TM 11-6625-928-35

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

DIRECT SUPPORT, GENERAL SUPPORT,

AND DEPOT MAINTENANCE MANUAL

TEST FACILITIES KIT

MK-994/AR

This copy is a reprint which includes current pages from Changes 1 through 8.

HEADQUARTERS, DEPARTMENT OF THE ARMY
DECEMBER 1968

WARNING

DANGEROUS VOLTAGES EXIST IN THIS EQUIPMENT

Be careful when working around the +27.5-volt dc and 115-volt, 400-Hz inputs to the equipment. These voltages are also available at front panel connectors.

DON'T TAKE CHANCES

CAUTION

To avoid transistor and integrated circuit damage, make sure that all power switches are in the OFF position before changing cable connections. Check the source voltage and polarity before making connections. TRANSISTORS AND INTEGRATED CIRCUITS MAY BE PERMANENTLY DAMAGED BY IMPROPER VOLTAGE OR POLARITY.

CHANGE

No. 8

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, 13 September 1985

DIRECT SUPPORT, GENERAL SUPPORT AND DEPOT MAINTENANCE MANUAL

TEST FACILITIES KIT MK-994/AR (NSN 6625-00-802-7191) and MK-994A/AR (NSN 6625-01-189-7882)

TM 11-6625-928-35, 9 December 1968, is changed as follows:

1. Title of the manual is changed as shown above.
2. This change includes information required to reflect MWO 11-6625-928-30-1.
3. Remove old pages and insert new pages as indicated below. New or changed material is indicated by a vertical bar in the margin of the page. Added or revised illustrations are indicated by a miniature pointing hand.

Remove pages	*Insert pages*
i and ii	i and ii
l-l and l-2	1-1 and 1-2
2-l and 2-2	2-1 and 2-2
2-7 and 2-8	2-7 and 2-8
3-l and 3-2	3-1 and 3-2
3-4.1 and 3-4.2	3-4.1 and 3-4.2
None	3-38.7 through 3-38.12
A-l	A-1 and A-2
5-29	5-29
None	5-41

4. File this change sheet in the front of the publication for reference purposes.

By Order of the Secretary of the Army:

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

Official:

DONALD J. DELANDRO
Brigadier General, United States Army
The Adjutant General

DISTRIBUTION:

To be distributed in accordance with DA Form 12-36, Operator, Direct and General Support Maintenance requirements for MK-994/AR.

TECHNICAL MANUAL

No. 11-6625-928-35

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, DC, *9 December 1968*

Direct Support, General Support, and Depot Maintenance Manual

TEST FACILITIES KIT MK-994/AR (NSN 6625-00-802-7191) AND MK-994A/AR (NSN 6625-01-189-7882)

LIST OF ILLUSTRATIONS

CHAPTER 1
INTRODUCTION

1-1. Scope

a. This manual contains instructions for direct, general support and depot maintenance for Test Facilities Kit MK-994/AR and MK-994A/AR (maintenance kit). It includes instructions appropriate to direct and general support and depot maintenance for troubleshooting, testing, and repairing the equipment, and replacing maintenance parts. It also lists tools, materials, and test equipment required for direct and general support and depot maintenance. Detailed functions of the maintenance kit are covered in chapter 2.

b. The complete technical manuals for this equipment include TM's 11-6625-928-12, 20P, and 34P.

1-1.1. Maintenance Forms, Records, and Reports

a. Reports of Maintenance and unsatisfactory Equipment. Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA Pam 738-750 as contained in Maintenance Management Update.

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

c. Discrepancy in Shipment Report (DISREP)(SF361). Fill out and forward Discrepancy in Shipment Report (DISREP) (SF 361) as prescribed in AR 55-38/NAVSUPINST 4610.33C/AFR 75-18/MCO P4610.19D/DLAR 4500.15.

1-2. Consolidated Index of Army Publications and Blank Forms

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

1-3. Reporting Errors and Recommending Improvements

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter or DA Form 2028 (Recommended Changes to Publications and Blank Forms) direct to: Commander, US Army Communications-Electronics Command and Fort Monmouth, ATTN: AMSEL-ME-MP, Fort Monmouth, New Jersey 07703-5007.

1-3.1. Reporting Equipment improvement Recommendations (EIR)

If your Test Facilities Kits MK-994/AR or MK-994A/AR need improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design. Put it on an SF 368 (Quality Deficiency Report). Mail it to Commander, US Army Communications-Electronics Command and Fort Monmouth, ATTN: AMSEL-ME-MP, Fort Monmouth, New Jersey 07703-5007. We'll send you a reply.

1-4. Common Names

The following are common names of equipment referred to in this manual:

Equipment	*Common name*
Wattmeter AN/URM-120.	Wattmeter.
Signal Generator AN/URM-103.	Fm generator.
Signal Generator AN/URM-44A.	Am generator.
Signal Generator AN/URM-127.	Audio generator.
Multimeter ME-26B/U.	Multimeter.
Electronic Voltmeter ME-30A/U.	Voltmeter.
Headset-Microphone H-101A/U.	Headset, or microphone.
RF Signal Generator Set AN/URM-25D.	RF generator.
Multimeter TS-352B/U.	Ohmmeter.
Electronic Voltmeter AN/URM-145.	RF voltmeter.
Electronic Voltmeter AN/USM-98.	Dc voltmeter.
Impedance Adapter MX-1487/URM-25D.	50-ohm termlnatmn.
Facility +27.5 ± 0.5-volt dc power source.	+28-volt power source.
Facility 115 ± 5-volt, 400-Hz, single-phase power source.	115-volt. 400-Hz power source.
Detector DT-307/G.	Detector.
Oscilloscope AN/USM-140A.	Oscilloscope.
Communication System Control C-6533/ARC (part of MK-994/AR).	COMM CONT NO. 1.
Communication System Control C-6533/ARC (under test).	COMM CONT NO. 2.

Equipment	*Common name*
Radio Set AN/ARC-114, -114A.	Radio set.
Radio Set AN/ARC-115.	Radio set.
Radio Set AN/ARC-116.	Radio set.
Radio Set Control C-7392/ARN-89.	Adf control.
Radio Receiver R-1496/ARN-89.	Adf receiver.
Receiver-Transmitter, Radio RT-1167/ARC-164(V).	Radio set.
Radio Set R-1354/ARC-186(V).	Radio set.
Standing Wave Ratio Indicator IM-157/U	Swr indicator.
50-Ohm BNC adapter (part of Electronic Voltmeter AN/URM-145)	50-ohm termination
Test Facilities Kit MK-1191/AR	GS accessories kit
Standard Lightweight Avionics Equipment	SLAE
Cable Assembly, Radio Frequency CC-3475/U	W1
Cable Assembly, Special Purpose, Electrical CX-10889/U	W2 or W3
Cable Assembly, Special Purpose, Electrical CX–10890/U	W4
Cable Assembly, Special Purpose, Electrical CX–10891/U	W5 or W6
Cable Assembly, Special Purpose, Electrical CX-10892/U	W7 or W8
Cable Assembly, Special Purpose, Electrical CX-10893/AR	W9
Cable Assembly. Radio Frequency CG-3477/U	W10
Cable Assembly, Radio Frequency CG-2340A/U	W11
Cable Assembly, Radio Frequency CG-3476/U	W12, W13, or W14
Cable Assembly, Radio Frequency CG-3478/U	W15
Cable Assembly, Radio Frequency CG-3479/U	W16
Cable Assembly, Radio Frequency CG-3481/U	W17
Cable Assembly, Radio Frequency CG-3482/U	W18
Cable Assembly, Radio Frequency CG-3480/U	W19
Cable Assembly, Special Purpose, Electrical CX-10888/U	W20 or W21
Cable Assembly, Power, Electrical CX-10886/AR	W22
Cable Assembly, Power, Electrical CX-10887/AR	W23
Cable Assembly, Radio Frequency CG-3483/U	W 24
Cable Assembly, Radio Frequency CG-3474/U	W25
Cable Assembly, Special Purpose, Electrical CX-10894/AR	W26
Cable Assembly, Radio Frequency CG-3484/AR	W27, W28, W29, W30, or W31
Cable Assembly, Special Purpose, Electrical, Branched CX-11985/AR	W32
Interconnecting Box J-4247/AR (part of MK-994A/AR)	Interconnecting box

CHAPTER 2

CIRCUIT FUNCTIONING

2-1. General

The MK-994/AR, in conjunction with standard test equipments, provides the capability for testing and performing checkout and/or repair of the electronic equipment that constitutes the SLAE and the ARC-164(V). In addition to this equipment, Test Facilities Kit MK-994A/AR provides the capability to test the RT-1354/ARC-186(V), RT-1300/ARC-186(V), C-10604(V)/ARC-186(V), C-10606(V)/ARC-186(V), CM-482/ARC-186(V), and CM-492/ARC-186(V). Communication System Control C-6533/ARC and Heading-Radio Bearing Indicator ID- 135 l/A are major units of the maintenance kit. For detailed information on these two major units, refer to the applicable technical manual (app. A). The direct current (dc) power distribution is common to all test circuits and is discussed in paragraph 2-2.

2-2. Dc Power Distribution

The dc power (+28-volt) distribution within the maintenance kit is shown in figure 5-1. The dc power is applied to the maintenance kit at front panel DC POWER connector J28-A. The +28 volts is then applied through 10.0-ampere DC POWER circuit breaker CB2 to terminal board TB2-4. Jumpers on terminal board TB2 connect the +28 volts at TB2-4 to TB2-1, 2, 3, and 5 for application to points within the maintenance kit. The +28 volts at terminal board TB2-4 is also applied to DC POWER indicator light DS3 as a front panel indication of dc power presence. The +28-volt return at DC POWER connector J28-B is connected to terminal board TB3-1. Jumpers at terminal boards TB3-1 through TB3-6 provide ground points for maintenance kit Circuitry.

2-3. Radio Test Circuit Analysis

a. Radio tests are performed with the radio set being tested connected to RADIO SET NO. 1 connector J1 (fig. 2-1 and fig. 5-2) of the maintenance kit. A selected am or fm generator, connected through cable W15 to SIGNAL INPUT connector J12 provides a test signal. A wattmeter connected between POWER METER OUTPUT connector J9 and POWER METER INPUT connector J10 provides for measuring transmitter power. Electrical 51-ohm dummy load AT1 provides the radiofrequency (RF) load. The RF antenna connector of the radio set under teat should be connected through cable W12 to T/R ANTENNA connector J11 to properly load the antenna circuit when transmit-receive (tr) relay K1 is energized. With tr relay K1 deenergized, the test signal, which is applied through cable W15 to SIGNAL INPUT connector J12, is connected through connector P4, coaxial adapters CP1 (9.5 decibels (db)), CP6, CP7, attenuator AT5 (12 db), connector P5, closed contacts B3 and B2 of tr relay K1, T/R ANTENNA connector J11, and cable W12 to the radio set under test (fig. 2-1 and 3-9). RADIO ANTENNA FUNCTION switch S1 (fig. 5-2) is retained in position XCVR unless the homing capability of the radio set under test is being checked. RADIO TEST switch S2 provides selection of the circuit function to be tested.

b. An audio generator, connected to RADIO TEST INPUT connector J17 (E, fig. 5-2), provides audio signals. With RADIO TEST switch S2 set to 4, the audio signals are applied to the audio circuits in the radio set under test through RADIO TEST INPUT connector J17, switch S2A and RADIO SET NO. 1 connector J1-Y. Audio from the radio set under test is applied to maintenance kit Communication System Control C-6533/ARC (COMM CONT NO. 1) through RADIO SET NO. 1 connector J1-d (C, fig. 5–2), terminal board TB1-4, TBI-5 and COMM CONT NO. 1 connectors J1-KK, MM, PP, SS, and UU, The audio signal is controlled by COMM CONT NO. 1 switching circuits and amplified by the headset amplifier. The amplified audio is applied through COMM CONT NO. 1 connectors J1-TT and XX, HEADSETS 1 connectors J15-B and D, and cable W20 or W21 to Headset-Microphone H-101A/U to provide aural monitoring of audio signal.

c. With HEADSETS 1 switch S6 (B, fig. 5-2) set to TRANSMIT, a ground at COMM CONT No. 1 connector J1-K is applied to terminal X2 of transmit-receive (tr) relay K1. With RADIO ANTENNA FUNCTION switch S1 set to XCVR, +28 volts is applied through switch S1, energizing relay K1. With RADIO TEST switch S2 set to 4, relay K1 can also be energized by application of a ground (retransmit control input) through switch S2. When relay K1 is energized, a ground is applied from TB3-3 through terminals Al and A2 of relay K1 to TB4-4. This ground is applied to RADIO SET NO. 1 con-

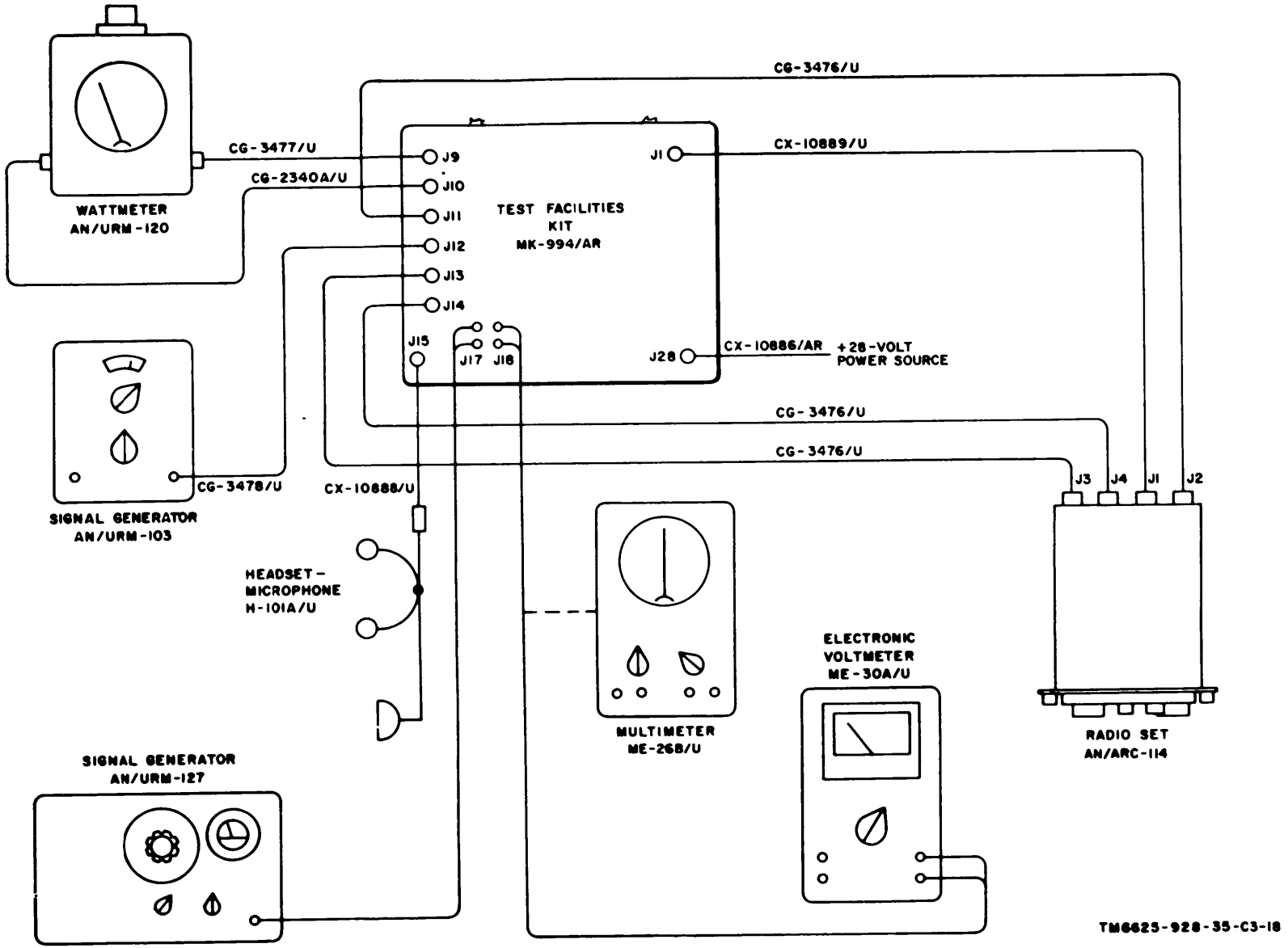


Figure 2–1. Typical system test setup.

nector J1-Z for use as the retransmit control input signal. With the radio set connected to connector J1 and set for retransmit, the retransmit control input signal applied through connector J1-Z will energize the tr relay in the radio set. An interlock is provided for the transmit mode of operation. RADIO ANTENNA FUNCTION switch S1 must be set to XCVR to permit a radio set under test to be placed in the transmit mode of operation. Switch S1 XCVR position applies +28 volts to relay K1 coil terminal Xl. Relay K1 is energized by grounding relay K1 coil terminal X2. When K1 is deenergized, the transmit control and retransmit control signals will not be applied to the radio set under test. With the tr relay in the radio set energized, the radio set under test is in the transmit mode and transmit audio signals are picked up by Headset-Microphone H-101A/U connected to HEADSETS 1 connector J15 (D, fig. *5-2).* The audio signal from Headset-Microphone H-101A/U is applied through cable W20 or W21, HEADSETS 1 connectors J15-A and C, and COMM CONT NO. 1 connectors J1-A and C to the microphone amplifier input, where it is amplified and applied through connector J1-F, L, P, R, or V, depending on the position of the COMM CONT NO. 1 selector switch, terminal 'board TB3-8, and RADIO SET NO. 1 connector J1-K to the radio set under test where it is gated, amplified, and reapplied to connector J1-d (C, fig. 5-2). The transmit audio sidetone on connector J1-d is amplified and monitored as explained in *b* above.

d. With the radio set under test in the transmit mode, radio set RF output is applied through T/R ANTENNA connector J11 and closed contacts B2 and B1 of relay K1 to POWER METER INPUT connector J10 (A, fig. 5-2). Relay K1 is energized as explained in c above. The RF from connector J10 may be applied through cable W10, the wattmeter, cable W11, POWER METER OUTPUT connector J9 and connector P3 to 51-ohm dummy load AT1 (fig. 3-3 and A, fig. 5-2). The power output of the radio set under test is indicated on the wattmeter when HEADSETS 1 switch. S6 is held at TRANSMIT.

e. With the radio set under test in the receive mode, the am or fm generator output test signal at SIGNAL INPUT connector J12 is applied to the radio set under test (A, fig. 5-2), as explained in *a* above.

f. RADIO TEST switch S2 may be set at any of 12 positions. When in position OFF, switch S2 has no effect on the maintenance kit since no circuit is established by any of the switch sections (E, fig. 5-2). Effects of switch S2 on the maintenance kit operation are covered in paragraphs g through p below.

g. With RADIO TEST switch S2 set to 1, the X-mode guard receiver audio output signal from the radio set under test is applied through RADIO SET NO. 1 connector J1-b and switch S2C to RADIO TEST OUTPUT connector J18-A. A ground from E17 is applied through TB2-9, 10, 11, and 12 to RADIO TEST OUTPUT connector J18-B (E, fig. 5-2). A voltmeter connected to connector J18 provides for measurement of the X-mode guard receiver output of the radio set under test.

h. With RADIO TEST switch S2 set to 2, the retransmit audio receive signal from the radio set under test at RADIO SET NO. 1 connector J1 is applied through connector J1-X and switch S2C, and the retransmit audio signal from the radio set under test at RADIO SET NO. 2 connector J2 is applied through connector J2-Y and switch S2C to RADIO TEST OUTPUT connector J18 and can be monitored on a voltmeter connected to connector J18. A retransmit control signal from connector Jl-H- is applied through switch S2E to CONTROL SIGNAL light DS2 causing the lamp to light. This retransmit control signal is also applied to connector J2–Z to operate a second radio set in the retransmit mode (E, fig. 5-2).

i. With RADIO TEST switch S2 set to 3, the -X-mode receiver output signal from the radio set under test is applied through RADIO SET NO. 1 connector J1-c and switch S2C to RADIO TEST OUTPUT connector J18. A ground (X-mode control) from E15 is also applied through TB3-6, TB3-5, and switch S2D to connector J1-g (E, fig. 5-2). This ground at connector J1-g enables the X-mode receiver output circuit. Connector J17 is also connected to J1-J providing audio for X-mode transmit function.

j. With RADIO TEST switch S2 set to 4 and RADIO ANTENNA FUNCTION switch S1 set to XCVR, relay K1 is energized (B, fig. 5-2). A ground from E15 is applied through TB3-6, TB3-5, and S2D to terminal X2 of relay K1. Relay Kl, when energized, provides a ground to RADIO SET NO. 1 connector J1-Z *(c* above). A ground may also be applied to connector J1-Z from RADIO SET NO. 2 connector J2–H when operating two radio sets in the retransmit mode. With a ground on connector J1-Z and the radio set function switch set to RETRANS, the transmit-receive relay in the radio set under test is energized and the radio set is in the transmit mode. The output from an audio generator connected to RADIO TEST INPUT connector J17 (E, fig. 5-2) is applied to connector J1-Y through switch S2A. Retransmit audio may also be applied to connector J1-Y from RADIO SET NO. 2 connector J2-X when operating two radio sets in the retransmit mode. Received audio may be monitored at RADIO TEST OUTPUT connector J18 during tests (E, fig. 5-2).

k. An additional radio set may be connected to RADIO SET NO. 2 connector J2 to test retransmit, am. transmitter audio modulation and distortion, and transmit receive modes of operation. Radio set No. 2 is controlled by Communication System Control C-6533/ARC connected to COMM CONT NO. 2 connector J3. The HEADSETS 2 connector J16 and switch S7 are used with radio set No. 2. When radio set No. 2 is used as a receiver, a simple antenna, or a signal generator in series with a 6-db, or larger, attenuator, must be connected directly to the radio set antenna connector. When radio set No. 2 is used as a transmitter, its antenna connector should be connected to a 50-ohm dummy load or antenna.

l. With RADIO TEST switch S2 set to 5, the signal from an audio generator is applied through RADIO TEST INPUT connector J17, switch S2A, and RADIO SET NO. 1 connector J1-J to the radio set under test for use as the X-mode transmit audio input (E, fig. 5-2). Also, relay K7 is energized with switch S2 set to 5 and disables tone modulation in the transmitter of Radio Set AN/ARC-114 under test. This action enables fm deviation to be measured when external modulation is applied (E, fig. 5-2). With switch S2 set to 5, a 6.8-volt automatic gain control (age) disable signal is applied through switch S2B to RADIO SET NO. 1 connector J1-F. The 6.8-volt agc disable signal is required for receiver agc tests.

m. With RADIO TEST switch S2 set to 6, the received audio input signal from the radio set under test is applied through RADIO SET NO. 1 connector J l-d, TB1-4, TBl-5, and switch S2C to RADIO TEST OUTPUT connector J18 (E, fig. 5-2). The received audio signal can also be monitored on the headset connected to HEADSETS 1 connector J15 *(b* above).

n. With RADIO TEST switch S2 set to 7, a +6.8-volt automatic gain control (age) disable signal is applied through S2B to RADIO SET NO. 1 connectors J1-G. The +6.8-volt signal is required for guard received agc tests (pin G). The +6.8-volt signal is developed across Zener diode CR1 and applied from terminal A1-E20 to switch S2B (E, fig. 5-2). Received audio may be monitored at RADIO TEST OUTPUT connector J18 during the tests (E, fig. 5-2).

