

TECHNICAL MANUAL

OPERATOR AND ORGANIZATIONAL MAINTENANCE MANUAL

**MAINTENANCE KIT,
ELECTRONIC EQUIPMENT
MK-1004A/ARC**

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

WARNING

DEATH OR SERIOUS INJURY may result from hazards in this equipment unless proper safety measures are observed when operating and maintaining the equipment. 27.5v dc exists when the equipment is energized.

TECHNICAL MANUAL

No. 11-6625-2609-12



HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, DC, 11 May 1973

Operator and Organizational Maintenance Manual

MAINTENANCE KIT, ELECTRONIC
EQUIPMENT MK-1004A/ARC

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CHAPTER 1

INTRODUCTION

Section I. GENERAL

1-1. Scope

This manual describes Maintenance Kit, Electronic Equipment MK-1004A/ARC (fig. 1-1) and provides instruction for operation and organizational maintenance. It includes instructions for cleaning and inspection of the equipment, and troubleshooting and replacement of parts available to the organizational maintenance repairman.

1-2. Indexes of Publications

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

1-2.1. 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 (Packaging Improvement Report) as prescribed in AR 700-58/NAVSUPINST 4030.29/AR 71-13/MCO P4030.29A, 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 4610.33A/AFR 75-18/MCO P4610.19B, and DSAR 4500.15.

1-3. Destruction of Army Materiel

Refer to TM 750-244-2 for destruction of Army materiel to prevent enemy use.

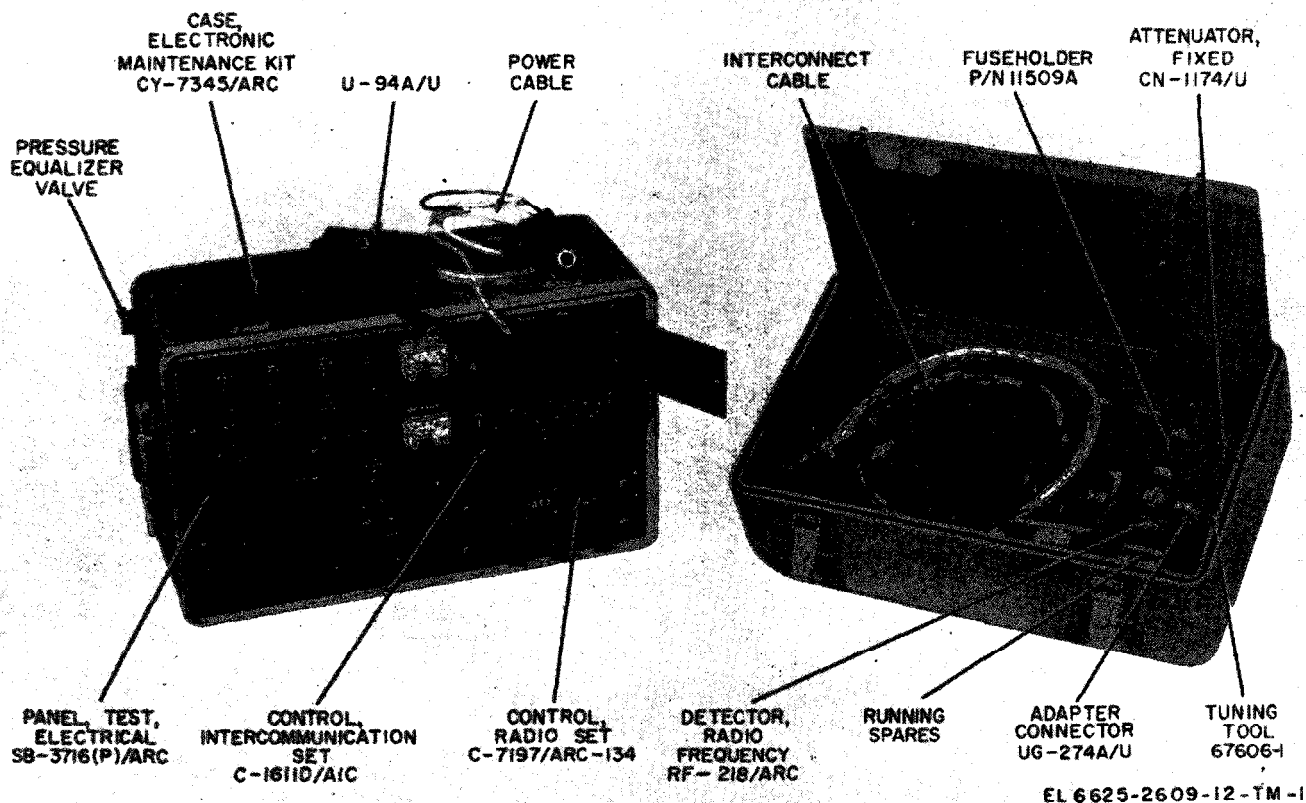


Figure 1-1. Maintenance Kit, Electronic Equipment MK-1004A/ARC

1-4. Administrative Storage

Refer to TM 740-90-1, and chapter 5 for requirements.

CAUTION

If the maintenance kit is being prepared for storage, close the pressure equalizer valve (fig. 1-1) to prevent moisture and dust accumulation inside the equipment case. If the maintenance kit is being prepared for air shipment, open the pressure equalizer valve to prevent possible rupture of the

equipment case at high altitudes.

1-5. 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: AMSEL-MA-Q, Fort Monmouth, NJ 07703.

Section II. DESCRIPTION AND DATA

1-6. Purpose and Use

a. Maintenance Kit, Electronic Equipment MK-1004A/ARC is a portable equipment used in field testing and adjusting Radio Set AN/ARC-134.

b. The MK-1004A/ARC includes Panel, Test Electrical SB-3716(P)/ARC mounted in Case, Electronic Maintenance Kit CY-7345/ARC. The SB-3716(P)/ARC house a Control, Radio Set C-7197/ARC-134; Intercommunication Control Set C-1611D/AIC; various input and output jacks; switches; indicators; and controls that are used to check and adjust for the proper operation of the AN/ARC-134.

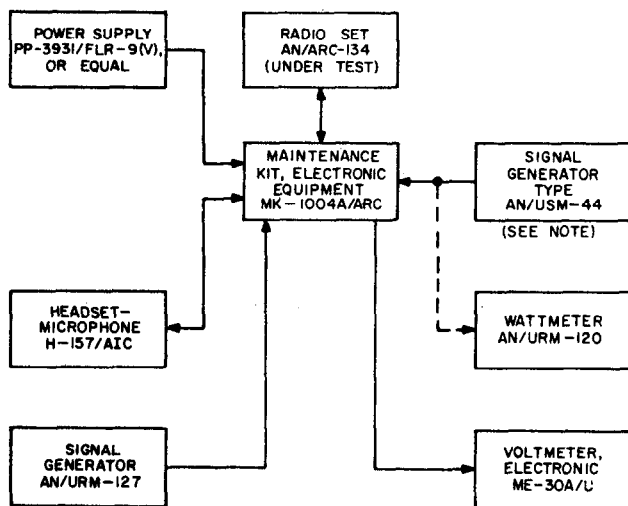
c. The intercommunications control set is used to verify proper performance of the intercommunication control set in the vhf communications network under test.

d. The radio control is used to provide power control, receiver volume control, and channel selection for the AN/ARC-134 under test. A COMM TEST switch on the radio control provides a means of checking the operation of the AN/ARC-134 with the receiver squelch disabled.

e. Figure 1-2 is a simplified block diagram illustrating the relationship between the MK-1004A/ARC, the required external test equipment, and the AN/ARC-134.

1-7. Nomenclature and Common Names

A list of the nomenclature assignments for Maintenance Kit, Electronic Equipment MK-1004A/ARC and its components is given in table 1-1. A common name used throughout the remainder of the manual is given for each entry.



NOTE:
VHF SIGNAL GENERATOR AN/USM-44 IS DISCONNECTED
AND WATTMETER IS CONNECTED TO MK-1004A/ARC
DURING TRANSMITTER TESTS AND ADJUSTMENTS.

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Figure 1-2. Maintenance kit and associated equipment.

