

TECHNICAL MANUAL
OPERATOR'S, ORGANIZATIONAL, DIRECT
SUPPORT, AND GENERAL
SUPPORT MAINTENANCE MANUAL
RADIO
TEST SET
AN/PRM-32A
(NSN 6625-01-013-9900)

W A R N I N G

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TECHNICAL MANUAL

No. 11-6625-2632-14-1

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, DC, 29 December 1978**Operator's, Organizational, Direct Support, and****General Support Maintenance Manual****RADIO TEST SET AN/PRM-32A****(NSN 6625-01-013-9900)****REPORTING OF ERROES**

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CHAPTER 1

INTRODUCTION

Section I. GENERAL

1-1. Scope

a. This manual covers operation, organizational, and general support maintenance of Radio Test Set AN/PRM-32A (fig. 1-1). The manual includes

instructions for operating, organizational maintenance, testing and servicing procedures, and general support maintenance and repair of Radio Test Set AN/PRM-32A (test set).

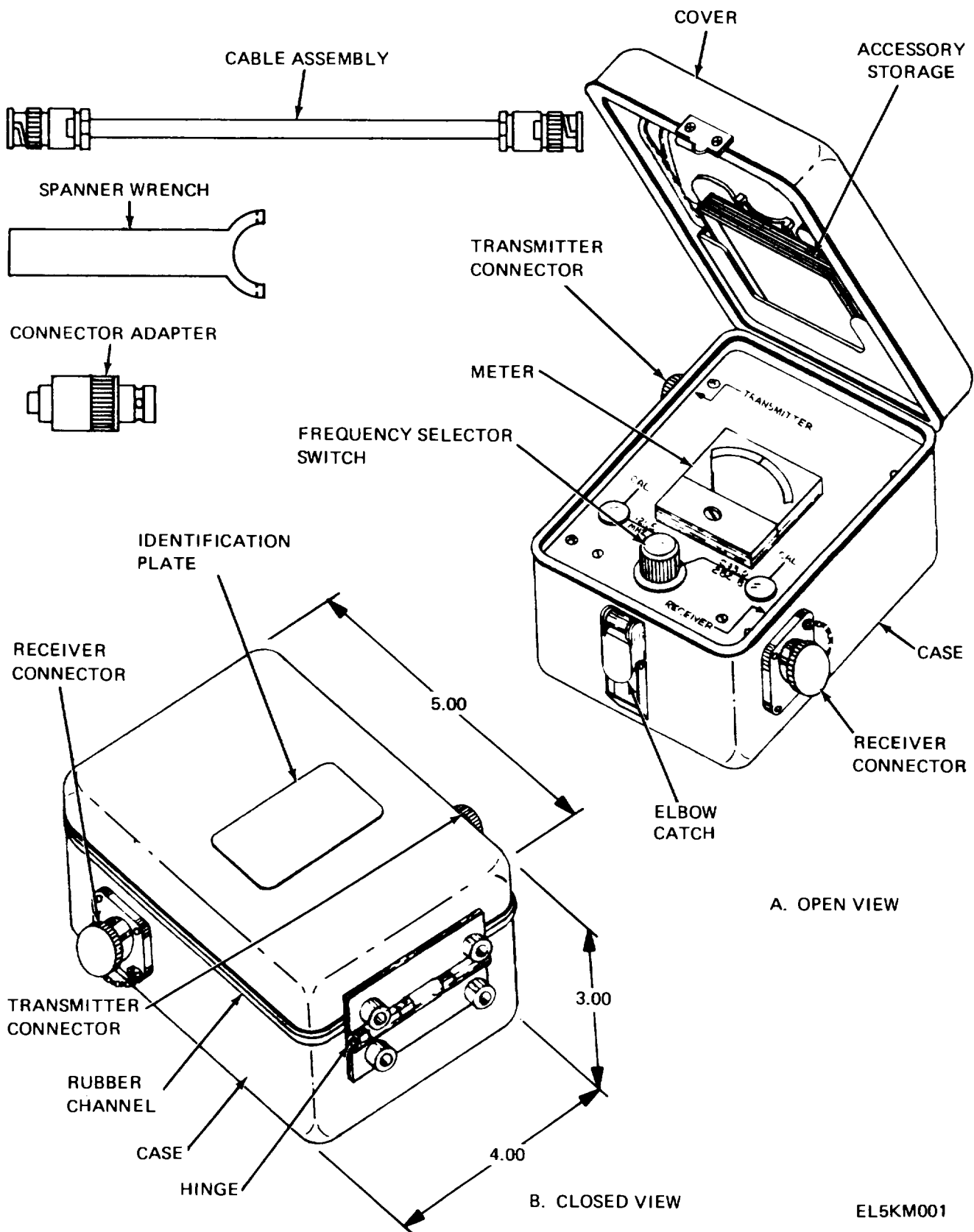


Figure 1-1. Radio Test Set AN/PRM-32A.

6. The maintenance allocation chart (MAC) appears in appendix B; the repair parts list is contained in TM 11-6625-2632-24P-1.

1-2. Indexes of Publications

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

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

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 DLAR 4154.8.

c. Discrepancy in Shipment Report (DISREP) (SF 361). Fill out and forward Discrepancy in shipment Report (DISREP) (SF 361) as prescribed in AR 55-38/NAVSUPINST 4610.33B/AFR 75-18/MCO P4610.19C and DLAR 4500.15.

1-4. Destruction of Army Materiel to Prevent Enemy Use.

Requirements for destruction will be those prescribed in TM 750-244-2.

1-5. Administrative Storage.

a. General. Electronics equipment that is placed in administrative storage should be capable of being ready for use within a 24-hour period. Select the best available site for storage. Separate stored

equipment from equipment in use. Conspicuously mark the area "Administrative Storage."

b. Maintenance Services. Before the Radio Test Set AN/PRM-32A is placed in administrative storage, perform the procedures in table 3-1 of this manual. Faulty equipment should not be placed in storage. If equipment fails test, troubleshoot using the procedures in paragraph 5-6 of this manual. Further, clean the equipment so that it is free of dirt, grease, and other contaminants using the procedures in paragraph 3-7 of this manual. Remove dust and damaged paint by scraping, wire brushing, sanding or buffing. Sand to a smooth finish and spot paint as necessary. See TB 43-0118.

c. Removal from storage. When the Radio Test Set AN/PRM-32A is removed from storage, it must be tested to insure that it is operating satisfactorily for use in the field. Test it by using the procedures in table 3-1 of this manual.

1-6. Calibration.

Radio Test Set AN/PRM-32A is simple to use but must be properly calibrated. Calibration is performed at general support maintenance, as prescribed in TB 43-180.

1-7. Reporting Equipment Improvement Recommendations (EIR)

EIR's will be prepared using Standard Form 368 (Quality Deficiency Report). Instructions for preparing EIR's are provided in TM 38-750, The Army Maintenance Management System. EIR's should be mailed directly to Commander, U.S. Army Communications and Electronics Materiel Readiness Command, ATTN: DRSEL-ME-MQ, Fort Monmouth, NJ 07703. A reply will be furnished directly to you.

Section II. DESCRIPTION AND DATA

1-8. Purpose and Use

Radio Test Set AN/PRM -32A is the primary piece of test equipment used to check out Radio Set AN/PRC-90 and Radio Set AN/PRC-106 (the AN/PRC-106 is not in Army inventory at this time) at organizational maintenance. Two cable assemblies and two Adapters, Test MX-8802/PRC-90 (connector adapters) are provided for attachment of the test set to the radio sets being tested. One radio set under test serves as a transmitter and the other as a receiver. The test set serves as a fully-shielded test path between the two radios. There is no interference with operating channels during testing. Indications on the meter of the test set show the operating condition of the radio sets under test.

1-9. Description

(fig. 1-1)

Radio Test Set AN/PRM 32A is a self-contained unit built into an aluminum case and hinged cover. The cover is used to store the two cable assemblies (a below), two connector adapters (b below), a wrench used to remove the antennas from radio sets under test and an instruction book. The cover is secured with an elbow catch when the test set is not in use. Two BNC connectors, one on each side of the test set, are provided to connect the test set to the radio sets under test. Two jack caps are attached to the case to seal the connectors from dirt and moisture when they are not being used. The test set is self-contained and requires no batteries or other power source. It is made ready

for use at any time by releasing the elbow catch and opening the hinged cover. The panel of the test set contains a meter, used to indicate the condition of the radio under test; a switch, used to match the operating frequency of the test set to the operating frequency of the transmitting radio under test; and two calibration potentiometers, used for calibration of test set.

a. Cable Assemblies. The cable assemblies are rf coaxial type cables terminated with male BNC connectors. The cables are identical and are composed of RG-58A/U cable and UG-88C/U connectors. The cables are approximately 7-½ inches long.

b. Connector Adapters. The connector adapters are used to adapt the radio under test to the connectors on the cable assemblies. One end of the connector adapters is terminated with a female BNC connector, the other end is externally threaded with a 3/8-24 UNF-2A thread. The threaded end mates with the antenna thread of the radio under test, the female BNC end mates the male BNC connector on the cable assemblies.

1-10. Tabulated Data

Tabulated data for Radio Test Set AN/PRM-32A are given in table 1-1.

Table 1-1. Radio Test Set
AN/PRM 32A Characteristics

Operating range:	
Temperature	.....+5°C to+40°C
Altitude	.....Sea level to 12,000 feet
Humidity	.....95% maximum
Dimensions:	
Height	.....3 inches
Length	.....5 inches
Width	.....4 inches
Weight, complete	.....1.74 pounds
operating frequencies:	
AN/PRC-90 Tests	.....243.0 MHz and 282.8 MHz
AN/PRC-106 tests.	.....121.5 MHz and 243.0 MHz
power required	.....None

1-11. Items Comprising an Operable Radio Test Set AN/PRM-32A

The items in table 1-2 make up an operable Radio Test Set AN/PRM-32A.

1-12. Additional Equipment Required

No additional equipment is required for use with Radio Test Set AN/PRM-32A.

Table 1-2. Items Comprising an Operable Radio Test Set AN/PRM-32A

NSN	Item	Quantity	Common name
6625-01-013-9900	Radio Test Set AN/PRM-32A	1	Test Set
	consisting of		
	Wrench, Spanner	1	Spanner wrench
	Book, Instruction	1	Instruction book
5820-00-478-7054	Cable Assembly	2	Cable
	Adapter, Test MX-8802/PRC-90	2	Connector adapter

CHAPTER 2

OPERATING INSTRUCTIONS

Section I. SERVICE UPON RECEIPT OF EQUIPMENT

2-1. General

Radio Test Set AN/PRM-32A is packaged for shipment in a standard moisture-proof container. It requires no special treatment upon receipt except removal by the operator from the package. There are no special siting or shelter requirements to be considered. It is available for use at any time. It should be used in a location as free from moisture, mud, dirt, and snow as possible, but can be used under such conditions if necessary.

2-2. Unpacking

Radio Test Set AN/PRM-32A is packaged for shipment in a corrugated carton that is approximately 6 inches long by 6 inches high by 4 inches wide. The corrugated carton is sealed on the top with tape. The test set is w-rapped with cellulose padding and inserted in a plastic bag before being inserted in the corrugated carton. To remove the test set from the corrugated carton perform the following:

- a. Carefully slit the tape securing the cover of the corrugated carton.
- b. Lift the top flaps of the corrugated carton and remove the plastic bag containing the test set.
- c. Open the plastic bag and remove the wrapped test set.
- d. Unwrap the test set.
- e. Perform the procedures in paragraph 23.

2-3. Checking Unpacked Equipment

a. Inspect the equipment for damage incurred during shipment. If the equipment has been damaged, report the damage in accordance with instructions on DD Form 6 (para. 1-3).

b. Check the equipment against the component listing and the packing slip to see if the shipment is complete. Report all discrepancies in accordance with paragraph 1-3. 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 identification plate on the top of the cover.) 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.)

d. For dimensions, weight and volume of the packaged item see SB 38-100.

2-4. Installation Instructions

There are no installation requirements for Radio Test Set AN/PRM-32A. No preliminary adjustments, external connections, or circuit alignments are required.

Section II. CONTROLS AND INSTRUMENTS

2-5. Damage From Improper Settings

No Damage will result from improper settings.

2-6. Operator's Controls

Operator's controls and indicators on Radio Test

Set AN/PRM 32A are identified in table 2-1 and shown in figure 2-2.

Table 2-1. Radio Test Set AN/PRM-32A Controls, Indicators, and Connectors

NOTE

This table covers only items used by the operator; items used by higher category maintenance personal are covered in instructions for the appropriate maintenance category.

Control, indicator, or connector	Function
Meter	Indicates power level of transmitted radio signal.
Frequency selector switch (2-position rotary switch)	Selects operating frequency.
	SW Pos Function
	121.5 MHz Matches the meter circuit to 121.5 MHz.
	243.0/282.8 Matches the meter circuit to 243.0 or 282.8 MHz.
TRANSMITTER connector	Connects to transmitting radio under test.
RECEIVER connector	Connects to receiving radio under test.
Connector adapters (two provided)	Adapts radio under test to connectors on cable assemblies.
Cable assemblies (two provided)	Connects radio under test to test set.

Section III. OPERATION UNDER USUAL CONDITIONS

2-7 Introduction

The test set can test a single radio for transmission or it can test a radio for reception of a signal being transmitted by an identical radio. The recommended procedure is to connect two identical radios to the test set. The radio being used as a transmitter must be tested first, then the other radio is tested as a receiver. After the two radios have been tested, transpose the two radios and repeat the tests.

2-8. Test Setup

- a. Select a test area which is as free of moisture,

dust, salt spray, snow, or other contaminants as possible. Testing can be performed in the presence of such contaminants, but it is best to avoid these conditions. Remove the wrench, connector adapters, and cable assemblies stored in the cover of the test set.

