

**TECHNICAL MANUAL**  
**OPERATOR'S AND ORGANIZATIONAL**  
**MAINTENANCE MANUAL**  
**TEST SET, RADIO**  
**AN/ARM-45 AND AN/ARM-45A**

**(NSN 6625-00-855-9447)**

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**HEADQUARTERS, DEPARTMENT OF THE ARMY**

**FEBRUARY 1976**

**WARNING**

Be careful when working around the antenna test cable connectors or RF INPUT and RF OUTPUT test connectors. Radiofrequency voltages that exist at these points may cause burns. Be careful when working on the 27.5 volt dc or 115-volt ac power supply connections. Serious injury or death may result.

**DON'T TAKE CHANCES!**

**OPERATOR'S AND ORGANIZATIONAL MAINTENANCE MANUAL****TEST SETS, RADIO AN / ARM-45 AND AN / ARM-45A****(NSN 6625-00-855-9447)**

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\*This manual supersedes TM 11-6625-409-12, 20February 1962, including all changes.

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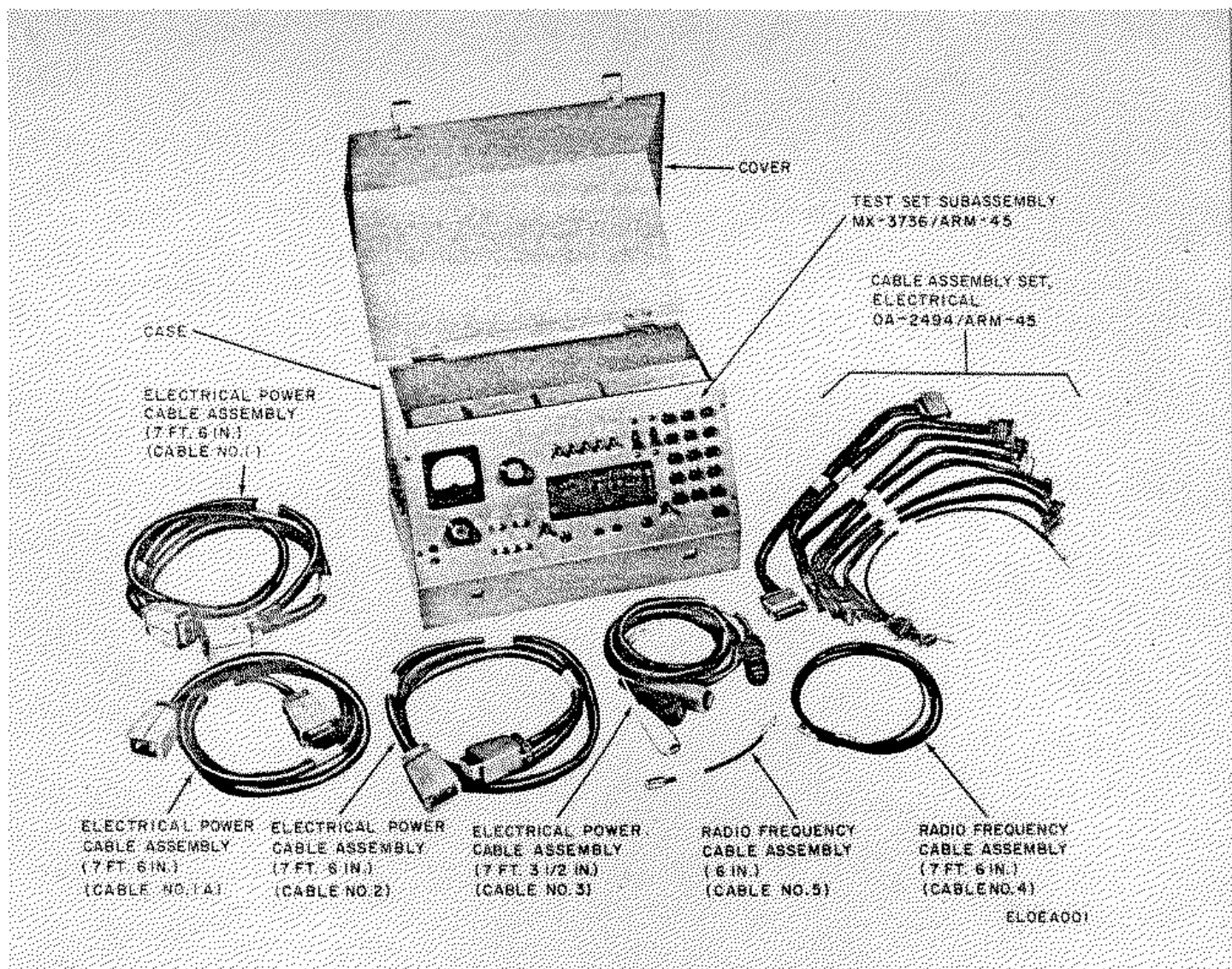


Figure 1-1. Test Set, Radio AN/ARM-45(\*).

## CHAPTER 1

INTRODUCTION

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## Section I. GENERAL

**1-1. Scope**

a. This manual describes Test Set, Radio AN/ARM-45(\*) (test set) (fig. 1-1), and covers its operation and organizational maintenance. It includes operating procedures, checking and inspection of the equipment, and replacement of parts available to organizational maintenance.

b. Nomenclature references in this manual followed by an (e) indicate all models of equipment are specified. For example, Radio Test Set AN/ARM-45 and Radio Test Set AN/ARM-45A.

**1-2. Indexes of Publications**

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

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

**1-3. 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 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/AFM 75-18/MCO P4610.19B, and DSAR 4500.15.

**1-4. Recommendation for Maintenance Publications Improvements (fig. 1-2)**

You can improve this manual by recommending improvements using DA Form 2028 (Recommended Changes to Publications and Blank Forms) or DA Form 2028-2 (Test) located in the back of the manual. To use the form in the back of the manual, cut it out, fill it out as shown on the sample in figure 1-2, fold it where shown, and drop it in the mail. A reply will be furnished direct to you.

**1-5. Administrative Storage**

Administrative storage of the equipment shall be in accordance with the requirements of TM 740-90-1.

**1-6. Destruction of Army Materiel**

Demolition of equipment will be accomplished only upon order of the commander. Refer to TM 750-244-2 for demolition procedures.

Figure 1-2. DA Form 2028-2 (Test) - sample.

## Section II. DESCRIPTION AND DATA

**1-7. Purpose and Use**

*a. Purpose.* Test Set, Radio AN/ARM-45(\*), provides the portable test facilities required for checking the components of Radio Sets AN/ARC-73 and AN/ARC-73A (Transmitter 17L-7A, Receiver 51X-2B, Dual shockmount 390E-2, and Radio Set Control 614U-5 or 614U-6) and the aircraft wiring associated with these components.

*b. Use.* The test set may be used either at a maintenance bench (independently of the associated aircraft wiring) to perform operational tests of the transmitter, receiver, and remote control unit (a above), or it may be used within the aircraft to test the wiring and control circuits associated with these components.

**1-8. Tabulated Data.**

Power requirements:

DC.....27.5 volts at 1.5 amperes.

**1-9. Items Comprising an Operable Radio Test Set AN/ ARM-45(\*)**  
(fig. 1-1 and 1-3)

AC ..... 115 volts, 400 cps, single phase, at 2 amperes (when AN/ARC-73 or AN/ARC-73A under test is equipped with ac power supplies).

Frequency range..... 116 to 151 megacycles (in. 0.05-megacycle increments).

Indicators:

Lamps (16) Incandescent, 28 volts.

Meter:

Type..... Dc milliammeter, 0 to 1.9 ma scale.

Accuracy .... ± 2 percent of full-scale deflection.

Weight ..... 35 pounds.

Volume ..... 2.1 cubic feet.

Dimensions:

Length ..... 18 inches.

Width..... 11 inches.

Height..... 10 3/4 inches.

National stock No.	QTY	Nomenclature, Part No. And Mfr Code
<b>NOTE</b>		
The part number is followed by the applicable 5-digit Federal Supply Code for Manufacturers (FSCM) identified in SB 708-42.		
6625-00-855-9447		Test Set Subassembly MX-3736/ARM-45, consisting of:
5821-00-673.3101	1	Control Radio Set, manual control type, 614U-6 a
5821-00-752-1208	1	Control Radio Set, manual control type, 614U-5
5995-00-903-4839	1	Electrical Power Cable Assembly (cable No. 1), 5180092583, 13499
6625-00-823-2583	1	Electrical Power Cable Assembly (cable No. 1A), 5180092583, 13499
6625-00-823-2585	1	Electrical Power Cable Assembly (cable No. 2), 5180076113, 13499
6625-00-823-2587	1	Electrical Power Cable Assembly (cable No. 3), 7765480001, 13499
6625-00-823-2580	1	Radio Frequency Cable Assembly (cable No. 4), 5180076162, 13499
6625-00-823-2573	1	Radio Frequency Cable Assembly (cable No. 5), 5180076432, 13499
6625-00-823-2491	1	Cable Assembly Set. Electrical OA-2494/ARM-45 consisting of:
6625-00-823-2581	1	Electrical Power Cable Assembly (RF patch cable No. 1) 5180076042, 13499
6625-00-823-2579	1	Radiofrequency Cable Assembly (RF patch cable No. 2) 5180076052, 13499
6625-00-087-0739	1	Electrical Power Cable Assembly (RF patch cable No. 3) 5180076312, 13499
6625-00-087-0737	1	Electrical Power Cable Assembly (Modulator Patch cable) 5180076322, 13499
6625-00-823-2591	1	Electrical Power Cable Assembly (Power patch cable No. 1), 5180076032, 13499
6625-00-087-0736	1	Electrical Power Cable Assembly (Power patch cable No. 2), 5180076082, 13499
6625-00-823-2582	1	Electrical Cable Assembly (Audio patch cable), 5180076072, 13499
6625-00-823-2586	1	Electrical Cable Assembly (RF/VIF patch cable), 5180076063, 13499
	1	Case
	1	Cover

**1-10. Description of Test Set, Radio AN/ ARM-45(\*)**  
(fig. 1-1)

The AN/ARM-45(\*) consists of Test Set Subassembly MX-3736/ARM-45 (para 1-11), Radio Set Control 614U-6 (para 1.12) or Radio Set Control 614U-5, Cable

Assembly Set, Electrical OA-2494/ARM-45 (para 1-13), and test cable assemblies (para 1-14). Storage facilities for the test cable assemblies and the components of OA-2494/ARM-45 are provided within the metal case of the MX-3736/ARM-45. Power for the



AN/ARM-45(\*) is furnished by an external 27.5-volt direct current (dc) source (para 1-15a).

#### 1-11. Description of Test Set Subassembly MX-3736/ ARM-45

(fig. 1-1 and 2-3)

The MX-3736/ARM-45 contains the controls, jacks, indicators, test cable receptacles, radio frequency (rf) dummy load, and cable assemblies required to perform operational tests of the AN/ARC-73 or AN/ARC-73A. The test cable receptacles (fig. 2-4) are located on a shelf mounted inside the metal case. The receptacles are protected by hinged covers. The case of the MX-3736/ARM-45 is equipped with carrying handles and a removable hinged cover.