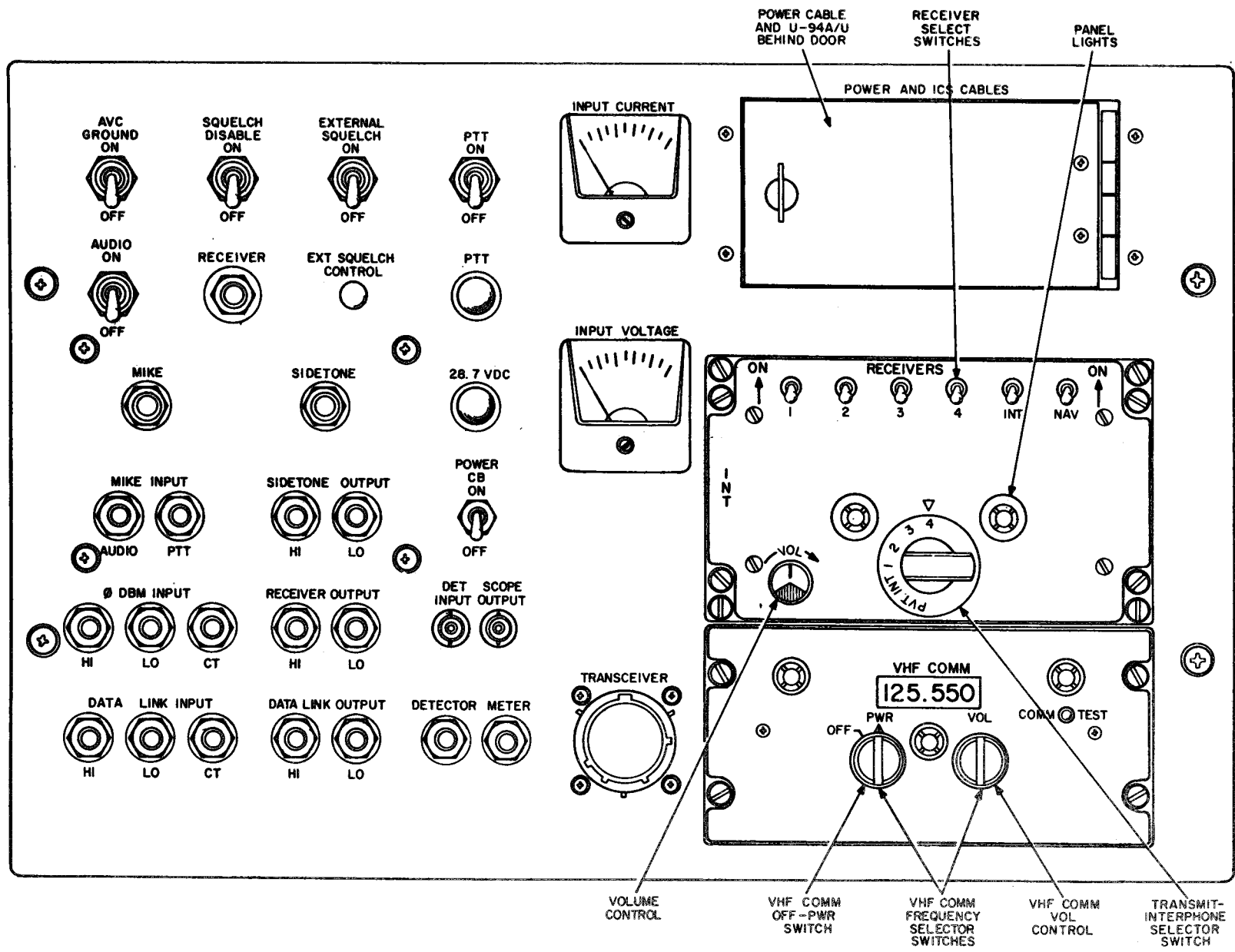


Figure 2-1.1. Maintenance kit switches, controls, indicators, and jacks.

Change 1 2-2.1

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Table 1-1. Nomenclature and Common Names

Nomenclature	Common name
Maintenance Kit, Electronic Maintenance kit Equipment MK-1004A/ARC.	
Panel, Test, Electrical SB- 3716(P)/ARC.	Test panel
Control, Radio Set C-7197/ARC-134.	Radio control
Case, Electronic Equipment Maintenance Kit CY-7345/ARC.	Equipment case
Detector, Radio Frequency RF-218/ARC.	RF detector
Attenuator, Fixed CN-1174/U.	Attenuator
Adapter, Connector UG-274A/U.	Adapter
Tuning Tools 67601-1	Tuning tool
Intercommunications Control Set C-1611D/AIC.	Intercom control

the headset-microphone are stored in a tray behind a small door on the front of the test panel. Alligator clip insulators (part of power cable) are marked to indicate the required input voltage connations.

b. Equipment Case. The equipment case is a lightweight, ruggedized inclosure with removable cover. Four clamps around the front of the main housing are used for locking the cover in place. Minor assemblies, interconnect cable, and running spares are in partitions on the inside of the removable case, and are held in place by a metal panel which is secured with two quick-release fasteners.

c. Test Panel. The test panel contains various signal input and output jacks, switches, controls, and indicators. Cutouts are provided for mounting the radio control and the intercom control. All electrical connections to the test panel are completed through the power cable and U-94A/U headset connection and through the interconnect cable that connects to a multipin receptacle on the front of the test panel.

d. Radio Control. The radio control provides power, receiver volume, and channel-selection control functions for the AN/ARC-134. A COMM TEST switch is used for disabling the receiver squelch circuit during test procedures. All controls are on an edge-lighted plastic front panel, and the selected channel frequency is indicated on an illuminated digital counter dial. The radio control is completely inched except for the front panel. All electrical connections are completed through a rear-mounted connector. The unit is mounted in a cutout on the test panel front

panel and is held in place by four quick-release fasteners.

e. Intercom Control. The intercom control is used to verify proper performance of the aircraft intercommunications control set. It includes a chassis, front and rear mounting plates, and a front panel. The controls and two panel lights are mounted on the front mounting plate and extend through cutouts in the front panel. The translucent front panel is edge-lighted by the panel lights. A pin receptacle on the rear mounting plate is provided for connection of the headset-microphone. Eight DZUS fasteners on the front mounting plate are used to secure the intercom control to the test panel.

f. Interconnect (Cable Assembly). The interconnect cable assembly is used to connect between the test panel and the AN/ARC-134 under test. It is terminated at one end with a plug for the main connector on the AN/ARC-134 and supplies all the required connections to the AN/ARC-134.

1-9. Description of Minor Assemblies

Special features of some of the minor assemblies are given below (fig. 1-3).

a. Fuseholder 11509A. The fuseholder, with self-contained fuse, is used whenever an external signal generator is connected to the maintenance kit interconnect cable BNC connector (AN/ARC-134 antenna connector). The fuseholder prevents possible damage to the signal generator through accidental keying of the AN/ARC-134 transmitter.

b. Radio Frequency Detector. The radio frequency detector is used to observe RF level during adjustments to the RF exciter/amplifier or driver stages in the AN/ARC-134 transmitter circuits.

e. Attenuator. The attenuator is connected to the external signal generator output to provide a proper signal input level to the AN/ARC-134 during test procedures.

d. Tuning Tool. The tuning tool is used whenever it is necessary to adjust the power amplifier grid coils in the AN/ARG-134 transmitter circuits.

e. Adapter. The adapter is used to connect the external signal generator, oscilloscope, and load wattmeter during transmitter test or adjustment procedures.

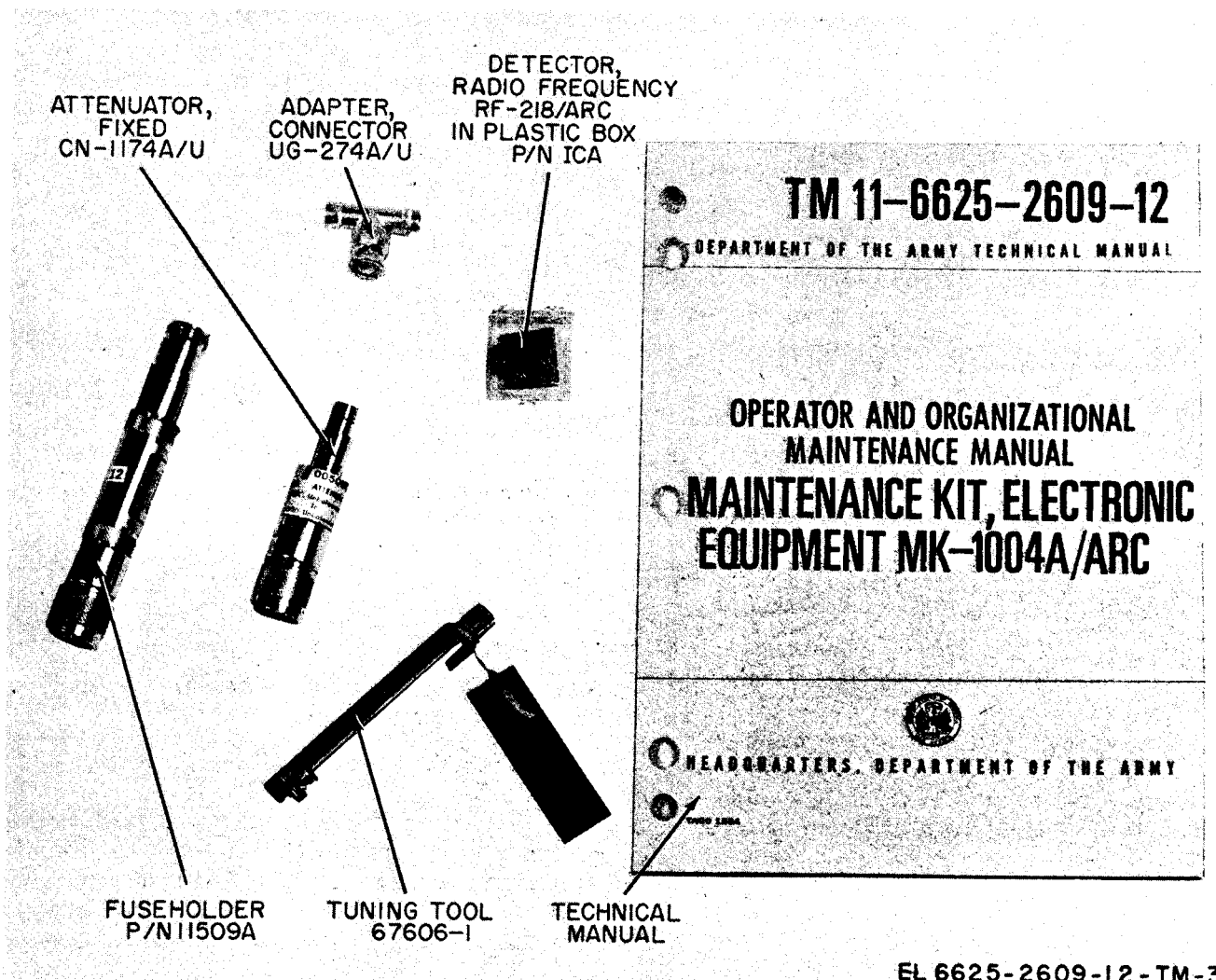


Figure 1-3. Minor components of maintenance kit.

1-10. Additional Equipment Required

The following equipment is not supplied as part of the maintenance kit, but is required for use with it.

a. *Power Supply PP-3931/FLR-9(V).* The PP-3931/FLR-9(V), or equivalent, is required to supply the dc power to the AN/ARC-134 under test.

b. *Radio Set AN/ARC-184.* The AN/ARC-134 is required for use with the maintenance kit.

c. *Other Equipment.* Additional equipment re-

quired for use with the maintenance kit is listed below.