- b. Check that both radio sets to be tested contain batteries in good condition.

- c. Remove antennas (fig. 2-1) from both radio sets to be tested. Use wrench supplied with test set if required (used only with AN/PRC-90 equipped with quarter wave antenna).

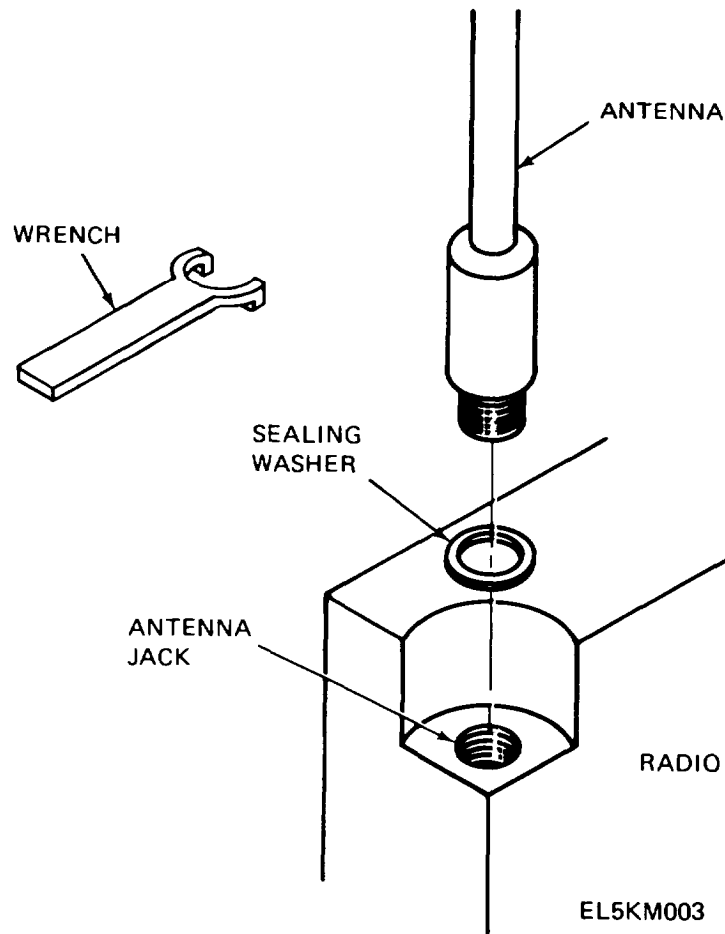


Figure 2-1. Antenna removal.

CAUTION

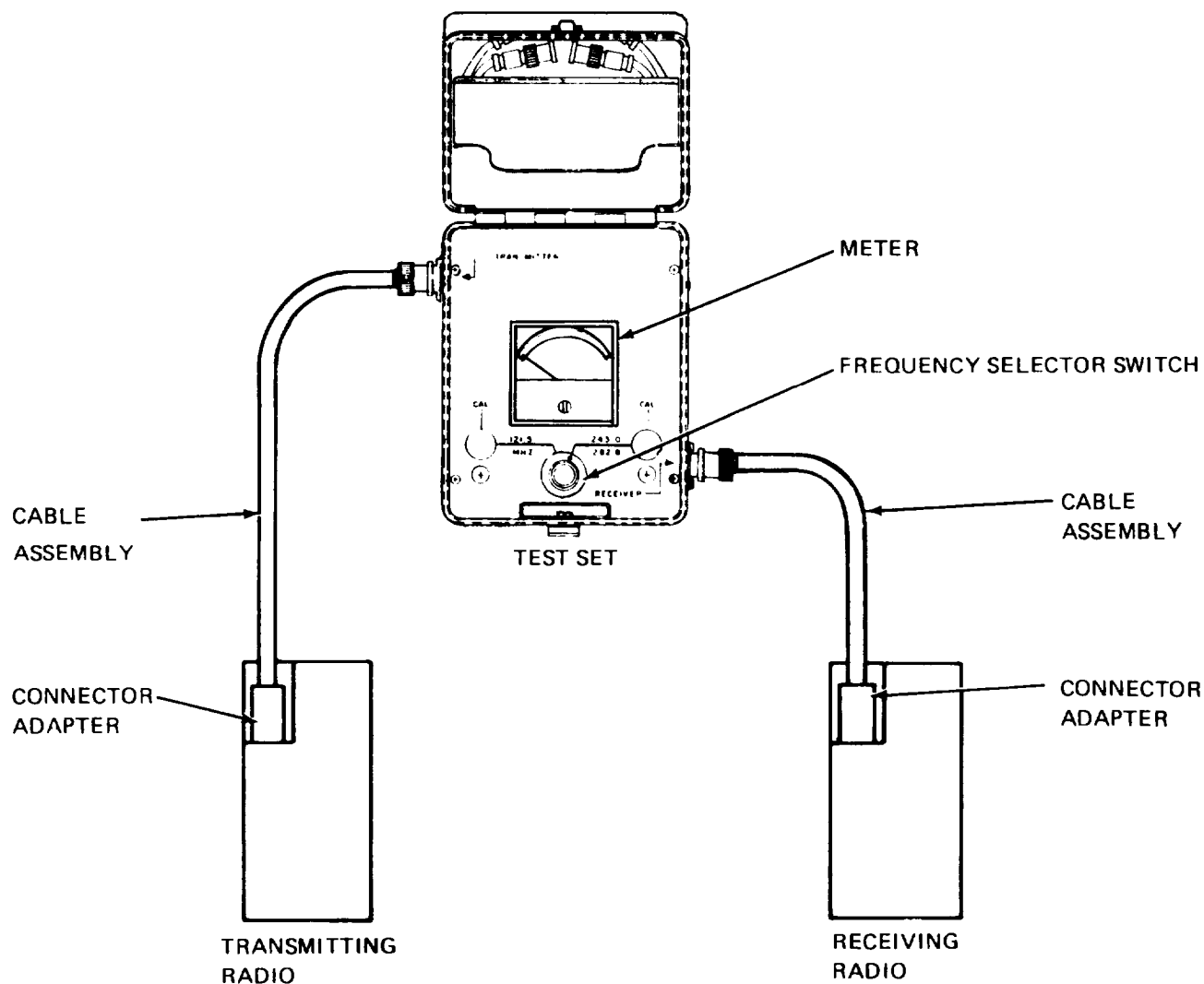
Do not lose sealing washer from antenna.

d. Remove the jack caps from the test set TRANSMITTER and RECEIVER connectors.

e. Install a connector adapter in each of the radio antenna jacks. Avoid cross threading. Seat

test adapters finger tight only.

f. Using cable assemblies supplied with the test set, connect one radio set to the TRANSMITTER connector on the test set and the other radio set to the RECEIVER connector (fig. 2-2).



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Figure 2-2 Test set operational test setup.

2-9. AN/PRC-90 Tests

a. General

(1) Perform the procedures outlined in paragraph 24.

(2) Perform the AN/PRC-90 tests in the order indicated.

b. Beacon Transmitter, Beacon Monitor, and Battery Test.

(1) Set the frequency selector switch on the test set to 243.0/282.8.

(2) Set the function switch of the transmitting radio set to transmit a beacon signal at 243.0 MHz.

(3) Meter should indicate in green area to indicate beacon power output and battery is good. If meter indicates in the red area, beacon power

output is not satisfactory. Install new battery in transmitting radio set.

(4) Repeat the procedure in (2) above. If meter now indicates in green area, the problem has been corrected. If meter indicates in red area, the radio set is not suitable for use and higher category maintenance of the transmitting radio is required.

(5) A beacon tone should be barely audible in the speaker of the transmitting radio. If the beacon tone is not audible, higher category maintenance of the transmitting radio is required.

c. MCW Transmitter Test.

(1) Set the function switch of the transmitting radio to transmit VOICE/MCW at 243.00 MHz.

(2) Press and Hold the MCW button of the radio set and observe the meter of the test set.

Release the MCW button.

(3) If the meter, on the test set, indicated in the green area when the MCW button was pressed, MC W output power is satisfactory. If the meter indicated in the red area, MCW output power is insufficient, higher category repair of the transmitting radio is required.

d. Transmitter 243.0 MHz Voice Test.

(1) press and hold the PUSH-TO-TALK button on the transmitting radio set.

(2) Whistle a steady clear tone into the microphone of the transmitting radio set from a distance of 2 to 3 inches and observe the meter on the test set. Release the PUSH-TO-TALK button.

(3) If meter indicated in the green area briefly during whistle, voice power out-put is satisfactory.

NOTE

It is normal for the meter indication to fall back into the red area if the microphone is not held close to the mouth for full sound volume.

(4) If meter indicated in the red area throughout the test, voice power output is not satisfactory. Repeat the test carefully. If meter still does not indicate in the green area, higher category repair of the transmitting radio is required.

e. Transmitter 282.8 MHz Voice Test.

(1) Set the function switch of the transmitting radio set to transmit voice at 282.8 MHz.

NOTE

To turn the knob of the function switch to the VOICE 282.8 position, press the button in the center of the knob while turning the knob in a counterclockwise direction.

(2) Press and hold the PUSH-TO-TALK button on the transmitting radio set.

(3) Whistle a steady clear tone into the microphone of the transmitting radio set from a distance of 2 to 3 inches and observe the meter on the test set. Release the PUSH-TO-TALK button.

(4) If meter indicated in the green area briefly during whistle, voice power output is satisfactory.

NOTE

It is normal for the meter indication to fall back into the red area if the microphone is not held close to the mouth for full sound volume.

(5) If meter indicated in the red area throughout the test, voice power output is not satisfactory. Repeat the test carefully. If meter still does not indicate in the green area, higher category repair of the transmitting radio is required.

f. Receiver 243.0 MHz Test.

NOTE

The transmitting radio must pass the tests in *b* through *e* above before the receiver tests are performed.

(1) Set the volume control of the transmitting radio to minimum and the function switch to transmit a-beacon signal at 243.0 MHz.

(2) Set the function switch of the receiving radio to receive a beacon signal at 243.0 MHz and the volume control to maximum.

(3) A beacon signal should be heard from the speaker of the receiving radio. If beacon signal is not heard, install new battery in receiving radio.

(4) Repeat the procedures in (1) and (2) above. If beacon signal can not be heard, the receiving radio is unsuitable for use and higher category maintenance is required.

NOTE

The presence of an audible Interfering signal from the speaker caused by a nearby 243.0 MHz transmitter generally will be an indication of satisfactory performance. This may not be a true indication if the interfering transmitter is of unusually high power or its antenna is located within 100 feet.

g. Receiver 282.8 MHz Test.

(1) Set the volume control of the transmitting radio to minimum and the function switch to transmit a voice signal at 282.8 MHz.

NOTE

To turn the knob of the function switch to the VOICE 282.8 position, press the button in the center of the knob while turning the knob in a counterclockwise direction.

(2) Set the function switch of the receiving radio to receive a voice signal at 282.8 MHz and the volume control to maximum.

(3) Press the PUSH-TO-TALK button on the transmitting radio. A reduction in noise level from the speaker of the receiving radio indicates a satisfactory 282.8 MHz receiver.

(4) Complete lack of noise, or no change in noise level indicates the receiving radio is unsuitable for use and higher category repair is required.

NOTE

The presence of an audible interfering signal from the speaker caused by a nearby 282.8 MHz transmitter generally will indicate a satisfactory receiver. This may not be a true indication if the interfering transmitter is of unusually high power or its antenna is located within 100 feet.

h. Earphone Test.

(1) Perform the procedures given in g (1) and (2) above.

(2) Observe the noise level from the speaker of the receiving radio.

(3) Plug the earphone connector into the earphone jack of the receiving radio. The speaker of the receiving radio should now be silent and the receiver noise should be clearly in the earphone.

(4) If the earphone does not operate properly, check the earphone connection for dirty contacts. If cleaning the contacts does not correct the problem, replace the earphone. If operation is still unsatisfactory, the receiving radio is unsuitable for use and higher category repair is required.

i. Completion of Tests.

(1) Satisfactory completion of the tests in *b* through *h* above assures the transmitting radio set is operating properly as a transmitter and the receiving radio set is operating properly as a receiver.

(2) Interchange the two radio sets and repeat the test procedures in paragraphs *b* through *h* above. Satisfactory completion of the tests assures both radio sets are operating properly.

(3) Disconnect the cable assemblies from the radio sets.

(4) Remove the test adapters from the radio sets.

(5) Check that the threads of the antennas and antenna jacks are free of moisture, dirt or other contaminants.

CAUTION

Do not overtighten or the plastic threads on the antenna will be damaged.

(6) Install the antennas and antenna sealing washers. Avoid cross threading. Use only enough torque to compress the sealing washer slightly.

(7) Replace test set items removed in paragraphs 2-8 a and d.

2-10. AN/PRC-106 Tests

a. General.

(1) Perform the procedures outlined in paragraph 2-8.

(2) Perform the AN/PRC 106 tests in the order indicated.

b. 243.0 MHz Beacon Transmitter, Beacon Monitor, and Battery Test. Perform the procedures outlined in paragraph 2 9b.

c. 243.0 MHz Voice Transmit Test.

(1) press and hold the PUSH-TO-TALK button on the transmitting radio set.

(2) Whistle a steady clear tone into the microphone of the transmitting radio set from a distance of 2 to 3 inches and observe the meter on the test set. Release the PUSH-TO-TALK button.

(3) If meter indicated in the green area briefly during whistle, voice power output is satisfactory.

NOTE

It is normal for the meter indication to fall back into the red area if the microphone is not held close to the mouth for full sound volume.

(4) If meter indicated in the red area throughout the test, voice power output is not satisfactory. Repeat the test carefully. If meter still does not indicate in the green area, higher category repair of the transmitting radio is required.

d. 121.5 MHz Beacon Transmit and Beacon Monitor Test.