#### 1-12. Description of Radio Set Controls 614U-6 and 614U-5

(fig. 2-3 and 2-5).

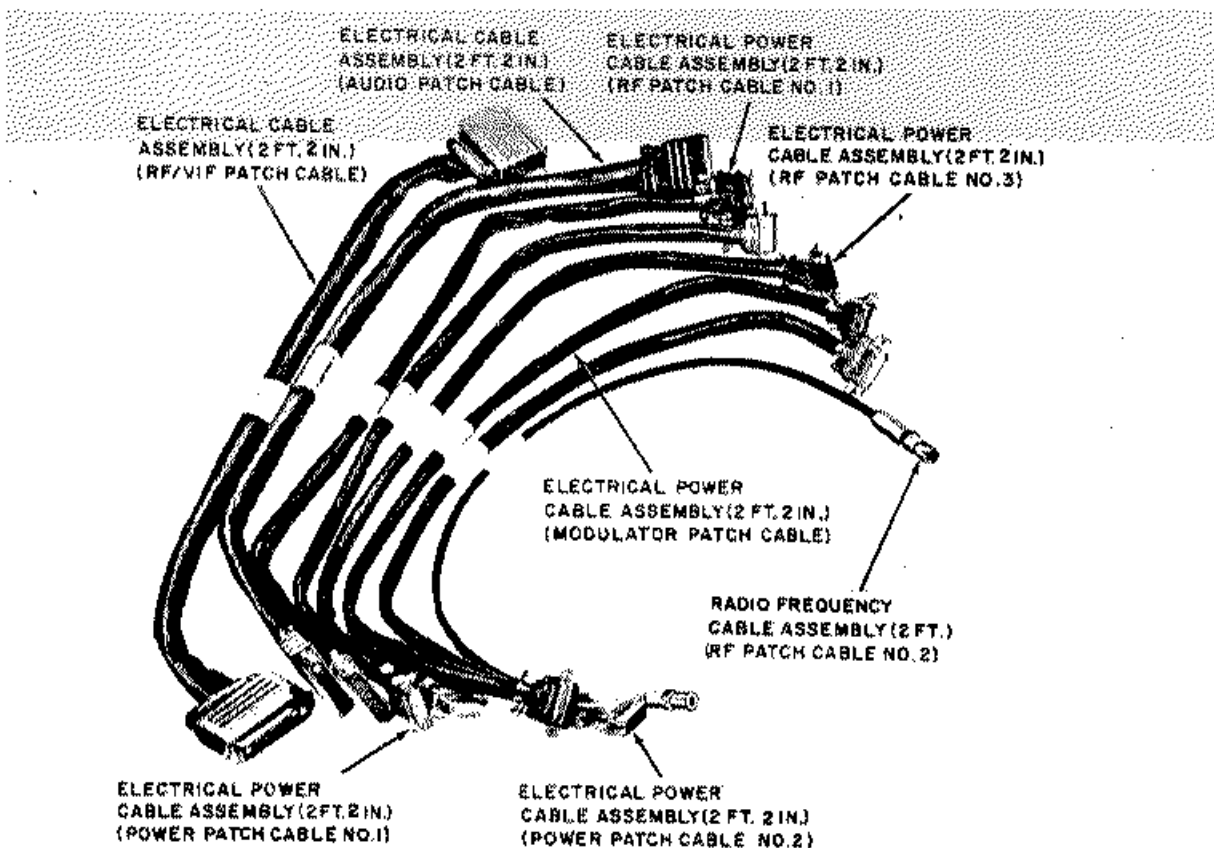
Radio Set Control 614U-6 (remote control unit) is located on the front panel of the MX-3736/ARM-45 and is secured by four mounting screws. A control and

power receptacle (not shown) is located on the rear of the remote control unit. The 614U-6 provides for the control and tuning of Transmitter 17L-7A and Receiver 51X-2B when testing the AN/ARC-73 (para 2-9). Radio Set Control 614U-5 is used when testing the AN/ARC-73A. Refer to TM 11-5821-217-12 for comparative descriptions of the 614U-6 and 614U-5.

#### 1-13. Description of Cable Assembly Set Electrical OA-2494/ ARM45

(fig. 1-3).

The OA-2494/ARM-45 consists of eight cables, used for extending the electronic modules in Transmitter 17L-7A and Receiver 51X-2B from their respective chassis when troubleshooting the AN/ARC-73 and AN/ARC-73A. Five module extension cables are provided for use with the 17L-7A; three are provided for use with the 51X-2B.



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Figure 1-3. Cable Assembly Set, Electrical OA-2494/ARM-45.

#### 1-14. Description of Test Cable Assemblies (fig. 1-1).

- a. Cable No. 1. Cable No. 1 is a 7-foot 6-inch,

22-conductor cable assembly that is used to connect the MX-3736/ARM-45 to either the 17L-7A or to the 17L-7A section in Dual Shockmount

390E-2 of the AN/ARC-73 or AN/ARC-73A being tested. Depending on the test to be performed (para 2-6), cable No. 1 may be connected to the MX-3736/ARM-45 at either test cable receptacle J101-7A or J103-7A.

*b. Cable No. 1 A.* Cable No. 1A is a 7-foot 6-inch, 22-conductor cable assembly that is similar to cable No. 1 in appearance and use (a above), except that during operational testing, cable No. 1A may be connected to the MX-3736/ARM-45 at either test cable receptacle J102-7A or J104-7A.

*c. Cable No. 2.* Cable No. 2 is a 7-foot, 6-inch 48-conductor cable assembly that is used to connect the MX-3736/ARM-45 to either the 51X-2B or to the 51X.2B section in Dual Shockmount 390E-2 of the AN/ARC-73 or AN/ARC-73A. Depending on the test to be performed (para 2-6), cable No. 2 may be connected to the MX-3736/ARM-45 at either test cable receptacle J105-2B or J106-2B.

*d. Cable No. 3.* Cable No. 3 is a 7-foot, 3 1/2-inch, four-conductor cable assembly that is used to connect the MX-3736/ARM-45 to an external 27.5-volt dc, or 115-volt, 400-cycle per second (cps) alternating current (ac) power source. A plug on one end of cable No. 3 connects to the MX-3736/ARM-45 at test cable receptacle J107; the opposite end of cable No. 3 is equipped with four spring clips to facilitate connection to the external power source.

*e. Cable No. 4.* Cable No. 4 is a 7-foot, 6-inch, coaxial cable that is used to connect the MX-3736/ARM-45 to an external dummy load, wattmeter, or antenna. The coaxial connector on one end of cable No. 4 connects to the MX-3736/ARM-45 at test cable receptacle J109; the coaxial connector on the opposite end of cable No. 4 connects to the coaxial connector on the external dummy load, wattmeter, or antenna.

*f. Cable No. 5.* Cable No. 5 is a 6-inch coaxial cable that is used to connect the MX-3736/ARM-45 RF INPUT connector to the RF OUTPUT connector when performing operational checks on the 17L-7A and 51X-2B (fig. 2-6). Each end of the cable assembly is equipped with coaxial connectors. Cable No. 5 may also be used to connect the MX-3736/ARM-45 to a signal generator (such as the AN/USM-44) or to a very high-frequency (vhf) antenna.

## 1-15. Additional Equipment Required

The following equipment is not supplied as a part of the test set, but is required for use with it.

*a. Dc Power Supply, 27.5 Volts.* A 27.5-volt dc power supply is required to furnish a maximum of 1.5 amperes for primary power to the MX-3736/ARM-45.

*b. Ac Power Supply, 115 Volts.* A 115-volt, 400 cps, single-phase ac power supply is required to furnish a minimum of 2 amperes to the MX-3736/ARM-45 when the AN/ARC-73 or AN/ARC-73A to be tested is equipped with ac power supply modules.

*c. Microphone.* An aircraft-type, carbon microphone is required to key and modulate the 17L-7A being tested.

*d. Headset.* A headset (Headset HS-23, Headset HS-33, or equivalent) is required to monitor 51X-2B output and 17L-7A sidetone during testing.

*e. Wattmeter AN/URM-43.* Wattmeter AN/URM-43A is required when the test set is to be used during prolonged or extensive test procedures. The AN/URM-43 may be used in-stead of the meter located on the front panel of the MX-3736/ARM-45 to provide a more accurate means of measuring rf power output.

## CHAPTER 2

## OPERATION

## Section I. SERVICE UPON RECEIPT OF EQUIPMENT

**2-1. Unpacking**

(fig. 2-1)

*a. Packaging Data.* When packaged for shipment, Tests Sets, Radio AN/ARM-45(\*) is - packed in corrugated cardboard cartons. A typical shipping carton and its contents are shown in figure 2-1.

*b. Removing Contents.*

- (1) Open the outer corrugated carton.
- (2) Open the waterproof barrier paper.
- (3) Open the inner corrugated carton. Remove the package containing the technical manuals.
- (4) Remove the corrugated filler pads on the top and at the sides of the test set.
- (5) Carefully lift the test set from the inner carton.

**2-2. 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 (para 1-3).

*b.* Check the equipment against the items comprising an operable equipment 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.

*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 MWOs have been applied. (Current MWOs applicable to the equipment are listed in DA Pam 310-7.)

*d.* Check all switches and controls for proper mechanical operation.

*e.* Check all test cable receptacles to see that they are free from dirt and corrosion.

*f.* Check the remote control unit to see that it is securely fastened in the front panel of the MX-3736/ARM-45.

*g.* Place the running spares in the storage compartment inside the case of the M 3736/ARM-45. If the AN/ARM-45 is not to be used immediately, place all the test cable assemblies and the technical manuals in the storage compartment. Close and fasten the case cover.

**2-3. Preoperational Tests**

*a. General.* Perform the following preoperational tests after the AN/ARM-45 has been unpacked and inspected (para 2-2). Make the preliminary control settings given in (2) through (5) below and connect the MX-3736/ARM-45 to an external 27.5-volt dc power source ((6) and below) before performing the preoperational test given in b and c below. Operating controls are listed and described in paragraphs 2-4 and 2-5.

(1) Unlatch and remove the case cover on the MX-3736/ARM-45.

(2) Operate the METER SELECTOR switch to OFF (fig. 2-3).

(3) Operate the 27.5 VDC-DC ADJUST switch to 27.5 VDC. Operate the EXT POWER SWITCH POWER switch to EXT POWER.