- (1) Signal Generator AN/USM-44.
- (2) Wattmeter, Radio Frequency AN/URM-120.
- (3) Signal Generator AN/URM-127.
- (4) Voltmeter, Electronic ME-30A/U.
- (5) Coaxial Adapter UG201/U.
- (6) Capacitor, 50 microfarads (μf), 25 volts direct current (dc), Sprague Type TL-1209, or equal.

- (7) Coaxial Connector UG-88/U(two required).
- (8) RG58 coaxial cable (as required).
- (9) Headset-Microphone H-157/AIC.
- (10) Dummy Load, Electrical DA-75/U.

1-11. Technical Characteristics

Technical characteristics of the MK-1004A/ARC are given in table 1-2.

Table 1-2 Technical Characteristics

Characteristic	Specification
Frequency range	116.000 to 149.976 MHz
Channel spacing	25 kHz
Control radio set	C-7197/ARC-134
Intercommunications control set.	C-1611D/AIC
Dc power input requirement.	28.7 v
Power consumption	Approximately 12 w max.
Weight	24.75 lb (less manual)

1-12. Dimensions of Major Components

Table 1-3 gives dimensions and weights of the major components of the maintenance kit.

Table 1-3. Dimensions of Major Components

Qty Item	Item	Dimensions (in.)			Weight (lb)	Fig. No.
		Height	Depth	Width		
1	Panel, Test Electrical SB-3716(P)/ARC	8.87	5.375	14.87	9.0	1-1
1	Control, Radio Set C-7197/ARC-134 (FSN 5821-905-9935)	2.62	5.87	5.75	1.56	1-1
1	Intercommunications Control Set C-1611D/AIC (FSN 5831-933-9822).	3.0	5.37	5.75	2.19	1-1
1	Case, Electronic Maintenance Kit CY-7345/ARC	12.37	9.87	15.87	13.25	1-1
1	Detector, Radio Frequency RF-218/ARC* (FSN 5821-933-9606).	0.75	0.437	0.8125	0.0156	1-3
1	Attenuator, Fixed CN-1174/U (FSN 5985-491-4305)	0.75	0.75	3.0	0.23	1-3
1	Adapter, Connector UG-274A/U (FSN 5935-201-2411)	0.5	1.0625	1.25	0.0312	1-3
1	Fuseholder 11509A (FSN 5920-686-1107)	0.75	4.625	0.75	0.375	1-3
1	Tuning Tool 67606-1 (FSN 5120-949-6692)	0.5	0.3125	3.875	0.5	1-3
1	Test cable assembly	3	3.5	56.0	2.06	1-3
1	Technical manual	---	N/A	---	---	---

*Contained in plastic box 083442-0001.

**Ten fuses (P/N F01A250V1-16A) for fuseholder in plastic box 083644-0001 (fig. 1-4).

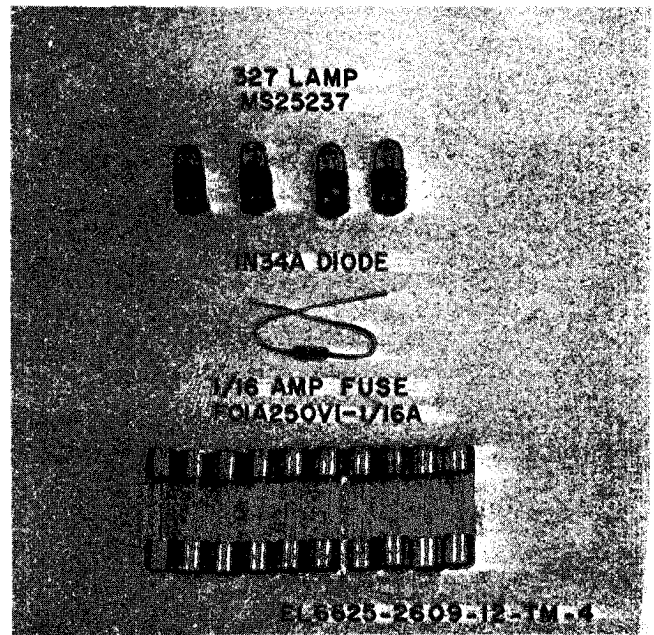


Figure 1-4. Maintenance kit running spares.

CHAPTER 2
OPERATING INSTRUCTIONS

Section I. SERVICE UPON RECEIPT AND INSTALLATION

2-1. Unpacking

a. *Packaging Data.* When packed for shipment, the units of the maintenance kits are sealed in a single shipping carton. The shipping carton and its contents are shown in figure 2-1. The dimensions are 13 x 11 x 17 inches, the volume is 1.4 cubic feet, and the

weight is 29.5 pounds,

b. *Removing Contents.*

(1) Cut the tape and open the top of the shipping carton.

(2) Remove the cushioning material from the carton.

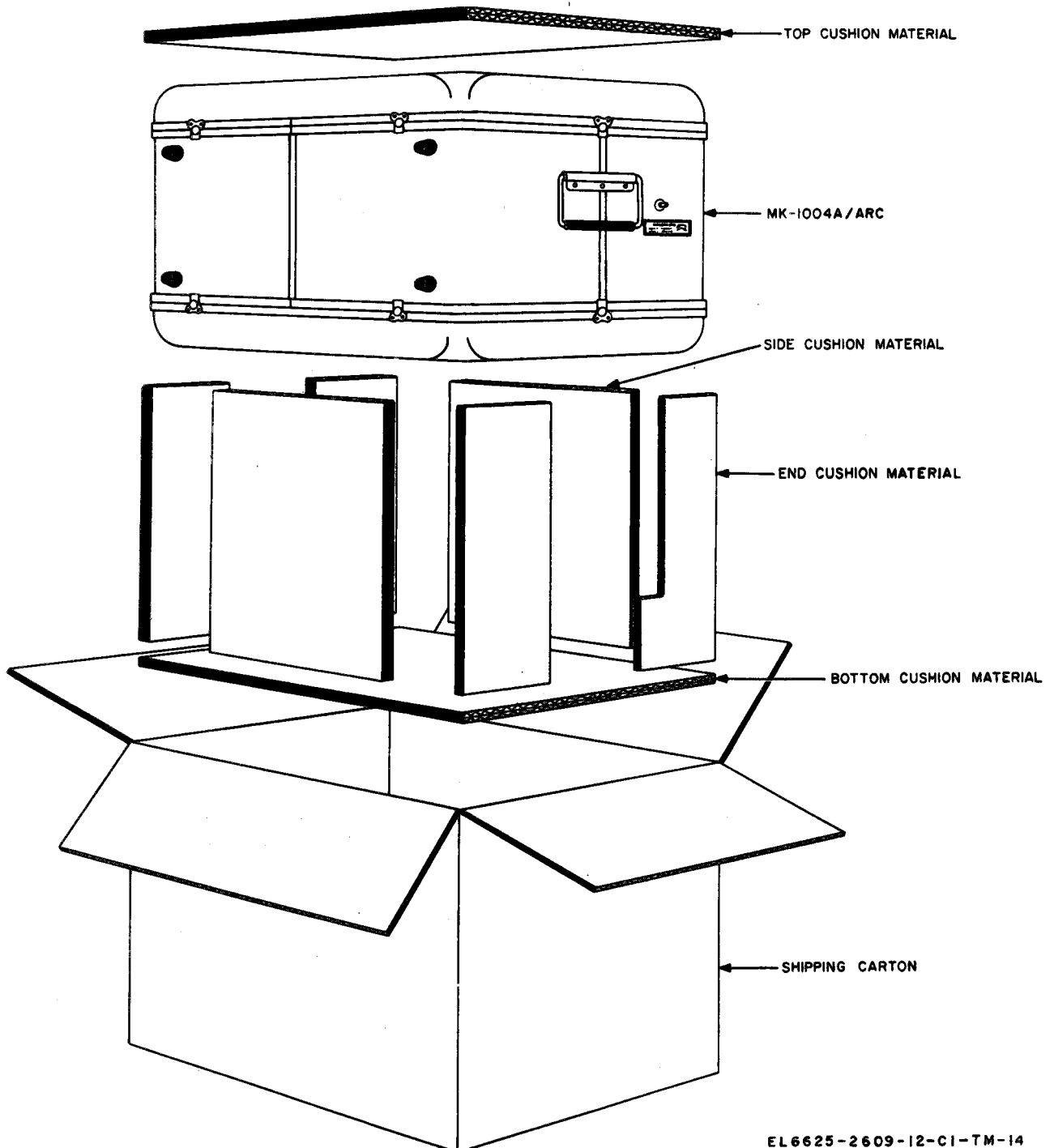


Figure 2-1. Maintenance kit packaging diagram.

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(3) Remove the equipment from the carton.

(4) Remove front and rear covers from the maintenance kit.

(5) Release the three fasteners on the inner panel of the rear cover, lift the panel, and remove the envelopes containing the manual and diagrams.

(6) Remove the nylon tape that secures the test cables at the rear of the unit.

(7) Place all cushioning material in the shipping container and same for storage or reshipment.

c. Check to see whether the equipment has been modified. (Equipment which has been modified will have the MWO number on the front panel, near the nomenclature plate.) Check also to see whether all currently applicable MWO's have been applied. (Current MWO's applicable to the equipment are listed in DA Pam 310-7.)

2-1.1. Checking Unpacked Equipment

a. Inspect the equipment for damage incurred during shipment. If the equipment has been damaged, report the damage on DD Form 6.

b. Check the equipment against the component listing in the operator's manual and the packing slip to see if the shipment is complete. Report all discrepancies in accordance with the instructions of TM 38-750. The equipment should be placed in service even though a minor assembly or part that does not affect proper functioning is missing.

2-2. Tools, Test Equipment, and Materials Required for Installation

There are no special tools, test equipment, or materials required for installation, other than the equipment required to test the AN/ARC-134.

2-3. Installation Instructions

a. Remove the cover from the maintenance kit.

b. Set maintenance kit up until it rests on its feet.

c. Release two push-to-release fasteners inside cover and lift door.

d. Remove interconnect cable from cover and attach to TRANSCEIVER connector on front of maintenance kit.