(1) Set the frequency selector on the test set to 121.5 MHz.

(2) Set the transmitting radio set to transmit a beacon signal at 121.5 MHz.

(3) Meter should indicate in green area to indicate beacon power output is good. If meter indicates in red area, the radio set is not suitable for use and higher category maintenance is required.

(4) A beacon tone should be barely audible in the speaker of the transmitting radio. If the beacon tone is not audible, higher category maintenance of the transmitting radio is required.

e. 121.5 MHz Voice Transmit Test.

(1) Press and hold the PUSH-TO-TALK button on the transmitting radio set.

(2) Whistle a steady clear tone into the microphone of the transmitting radio set from a distance of 2 to 3 inches and observe the meter on the test set. Release the PUSH-TO-TALK button.

(3) If meter indicated in the green area briefly during whistle, voice power output is satisfactory.

NOTE

It is normal for the meter indication to fall back into the red area if the microphone is not held close to the mouth for full sound volume.

(4) If meter indicated in the red area throughout the test, voice power output is not satisfactory. Repeat the test carefully. If meter still does not indicate in the green area, higher category repair of the transmitting radio is required.

f. 243.0 MHz Receiver Test.

NOTE

The transmitting radio must pass the tests in *b* through *e* above before the receiver tests are performed.

(1) Set the volume control of the transmitting radio to minimum and the function switch to transmit a beacon signal at 243.0 MHz.

(2) Set the function switch of the receiving

radio to receive a beacon signal at 243.0 MHz and the volume control to maximum.

(3) A beacon signal should be heard from the speaker of the receiving radio. If beacon signal is not heard, install new battery in receiving radio.

(4) Repeat the procedures in (1) and (2) above. If beacon signal can be heard from the speaker of the receiving radio, the problem has been corrected. If beacon signal can not be heard, the receiving radio is unsuitable for use and higher category maintenance is required.

NOTE

The presence of an audible interfering signal from the speaker caused by a nearby 243.0 MHz transmitter generally will be an indication of satisfactory performance. This may not be a true indication if the interfering transmitter is of unusually high power or its antenna is located within 100 feet.

g. Earphone Test.

(1) Plug the earphone connector into the earphone jack of the receiving radio. The speaker of the receiving radio should now be silent and the beacon should be heard clearly in the earphone.

(2) If the earphone does not operate properly, check the earphone connection for dirty contacts. If cleaning the contacts does not correct the problem, replace the earphone. If operation is still unsatisfactory, the receiving radio is unsuitable for use and higher category repair is required.

(3) Disconnect earphone from receiving radio set.

h. 121.5 MHz Receiver Test.

(1) Set the volume control of the transmitting radio to minimum and the function switch to transmit a beacon signal at 121.5 MHz.

(2) Set the function switch of the receiving radio to receive a beacon signal at 121.5 MHz and

the volume control to maximum.

(3) A beacon signal should be heard from the speaker of the receiving radio. If beacon signal can not be heard, the receiving radio is unsuitable for use and higher category maintenance is required.

NOTE

The presence of an audible interfering signal from the speaker caused by a nearby 121.5 MHz transmitter generally will be an indication of satisfactory performance. This may not be a true indication if the interfering transmitter is of unusually high power or its antenna is located within 100 feet.

i. Completion of Tests.

(1) Satisfactory completion of the tests in b through h above assures the transmitting radio set is operating properly as a transmitter and the receiving radio set is operating properly as a receiver.

(2) Interchange the two radio sets and perform the test procedures in paragraphs b through h above. Satisfactory completion of the tests assures both radio sets are operating properly.

(3) Disconnect the cable assemblies from the radio sets.

(4) Remove the test adapters from the radio sets.

(5) Check that the threads of the antennas and antenna jacks are free of moisture, dirt or other contaminants.

CAUTION

Do not overtighten or the plastic threads on the antenna will be damaged.

(6) Install the antennas and antenna sealing washers. Avoid cross threading. Use only enough torque to compress the sealing washer slightly.

(7) Replace test set items removed in paragraph 2-8 a and d.

Section IV. OPERATION UNDER UNUSUAL CONDITIONS

2-11. Introduction

Radio Test Set AN/PRM 32A is designed to be resistant to damage from moisture, cold, heat, dust, sand, and snow. Consequently Radio Test Set AN/PRM-32A can be used for testing the radio sets under severe field conditions. However, screw threads, switches, and knobs may be damaged from excessive contamination. Always select a test area which is as free of moisture, salt spray, dust, sand, snow, mud or other contaminants as possible. Under severe conditions, provide some form of shelter for the test area. If

no other shelter is available, a poncho held over the unite under test will reduce the amount of contamination from foreign matter.

2-12. Procedure After Testing

After testing is completed under severe conditions, wipe the screw threads on the antenna and radio, and the sealing washer, carefully with a clean, dry cloth to reduce the contamination before reassembling the antennas on the radio sets. Wipe off the connectors before sealing with the jack caps. Wipe off the connector adapters, cable

assemblies and spanner wrench before closing the cover on the test set. After the cover is closed on the test set it is not likely to be damaged by contaminant.

2-13. Lubrication After Testing

No lubrication of Radio Teat Set AN/PRM-32A is

required. Under extreme conditions, such as the presence of salt spray, dust, sand, snow, or mud, wipe a very light oil over the surfaces of the two connectors to prevent damage to them.

CHAPTER 3

ORGANIZATIONAL MAINTENANCE

NOTE

The operator will perform the organizational maintenance procedures itemized in this chapter. All other test set repairs will be referred to general support category.

Section I. TOOLS, TEST EQUIPMENT, AND MATERIALS

NOTE

Preventive maintenance for commanders is contained in DA Pam 750-1.

3-1. Scope of Maintenance

The maintenance duties of the operator are to perform a prescribed sequence of preventive maintenance checks and services. The preventive maintenance procedures are the systematic care, servicing, and inspection of equipment to prevent the occurrence of trouble and to reduce downtime by detecting and correcting the onset of trouble. These checks and services are to maintain Army electronic equipment in a combat serviceable and mission ready condition.

- a. Touchup Painting (para 3-4).
- b. Preventive maintenance checks and services (para 3-6).
- c. Cleaning (para 3-7).
- d. Troubleshooting (para 3-8).
- e. Repairs (para 3-9).

3-2. Tools and Test Equipment Required

Tools and test equipment required required for

organizational maintenance are listed below. Repair parts and special tools are listed in TM 11-6625-2632-24P-1, and the maintenance allocation chart, appendix B of this manual.

a. Tools. Tool Kit, Electronic Equipment TK-101/G.

b. Test Equipment. No test equipment is required for organizational maintenance.

3-3 Materials Required for Maintenance

- a. Trichloroethane (NSN 6810-00-292-9625).
- b. Camel-hair brush (NSN 8020-00-260-1306).
- c. Lint free cloth (NSN 8305-00-267-3015).
- d. Sandpaper, fine (NSN 5350-00-264-3485).
- e. Dishwashing compound or detergent.
- f. Fungus removal solution (NSN 6850-00-142-9247).
- g. Primer, zinc chromate.
- h. Paint, grey, gloss (color number 16473 per Fed Std 595).

Section II. REPAINTING AND REFINISHING

3-4. Touchup Painting Instructions

- a. The outside of the case and cover of Radio Test Set AN/PRM-32A should be repainted if they become scratched or blistered.
- b. Thoroughly clean the AN/PRM-32A (para 3-7). Allow to dry thoroughly.
- c. Remove rust and corrosion from metal surfaces by sanding them lightly with fine sandpaper.
- d. Apply one coat of primer to bare metal surfaces.

e. Apply one coat of topcoat to the area to be painted. Allow to dry thoroughly. Refer to the applicable cleaning and refinishing practices specified in TB 43-0118.

3-5. Painting and Refinishing Precautions

Do not paint any of the areas-listed below.

- a. Identification plates.
- b. Rubber channel.
- c. Elbow catch.
- d. Interior surfaces.

Section III. PREVENTIVE MAINTENANCE CHECKS AND SERVICES

3-6. General

To insure that the AN/PRM 32A 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 table 3-1. 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. Organizational Preventive Maintenance Checks and Services

A-Monthly

Total task-hours required: 1.6

Item Number	Item to be inspected Procedure	Work Time (T/H)
1	WRENCH Open cover and inspect to be sure wrench is in place in cover. If wrench is not present, order through normal supply channels.	0.2
2	CASE Inspect all surfaces for dirt, grease, dents, or cracks. Clean all exposed surfaces with a clean, dry, lint-free cloth. Do not use cleaning solvents. Wipe off dirt or grease which has collected. Wipe the surface of the rubber channel carefully so it will continue to act as a seal (para 3-7).	0.1 0.2
	WARNING The fumes of TRICHLOROETHANE are toxic. Provide thorough ventilation whenever it is used; avoid prolonged or repeated breathing of vapor. Do not use near an open flame or hot surface, trichloroethane is nonflammable but heat converts the fumes to a highly toxic phosgene gas the inhalation of which could result in serious injury or death. Prolonged or repeated skin contact with trichloroethane can cause skin inflammation. When necessary, use gloves, sleeves and aprons which the solvent cannot penetrate.	
3	CABLES Inspect cables for dirt, cracks, loose connections, or evidence of deterioration of the covering. Replace defective cables. Order through normal supply channels.	0.1
4	CONNECTOR ADAPTER Inspect connector adapters to be sure they are present and mated properly on ends of both cable connectors. If they are damaged, or are not present, replace them.	0.2
5	METER Inspect meter for cracks in cover, missing cover, or dirt lodged under cover.	0.1
6	TEST SET With cover open inspect test set to be sure all visible components are in place. Inspect for loose or dirty connections, worn or deteriorated parts, or missing parts.	0.1
7	Clean all exposed components with a clean, dry, lint-free cloth. Do not use cleaning solvents. Wipe off dirt or grease which has collected (para 3-7).	0.1
8	Test set operation (fig. 2-1 and 2-2). Connect the transmitter cable to a Radio Set AN/PRC-90 known to be operating properly and the receiver cable to a second Radio Set AN/PRC-90 known to be operating properly (para 2-8) and perform the 243.0 MHz receiver check (para 2-9f). Test set meter should indicate in the green area. If it does not, refer the test set to general maintenance for repair.	0.1
9	Test set operation (fig. 2-1 and 2-2). Connect the transmitter cable to a Radio Set AN/PRC-106 (if available) known to be operating properly and the receiver cable to a second Radio Set AN/PRC-106 known to be operating properly (para 2-8) and perform the 121.5 MHz receiver check (para 2-10h). Test set meter should indicate in the green area. If it does not, refer the test set to general support maintenance for repair.	0.1
10	If paint of case or cover is damaged, repaint as required (para 3-4).	0.2
11	If knob is broken or loose, replace knob (para 3-10).	0.1

3-7. Cleaning

a. Cleaning at the organizational category will consist of wiping the exterior of the case with a clean, lint-free cloth to remove moisture and loose

dirt. If dirt is difficult to remove, dampen the cloth with warm water and, if necessary, use a mild soap.

WARNING

The fumes of TRICHLOROETHANE are toxic. Provide thorough ventilation whenever it is used; avoid prolonged or repeated breathing of vapor. Do not use near an open flame or hot surface; trichloroethane is nonflammable but heat converts the fumes to a highly toxic phosgene gas the inhalation of which could result in serious injury or death. Prolonged or repeated skin contact with trichloroethane can cause skin inflammation. When necessary, use gloves,

sleeves and aprons which the solvent cannot penetrate.

b. Remove grease or fungus from the exterior surfaces with a clean cloth dampened (not wet) with trichloroethane.

3-8. Organizational Troubleshooting

Troubleshooting at the organizational category is confined to a visual indication of possible or actual trouble and is based on the monthly preventive maintenance checks and equipment performance during use. Any malfunction that is beyond the scope of organizational maintenance to correct shall be referred to general support category maintenance personnel.

Section IV. MAINTENANCE**3-9. General**

Organizational maintenance is limited to:

- a. Replacing defective or missing connector adapters.
- b. Replacing defective or missing cable assemblies.
- c. Replacing defective or missing spanner wrench.
- d. Replacing defective or missing knob on frequency selector switch.

3-10. Replacement Procedures

(fig. 1-1)

- a. Connector Adapter Replacement.
 - (1) Open elbow catch securing test set cover.
 - (2) Open test set cover.
 - (3) Remove defective connector adapter from its storage position in the test set cover.
 - (4) Place new connector adapter in its storage position in the test set cover.
 - (5) Close test set cover.
 - (6) Secure test set cover with elbow catch.
- b. Cable Assembly Replacement.
 - (1) Perform the procedures given in a(1) and (2) above.
 - (2) Remove defective cable assembly from its

storage position in the test set cover.

(3) place new cable assembly in its storage position in the test set cover.

(4) perform the procedures given in a(5) and (6) above.

c. Spanner Wrench Replacement.

(1) Perform the procedures given in a(1) and (2) above.

(2) Remove defective spanner wrench from its storage position in the test set cover.

(3) Place new spanner wrench in its storage position in the test set cover.

(4) Perform the procedures given in a(5) and (6) above.

d. Frequency Selector Switch Knob Replacement.

(1) Perform the procedures given in a(1) and (2) above.

(2) Loosen set screws and remove knob by pulling knob off of frequency selector switch shaft.

(3) Reinstall new knob by pushing knob on to frequency selector switch shaft and tighten the set screws.

(4) Perform the procedures given in a(5) and (6) above.