o. With RADIO TEST switch S2 set to 8, the homing enable output signal from Radio Set AN/ARC-l 14 under test is applied through RADIO SET NO. 1 connector J1-R and switch S2C to RADIO TEST OUTPUT connector J18 (E, fig. 5-2).

p. With RADIO TEST switch S2 set to 9, the band switch output signal from Radio Set AN/ARC- 114 under test is applied through RADIO SET NO. 1 connector J1-S and switch S2C to RADIO TEST OUTPUT connector J18 (E, fig. 5-2).

q. With RADIO TEST switch S2 set to 10, the antenna tuner test 1 to 5-MHz output signal from the radio set under test is applied through RADIO SET NO. 1 connector J1-M and developed across resistor R16. This signal is applied through switch S2C to RADIO TEST OUTPUT connector J18 (E, fig. 5-2).

r. With RADIO TEST switch S2 set to 11, the antenna tuner test 5 to 10-M Hz output signal from the radio set under test is applied through RADIO SET NO. 1 connector J1-W and developed across resistor R17. This signal is applied through switch S2C to RADIO TEST OUTPUT connector J18 (E, fig. 5-2).

s. The homing capability of Radio Set AN/ARC-114 can also be checked by the maintenance kit. The test setup is the same as described in paragraph a above, except SIGNAL OUTPUT LEFT connector J 13 is connected through cable CG-3476/U to connector J3 on the AN/ARC-114, and the SIGNAL OUTPUT RIGHT connector J14 is connected through another cable CG-3476/U to connector J4 on the AN/ARC-114 (F, fig. 5-2). To perform the homing tests, RADIO ANTENNA FUNCTION switch S 1 is operated as indicated below, with RADIO TEST switch S2 set to 8 *(o* above).

t. With RADIO ANTENNA FUNCTION switch S1 set to HOMING BALANCE, +28 volts is applied to terminal Xl of homing balance relays K2 (left) and K6 (right). A ground from E15 is applied through TB3 to terminals X2 of both K2 and K6 (F, fig. 5-2). Both relays K2 and K6 energize with S1 set to HOMING BALANCE. The fm generator input at SIGNAL INPUT connector J12 is applied through connector P4; coaxial adapters CP1 (9.5 db), CP8, and CP9; attenuator AT2 (12 db); adapter CP2; and connector P9 and P6 to relays K2 and K6, respectively. With "both relays energized, identical signal outputs are provided to Radio Set AN/ARC-114 through SIGNAL OUTPUT LEFT AND RIGHT connectors J13 and J14, respectively. Radio Set AN/ARC-114 provides the following signals to the maintenance kit: the homing signal adequacy signal is applied through RADIO SET NO. 1 connector J1-A; a +28-volt signal is applied through TB2-4 and connector P2-X to HOMING/ADF/GYRO indicator; homing signal strength and its signal return are applied through connectors J1-B and V, respectively; and homing right and left steering sig-

nals are applied through connectors J1–T and U, respectively. Homing signals are applied to Heading-Radio Bearing Indicator ID-1351/A through connector P2 (G, fig. 5-2).

u. With RADIO ANTENNA FUNCTION switch S1 set to HOMING LEFT, relay K2 is energized and relay K6 is deenergized (F, fig. 5-2). The fm generator input at SIGNAL INPUT connector J12 is applied to SIGNAL OUTPUT LEFT AND RIGHT connectors J13 and J14, respectively. The signal is applied from connector J12 through connector P4; coaxial adapters CP1 (9.5 db), CP8, and CP9; attenuator AT2 (12 db); adapter CP2; and connector P9, and through terminals B1 and B2 of energized relay K2 to connector J13. The signal is applied from connector J12 through connector P4, coaxial adapters CP1 (9.5 db), CP4, CP5, attenuator AT3 (15 db), adapter CP3, connector P7 and terminals B3 and B2 of deenergized relay K6 to connector J14 (fig. 3–9). Since AT3 provides attenuation 3 db greater than AT2, the signal output at connector J14 is 3 db lower than the signal output at connector J13.

v. With RADIO ANTENNA FUNCTION switch S1 set to HOMING RIGHT, relay K6 is energized and relay K2 is deenergized (F, fig. 5-2), The fm generator input at SIGNAL INPUT connector J12 is applied through the connectors, adapters, and attenuators identically as described in u. above, except that with the energization of both relays K2 and K6 reversed, the outputs from adapters CP2 and CP3 to SIGNAL OUTPUT LEFT and RIGHT connectors J13 and J14, respectively, are reversed and the signal output at connector J13 is 3 db lower than the signal output at connector J14.

2-4. Communication Control Test Circuit Analysis

(fig. 5-3 and 5-4)

a. The communication control tests are performed with the C–6533/ARC under test (comm cent No. 2) connected to COMM CONT NO. 2 connector J3. Also, the following pieces of equipment are connected to the maintenance kit: one H–101A/U is connected to HEADSETS 1 connector J15 through cable CX–10888/U. A second H-101A/U is connected to HEADSETS 2 connector J16 through a second cable CX-10888/U; an audio generator is connected to COMM CONT TEST INPUT connector J19; and a multimeter is connected to COMM CONT TEST OUTPUT connector J20. For ease of explanation, the C-6533/ARC that is contained in and part of the maintenance kit is referred to as comm cent No. 2.

b. The microphone amplifier test (fig. 5-3) is performed with the selector switch on comm cent No. 2 and COMM CONT NO. 1 set to ICS (intercom). When HEADSETS 2 switch S7 is placed at INTERCOM, a ground from E15 is applied through TB3-6, 5, 4, 3 and 2; COMM CONT NO. 2 connector J3-M; cable CX-10893/AR; COMM CONT NO. 2 connector J1–M; connector J1–K; connector J3-K; closed contacts 2 and 1 of switch S7; connector J3-E; and connector J1–E to the microphone intercom control line. Application of the ground signal to the unit under test enables the switching circuitry and the microphone amplifier in comm cent No. 2. Any audio input picked up by Headset-Microphone H–101A/U (microphone) connected to HEADSETS 2 connector J16 is applied to comm cent No. 2 microphone amplifier, and amplified and applied to the switching circuitry (containing an isolation network) in COMM CONT NO. 1. The audio from the switching circuitry is amplified by COMM CONT NO. 1 headset simplifier, and can be monitored on the associated HEADSETS 1 Headset-Microphone H-101A/U (headset). Comm cent No. 2 microphone amplifier audio, which is indicated as the interphone line signal at connector J1–DD, is applied through COMM CONT NO. 2 connector J3-d to terminal board TB1–1 and developed across resistor R2 on assembly Al. With COMM CONT TEST switch S3 set to 1, microphone amplifier audio output from the unit under test can be monitored on the multimeter connected to COMM CONT TEST OUTPUT connector J20.

c. The headset amplifier test (fig. 5-4) is performed with the selector switches on comm cent No. 2 under test and COMM CONT NO. 1 set to ICS (intercom). With HEADSETS 1 switch S6 set to INTERCOM, a ground is applied from E15 through TB3-6, 5, 4 and 3; COMM CONT NO. 1 connectors J1-M and K; terminals 1 and 2 of switch S6, and connector Jl-E to the switching circuit of COMM CONT NO. 1 to enable the microphone amplifier in COMM CONT NO. 1. Audio applied to the microphone connected to HEADSETS 1 connector J15 is amplified by this microphone amplifier. The audio output line at TB1-1 is 150 ohms above ground (A1R2), and the output line at TB2–10 is at ground. The audio output from COMM CONT NO. 1 microphone amplifier is applied through switching circuit to the switching circuitry of comm cent No.

2. The audio from this switching circuit is amplified by its associated headset amplifier and applied back through the maintenance kit and HEADSETS 2 connectors J16-B and D to the headset. A multimeter connected to COMM CONT TEST OUTPUT connector J20 can monitor comm cent No. 2 headset amplifier audio with COMM CONT TEST switch S3 set to 3, 4, 5, 6, 7, 8, 9 or 10.

d. COMM CONT TEST switch S3 permits additional tests of the comm cent No. 2 under test. The following paragraphs discuss the circuit differences as switch S3 is rotated from one position to the next.

e. With COMM CONT TEST switch S3 set to 1 or 2, the output of the audio generator connected to COMM CONT TEST INPUT connector J19 is applied to the microphone amplifier in the unit under test (fig. 5–3). The microphone amplifier under test is enabled when HEADSETS 2 switch S7 is held at INTERCOM. The output of the microphone amplifier can be monitored on a multimeter connected to COMM CONT TEST OUTPUT connector J20 only when switch S3 is set to 1. With COMM CONT TEST switch S3 set to 2, HEADSETS 2 switch S7 held at TRANSMIT and the selector switch on comm cent No. 2 under test changed from ICS to 1, 2, 3, 4 or 5, the output from the microphone amplifier of the unit under test is applied to COMM CONT TEST OUTPUT connector J20. With switch S7 held at TRANSMIT, a ground from E15 is applied through TB3-6, 5, 4, 3 and 2 to the comm cent No. 2 under test through COMM CONT NO. 2 connector J3-M, cable CX-10893/AR, COMM CONT NO. 2 connector J1–M, connector J1–K, connector J3-K, closed contacts 2 and 3 of switch S7, connector J3–B, and connector J1–B to the microphone transmit control line. This ground activates a relay in the switching circuit and enables the microphone amplifier. The amplifier transmit audio output is applied to COMM CONT NO, 2 connector J1–F, L, P, R or V, depending on the position of the selector switch of comm cent No. 2 under test. The ground applied to connector J1–B is reapplied, through an isolation diode in the unit under test, to connector J1-J, N, T, X or BB as the transmit signal output to CONTROL SIGNAL light DS2, depending on the position of the comm cent No. 2 selector switch. A ground appearing at one of these five pins causes CONTROL SIGNAL light DS2 on the maintenance kit to light with COMM CONT TEST switdh S3 set to 2. COMM CONT TEST switch S3 positions 1 and 2 are used in conjunction with testing the microphone amplifier and transmit audio and control signals of comm cent No. 2 under test.

f. With COMM CONT TEST switch S3 set to 3, an audio generator output signal is applied through COMM CONT TEST INPUT connector J19, switch S3A, cable CX-10893/AR, and COMM CONT NO. 2 connector J3 to COMM CONT NO. 2 connectors J1-EE, KK, SS, FP, MM and UU of comm cent No. 2 under test (fig. 5-4). With either comm cent No. 2 selector switch set to 1, 2, 3, 4 or 5, or comm cent No. 2 receiver toggle switch 1, 2, 3, 4, or 5 set to ON, am input is applied to the headset amplifier. To obtain an input at comm cent No. 2 connector J1-UU, the AUX switch on comm cent No. 2 under test must be set to ON. The output from the audio generator is applied through the switching circuit in comm cent No. 2 under test to the headset amplifier. The output of the headset amplifier can be monitored on a multimeter connected to COMM CONT TEST OUTPUT connector J20 with COMM CONT TEST switch S3 set to 3, 4, 5, 6, 7, 8, 9 or 10. This output can also be monitored on a headset connected to HEADSETS 2 connector J16.

g. With COMM CONT TEST switch S3 set to 4, an audio generator output signal is applied through COMM CONT TEST INPUT connector J19, switch S3A, COMM CONT NO. 2 connector J3–h, cable CX–10893/AR, the comm cent No. 2 connector J1–HH directly into the headset amplifier (fig. 5-4). This input is applied independently of any switch position on the unit under test, The headset amplifier output circuit is the same as previously discussed in f above.

h. Additional audio input circuits of comm cent No. 2 under test can be checked as the audio input is changed from comm cent No. 2 connector J1-HH to comm cent No. 2 connectors J1–WW, VV, DD, RR, LL and FF by rotating COMM CONT TEST switch S3 to 5, 6, 7, 8, 9 and 10, respectively (fig. 5–4). When the audio is applied to comm cent No. 2 connector J1-WW or W, the NAV switch of comm cent No. 2 under test must be set to ON if the output of the headsets amplifier is to be monitored.

2-5. Automatic Direction Finder Circuit Analysis

a. The automatic direction finder tests that are performed using the maintenance kit require that the maintenance kit be inserted between connector 1J2 on the adf receiver and connector 2J1 on

the automatic direction finder (adf) control. Test cable CX-10892/U connects the ADF RCVR TEST connector J5 to adf receiver connector lJ2. A second test cable CX–10892/U connects ADF CONTROL TEST connector J6 to adf control connector 2J1. ADF/GYRO connector J4 must be connected to adf receiver connector lJ1 (B, fig. 5-5). External test equipment connected to maintenance kit ADF TEST RCVR connector J21 permits monitoring output signals of the adf receiver. External test equipment connected to the maintenance kit ADF TEST CONTROL connector J22 permits monitoring output signals of the adf control. The output signals applied to connectors J21 and J22 for monitoring are selected by the ADF TEST switch. The adf sense antenna and the adf loop antenna inputs to the adf receiver must be connected to the maintenance kit as indicated in the chart below:

Maintenance kit connector	*Adf receiver connector*
ADF SENSE ANTENNA J26	1J6
ADF LOOP ANTENNA X J24	1J4
ADF SENSE ANTENNA J26	1J5

b. An RF generator, connected to ADF SIGNAL INPUT connector J23 (A, fig. 5-5), supplies the necessary input signals to the adf receiver (sense, X-loop, or Y-loop antenna inputs) through the maintenance kit circuitry and test cables. ADF antenna function switch S5 controls distribution of the RF generator output to ADF LOOP ANTENNA X connector J24, ADF LOOP ANTENNA Y connector J25, and ADF SENSE ANTENNA connector J26 as follows:

(1) With ADF antenna function switch S5 set to COMP, +28 volts is applied to energize relays K3, K4, and K5 (compass or antenna relay; compass, loop or X-relay; and compass, loop or Y-relay, respectively). The input RF signal applied to ADF SIGNAL INPUT connector J23 is applied through connector P10 to coaxial adapters CP14 and CP10. Two outputs from CP10 connectors P12 and P13 are applied to ADF LOOP ANTENNA X and ADF LOOP ANTENNA Y connators J24 and J25, respectively, through closed contacts of energized relays K4 and K5. The third output from coaxial adapter CP10 is applied through coaxial adapters CP11, CP12, CP13, attenuator AT4, connector P11, and energized relay K3 to ADF SENSE ANTENNA connector J26. The output at this connector is attenuated 3 db more than the output at ADF LOOP ANTENNA X and ADF LOOP ANTENNA Y connector J24 and J25, respectively. The output at ADF SENSE ANTENNA connector J26 is attenuated 3 db more than the outputs at ADF LOOP ANTENNA X connector J24, and ADF LOOP ANTENNA Y connector J25.

(2) With ADF antenna function switch S5 set to ANT, relay K3 is energized and relays K4 and K5 are deenergized. The RF generator output signal, applied through closed contacts B2 and B1 of energized relay K3, is applied to the adf receiver through ADF SENSE ANTENNA connector J26 and cable CG-3482/U. The RF generator output signal, applied through closed contacts B2 and B3 of deenergized relays K4 and K5, is terminated with 51-ohm resistors R2 and R3, respectively.

(3) With ADF antenna function switch S5 set to LOOP, relays K4 and K5 are energized and relay K3 is deenergized. The RF generator output signal, applied through closed contacts B2 and B1 of energized relays K4 and K5, is applied to the adf receiver through ADF LOOP ANTENNA X connector J24 and cable CG-3479/U, and ADF LOOP ANTENNA Y connector J25 and cable CG-3481/U respectively. The RF generator output signal, applied through closed contacts B2 and B3 of deenergized relay K3, is terminated with 51-ohm resistor R1.

(4) With ADF antenna function switch S5 set to X, relay K4 is energized and relays K3 and K5 are deenergized. The RF generator output signal, applied through closed contacts B2 and B1 of energized relay K4, is applied to the adf receiver through ADF LOOP ANTENNA X connector J24 and cable CG-3479/U. The RF generator output signal, applied through closed contacts B2 and B3 of deenergized relays K3 and K5, is terminated with 51-ohm resistors R1 and R3, respectively.

(5) With ADF antenna function switch S5 set to Y, relay K5 is energized and relays K3 and K4 are deenergized, The RF generator output signal, applied through closed contacts B2 and B1 of energized relay K5, is applied to the adf receiver through ADF LOOP ANTENNA Y connector J25 and cable CG–3481/U. The RF generator output signal, applied through closed contacts B2 and B3 of deenergized relay K3, and K4 is terminated with 51-ohm resistors R1 and R2 respectively.

c. Transformer T1 receives 115-volt, 400-Hertz (Hz), single-phase power from the maintenance facility through AC POWER connector J27 and AC POWER circuit breaker CB1 (B, fig. 5-5).

The 26-volt, 400-Hz output on secondary terminah 5 and 9 of transformer T1 is available at ADF TEST RCVR connector J21 for general purpose testing with ADF TEST switch S4 set to 6. AC POWER indicator light DS1 lights when AC POWER circuit breaker CB1 is set to ON.

d. With ADF TEST switch S4 set to 1, the +28-volt input applied through ADF RCVR TEST connector J5-A can be monitored on ADF TEST RCVR connector J21. This voltage is applied to connector J21 through switch S4A . The dc circuit is completed through ADF TEST switch, S4B and connector J21-B to ground with switch S4 set to 1, 8, 4 or 5. All pins in ADF RCVR TEST connector J5 connect to identically labeled pins in ADF CONTROL TEST connector J6. Lines can be connected through ADF TEST switch S4C to ADF TEST CONTROL connector J22 for monitoring purposes. With the exception of ADF TEST switch S4 position 6 (c above), the signals monitored on ADF TEST RCVR connector J21 are outputs of the adf receiver. All signals monitored on ADF TEST CONTROL connector J22 are outputs of the adf control.

e. Any received audio from the adf receiver at ADF/GYRO connector J4-A (B, fig. 5-5) is applied to COMM CONT NO. 1 connector Jl-WW. The audio input line is 150 ohms above ground (resistor A1R9) and may be monitored on a headset connected to HEADSETS 1 connector J15. To monitor this audio, the COMM CONT NO. 1 NAV switch must be set to ON.

f. Heading-Radio Bearing Indicator ID-1351/A, that is contained in and part of the maintenance kit, is used as an indicator during adf tests. Its operation and maintenance is covered in TM 11-6605-202-12 and TM 11-5895-537-50. Output signals of the adf receiver are applied to Heading-Radio Bearing Indicator ID-1351/A through ADF/GYRO connector J4 and the wiring of the maintenance kit (B, fig. 5-5).

2-6. Interconnecting Box J-4247/AR Circuit Analysis

The Interconnecting Box J-4247/AR constitutes a passive network which interconnects the AN/ARC-186(V) Radio Set variations with connector J 1 of the MK-994A/AR Test Facilities Kit.

CHAPTER 3

DIRECT AND GENERAL SUPPORT MAINTENANCE

Section I. GENERAL TROUBLESHOOTING INFORMATION

3-1. General Instructions

The direct and general support maintenance procedures in this chapter includes troubleshooting, repair, and testing procedures for Test Facilities Kit MK-994/AR and MK-994A/AR. If Communication System Control C-6533/ARC, Heading-Radio Bearing Indicator ID- 135 l/A, or Interconnecting Box J-4247/AR does not work, replace the defective unit. For repair of the C-6533/ARC, refer to TM 11-5821-262-35. For repair of the ID-1351/A, refer to TM 11-5895-537-50.

3-2. Organization of Troubleshooting Procedures

a. General. Perform troubleshooting by sectionalizing a fault to a major operating section and then localizing the fault to a defective assembly or component.

b. Sectionalization and Localization. Sectionalize faults by noting whether the fault occurred while performing radio, communication system control, or adf tests. Localize faults by referring to the troubleshooting chart for the section of the maintenance kit in which the fault occurred (para 3-5).

c. Visuald inspection. Visually inspect the maintenance kit to see if faults can be sectionalized and localized without testing or measuring circuits.

Component	*Inspect for*
Circuit breakers----------	Secure mounting.
Selector switches---------	Secure mounting, ease of operation.
Cables (internal)---------	Proper connection.
Test cables----------	Broken connections or connectors, shorted pins, or damaged pins.
Wiring----------	Broken connections, charred insulation (evidence of overheating), poor solder connections.
Front panel----------	Evidence of physical damage or obliterated markings.

d. Procedure. After the trouble has been localized, replace the defective part or subassembly.

e. Intermittent troubles. Localize intermittent troubles, if present, by tapping or jarring the maintenance kit.

3-3. Test Equipment Required

Test equipment, tools, materials, and facilities required for testing the maintenance kit are listed in paragraphs 3-9 and 3-10.

Caution: **Be careful when making test equipment connections so that shorts will not be caused by exposed test equipment connectors. Tape or sleeve test prods or clips, as necessary, so as to leave only as much bare metal exposed as needed to make contact with the circuit under test.**

3-4. Test Setup

(fig. 3-18)

Caution: **To avoid transistor and integrated circuit damage, make sure that all power switches are in the OFF position before changing cable connections. Check the source voltage and polarity before making connections. Transistors and integrated circuits may be permanently damaged by improper voltage or polarity. General support tests on the maintenance kit require connection to two power sources (115 volts, 400 Hz, and 28 volts) and to various test equipment. The 115-volt, 400-Hz power source is only required when transformer T1 is to be checked during adf test circuit tests (para 3–16). Connect cable W23 between maintenance kit AC POWER connector J27 and the 115-volt, 400-Hz power source. Connect cable W22 between maintenance kit DC POWER connector J28 and the 28-volt power source. Test equipment connections vary from test to test.**

3-5. Localizing Troubles

a. General. When a record has been made of the conditions under Which the maintenance kit was found to be malfunctioning, consult the appropriate troubleshooting chart for information to localize the trouble to a defective assembly or part. If a malfunction occurred during the radio tests, refer to the radio test circuit troubleshooting chart *(b* below); during the communication control tests, refer to the communication system control test circuit troubleshooting chart *(c* below); during the adf tests, refer to the adf test circuit troubleshooting chart *(d* below).

Note. The information presented in the following charts is applicable when the COMM CONT NO. 1 VOL control is adjusted for maximum audio gain.

b. Radio Test Circuit Troubleshooting Chart (fig. 5-1 and 5-2).

