				0.5		17	
		Repair				2.0		5	
011206	TRANSLATOR, RADIOFREQUENCY 548-1369-004 (13499)	Inspect				0.3			
		Service				0.3		17	
		Test				0.4		1-5,7-15, 23,25	
		Replace				0.5		17	
		Repair				2.0		1-5,7-15, 23,25	
011207	TRANSLATOR SUBASSEMBLY 546-7417-004 (13499)	Inspect				0.3			
		Service				0.3		17	
		Test				0.4		1-5,7-15, 23,25	
		Replace				0.5		17	
		Repair				2.0		1-5,7-15, 23,25	
011208	TRANSLATOR SUBASSEMBLY 546-7420-004 (13499)	Inspect				0.3			
		Service				0.3		17	
		Test				0.4		1-5,7-17, 23-25	
		Replace				0.5		17	
		Repair				2.0		1-5,7-17, 19-21,23, 26	
011209	TRANSLATOR SUBASSEMBLY 546-7419-004 (13499)	Inspect				0.3			
		Service				0.3		17	
		Test				0.4		1-5,7-17, 23-25	
		Replace				0.5		17	
		Repair				2.0		1-5,7-17, 19-21,23, 26	
011210	TRANSLATOR SUBASSEMBLY 546-7418-004 (13499)	Inspect				0.3			
		Service				0.3		17	
		Test				0.4		1-5,7-17, 23-25	
		Replace				0.5		17	
		Repair				2.0		1-5,7-17, 19-21,23, 26	

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SECTION II MAINTENANCE ALLOCATION CHART FOR

RADIO SET AN/ARC-102

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY C	O	F	H	D	(5) TOOLS AND EQPT.	(6) REMARKS
011211	CHASSIS, ELECTRICAL EQUIPMENT 546-7125-003 (13499)	Inspect				0.3			
		Service				0.3		17	
		Test				0.4		1-5,7-17	
		Replace				0.5		17	
		Repair				2.0		1-5,7-17	
011212	TERMINAL BOARD 1532A (71785)	Inspect				0.2			
		Service				0.2		17	
		Test				0.2		5	
		Replace				0.3		17	
		Repair				0.5		5	
011213	TERMINAL BOARD 1909 (71785) - OR -	Inspect				0.2			
		Service				0.2		17	
		Test				0.2		5	
		Replace				0.3		17	
		Repair				0.5		5	
011213	TERMINAL BOARD 1520 (71785)	Inspect				0.2			
		Service				0.2		17	
		Test				0.2		5	
		Replace				0.3		17	
		Repair				0.5		5	
011214	TERMINAL BOARD 546-7029-002 (13499)	Inspect				0.2			
		Service				0.2		17	
		Test				0.2		5	
		Replace				0.3		17	
		Repair				0.5		5	
011215	TERMINAL BOARD 1542A (71785)	Inspect				0.2			
		Service				0.2		17	
		Test				0.2		5	
		Replace				0.3		17	
		Repair				0.5		5	
011216	CHASSIS, ELECTRICAL EQUIPMENT 546-7428-004 (13499)	Inspect				0.3			
		Service				0.3		17	
		Test				0.5		1-5,7-17	
		Replace				0.5		17	
		Repair				2.0			
011217	RADIO FREQUENCY TUNER SUBASSEMBLY 546-7430-005 (13499)	Inspect				0.3			
		Service				0.3		17	
		Test				0.4		1-5,7-17, 19-21,23	
		Replace				0.5		17	
		Repair				2.0		1-5,7-17, 19-21,23	
011218	RADIO FREQUENCY TUNER SUBASSEMBLY 546-7431-005 (13499)	Inspect				0.3			
		Service				0.2		17	
		Test				0.3		1-5,7-17, 19-21, 23,26	
		Replace				0.4		17	
		Repair				2.0		1-5,7-17, 19-21, 23-26	
011219	RADIO FREQUENCY TUNER SUBASSEMBLY 546-7433-005 (13499)	Inspect				0.3			
		Service				0.2		17	
		Test				0.3		1-5,7-17, 19-21	
		Replace				0.4		17	
		Repair				2.0		1-5,7-17, 19-21	