CHAPTER 4

FUNCTIONING OF EQUIPMENT

4-1. Introduction

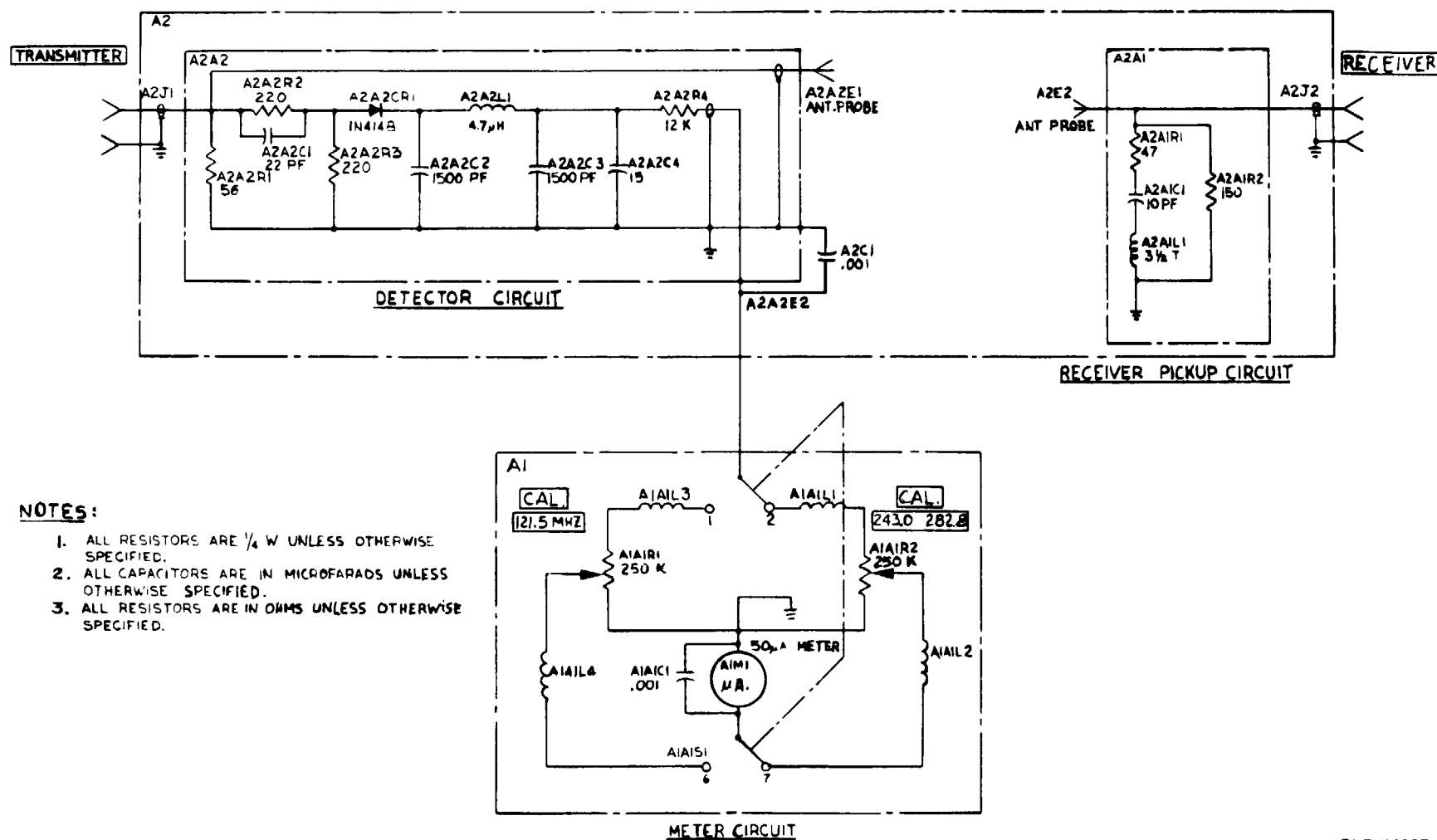
In use Radio Test Set AN/PRM-32A is connected between two Radio Sets AN/PRC-90 or AN/PRC-106. One radio set transmits and the other receives the transmitted signal through the test set. The test set performs two functions. It attenuates the signal level from the transmitting radio set so that only a weak signal is applied to the antenna of the receiving radio set. This permits more sensitive testing than would otherwise be

possible. It also provides a meter indication of signal strength as visible evidence that a signal is being transmitted.

4-2. Functioning of Equipment

(fig. 4-1)

a. The signal from the transmitting radio set is passed through TRANSMITTER connector A2J1 to feed thru (A2A2E1) that acts as an internal transmitting antenna, and to a detector circuit.



NOTES:

1. ALL RESISTORS ARE $\frac{1}{4}$ W UNLESS OTHERWISE SPECIFIED.
2. ALL CAPACITORS ARE IN MICROFARADS UNLESS OTHERWISE SPECIFIED.
3. ALL RESISTORS ARE IN OHMS UNLESS OTHERWISE SPECIFIED.

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Figure 4-1. Radio Test Set AN/PRM-32A, schematic diagram.

b. The detector circuit, which is a halfwave rectifying circuit, applies a dc level which is proportional to signal strength, through switch A1A1S1 to meter A1M1 in parallel with variable resistor A1A1R1 or A1A1R2. The variable resistors are adjusted during calibration so that dc ammeter A1M1 registers in the green portion of its dial, marking when the signal from the transmitting radio set is at an acceptable level. The attenuation of the detector circuit is different at 121.5 MHz and 243.0/282.8 MHz so when switch A1A1S1 is set to 121.5 MHz, A1A1R1 is in

parallel with the meter and when the switch is set to 243.0/282.8, A1A1R2 is in parallel with the meter.

c. The output from the feedthru (A2A2E1) that acts as an internal transmitting antenna is picked up by the internal antenna probe (A2E2) which is located approximately 2-1/4 inches away. The rf signal level at antenna probe A2E2 is attenuated by the pickup circuit and coupled through RECEIVER connector A2J2 to the radio set under test.

CHAPTER 5

GENERAL SUPPORT MAINTENANCE

Section I. GENERAL

5-1. Scope of Maintenance

The maintenance duties of general support personnel are detailed in this chapter. The procedures are presented in a logical order. Do not perform any maintenance not specifically defined in this chapter or in chapter 3. The test set must be calibrated after any parts in the detector, receiver, or meter circuit have been replaced. After parts have been replaced, refer to the calibration requirements shown in paragraph 5-12. The maintenance duties of general support personnel are outlined below. A wiring diagram of the test set is presented in figure 5-6. Refer to figure FO-1 for resistor, inductor, and capacitor color code markings.

- a. Physical inspection (para 5-3).
- b. Checkout (para 5-5).
- c. Troubleshooting (para 5-6).
- d. Removal of components (para 5-8).
- e. Repair (para 5-9).
- f. Fabrication of replacement parts (para 5-10).
- g. Replacement of components (para 5-11).
- h. Testing after repair (para 5-12).

5-2. Tools and Test Equipment Required

Tools and test equipment required for general

support maintenance are listed below. Repair parts and special tools are listed in TM 11-6625-2632-24P-1, and the maintenance allocation chart, appendix B of this manual.

a. Took. Tool Kit, Electronic Equipment TK-100/G (NSN 5180-00-605-0079).

b. Test Equipment.

(1) Radio Set AN/PRC-90 (NSN 5820-00-782-5308).

(2) Multimeter AN/USM-223 (NSN 6625-00-999-7465).

5-3. Physical Inspection

The purpose of visual inspection is to locate faults without testing of components. Many faults may be detected by sight, touch, or smell. All visual signs should be analyzed to help localize the fault to a particular part. Inspect the test set carefully for obvious defects. Inspection procedures are shown in table 5-1. Partial disassembly (panel assembly removal, para 5-8) will be required so that the electronic components on the back of the panel can be examined. After correction of any electronic component defects found by inspection, reassemble the test set and refer to the calibration requirements in paragraph 5-12.

Table 5-1. Physical Inspection

Step No.	Test Procedure	Performance Standard
1	Inspect all controls and mechanical assemblies for loose or missing screw, bolts, and nuts.	Screws, bolts, and nuts must be tight, with none missing.
2	Inspect all metal parts and wiring for dirt, rust, and corrosion.	Metal parts and wiring must be clean and free of rust and corrosion.
3	Inspect for loose or missing parts, and cracked or broken parts.	All parts must be intact, without cracks, with no loose connections, and no parts missing.
4	Inspect for frayed or broken insulation, broken wires, and bare wires or burned insulation.	All wires must be securely soldered, with no breaks. There must be no bare wires, or burned or broken insulation.
5	Inspect for shorted wires, or wires in contact with metal parts of panel.	There must be no shorted wires, and no wires in contact with metal parts of case.

Section II. TROUBLE SHOOTING

5-4. General

Troubleshooting at general support maintenance category consists of verifying and localizing troubles in defective equipment. It also includes a checkout of new equipment for proper operation before use. Troubleshooting by general support maintenance personnel is performed using the operational check specified in table 5-2. Refer to troubleshooting procedures (para 5-6) for corrective measures. Replace defective components.

5-5. Checkout Procedures

Checkout procedures are intended to localize the malfunction or determine that no malfunction exists. Perform the checkout procedures shown in table 5-2. If the test set gives weak or normal indications in this procedure, proceed to testing and calibration (para 5-12 and 5-13). If an abnormal indication appears, record the procedure at which a malfunction occurred and proceed to the

corresponding procedure in the troubleshooting procedure. After repair, perform the complete checkout procedure to be sure the test set is functioning properly. After completion of checkout procedure, refer to the calibration requirements shown in paragraph 5-13.

5-6. Troubleshooting Procedures

Troubleshooting procedures are intended to isolate the faulty part when a malfunction has been determined to exist through operational checks. When the operational checks of table 5-2 have been performed to localize the malfunction to a specific circuit, perform the appropriate procedure of the troubleshooting procedure in table 5-3 to determine which part needs replacement. Replacement procedures are described in paragraph 5-11. Component identification is shown in figures 5-1 through 5-5.

Table 5-2. Operational Check

Step	Action	Normal indication	If indication is abnormal
1	Using connector adapters, connect the test set cables to antenna jacks of two Radio Sets AN/PRC-90 or AN/PRC-106 known to be operating properly (Para 2-8).		
2	Set function switch of transmitting radio to BCN 243.0 and VOL Switch to minimum		
3	Set function switch of receiving radio to VOICE/MCW 243.0 and VOL switch to MAX.	a. Audible beacon tone in speaker of receiving radio. Proceed to b below. b. Observe test set meter. Needle should indicate in green area of dial marking.	a. Malfunction is in cables or receiver antenna coupler circuit. Refer to table 5-3, step 2. b. Malfunction is in detector circuit or meter circuit. Refer to table 5-3, step 3.
4	If two Radio Sets AN/PRC-106 are available, set function switch of transmitting radio to BCN 121.5 and VOL switch to minimum.		
5	Set function switch of receiving radio to VOICE/MCW 121.5 and VOL switch to MAX.	a Audible beacon tone in speaker of receiving radio. Proceed to b. below. b. Observe test set meter. Needle should indicate in green area of dial marking.	a. Malfunction is in cables or receiver antenna coupler circuit. Refer to table 5-3, step 2. b. Malfunction is in detector circuit or meter circuit. Refer to table 5-3, step 3.

Table 5-3. Troubleshooting Procedure

Step	Action	Normal indication	If indication in abnormal
1	Partially disassemble test set to remove panel from case (refer to para 5-8a).		
2	With test set connected, and switches set as in step 3 or step 5 (as applicable) of table 5-2, observe test set meter.	Meter indication in green area of dial marking.	Proceed to step 3 below.
3	Using bench testing check: a. Continuity of transmitter and receiver cables, connectors A2J1 and A2J2, and receiver wire. b. Resistance values of individual components	See figure 4-1, schematic diagram, for values. See figure 5-6, wiring diagram for physical connections.	Replace faulty part. NOTE If a part is replaced, calibration of test set is required (refer to para 5-13).

Section III. MAINTENANCE OF RADIO TEST SET AN/PRM-32A

5-7. General

Adjustment and calibration of the AN/PRM-32A is included in calibration procedures (para 5-13). Repair is achieved by replacement of defective components. Partial disassembly is required to remove the panel assembly for troubleshooting and repair. Further disassembly may be required if components must be removed and replaced. The procedures for removing and replacing those parts which are replaceable are described below. Procedures are presented in a logical order and

should be performed only to the extent required to gain access to parts requiring replacement. Figures 5-1 through 5-5 identify the component parts of the test set. Refer to figure 4-1 for the test set schematic diagram and figure 5-6 for a wiring diagram of the test set.

5-8. Removal of Major Components

a. Removal of Panel Assembly (fig. 5-1).

- (1) Open the elbow catch and open cover (14).
- (2) Remove items stored in the cover.