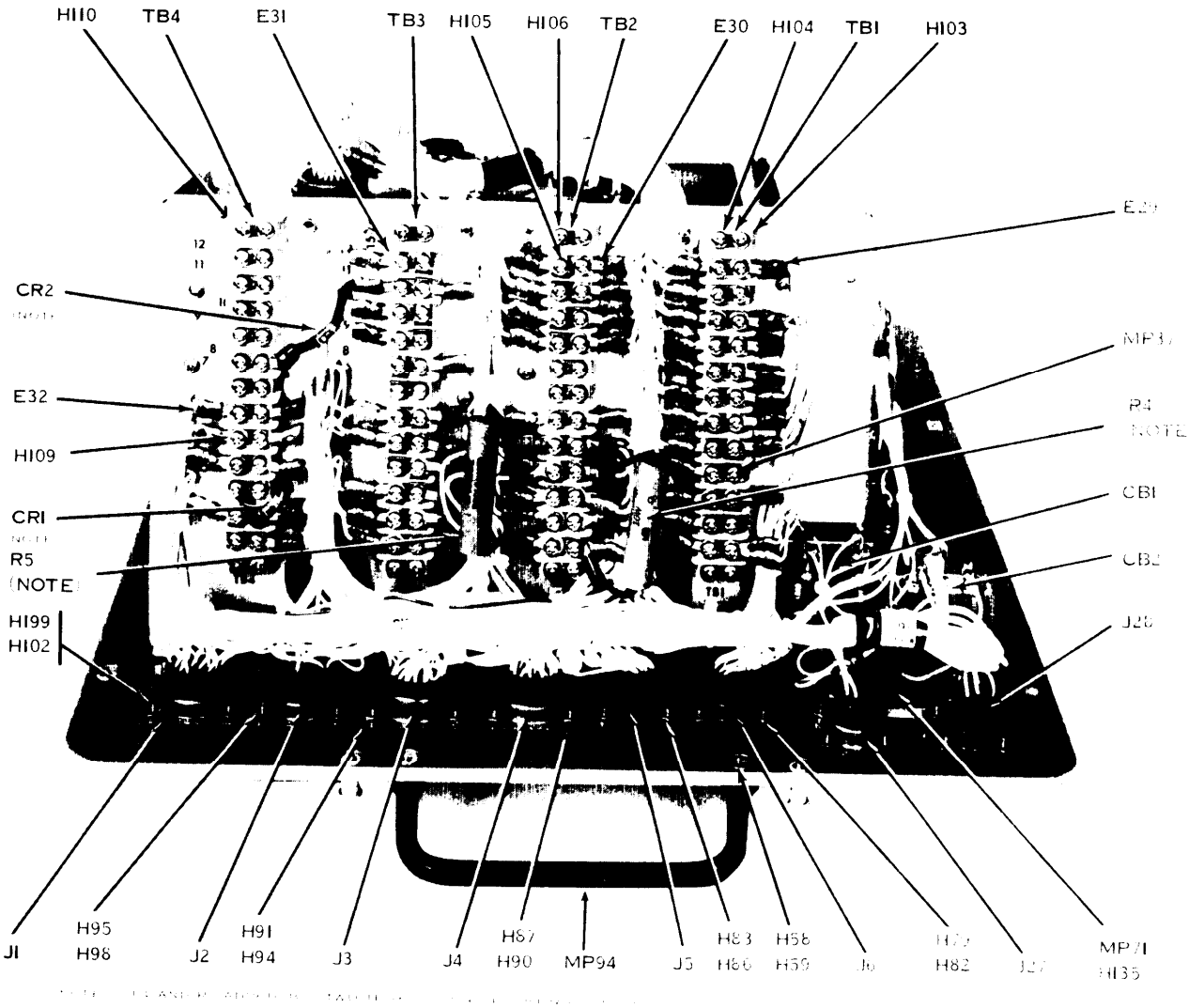
Item No.	Trouble symptom	Probable trouble	Checks and corrective measures
1	+ 27.5 volts not available at RADIO SET NO. 1 connector J1 or RADIO SET NO. 2 connector J2 with DC POWER input circuit breaker CB2 set to ON.	a. Defective circuit breaker CB2.	a. Check continuity of circuit breaker CB2 and replace if necessary (fig. 5-1).
		b. Defective wiring.	b. Check continuity of associated wiring and replace if necessary (fig. 5-1).
		c. Defective DC POWER connector J28, connector Jl, or connector J2.	c. Check continuity of connectors J28, Jl, and J2; replace if necessary (fig. 5-l).
		d. Defective cable W22, W2, W3, W5, or W6.	d. Check continuity of cables W22, W2, W3, W5 and W6; replace if necessary (para *3-7p, b,* and *d).*
2	Tone not heard in HEADSETS 1 Headset-Microphone H-101A/U with l audio input applied to RADIO SET NO. 1 connector J1- *d.*	a. Defective COMM CONT NO. 1.	a. Teat COMM CONT NO. 1 (para 3-15) and replace Communication System Control C-6533/ARC if necessary.
		b. Defective wiring.	b. Check continuity of associated wiring l nd replace if necessary (C, fig. 5-2) .
		c. Defective cable W20, W21, W2, W3, W5 or W6.	c. Check continuity of cables W20, W21, W2, W3, W5 and W6. Replace if necessary (para *3-7o, b,* and *d).*
		d. Defective Headset-Microphone H-101A/U.	d. Check H-101A/U and replace if necessary (C, fig. 5-2).
		e. Defective HEADSETS 1 connector J15.	e. Check continuity of connector J 15 and replace if necessary (C, fig. !&2).
3	No transmit audio output at RADIO SET NO. 1 connector J1-K. Audio input to maintenance kit from Headset-Microphone H-101A/U connected to HEADSETS 1 conneotor J15, HEADSETS 1 switch S6 held to TRANSMIT, and RADIO ANTENNA FUNCTION switch S1 set to XCRV.	a. Defective COMM CONT NO. 1.	a. Test COMM CONT NO. 1 (para 3-15) l and replace Communication System Control C-6533/ARC if necessary.
		b. Defective wiring.	b. Check continuity of associated wiring and replace if necessary (B, D, fig. 5-2).
		c. Defective switch S6.	c. Check continuity of switch S6 and replace if necessary (B, fig. 5-2).
		d. Defective switch S1.	d. Check continuity of switch S1 and replace if necessary (B, fig. 5-2) .
		e. Defective cable W20, W21, W2, W3, W5 or W6.	e. Check continuity of cable W20, W21, W2, W3, W5 and W6; replace if necessary (para 3-7o, b, and d).
		f. Defective relay Kl or related diodes.	f. Check relay/diodes, replace as required (fig. 3-0, 3 of 5-2).
4	No transmit control output signal (grd) at RADIO SET NO. 1 connector Jl-h with RADIO ANTENNA FUNCTION switch S1 set to XCVR, and HEADSETS 1 switch S6 held to TRANSMIT.	If transmit audio output is present at RADIO SET NO. 1 connector J1-K (Item No. 3), trouble is in switching circuit of COMM CONT NO. 1, or associated wiring in maintenance kit.	Check continuity from connector Pi-J, N, T and X to TB3-11. Check continuity between TB3-11 and RADIO SET NO. 1 connector J1-h (B, fig. 5-2). If wiring is all right, replace Communication System Control C-6533/ARC.
5	Am or fm signal generator output applied to maintenance kit SIGNAL INPUT connector J12 not present or of improper amplitude, at T/R ANTENNA connector J11 with RADIO ANTENNA FUNCTION switch S1 set to XCVR, and RADIO TEST switch S2 set to 1.	a. See 3 f above.	a. See 3 f above.
		b. Defective coaxial adapter CP1, CP6, or CP7. Defective attenuator AT5.	b. perform teat given in paragraph 3-14c, steps 2 and 3 to isolate trouble. Relpace if necessary (A, fig. 5-2) .
		c. Defective wiring.	c. Check continuity of associated wiring l nd replace if necessary (A and B, fig. 5-2).

Item No.	Troubles symptom	Probable trouble	Checks and corrective measures
6	Unable to monitor output power of radio set under test with external wattmeter connected between POWER METER INPUT connector J10 and POWER METER OUTPUT connector J9.	*a.* See 3 f above.	*a.* See 3 f above.
		b. Defective wiring.	*b.* Check continuity of associated wiring and replace if necessary (A and B, fig. 5-2).
		c. Defective cable W10 or W11.	*c.* Check continuity of cable W10 and W 11. Replace if necessary (para 3-70 and h).
		d. Defective attenuator AT1.	*d.* Perform teat given in paragraph 3-14c, step 2. Replace attenuator AT1 if necessary (A, fig. 5-2).
7	Unable to monitor X-mode guard receiver output signal at RADIO TEST OUTPUT connector J18 with signal applied to RADIO SET NO. 1 connector J1-b, and RADIO TEST switch S2 set to 1.	*a.* Defective switch S2.	*a.* Check continuity of switch S2 and replace if necessary (E, fig. 5-2).
		b. Defective wiring.	*b.* Check continuity of associated wiring and replace if necessary (E, fig. 5-2) .
		c. Defective cable W2, W3, W5 or W6.	*c.* Check continuity of cables W2, W3, W5 and W6; replace if neceesary (para 3-7b and d).
8	Unable to monitor retransmit audio output signal at RADIO TEST OUTPUT connector J18 with audio signal applied to RADIO SET NO. 1 connector J1-X, and RADIO TEST switch S2 set to 2.	*a.* Defective switch S2.	*a.* Check continuity of switch S2 and replace if necessary (E, fig. 5-2).
		b. Defective wiring.	*b.* Check continuity of associated wiring and replace if necessary (E, fig. 5-2) .
		c. Defective cable W2, W3, W5 or W6.	*c.* Check continuity of cable W2, W3, W5 and W6; replace if necessary (para 3-7b and d).
9	CONTROL SIGNAL light DS2 does not light when retransmit control output signal (grd) is applied to RADIO SET NO. 1 connector J1-H with RADIO TEST switch S2 set to 2.	*a.* Dcfective CONTROL SIGNAL light DS2.	*a.* Check CONTROL SIGNAL light DS2 and replace if necessary (E, fig. 5-2) ,
		b. Defective switch S2.	*b.* Check continuity of switch S2 and replace if necessary (E, fig. 5-2).
		c. Defective wiring.	*c.* Check continuity of associated wiring and replace if necessary (E, fig. 5-2).
10	X-mode control signal at RADIO SET NO. 1 connector J l-g is not at ground level with RADIO TEST switch 82 set to 3.	*a.* Defective switch S2.	*a.* Check continuity of switch S2 and replace if necessary (E, fig. 5-2).
		b. Defective wiring.	*b.* Check continuity of associated wiring and replace if necessary (E, fig. 5-2).
		c. Defective cable W2, W3, W5, or W6.	*c.* Check continuity of cables W2, W3, W5, and W6; replace if necessary (para 3-7b and d).
11	Unable to monitor X-mode receive output signal at RADIO TEST OUTPUT connector J18 with signal l pplied to RADIO SET NO. 1 connector J l-c and RADIO TEST switch S2 in position 3.	*a.* Defective switch S2.	*a.* Check continuity of switch S2 and replace if necessary (E, fig. 5-2).
		b. Defective wiring.	*b.* Check continuity of associated wiring and replace if necessary (E, fig. 5-2) .
		c. Defective cable W2, W3, W5, or W6.	*c.* Check continuity of cables W2, W3, W5, and W6; replace if necessary (para 3-7b and d).
12	Unable to monitor retransmit audio at RADIO SET NO. 1 connector J1-Y or RADIO SET NO. 2 connector J2-X with RADIO TEST switch S2 set to 4 and audio generator signal l pplied to RADIO TEST INPUT connector J17.	*a.* Defective switch S2.	*a.* Check continuity of switch S2 and replace if necessary (E, fig. 5-2).
		b. Defective wiring.	*b.* Check continuity of associated wiring and replace if necessary (E, fig. 5-2) .
		c. Defective cable W2, W3, W5, or W6.	*c.* Check continuity of cables W2, W3, W5, and W6; replace if necessary (para 3-7b and d).

Item No.	Trouble symptom	Probable trouble	Checks and corrective measures
13	Radio set under test does not switch to transmit mode of operation with RADIO TEST switch S2 set to 4 and RADIO ANTENNA FUNCTION switch S1 set to XCVR.	*o.* Defective relay K1.	*a.* Check relay K1 and replace if necessary (B, fig. 5-2)
		b. Defectivc switch S2.	*b.* Check continuity of switch S2 and replace if necessary (B adn E, fig. 5-2).
		c. Defective switch S1.	*c.* check continuity of switch S1 and replace if necessary (B, fig. 5-2).
		d. Defective wiring.	*d.* Check continuity of associated wiring and replace if necessary (B and E, fig. 5-2).
		e. Defective cable W2, W3, W5, or W6.	*e.* Check continuity of cables W2, W3, W5, and W6; replace if necessary (para 3-7b and d).
14	X-mode transmit audio not present at RADIO SET NO. 1 connector J1-J with RADIO TEST switch S2 set to 5, and audio generetor signal applied to RAD1O TEST INPUT connector J 17.	*o.* Defective switch S2.	*a.* Check continuity of switch S2 and replace if necessary (E, fig. 5-2).
		b. Defective wiring.	*b.* Check continuity of associated wiring and replace if necessary (E, fig. 5-2).
		c. Defective cable W2, W3, W5 or W6.	*c.* Check continuity of cable W2, W3, W5 and W6; replace if necessary (para 3-7b and d).
15	Unable to disable tone modulation in Radio Set AN/ARC-114 with RADIO TEST switch S2 set to 5.	*a*. Defective relay K7.	*a.* Check relay K7 and replace if necessary (E, fig. 5-2).
		b. Defective switch S2.	*b.* Check continuity of switch S2 and replace if necessary (E, fig. 5-2),
		c. Defective wiring.	*c.* Check continuity of associated wiring and replace if necessary (E, fig. 5-2).
		d. Defective cable W2 or W3.	*d.* Check continuity of cable W2 or W3; replace if necessary (para 3-7b)
16	Unable to monitor received audio signal at RADIO TEST OUTPUT connector J18 with audio signal applied to RADIO SET NO. 1 connector Jl-d, and RADIO TEST switch S2 set to 6.	*a*. Defective switch 82.	*a.* Check continuity of switch S2 and replace if necessary (E, fig. 5-2).
		b. Defective wiring.	*b.* Check continuity of associated wiring and replace if necessary (E, fig. 5-2).
		e. Defective cable W2 W3, W5 or W6.	*c.* Check continuity of cable W2, W3, W5 and W6; replace if necessary (para 3-7b and d).
17	Guard receiver agc test signal or receiver agc test signal (both + 6.8 ± 0.5-volt levels) not present at RADIO SET NO. 1 connector J1-G with RADIO TEST switch S2 set to 7, and not present at J1-F with RADIO TEST switch S2 set to 5.	*a.* Defective reditor R15 or diode CR1 on assembly Al.	*a.* Check R15 and CR1 on Al and replace if necessary (E, fig. S2).
		b. Defective switch S2.	*b.* Check continuity of switch S2 and replace if necessary (E, fig. 5-2).
		c. Defective wiring.	*c.* Check continuity of associated wiring and replace if necessary (E, fig. 5-2).
		d. Defective cable W2, W3, W5 or W6.	*d.* Check continuity of cables W2, W3, W5 and W6; replace if necessary (para 3-7b and d).
18	Unable to monitor homing enable output signal at RADIO TEST OUTPUT connector Jl8 with signal applied to RADIO SET NO. 1 connector J1-R, and RADIO TEST switch S2 set to 8.	*a.* Defective switch S2.	*a.* Check continuity of switch S2 and replace if necessary (E, fig. 5-2).
		b. Defective wiring.	*b.* Check continuity of associated wiring and replace if necessary (E, fig. 5-2).
		c. Defective cable W2, W3, W5 or W6.	*c.* Check continuity of cables W2, W3, W5 and W6; replace if necessary (para 3-7b and d).
19	Unable to monitor band switch signal from Radio Set AN/ARG-114 at RADIO TEST OUTPUT connector Jill with signal applied to RADIO SET NO. 1 connector J1-S, and RADIO TEST switch S2 set to 9.	*a.* Defective switch S2.	*a.* Check continuity of switch S2 and replace if necessary (E, fig. 5-2).
		b. Defective wiring.	*b.* Check continuity of associated wiring and replace if necessary (E, fig. 5-2).
		c. Defective cable W2 or W3.	*c.* Cheek continuity of cable W2 or W3; replace if necessary (para 3-7b).

c. Radio Test Circuit Troubleshooting Chart (fig. 6-1 and S-2) (cent).

Itew No.	*Trouble symptom*	Probable trouble	*Checks and corrective measures*
20	Unable to monitor antenna tuner test 1-5 MHz signal from RADIO TEST OUTPUT connector J18 with signal applied to RADIO SET NO. 1 connector J1-M and RADIO TEST switch S2 set to 10.	*a.* Defective switch S2.	*a.* Check continuity of switch S2 and replace if necessary (E, fig. &2).
		b. Defective wiring.	*b.* Check continuity of associated wiring and replace if necessary (E, fig. s-2).
		c. Defective cable CX-10889/U or CX-ll1985/AR.	*c.* Check continuity of cable CX-l0889/U and/or CX-11985/AR. Replace if necessary (para 3-7b and u).
21	Unable to monitor antenna tuner test 6-10 MHz signal from RADIO TEST OUTPUT connector J18 with signal applied to RADIO SET NO. 1 connector J1-W and RADIO TEST switch S2 set to 11.	*a.* Defective switch S2.	*a.* Check continuity of switch S2 and replace if necessary (E, fig. 5-2).
		b. Defective wiring.	*b.* Check continuity of associated tiring and replace if necessary (E, fig. 5-2).
		c. Defective cable CX-l0889/U or CX-11985/AR.	*c.* Check continuity of cables CX-10889/U and/or CX-l1985/AR. Replace if necessary (para 3-7b and u).
22	Unable to monitor X-mode transmit audio at J1-J when RADIO TEST switch S2 set to 3.	*a.* Defective wiring or unaltered test set.	*a.* Check wiring (B, fig. 5-2), repair as required.
		b. Defective switch S2.	*b.* Check for jumper between S2A-3 and S2A-5; repair as required.
23	Cannot test AN/ARC-186(V) Radio Set	*a.* Defective Interconnecting Box J-4247/AR.	*a.* Check contnuity of J-4247/AR(para. 3-17). Repair/replace defective components as required.
		b. Defective Mk-994/AR.	*b.* Check Mk-994/AR (para. 3-13 through 3-16). Repair/replace defective components as required.



NOTE- R4 AND R5 ADDED BY MWO 11-6625-928-40-1,CR1 QND CR2 ADDED TO INCREASE COMPATABILITY WITH RT-1167/ARC-164(V)

Figure 3-0. Chassis, viewed from right edge, altered for use with RT-1167/ARC-164(V)

c. Communication System Control Test Circuit Troubleshooting Chart (fig. 5-1, 5-3, and 5-4).

Item No.	Trouble symptom	Probable trouble	Checks and corrective measures
1	+27.5 volts not available at COMM CONT NO. 2 connector J3 with with DC POWER input circuit breaker CB2 set to ON.	*a.* Defective circuit breaker CB2.	*a.* Check continuity of circuit breaker CB2 and replace if necessary (fig. 5-l).
		b. Defective wiring.	*b.* Check continuity of associated wiring and replace if necessary (fig. 5-l).
		c. Defective DC POWER connectors J28 or connector J3.	*c.* Check continuity of connectors J28 and J3 and replace if necessary (fig. 5-l).
		d. Defective cable W22.	*d.* Check continuity of cable CX-10886/AR and replace if necessary (para. 3-7p).
2	Sound not heard in Headset-Microphone H–101A/U (headset), connected to HEADSETS 1 connector J15, with an audio input applied to Headset-Microphone H-101A/U (microphone), connected to HEADSETS 2 connector J16, and HEADSETS 2 switch S7 set to INTERCOM.	*a*. Defective COMM CONT NO. 1.	*a* Test COMM CONT NO. 1 and replace Communication System Control C-6533/ARC if necessary (para 3-15).
		b. Defective switch S7.	*b.* Check continuity of switch S7 and replace if necessary (fig. 5-3).
		c. Defective wiring.	*c.* Check continuity of associated wiring and replace if necessary (fig. 5-3).
		d. Defective cable W9, W20, or W21	*d.* Check continuity of cables W9, W20, and W21; replace if necessary (para 3-7f and o).
3	Sound not heard in Headset-Microphone H-101A/U (headset), connected to HEADSETS 2 connector J16, with an audio input applied to Headset-Microphone H-101A/U (microphone), connected to HEADSETS 1 connector J15, and HEADSETS 1 switch S6 set to INTERCOM.	*a*. Defective COMM CONT NO. 1.	*a.* Test COMM CONT NO. 1 and replace Communication System Control C-6533/ARC if necessary (para 3- 15).
		b. Defective switch S6.	*b.* Check continuity of switch S6 and replace if necessary (fig. 5-4).
		c. Defective wiring.	*c.* Check continuity of associated wiring and replace if necessary (fig. 5-4) .
		d. Defective cable W9, W20; or W21.	*d.* Check continuity of cables W9, W20, and W21; replace if necessary (para 3-7f and o).
4	With COMM CONT TEST switch S3 set to 1, HEADSETS 2 switch S7 set to INTERCOM, and a reference audio oscillator signal applied to COMM CONT TEST INPUT connector J19, internal microphone amplifier signals in C-6533/ARC under test are missing, or below, minimum tolerances.	*a*. Defective switch S7.	*a.* Check continuity of switch S7 and replace if necessary (fig. 5-3).
		b. Defective switch S3.	*b.* Check continuity of switch S3 and replace if necessary (fig. 5-3).
		c. Defective wiring.	*c.* Check continuity of associated wiring and replace if necessary (fig. 5-3).
		d. Defective cable W9.	*d.* Check continuity of cable W9 and replace if necessary (para 3–7f).
5	With COMM CONT TEST switch S3 set to 2, HEADSETS 2 switch S7 set to TRANSMIT, and a l-kHz signal of 0.6-volt rms amplitude applied to COMM CONT TEST INPUJT connector J19, output at COMM CONT TEST OUTPUT connector J20 is below 2.75 volts rms. H-l01A/U is connected to HEADSETS 2 connector J16 by cable CX-10888/U. Disconnect H-101A/U or CX-l0888/U when applying signal to connector J19.	*a*. Defective switch S7.	*a.* Check continuity of switch S7 and rcplace if necessary (fig. 5-3).
		b. Defective switch S3.	*b.* Check continuity of switch S3 and replace if necessary (fig. 5-3).
		c. Defective cable W9.	*c.* Check continuity of cable W9 and replace if necessary (Pam 3–7f).
		d. Defective wiring or resistor R2.	*d.* Check R2 and continuity of associatcd wiring; replace if necessary (fig. 5–3).
			e. Disconnect H-101A/U W20 or W21 when applying signal to connector J 19.

Item No.	Trouble symptom	Probable trouble	Checks and corrective measures
6	With COMM CONT TEST switch S3 set to 2, and HEADSETS 2 switch S7 set to TRANSMIT, CONTROL SIGNAL light DS2 fails to light.	*a.* Defective light DS2.	*a.* Check light DS2 and replace if necessary (fig. 5-3).
		b. Defective switch S3.	*b.* Check continuity of switch S3 and replace if necessary (fig. 5-3).
		c. Defective switch S7.	*c.* Check continuity of switch S7 and replace if necessary (fig. 5-3).
		d. Defective wiring.	*d.* Check continuity of associated wiring and replace if necessary (fig. 5-3).
		e. Defective cable W9	*e.* Check continuity of cable W9 and replace if necessary (para 3-7f).
7	With COMM CONT TEST switch S3 set to 3, Headset-Microphone H-101A/U (headset) connected to HEADSETS 2 connector J16, a l-k Hz signal of 2.7.5 volts rms amplitude applied to COMM CONT TEST INPUT connector J19, and COMM CONT NO. 2 selector switch rotated to 1, 2, 3, 4, and 5, no l-k Hz audio tone is heard in Headset-Microphone H-101A/U (headset).	*a.* Defective switch S3.	*a.* Check continuity of switch S3 and replace if necessary (fig. 5-4).
		b. Defective wiring.	*b.* Check continuity of associated wiring and replace if necessary (fig. 5-4).
		c. Defective cable W9.	*c.* Check continuity of cable W9 and replace if necessary (para 3–7f).
8	With COMM CONT TEST switch S3 set to 3, 4, 5, 6, 7, 8, 9, or 10, Headset-Microphone H-101A/U connected to HEADSETS 2 connector J16, and a l-k Hz signal of 2.75-volt rms amplitude applied to COMM CONT INPUT connector J19, no l-k Hz audio tone is heard in Headset-Microphone H-101A/U (headset).	*a.* Defective switch S3.	*a.* Check continuity of switch S3 and replace if necessary (fig. 5–4).
		b. Defective wiring.	*b.* Check continuity of associated wiring and replace if necessary (fig. 5-4).
		c. Defective cable W9.	*c.* Check continuity of cable W9 and replace if necessary (para 3-7f).