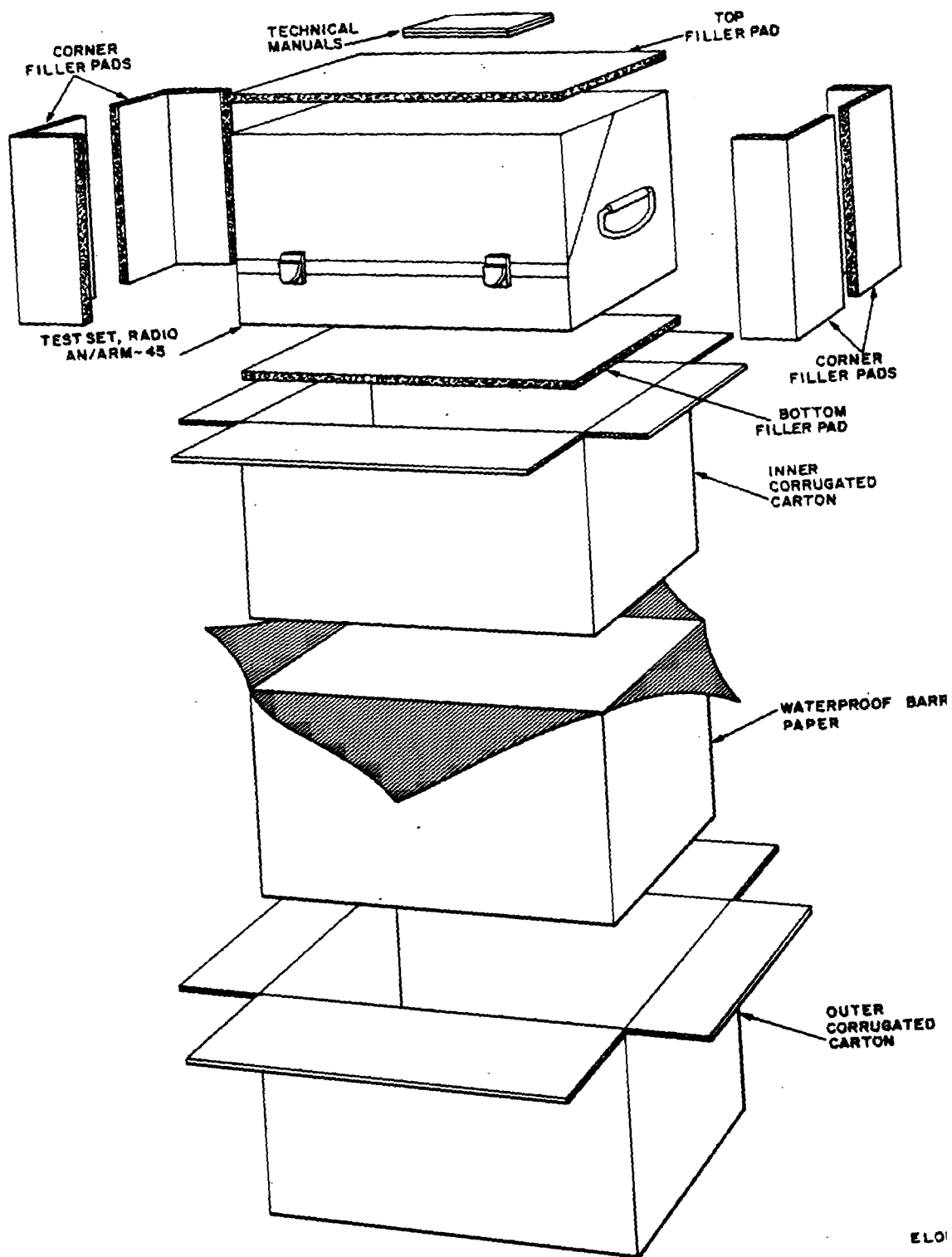
(4) Operate all remaining switches to downward position.

(5) Set the remote control unit megacycle and kilocycle dial knobs to 116.00 megacycle (mc).

(6) Connect one end of cable No. 3 to the 1 DC POWER receptacle (J-107) (fig. 2-2) inside the MX-3736/ARM-45 case (fig. 2-4).

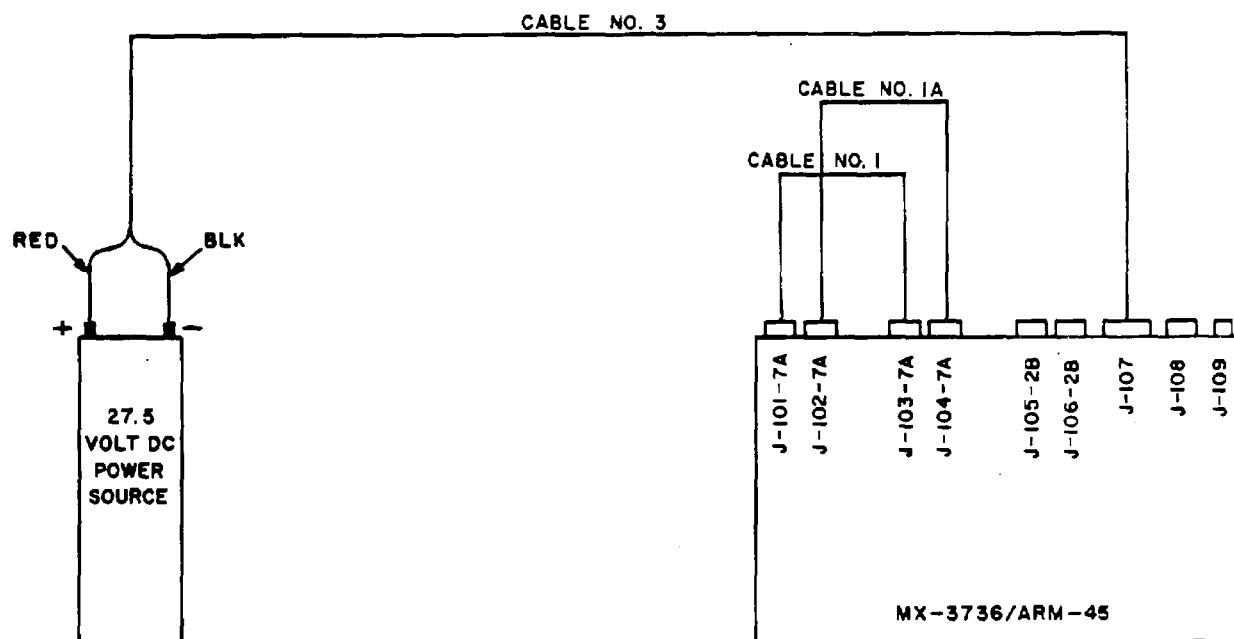
(7) Connect the red clip on the other end of cable No. 3 to the positive terminal on the 27 volt dc power source; connect the black clip to the negative terminal on the power source. Observe the correct polarity.

*b. Transmitter Channeling Circuit Test (fig. 2-2).* Perform the procedures below to test the AN/ARM-45 (\*) controls and test cable assemblies associated with transmitter channeling. If improper test lamp indications are obtained during the test, request higher category of maintenance.

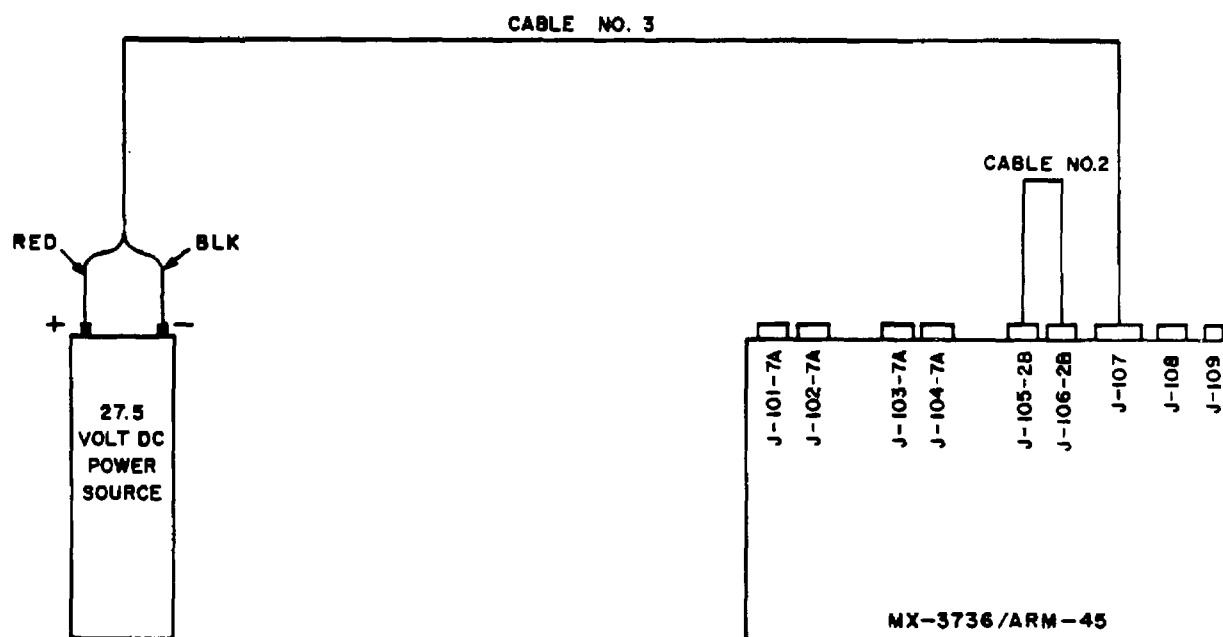


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Figure 2-1. Typical packaging.



A. TRANSMITTER CHANNELING CIRCUIT TEST



B. RECEIVER CHANNELING CIRCUIT TEST

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Figure 2-2. Cabling diagrams for preoperational tests.

(1) Connect one end of cable No. 1 to XMTR PLUG TOP receptacle J-103-7A on the top of the MX-3736/ARM-45 (fig. 2-4); connect the other end of the cable assembly to XMTR PLUG TOP receptacle J-101-7A.

(2) Connect one end of cable No. 1A to XMTR PLUG BOTTOM receptacle J-104-7B; connect the other end of the cable assembly to XMTR PLUG BOTTOM receptacle J-102-7A.

(3) Operate the 27.5 VOLTS DC switch (fig. 2-3) to ON.

(4) On the remote control unit (fig. 2-5), operate the SCS-DCS/DCD switch to SCS. If remote control unit 614U-5 is used operate the COMM-NAV/COMM switch to COMM.

(5) Observe the test lamps on the front panel of the MX-3736/ARM-45. Test lamps A, D, E, L, M, and STANDBY should be lighted.

(6) On the remote control unit, operate the kilocycle dial control knob through the frequency range indicated in the chart below. Check for the proper test lamp indications at each increment on the kilocycle dial.

#### NOTE

Test lamps A, D, M, and STANDBY should remain lighted throughout the test.

Kilocycle dial setting	Test lamp indications	Kilocycle dial setting	Test lamp indications
00.....	E, L	50.....	E, H, L
05.....	E, K	55.....	E, H, K
10.....	F, L	60.....	E, F, L
15.....	F, K	65.....	E, F, K
20.....	E, G, L	70.....	F, G, L
25.....	E, G, K	75.....	F, G, K
30.....	F, H, L	80.....	G, H, L
35.....	F, H, K	85.....	G, H, K
40.....	G, L	90.....	H, L
45.....	G, K	95.....	H, K

(7) On the remote control unit, operate the megacycle dial control knob through the frequency range indicated in the chart below. Check for the proper test lamp indications at each increment on the megacycle dial.

#### NOTE

Test lamps H, K, and STANDBY should remain lighted throughout the test.