Section II. CONTROLS AND INSTRUMENTS

2-4. Operator's Controls

Table 2-1 lists and describes the front panel controls,

switches, indicators, and jacks of the maintenance kit. Figure 2-1 illustrates them.

Table 2-1. Operator's Controls

<i>Control, indicator, switch, or jack</i>	<i>Function</i>
POWER CB circuit breaker	In the ON position, applies the primary operating voltage to the radio control and the intercom control Lights the 28.7 VDC indicator lamp and the panel lamps on the radio control and the intercom control.
VHF COMM OFF-PWR switch	In the PWR position, applies primary operating voltage to the AN/ARC-134 and lights the radio control VHF COMM frequency counter dial indicator lamps.
VHF COMM MHz frequency selector switch	Tunes the AN/ARC-134 to the desired frequency (116 to 149 MHz).
VHF COMM fractional MHz frequency selector switch	Tunes the AN/ARC-134 to the desired fractional megahertz frequency (116.000 to 149.975 MHz).
VHF COMM VOL control	Adjusts the AN/ARC-134 volume level.
COMM TEST switch	Disables the AN/ARC-134 squelch circuit.
VHF COMM frequency counter dial	Indicates channel frequency to which the AN/ARC-134 is tuned.
Transmit-interphone selector, a 6-position rotary switch.	When set to position 2 and PTT switch on U-94A/U connector is depressed, applies audio from the H-157/AIC microphone through the preamplifier and amplifier of the intercom control to the transmitter of the AN/ARC-184 under test. Also receiver audio to amplifiers and headset.

1-8. Description

a. General. The maintenance kit is a portable unit designed to facilitate testing and adjustment of Radio Set AN/ARC-134 in the field. All electrical components are within the equipment case. There is an air pressure valve, for use in air shipment, on the

equipment case. All operating controls and test jacks are on the test panel, which is accessible by removing the cover of the equipment case. Minor assemblies and running spares are stored in partitions in the removable equipment case cover. The interconnect cable for the AN/ARC-134 is also stored in the cover. The power cable and U-94A/U connection cable for

Table 2-1. Operator's Controls-Continued

<i>Control, indicator, switch, or jack</i>	<i>Function</i>
RECEIVERS switches	Selects receiver <i>to be</i> connected to transmit-interphone selector.
VOL control, intercom control	Adjusts volume of the intercom control amplifier.
AUDIO switch	Turns the AN/ARC-134 audio output on and off.
SQUELCH DISABLE switch	In the ON position, the AN/ARC-134 squelch circuit is disabled, permitting signal levels below the squelch threshold to be heard.
EXTERNAL SQUELCH switch-----	In the ON position, the AN/ARC-134 squelch <i>can be</i> adjusted by means of the test panel EXT. SQUELCH CONTROL.
EXT. SQUELCH CONTROL-----	Adjusts the AN/ARC-134 squelch when the EXTERNAL SQUELCH switch is set to ON.
Indicator lamps 28.7 VDC-----	Lights when 28.7 vdc is applied to the maintenance kit and the POWER CB circuit breaker is set to ON.
PTT-----	Lights when PTT switch is activated.
PTT switch-----	Keys the AN/ARC-134 when set to ON.
MIKE jack	Provides circuit connections for keying and modulating the AN/ARC-134 with an external carbon microphone.
MIKE INPUT jacks	Provide connections to a 100-ohm input circuit for modulating the AN/ARC-134 with an external audio test signal.
Ⓜ DBM INPUT jacks	Provide connections to a 500-ohm center-tapped microphone input circuit for modulating the AN/ARC-134 with an external audio test signal.
DATA LINK INPUT jacks-----	Provide connections to the ATCSS (Air Traffic Control Signaling System) input circuit for modulating the AN/ARC-134 with an external audio test signal.
RECEIVER Jack-----	Provides a headset connection.
RECEIVER-OUTPUT jacks-----	Provide connection for an audio voltmeter.
DATA LINK-OUTPUT jacks-----	Provide connections to the ATCSS output circuit in the AN/ARC-134.
SIDETONE jack	Provides a headset connection.
SIDETONE OUTPUT jacks.	Provide connections for an audio voltmeter.
DET INPUT jack-----	Used to connect the AN/ARC-134 output to the input of a detector circuit in the maintenance kit.
DETECTOR METER jacks-----	Provide connections from the output of a detector circuit in the maintenance kit to an audio voltmeter, permitting measurement of the AN/ARC-134 modulation level.
SCOPE OUTPUT jack-----	Provides a connection from the output of a detector circuit in the maintenance kit to an oscilloscope, permitting the AN/ARC-134 modulation to be observed.
INPUT CURRENT meter-----	Measures current drawn by the AN/ARC-134.
INPUT VOLTAGE meter	Measures primary voltage applied to the AN/ARC-194.
Plug, Connector U-94A/U-----	Provides connection for Headset-Microphone H-157/AIC. Provides PTT switch for keying the transmitter of the AN/ARC-134.

Section III. OPERATION

2-5. Preliminary Starting Procedure

Perform the operation listed below before starting the equipment.

- a. Set the transmit-interphone selector switch position PVT and the RECEIVERS switch 3 to ON. Set another switches on the maintenance kit to OFF.
- b. Adjust VHF COMM VOL control fully clockwise.
- c. Connect primary power cable (two alliga-

tor clips) to primary power supply. Turn on power supply and set to 28.7 volts dc.

2-6. Starting Procedure

To start the equipment, make sure the controls are set as required by the preliminary starting procedure (para 2-5). Perform the procedure given below.

- a. Set the POWER CB circuit breaker to ON. On the maintenance kit, the 28.7 VDC lamp, panel lamps on the radio control, and panel lamps on

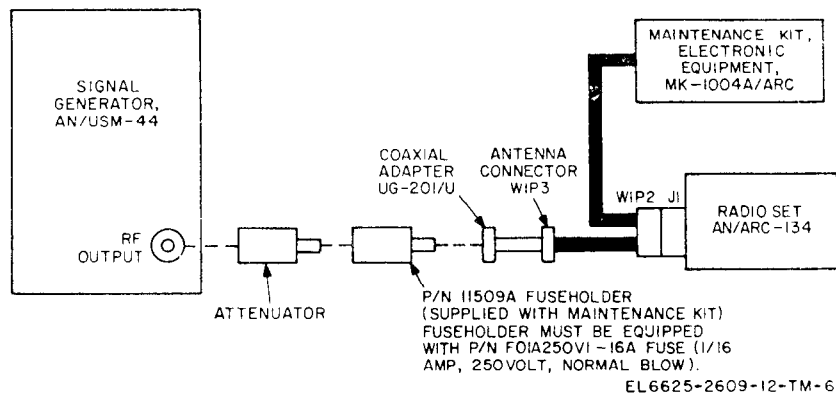


Figure 2-2. Radio Set AN/ARC-134 connected to maintenance kit.

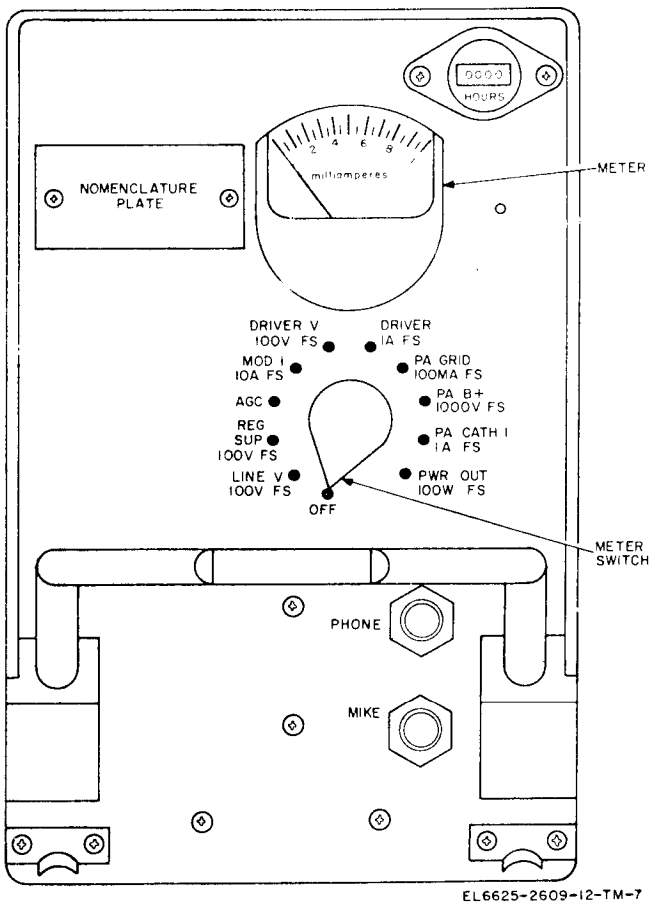


Figure 2-3. Radio Set AN/ARC-134, front Panel view.

the intercom control should light. The INPUT VOLTAGE meter should indicate 27.5 volts.

b. Connect the AN/ARC-134 to the maintenance kit as shown in figure 2-2.

c. Set the VHF COMM OFF-PWR switch to PWR. The indicator lamps behind the VHF COMM frequency counter dials should light, and

the INPUT CURRENT meter should indicate between 2 and 3 amperes.

d. Set the meter switch (fig. 2-3) on, the AN/ARC-134 front panel to LINE V 100V FS; the AN/ARC-134 meter should indicate 27.5 volts dc (-20%, +10%).

2-7. Operating Procedure

The operational checks in a through h below are given to familiarize the operator with the use of the maintenance kit. For the complete AN/ARC-134 test procedures, refer to TM 11-5821-277-35.

a. *Receiver Control Circuit Check at 132.5 MHz.* Start the equipment as instructed in paragraph 2-6 and proceed as follows.

(1) Connect voltmeter ME-30A/U, set to 30-volt range, to RECEIVER OUTPUT jacks on the maintenance kit.