Note. COMM CONT NO. 2 AUX and NAV switches set to ON for COMM CONT TEST switch S3 positions 3, 5, and 6.

d. Adf Test Circuit Troubleshooting Chart (fig. 5-l and 5-5).

Item No.	Trouble symptom	Probable trouble	Checks and corrective measures
1	+27.5 volts not available at ADF/ GYRO connector, J4.	*a.* Defective DC POWER input circuit breaker CB2.	*a.* Check circuit breaker CB2 and replace if necessary (fig. 5-1).
		b. Defective wiring.	*b.* Perform voltage and continuity checks on associated wiring and replace if necessary (fig. 5-1).
		c. Defective interconnecting cable W22.	*c.* Check continuity of cable W22; replace if necessary (para 3-7p).
2	26 volts rms, 400 Hz not available at ADF TEST RCVR connector J21 with ADF TEST switch S4 set to 6.	*a.* Defective AC POWER input circuit breaker CB1.	*a.* Check continuity of circuit breaker CB1 and replace if necessary (B, fig. 5-5) .
		b. Defective wiring.	*b.* Perform voltage and continuity checks on associated wiring and replace if necessary (B, fig. 5-5).
		c. Defective transformer T1.	*c.* Perform voltage and resistance checks on transformer T1 and replace if necessary (fig. 5-6).
		d. Defective switch S4.	*d.* Check continuity of switch S4 and replace if necessary (B, fig. 5-5).
		e. Defective interconnecting cable W23.	*e.* Check continuity of cable W23 and replace if necessary (para 3-7d).
3	Absence of either of following signals at ADF/GYRO connector J4: 26 volts rms, 400 Hz. Audio output.	*a.* Defective wiring.	*a.* Check continuity of associated wiring and replace if necessary (B, fig. 5-5) .
		b. Defective interconnecting cable W4, W7, or W8.	*b.* Check continuity of cables W4, W7, and W8. Replace if necessary (para 3-7c and e).

Item No.	Trouble symptom	Probable trouble	Checks and corrective measures
4.	Absence of any one of following signals at ADF RCVR TEST connector J5: +28 volts. +15 volts regulated. Tuning meter input	*a*. Defective wiring.	*a*. Check continuity of associated wiring and replace if necessary (B, fig. 5-5).
		b. Defective interconnecting cable W4, W7, or W8.	*b*. Check continuity of cables W4, W7, and W8. Replace if necessary (para 3-7c and e).
5	Absence of any one of following signals, at ADF TEST RCVR connector J21 with ADF TEST switch S4 in position shown: Switch S4 pos — Signal 1 +28 volts. 2 26 volts rms, 400 Hz. 3 +15 volts regulated. 4 Tuning meter input 5 Audio output.	*a*. Defective wiring.	*a*. Check continuity of associated wiring and replace if necessary (B, fig. 5-5).
		b. Defective interconnecting cable W4, W7, or W8.	*b*. Check continuity of cables W4, W7, and W8; replace if necessary (para 3-7c and e).
		c. Defective switch S4.	*c*. Check continuity of switch S4 and replace if necessary (B, fig. 5–5).
6	Absence of radio bearing meter indication on HOMING/ADF/CYRO indicator.	*a* Defective Heading-Radio Bearing Indicator ID-1351A.	*a* Test ID–1351/A and replace if necessary (para 3– 16c, step 3).
		b. Defective wiring.	*b*. Check continuity of associated wiring and replace if necessary (B, fig. 5-5).
		c. Defective interconnecting cable W4, W7, or W8.	*c*. Check continuity of cables W4, W7, and W8; replace if necessary (para 3-7c and e).
7	Unable to hear audio tone in Headset-Microphone H-101A/U (headset) connected to HEADSETS 1 connector J15 with audio signal present at ADF TEST RCVR connector J21, ADF TEST switch S4 set to 5, and COMM CONT NO. 1 receiver monitor switch NAV set to ON.	*a* Defective COMM CONT NO. 1.	*a*. Test COMM CONT NO. 1 (para 3-15) and replace Communication System Control C-6533/ARC if necessary.
		b Defective wiring.	*b*. Check continuity of associated wiring and replace if necessary (B, fig. 5-5).
		c. Defective interconnecting cable W20 or W21.	*c*. Check continuity of cable W20 or W21 and replace if necessary (para 3-70).
		d. Defective Headset-Microphone H-101A/U (headset).	*d*. Check H-101A/U and replace if necessary.
8	Absence of any one of following signals at ADF CONTROL TEST connector J6: 28 volts, switched, pin B +15 volts, pin F. +15 volts, pin L. +15 vo1ts, pin M. +15 volts, pin S. Gain control output.	*a*. Defective wiring.	*a*. Check continuity of associated wiring and replace if necessary (B, fig. 5-5).
		b. Defective interconnecting cable W4, W7, or W8.	*b*. Check continuity of cables W4, W7, and W8; replace if necessary (para 3-7c and e).
9	Absence of any one of following signals at ADF TEST CONTROL connector J22 with ADF TEST switch S4 in position shown: Switch S4 pos — Signal 1 +28 volts, pin B. 2 +15 volts, pin F. 3 +15 volts, pin L. 4 +15 volts, pin M. 5 +15 volts, pin S. 6 Gain control output.	*a*. Defective wiring.	*a*. Check continuity of associated wiring and replace if necessary (B, fig. 5-5).
		b. Defective interconnecting cable W4, W7, or W78.	*b*. Check continuity of cables W4, W7, and W8; replace if necessary (para 3-7c and e).
		c. Defective switch S4.	*c*. Check continuity of switch S4 and replace if necessary (B, fig. 5-5).
10	RF test signal is not present at SENSE ANTENNA connector J26 with ADF antenna function selector switch S5 set to ANT or COMP.	*a*. Defective capacitor C 1.	*a*. Check capacitor Cl and replace if necessary (A, fig. 5-5).
		b. Defective relay K3.	*b*. Check relay K3 and replace if necessary (A, fig. 5–5).
		c. Defective attenuator AT4.	*c*. Check attenuator AT4 and replace if necessary (A, fig. 5-5).

Item No.	Trouble symptom	Probable trouble	Checks and corrective measures
		d. Defective wiring.	*d.* Perform voltage and continuity checks on associated wiring and replace if necessary (A, fig. 5-5).
		e. Defective switch S5.	*e.* Check continuity of switch S5 and replace if necessary (A, fig. 5-5).
		f. Defective interconnecting cable W15 or W18.	*f.* Check continuity of cables W15 and W18; replace if necessary (para 3-7j and 3-7m).
11	RF tent signal is not present at ADF LOOP ANTENNA X connector J24 with ADF antenna function selector switch S5 set to X, LOOP, or COMP.	*a.* Defective capacitor C2.	*a.* Check capacitor C2 and replace if necessary (A, fig. 5-5).
		b. Defective relay K4.	*b.* Check relay K4 and replace if necessary (A, fig. 5-5).
		c. Defective wiring.	*c.* Perform voltage and continuity checks on associated wiring and replace if necessary (A, fig. 5-5).
		d. Defective switch S5.	*d.* Check continuity of switch S5 and replace if necessary (A, fig. 5-5).
		e. Defective interconnecting cable W15 or W16.	*e.* Check continuity of cables W15 and W16 and replace if necessary (para 3-7j and 3-7k).
12	RF teat signal is not present at ADF LOOP ANTENNA Y connector J25 with ADF antenna function selector switch S5 set to Y, LOOP, or COMP.	*a.* Defective capacitor C3.	*a.* Check capacitor C3 and replace if necessary (A, fig. 5-5).
		b. Defective relay K5.	*b.* Check relay K5 and replace if necessary (A, fig. 5-5).
		c. Defective wiring.	*c.* Perform voltage and continuity checks on associated wiring and replace if necessary (A, fig. 5-5.
		d. Defective switch S5.	*d.* Check continuity of switch S5 and replace if necessary (A, fig. 5-5).
		e. Defective interconnecting cable W15 or W17.	*e.* Check continuity of cables W 15 and W 17. Replace if necessary (para 3-7j and l).

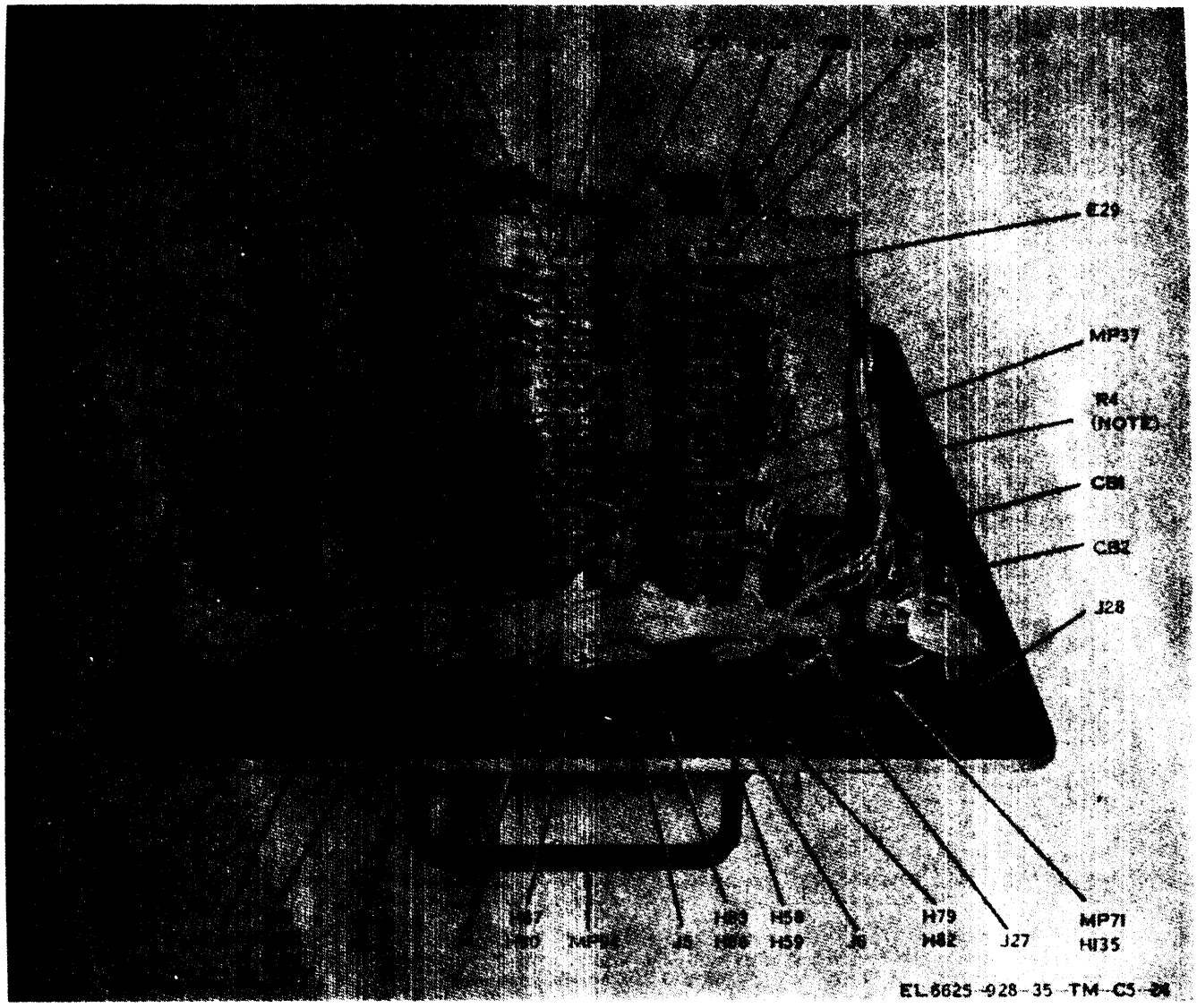


Figure 3-1. Chassis, viewed from panel right edge.

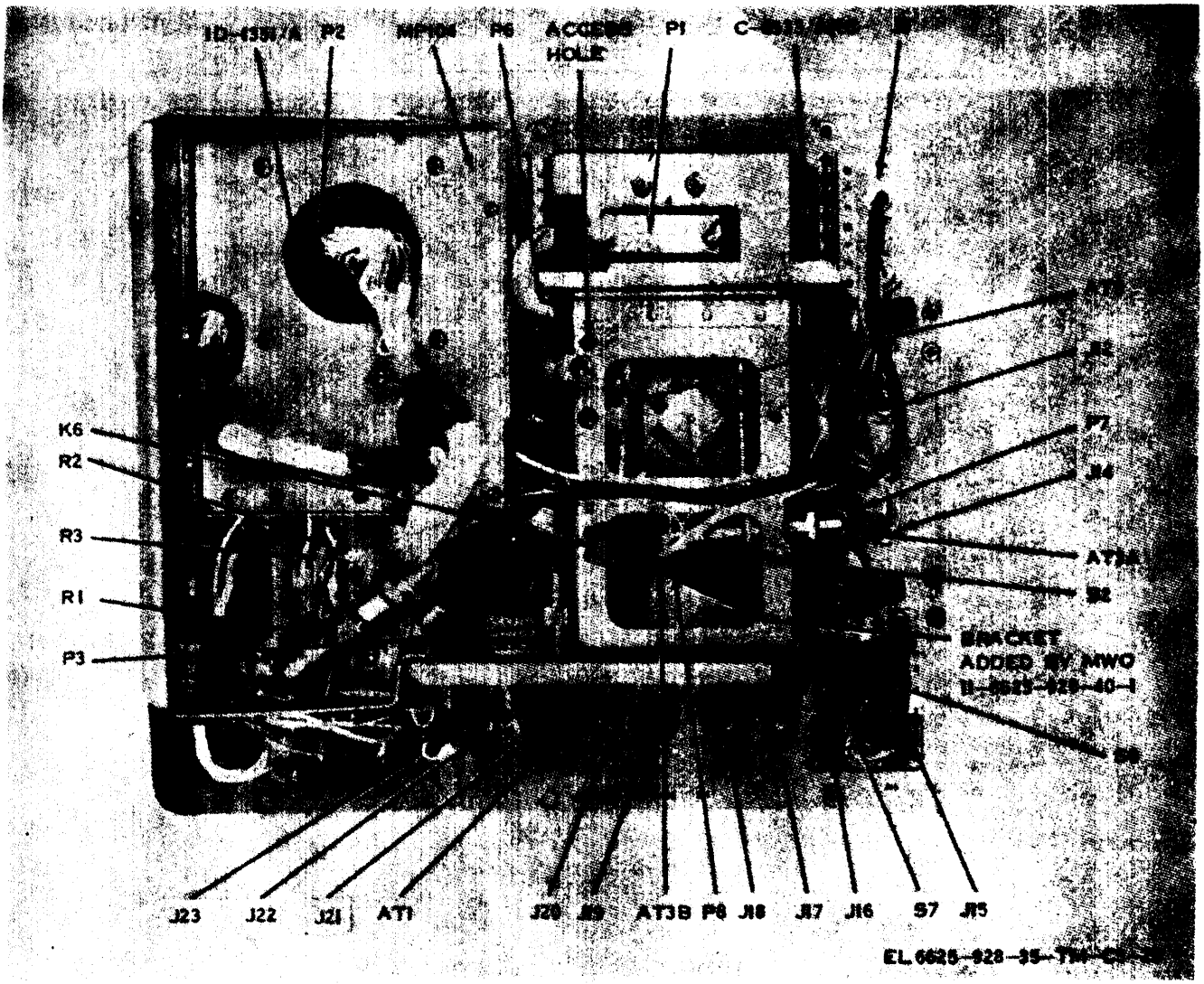


Figure 3-2. Chassis, rear view

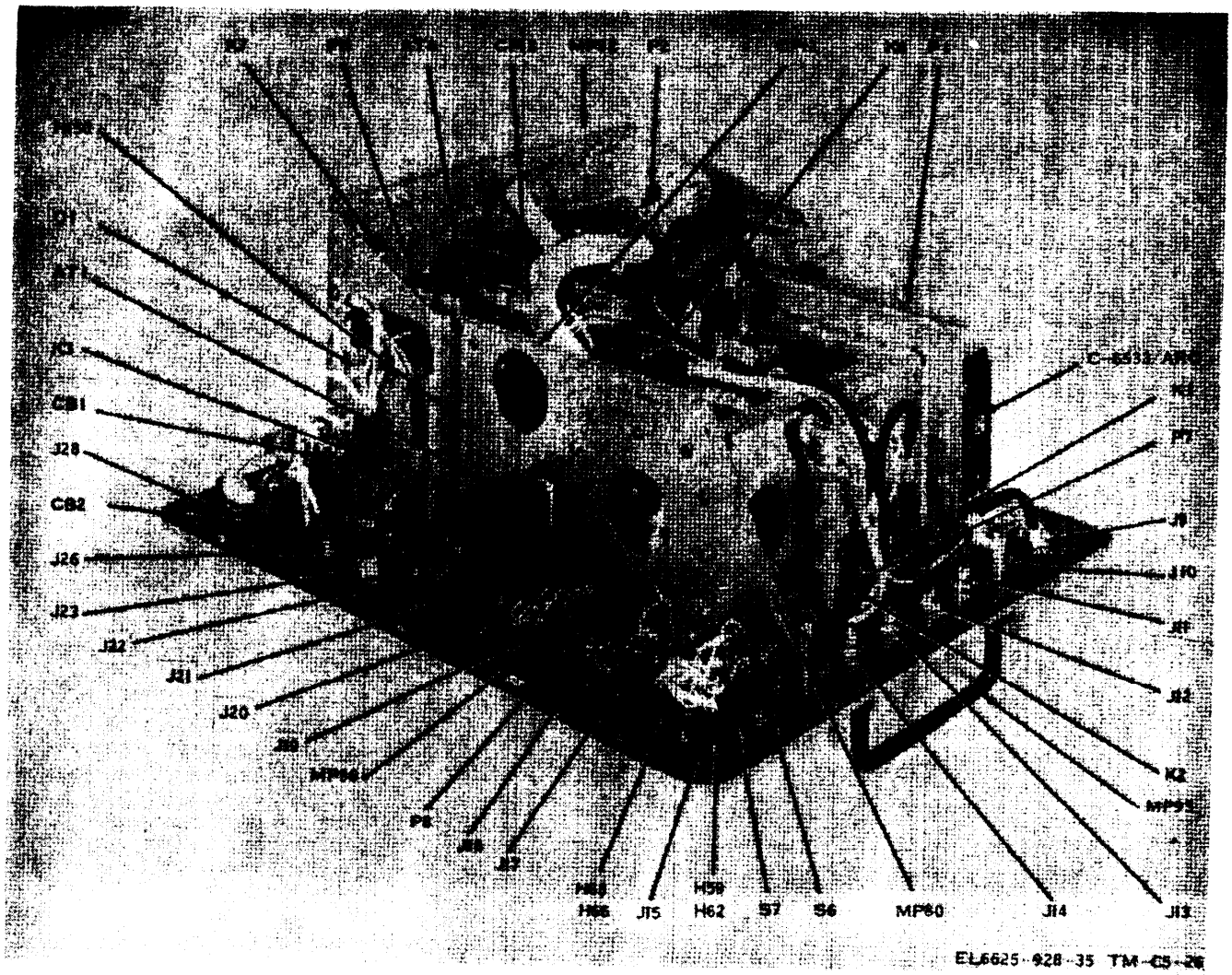


Figure 3-3. Chassis, oblique view from panel bottom edge.

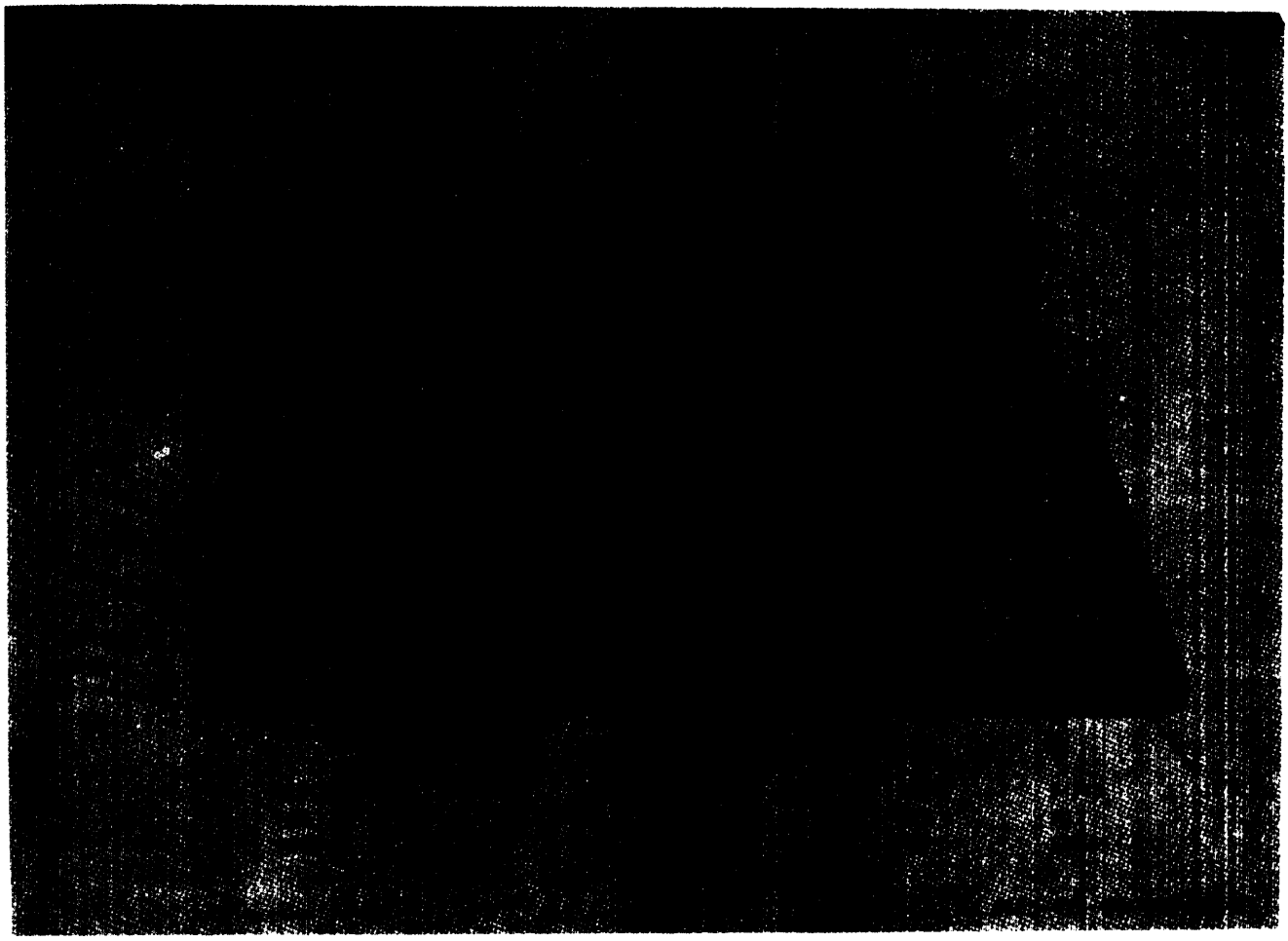


Figure 3-4. Chassis, viewed from panel top edge.