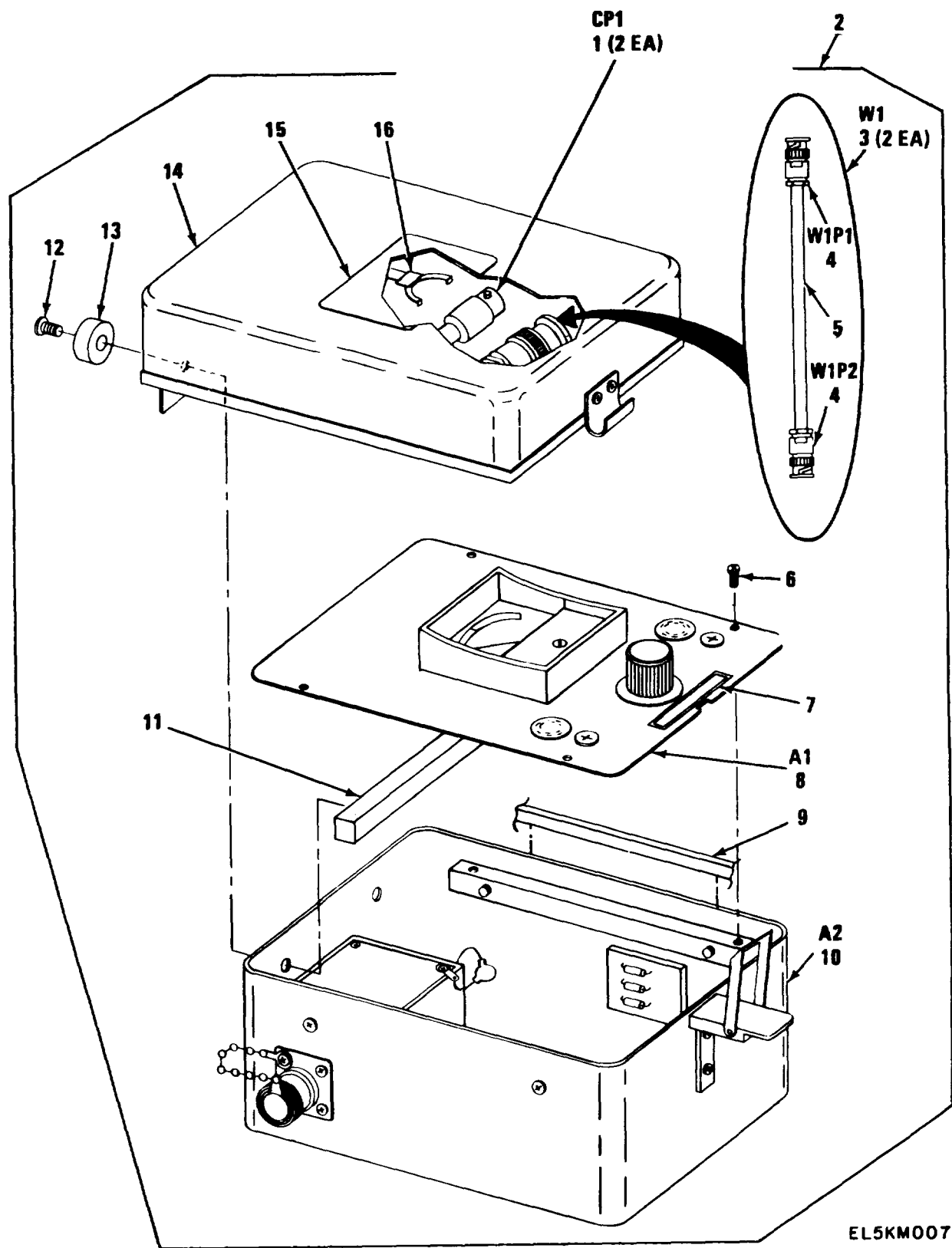
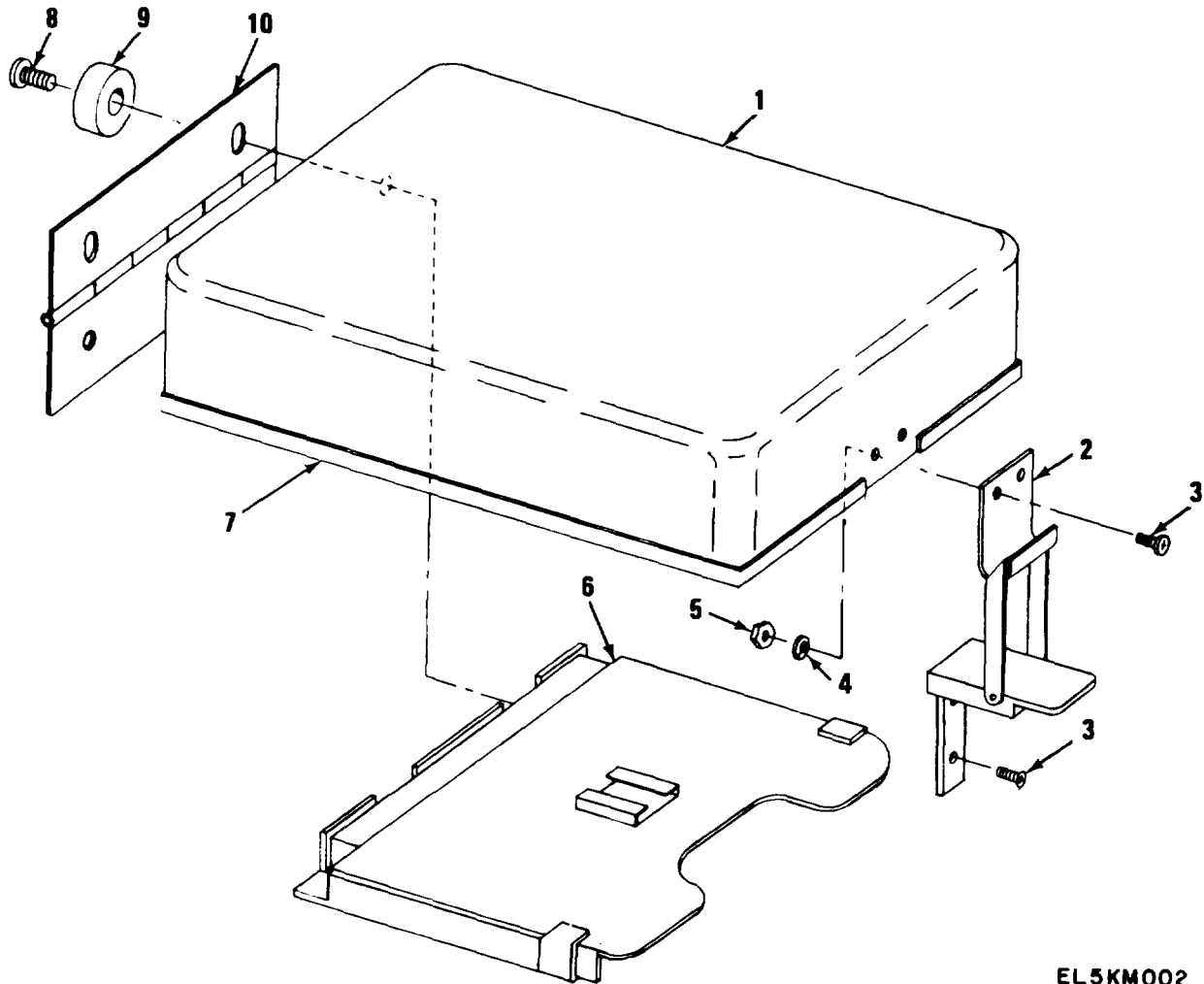


Figure 5-1. Radio Test Set AN/PRM-32A parts identification.

Key to fig. 5-1:

- | | |
|---------------------------|-------------------------|
| 1 Connector Adapter CP1 | 9 Rubber Channel |
| 2 Test Set Assembly | 10 Case Assembly A2 |
| 3 Cable Assembly W1 | 11 Hinge Bar |
| 4 Connector W1P1 and W1P2 | 12 Screw |
| 5 RF Cable | 13 Rubber Bumper |
| 6 Screw | 14 Cover Assembly |
| 7 Identification Plate | 15 Identification Plate |
| 8 Panel Assembly AI | 16 Spanner Wrench |



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- | | |
|---------------|---------------------------|
| 1 Cover | 6 Instruction Book Holder |
| 2 Elbow Catch | 7 Rubber Channel |
| 3 Screw | 8 Screw |
| 4 Washer | 9 Rubber Bumper |
| 5 Nut | 10 Hinge |

Figure 5-2 Cover assembly parts identification.

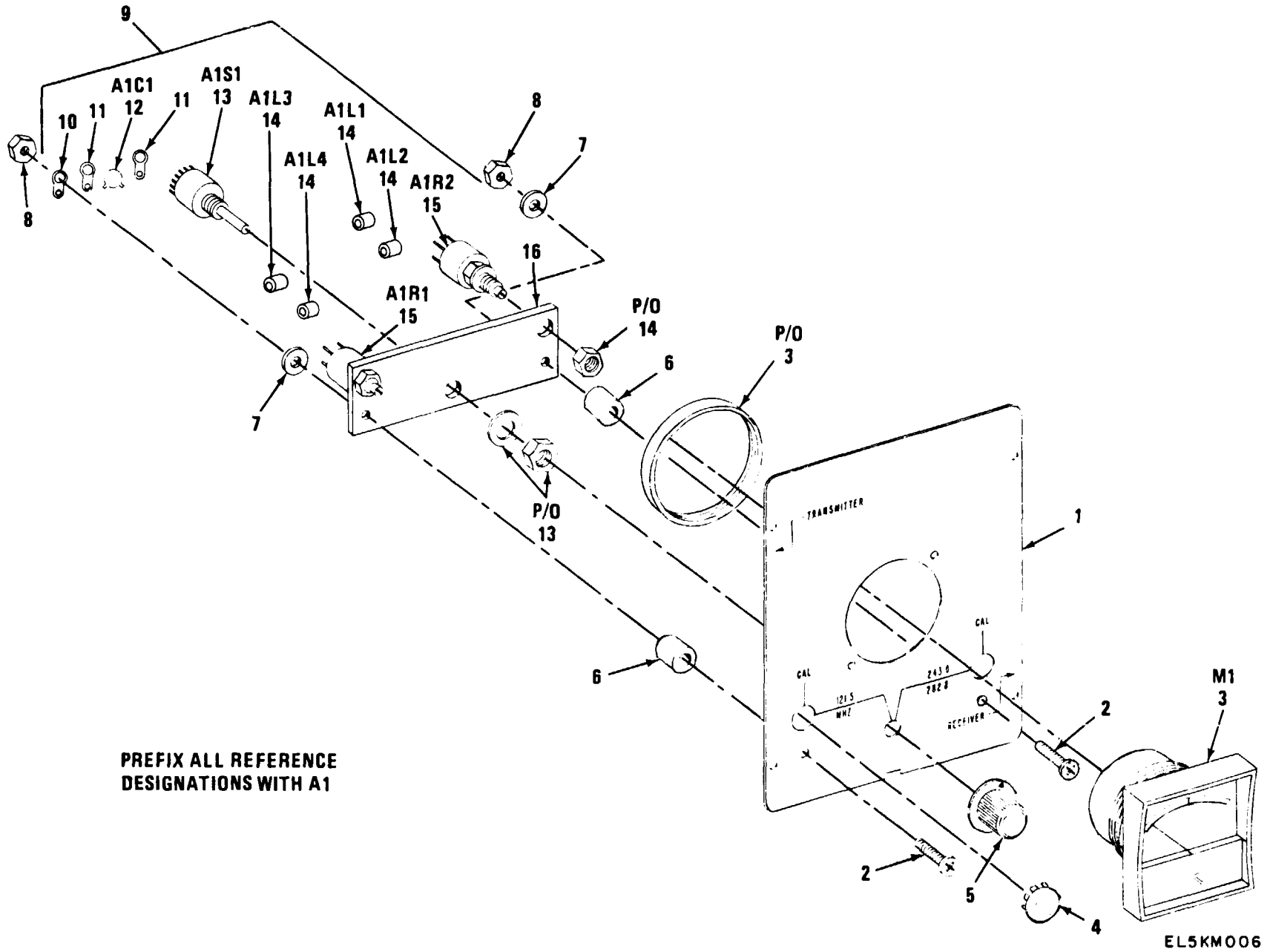
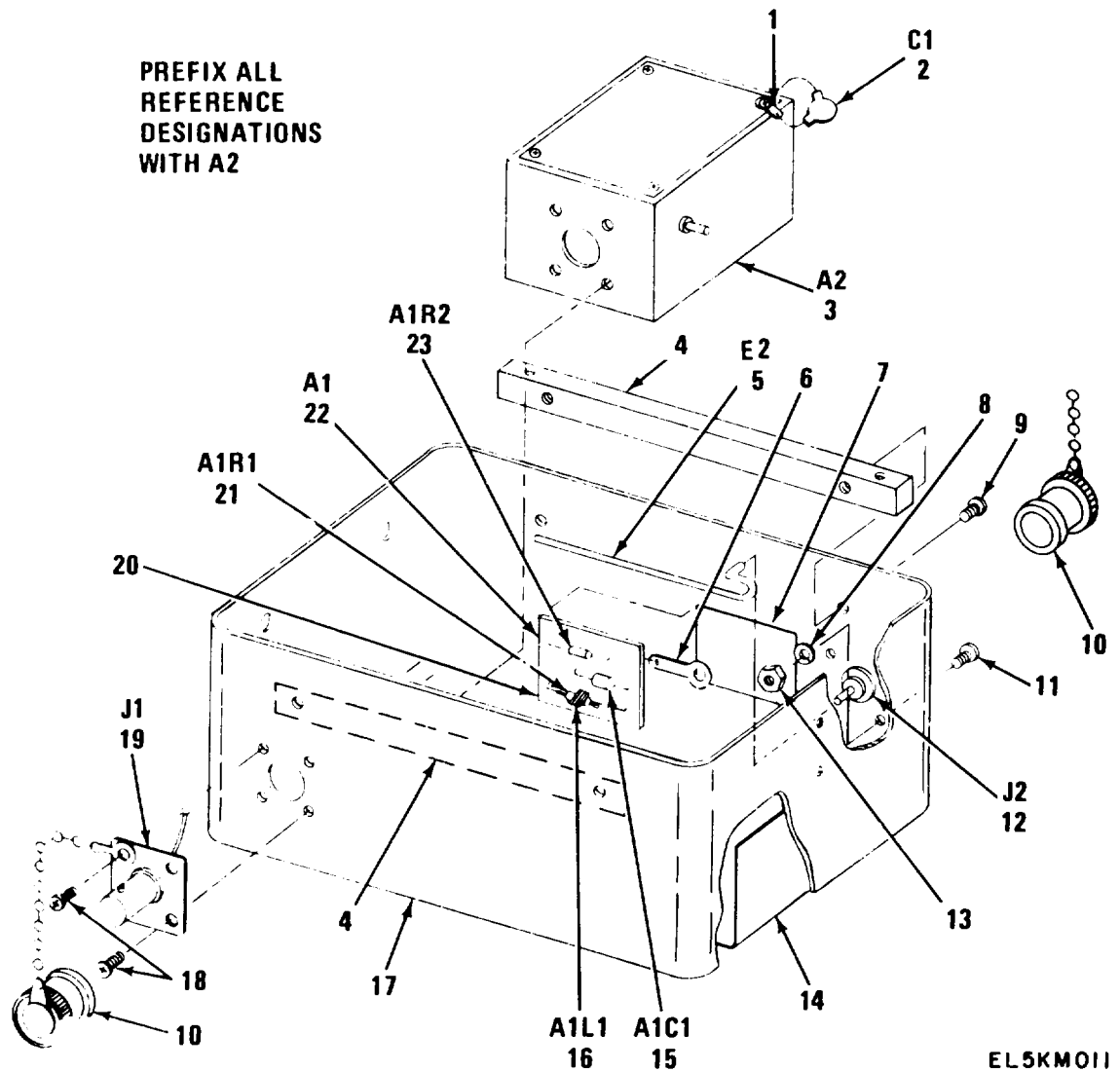


Figure 5-3. Panel assembly parts identification.