CAUTION

In (2) below, be sure to connect the 11509A fuseholder between the output receptacle of the AN/USM-44 and antenna connector W1P3 (fig. 2-2) on the maintenance kit. The fuseholder should be equipped with a FO1A250V1-16A fuse. Do not press the PTT switch on the microphone or the test panel when the very high frequency (vhf) signal generator is connected to connector W1P3.

(2) Connect the AN/USM-44 to antenna connector W1P3 on the maintenance kit (fig. 2-2). Set the AN/USM-44 for a 132.500-MHz signal, modulated 30 percent at 1000 Hz, and set the output attenuator for a 3-microvolt output.

(3) Set the VHF COMM frequency selector switches to 132.500 MHz. An output indication should be obtained on the ME-30A/U.

(4) Connect the ME-30A/U to the DATA LINK OUTPUT jacks. The indicated voltage should be considerably lower than that obtained in (3) above.

b. Receiver Audio Output Checks. Start the equipment as instructed in paragraph 2-6 and proceed as follows:

(1) Leave the AN/USM-44 connected and adjusted as described in a above, except set for 30 percent modulation.

(2) Connect the H-157/AIC to the U-94A/U connector.

(3) Set the AUDIO switch to ON. A signal should be heard in the headset.

(4) Set RECEIVERS switch 3 to OFF. The signal heard in the headset should disappear. In sequence; set RECEIVERS switches 1, 2, 4, INT, and NAV to ON. No signal should be heard in the headset. Return RECEIVERS switches 1, 2, 4, INT, and NAV to the OFF position. Return RECEIVERS switch 3 to the ON position. The signal should again be heard in the headset.

(5) Set the EXTERNAL SQUELCH switch to ON, and adjust the EXT. SQUELCH CONTROL until the signal just disappears.

(6) Press the radio control COMM TEST switch. The signal should be heard again in the headset, indicating that the AN/ARC-134 squelch circuit is disabled. Release the COMM TEST switch.

(7) Set the SQUELCH DISABLE switch to ON. Indications should be the same as in (6) above.

(8) Set the SQUELCH DISABLE switch to OFF.

c. Squelch Control Circuit Checks. Start the equipment as instructed in paragraph 2-6 and proceed as follows:

(1) Leave the equipment connected as described in a and b above.

(2) Leave switches in positions set at the conclusion of b above.

(3) Adjust EXT. SQUELCH CONTROL fully clockwise.

(4) Adjust the AN/USM-44 output attenuator for a minimum output (less than .1 microvolt).

(5) Slowly increase the AN/USM-44 output level until the squelch opens as indicated by the presence of a tone in the headset. The AN/USM-44 level should not be greater than 1 microvolt.

(6) Set the AN/USM-44 output level to less than .1 microvolt. Adjust the EXT. SQUELCH CONTROL fully counterclockwise. Slowly increase the AN/USM-44 output level until the squelch opens. The AN/USM-44 level should be approximately 50 microvolt. Actual break points are a function of the AN/ARC-134 internal adjustments and are not dependent upon the maintenance kit.

d. Channel Selection Checks. Start the equipment as instructed in paragraph 2-6 and proceed as follows:

(1) Leave the AN/USM-44 connected and adjusted as described in a above. Leave the headset connected as described in b above.

(2) Set the AUDIO switch to ON.

(3) Set the EXTERNAL SQUELCH switch to OFF. Adjust the AN/USM-44 output attenuator for a 5-microvolt output.

(4) Set the AN/USM-44 and the radio control VHF COMM frequency selector switches to each of the following frequencies and check for proper frequency selection as denoted by a tone in the headset: 116.00 MHz, 126.00 MHz, 136.00 MHz, 146.00 MHz, 147.00 MHz, 148.00 MHz, 149.00 MHz, 140.00 MHz, 141.00 MHz, 142.00 MHz, 143.00 MHz, 144.00 MHz, 145.00 MHz, 145.10 MHz, 145.20 MHz, 145.30 MHz, 145.40 MHz, 145.50 MHz, 145.60 MHz, 145.70 MHz, 145.80 MHz, 145.90 MHz, and 145.95 MHz.

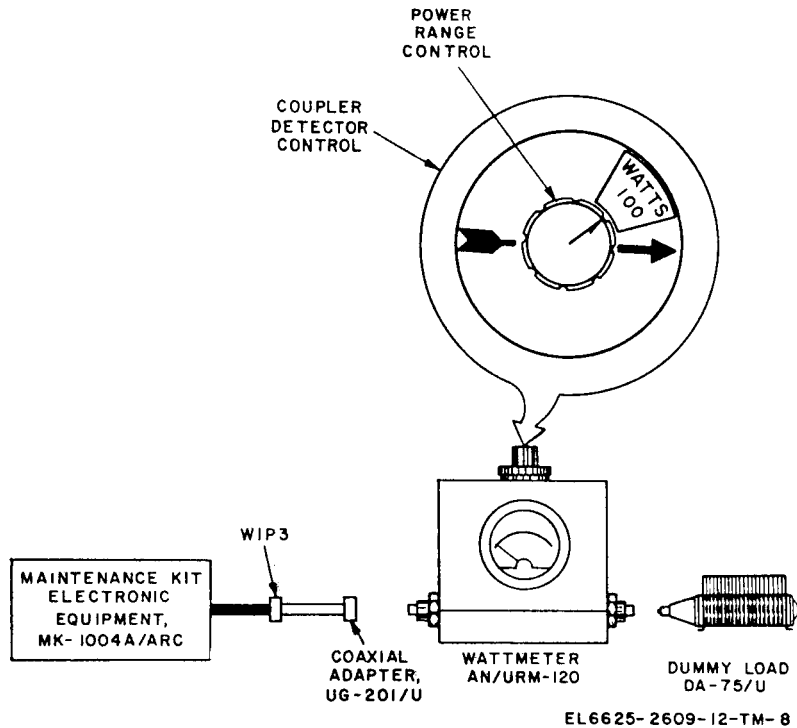
(5) Disconnect the AN/USM-44 and the ME-30A/U from the maintenance kit.

e. Transmitter Output and Control Circuit Checks. Start the equipment as instructed in paragraph 2-6 and proceed as follows:

(1) Connect Wattmeter, Radio Frequency AN/URM-120 and Dummy Load DA-75U to antenna connector W1P3 on the maintenance kit (fig. 2-4).

(2) Set the VHF COMM frequency selector switches (fig. 2-1) to 132.500 MHz.

(3) Set the test panel PTT switch to ON. A power output indication should be observed on the AN/URM-120, the INPUT CURRENT meter should indicate between 6 and 9 amperes, and the red PTT lamp should light.



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Figure 2-4. Wattmeter, Radio Frequency AN/URM-120 connected to maintenance kit.

(4) Settle PTT switch to OFF.

f. *Sidetone Check.* Start the equipment as instructed in paragraph 2-6 and proceed as follows :

(1) Leave the AN/URM-120 connected as described in e above.

(2) Connect the ME-30A/U to the SIDE-TONE OUTPUT jacks.

(3) Set the transmit-interphone selector switch to PVT.

(4) Key the AN/ARC-134 with the U-94A/U and talk into the microphone. Sidetone should be present in the headset and no power should be indicated on the AN/URM-43A or the ME-30A/U.

(5) Set the transmit-interphone selector switch to position 1.

(6) Repeat step (4) above. There should be no sidetone and no power indication on the ME-30A/U or the AN/URM-120.

(7) Set the selector switch to position 2.

(8) Repeat step (4) above. There should be no sidetone or power indication.

(9) Set the selector switch to position 3.

(10) Repeat step (4) above. Sidetone should be present, power should be inflicted on the AN/URM-120, sidetone should be indicated on the ME-30A/U, and INPUT CURRENT meter should indicate changing current levels.

(11) Set the selector switch to position 4.

(12) Repeat step (4) above. There should be no sidetone or power indication.

(13) Set the selector switch to position 3.

g. *Modulation Checks.* Start the equipment as instructed in paragraph 2-6 and proceed as follows :

(1) Leave the AN/URM-120 and Dummy Load DA-75U connected as described in e above.

(2) Set the AN/ARC-134 meter switch (fig. 2-3) to MOD I 10A FS.

(3) Key the AN/ARC-134 with the U-94A/U. Talk into the microphone and observe the AN/ARC-134 meter. The meter should fluctuate with modulation.

(4) Connect Signal Generator AN/URM-127 through a 50-micro farad blocking capacitor (fig. 2-5) to the test panel MIKE INPUT jacks (fig. 2-1).

(5) Set the AN/URM-127 to a frequency of 1000 Hz.

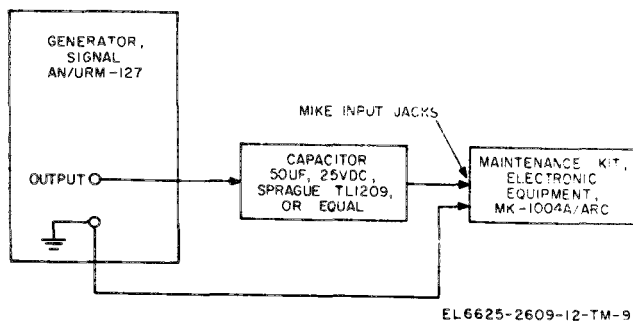


Figure 2-5. Signal Generator AN/URM-127 connected to maintenance kit.

(6) Set the test panel PTT switch to ON and increase the AN/URM-127 output level. A modulation indication should be observed on the AN/ARC-134.

(7) Repeat the procedure given in (5) and (6) above with the AN/URM-127 connected first to the test panel Ø DBM INPUT jacks and then to the DATA LINK INPUT jacks.

(8) Set PTT switch to OFF.

h. Detector Circuit Checks. Start the equipment as instructed in paragraph 2-6 and proceed as follows:

(1) Reconnect the AN/URM-127 through a

50-microfarad blocking capacitor to the test panel MIKE INPUT jacks.

(2) Connect the ME-30A/U to the test panel DETECTOR METER jacks. Set the ME-30A/U to the 10-volt range.