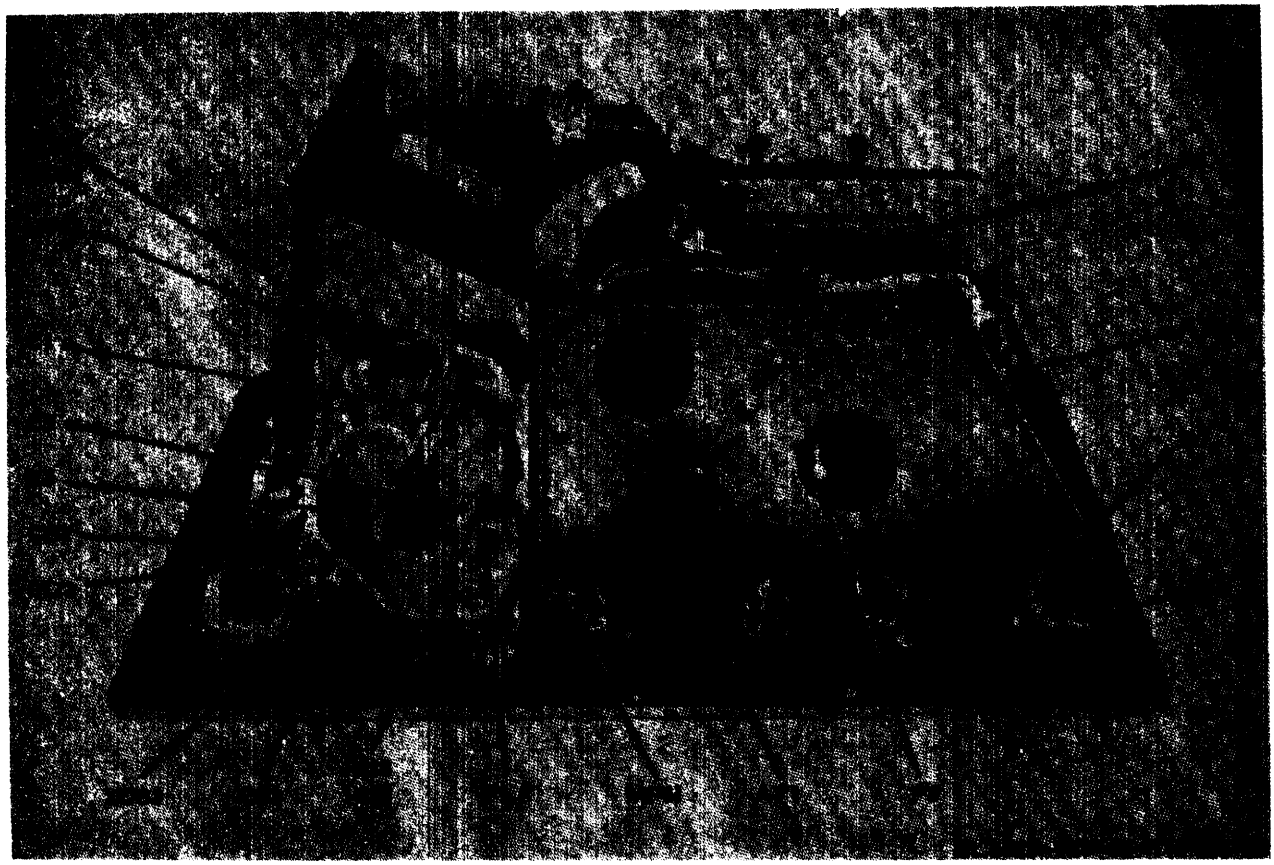


Figure 3-5. Chassis, viewed from panel bottom edge.

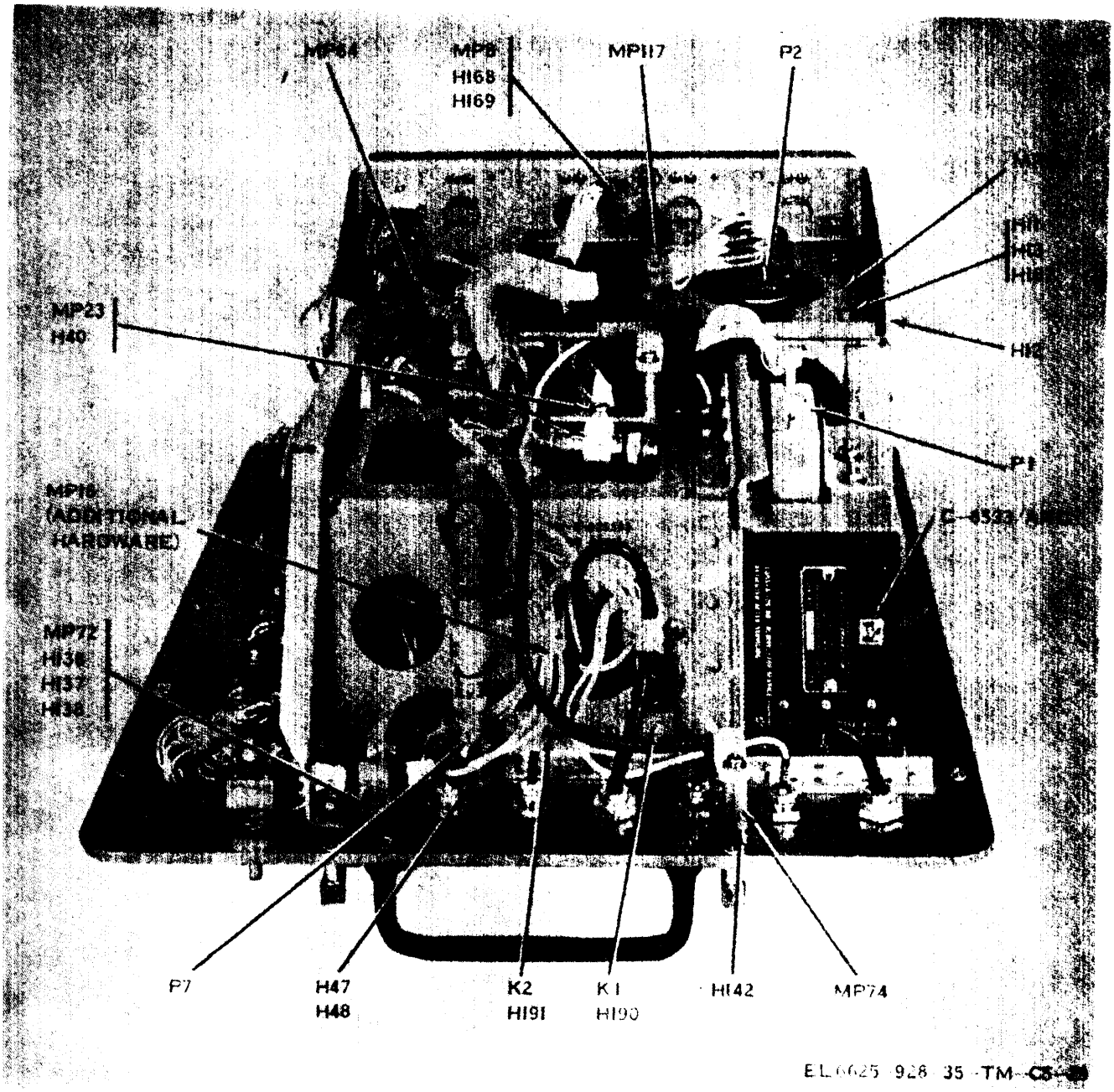


Figure 3-6. Chassis, viewed from panel left edge.

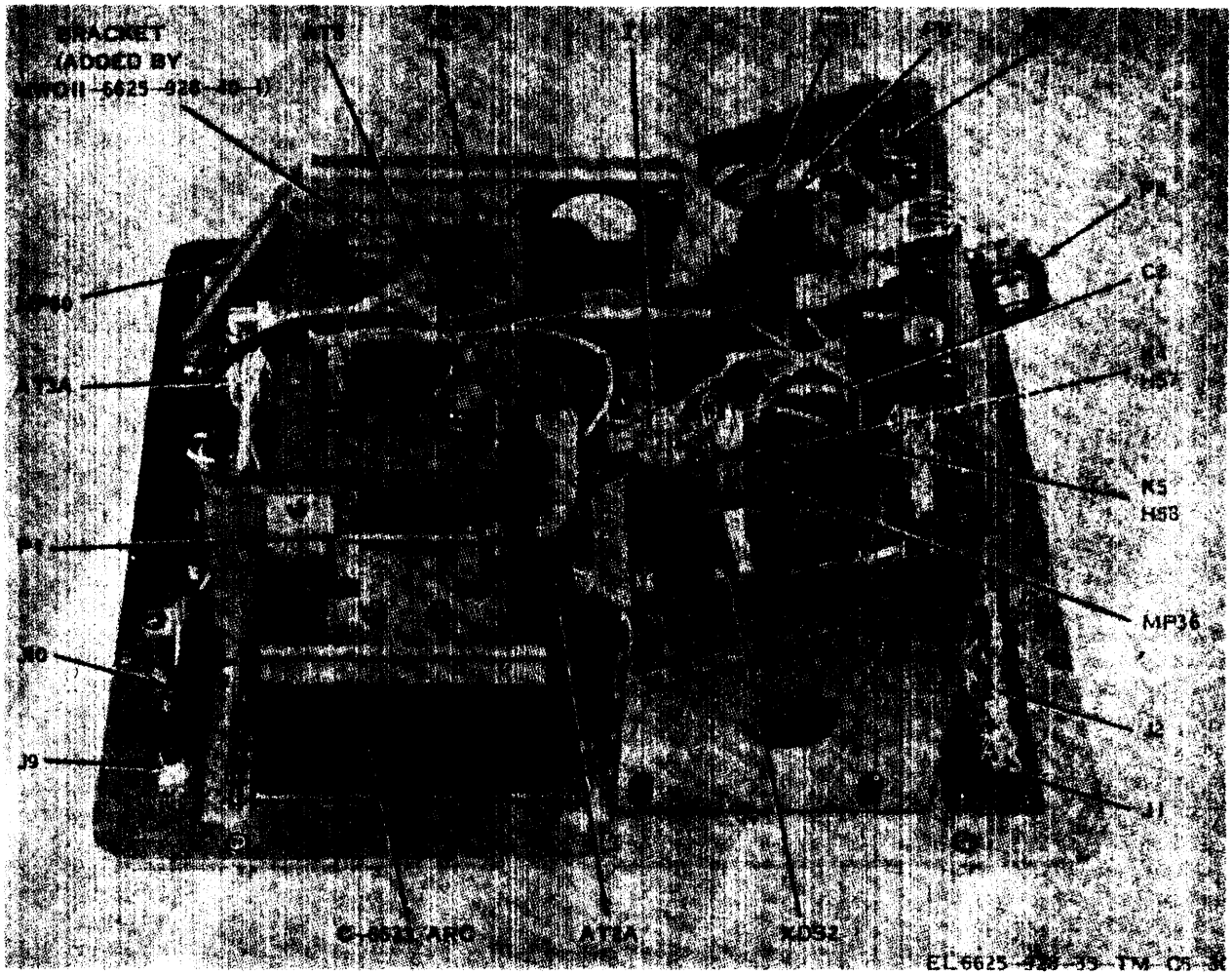


Figure 3-7. Chassis, viewed from panel top edge with ID-1351/A and MP104 removed.

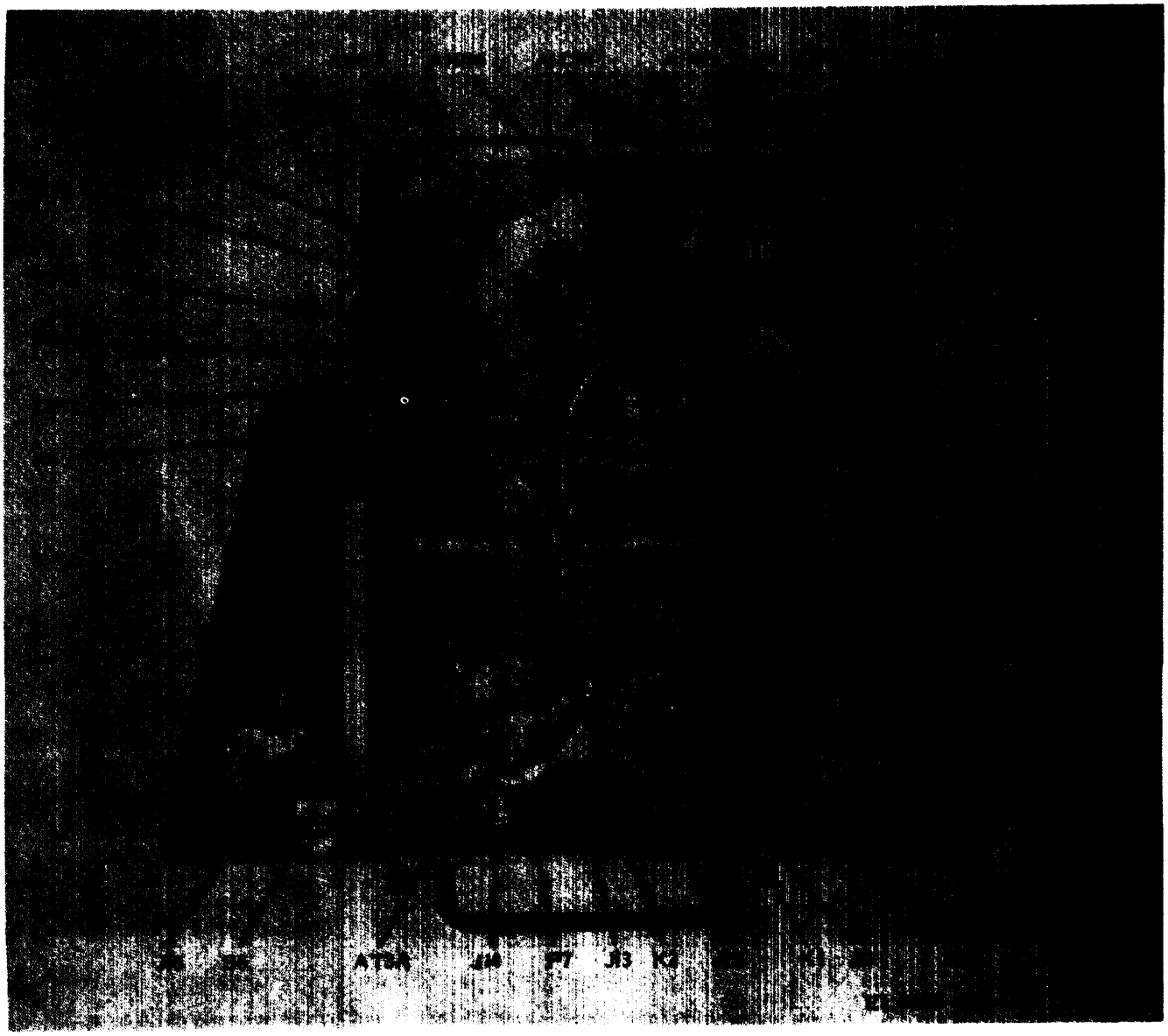


Figure 3-8. Chassis, viewed from panel left edge with ID-1351/A and MP104 removed.

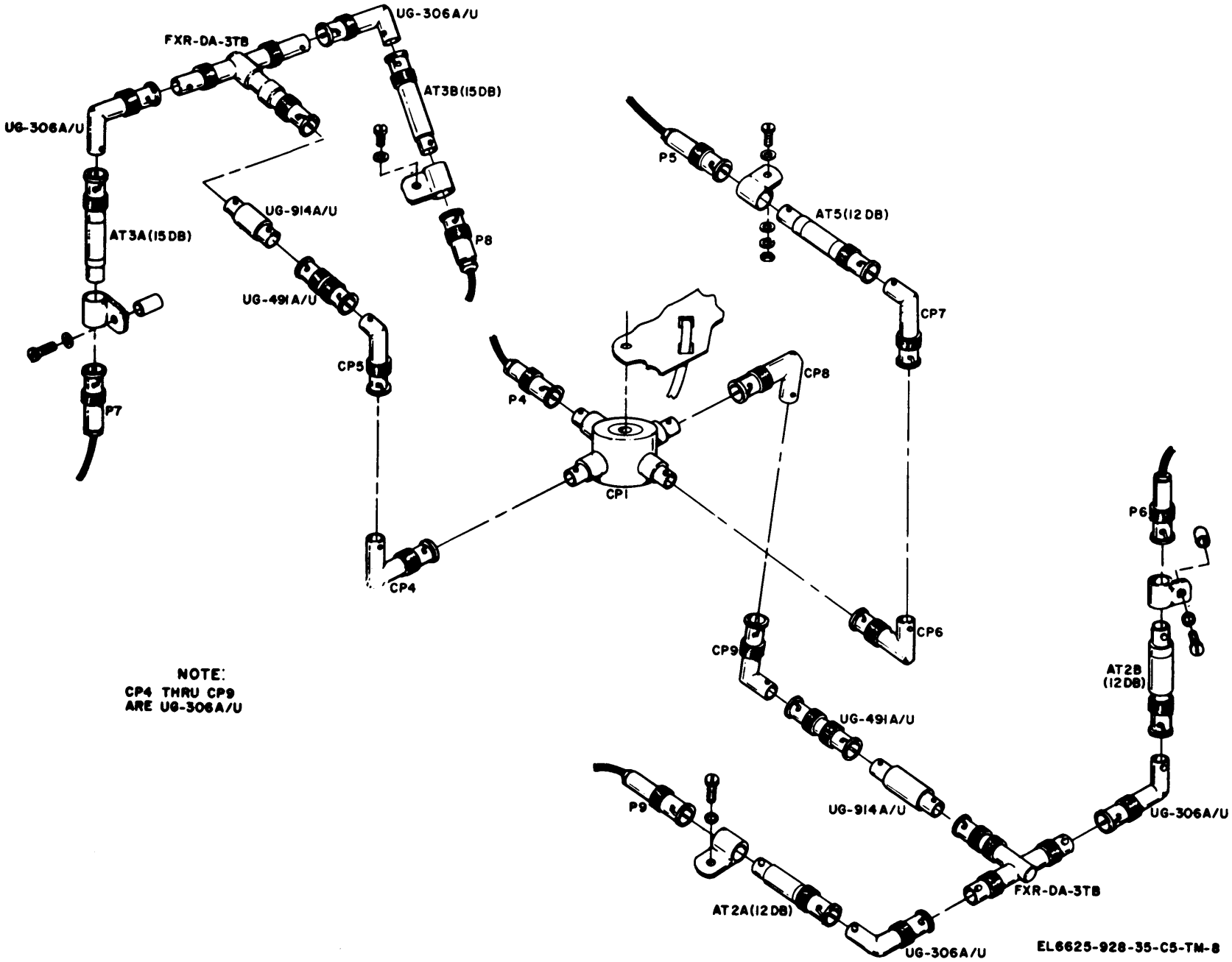


Figure 3-9. Radio coaxial fittings, exploded view.

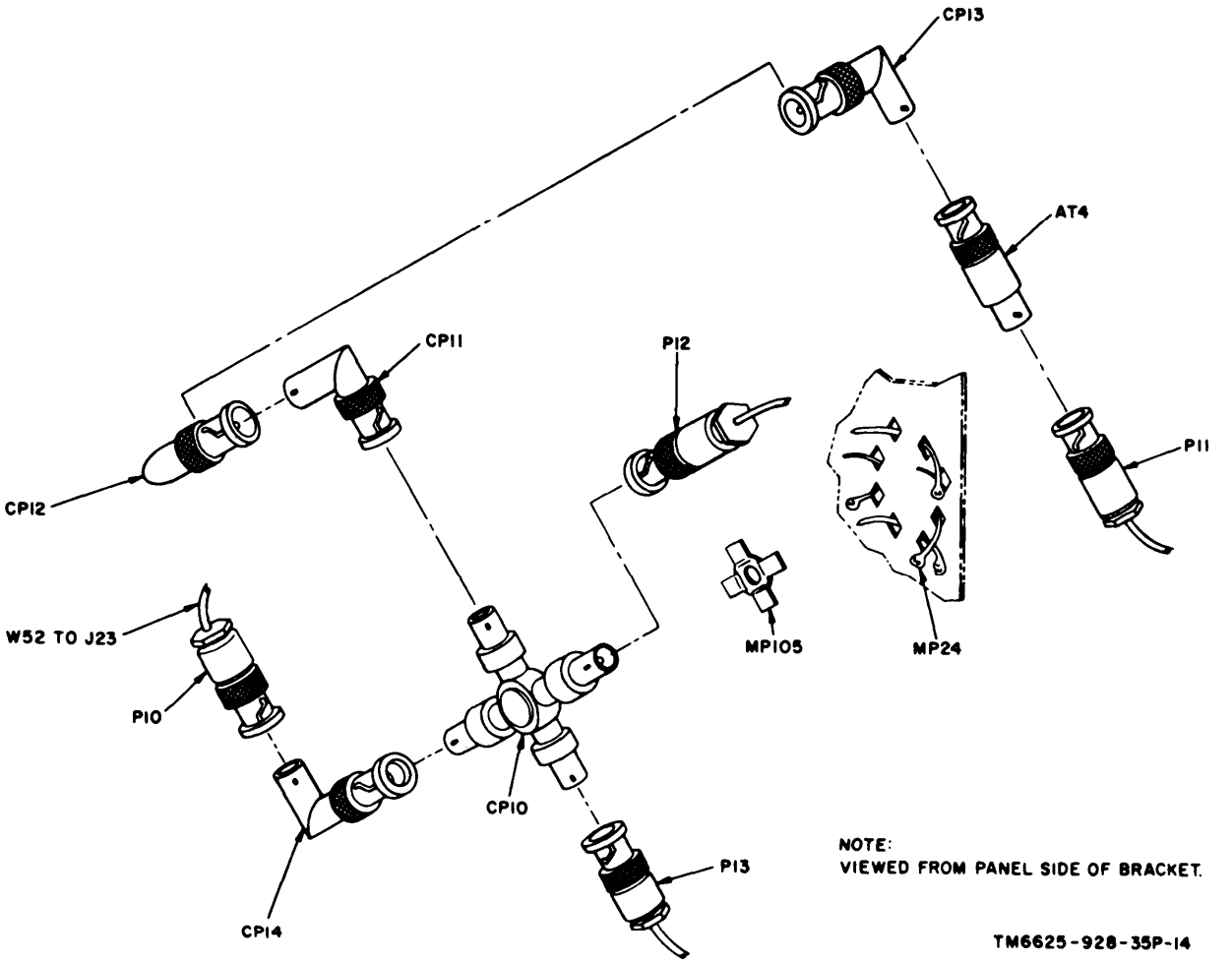
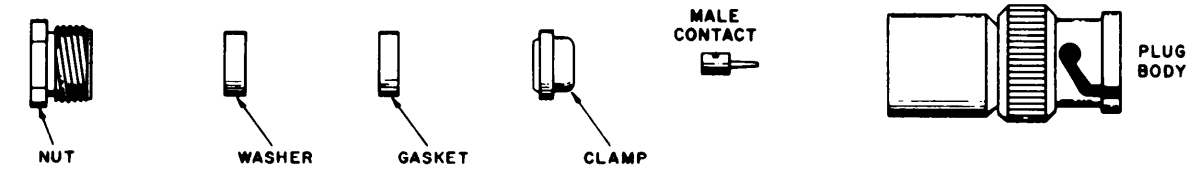
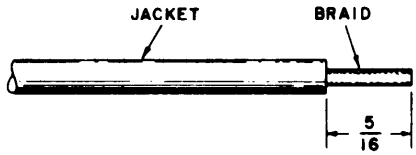
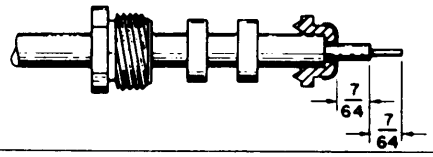
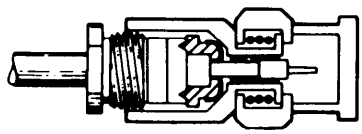


Figure 3-10. Adf coaxial fittings, exploded view.