Megacycle dial setting	Test lamp indications	Megacycle dial setting	Test lamp indications
116.....	A, D, M	123.....	D, J
117.....	A, D, J	124.....	A, M
118.....	B, M	125.....	A, J
119.....	B, J	126.....	A, B, M
120.....	C, M	127.....	A, B, J
121.....	C, J	128.....	B, C, M
122.....	D, M	129.....	B, C, J

Megacycle dial setting	Test lamp indications	Megacycle dial setting	Test lamp indications
130.....	A, C, D, M	140.....	D, M, N
131.....	A, C, D, J	141.....	D, J, N
132.....	B, D, M	142.....	A, M, N
133.....	B, D, J	143.....	A, J, N
134.....	A, D, M, N	144.....	A, B, M, N
135.....	A, D, J, N	145.....	A, B, J, N
136.....	B, M, N	146.....	B, C, M, N
137.....	B, J, N	147.....	B, C, J, N
138.....	C, M, N	148.....	A, C, D, M, N
139.....	C, J, N	149.....	A, C, D, J, N

(8) Operate the XMIT-STANDBY switch on the front panel of the MX-3736/ARM-45 to XMIT. The STANDBY lamp should be extinguished and the MICKEY lamp and XMIT lamp should be lighted.

(9) Operate the 27.5 VOLTS DC switch to OFF. Set the remote control unit megacycle and kilocycle dial knobs to 116.00 mc. Do not change any other control or switch positions.

(10) Disconnect test cables No. 1 and No. 1A from the test cable receptacles. Do not disconnect cable No. 3.

#### c. Receiver Channeling Circuit Test (B, fig. 2-2)

Perform the procedures below to test the AN/ARM-45 controls and test cable assembly associated with receiver channeling. If improper test lamp indications are obtained during the test, request higher echelon maintenance.

(1) Connect one end of cable No. 2 to ACFT TEST receptacle J-106-2B; connect the other end of the cable assembly to EQUIP TEST receptacle J-105-2B.

(2) Operate the 27.5 VOLTS DC switch to ON.

(3) Observe the test lamps on the front panel of the MX-3736/ARM-45. Test lamps C, D, E, L, M, N, and STANDBY should be lighted.

(4) On the remote control unit, operate the kilocycle dial control knob through the frequency range indicated in the chart in b (6) above. Check for the proper test lamp indications at each increment on the kilocycle dial.

#### NOTE

Test lamps C, D, M, N, and STANDBY should remain lighted throughout the test.

(5) On the remote control unit, operate the megacycle dial control knob through the frequency range indicated in the chart below. Check for the proper test lamp indications at each increment on the megacycle dial.

#### NOTE

Test lamps H, K, and STANDBY should remain lighted throughout the test.

Megacycle dial setting	Test lamp indications	Megacycle dial setting	Test lamp indications	Megacycle dial setting	Test lamp indications	Megacycle dial setting	Test lamp indications
116 ..... N	C, D, M, N	132 ..... N	A, C, D, M,	148 ..... N	A, B, C, M	150 ..... N	B, C, D, M
117 ..... N	C, D, J, N	133 ..... N	A, C, D, J, N	149 ..... N	A, B, C, J	151 ..... N	B, C, D, J
118 ..... N	A, D, M, N	134 ..... N	B, D, M, N				
119 ..... N	A, D, J, N	135 ..... N	B, D, J, N				
120 ..... N	B, M, N	136 ..... N	A, C, M				
121 ..... N	B, J, N	137 ..... N	A, C, J				
122 ..... N	C, M, N	138 ..... N	A, B, D, M				
123 ..... N	C, J, N	139 ..... N	A, B, D, J				
124 ..... N	D, M, N	140 ..... N	B, C, M				
125 ..... N	D, J, N	147 ..... N	A, B, J				

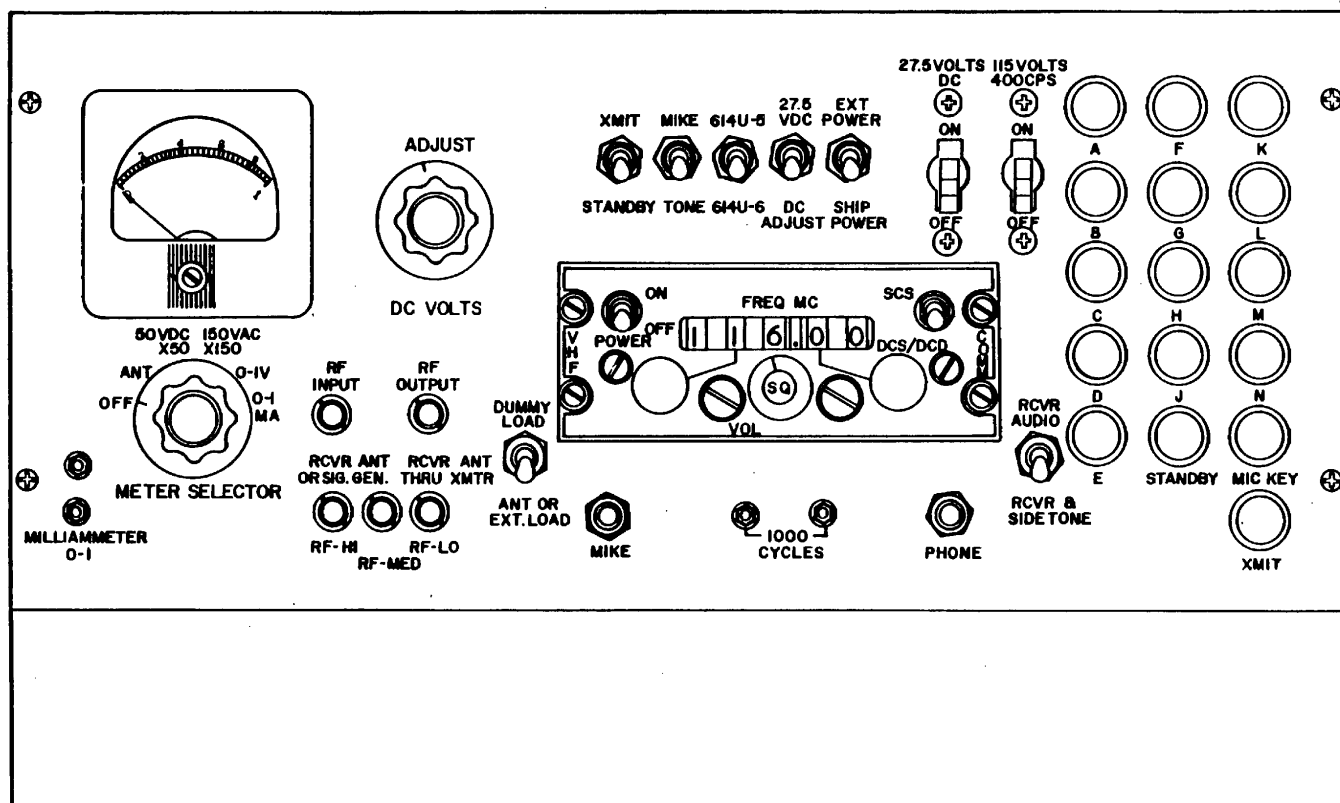
## Section II. OPERATING INSTRUCTIONS

### 2-4. Test Set Subassembly MX3736/ ARM45, Controls, Indicators, and Connectors (fig. 2-3 and 2-4)

Control, indicator, or connector	Function														
ADJUST DC VOLTS control .....	Reduces the amount of 27.5 volts dc power supplied through the AN/ARM-45(*) to the AN/ARC-73 or AN/ARC-73A being tested under marginal voltage conditions.														
METER SELECTOR switch (6-position rotary switch).	<p>Selects the signal to be sampled and indicated on the meter:</p> <table> <tr> <th>Sw pos</th><th>Action</th></tr> <tr> <td>OFF .....</td><td>Disconnects meter from all test circuits.</td></tr> <tr> <td>ANT .....</td><td>Connects meter for indication of rf level.</td></tr> <tr> <td>50 VDCX50 .....</td><td>Connects meter for measurement of the 27.5 volt dc input.</td></tr> <tr> <td>150 VACX150 .....</td><td>Connects meter for measurement of the 115-volt, 400 cps-ac input.</td></tr> <tr> <td>0-1V.....</td><td>Connects meter for measurement of the 1,000-cps input.</td></tr> <tr> <td>0-1 MA.....</td><td>Connects meter for use as milliammeter.</td></tr> </table>	Sw pos	Action	OFF .....	Disconnects meter from all test circuits.	ANT .....	Connects meter for indication of rf level.	50 VDCX50 .....	Connects meter for measurement of the 27.5 volt dc input.	150 VACX150 .....	Connects meter for measurement of the 115-volt, 400 cps-ac input.	0-1V.....	Connects meter for measurement of the 1,000-cps input.	0-1 MA.....	Connects meter for use as milliammeter.
Sw pos	Action														
OFF .....	Disconnects meter from all test circuits.														
ANT .....	Connects meter for indication of rf level.														
50 VDCX50 .....	Connects meter for measurement of the 27.5 volt dc input.														
150 VACX150 .....	Connects meter for measurement of the 115-volt, 400 cps-ac input.														
0-1V.....	Connects meter for measurement of the 1,000-cps input.														
0-1 MA.....	Connects meter for use as milliammeter.														
27.5 VDC-DC ADJUST switch .....	<p>Arranges application of external 27.5-volt dc power through AN/ARM-45 (0) AN/ARC-73 or AN/ARC-73A under test:</p> <table> <tr> <th>Sw pos</th><th>Function</th></tr> <tr> <td>27.5 VDC.....</td><td>27.5-volt dc power is applied directly to radio set under test.</td></tr> <tr> <td>DC ADJUST .....</td><td>27.5-volt dc power may be regulated by ADJUST DC VOLTS control for marginal voltage test.</td></tr> </table>	Sw pos	Function	27.5 VDC.....	27.5-volt dc power is applied directly to radio set under test.	DC ADJUST .....	27.5-volt dc power may be regulated by ADJUST DC VOLTS control for marginal voltage test.								
Sw pos	Function														
27.5 VDC.....	27.5-volt dc power is applied directly to radio set under test.														
DC ADJUST .....	27.5-volt dc power may be regulated by ADJUST DC VOLTS control for marginal voltage test.														
MIKE-TONE switch .....	Arranges AN/ARM-45 (*) for either microphone input or test tone (signal generator input).														
XMIT-STANDBY switch .....	<p>Arrange AN/ARM-45 (1) for keying of Transmitter 17L-7A under test:</p> <table> <tr> <th>Sw pos</th><th>Function</th></tr> <tr> <td>XMIT .....</td><td>Transmitter under test is keyed continuously by AN/ARM-45 (').</td></tr> <tr> <td>STANDBY .....</td><td>Transmitter under test must be keyed by microphone connected to AN/ARM-45(*)).</td></tr> </table>	Sw pos	Function	XMIT .....	Transmitter under test is keyed continuously by AN/ARM-45 (').	STANDBY .....	Transmitter under test must be keyed by microphone connected to AN/ARM-45(*)).								
Sw pos	Function														
XMIT .....	Transmitter under test is keyed continuously by AN/ARM-45 (').														
STANDBY .....	Transmitter under test must be keyed by microphone connected to AN/ARM-45(*)).														
RCVR AUDIO-RCVR and SIDETONE switch.	<p>Selects circuit to be monitored at PHONES jack:</p> <table> <tr> <th>Sw pos</th><th>Function</th></tr> <tr> <td>RCVR AUDIO.....</td><td>Permits monitoring of Receiver 51X-2 B audio output.</td></tr> <tr> <td>RCVR &amp; SIDETONE .....</td><td>Permits monitoring of Transmitter 17L-7A sidetone-receiver circuits.</td></tr> </table>	Sw pos	Function	RCVR AUDIO.....	Permits monitoring of Receiver 51X-2 B audio output.	RCVR & SIDETONE .....	Permits monitoring of Transmitter 17L-7A sidetone-receiver circuits.								
Sw pos	Function														
RCVR AUDIO.....	Permits monitoring of Receiver 51X-2 B audio output.														
RCVR & SIDETONE .....	Permits monitoring of Transmitter 17L-7A sidetone-receiver circuits.														