Key to fig. 5-3:

- 1 Plate
- 2 Screw
- 3 Meter A1M1
- 4 Plug
- 5 Knob
- 6 Spacer
- 7 Washer
- 8 Nut
- 9 Mounting Bracket Assembly

- 10 Terminal Lug
- 11 Terminal Lug
- 12 Capacitor A1A1C1
- 13 Switch A1A1S1
- 14 Inductor Bead A1A1L1, A1A1L2, A1A1L3 and A1A1L4
- 15 Variable Resistor A1A1R1 and A1A1R2
- 16 Bracket



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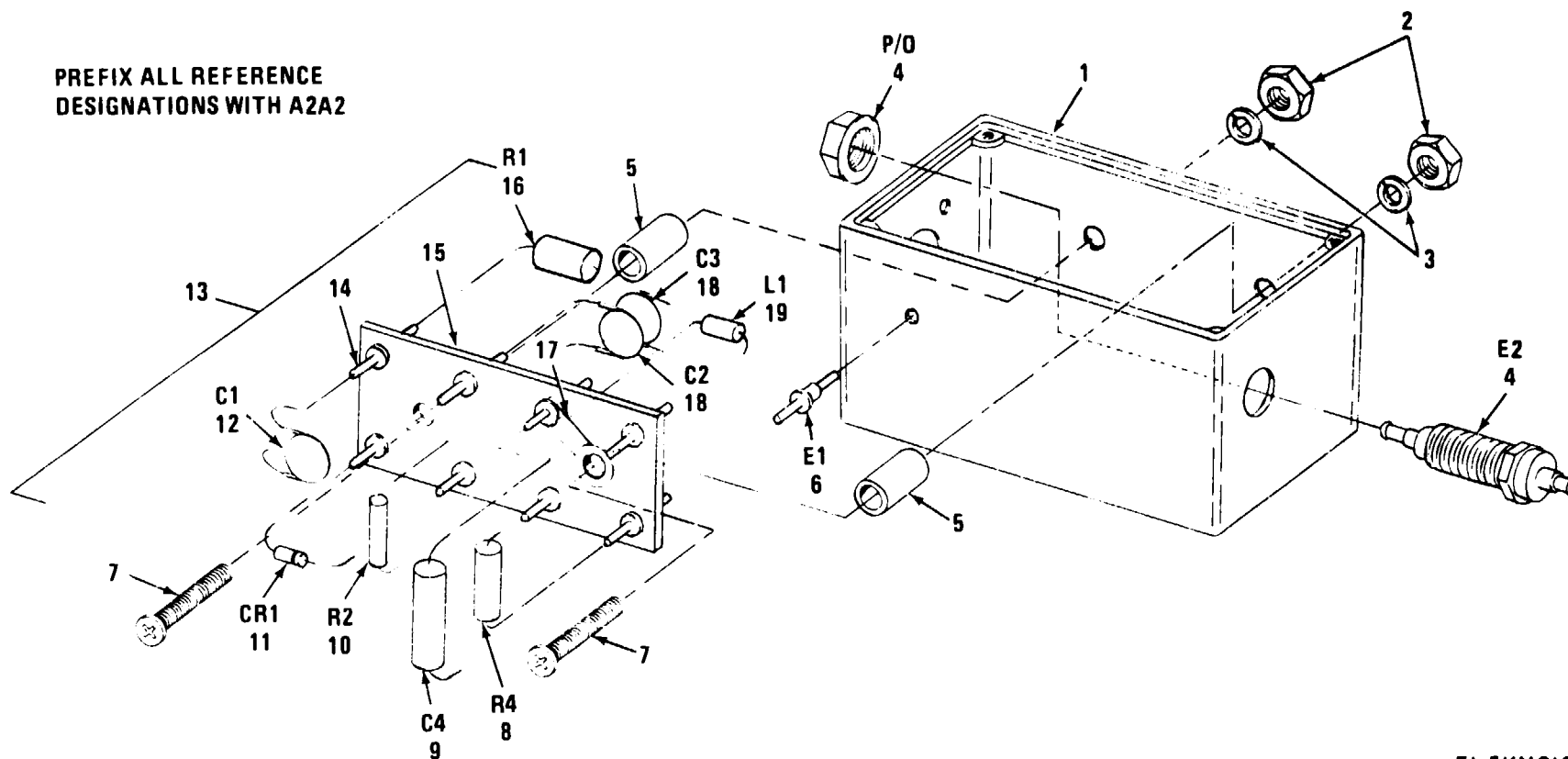
- 1 Terminal Lug
- 2 Capacitor A2C1
- 3 Shielded Box Assembly A2A2
- 4 Bar
- 5 Antenna Wire A2E2
- 6 Terminal Lug
- 7 Fish paper
- 8 Washer

- 9 Screw
- 10 Jack Cap
- 11 Screw
- 12 Connector A2J2
- 13 Nut
- 14 Plate
- 15 Capacitor A2A1C1
- 16 RF Coil A2A1L1

- 17 Case
- 18 Screw
- 19 Connector A2J1
- 20 Printed Circuit Board
- 21 Resistor A2A1R1
- 22 Receiver PC Board A2A1
- 23 Resistor A2A1R2

Figure 5-4. Case assembly parts identification.

PREFIX ALL REFERENCE
DESIGNATIONS WITH A2A2



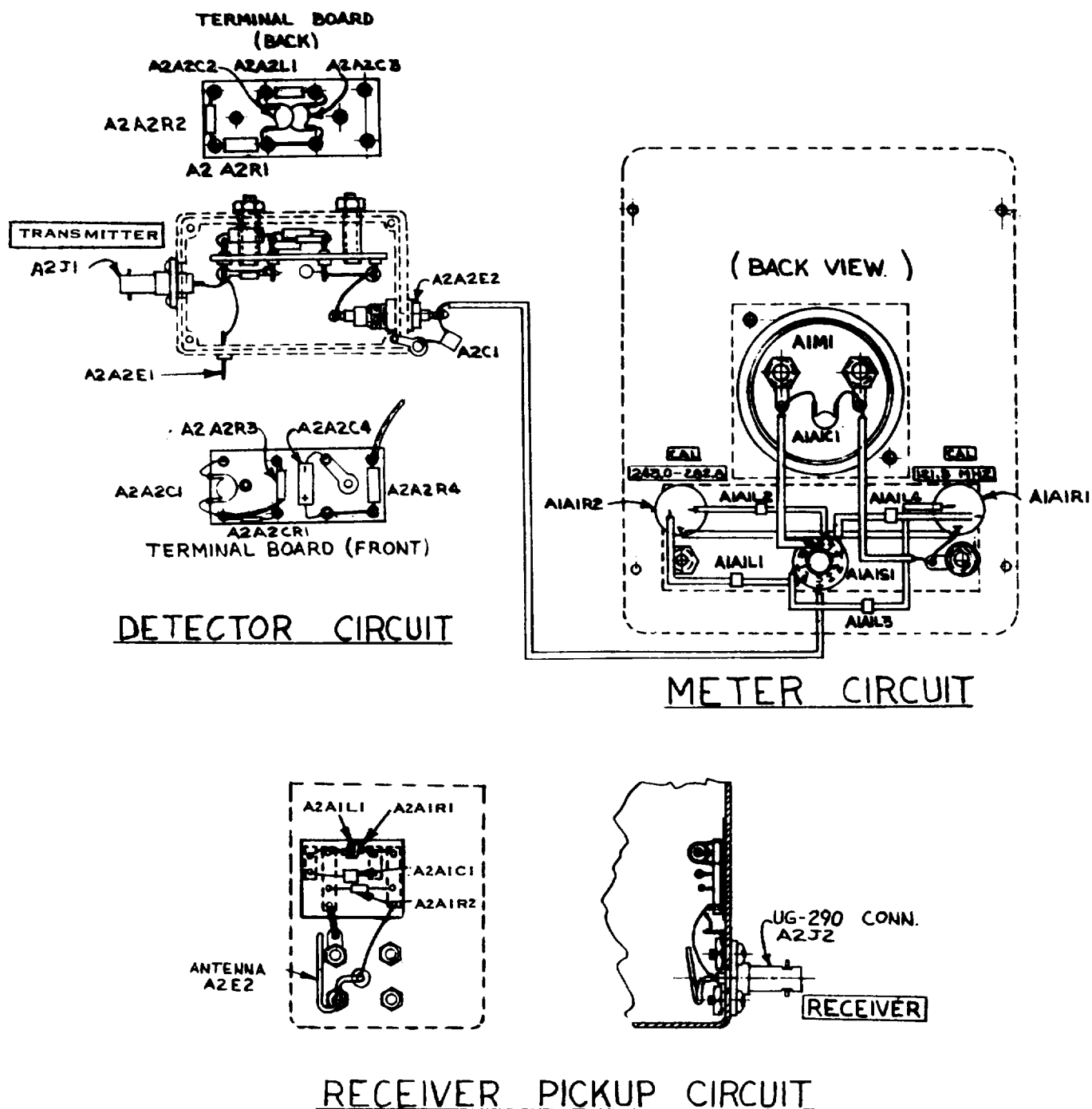
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- | | |
|--------------------|--------------------------------|
| 1 Box | 11 Diode A2A2CR1 |
| 2 Nut | 12 Capacitor A2A2C1 |
| 3 Washer | 13 Mounting Plate Assembly |
| 4 Feedthru A2A2E2 | 14 Feedthru |
| 5 Spacer | 15 Plate |
| 6 Feedthru A2A2E1 | 16 Resistor A2A2R1 |
| 7 Screw | 17 Terminal Lug |
| 8 Resistor A2A2R4 | 18 Capacitor A2A2C3 and A2A2C4 |
| 9 Capacitor A2A2C4 | 19 Inductor A2A2L1 |
| 10 Resistor A2A2R2 | |

Figure 5-5. Shielded box assembly parts identification.

- (3) Carefully peel off rubber channel (9).
- (4) Remove four screws (6) and carefully lift panel assembly A1 (8) out of case assembly A2 (10).
- (5) Tag and unsolder wire from feedthru terminal A2A2E2 (4, fig. 5-5).
- b. Removal of Cover Assembly and Parts (fig. 5-1 and 5-2).
 - (1) Remove panel assembly (a above).
 - (2) Remove two screws (12, fig. 5-1), rubber bumpers (13) and hinge bar (11).
 - (3) Lift off cover assembly (14).
 - (4) Remove instruction book holder (6, fig. 5-2) by removing two screws (8), two rubber bumpers (9) and hinge (10).
- c. Removal of Meter A1M1.
 - (1) Remove panel assembly (a above).
 - (2) Tag wires and unscrew terminal nuts (not illustrated) from meter A1M1 (3, fig. 5-3). Remove terminal lugs (11) with capacitor A1A1C1 (12) and wires attached.
 - (3) Unscrew mounting ring (part of 3) and remove meter (3) from panel.
- d. Removal of Mounting Bracket Assembly and Parts.
 - (1) Remove panel assembly (a above).
 - (2) Tag wires and unscrew terminal nuts from meter A1M1 (3, fig. 5-3). Remove terminal lugs (11) with capacitor A1A1C1 (12) and wires attached.
 - (3) Tag and unsolder wire from feedthru terminal A2A2E2 (4, fig. 5-5).
 - (4) Loosen set screws and remove knob (5, fig. 5-3) by pulling off.
 - (5) Remove two screws (2), washers (7), spacers (6), nuts (8) and terminal lug (10).
 - (6) Remove mounting bracket assembly (9).

- (7) Tag wires at switch A1A1S1 (13). Unsolder wires. Remove nut (part of 13) and washer (part of 13) and remove switch (13).
- (8) Tag wires at variable resistor A1A1R1 or A1A1R2 (15). Unsolder wires. Remove locknut (part of 15) and remove variable resistor (15).
- e. Removal of Shielded Box Assembly.
 - (1) Remove panel assembly (a above).
 - (2) Remove the bar (4, fig. 5-4) above the shielded box assembly A2A2 (3).
 - (3) Remove four screws (not called out) securing cover (not called out) of shielded box assembly A2A2 (3) and open cover.
 - (4) Tag and unsolder wire from TRANSMITTER connector A2J1 (19).
 - (5) Close cover of shielded box assembly A2A2. Secure cover with four screws removed in (3) above. One screw also secures terminal lug (1).
 - (6) Remove four screws (18). Remove TRANSMITTER connector A2J1 (19) with one jack cap (10).
 - (7) Tag and unsolder wire from feedthru terminal A2A2E2 (4, fig. 5-5).
 - (8) Remove shielded box assembly A2A2 (3, fig. 5-4) with capacitor A2C1 (2) and terminal lug (1).
- f. Removal of Mounting Plate Assembly.
 - (1) Remove shielded box assembly (e above).
 - (2) Remove four screws securing cover of shielded box assembly A2A2 (3, fig. 5-4) and open cover.
 - (3) Tag and unsolder wire from feedthru terminal A2A2E1 (6, fig. 5-5).
 - (4) Remove two screws (7), washers (3), nuts (2) and spacers (5).
 - (5) Remove mounting plate assembly (13).