ASSEMBLY OF TYPE BNC RADIO FREQUENCY CABLE PLUGS UG-88 E/U AND SM-A-625471-3

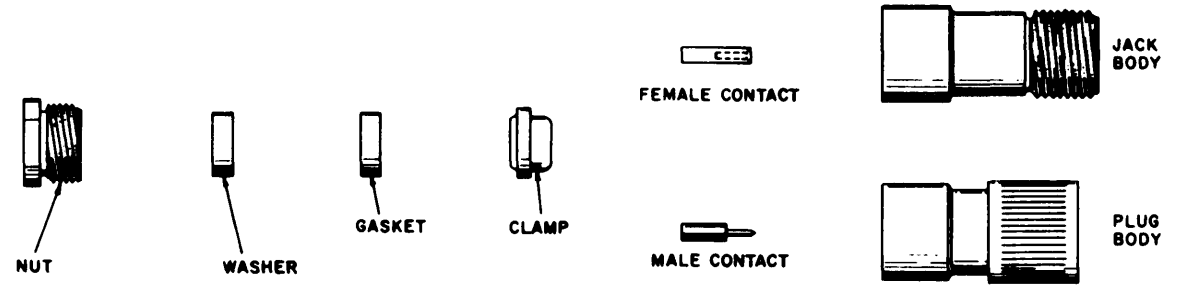


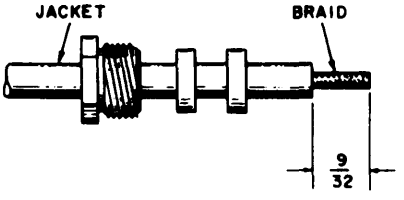
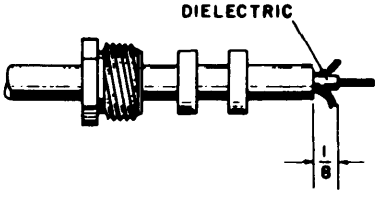
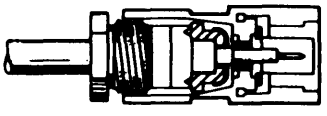
STEP 1		CUT OFF END OF CABLE SQUARE AND REMOVE JACKET 5/16" FROM END. DO NOT NICK BRAID.
STEP 2		COMB OUT BRAID.
STEP 3		TAPER BRAID, SLIDE NUT, WASHER, GASKET AND CLAMP OVER TAPERED BRAID, MAKING SURE INNER SHOULDER OF CLAMP IS POSITIONED TIGHTLY AGAINST END OF JACKET.
STEP 4		FLARE BACK BRAID, TRIM IF NECESSARY, TRIM DIELECTRIC TO DIMENSION SHOWN. DO NOT NICK INNER CONDUCTOR. CUT OFF INNER CONDUCTOR 7/64" FROM DIELECTRIC.
STEP 5		SOLDER CONTACT ON INNER CONDUCTOR. REMOVE EXCESS SOLDER. DO NOT OVER HEAT DIELECTRIC AS IT WILL BECOME SWOLLEN AND WILL NOT ENTER BODY AND INSULATOR PROPERLY.
STEP 6		INSERT CABLE AND HARDWARE INTO PLUG BODY. MAKE SURE GASKET IS PROPERLY SEATED ON SHARP EDGE OF CLAMP. AFTER NUT IS STARTED TIGHTEN WITH WRENCH. NOTE: SHARP EDGE OF CLAMP MUST SPLIT GASKET.

TM6625-928-35-C3-17

Figure 3-11. Assembly instructions for type BNC RF cable connectors.

ASSEMBLY OF TYPE N RADIO FREQUENCY CABLE PLUG UG-536 B/U AND CABLE JACK SM-A-625464-1

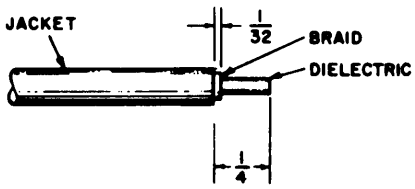
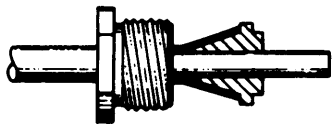
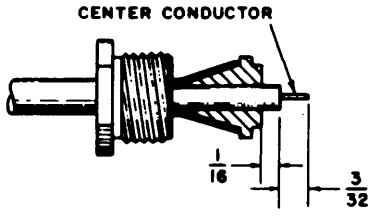
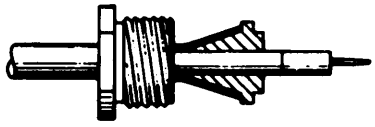
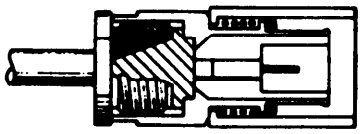


STEP 1		PLACE NUT, WASHER AND GASKET OVER CABLE; CUT JACKET 9/32" FROM END. DO NOT NICK BRAID.
STEP 2		COMB OUT BRAID AND FOLD BACK. CUT DIELECTRIC FLUSH TO DIM. SHOWN.
STEP 3		SLIDE CLAMP OVER BRAID. CLAMP MUST BE POSITIONED FLUSH AGAINST JACKET. FLARE BACK BRAID OVER CLAMP. TRIM IF NECESSARY TO PROPER LENGTH. SOLDER CONTACT TO CENTER CONDUCTOR. FEMALE CONTACT IS USED WITH JACK; MALE CONTACT IS USED WITH PLUG. REMOVE EXCESS SOLDER. CONTACT MUST BE FLUSH WITH DIELECTRIC.
STEP 4		INSERT CABLE AND HARDWARE INTO PLUG OR JACK BODY. MAKE SURE GASKET IS PROPERLY SEATED ON SHARP EDGE OF CLAMP. AFTER NUT IS STARTED TIGHTEN WITH WRENCH. NOTE: SHARP EDGE OF CLAMP MUST SPLIT GASKET.

TM6625-928-35-C3-20

Figure 3-12. Assembly instructions for type N RF cable connectors.

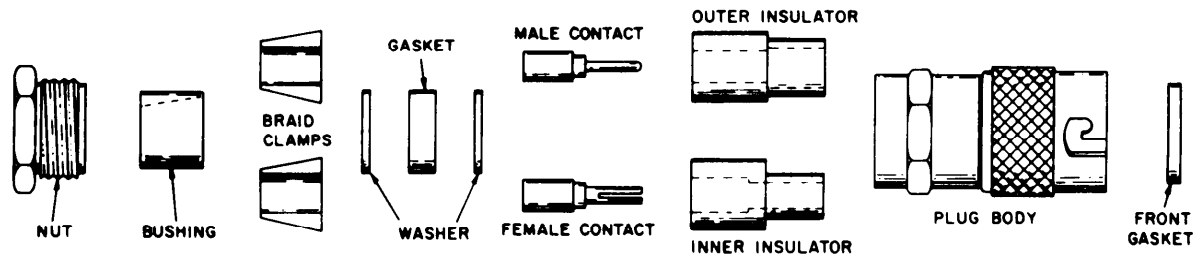
ASSEMBLY OF TYPE TPS RADIO FREQUENCY CABLE PLUG UG-1366( )/U

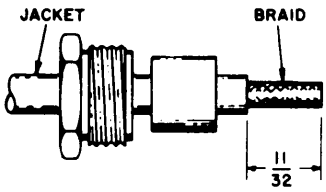
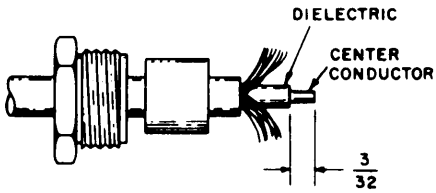
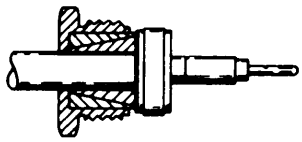
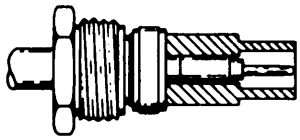
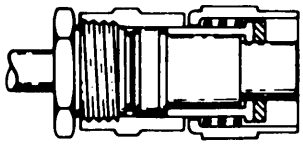
STEP 1		CUT CABLE OFF SQUARE ON END. DO NOT DEFORM. CUT JACKET AND BRAID TO DIMENSION SHOWN. DO NOT NICK DIELECTRIC.
STEP 2		SLIDE NUT OVER JACKET AND PUSH BACK OUT OF WAY. SLIDE CLAMP OVER DIELECTRIC AND UNDER BRAID. PUSH FIRMLY UNTIL CLAMP IS FLUSH WITH BRAID.
STEP 3		TRIM DIELECTRIC AND CENTER CONDUCTOR AS SHOWN.
STEP 4		SOLDER MALE CONTACT ON CENTER CONDUCTOR. REMOVE EXCESS SOLDER. DO NOT OVERHEAT.
STEP 5		INSERT CABLE ASSEMBLY INTO PLUG BODY. PUSH FIRMLY INTO PLACE AND TIGHTEN BODY. DO NOT ROTATE NUT OR CABLE.

TM6625-928-35-C3-21

Figure 3-13. Assembly instructions for type TPS RF cable connectors.

ASSEMBLY OF TYPE DM CABLE PLUGS SM-A-625473-1 AND -3 (FEMALE) AND PLUGS SM-A-625473-2 AND -4 (MALE)

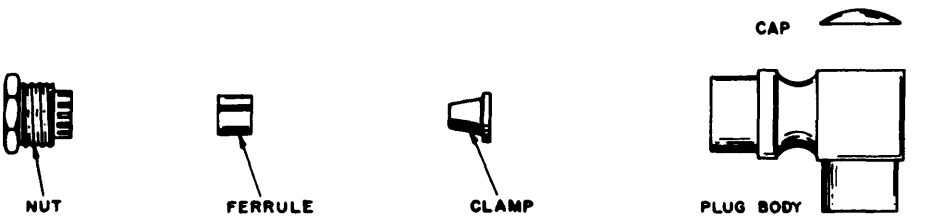


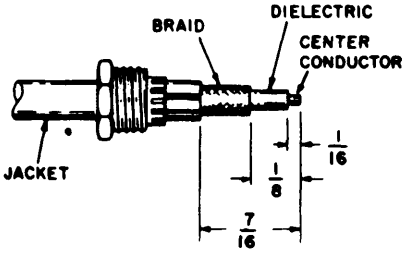
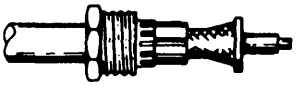
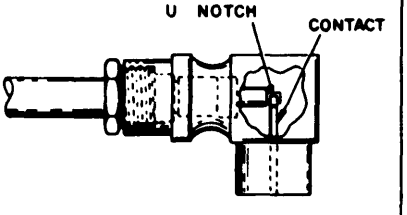
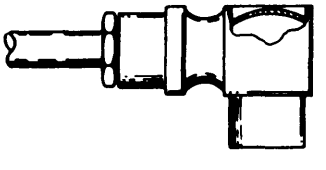
STEP 1		CUT CABLE OFF SQUARE ON END. DO NOT DEFORM. SLIDE CABLE NUT AND BUSHING OVER CABLE AND PUSH BACK OUT OF WAY. CUT JACKET TO DIMENSION SHOWN BEING CAREFUL NOT TO NICK BRAID.
STEP 2		COMB OUT BRAID AND TRIM DIELECTRIC TO DIMENSION SHOWN, BEING CAREFUL NOT TO NICK CENTER CONDUCTOR.
STEP 3		WITH BRAID CLAMPS FLUSH WITH END OF JACKET, SLIDE BUSHING OVER TAPERED END OF CLAMPS. THIS PROCEDURE CLAMPS CABLE AND BRAID CLAMPS SECURELY. FOLD BACK BRAID. PLACE WASHER, GASKET AND WASHER IN PLACE. TRIM EXCESS BRAID FLUSH WITH WASHER. SOLDER CONTACT ON CENTER CONDUCTOR FLUSH WITH DIELECTRIC. REMOVE EXCESS SOLDER.
STEP 4		PLACE INSULATOR IN POSITION. USE OUTER INSULATOR WITH MALE CONTACT; USE INNER INSULATOR WITH FEMALE CONTACT.
STEP 5		INSERT CABLE ASSEMBLY INTO PLUG BODY, PUSH FIRMLY IN PLACE AND TIGHTEN NUT UNTIL IT IS FLUSH WITH CONNECTOR. NOTE: TURN NUT ONLY WHEN TIGHTENING. DO NOT ROTATE BODY OR CABLE. AFTER ASSEMBLY PLACE FRONT GASKET IN PLUG AS SHOWN.

TM6625-928-35-C3-22

Figure 3-14. Assembly instructions for type DM RF cable connectors.

ASSEMBLY OF RIGHT ANGLE CABLE PLUG SM-A-595802-2



STEP 1		CUT CABLE OFF SQUARE ON END. DO NOT DEFORM. SLIDE CABLE NUT AND FERRULE OVER CABLE. CUT JACKET, BRAID, AND DIELECTRIC TO DIMENSION SHOWN.
STEP 2		SLIDE CLAMP UNDER BRAID AS SHOWN.
STEP 3		INSERT CABLE AND ASSEMBLY INTO PLUG BODY SO THAT CENTER CONDUCTOR RESTS IN CONTACT U NOTCH. SOLDER CENTER CONDUCTOR TO CONTACT U NOTCH.
STEP 4		TIGHTEN NUT PLACE CAP IN PLUG BODY RECESS AND SOLDER IN PLACE.

TM6625-928-35-C3-23

Figure 3-15. Assembly instructions for RF cable connector SM-A-595802-2.

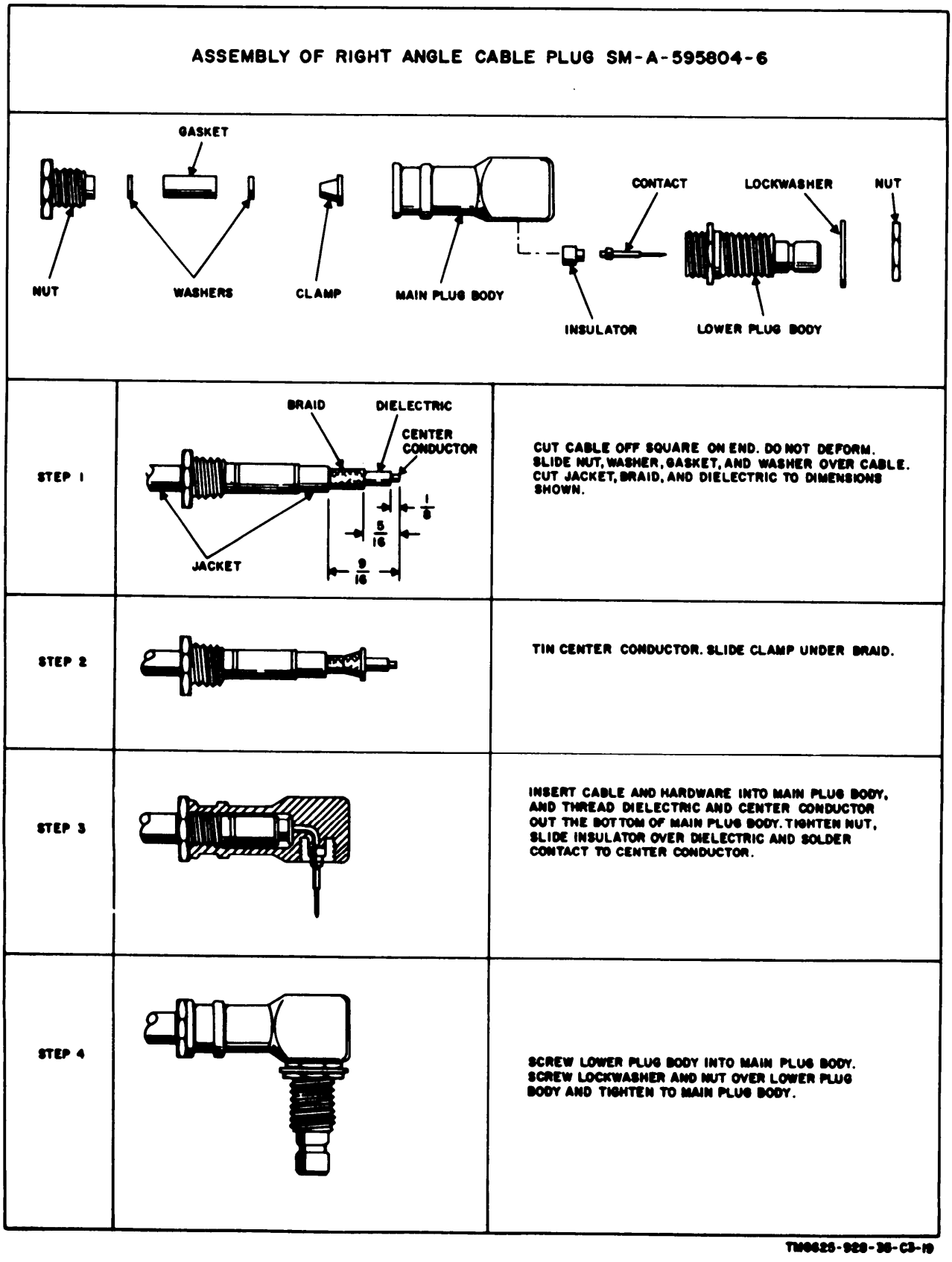


Figure 3-16. Assembly instructions for RF cable connector SM-A-595804-6.

Section II. REPAIRS

3-6. General Parts Replacement Techniques

a. All parts on the chassis and panel of the maintenance kit are easily replaced without special procedures. Figures 3-1 through 3-10, 5-8 and 5-9 show the location and orientation of parts on the chassis. Wiring information for repairing cables given in paragraph 3-7.

b. To prevent damage to components of the maintenance kit, use a pencil-type soldering iron with a 25-watt maximum capacity. If the iron power source is ac power, use an isolating transformer between the iron and the line. Do not use a soldering gun; damaging voltages can be induced in components.

c. The following tools from the MK–1191/AR should be used in the repair of maintenance kit connectors:

Tool	*Use*
Adapter, Crimp MS3191-1	Crimps pins or sockets on cable wires.
Tool, Extractor CET 20A	Extracts size 20 pins or sockets from connectors.
Tool, Extractor CET 16	Extracts size 16 pins or sockets from connectors.
Tool, Insertion CIT 20	Inserts size 20 pins or sockets in connectors.
Tool, Insertion CIT 16	Inserts size 16 pins or sockets in connectors.

3-7. Cable Wiring

a. Cable CG-3475/U. Cable CG3475/U (W1) consists of 6 feet of RG-188A/U. The coaxial cable is terminated with right-angle female plug P1 (fig. 3-15) and male BNC plug P2 (fig. 3-11).

b. Cable CX-10889/U. Cable CX-10889/U (W2 or W3) is a 32-wire, rubber-insulated cable terminated with multi-pin plugs P1 and P2.

Connects to		
P1 (MS3126E18–32P) pin No.	*P2 (MS27656PB18–32SA) pin No.*	*Wire size (awg) (length: 3 ft)*
A	A	22
B	B	22
C	C	22
D	D	20
E	E	22
F	F	22
G	G	22
H	H	22
J	J	20 shielded
K	K	20 shielded
L	L	22
M	M	22
N	N	22
P	P	20
R	R	22
S	S	22
T	T	22
U	U	22
V	V	22
W	W	22
X	X	20 shielded
Y[a,b]	Y	20 shielded
Z	Z	22
	a[c]	
b	b	22
c	c	22
d	d	22
e	e	22
f	f	22
g	g	22
h	h	22
j	j	22

[a] P1–a connects to P1–Y shield with No. 20 awg wire.
[b] P1–Y shield connects in series to shields at P1–X, K, and J with No. 22 awg.
[c] P2–a connects to P2–Y shield with No. 20 awg wire.

c. Cable CX-10890/U. Cable CX-10890/U (W4) is a 15-wire, rubber-insulated cable with multipin plugs P1 and P2.

Connects to		
P1 (MS3126E18–32PX) pin No.	*P2 (MS3126E14–15S) pin No.*	*Wire size (awg) (length: 3 ft)*
A	A	22
B	B	22
C	C	20
D	D	20 shielded
E	F	20 shielded
F	G	20
G	H	20 shielded
H	J	20 shielded
J	K	20 shielded
K	L	20
L	M	20
M[a]		
N	R	20 shielded
P	P	20
	N[b]	
	E[d]	
R through Z and a through j[c]		

[a] P1–M connects to P1–N shield with No. 20 awg wire.
[b] P2–N connects to P2–R shield with No. 20 awg wire; P2–R shield connects in series to shields at P2–K, J, H, F, and D with No. 22 awg wire.
[c] Spare pins on P1 are R through Z and a through j.
[d] Spare pin on P2 is E.

d. Cable CX-10891/U. Cable CX-10891/U (W5 or W6) is a 32-wire rubber-insulated cable with multipin plugs P1 and P2.

Connects to		
P1 (MS3126E18–32P) pin No.	*P2 (MS27656PB18–32SA) pin No.*	*Wire size (awg) (length: 3 ft)*
A	A	22
B	B	22
C	C	22
D	D	20

Connects to		
P1 (MS3126E14-19P) pin No.	P2 (MS3126E14-19S) pin No.	Wire size (awg) (length: 3 ft)
E	E	22
F	F	22
G	G	22
H	H	22
J	J	20 shielded
K	K	20 shielded
L	L	22
M	M	22
N	N	22
P	P	20
R	R	22
S	S	22
T	T	22
U	U	22
V	V	22
W	W	22
X	X	20 shielded
Y[b]	Y	20 shielded
Z	Z	22
a[b]		
	a[a]	
b	b	22
c	c	22
d	d	22
e	e	22
f	f	22
g	g	22
h	h	22
j	j	22

[a] P2-a connects to P2-Y shield with No. 20 awg wire.
[b] P1-Y shield connects in series to shields at P1-X, K, and J with No. 22 awg.

e. Cable CX-10892/U. Cable CX-10892/U (W7 or W8) is a 19-wire, rubber-insulated cable with multipin plugs P1 and P2.

Connects to		
P1 (MS3126E14-19P) pin No.	P2 (MS3126E14-19S) pin No.	Wire size (awg) (length: 3 ft)
A	A	20
B	B	20
C	C	22
D	D	22
E	E	22
F	F	22
G	G	22
H	H	22
J	J	22
K	K	22
L	L	22
M	M	22
N	N	22
P	P	22
R	R	22
S	S	22
T	T	20
U	U	22
V	V	22

f. Cable CX-10893/AR. Cable CX-10893/AR (W9) is a 40-wire, rubber, insulated cable with multipin plugs P1 and P2.