Control, indicator, or connector	Function
EXT POWER-SHIP POWER switch .....	Arranges AN/ARM-45(1*) for operation on either externally supplied dc power or on dc power supplied from aircraft circuits under test.
27.5 VOLTS DC switch 115-ampere circuit breaker).	Provides for overload protection of external 27.5-volt dc power source and ON-OFF control of AN/ARM-45 (*).
115 VOLTS 400 CPS switch (2-ampere circuit breaker).	Provides for overload protection of external 115-volt. 400-cps ac power source and ON-OFF control of AN/ARM-45 1I'.
DUMMY LOAD-ANT OR EXT. LOAD switch,	Permits switching transmitter rf output from internal dummy load to external dummy load. wattmeter. or vhf antenna.
614U-5-614U-6 switch .....	Arranges AN/ARM-45 (*) for testing either Radio Set Control 614U-5 or Radio Set Control 614U-6.
RF INPUT-RCVR ANT OR SIG. GEN. connector.	Provides for connecting Receiver 51X-2B under test to a signal generator or vhf antenna.
RF OUTPUT-RCVR ANT THROUGH XMTR connector.	Provides for connecting AN/ARM-45 (*1 to a vhf antenna and permits strapping of transmitter and receiver under test to provide normal equipment operation.
1000 CYCLES jacks .....	Pin jacks that provide for the connection of an external 1,000-cps modulation signal.
MILLIAMMETER 0-1 jacks.....	Pin jacks that provide for connection to AN/ARM-45 (*) meter when required for use as milliammeter 10- to 1-ma range).
MIKE jack.....	Provides for connection of a microphone to key transmitter under test.
PHONE jack .....	Provides for connection of a headset to monitor sidetone and output of transmitter or receiver under test.
RF-HI, RF-MED and RF-LOW connectors.	Provide a means for sampling the rf output of Transmitter 17L-7A under test at three relative output levels; also provide for connection of an oscilloscope for observation of the modulation envelope.
EXT LOAD OR ANT connector (J-109)	Provides for connecting an external dummy load. wattmeter, or vhf antenna to the AN/ARM-45 (*)
LOC NAV receptacle (J-108) .....	Provides for connecting VOR and LOC information from Receiver 51X-2B under test to test cable receptacles J-101 through J-107 for special testing of OMNI range system.
Test cable receptacles J-101 through J-107.	Provide for connecting the AN/ARM-45 (*) to components of AN/ARC-73 or AN/ARC-73A under test; receptacle J-107 provides for connecting AN/ARM-45 (*) to primary ac or dc power source.
Test lamps A through H and J through N.	Lamp code lighting sequence provides visual indication when testing the remote control units and associated wiring in the aircraft.
MIC KEY. STANDBY, and XMIT test lamps.	Provide visual indication of transmitter condition (transmit or standby) for Transmitter 17L-7A under test.
Meter (milliammeter).....	Used in conjunction with METER SELECTOR switch to measure the 27.5-volt dc primary voltage, 115-volt, 400 cps ac primary voltage, relative rf power to internal dummy load, and 1,000-cps audio signal from modulation source; also used in conjunction with MILLIAMMETER 0-1 jacks as basic milliammeter.





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Figure 2-3. Test Set Assembly MX-3736/ARM-45, front panel with remote control unit 614U-6.

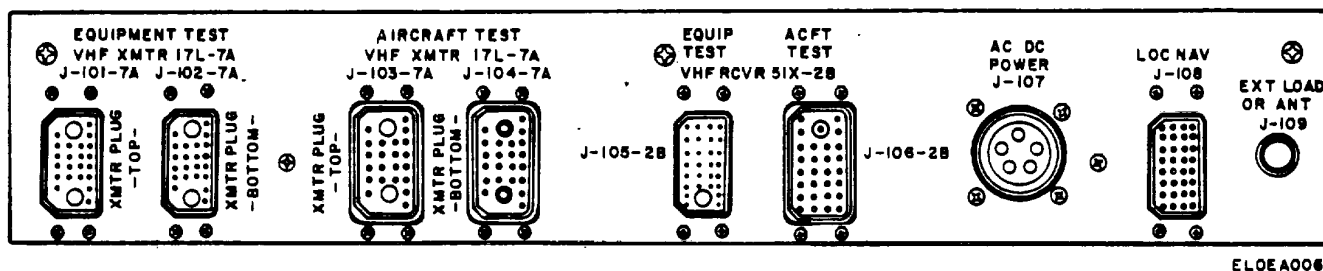


Figure 2-4. Test cable receptacle shelf, when removed, top view.

## 2-5. Radio Set Control 614U-6, Controls and Indicators (fig. 2-5)

Control, or indicator	Function	Control or indicator	Function
POWER switch	Turns primary power to remote control unit on or off.	FREQ MC indicator window.	Indicates transmitter or receiver Frequency selected.
VOL control knob	Controls Receiver 51X-2B (under test) radio volume level to headset.	SCS-DCS/DCD switch a	Selects single channel simplex or double channel simplex/double channel duplex type of operation for AN/ARC-73 under test.
SQ control knob	Adjusts squelch threshold level on Receiver 51X-2B output.	Panel lamps	Illuminate translucent panel markings.
Megacycle dial control knob.	Selects transmitter or receiver Frequency in 1-megacycle increments.		
Kilocycle dial control knob.	Selects transmitter or receiver Frequency in 50-kilocycle increments.		

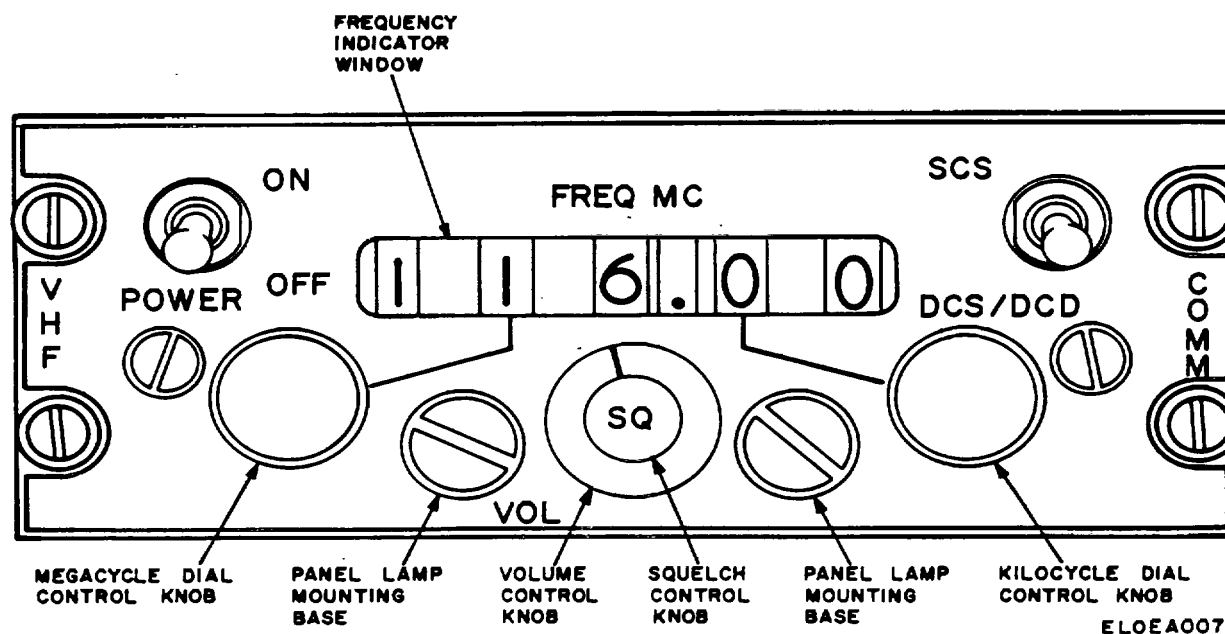


Figure 2-5. Radio Set Control 614U-6, front panel.

## 2-6. Types of Operation.

a. Test Set, Radio AN/ARM-45(\*), may be used either to test the wiring and control circuits of Radio Sets AN/ARC-73 and AN/ARC-73A within the aircraft or to perform operational tests of Transmitter 17L-7A and Receiver 51X-2B at the maintenance bench. Detailed instructions covering the operation and connection of the AN/ARM-45(\*) during testing of the AN/ARC-73 and AN/ARC-73A components are given in other technical manuals.

b. For any type of operation, perform the following procedures:

- (1) Preoperational tests (para 2-3).
- (2) Connecting and control setting procedures for the desired type of operation (para 2-7, 2-8, or 2-9).
- (3) Stopping procedures (para. 2-10).

## 2-7. Testing Transmitter Remote Control Unit and Associated Wiring in Aircraft.

(A, fig. 2-6)

The following procedures describe typical methods for using the AN/ARM-45(\*) to test the transmitter -control circuit wiring within the aircraft.

a. Unlatch and remove the case cover on the MX-3736/ARM-45. Remove cables No. 1, No. 1A, and No. 3 from the case storage compartment. Raise the covers on the test cable receptacles (fig. 2-4).

b. At the AIRCRAFT TEST VHF XMTR 17L-7A test cable receptacles, connect one end of cable No. 1 to XMTR PLUG TOP receptacle J-103-7A; connect one end of cable No. 1A to XMTR PLUG BOTTOM receptacle J-104-7A.

c. Remove transmitter 17L-7A from Dual Shockmount 390E-2 in the aircraft (TM 11-5821-217-12). Connect the other end of cable No. 1 to the top receptacle at the rear of the shockmount; connect the other end of cable No. 1A to the bottom receptacle at the rear of the shockmount.

d. If 27.5 volts dc is available within the aircraft, operate the EXT POWER-SHIP POWER switch on the MX-3736/ARM-45 to SHIP POWER and continue with the instructions given in g below.

e. If 27.5 volts dc is not available within the aircraft, connect the connector end of cable No. 3 to AC DC POWER receptacle J-107. Connect the red and black clip leads on the other end of the cable to the positive and negative terminals, respectively, of an external 27.5-volt dc power source. Observe proper polarity.

f. Operate the EXT POWER-SHIP POWER switch to EXT POWER.

g. Operate the 27.5 VOLTS DC switch to ON; operate the 27.5 VDC-DC ADJUST switch to 27.5 VDC.

h. The test-lamps on the front panel of the MX3736/ARM-45 should light as indicated in the chart (para 2-3 b (6) and (7)) for the frequency set on the aircraft transmitter remote control unit.