(3) Disconnect antenna connector W1P3 on the maintenance kit from the AN/URM-120, and connect W1P3 to the test panel DET INPUT receptacle.

(4) Connect the AN/URM-120 (fig. 2-6) to the test panel SCOPE OUTPUT receptacle.

(5) Set the test panel PTT switch to ON and increase the AN/URM-127 output level. Modulation should be indicated by a meter deflection on the ME-30A/U.

(6) Set PTT switch to OFF.

2-8. Stopping Procedure

a. To remove operating power from the AN/ARC-134, set the VHF COMM OFF-PWR switch to OFF. The indicator lamps behind the VHF COMM frequency counter dials should go out.

b. To remove all power from the maintenance kit, set the test panel POWER CB circuit breaker to OFF. The test panel 28.7 VDC indicator lamp should go out.

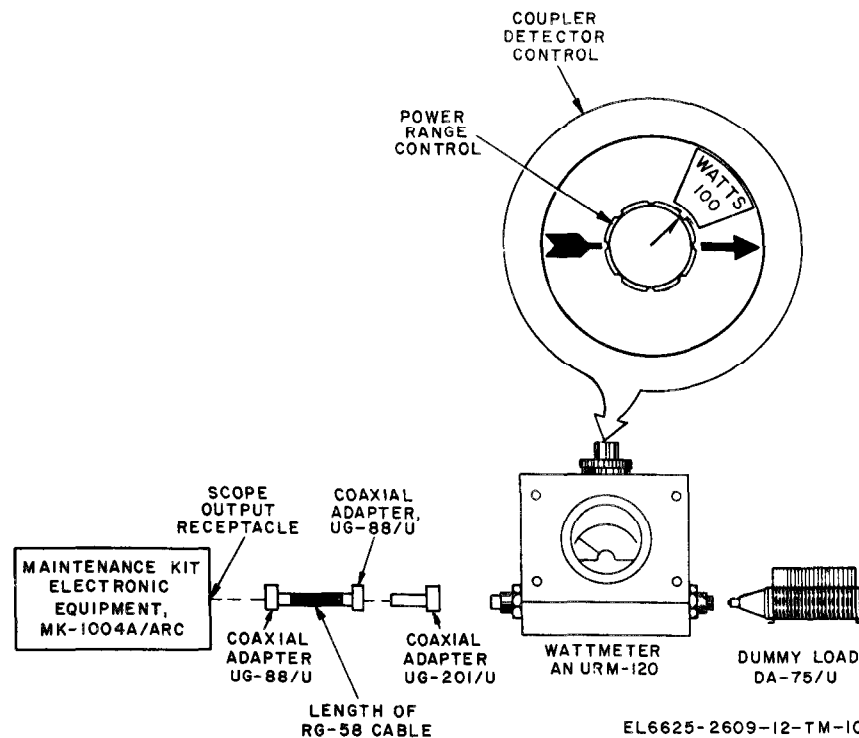


Figure 2-6. Wattmeter, Radio Frequency AN/URM-120 connected to maintenance kit detector.

CHAPTER 3

ORGANIZTIONAL MAINTENANCE INSTRUCTIONS

Section I. TOOLS AND EQUIPMENT

3-1. Tools and Equipment

Test equipment prescribed for use by operator

and organizational maintenance repairmen is given in paragraph 1-9 c.

Section II. REPAINTING AND REFINISHING INSTRUCTIONS

3-2. Cleaning

Before any painting or refinishing is done, the surface should be cleaned-

cloth dampened (not wet) with cleaning compound.

c. Remove with a brush, dust or dirt from plugs, receptacles, and jacks.

d. Use a soft, clean cloth to clean the front panel and control knobs. If dirt is difficult to remove, dampen the cloth with water and use mild soap if necessary.

CAUTION

Do not use any cleaning solvent on the front panel where silk-screening is present.

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

WARNING

Cleaning compound is toxic and flammable. Provide adequate ventilation. DO NOT use near a flame.

b. Remove grease and ground-in dirt with a

3-3. Repainting and Refinishing

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 SB 11-573 to determine the paint or preservative to be used. Refer to TB 746-10 for applicable cleaning and refinishing practices.

Section III. PREVENTIVE MAINTENANCE CHECKS AND SERVICES

3-4. General

To insure that the MK-1004A/ARC is always ready for operation, it must be inspected systematically so that defects may be discovered and corrected before they result in serious damage or failure. The necessary preventive maintenance checks and services to be performed are listed and described in tables 3-1 through 3-3. The

item numbers indicate the sequence of and minimum inspection required. Defects discovered during operation of the unit will be noted for future correction to be made as soon as operation has ceased. Stop operation immediately if a deficiency is noted during operation which would damage the equipment. Record all deficiencies together with the corrective action taken.

Table 3-1. Daily Preventive Maintenance Checks and Services

Sequence No.	Item to be inspected	Procedure	Reference
1	Completeness -----	See that the equipment is complete.	
2	Connectors -----	Check the tightness of all connectors.	
3	Switches, controls, and indicators -----	While making the operating checks, observe that the mechanical action of each switch and knob is smooth and free of external or internal binding and that no excessive looseness is apparent.	

Table 3-2. Monthly Preventive Maintenance Checks and Services

Sequence No.	Item to be inspected	Procedure	Reference
1	Indicators	Check all indicators for proper operation and indication.	
2	Cables	Inspect cords, cables, and wires for chafed, cracked, or frayed insulation. Replace connectors that are broken, stripped, worn excessively, or show evidence of arcing.	
3	Handles and latches	Inspect handles, latches, and hinges for looseness. Replace or tighten as necessary.	
4	Metal surfaces	Inspect exposed metal surfaces for rust and corrosion. Clean and touch up paint as required.	
5	Jacks	Inspect jacks for snug fit and good contact.	
6	Preliminary	Set all switches and controls as indicated in paragraph 2-5.	
7	AN/ARC-134 meter, 28.7 VDC lamp, and indicator lamps behind VHF COMM frequency dials and intercom control panel.	Perform procedure given in paragraph 2-6. Note the following: a. The AN/ARC-134 meter reads 27.5 vdc (-20%, +10%). b. The 28.7 VDC indicator lamp lights. c. The indicator lamp behind VHF COMM frequency counter dials light. d. The panel lamps on the intercom control light.	
8	RECEIVER OUTPUT jacks	Perform the procedure given in paragraph 2-7a(1), (2), and (3). An output indication should be obtained on the ME-30A/U.	
9	DATA LINK OUTPUT jacks	Perform the procedure given in paragraph 2-7a(4). An output indication considerably lower than that obtained in sequence No. 9 should be obtained on the ME-30A/U.	
10	RECEIVERS switches	Perform the procedure given in paragraph 2-7b(4). A signal should be heard in the headset only when RECEIVERS switch 3 is in the ON position.	
11	COMM TEST switch	Perform the procedure given in paragraph 2-7b(5) and (6). The signal should again be heard in the headset.	
12	EXTERNAL SQUELCH switch	Perform the procedure given in paragraph 2-7c(1) through (5). Squelch threshold should be 1 μ v or less.	
13	EXT. SQUELCH CONTROL	Perform the procedure given in paragraph 2-7c(6). Squelch threshold should be approximately 50 μ v.	
14	VHF COMM frequency selector switches	Perform the procedure given in paragraph 2-7d(1) through (4). Tone should be heard in the headset on each channel checked.	
15	VHF COMM VOL control	Leave equipment adjusted as described in sequence No. 14. Vary VHF COMM VOL control from minimum to maximum. Signal in the headset should increase as control is turned maximum clockwise.	
16	Intercom control VOL control	Leave equipment adjusted as described in sequence No. 15. Vary VOL control from minimum to maximum. Signal in H-157/AIC should increase as control is turned clockwise.	

Table 3-2 Monthly Preventive Maintenance Checks and Services-Continued

Sequence No.	Item to be inspected	Procedure	Reference
17	PTT switch	Perform the procedure given in paragraph 2-7d(5) and then the procedure in paragraph 2-7e. A power output indication should be observed on the AN/URM-120, and the maintenance kit INPUT CURRENT meter should indicate between 6 and 9 amps.	
18	Transmit-interphone selector switch	Perform the procedure given in paragraph 2-7f. Sidetone should be heard when transmit-interphone selector switch is in position INT, PVT, and 3. Power output should be observed on the AN/URM-120 only when the selector switch is in position 3.	
19	Ø DBM INPUT jacks	Perform the procedure given in paragraph 2-7g. A modulation indication should be observed on the AN/ARC-134 meter.	
20	DATA LINK INPUT jacks	Perform the procedure given in paragraph 2-7g. A modulation indication should be observed on the AN/ARC-134 meter.	
21	DETECTOR METER, DET INPUT, and SCOPE OUTPUT jacks.	See paragraph 2-7h. Modulation should be indicated by a meter deflection on the ME-30A/U and by an increase in the AN/URM-120 indication.	

Table 3-3. Quarterly Preventive Maintenance Checks and Services

Sequence No.	Item to be inspected	Procedure	Reference
1	Publications	See that all publications are complete, serviceable, and current.	DA Pam 310-4.
2	Modifications	Check DA Pam 310-7 to determine if new applicable MWO's have been published. All URGENT MWO's must be applied immediately. All NORMAL MWO's must be scheduled.	DA Pam 310-7.
3	Spare parts	Check all spare parts (operator and organization) for general condition and method of storage. No overstock should be evident and all shortages must be on valid requisitions.	

Section IV. TROUBLESHOOTING

3-5. General

Troubleshooting this equipment at the operator or organizational category is based on the operational checks continued in the monthly preventive maintenance checks and services (table 3-2). To troubleshoot the equipment, perform all functions indicated in sequence number 7 in table 3-2 and

proceed through the functions until an abnormal condition or result is obtained. When an abnormal condition is observed, refer to troubleshooting table 3-4 and perform the checks and corrective actions indicated. If the corrective measures indicated do not result in correction of the trouble, higher category maintenance is required.