Connects to		
P1 (MS3126E20-41P) pin No.	P2 (SM-A-595898-1 or MRE-42J-TC6H) pin No.	Wire size (awg) (length: 3 ft)
A[b]	A	20 shielded
B	B	22
C	C	20 shielded
D[b]	D[c]	
E	E	22
F	F	20 shielded
G	UU	22
H	H	22
J	J	22
K	K	22
L	L	20 shielded
M	M	22
N	N	22
P	P	20 shielded
R	R	20 shielded
S	S	20
T	T	22
U	U	22
V	V	20 shielded
W	W	22
X	X	22
Y	Y	22
Z	Z	20
a	LL	22
b	BB	22
c	CC	22
d	DD	22
e	EE	22
f	FF	22
g	VV	22
h	HH	22
i	WW	22
j	JJ	22
k	KK	22
m	MM	22
n	NN	22
p	PP	22
q	XX	20 shielded
r	RR	22
s	SS	22
t	TT	20 shielded

[a] P2-D connects to P2-A shield with No. 20 awg wire.
[b] P1-D connects to P1-A shield with No. 20 awg wire; P1-A shield connects in series to shields at P1-C, F, L, P, R, V, q, and t with 22 awg wire.
[c] Space pins on P2 are G and AA.

g. Cable CG-3477/U (fig. 8-11 and 3-12). Cable CG-3477/U (W10) consists of 4 feet of RG-58C/U coaxial cable with male type BNC plug P1 and female type N jack P2 Connector P1 is UG-88E/U. The manufacturer's (Amphenol) part number for P2 is 35025.

h. Cable CG-2340A/U (fig. 3-11 and 3-12). Cable CG-2340A/U (W11) consists of 4 feet of RG-58C/U coaxial cable with male type BNC plyg P1 and male type N plug P2. Connector P1 is UG-88E/U. Connector P2 is UG-536B/U.

i. Cable CG-3476/U (fig. 3-13). Cable CG-3476/U (W12, W13, or W14) consists of 4 feet of RG-58C/U coaxial cable with male type TPS

plugs P1 and P2. Connectors P1 and P2 are UG-1366/U.

j. Cable CG–3478/U (fig. 3–11). Cable CG-3478/U (W15) consists of 4 feet of RG-58C/U coaxial cable with male type BNC plugs P1 and P2. Connectors P1 and P2 are UG-88E/U.

k. Cable CG-8479/U (fig. 3-14). Cable CG-3479/U (W16) consists of 4 feet of RG-58C/U coaxial cable with female type DM plugs P1 and P2. The manufacturer's (Dage Electric Co., Inc.) part number for P1 and P2 is 6388–1.

l. Cable CG–3481/U (fig. 3–14). Cable CG-3481/U (W17) consists of 4 feet of RG-58C/U coaxial cable with female type DM plugs P1 and P2. The manufacturer's (Dage Electric Co., Inc.) part number for P1 and P2 is 6390–1.

m. Cable CG–3482/U (fig. 3–14). Cable CG–3482/U (W18) consists of 4 feet of RG–58C/U coaxial cable with male type DM plugs P1 and P2. The manufacturer's (Dage Electric Co., Inc.) part number for P1 and P2 is 6391–1.

n. Cable CG-3480/U. (fig. 8–14). Cable CG–3480/U (W19) consists of 4 feet of RG-58 C/U coaxial cable with male type DM plugs P1 and P2. The manufacturer's (Dage Electric Co., Inc.) part number for P1 and P2 is 6389–1.

o. Cable CX-10888/U. Cable CX-10888/U (W2 or W21) is a five-wire, rubber-insulated cable with multipin plyg P! and telephone jack P2.

Connects to		
P1 (MS3126E10-6P) pin No.	P2 (U-92A/U) pin No.	Cable type WF 14/U (length: 6 feet)
A	1	green
B	2	white
C	3	red
D	4	black
E	C	shield

p. Cable CX–10886/AR. Cable CX–10886/AR (W22) is a two-conductor, rubber-insulated power cable with plug P1 at one end and two clips at the other end.

Connects to		
P1 (MS3126E12-3S) pin No.	Termination	Cable type CO-02MGF (2–16) 0335[a]
A	Clip (PC–4)	white
B	Clip (PC–4)	black
C[b]		

[a] CX–10886/AR is six feet in length (overall). Outer rubber installation is stripped off 6.5 inches from clips.
[b] Spare pin on P1 is C.

q. Cable CX-10887/AR. Cable CX-10887/AR (W23) is a three-conductor, rubber-insulated, power cable with plugs P1 and P2.

Connects to		
P1 (MS3126E12-10S) pin No.	P2 (H24) pin No.	Cable type CO-03HOF (3-16)0435 (length: 6 feet)
A	1	black
B	2	white
C	3	green
D thru K[a]		

[a] Spare pins on P1 are D through K.

r. Cable CG-3483/17 (fig. 3-16) . Cable CG-3483/U (W24) consists of miniature female coaxial plug P2 and male right-angle plug P1 on a 1-foot length of RG–178B/U cable. The part number for P2 and the RG–178B/U cable assembled is SM–A–597837–1. The part number for P1 is SM–A–595804–6 (or Selectro Corp., 51-012-3196).

s. Cable CG–3474/U (fig. 3–16). Cable CG–3474/U (W25) consists of miniature male coaxial plug P2 and male right-angle plug P1 on a 1-foot length of RG–178B/U cable. The part number for P2 and the RG–178B/U cable assembled is SM–A–597837–2. The part number for P1 is SM–A–595804-6 (or Selectro Corp 51-012-3196).

t. Cable CX-10894/AR. Cable CX-10894/AR (W26) is a 14-wire, rubber-insulated cable with multipin plugs P1 and P2.

Connects to		
P1 (SM-A-625484-15 or DAC15P) pin No.	P2 (SM-A-625484-015 or DAC15S) pin No.	Wire size (awg) (length: 18 in.)
1	1	20 shielded
2	2	
3	3	22
4	4	22
5	5	20 shielded
6	6	22
7	7	22
8	8	20 shielded
9	9	20 shielded
10	10	22
11	11	22
12	12	22
13	13	22
14	14	22
15	15	22

[a] P1–2 connects in series to shields at P1–1, 5, 8, and 9 with No. 22 awg wire.
[b] P2–2 connects to shield at P2–1 with No. 22 awg wire.

u. Cable CG-3484/AR. Cable CG-3484/AR (W27 through W31) consists of a miniature male coaxial plug P2 and a miniature female coaxial plug P1 on a 12.7-inch length of RG-

178B/U cable. The part number for P1, P2 and the RG-178B/U cable assembled is SM-A-597837-3.

v. Cable CX-11985/AR. Cable CX-11985/AR (W32) consists of three different type connectors connected by wires covered with sleeving. Male connector P1 is a 32-pin connector. Female connector P2 is a 32-pin connector and female connector P3 is a 10-pin connector. The overall length of the cable (P 1 to P3) is 3 feet, 4 inches.

Connects to			
P1 (MS3126E18-32P pin No.	*P2 MS27336PB18-32SA) pin No.*	*P3 (MS3126E12-10S) pin No.*	*Wire size (awg) (length: 3 ft.)*
A	A	—	22
B	B	—	22
C	C	—	22
D	D	A	20
E	E	B	22
F	F	—	22
G	G	—	22
H	H	—	22
J	J	—	20 shielded
K	K	—	20 shielded
L	L	—	22
—	M	C	22
N	N	—	22
P	P	—	20
R	R	—	22
—	S	D	22
T	T	—	22
U	U	—	22
V	V	—	22
X	W	E	22
—	X	—	20 shielded
Y	Y	—	20 shielded
Z	Z	—	22
a[b]	a[b]	—	
b	b	—	22
c	c	—	22
d	d	—	dd
e	f	—	22
f	e	—	22
g	g	—	22
h	h	—	22
j	j	—	22
M, S and W[c]	—	F through K[d]	

[a] P1-a connects to P1-Y shield with No. 20 awg wire. P1-Y shield connects in series to shields at P1-X, K, and J with No. 22 awg wire.
[b] P2-a connects to P2-Y shield with No. 20 awg wire.
[c] Spare pins on P1 are M, S, and W.
[d] Spare pins on P3 are F through K.

w. Cable SC-D-972432. Cable SC-D-972432 (W33) is a 22-wire, rubber insulated cable with multiplugs P1 and P2.

Connects to		
P1 (MS3126E18-32P pin No.	*P2 MS27336PB18-32S) pin No.*	*Wire size (awg) (length: 3 ft.)*
A,H	H	22
C	C	22
D	D	20
E,f	E,f	22
J[a]	J	20 shielded
K[a]	K	20 shielded
L	L	22
P	P	20
R	R	22
S	S	22
X[a]	X	20 shielded
Y[a]	Y[b]	20 shielded
a[a]	a[b]	20
Z	Z	22
c	*c*	22
d	d	22
e	e	22
g	g	22
h	h	22
j	j	22

[a] P1-a connects to shields of P1-Y, P1-X, P1-K and P1-J with No. 22 awg wire.

[a] P2-a connects to shield of P2-Y with No. 20 awg wire.

3-7.1 Dummy Loads (fig. 3-16.1)

Three dummy loads consists of small circuit boxes having input banana jacks and output banana plugs. Input to output signal paths contain impedance matching components.

figure 3-16.1, Schematic diagrams, dummy loads,

Section III. GENERAL SUPPORT TESTING PROCEDURES

3-8. General

a. Testing procedures are prepared for use by maintenance shops and service organizations responsible for general support maintenance to determine the acceptability of repaired equipment. These procedures set forth specific requirements that a repaired equipment must meet before it is returned to the using organization. Testing procedures may also be used as a guide for the testing of equipment that has been repaired at direct support category maintenance if the proper tools and test equipment are available. For each step, perform all the actions required in the Test equipment and Equipment under test columns; then perform each specific test procedure and verify it against its performance standard. It is not necessary to perform numbered test steps in sequence; however, all test procedures must be performed to certify the performance of the repaired equipment.

3-9. Test Equipment, Tools, and Materials

All test equipment, tools, materials, and other equipment required to perform the testing procedures given in this section are listed in the following charts and are authorized under TA–ll-17, and TA-11-100 (11-17).

NOTE

Refer to paragraph 1-3 for additional common name assignments.

a. Test Equipment.

Nomenclature	*Technical manual*	*Common name*
Electronic Voltmeter AN/URM–145	TM 11–6625–524–14	RF voltmeter.
Electronic Voltmeter ME–30A/U	TM 11–6625–320–12	Voltmeter.
Multimeter ME–26B/U	TM 11–6625–200–12	Multimeter.
RF Signal Generator Set AN/URM–25D.	TM 11–5551–D	RF generator.
Signal Generator AN/USM–44A	TM 11–6625–508–10	Am. generator.
Signal Generator AN/URM–127	TM 11–6625–683–15	Audio generator.
Multimeter TS–352B/U	TM 11–6625–366–15	Ohmmeter.
Electronic Voltmeter AN/USM–98	TM 11–6625–438–10	Dc voltmeter.
Standing Wave Ratio Indicator IM–157/U.		Swr. indicator.
Detector DT–307/G		Detector.
Attenuator CN–796( )/U		Attenuator.
Impedance Adapter MX–1487/URM–250.	TM 11–5551–D	50-ohm termination.
50-ohm BNC adapter (from Electronic Voltmeter AN/URM–145).	TM 11–6625–524–14	50-ohm termination.
Test Facility Kit MK–1191/AR	TM 11–6625–2414–12	GS accessories kit.

b. Materials.

Material	*Federal stock No.*
Resistor, Fixed, Composition; 8,200 ohms, ±5%, 1/2 w, Military Type RC20GF822J.	5905–299–1971
Resistor, Fixed, Composition; 510 ohms, ±5%, 1/2 w, Military Type RC20GF511J.	5905–279–3511
Resistor, Fixed, Composition; 82 ohms, ±5%, 1/2 w, Military Type RC20GF820J.	5905–279–1894
Resistor, Fixed, Composition; 68 ohms, ±5%, 1/2 w, Military Type RC20GF680J.	5905–195–5571
Male pin Military Standard Part Number MS3192A20A (3 required, same as pin used in multipin connector MS3126E18–32P).	5935–226–4703
Wire, Insulated, No. 20 (9 ft. required) MIL–W–16878.	

3-10. Test Facilities

A dc power source of +27.5 volts ±0.5 is required to furnish the operating voltages. To deck the 115-volt, 400-Hz circuitry in the maintenance kit, an alternating current (aC) power source of 115 volts ±5, at 400 Hz, single phase is required for testing, as described in the adf test circuit tests (para 3-16c).

3-11. Fabrication of Voltage Divider and Special Test Probes

Testing of meters in the HOMING/ADF/GYRO indicators requires the application of low level dc voltages to pins on J1. The low level voltages are derived by reducing the output voltage of the +28-volt power

supply using a resistive voltage divider. Fabricate the voltage divider, using the resistors listed in paragraph 3-9b, as shown in figure 3-17. Each of the three probes shown in figure 3-9 is constructed from 3 feet of insulated No. 20 wire with a male pin MS3192A20A soldered on the probe end.

3-12. Modification Work Orders

The performance standards listed in the tests (para 3-13 through 3-16) assume that no modification work orders (MWO's) have been performed. A listing of current modification work orders will be found in DA Pamphlet 310-7.

3-13. Physical Tests and Inspection

a. Test Equipment and Material. None are required.

b. Ted Connectionm and Conditions. Remove the front panel and the chassis assembly from the case.

c. Procedure.

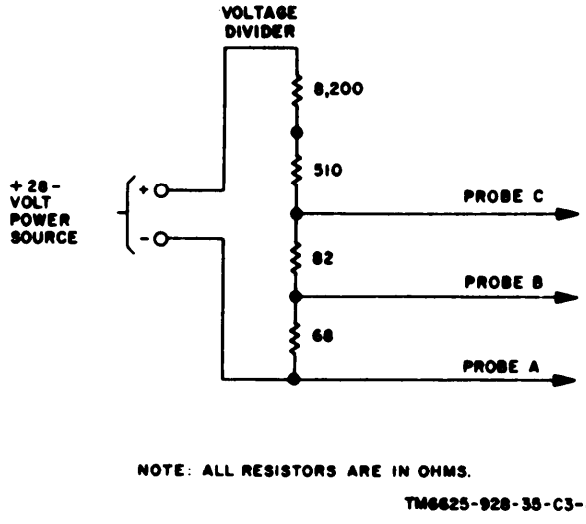


Figure 3-17. Test power supply and voltage divider.

Step No.	Test equipment	Control settings / Equipment under test	Test procedure	Performance standard
1	N/A.	Controls may be in any position.	*a*. Inspect all controls and mechanical assemblies for loose or missing screws, bolts, or nuts.	*a*. Screws, bolts, and nuts tight. None missing.
			b. Inspect all connectors, lampholders, and attenuators for looseness and damage.	*b*. No looseness or damage evident.
2	N/A.	Controls may be in any position.	*a*. Turn RADIO ANTENNA FUNCTION switch to XCVR, HOMING LEFT, HOMING RIGHT, and HOMING BALANCE.	*a*. Operates freely and catches in each position.
			b. Turn RADIO TEST, COMM CONT TEST, and ADF TEST switches to OFF and to positions 1 through 11.	*b*. Operate freely and catch in each position.
			c. Turn ADF antenna function selector switch to OFF, COMP, ANT, LOOP, X and Y.	*c*. Operates freely and catches each position.
			d. Set AC and DC POWER circuit breakers to ON and OFF.	*d*. Operate freely and catch in each position.
			e. Set HEADSETS 1 and 2 switches to INTERCOM and TRANSMIT.	*e*. Spring return from both positions.
3	N/A.	Controls may be in any position.	Inspect case and chassis for damage, missing parts, and condition of finish and panel lettering. *Note.* Touchup painting is recommended in lieu of refinishing whenever practicable. Screwheads, binding posts, connectors, indicators, and plated fastener parts are not to be painted or polished with abrasives.	No damaged or missing parts evident. External surfaces intended to be painted do not show bare metal. Panel lettering is legible.
4	N/A.	N/A.	Check the maintenance kit for applicable modification work orders of (para 3-12).	None.

3-14. Radio Test Circuit Tests

a. Test Equipment and Materials.

(1) Electronic Voltmeter AN/URM-145.

(2) Multimeter ME-26B/U.

(3) Multimeter TS-352B/U.

(4) Standing Wave Ratio Indicator IM-157/U.

(5) Detector DT-307/G.

(6) Electronic Voltmeter ME-30A/U.

(7) Signal Generator AN/USM-44A.

(8) Signal Generator AN/URM-127.

(9) Electronic Voltmeter AN/USM–98.

(10) Attenuator CN-796( )/U.

(11) 50-ohm BNC adapter from Electronic Voltmeter AN/URM-145.

(12) Impedance Adapter MX-1487/URM-25D.

(13) Headset adapter from GS accessories kit.

(14) Headset termination from GS accessories kit.

(15) Microphone termination from GS accessories kit.

(16) Carbon composition resistor, 8,200 ohms, 5 percent, 1/2 watt.

(17) Carbon composition resistor, 510 ohms, 5 percent, 1/2 watt.

(18) Carbon composition resistor, 82 ohms, 5 percent, 1/2 watt.

(19) Carbon composition resistor, 68 ohms, 5 percent, 1/2 watt.

b. Test Connections and Conditions. Tests require that maintenance kit connector P1 be disconnected in certain steps requiring the f rent panel and the chassis assembly to be removed from the bottom case. For ease of testing, it is advisable to have the front panel and the chassis assembly inserted in the bottom case, but not secured to the case, so that these assemblies may be easily removed from the case when required. When tests require the connation of the GS accessories kit microphone and headset terminations to the headset adapter, connect the red double banana plug from the headset adapter to the microphone termination and the black double banana plug to the headset termination. POWER connector J28 should be connected to the facility +28-volt power source with cable CX-10886/AR to provide the necessary operating dc voltage (fig. 3-18).

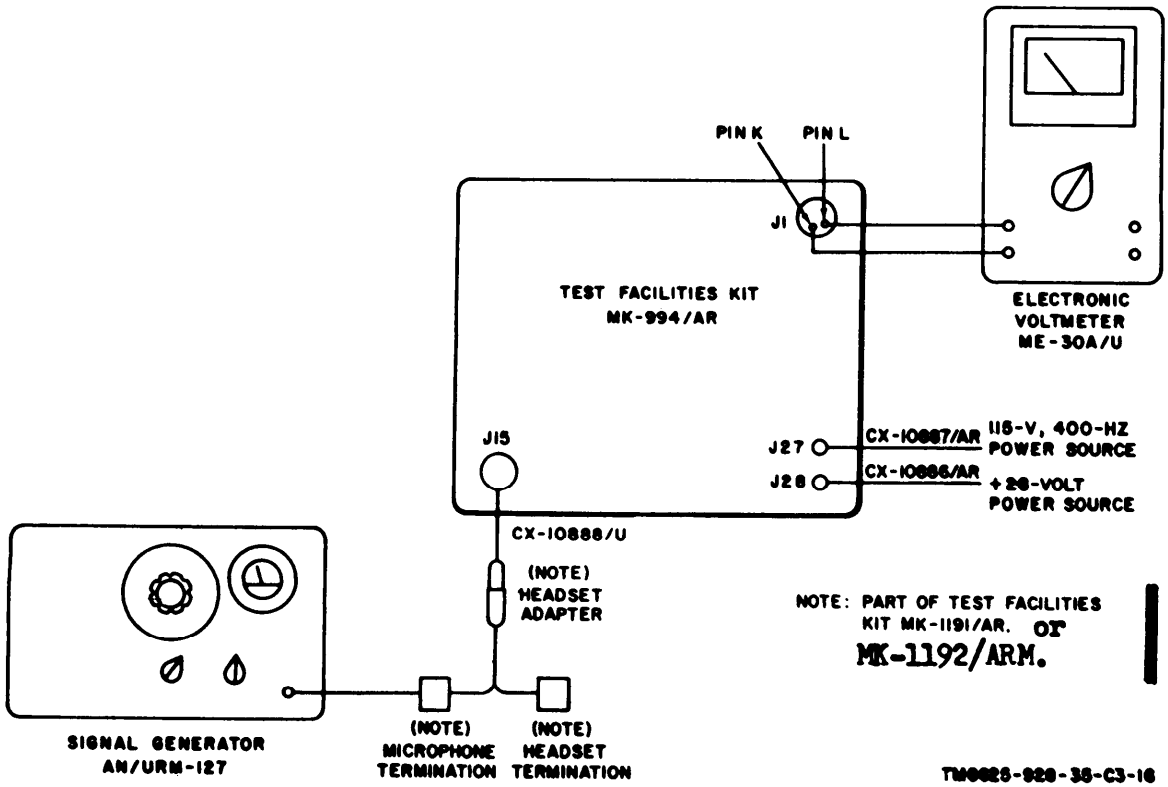


Figure 3-18. Typical test setup.

c. *Procedure* (fig. 5-2)

Step No.	*Test equipment control settings*	*Equipment under test control settings*	*Test procedure*	*Performance standard*
1	None.	AC POWER circuit breaker CB1: OFF. DC POWER circuit breaker CB2: OFF RADIO ANTENNA FUNCTION switch S1: XCVR. RADIO TEST swtich S2: OFF. COMM CONT NO. 1 selector switch: ICS COMM CONT NO. 1 HOT MIKE switch: OFF. COMM CONT NO. 1 monitor switches 1 thru, 5 AUX and NAV: OFF. COMM CONT TEST switch S3: OFF ADF TEST switch S4: OFF. ADF antenna selector switch S5: OFF.	*a.* Set RADIO TEST switch S2 to 1. Measure resistance between: (1) J18-A and J1-b. (2) J18-B and grd. b. Set RADIO TEST switch S2 to 2. Measure resistance between: (1) J18-A and J1-X. (2) J18-B and grd. (3) J1-X and J2-Y. c. Set DC POWER circuit breaker CB2 to ON. (1) Observe DC POWER indi-) Ground J1-H and observe CONTROL SIGNAL light DS2. (3) Ground J2-Z and observe CONTROL SIGNAL light DS2. *d.* Set DC POWER circuit breaker CB2 to OFF, and RADIO TEST switch S2 to 3. Measure resistance (1) J18-A and J1-c. (2) J18-B and grd. (3) J1-g and grd. (4) J17-A and J1-J. *e.* Set RADIO TEST switch S2 to 4. Measure resistance between: (1) J17-A ad J1-Y. (2) J17-A and J2-X. (3) J17-B and grd. (4) J17-B and J18-B. (5) J18-A and J1-d. (6) J2-H and J1-Z. (7) J20H and grd. *f.* Set DC POWER circuit breaker CB2 to ON. Measure resistance between: (1) J1-Z and grd.(1) Short circuit. (2) J2-H and grd. (3) J11 center and J10 center. *g.* Set COMM CONT NO. 1 selector switch to 1. Measure resistance between J1-h and grd using ohmmeter on RX10 scale.	(1) Short circuit. (2) Short circuit. (1) Short circuit. (2) Short circuit. (3) Short circuit. (1) DC POWER indicator light (2) CONTROL SIGNAL light DS2 lights. (3) CONTROL SIGNAL light DS2 lights. (1) Short circuit. (2) Short circuit. (3) Short circuit. (4) Short circuit. (1) Short circuit. (2) Short circuit. (3) Short circuit. (4) Short circuit. (5) Short circuit. (6) Short circuit. (7) Short circuit. (2) Short circuit. (3) Short circuit. *g.* Forward to reverse resistance shall be 1:1000 minimum.

NOTE

Switch RADIO ANTENNA FUNCTION FUNCTION switch S1 off XCVR position for this test.