### NOTE

The setting of the megacycle and kilocycle controls on the MX-3736/ARM-45 remote control unit will not affect the test lamp indications during the test.

i. Check the aircraft transmitter remote control unit and the associated aircraft wiring by operating the remote control unit megacycle and kilocycle controls through the frequency ranges given in the chart. Check for the proper test-lamp indication.

j. Check the operation of the aircraft vhf control circuit by connecting a microphone to the microphone jack in the aircraft and pressing the push-to-talk switch. The MIC KEY test lamp on the MX-3736/ARM-45 should light.

k. Disconnect cables No. 1 and No. 1A from the MX-3736/ARM-45 and from the shockmount. Replace the 17L-7A in the shockmount (TM 11-5821-217-12). If no additional tests are to be performed, disconnect cable No. 2 and store all cables in the case. Close and latch the case cover.

## 2-8. Testing Receiver Remote Control Unit and Associated Wiring in Aircraft.

(A, fig. 2-6)

The following describes typical procedures for using the AN/ARM-45 to test the receiver control circuit wiring within the aircraft.

a. Unlatch and remove the MX-3736/ARM-45 case cover. Remove cable No. 2 and cable No. 3 from the case storage compartment. Raise the covers on the test cable receptacles (fig. 2-4).

b. Connect one end of cable No. 2 to ACFT TEST VHF RCVR 51X-2B receptacle J-106-2B.

c. Remove Receiver 51X-2B from Dual Shockmount 390E-2 (TM 11-5821-217-12). Connect the other end of cable No. 2 to the receptacle at the rear of the shockmount.

d. Connect the MX-3736/ARM-45 to the source of 27.5-volt dc power as described in paragraph 2-7d or e, as applicable.

e. Operate the EXT POWER-SHIP POWER switch to the appropriate position.

f. Operate the 27.5 VOLTS DC switch to ON; operate the 27.5 VDC-DC ADJUST switch to 27.5 VDC.

g. The test lamps on the front panel of the MX-3736/ARM-45 should light as indicated in the

chart (para 2-3 b (6) and (7)) for the frequency set on the aircraft receiver remote control unit.

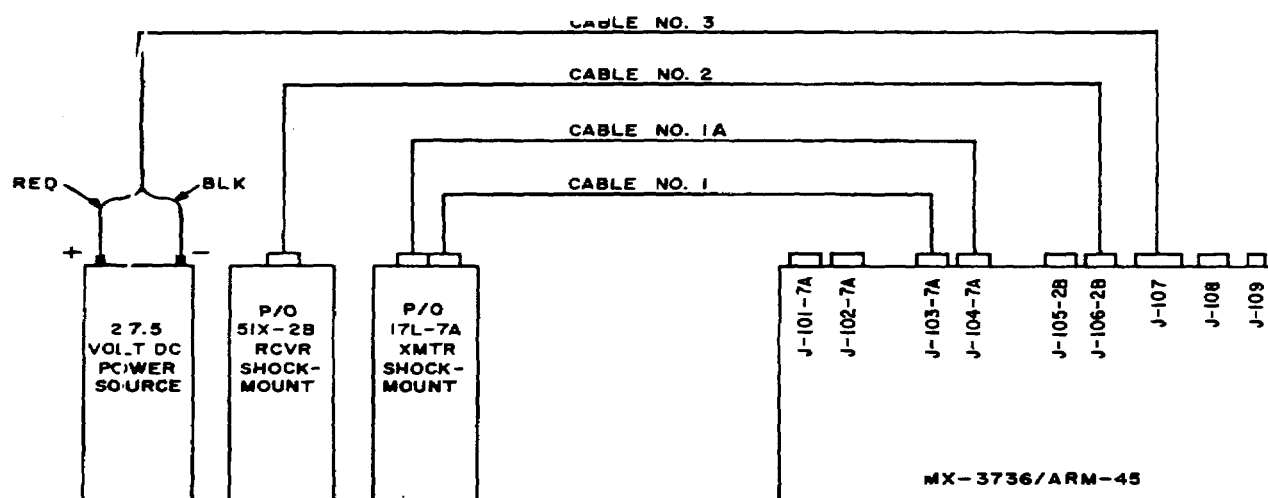
**NOTE**

The setting of the megacycle and kilocycle controls on the MX-3736/ARM-45 remote control unit will not affect the test lamp indications during the test.

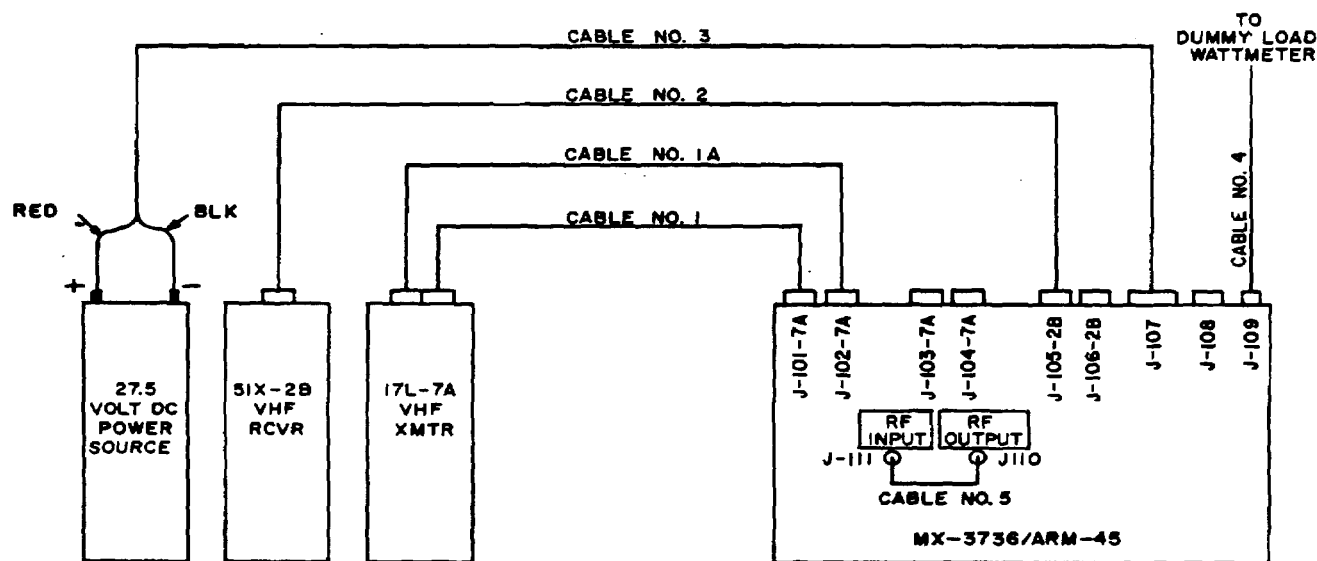
*h.* Check the aircraft receiver remote control unit and the associated aircraft wiring by operating the

remote control unit megacycle and kilocycle controls through the frequency ranges given in the chart. Check for the proper test lamp indications.

*i.* Disconnect cables No. 2 and (i No. 3 from the MX-3736/ARM-45 and from the shockmount. Replace Receiver 51X-2B (TM 11-5821-217-12). Store the cables in the case and close and latch the case cover.



A. REMOTE CONTROL UNIT AND WIRING TEST



B. TRANSMITTER AND RECEIVER BENCH TEST

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Figure 2-6. Cabling diagrams for typical aircraft and bench tests

## 2-9. Testing radio Transmitter and Receiver at Maintenance Bench

(B, fig. 2-6)

The following describes typical procedures for

using the AN/ARM-45(\*) to perform functional tests of Transmitter 17L-7A and Receiver 51X-2B at the maintenance bench.

a. Unlatch and remove the case cover on the

MX-3736/ARM -45. Remove cables No. 1 through No. 5 from the storage compartment. Raise the covers on the test cable receptacles (fig. 2-4).

b. Operate the DUMMY LOAD-ANT OR EXT. LOAD switch (fig. 2-3) to DUMMY LOAD.

c. Operate the 27.5 VDC-DC ADJUST switch to 27.5 VDC. Operate the EXT POWER-SHIP POWER switch to EXT POWER.

d. Operate all other switches to a downward position.

e. At the EQUIPMENT TEST VHF XMTR 17L-7A test cable receptacles (fig. 2-4) connect one end of cable No. 1 to XMTR PLUG TOP receptacle J-101-7A; connect one end of cable No. 1A to XMTR PLUG BOTTOM receptacle J-102-7A.

f. At the rear of the 17L-7A, connect the other end of cable No. 1 to the top receptacle; connect the other end of cable No. 1A to the bottom receptacle.

g. At the MX-3766/ARM-45, connect one end of cable No. 2 to EQUIP TEST VHF RCVR 51X-2B receptacle J-105-2B. Connect the other end of cable No. 2 to the receptacle on the rear of the 51X-2B.

h. Connect the connector end of cable No. 3 of AC DC POWER receptacle J-107. Connect the red and black clip leads on the other end of the cable to the positive and negative terminals, respectively, of an external 27.5-volt dc power source. Observe proper polarity.

#### NOTE

If the transmitter or receiver under test is equipped with ac power supplies, 115-volt, 400-cps ac power is required in addition to the 27.5-volt dc power source. Connect the yellow clip lead on cable No. 3 to the terminal on the 115-volt, 400-cps ac power source and operate the 115 VOLTS 400 CPS switch to ON.

i. Connect cable No. 5 between the RF INPUT connector and the RF OUTPUT connector on the front panel of the MX-3736/ARM-45 (fig. 2-3).

j. Plug a microphone into the MIKE jack (Fig. 2-3) and a headset into the PHONE jack.

k. Operate the 27.5 VOLTS DC switch to ON. The STANDBY lamp should light.

l. To key the 17L-7A under test, press the push-to-talk switch on the microphone. If continuous keying is desired, operate the STANDBY-XMIT switch to XMIT. The XMIT lamp should light and the STANDBY lamp should be extinguished whenever the 17L-7A is keyed.

m. The rf output of the 17L-7A may be observed by

operating the METER SELECTOR switch to ANT. The indication should be between .4 and .6 on the meter scale for normal output of transmitter.