Section V. MAINTENANCE OF MK-1004A/ARC

3-6. Replacement of Test Panel Indicator Lamps

CAUTION

Be sure POWER CB circuit breaker is set to OFF.

a. Rotate lampholder (fig. 3-1) until it separates from the test panel.

b. Extract the defective lamp from the lampholder; use a knife blade or small screwdriver as a pry if the bulb is difficult to remove.

Table 3-4 Troubleshooting

Malfunction	Probable cause	Corrective action
1 AN/ARC-134 meter does not indicate 27.5 vdc (-20%, +10%).	a. VHF COMM OFF-PWR switch is OFF. b. AN/ARC-134 meter switch not set to LINE V.	a. Set VHF COMM OFF-PWR switch to PWR. b. Set meter switch to LINE V.
2 Radio control or intercom control panel lamps do not light.	Defective panel lamps	Replace lamps (para 3-7).
3 VHF COMM frequency counter dials do not light.	Defective frequency counter dial lamps	Replace lamps (para 3-8).

c. Install a new lamp and rotate the lamp-holder clockwise until it is secure.

3-7. Replacement of Radio Control and Intercom Control Panel Lamps

a. Rotate lamp receptacle cap (fig. 3-1) counterclockwise and remove it from the front panel.

b. Insert a new lamp into the lamp receptacle cap and rotate the cap clockwise until it is secure.

3-8. Replacement of Frequency Counter Dial Indicator Lamps

a. Rotate the quick-release fasteners (fig. 3-2) one-quarter turn counterclockwise.

b. Slide the radio control forward and out of the test panel.

c. Remove the cover attaching screws (fig. 3-2) and lift the cover from the radio control.

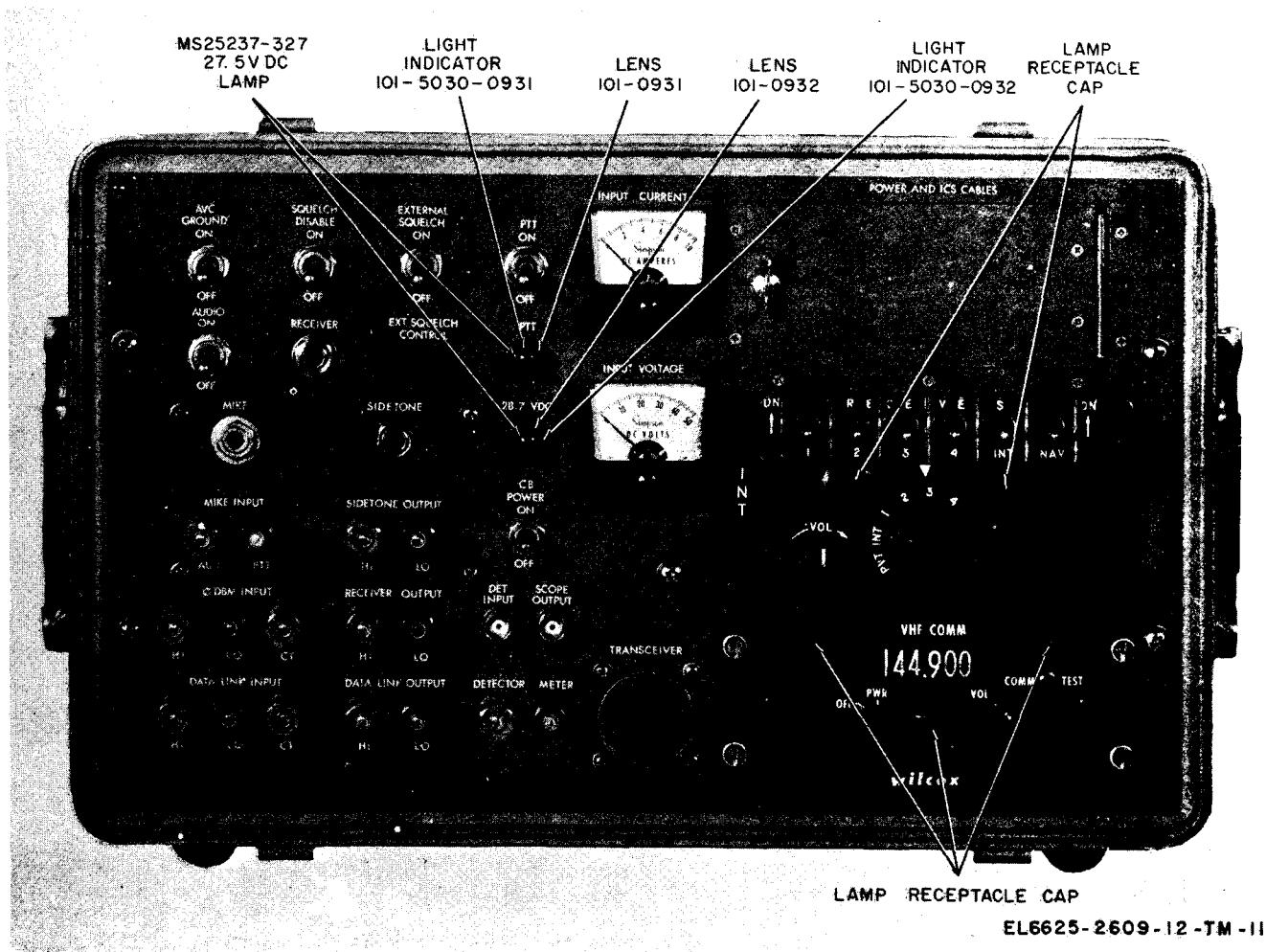


Figure 3-1. Test panel, indicator lamp locations.

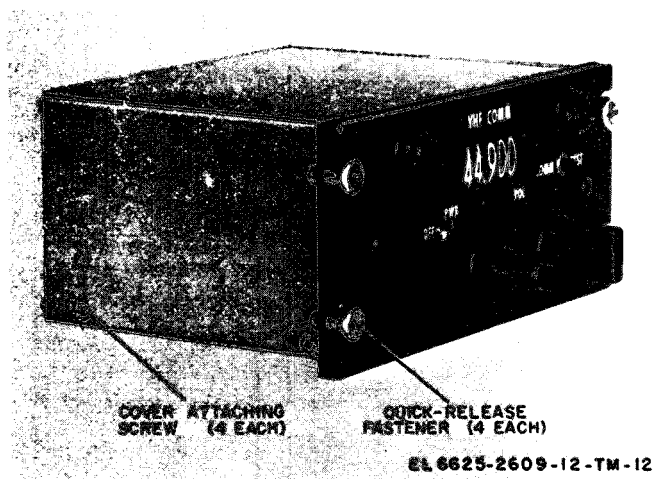


Figure 3-2. Radio control disassembly.

- d. Remove the lamp cover (fig. 3-3) from the dial indicator lamp.
- e. Loosen the tab retaining screw (fig. 3-3) near the lamp base.
- f. Turn the retaining tab away from the lamp base.
- g. Push the lamp backward through the hole in the gear plate and remove the lamp.
- h. Insert a new lamp in the gear plate.
- i. Position the retaining tab over the base of the lamp and tighten the retaining screw.
- j. Replace the lamp cover over the lamp.

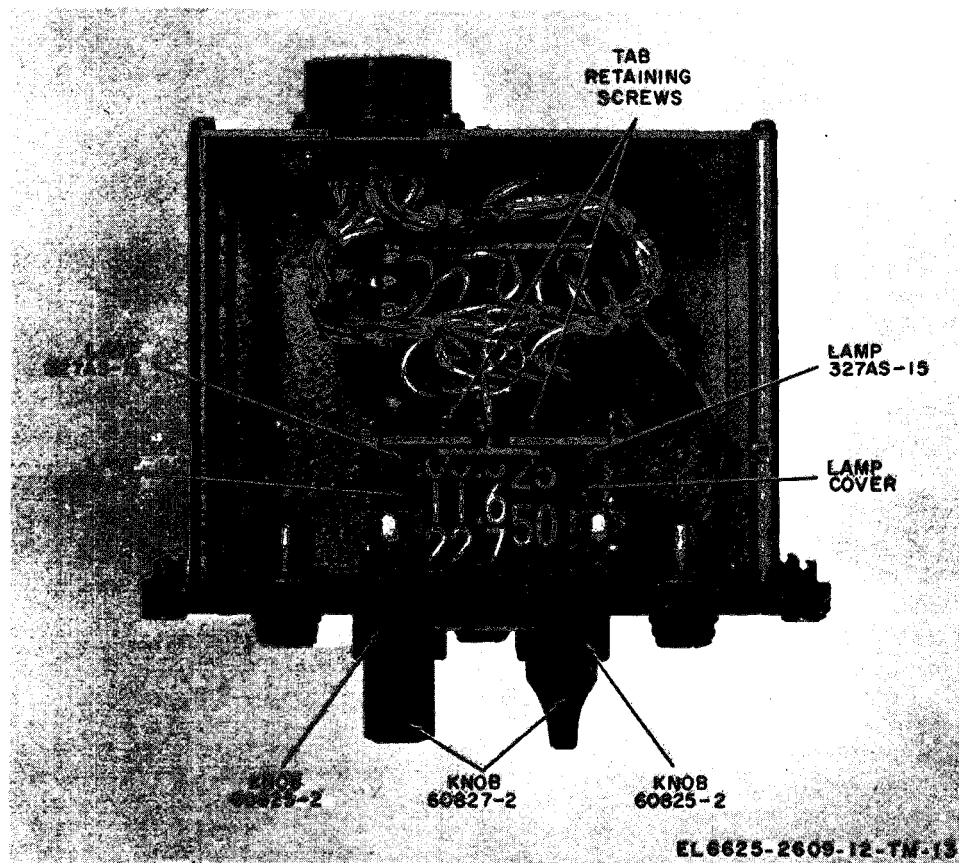


Figure 3-3. Radio control dial indicator lamp locations.

Section VI. TESTING

3-9. General

After repairs have been made on the maintenance kit, the monthly preventive maintenance

checks and services of table 3-2 should be performed to insure that the equipment is functioning correctly.