NOTES:

1. BLOCKED LEGENDS ARE FRONT PANEL MARKINGS.

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Figure 5-6. Radio Test Set AN/PRM-32A, wiring diagram.

5-9. Repair Procedures

Repair of physical damage to the case, cover or panel of Radio Test Set AN/PRM-32A consists of straightening out dents and repainting.

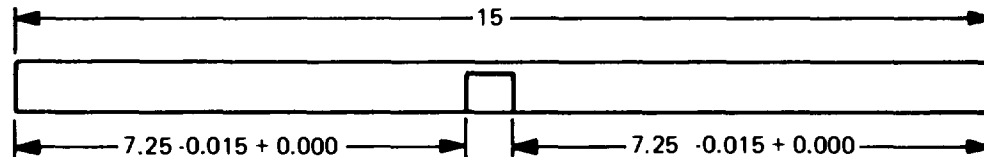
5-10. Fabrication of Replacement Parts

The following parts may be fabricated locally by general support personnel.

a. A rubber channel can be made using the data in figure 5-7.

b. An antenna wire can be made using the data in figure 5-8.

c. The fish paper (7, fig. 5-4) is cut from 0.015 inch thick paper per MIL-I-695, Type F. The fish paper is cut to a 1-inch by 3/4-inch rectangle.



NOTE: ALL DIMENSIONS ARE IN INCHES.

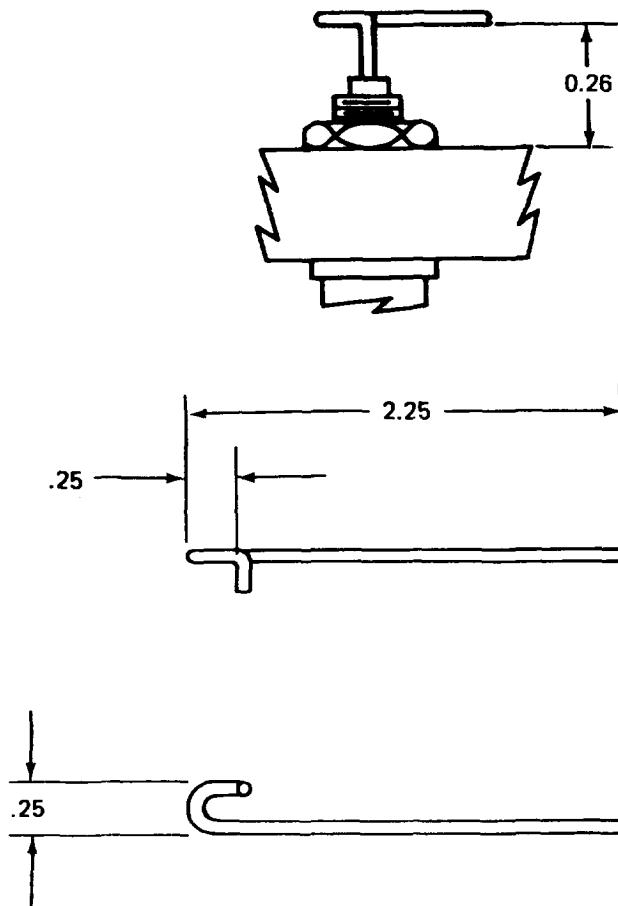
MATERIAL IS 27U68 BUNA-S

ATLANTIC INDIA RUBBER CO.

P/N X661

ELK5M010

Figure 5-7. Rubber Channel Fabrication Details.



NOTE: ALL DIMENSIONS ARE IN INCHES. MATERIAL 16 AWG COPPER WIRE MIL-W-S83C, CLASS 105, TYPE T2.

EL5KM008

Figure 5-8. Antenna Wire Fabrication Details

5-11. Replacement of Major Components

a. Replacement of Mounting Plate Assembly.

(1) Insert two screws (7, fig. 5-5) into mounting plate assembly (13). The screw heads go on the same side as diode A2A2CR1 (11).

(2) Slip spacer (5) over threads of each screw (7).

(3) Apply thread sealing compound, MIL-S-22473C, grade AVV, to screws (7). Insert screws (7) through holes in box (1) and secure with washers (3) and nuts (2).

(4) Untag and resolder wires from mounting plate assembly to feedthru terminals A2A2E2 and A2A2E1 (4 and 6).

(6) Install cover of shielded box assembly A2A2 (3, fig. 5-4) and secure with four screws. One screw also secures terminal lug (1).

b. Replacement of Shielded Box Assembly,

(1) Place shielded box assembly A2A2 (3, fig. 5-4) in case (17).

(2) Insert TRANSMITTER connector A2J1 (19) through case (17) into shielded box assembly A2A2 (3). Apply thread sealing compound, MIL-S-22473C, grade AVV, to screws (18) and secure TRANSMITTER connector A2J1 (19) with four screws (18). One screw also secures jack cap (10).

(3) Untag and resolder wire from mounting bracket assembly (9, fig. 5-3) to feedthru terminal A2A2E2 (4, fig. 5-5).

(4) Remove four screws securing cover of shielded box assembly A2A2 (3, fig. 5-4) and open cover.

(5) Untag and resolder wire from mounting

plate assembly (13, fig. 5-5) to TRANSMITTER connector A2J1 (19, fig. 5-4).

(6) Close cover of shielded box assembly. Secure cover with four screws removed in (4) above. One screw also secures terminal lug (1).

(7) Replace the bar (4) above the shielded box assembly A2A2 (3).

c. Replacement of Mounting Bracket Assembly and Parts.

(1) Remove locknut (supplied with variable resistor) from variable resistor A1A1R1 or A1A1R2 (15, fig. 5-3).

(2) Insert variable resistor (15), with lock-washer and mounting nut (supplied with variable resistor) attached, in bracket (16).

(3) Thread locknut, removed in (1) above, on variable resistor (15). Locknut is to be finger tight only to secure variable resistor (15). Secure by tightening mounting nut.

(4) Untag and resolder wires to variable resistor (15).

(5) Remove mounting nut and washer (supplied with switch) from switch A1A1S1 (13).

(6) Insert switch (13) in bracket (16) and secure with mounting nut and washer removed in (5) above.

(7) Untag and resolder wires to switch (13).

(8) Insert two screws (2) through plate (1).

(9) Place spacer (6) on each screw. Apply thread sealing compound, MIL-S-22473C, grade AVV, to threads of screws (2).

(10) set mounting bracket assembly (9) in place and secure with washers (7) and two nuts (8).

(11) Place terminal lug (10) on nearest screw (2) and secure with nut (8).

(12) Push knob (5) on shaft of switch A1A1S1 (13) and tighten set screws.

(13) Untag and resolder wire on feedthru terminal A2A2E2 (4, fig. 5-5).

(14) Untag wires and place terminal lugs (11, fig. 5-3), with capacitor A1A1C1 (12) and wires

attached, on terminals of meter A1M1 (3). Secure with terminal nuts from meter.

d. Replacement of Meter A1M1.

(1) Insert meter A1M1 (3, fig. 5-3) in plate (1) and secure with mounting ring (part of 3).

(2) Untag wires and place terminal lugs (11), with capacitor A1A1C1 (12) and wires attached, on terminals of meter A1M1 (3). Secure with terminal nuts from meter.

e. Replacement of Cover Assembly and Parts.

(1) Insert one screw (8, fig. 5-2) through each of two rubber bumpers (9).

(2) Insert screws (8), with rubber bumpers (9) attached, through elongated holes in hinge (10). Apply sealing compound, MIL-S-22473C, grade AVV, to threads of screws (8). Do not get sealing compound on rubber bumpers (9).

(3) Insert screws (8), with rubber bumpers (9) and hinge (10) attached, through cover (1) and into instruction book holder (6). Tighten screws.

(4) Place rubber bumpers (13, fig. 5-1) on screws (12) and insert screws in hinge on cover assembly (14). Apply sealing compound, MIL-S-22473C, grade AVV, to threads of screws (12). Do not get sealing compound on rubber bumpers (13).

(5) Set cover assembly in place on case assembly A2 (10) and thread screws into hinge bar (11). Tighten screws.

f. Replacement of Panel Assembly.

(1) Untag and resolder wire from mounting bracket assembly (9, fig. 5-3) to feedthru terminal A2A2E2 (4, fig. 5-5).

(2) Set panel assembly A1 (8, fig. 5-1) in position in case assembly A2 (10) and secure with four screws (6).

(3) Carefully scrape any adhesive residue from rim of case assembly A2 (10). Secure rubber channel (9) to case assembly A2 (10) with Scotch-Grip Industrial Adhesive No. 847 or equivalent.

Section IV. TESTING AND CALIBRATION

5-12. Testing

The test set must be calibrated after repair or replacement of electronic components, refer to paragraph 5-13. After calibration has been completed, perform the checkout procedures (para

5-5) to make sure that Radio Test Set AN/PR-M-32A is functioning properly.

5-13. Calibration

The adjustment of antenna A2E2 and Calibration of the test set meter are performed in accordance with TB 11-6625-2632-35-1.

APPENDIX A

REFERENCES

The following publications contain information applicable to the maintenance of Radio set AN/PRM-32A.

DA Pam 310-4	Index of Technical Manuals, Technical Bulletins, Supply Manuals (type 7, 8, and 9), Supply Bulletins, and Lubrication Orders.
DA Pam 310-7	US Army Equipment Index of Modification Work Orders.
SB 11-573	Painting and Preservation Supplies Available for Field Use for Electronics Command Equipment.
SB 38-100	Preservation, Packaging, Packing and Marking Materials, Supplies, and Equipment Used by the Army.
SC 5180-91-CL-R13	sets, Kits, and Outfits Components List: Tool Kit, Electronic Equipment TK-101/G.
SC 5180-91-CL-S21	Sets, Kits, and Outfits Components List: Tool Kit, Electronic Equipment TK-100/G.
TB 43-0118	Field Instructions for Painting and Preserving Electronics Command Equipment. Including Camouflage Pattern Painting of Electrical Equipment Shelters.
TB 43-180	Calibration Requirements for the Maintenance of Army Materiel.
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 B

MAINTENANCE ALLOCATION

Section I. INTRODUCTION

B-1. General

a. This appendix provides a summary of the maintenance operations for the AN/PRM-32A. 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. Maintenance of avionics equipment is changing to three categories of maintenance. These maintenance categories are Aviation Unit Maintenance (AVUM); Aviation Intermediate Maintenance (A VIM); and Depot Maintenance. AVUM will replace organizational maintenance, and AVIM will replace direct and general support maintenance. In the interim, as maintenance units are reorganized into three categories of maintenance activities, this publication will be used by AVUM or organizational and AVIM or general support maintenance personnel for the maintenance of the avionics equipment. The maintenance allocation chart (MAC) can be adapted to the three-category maintenance concept where the code O represents AVUM, the code F represents AVIM, and D represents depot maintenance.

B-2. Maintenance Function

Maintenance functions will be limited to and defined as follows:

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

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

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

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

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

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

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

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

i. 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 or assembly), end item, or system.

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

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

B-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 RP-STL coincide.
- d. Column 4, Maintenance Category. Column 4 specifies, by the listing of a "worktime" figure in the appropriate subcolumn(s), the lowest level of maintenance authorized to perform the function listed in column 3. This figure represents the active time required to perform that maintenance function at the indicated category of maintenance. If the number or complexity of the tasks within the listed maintenance function vary at different maintenance categories, appropriate "worktime" figures will be shown for each category. The number of task-hours specified by the "worktime" figure represents the average time required to restore an item (assembly, subassembly, component, module, end item or system) to a service 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—Not applicable.
 O—Organizational—Aviation Unit Maintenance (AVUM)
 F—Direct Support/General Support in Aviation Intermediate Maintenance (AVIM)
 H—Not applicable.
 D—Depot

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

f. Column 6, Remarks. Column 6 contains an alphabetic code which leads to the remark in section IV, Remarks, which is pertinent to the item opposite the particular code.

B-4. Tool and Test Equipment Requirements (sect III)

- a. Tool or Test Equipment Reference Code. The numbers in this column coincide with the numbers used in the tools and equipment column of the MAC. The numbers indicate the applicable tool or test equipment for the maintenance functions.
- b. Maintenance Category. The codes in this column indicate the maintenance category allocated the tool or test equipment.
- c. Nomenclature. This column lists the noun name and nomenclature of the tools and test equipment required to perform the maintenance functions.
- d. National/NATO Stock Number. This column lists the National/NATO stock number of the specific tool or test equipment.
- e. Tool Number. column lists the manufacturer's part number of the tool followed by the Federal Supply Code for manufacturers (5-digit) in parentheses.

B-5. Remarks (sect IV)

- a. Reference Code. This code refers to the appropriate item in section II, column 6.
- b. Remarks. This column provides the required explanatory information necessary to clarify items appearing in section II.