#### NOTE

The dummy load provided with the MX-3736/ARM-45 should not be used during critical test adjustments.

n. The rf power output of the 17L-7A under test may be more accurately measured by connecting cable No. 4 between a wattmeter and EXT LOAD OR ANT receptacle J-1()9. DUMMY LOAD-ANT OR EXT. LOAD switch must be operated to ANT OR EXT. LOAI) when this connection is made.

o. The 17L-7A under test may be modulated by an external 1,000-cps test tone by connecting a signal generator to the 1,000 CYCLE S pin jacks. The MIKE-TONE switch must be operated to TONE when this connection is made;.

p. To measure the 1,000-cps signal input, operate the METER SELECTOR switch to 0-1V. (The test set meter will be deflected full scale by a 1-volt signal into the transmitter.)

q. The receiver output may be monitored through the headset by operating the RCVR AUDIO-RCVR & SIDETONE switch to RCVR AUDIO.

r. Transmitter sidetone may be monitored through the headset by operating the RCVR AUDIO-RCVR & SIDETONE switch to RCVR & SIDETONE.

s. To measure receiver sensitivity, disconnect cable No. 5 and connect a signal generator to the RF INPUT RCVR ANT OR SIG. GENT. connector on the front panel of the MX-3736/ARM-45.

t. To test the transmitter and receiver under reduced primary voltage conditions, operate the 27.5 VDC-DC ADJUST switch to DC ADJUST, operate the METER selector switch to 50 V DC X 50, and turn the ADJUST DC VOLTS control until the desired voltage is indicated on the meter.

#### NOTE

The 27.5 VDC-DC ADJUST switch is operated to the DC ADJUST position only when testing equipment under reduced primary voltage conditions.

#### CAUTION

**When performing the frequency selection tests in u and v below for the components of the AN/ ARC-73A., remove Radio Set Control 614U-6 from the MX-3736/ ARM45 (para 3-15) and substitute Radio Set Control 614U-5.**

u. To perform a transmitter frequency selection test, disconnect cable No. 2 at the receiver and follow the procedures in paragraph 2-3b(4) through (7)

v. To perform a receiver frequency selection test, reconnect the receiver (fig. 2-6 and disconnect cables No. 1 and No. 1A at the transmitter. Follow the procedures in paragraph 2-3c(4) and (5).

w. Individual module testing and repair of the AN/ARC-73 and AN/ARD-73A transmitter and receiver components may be facilitated by using Cable Assembly Set, Electrical OA-2494/ARM-45 (fig. 1-3).

#### **CAUTION**

**Do not continuously key the transmitter**

**when the transmitter modules are ex-tended from the main chassis with the OA-2494/ ARM-45 patch cables.**

#### **2-10. Stopping Procedure**

a. Operate the 27.5 VOLTS DC switch to OFF (fig. 2-3). If an ac power supply is also connected to the MX-3736/ARM-45, operate the 115 VOLTS 400 CPS switch to OFF.

b. Disconnect all the cable assemblies from the test cable receptacles and the equipment under test. Close the covers on the test cable receptacles.

c. Place all the cable assemblies in the storage compartment inside the MX-3736/ARM-45 case. Close and fasten the case cover.

## CHAPTER 3

## MAINTENANCE INSTRUCTIONS

**3-1. Scope of Maintenance****NOTE**

The operator will perform organizational maintenance. The maintenance duties assigned to the operator of the equipment are listed below together with a reference to the paragraph covering the specific maintenance function. The duties assigned to not require materials other than those specified in paragraph 3-2.

- a. Daily preventive maintenance checks and services (para 3-4).
- b. Cleaning (para 3-6).
- c. Monthly preventive maintenance checks and services (para 3-7).
- d. Preservation (para 3-9).
- e. Quarterly preventive maintenance checks and services (para 3-10).
- f. Visual Inspection (para 3-12).
- g. Equipment performance check (para 3-13).
- h. Replacement of test lamps (para 3-14).
- i. Replacement of Radio Set Control 614U-6 (para 3-15).

**3-2. Materials Required**

- a. Fine sandpaper, No. 000.
- b. A clean, dry, lint-free cloth.
- c. Trichloroethane.
- d. A soft bristled brush.

**3-3. 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 assure that the equipment is serviceable.

**3-5. Daily Preventive Maintenance Checks and Services Chart**

Sequence No.	Item	Procedure	References
1.	Exterior surfaces .....	Clean the MX-3736/ARM-45 exterior surface and meter glass. Check for broken meter glass. If meter glass is broken, refer to higher category of maintenance for repair.	Para 3-6
2.	Meter, switches, knobs, and connectors.	<ol style="list-style-type: none"> <li>a. During operation (sequences No. 3), check meter, switches, knobs, and connectors (fig. 2-3) for loose or insecure fastenings: tighten if required.</li> <li>b. Switches should operate smoothly and have position detent action.</li> <li>c. Check to see that meter pointer is not bent, broken, or stuck. Refer all repairs to higher category of maintenance.</li> </ol>	<ol style="list-style-type: none"> <li>a. None.</li> <li>b. None.</li> <li>c. None.</li> </ol>
3.	Operation.....	During operation (para 2-6 through 2-10) be alert for any evidence of unusual performance or faulty operation. Observe meter for erratic action.	Para 3-13

a. *Systematic Care.* The procedures given in paragraphs 3-4 through 3-11 cover routine systematic care essential to proper upkeep and operation of the equipment.

b. *Preventive Maintenance Checks and Services.* The preventive maintenance checks and services charts (para 3-5, 3-8, and 3-11) outline functions to be performed at specific intervals. These checks and services are performed to maintain Army electronic equipment in a serviceable condition; that is, in good general (physical) condition and in good operating condition. To assist operators in maintaining serviceability, the chart indicates what to check, how to check, and what the normal conditions are. The references column lists the appropriate paragraphs or manuals that contain detailed repair or replacement procedures. If the defect cannot be remedied by the operator, higher echelon maintenance is required. Records and reports of these checks and services must be made in accordance with the requirements set forth in TM 38-750.

**3-4. Daily Preventive Maintenance Checks and Services**

Perform the maintenance functions indicated in the daily preventive maintenance checks and services chart (para 3-5) daily or under the special conditions listed below.

- a. When the equipment is installed initially.
- b. When the equipment is returned to service after higher echelon maintenance.
- c. At least once a week if the equipment is maintained in a *standby* condition.



**3-6. Cleaning**

Inspect the exterior of the test set. The exterior surfaces should be clean and free of dust, dirt, grease, oil, moisture, and fungus.

a. Remove dust, loose dirt, and moisture with a clean dry cloth.

**WARNING**

The fumes of trichloroethane are toxic. Provide thorough ventilation whenever used. **DO NOT USE NEAR AN OPEN FLAME.** Trichloroethane is not flam-mable, but exposure of the fumes to an open flame or hot metal forms highly toxic phosgene gas.

b. Remove grease, oil, fungus, and ground-in dirt with a cloth dampened (not wet) with trichloroethane.

c. Remove dirt from exposed connectors with a brush and remove moisture with a cloth.

**CAUTION**

Do not press on the glass face of the front

panel meter when cleaning; the meter may become damaged.

d. Clean the front panel meter and controls; use a soft clean cloth. If dirt is difficult to remove, use mild soap and water.

**3-7. Monthly Preventive Maintenance Checks and Services**

Perform the maintenance functions indicated in the monthly preventive maintenance checks and services chart (para 3-8) once each month in addition to those given in the daily preventive maintenance checks and services chart (para 3-5). A monthly interval is defined as approximately 30 calendar days of 8-hour-per-day operation. Adjust the maintenance interval to compensate for any unusual operating conditions. Equipment used less than 8 hours per day or maintained in a standby (ready for immediate operation) conditions must have monthly maintenance. Equipment in limited storage (requires service before operation) does not require monthly maintenance.

**3-8. Monthly Preventive Maintenance Checks and Services Chart**

Sequence No.	Item	Procedure	References
1	Cables and connectors.....	Check cables for cuts, kinks, and frayed insulation. Check cable connectors for bent, broken, or damaged pins or plugs. Replace defective cables. Refer defective cables to higher category of maintenance for repair.	None
2	Fasteners .....	Check fasteners for looseness: tighten if possible, otherwise, refer to higher category of maintenance for repair or replacement.	None
3	Exterior surfaces .....	Check the metal surfaces of the MX-3736/ARM-Para 3-9. 45 for rust or corrosion and bare spots. Remove rust and corrosion and repaint bare spots,	Para :19

**3-9. Preservation**

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 TB 43-0118.

**3-10. Quarterly Preventive Maintenance Checks and Services**

Perform the maintenance functions indicated in the quarterly preventive maintenance checks and services chart (para 3-11) once each quarterly interval in

addition to the daily and monthly preventive maintenance checks and services (para 3-5 and 3-8). A quarterly interval is defined as approximately 90 calendar days of 8-hour-per-day operation. All deficiencies or shortcomings will be recorded, and those not corrected during the preventive maintenance checks and services will be immediately reported to higher echelon by use of forms and procedures specified to TM 38-750. Equipment that has a deficiency that cannot be corrected at the organizational level should be deadlined in accordance with TM 38-750.

**3-11. Quarterly Preventive Maintenance Checks and Services Chart**

Sequence No.	Item	Procedure	References
1	AN/ARM-45.....	Check to see that equipment is complete	App A..
2	Equipment connectors and mating cable connectors. ....	Engage cable connectors {fig. 1-2) to the equipment connectors: check for ease of engagement and snug fit. Refer all repairs for equipment connectors to higher category of maintenance.	None
3	Publications .....	Check to see that all publications pertinent to this equipment are complete, usable, and current. Check to see that all applicable changes are on hand.	DA Pam 310-4.
4	Modification-work orders (MWO's). .....	Check to see that all URGENT MWO's have been applied and that all NORMAL MWO's have been scheduled. Check to see that MWO stencils on the equipment are legible.	DA Pam 310-4

**3-12. Visual Inspection**

Some causes of equipment failure can be detected by visual inspection. Equipment troubles that can be remedied by the operator are given below. AU other - equipment failures should be referred to higher category of maintenance.

- Check for incorrect setting of switches and controls.
- Check to see that cable assemblies are not disconnected or improperly connected.
- Check the headset and microphone for loose connections.
- Check to see that the external ac or dc power source is operating properly.

**3-13. Equipment Performance Check**

Perform the preoperational tests as described in paragraph 2-3 and note the equipment performance. If trouble occurs, perform a visual check (para 3-12) before performing the corrective procedures below. If the corrective procedures do not clear the trouble, higher category of maintenance is required. Note on the repair tag what mode of operation was being used, how the equipment performed, and what corrective action, if any, was taken.

- If any one test lamp does not light (as shown in the chart in paragraph 2-3b or c), replace the defective lamp (para 3-14).
- If none of the test lamp light, or the test lamp indications do not agree with those shown in the charts, replace the remote control unit (para 3-15) with one known to be in good condition.

**3-14. Replacement of Test Lamps**

- Turn the test lamp lens counterclockwise to unscrew it from the lamp socket.
- Press in on the lamp and twist it counterclockwise to unlock it from the lamp socket.
- Remove the defective lamp; insert a new lamp, push in on the lamp, and turn it clockwise to lock it in place.
- Replace the test lamp lens.

**3-15. Replacement of Radio Set Control 614U-6 (fig. 2-5)**

- Loosen the four retaining fasteners on the front panel by turning each fastener one-quarter turn counterclockwise.
- Pull the 614U-6 out far enough from the front panel of the MX-3736/ARM-45 to gain access to the cable assembly connected to the rear of the unit.
- Disconnect the cable assembly from the receptacle at the rear of the 614U-6 by turning the two cable connector screws counterclockwise until they are disengaged from the receptacle; then pull the connector straight out.
- Plug the cable assembly into the receptacle on the rear of the replacement unit.
- Tighten the cable connector retaining screws.
- Carefully push the 614U-6 into the front panel opening of MX-3736/ARM-45. Be careful not to scrape or kink the cable assembly.
- Secure the 614U-6 by turning the four retaining fasteners one-quarter turn clockwise.