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SECTION II MAINTENANCE ALLOCATION CHART
FOR

RADIO SET AN/ARC-102

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY C	O	F	H	D	(5) TOOLS AND EQPT.	(6) REMARKS
011220	RADIO FREQUENCY TUNER SUBASSEMBLY 546-7432-005	Inspect				0.3			
		Service				0.2		17	
		Test				0.3		1-5,7-17, 19-21, 23-26	
		Replace				0.4		17	
		Repair				2.0		1-5,7-17, 19-21, 23-26	
011221	RADIO FREQUENCY TUNER SUBASSEMBLY 546-7434-005 (13499)	Inspect				0.3			
		Service				0.2		17	
		Test				0.3		1-5,7-17, 19-20, 23-26	
		Replace				0.4		17	
		Repair				2.0		1-5,7-17, 19-20, 23-26	
011222	RADIO FREQUENCY TUNER SUBASSEMBLY 546-7435-005 (13499)	Inspect				0.3			
		Service				0.2		17	
		Test				0.3		1-5,7-17, 19-20, 23-26	
		Replace				0.4		17	
		Repair				2.0		1-5,7-17, 19-20, 23-26	
02	CONTROL, RADIO SET C-3940/ARC-94 (80058)	Inspect				0.3			
		Service				0.3		17	
		Test				0.4		1-5,7-17	
		Replace				0.3		17	
		Repair				2.0		1-5,7-17	
03	MOUNT, RECEIVER 554-5363-005 (13499)	Inspect				0.3			
		Service				0.2		17	
		Test				0.2		1-5,7-17	
		Replace				0.3		17	
		Repair				2.0		1-5,7-17	
0301	MOUNT, RECEIVER 554-5375-005 (13499)	Inspect				0.3			
		Service				0.2		17	
		Test				0.2		1-5,7-17	
		Replace				0.3		17	
		Repair				2.0		1-5,7-17	
0302	TERMINAL BOARD 367-0121-00 (13499)	Inspect				0.2			
		Service				0.2		17	
		Test				0.3		5	
		Replace				0.2		17	
		Repair				0.5		5	
0303	TERMINAL BOARD 547-3813-002 (13499)	Inspect				0.2			
		Service				0.2		17	
		Test				0.3		5	
		Replace				0.2		17	
		Repair				0.5		5	
04	STATIC INVERTER 522-2929-00 (13499)	Inspect				0.3		17	
		Test				0.3		5	
		Replace				0.4		17	
0401	TERMINAL BOARD 22414 (24039)	Inspect				0.2			
		Service				0.2		17	
		Test				0.2		5	
		Replace				0.3		17	
		Repair				1.0		5	
0402	PRINTED CIRCUIT BOARD 25044-1 (24039)	Inspect				0.2			
		Test				0.4		5	
		Replace				0.3		17	
		Repair				1.0		5	

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SECTION II MAINTENANCE ALLOCATION CHART
FOR
RADIO SET AN/ARC-102

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY					(5) TOOLS AND EQPT.	(6) REMARKS
			C	O	F	H	D		
0403	PRINTED CIRCUIT BOARD 22359 (24039)	Inspect Test Replace Repair				0.2 0.4 0.3 1.0		 5 17 5	

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SECTION III TOOL AND TEST EQUIPMENT REQUIREMENTS
FOR

RADIO SET AN/ARC-102

TOOL OR TEST EQUIPMENT REF CODE	MAINTENANCE CATEGORY	NOMENCLATURE	NATIONAL/NATO STOCK NUMBER	TOOL NUMBER
1	H	SIGNAL GENERATOR AN/URM-127	6625-00-783-5965	
2	H	DUMMY LOAD DA-75	5985-00-856-3970	
3	H	FREQUENCY COUNTER AN/USM-207A	6625-00-044-3228	
4	H	MAINTENANCE KIT, ELECTRONIC EQUIPMENT MK-722/URC	6625-00-082-4275	
5	H	MULTIMETER ME-26(*)/U	6625-00-360-2493	
6	O	MULTIMETER AN/USM-223	6625-00-999-7465	
7	H	OSCILLOSCOPE AN/USM-281A	6625-00-228-2201	
8	H	RF SIGNAL GENERATOR AN/URM-25F	6625-00-643-1548	
9	H	SPECTRUM ANALYZER TS-723A/U	6625-00-668-9418	
10	H	T-CONNECTOR, CO-AX MX-3341/U	6625-00-713-4356	
11	H	TEST HARNESS, RADIO SET AN/URM-157	6625-00-766-4685	
12	H	TEST SET, ELECTRON TUBE TV-2/U	6625-00-699-0263	
13	H	TEST SET, ELECTRON TUBE TV-7/U	6625-00-820-0064	
14	H	TEST SET, RADIO TS-1956/URC	5625-00-965-0188	
15	H	TEST SET, TRANSISTOR TS-1836/U	6625-00-893-2628	
16	H	TOOL KIT, ELECTRONIC EQUIPMENT TK-100/G	5180-00-605-0079	
17	H	TOOL KIT, ELECTRONIC EQUIPMENT TK-105/G	5180-00-610-8177	
18	O	TOOL KIT, ELECTRONIC EQUIPMENT TK-101/G	5180-00-064-5178	
19	H	VOLTMETER, ELECTRONIC AN/URM-145	6625-00-973-3986	
20	H	VOLTMETER, ELECTRONIC AN/USM-98	6625-00-753-2115	
21	H	VOLTMETER, ELECTRONIC ME-30(*)/U	6625-00-643-1670	
22	O	WATTMETER AN/URM-120	6625-00-813-8430	
23	H	RADIO RECEIVER R-1122/GR	5820-00-858-5925	
24	H	DUMMY LOAD DA-340/URC	5821-00-019-6315	
25	H	SPECTRUM ANALYZER AN/UPM-84E	6625-00-557-8262	
26	H	TEST HARNESS, SUBASSEMBLY TS-1949/URM-157	6625-00-766-3847	

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