(Next printed page is B-3)

SECTION III. TOOL AND TEST EQUIPMENT REQUIREMENTS
FOR
RADIO TEST SET AN/PRM-32A

TOOL OR TEST EQUIPMENT REF CODE	MAINTENANCE CATEGORY	NOMENCLATURE	NATIONAL/NATO STOCK NUMBER	TOOL NUMBER
1	O	TOOL KIT, ELECTRONIC EQUIPMENT TK-101/G	5180-00-064-5178	
2	F	RADIO SET AN/PRC-90	5825-00-782-5308	
3	F	TOOL KIT, ELECTRONIC EQUIPMENT TK-100/G	5180-00-605-0079	
4	F	MULTIMETER AN/USM-223	6625-00-999-7465	

RADIO TEST SET AN/PRM-32A

SECTION IV. REMARKS

REFERENCE CODE	REMARKS
A	EXTERIOR ONLY
B	OPERATIONAL
C	REPLACE ADAPTER, TEST MX-8802/PRC-90
D	FOR CALIBRATION, REFER TO TB 43-180
E	REPLACE HINGES AND LATCH. REPLACE CONNECTOR CAPS.

By Order of the Secretary of the Army:

BERNARD W. ROGERS
General United States Army
Chief of Staff

Official:

J.C. PENNINGTON
Brigadier General, United States Army
The Adjutant General

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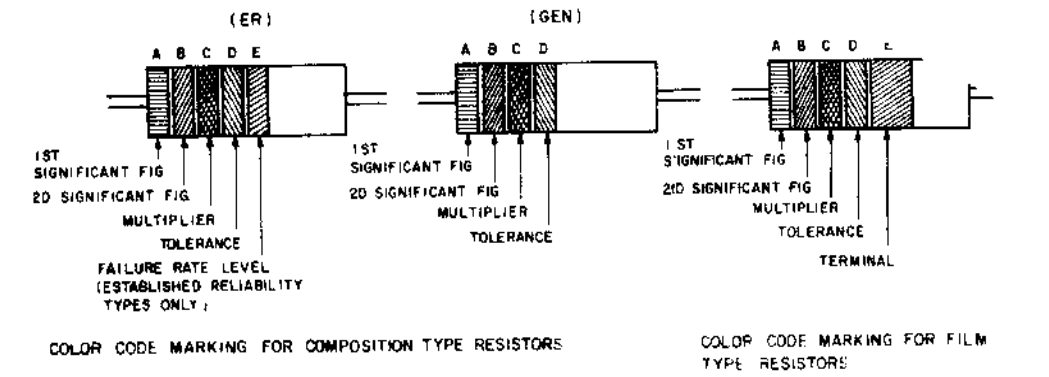


TABLE 2 COLOR CODE FOR COMPOSITION TYPE AND FILM TYPE RESISTORS									
BAND A		BAND B		BAND C		BAND D		BAND E	
COLOR	1ST SIGNIFICANT FIGURE	COLOR	2ND SIGNIFICANT FIGURE	COLOR	MULTIPLIER	COLOR	RESISTANCE TOLERANCE (PERCENT)	COLOR	FAILURE RATE LEVEL
BLACK	0	BLACK	0	BLACK	1	BROWN	±10 (COMP TYPE ONLY)	BROWN	M 10
BROWN	1	BROWN	1	BROWN	10	RED	±5	RED	R 0.1
RED	2	RED	2	RED	100	ORANGE	±2 (NOT APPLICABLE TO ESTABLISHED RELIABILITY)	ORANGE	R 0.01
ORANGE	3	ORANGE	3	ORANGE	1 000	SILVER		ORANGE	R 0.001
YELLOW	4	YELLOW	4	YELLOW	10 000	BLUE		WHITE	
GREEN	5	GREEN	5	GREEN	100 000	GOLD			
BLUE	6	BLUE	6	BLUE	1 000 000	RED			
PURPLE (VIOLET)	7	PURPLE (VIOLET)	7						
GRAY	8	GRAY	8	SILVER	0.01				
WHITE	9	WHITE	9	GOLD	0.1				

BAND A — THE FIRST SIGNIFICANT FIGURE OF THE RESISTANCE VALUE (BANDS A THRU D SHALL BE OF EQUAL WIDTH)

BAND B — THE SECOND SIGNIFICANT FIGURE OF THE RESISTANCE VALUE

BAND C — THE MULTIPLIER (THE MULTIPLIER IS THE FACTOR BY WHICH THE TWO SIGNIFICANT FIGURES ARE MULTIPLIED TO YIELD THE NOMINAL RESISTANCE VALUE)

BAND D — THE RESISTANCE TOLERANCE

BAND E — WHEN USED ON COMPOSITION RESISTORS BAND E INDICATES ESTABLISHED RELIABILITY FAILURE RATE LEVEL PERCENT (PER 1 000 HOURS) ON FILM RESISTORS THIS BAND SHALL BE APPROXIMATELY 1 1/2 TIMES THE WIDTH OF OTHER BANDS AND INDICATES TYPE OF TERMINAL

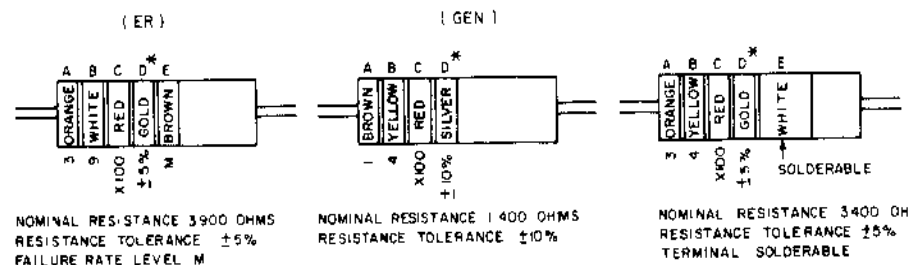
RESISTANCES IDENTIFIED BY NUMBERS AND LETTERS (THESE ARE NOT COLOR CODED)

SOME RESISTORS ARE IDENTIFIED BY THREE OR FOUR DIGIT ALPHA NUMERIC DESIGNATORS THE LETTER R IS USED IN PLACE OF A DECIMAL POINT WHEN FRACTIONAL VALUES OF AN OHM ARE EXPRESSED FOR EXAMPLE

2R7 2.7 OHMS 10R0 10.0 OHMS

FOR WIRE-WOUND TYPE RESISTORS COLOR CODING IS NOT USED IDENTIFICATION MARKING IS SPECIFIED IN EACH OF THE APPLICABLE SPECIFICATIONS

EXAMPLES OF COLOR CODING



COMPOSITION-TYPE RESISTORS

* IF BAND D IS OMITTED THE RESISTOR TOLERANCE IS ±20% AND THE RESISTOR IS NOT MIL STD

A COLOR CODE MARKING FOR MILITARY STANDARD RESISTORS

FILM TYPE RESISTORS

B COLOR CODE MARKING FOR MILITARY STANDARD INDUCTORS

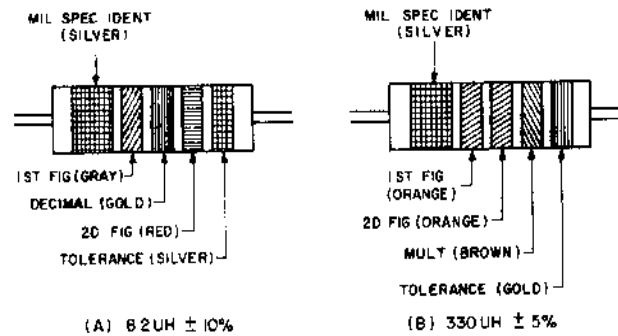


TABLE 2
COLOR CODING FOR TUBULAR ENCAPSULATED R.F. CHOKES

COLOR	SIGNIFICANT FIGURE	MULTIPLIER	INDUCTANCE TOLERANCE (PERCENT)
BLACK	0	1	
BROWN	1	10	1
RED	2	100	2
ORANGE	3	1 000	3
YELLOW	4		
GREEN	5		
BLUE	6		
VIOLET	7		
GRAY	8		
WHITE	9		
NONE			20
SILVER			10
GOLD			5

MULTIPLIER IS THE FACTOR BY WHICH THE TWO COLOR FIGURES ARE MULTIPLIED TO OBTAIN THE INDUCTANCE VALUE OF THE CHOKES COIL

CAPACITORS FIXED VARIOUS-DIELECTRICS STYLES CM CN CY AND CB

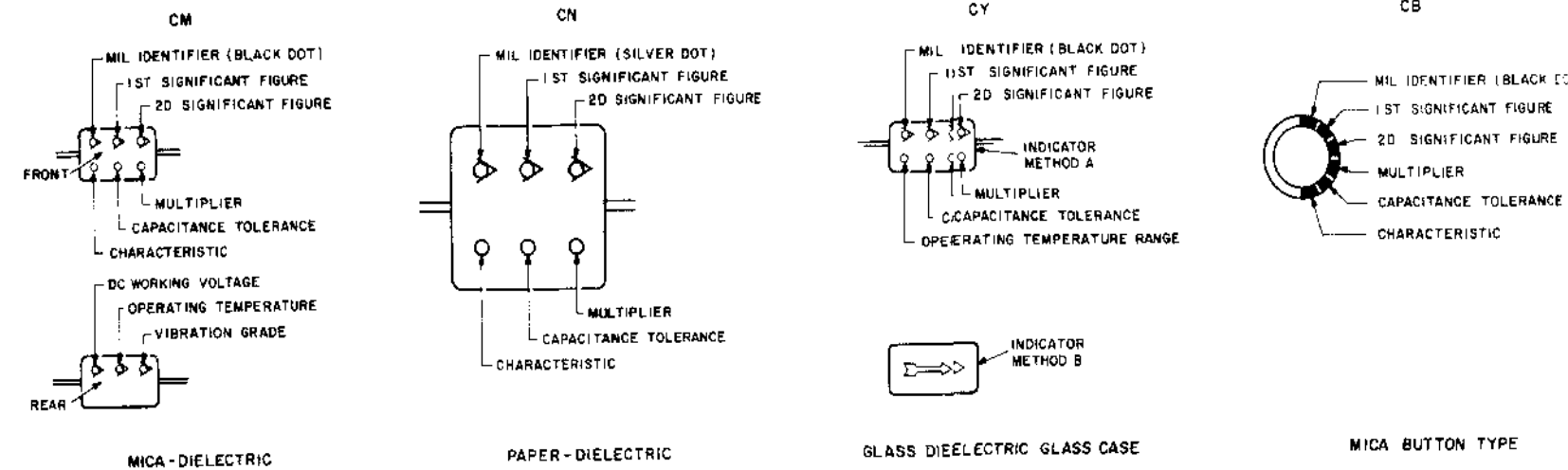


TABLE 3 — FOR USE WITH STYLES CM CN CY AND CB

COLOR	MIL ID	1ST SIG FIG	2D SIG FIG	MULTIPLIER	CAPACITANCE TOLERANCE				CHARACTERISTIC	DC WORKING VOLTAGE	OPERATING TEMP RANGE		VIBRATION
					CM	CN	CY	CB			CM	CY, CN	
BLACK	CM, CY, CB	0	0	1			±20%	±20%	A			-50° TO +70°C	10 55 HZ
BROWN		1	1	10					B	E	B		
RED		2	2	100	±2%		±2%	±2%	C			-55° TO +85°C	
ORANGE		3	3	1 000	±30%				D	D	300		
YELLOW		4	4	10 000					E		900	-55° TO +125°C	10 2 000 HZ
GREEN		5	5		±3%				F		900		
BLUE		6	6									-55° TO +180°C	
PURPLE (VIOLET)		7	7										
GRAY		8	8										
WHITE		9	9										
GOLD				0.1			±5%	±5%					
SILVER	CN			0.01	±10%	±10%	±10%	±10%					

TABLE 4 — TEMPERATURE COMPENSATING STYLE CC

COLOR	TEMPERATURE COEFFICIENT*	1ST SIG FIG	2D SIG FIG	MULTIPLIER	CAPACITANCE TOLERANCE		MIL ID
					CAPACITANCES OVER 10 UUF	CAPACITANCES 10 UUF OR LESS	
BLACK	0	0	0	1		±20 UUF	CC
BROWN	-30	1	1	10	±1%		
RED	-80	2	2	100	±2%	±0.25 UUF	
ORANGE	-150	3	3	1 000			
YELLOW	-220	4	4				
GREEN	-330	5	5		±5%	±0.5 UUF	
BLUE	-470	6	6				
PURPLE (VIOLET)	-750	7	7				
GRAY		8	8	0.01*			
WHITE		9	9	0.1*	±10%		
GOLD	+100			0.1		±10 UUF	
SILVER				0.01			

- THE MULTIPLIER IS THE NUMBER BY WHICH THE TWO SIGNIFICANT (SIG) FIGURES ARE MULTIPLIED TO OBTAIN THE CAPACITANCE IN UUF
 - LETTERS INDICATE THE CHARACTERISTICS DESIGNATED IN APPLICABLE SPECIFICATIONS MIL-C-5 MIL-C-250 MIL-C-1272B AND MIL-C-10950C RESPECTIVELY
 - LETTERS INDICATE THE TEMPERATURE RANGE AND VOLTAGE TEMPERATURE LIMITS DESIGNATED IN MIL-C-10130
 - TEMPERATURE COEFFICIENT IN PARTS PER MILLION PER DEGREE CENTIGRADE
- * OPTIONAL CODING WHERE METALLIC PIGMENTS ARE UNDESIRABLE

C COLOR CODE MARKING FOR MILITARY STANDARD CAPACITORS

Figure FO-1. MIL-STD resistor, inductor, and capacitor color code marking



SOMETHING WRONG WITH THIS MANUAL?

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DATE

PUBLICATION NUMBER

TM 11-6625-2632-14-1

DATE

29 Dec 78

TITLE

BE EXACT. ...PIN-POINT WHERE IT IS

IN THIS SPACE TELL WHAT IS WRONG
AND WHAT SHOULD BE DONE ABOUT IT:PAGE
NO.PARA-
GRAPHFIGURE
NO.TABLE
NO.

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