## CHAPTER 4

### SHIPMENT AND LIMITED STORAGE

#### 4-1. Disassembly of Equipment

- a. Disconnect all test cable assemblies and close the covers on the test cable receptacles.
- b. Turn the METER SELECTOR switch to OFF.
- c. Store the components of the OA-2494/ARM-45, test cables, running spares, and technical manuals in the storage compartment inside the MX-3736/ARM-45.

#### NOTE

To facilitate repacking of the test cables in the storage compartment, the OA-2494/ARM-45 components should be packed *first*.

- d. Close and fasten the case cover.

#### 4-2. 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. The information concerning the original packaging (para 2-1) will also be helpful.

- a. *Material Requirements* The following materials, are required for packaging Test Set, Radio AN/ARM-

45(\*). For stock numbers of materials, consult SB 38-100.

Material	Quantity
Waterproof paper .....	25 sq ft
Waterproof tape .....	25 ft
Corrugated cardboard .....	50 sq ft
Corrugated filler.....	50 sq ft
Gummed tape .....	25 ft

#### b. Packaging.

(1) Use the corrugated cardboard to form an inner carton large enough (13 by 13 by 20 inches) to hold the unit.

(2) Place a 1 1/2-inch thick corrugated filler pad in the bottom of the carton. Carefully place the test set in the carton; fill the voids on each side and the top with corrugated filler pads.

(3) Close the carton and seal it with gummed tape.

(4) Place the sealed inner carton inside the waterproof barrier paper and place in the outer carton. Seal the waterproof barrier paper and then seal the outer carton with waterproof tape.

**APPENDIX A****REFERENCES**

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Following is a list of references available to organizational maintenance personnel of Test Set, Radio AN/ARM-45 and AN/ARM-45A.

DA Pam 310-4	Index of Technical Manuals, Technical Bulletins, Supply Manuals (types 7, 8, 9), Supply Bulletins and Lubrication Orders.
DA Pam 310-7	U.S. Army Equipment Index of Modification Work Orders.
SB. 38-100	Preservation, Packaging, Packing and Marking Materials, Supplies, and Equipment Used by the Army.
SB 708-42	Federal Supply Code-for Manufacturers-United States and Canada-Code to Name (Cataloging Handbook H4-2).
TB 43-0118	Field Instructions For: Painting and Preserving Electronics Command Equipment.
TM 11-5821-217-12	Operator's and Organizational Maintenance Manual; Radio Sets AN/ARC-73 and AN/ARC1-73A.
TM 38-750	The Army Maintenance Management System (TAMMS).
TM 740-90-1	Administrative Storage of Equipment.
TM 750-244-2	Procedures for Destruction of Electronic Materiel to Prevent Enemy Use (Electronics Command).

## APPENDIX C MAINTENANCE ALLOCATION.

### Section I. INTRODUCTION

#### C-1. General

This appendix provides a summary of the maintenance operations for the AN/ARM-45(\*). It authorizes categories of maintenance for specific maintenance functions on reparable 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.

#### C-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, 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, model (component or assembly) for an unserviceable counterpart.

*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. This function does not include the trial and error replacement of running spare type items such as fuses, lamps, or electron tubes.

*j. Overhaul.* That periodic maintenance effort (service/action) necessary to restore an item to a completely serviceable/operational condition as prescribed by maintenance standards (e.g., DWR) 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 material 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.

#### C-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 maintenance 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 man-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 in

dividual tools) and special tools, test, and support equipment required to perform the designated function.

#### **C-4. Tool and Test Equipment Requirements (Table 1)**

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.

## SECTION II MAINTENANCE ALLOCATION CHART FOR TEST SETS, RADIO AN/ARM-45 AND AN/ARM-45A

(1) GROUP NUMBER	(2) COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIPMENT
			C	O	F	H	D	
00	TEST SET RADIO AN/ARM-45 AND AN/ARM-45A (See note 5)	Inspect <sup>1</sup> Test <sup>2</sup> Replace <sup>3</sup> Repair <sup>4</sup>		0.2 0.2 0.2				1,2 1 thru 10 1 thru 10
01	TEST SET, ASSEMBLY MX-3736/ARM-45	Inspect <sup>1</sup> Test <sup>2</sup> Replace <sup>3</sup> Repair <sup>4</sup>		0.2 0.2 0.2		1.0		1,2 2 1 thru 10
0101	CONTROL UNIT-614U-5 (p/o AN/ARM-45A)	Inspect <sup>1</sup> Test <sup>2</sup> Replace <sup>3</sup> Repair <sup>4</sup>		0.2 0.2		5.0		1,2 1 thru 10
0102	CONTROL UNIT-614U-6 (p/o AN/ARM-45)	Inspect <sup>1</sup> Test <sup>2</sup> Replace <sup>3</sup> Repair <sup>4</sup>		0.2 0.2		1.0	5.0	1,2 1 thru 10 1 thru 10
02	CABLE ASSEMBLY SET, ELECTRICAL OA-2494/ARM-45	Inspect <sup>1</sup> Test <sup>2</sup> Replace <sup>3</sup> Repair <sup>4</sup>		1.0 1.0 2.0			5.0	1,2 1 thru 10 1 thru 10
0201	ELECTRICAL POWER CABLE ASSEMBLY CABLE NO. 1	Inspect <sup>1</sup> Test <sup>2</sup> Replace <sup>3</sup> Repair <sup>4</sup>		0.2 0.2 0.1				1,2 1,2 1,2
0202	CABLE NO. 1A	Inspect <sup>1</sup> Test <sup>2</sup> Replace <sup>3</sup> Repair <sup>4</sup>		0.2 0.2 0.1				1,2 1,2 1,2
0203	CABLE NO.2	Inspect <sup>1</sup> Test <sup>2</sup> Replace <sup>3</sup> Repair <sup>4</sup>		0.2 0.2 0.1				1,2 1,2 1,2
0204	CABLE NO. 3	Inspect <sup>1</sup> Test <sup>2</sup> Replace <sup>3</sup> Repair <sup>4</sup>		0.2 0.2 0.1				1,2 1,2 1,2
0205	CABLE NO. 4	Inspect <sup>1</sup> Test <sup>2</sup> Replace <sup>3</sup> Repair <sup>4</sup>		0.2 0.2 0.1				1,2 1,2 1,2
0206	CABLE NO. 5	Inspect <sup>1</sup> Test <sup>2</sup> Replace <sup>3</sup> Repair <sup>4</sup>		0.2 0.2 0.1				1,2 1,2 1,2
0207	TEST SET SUBASSEMBLY MX-3736/ARM-45	Inspect <sup>1</sup> Test <sup>2</sup> Replace <sup>3</sup> Repair <sup>4</sup>		0.2 0.2 0.1				1,2 1,2 1,2

(1) Inspect-refers to visual inspection of equipment to determine maintenance needs in regards to cleaning, painting, external mechanical and electrical damage.

(2) Test-refers to equipment operation check. Test also refers to electrical continuity check.

(3) Replace, organizational, refers to externally replacing fuses, lamps, knobs, and external connections, cables, to the Black Box. Replace also refers to replacing End Item for higher category of maintenance repair.

(4) Repair limited to component replacement.

(5) TM 11-6625-409-12,-20P

## SECTION II MAINTENANCE ALLOCATION CHART FOR TEST SETS, RADIO AN/ARM-45 AND AN/ARM-45A

(1) GROUP NUMBER	(2) COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIPMENT
			C	O	F	H	D	
0208	CONNECTOR, RECEPTACLE J101-7A	Inspect <sup>1</sup>		0.2				
		Test <sup>2</sup>		0.2				1,2
		Replace <sup>3</sup>		0.1				1,2
		Repair <sup>4</sup>		0.5				1,2
0209	J102-7A	Inspect <sup>1</sup>		0.2				
		Test <sup>2</sup>		0.2				1,2
		Replace <sup>3</sup>		0.1				1,2
0210	J103-7A	Inspect <sup>1</sup>		0.2				
		Test <sup>2</sup>		0.2				1,2
		Replace <sup>3</sup>		0.1				1,2
		Repair <sup>4</sup>		0.5				1,2
0211	J104-7A	Inspect <sup>1</sup>		0.2				
		Test <sup>2</sup>		0.2				1,2
		Replace <sup>3</sup>		0.1				1,2
		Repair <sup>4</sup>		0.5				1,2
0212	J105-2B	Inspect <sup>1</sup>		0.2				
		Test <sup>2</sup>		0.2				1,2
		Replace <sup>3</sup>		0.1				1,2
		Replace <sup>4</sup>		0.5				1,2
0213	J106-2B	Inspect <sup>1</sup>		0.2				
		Test <sup>2</sup>		0.2				1,2
		Replace <sup>3</sup>		0.1				1,2
		Repair <sup>4</sup>		0.5				1,2
0214	J107	Inspect <sup>1</sup>		0.2				
		Test <sup>2</sup>		0.2				1,2
		Replace <sup>3</sup>		0.1				1,2
		Repair <sup>4</sup>		0.5				1,2
0215	J109	Inspect <sup>1</sup>		0.2				
		Test <sup>2</sup>		0.2				1,2
		Replace <sup>3</sup>		0.1				1,2
		Repair <sup>4</sup>		0.5				1,2
		<b>C-4</b>						



**TABLE 1. TOOL AND TEST EQUIPMENT REQUIREMENTS  
FOR  
TEST SET, RADIO AN/ARM-45 AND AN/ARM-45A**

<b>(1) TOOL OR TEST EQUIPMENT REF CODE</b>	<b>(2 ) MAINTENANCE LEVEL</b>	<b>(3)  NOMENCLATURE</b>	<b>(4)  NATIONAL/NATO STOCK NUMBER</b>	<b>(5)  TOOL NUMBER</b>
1	O,F,D	MULTIMETER TS-352B/U	6625-00-553-0142	
2	O,F	TOOL KIT, ELECTRONIC EQUIPMENT TK-101/G	5180-00-064-5178	
3	F,H,D	TOOL KIT, ELECTRONIC EQUIPMENT TK-100/G	5180-00-605-0079	
4	H,D	AUDIO OSCILLATOR TS-421/U	6625-00-669-0228	
5	H,D	WATTMETER AN/URM-120	6623-00-813-8430	
6	H,D	DUMMY LOAD DA-75/U	5985-00-280-3480	
7	H,D	VHF TRANSMITTER T-879(*)/ARC-73	5821-00-752-0546	
8	H,D	MICROPHONE M-52A/U	5965-00-170-4814	
9	H,D	VOLTMETER, ELECTRONIC ME-30(*)/U	6625-00-643-1670	
10	H,D	POWER SUPPLY 27.5 VDC		
		<p align="center"><b>NOTE</b> UPDATED COMMERCIAL SUBSTITUTES MAY REPLACE TEST EQUIPMENT.</p>		
		<p align="center"><b>C-5</b></p>		

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