CHAPTER 4

MATERIEL USED IN CONJUNCTION WITH MAJOR ITEM

4-1. Auxiliary Equipment

The following is a list of equipment used with the maintenance kit to test the AN/ARC-134. Technical manuals for the auxiliary equipment are listed in appendix A.

- a.* Signal Generator AN/USM-44.
- b.* Wattmeter, Radio Frequency AN/URM-120.
- c.* Signal Generator AN/URM-127.
- d.* Voltmeter, Electronic ME-30A/U.
- e.* Coaxial Adapter UG-201/U.
- f.* Headset-Microphone H-157/AIC.
- g.* Coaxial Connector UG-88/U (2 required).
- h.* Coaxial Cable RG-58/U (as required).
- i.* Capacitor, 50 μ f, 25 vdc.
- j.* Dummy Load DA-75/U.

CHAPTER 5

SHIPMENT AND LIMITED STORAGE

5-1. Disassembly of Equipment

Prepare the maintenance kit for shipment and storage as follows:

a. Disconnect all control, antenna, and power cables.

b. Replace all minor assemblies, running spares, the interconnect cable, and technical manual in the proper positions inside the cover of the equipment case.

e. Close the metal panel inside the cover of the equipment case and secure the panel with the two fasteners.

d. Replace the cover on the equipment case and secure the cover with four holddown clamps.

5-2. Repackaging for Shipment or limited Storage

The exact procedure for repackaging depends on the material available and the conditions under which the equipment is to be shipped or stored. Adapt the procedures outlined below whenever circumstances permit.

a. Material Requirements. The following materials are required for packaging the maintenance kit. For stock numbers of materials, consult SB 38-100.

<i>Material</i>	<i>Quantity</i>
Carton -----	(19 x 13 x15 in.)
Tape, cloth backing, water-proof.	130 in.
Cushioning material (1½ in. thickness) (PPP-C-850d).	1190 sq in.

b. Packaging. Package the items of the maintenance kit as outlined below.

(1) Place cushioning material in the bottom of the shipping carton.

CAUTION 1

If the maintenance kit is being prepared for storage, close the pressure equalizer valve (fig. 1-1) to prevent moisture and dust accumulation inside the equipment case.

CAUTION 2

If the maintenance kit is being prepared for air shipment, open the pressure equalizer valve (fig. 1-1) to prevent possible rupture of the equipment case at high altitudes.

(2) Place the maintenance kit in the shipping carton and insert cushioning material around the equipment case.

(3) Secure the top of the shipping carton with the cloth-backed waterproof tape.

APPENDIX A

REFERENCES

The following is a list of applicable references available to the operator and organizational repairment of the MK-1004A/ARC.

DA Pam 310-4	Index of Technical Manuals, Technical Bulletins, Supply Manuals (Types 7, 8, and 9), Supply Bulletins, and Lubrication Orders
DA Pam 310-7	U.S. Army Equipment Index of Modification Work Orders
SB 38-100	Preservation, Packaging and Packing Materials, Supplies, and Equipment Used by the Army
TM 11-6626-446-15	Wattmeter AN/URM-120
TM 11-5821-277-20	Organizational Maintenance Manual: Radio Sets AN/ARC-134, AN/ARC-134A and AN/ARC-134B
TM 11-5821-277-20P	Organizational Repair Parts and Special Tools List: Radio Set AN/ARC-134A
TM 11-5831-201-20	Organizational Maintenance Manual: Control, Intercommunication Set C-1611D/AIC and Discriminator, Discrete Signal MD-736/A
TM 11-5831-201-20P	Organizational Repair Parts and Special Tools List: Control, Intercommunication Set C-1611D/AIC and Discriminator, Discrete Signal MD-736/A
TM 11-6625-320-12	Operation and Organizational Maintenance Manual: Voltmeter, Meter ME-30A/U and Voltmeter, Electronic ME-30B/U, ME-30C/U, and ME-30E/U
TM 11-6625-508-10	Operator's Manual: Signal Generators AN/USM-44 and AN/USM-44A
TM 11-6625-1635-24P	Organizational, Direct Support and General Support Maintenance Repair Parts and Special Tools Lists (Including Depot Maintenance Repair Parts and Special Tools) : Maintenance Kit, Electronic Equipment MK-1004A/ARC
TM 38-750	The Army Maintenance Management System (TAMMS)
TM 740-90-1	Administrative Storage
TM 750-244-2	Procedures for Destruction of Electronics Materiel to Prevent Enemy Use (Electronics Command)

APPENDIX B

MAINTENANCE ALLOCATION

Section I. INTRODUCTION

B-1. General

This appendix provides a summary of the maintenance operations covered in the equipment literature. 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.

B-2. Maintenance Functions

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, preserve, drain, paint, or to replenish fuel/lubricants/hydraulic fluids or compressed air supplies.

d. Adjust. 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 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 equipment used in precision measurement. Consists of the comparison 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/system.

h. Replace. The act of substituting a serviceable like-type part, subassembly, module (component or assembly) in a manner to allow the proper functioning of an equipment/system.

i. Repair. 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/assembly, end item or system.

j. Overhaul. A That maintenance effort (service/action) necessary to restore an item to a completely serviceable/operational condition as prescribed by maintenance standards (e.g., DMWR) in pertinent technical manuals. 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 equipment/components.

l. Symbols. The uppercase letter placed in the appropriate column indicates the lowest level at which that particular maintenance function is to be performed.

B-3. Explanation of Format

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

b. Functional Group. Column 2 lists the next higher assembly group and the item names of components, assemblies, subassemblies, and modules within the group for which maintenance is authorized.

c. Maintenance Functions. Column 3 lists the twelve maintenance functions defined in paragraph B-2. Each maintenance function required for an item is specified by the symbol among those listed in *d* below which indicates the level responsible for the required maintenance. Under this symbol is listed an appropriate work measurement time value determined as indicated in *e* below.

d. Use of Symbols. The following symbols are used to prescribe work function responsibility:

- C_ _ _ _ Operator/crew.
- O_ _ _ _ Organization.
- F** _ _ _ _ Direct support.
- H_ _ _ _ General support.
- D_ _ _ _ Depot.

e. Work Measurement Time. The active repair time required to perform the maintenance function is included directly below the **symbol identifying the category of maintenance**. The **skill levels used to obtain the measurement times approximate those found in typical TOE units**. Active repair time is the average aggregate time required to restore an item (subassembly, assembly, component, module, end item, or system) to

a serviceable condition under typical field operating conditions. This time includes preparation time, fault isolation/diagnostic time, and QA QC time in addition to the time required to perform specific maintenance functions identified for the tasks authorized in the maintenance allocation chart. This time is expressed in man hours and carried to one decimal place (tenths of hours).

f. Tools and Test Equipment. This column is used to specify, by code, those tools and test equipment required to perform the designated function.

g. Remarks. Self-explanatory.

B-4. Explanation of Format of Table I and Test Equipment Requirements

The columns in table I follows:

a. Tools and Equipment. The numbers in this column coincide with the numbers used in the tools and equipment column of the maintenance allocation chart. The numbers indicate the applicable tool for the maintenance function.

b. Maintenance Category. The codes in this column indicate the maintenance category normally allocated the facility.

c. Nomenclature. This column lists tools, test, and maintenance equipment required to perform the maintenance functions.

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

e. Tool Number. Not used.

SECTION II. MAINTENANCE ALLOCATION CHART															
(1) GROUP NUMBER	(2) FUNCTIONAL GROUP COMPONENT ASSEMBLY NOMENCLATURE	(3) MAINTENANCE FUNCTIONS											(4) TOOLS AND EQUIPMENT	(5) REMARKS	
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD			
1	MAINTENANCE KIT, ELECTRONIC EQUIPMENT MK-1004A/ARC	0 .25	0 .5	0 .25						0 .5				4,5	Organizational maintenance performed by Direct Support. Testing limited to equipment operation. Repair will be limited to replacement of knobs, lenses, lamps, C-1611 D /AIC and C-7197/ARC.
			F 1.0						F 2.0			D 8.0	D 8.0	1 thru 11	
1A	TEST PANEL SD-3716(F)/ARC MODIFIED	0 .25	0 .5	0 .25					0 .5	0 .5				4,5	
			F 7.0							F 2.0		D 8.0	D 8.0	1 thru 11 1 thru 11	Organizational maintenance performed by Direct Support. Testing limited to equipment operation. Repair will be limited to replacement of knobs, lenses, lamps, C-1611 D /AIC and C-7197/ARC.
1B	INTERCOMMUNICATION SET C-1611D/AIC	0 .25	0 .5	0 .25					0 .5	0 .5				4,5	
			#							#					Repair limited to replacement of knobs, lenses, and lamps. See TM 11-5831-201-20

MAINTENANCE ALLOCATION CHART															
(1) GROUP NUMBER	(2) FUNCTIONAL GROUP COMPONENT ASSEMBLY NOMENCLATURE	(3) MAINTENANCE FUNCTIONS											(4) TOOLS AND EQUIPMENT	(5) REMARKS	
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD			
1C	CONTROL, RADIO SET C-7197/ARC	0 .25	0 .5 #	0 .25						0 .5	0 .5 #			4,5	Repair limited to replacement of knobs, lenses, and lamps. See TM 11-5821-277-20 # Indicates that maintenance guidance will be found in documents referenced in remarks column.

TABLE I. TOOL AND TEST EQUIPMENT REQUIREMENTS

TOOLS AND EQUIPMENT	MAINTENANCE CATEGORY	NOMENCLATURE	FEDERAL STOCK NUMBER	TOOL NUMBER
1	F,H,D	GENERATOR, SIGNAL AN/UFM-127	6625-783-5965	
2	F,H,D	GENERATOR, SIGNAL AN/USM-44	6625-669-4031	
3	F,H,D	WATTMETER, RADIO FREQUENCY AN/UFM-120()	6625-813-8430	
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LOCATION	QUANTITY	UNIT OF ISSUE	
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