Step No.	Test equipment control settings	Equipment under test control settings	Test procedure	Performance standard
			Note. It may be necessary to reverse ohmmeter probes to obtain normal indication, since continuity is being checked through a diode.	
			h. Set DC POWER circuit breaker CB2 to OFF, COMM CONT NO. 1 selector switch to ICS, and RADIO TEST switch S2 to 5. Measure resistance between:	
			(1) J17–A and J1–J.	(1) Short circuit.
			(2) J17–B and grd.	(2) Short circuit.
			(3) J1–j and J1–f.	(3) Open circuit (infinite resistance).
			(4) J2–j and J2–f.	(4) Open circuit (infinite resistance).
			i. Set DC POWER circuit breaker CB2 to ON. Measure resistance between:	
			(1) J1–j and J1–f.	(1) Short circuit.
			(2) J2–j and J2–f.	(2) Short circuit.
			j. Disconnect connector P1 from COMM CONT NO. 1, set DC POWER circuit breaker CB2 to OFF and RADIO TEST switch S2 to 6. Measure resistance between:	
			(1) J18–A and grd.	(1) 150 ohms ± 15
			(2) J18–A and J1–d.	(2) Short circuit.
			(3) J18–B and grd.	(3) Short circuit.
			k. Connect P1 to COMM CONT NO. 1, and set RADIO TEST switch S2 to 7. Measure resistance between:	
			(1) J1–C and J1–G.	(1) 1,200 ohms ± 120.
			(2) J1–d and J18–A.	(2) Short circuit.
			l. Set DC POWER circuit breaker CB2 to ON. Measure dc voltage at (1) J1-G; set S2 to position 5 and measure dc voltage at (2) J1-F.	(1) +6.8 volts ±0.4. (2) +6.8 volts ±0.4.
			m. Set DC POWER circuit breaker CB2 to OFF, and RADIO TEST switch S2 to 8. Measure resistance between:	
			(1) J18–A and J1–R.	(1) Short circuit.
			(2) J18–B and grd.	(2) Short circuit.
			n. Set RADIO TEST switch S2 to 9. Measure resistance between:	

Step No.	Test equipment control settings	Equipment under test control settings	Test procedure	Performance standard
			(1) J18–A and J1–S.	(1) Short circuit.
			(2) J18–B and grd.	(2) Short circuit.
			o. Set RADIO TEST switch S2 to 10. Measure resistance between:	
			(1) J18–A and J1–M.	(1) Short circuit.
			(2) J18–A and grd.	(2) 1,500 ohms ± 150.
			p. Set RADIO TEST switch S2 to 11. Measure resistance between:	
			(1) J18–A and J1–W.	(1) Short circuit.
			(2) J18–A and grd.	(2) 1,500 ohms ± 150.
			q. Connect J1-h to ground; set RADIO TEST switch S2 to any position except 4; set DC POWER circuit breaker CB2 to ON. Measure resistance between J10 and J11.	q. Short circuit.
			r. Set DC POWER circuit breaker CB2 to OFF and measure continuity between J1-h (ungrounded) and J1-Z. Reverse ohmmeter leads and measure again with reverse polarity to check diodes.	r. Open circuit.
2	None.	Same as above.	Measure resistance from J9 center conductor to J9 shield.	51 ohms ±5.
3	None.	Same as above.	a. Connect am. generator to attenuator, attenuator to detector, and detector to swr indicator, and adjust am. generator for the following output: Amplitude: –30 dbm. Frequency: 30 MHz. Modulation: 1 kHz at 50%.	a. None.
			b. Set attenuator to 0 db, swr indicator INPUT SELECTOR switch to XTAL 200 KΩ, swr indicator RANGE switch to 50, then adjust swr indicator VERNIER and GAIN controls to obtain a 0 db indication on meter.	b. None.
			c. Disconnect the attenuator from the detector, and connect the output of the attenuator to J12.	c. None.

Step No.	Test equipment control settings	Equipment under test control settings	Test procedure	Performance standard
			d. Connect the input of the detector to J11, and slowly increase output of am. generator to obtain a 0 db indication on swr indicator. Observe output dial indication on am. generator.	*d.* −7.5 to −9.5 dbm.
			e. Connect 50-ohm terminations to J11 and J13 and detector to J14. Set DC POWER circuit breaker CB2 to ON, and RADIO ANTENNA FUNCTION switch S1 to HOMING LEFT.	*e.* None.
			f. Set amplitude of am. generator to −4 dbm and observe db indication on swr indicator. Record indication for later use.	*f.* None.

Step No.	Test equipment control settings	Equipment under test control settings	Test procedure	Performance standard
			g. Set RADIO ANTENNA FUNCTION switch S1 to HOMING RIGHT, and observe indication on swr indicator. Record indication for later use.	*g.* None.
			h. Set RADIO ANTENNA FUNCTION switch to HOMING BALANCE, and observe indication on swr indicator. Record indication for later use.	*h.* None.
			i. Remove 50-ohm termination from J13 and detector from J14. Connect 50-ohm termination to J14 and detector to J13.	*i.* None.
			j. Set RADIO ANTENNA FUNCTION switch S1 to HOMING LEFT, and slowly adjust output of am. generator to obtain same indication on swr indicator as was obtained in *f* above. Observe output dial indication on am. generator.	*j.* - 6 to - 8 dbm.
			k. Set RADIO ANTENNA FUNCTION switch S1 to HOMING RIGHT, and slowly adjust output of am. generator to obtain same indication on swr indicator as was obtained in *g* above. Observe output dial indication on am. generator.	*k.* - 6 to -2 dbm.
			l. Set RADIO ANTENNA FUNCTION switch S1 to HOMING BALANCE, and slowly adjust output of am. generator to obtain same indication on swr indicator as was obtained in *h* above. Observe output dial indicator on am. generator.	*l.* -3.5 to -4.5 dbm.
			m. Disconnect am. generator and 50-ohm terminations from maintenance kit.	*m.* None.

Step No.	Test equipment control settings	Equipment under test control settings	Test procedure	Performance standards
4	None.	Same as above.	a. Set DC POWER CIRCUIT breaker CB2 to ON. Observe fm homing on-off indicator on HOMING/ADF/GYRO indicator.	a. Indicator displays three orange sectors.
			b. Ground J1-A, and observe fm homing on-off indicator.	b. Indicator displays all black.
5	None.	Same as above.	a. Fabricate a resistive voltage divider and connect it to the +28-volt power source as shown in figure 3-17. Adjust the power source output for a +0.075-volt output from probe C as monitored on dc voltmeter.	a. None.
			b. Apply probe C to J1-B and probe A to J1-V; observe station passage meter pointer on HOMING/ ADF/ GYRO indicator.	b. Pointer points towards center dot on station passage meter scale.
			c. Remove probes from J1 and observe station passage meter.	c. Pointer is at rest on dot nearest top of maintenance kit front panel.
6	None.	Same as above.	a. Adjust the +28-volt power source for a +0.075-volt output from probe B as monitored on dc voltmeter.	a. None.
			b. Apply probe B to J1-T and probe C to J1-U; observe steering meter pointer on HOMING/ADF/ GYRO indicator.	b. Pointer points to first dot left of center dot.
			c. Apply probe C to J1-T and probe B to J1-U; observe steering meter pointer.	c. Pointer points to first dot right of center dot.
			d. Remove probes from J1 and observe steering meter pointer.	d. Pointer points to center dot.
7	None.	Same as above.	Connect cable CX-10888/U to J15, headset adapter to CX-10888/U, and microphone and headset terminations to headset adapter. Set DC POWER circuit breaker CB2 to ON, COMM CONT NO. 1 selector switch to 1, and COMM CONT TEST switch S3 to 2. Adjust audio generator for following output: Frequency: 1 kHz. Amplitude: 600 mv rms.	330 to 460 mv rms into a 150-ohm load.

Step No.	Test equipment control settings	Equipment under test control settings	Test procedure	Performance standard
			Apply audio generator output to microphone termination and measure audio voltage between J1-K and J1-L (grd) while holding HEADSETS 1 switch S6 to TRANSMIT.	
8	None.	Same as above.	a. Set COMM CONT NO. 1 selector switch to 1, DC POWER circuit breaker CB2 to ON, and VOL control fully cw. Adjust audio generator for following output: Frequency: 1 kHz. Amplitude: 2.75 volts rms. Apply audio generator output to J1-d and J1-e (grd) and measure audio voltage at headset termination.	a. 1.10 to 2.75 v rms max.
			b. Disconnect audio generator, voltmeter and cable CX-10888/U from maintenance kit.	b. None.
9	None.	Same as above.	a. Set DC POWER circuit breaker CB2 to ON, and measure voltage between:	
			(1) J1-C and J1-E (grd).	(1) +27.5 volts ± 2.75
			(2) J1-D and J1-E (grd).	(2) +27.5 volts ± 2.75
			b. Set DC POWER circuit breaker CB2 to OFF. Measure resistance between:	
			(1) J1-C and J4-L.	(1) 200 ohms ± 50
			(2) J1-D and J2-D.	(2) Short circuit.
			(3) J1-E and grd.	(3) Short circuit.
			(4) J1-E and J2-E.	(4) Short circuit.
			(5) J1-F and J1-G.	(5) Open circuit
			(6) J1-H and J2-Z.	(6) Short circuit.
			(7) J1-L and grd.	(7) Short circuit.
			(8) J1-L and J2-L.	(8) Short circuit.
			(9) J1-P and grd.	(9) Short circuit.
			(10) J1-P and J2-P.	(10) Short circuit.
			(11) J1-Z and J2-H.	(11) Short circuit.
			(12) J1-a and grd.	(12) Short circuit.
			(13) J1-a and J2-a.	(13) Short circuit.
			(14) J1-e and grd.	(14) Short circuit.
			(15) J1-e and J2-e.	(15) Short circuit.
			(16) J2-B and J2-V.	(16) Short circuit.
			(17) J2-h and J3-N.	(17) Short circuit.

3-15. Communication Control Test Circuits Tests

a. Test Equipment and Materials.

(1) Electronic Voltmeterr ME-30A/U.

(2) Multimeter ME-26B/U.

(3) Signal Generator AN/URM-127.

(4) Headset adapter from GS accessories kit.

(5) Headset termination from GS accessories kit.

(6) Microphone termination from GS accessories kit.

b. Test Connection and Conditions. Tests require that maintenance kit connector P12 be disconnected in certain steps requiring the front panel and the chassis assembly to be removed from the bottom case. For ease of testing, it is advisable to have the front panel and the chassis assembly inserted in the bottom case, but not secured to the case, so that these assemblies may be easily removed from the case when required. When tests dictate to connect the GS accessories kit microphone and headset terminations to the headset adapter, connect the red double banana plug from the headset adapter to the microphone termination and the black double banana plug to the headset termination. POWER connector J28 should be connected to the facility 28-volt power source with cable CX-10886/AR to provide the necessary operating dc voltage (fig. 3-18).

Step No.	Test equipment control settings	Equipment under test control settings	Test procedure	Performance standard
1	None.	AC POWER circuit breaker CB1: OFF. DC POWER circuit breaker CB2: OFF. RADIO ANTENNA FUNCTION switch S1: XCVR. RADIO TEST switch S2: OFF. COMM CONT NO. 1 selector switch: ICS. COMM CONT NO. 1 HOT MIKE switch: OFF. COMM CONT NO. 1 VOL control: clockwise. COMM CONT NO. 1 monitor switches 1 thru 5, AUX, and NAV: OFF. COMM CONT TEST switch S3: OFF. ADF TEST switch S4: OFF. ADF antenna selector switch S5: OFF.	*a.* Hold HEADSETS 2 switch S7 to INTERCOM. Measure resistance between J3–E and J3–K. *b.* Release HEADSETS 2 switch S7. Measure resistance between: (1) J3–E and J3–K. (2) J3–M and grd. (3) J3–Y and grd. *c.* Hold HEADSETS 2 switch S7 to TRANSMIT. Measure resistance between J3–B and J3–K. *d.* Release HEADSETS 2 switch S7. Measure resistance between J3–B and J3–K.	*a.* Short circuit. (1) Open circuit. (2) Short circuit. (3) Short circuit. *c.* Short circuit. *d.* Open circuit.
2	None.	Same as above.	*a.* Disconnect connector P1 from COMM CONT NO. 1, and set COMM CONT TEST switch S3 to 1. Measure resistance between: (1) J19–A and J16–A. (2) J19–A and J3–C. (3) J19–A and J19–B. (4) J19–B and J16–A. (5) J19–B and J3–A. (6) J20–A and J3–d. (7) J20–A and grd. (8) J20–B and grd. (9) J20–B and J3–Z. *b.* Connect P1 to COMM CONT NO. 1, cable CX–10888/U to J15 headset adapter to CX–10888/U, and microphone and headset terminations to headset adapter. Set DC POWER circuit CB2 to ON, and apply a 1 kHz signal from audio generator to J20. Adjust amplitude of 1-kHz audio generator input until audio output voltage at headset termination is 1.25 volts rms. Measure audio voltage at J20.	(1) 5,100 ohms ±510 (2) 5,100 ohms ±510 (3) 5,105 ohms ±510 (4) 5.1 ohms ±0.5. (5) Short circuit. (6) Short circuit. (7) 150 ohms ±15 (8) Short circuit. (9) Short circuit. *b.* 1.10 to 2.75 v rms.

Step No.	Test equipment control settings	Equipment under test control settings	Test procedure	Performance standard
			c. Connect audio generator to microphone termination, and adjust audio generator for following output: Frequency: 1 kHz. Amplitude: 600 mv rms. Measure the audio voltage at J20 while holding HEADSETS 1 switch S6 to INTERCOM. Release HEADSETS 1 switch S6, and disconnect voltmeter and cable CX-10888/U from maintenance kit.	c. 2.30 to 3.30 v rms.
			d. Set COMM CONT TEST switch S3 to 2. Apply a ground to:	
			(1) J3-X.	(1) CONTROL SIGNAL light DS2 lights.
			(2) J3-T.	(2) CONTROL SIGNAL light DS 2 lights.
			(3) J3-N.	(3) CONTROL SIGNAL light DS2 lights.
			(4) J3-J.	(4) CONTROL SIGNAL light DS2 lights.
			(5) J3-b.	(5) CONTROL SIGNAL light DS2 lights.
			e. Set DC POWER circuit breaker CB2 to OFF. Measure resistance between:	
			(1) J2-h and J3-b.	(1) Short circuit.
			(2) J19-A and J16-A.	(2) 5,100 ohms ± 510.
			(3) J19-B and J16-C.	(3) Short circuit.
			(4) J20-A and J2-K.	(4) Short circuit.
			(5) J20-A and J3-V.	(5) Short circuit.
			(6) J20-A and J3-R.	(6) Short circuit.
			(7) J20-A and J3-L.	(7) Short circuit.
			(8) J20-A and J3-F.	(8) Short circuit.
			(9) J20-A and J3-P.	(9) Short circuit.
			(10) J20-B and grd.	(10) Short circuit.
			f. Set COMM CONT TEST switch S3 to 3. Measure resistance between:	
			(1) J19-A and J2-d.	(1) Short circuit.
			(2) J19-A and J3-e.	(2) Short circuit.
			(3) J19-A and J3-k.	(3) Short circuit.
			(4) J19-A and J3-s.	(4) Short circuit.
			(5) J19-A and J3-p.	(5) Short circuit.
			(6) J19-A and J3-m.	(6) Short circuit.

Step No.	Test equipment control settings	Equipment under test control settings	Test procedure	Performance standard
			(7) J19–A and J3–G.	(7) Short circuit.
			(8) J19–A and grd.	(8) 150 ohms ± 15
			(9) J19–B and grd.	(9) Short circuit.
			(10) J19–B and J3–Z.	(10) Short circuit.
			(11) J20–A and J3–t.	(11) Short circuit.
			(12) J20–A and J16–B.	(12) Short circuit.
			(13) J20–A and J20–B.	(13) 8.2 ohms ±0.82.
			(14) J20–B and J3–q.	(14) Short circuit.
			(15) J20–B and J16–D.	(15) Short circuit.
			f. Set COMM CONT TEST switch S3 to 4. Measure resistance between:	
			(1) J19–A and J3–h.	(1) Short circuit.
			(2) J19–A and grd.	(2) 620 ohms ±31.
			(3) J19–B and grd.	(3) Short circuit.
			(4) J20–A and J3–t.	(4) Short circuit.
			(5) J20–B and J3–q.	(5) Short circuit.
			g. Set COMM CONT TEST switch S3 to 5. Measure resistance between:	
			(1) J19–A and J3–i.	(1) Short circuit.
			(2) J19–A and grd.	(2) 150 ohms ±7.5.
			(3) J19–B and grd.	(3) Short circuit.
			(4) J20–A and J3–t.	(4) Short circuit.
			(5) J20–B and J3–q.	(5) Short circuit.
			h. Set COMM CONT TEST switch S3 to 6. Measure resistance between:	
			(1) J19–A and J3–g.	(1) Short circuit.
			(2) J19–A and grd.	(2) 150 ohms ± 15
			(3) J19–B and grd.	(3) Short circuit.
			(4) J20–A and J3–t.	(4) Short circuit.
			(5) J20–B and J3–q.	(5) Short circuit.
			i. Disconnect connector P1 from COMM CONT NO. 1, and set COMM CONT TEST switch S3 to 7. Measure resistance between:	
			(1) J19–A and J3–d.	(1) Short circuit.
			(2) J19–A and grd.	(2) 150 ohms ± 15
			(3) J19–B and grd.	(3) Short circuit.
			(4) J20–A and J3–t.	(4) Short circuit.
			(5) J20–B and J3–q.	(5) Short circuit.
			j. Connect P1 to COMM CONT NO. 1, and set COMM CONT TEST switch S3 to 8. Measure resistance between:	

Step No.	Test equipment control settings	Equipment under test control settings	Test procedure	Performance standard
			(1) J19–A and J3–r.	(1) Short circuit.
			(2) J19–A and grd.	(2) 150 ohms ±15
			(3) J19–B and grd.	(3) Short circuit.
			(4) J20–A and J3–t.	(4) Short circuit.
			(5) J20–B and J3–q.	(5) Short circuit.
			k. Set COMM CONT TEST switch S3 to 9. Measure resistance between:	
			(1) J19–A and J3–a.	(1) Short circuit.
			(2) J19–A and grd.	(2) 150 ohms ±15
			(3) J19–B and grd.	(3) Short circuit.
			(4) J20–A and J3–t.	(4) Short circuit.
			(5) J20–B and J3–q.	(5) Short circuit.
			l. Set COMM CONT TEST switch S3 to 10. Measure resistance between:	
			(1) J19–A and J3–f.	(1) Short circuit.
			(2) J19–A and grd.	(2) 150 ohms ±15
			(3) J19–B and grd.	(3) Short circuit.
			(4) J20–A and J3–t.	(4) Short circuit.
			(5) J20–B and J3–q.	(5) Short circuit.
			m. Set COMM CONT TEST switch S3 to OFF.	*n.* None.

3-16. Adf Test Circuit Tests

a. Test Equipment and Materials.

(1) Multimeter ME-26B/U.

(2) RF Signal Generator Set AN/URM-25D.

(9) Signal Generator AN/URM-127.

(4) Electronic Voltmeter ME-30A/U.

(5) Electronic Voltmeter AN/URM-145.

(6) Headset adapter from GS accessories

(7) Headset termination from GS accessories kit.

(8) Microphone termination from GS accessories kit.

(9) DM to BNC adapter, polarity A, from GS accessories kit.

(10) DM to BNC adapter, polarity E, from GS accessories kit.

(11) DM to BNC adapter, polarity F, from GS accessories kit.

(12) BNC adapter jack UG-914/U from GS accessories kit.

(13) Impedance Adapter MX-1487/URM-25.

(14) 50-ohm bnc adapter from Electronic Voltmeter AN/URM-145.

b. Test Connections and Conditions. Tests are performed with the front panel and the chassis assembly installed in the bottom of the case. When tests dictate to connect the GS accessories kit microphone and headset terminations to the headset adapter, connect the red double banana plug from the headset adapter to the microphone termination and the black double banana plug to the headset termination. POWER connector J28 should be connected to the facility 28-volt power source with cable CX–10886/AR to provide the necessary operating dc voltage (fig. 3–18). To check the 115-volt, 400-Hz circuitry, connect POWER connector J27 to facility 115-volt, 400-Hz, power source with cable CX-10887/AR (fig. 3-18).

Step No.	Test equipment control settings	Equipment under test control settings	Test procedure	Performance standard
1	None.	AC POWER circuit breaker CB1: OFF. DC POWER circuit breaker CB2: OFF. RADIO ANTENNA FUNCTION switch S1: ±OVR. RADIO TEST switch S2: OFF. COMM CONT NO. 1 selector switch: ICS. COMM CONT NO. 1 HOT MIKE switch: OFF. COMM CONT NO. 1 monitor switches 1 thru 5, AUX, and NAV: OFF. COMM CONT TEST switch S3: OFF. ADF TEST switch S4: OFF. ADF antenna selector switch S5: OFF.	a. Set ADF TEST switch S4 to 1. Measure resistance between: (1) J21–A and J5–A. (2) J21–A and J6–A. (3) J21–B and grd. (4) J21–B and J22–B. (5) J22–A and J5–B. (6) J22–A and J6–B. (7) J22–B and grd.	 (1) Short circuit. (2) Short circuit. (3) Short circuit. (4) Short circuit. (5) Short circuit. (6) Short circuit. (7) Short circuit.
		b. Set ADF TEST switch S4 to 2. Measure resistance between: (1) J21–A and J4–E. (2) J21–A and J4–G. (3) J21–B and J4–D. (4) J22–A and J5–F. (5) J22–A and J6–F. (6) J22–B and grd.	 (1) Short circuit. (2) Short circuit. (3) Short circuit. (4) Short circuit. (5) Short circuit. (6) Short circuit.
		c. Set ADF TEST switch S4 to 3. Measure resistance between: (1) J21–A and J5–D. (2) J21–A and J6–D. (3) J21–B and grd. (4) J22–A and J5–L. (5) J22–A and J6–L. (6) J22–B and grd.	 (1) Short circuit. (2) Short circuit. (3) Short circuit. (4) Short circuit. (5) Short circuit. (6) Short circuit.
		d. Set ADF TEST switch S4 to 4. Measure resistance between: (1) J21–A and J5–P. (2) J21–A and J6–P. (3) J21–B and grd. (4) J22–A and J5–M. (5) J22–A and J6–M. (6) J22–B and grd.	 (1) Short circuit. (2) Short circuit. (3) Short circuit. (4) Short circuit. (5) Short circuit. (6) Short circuit.
		e. Set ADF TEST switch S4 to 5. Measure resistance between: (1) J21–A and J4–A. (2) J21–A and J21–B. (3) J21–B and grd. (4) J22–A and J5–S. (5) J22–A and J6–S. (6) J22–B and grd.	 (1) Short circuit. (2) 150 ohms ± 15 (3) Short circuit. (4) Short circuit. (5) Short circuit. (6) Short circuit.
		f. Set ADF TEST switch S4 to 6, and AC POWER circuit breaker CB1 to ON. Measure ac voltage at J21 and observe AC POWER indicator light DS1.	f. 26 volts rms ±2, and AC POWER indicator light DS1 lights.

Step No.	Test equipment control settings	Equipment under test control settings	Test procedure	Performance standard
			g. Set AC POWER circuit breaker CB1 to OFF. Measure ac voltage at J21 and observe AC POWER indicator light DS1.	g. 0 volt, and AC POWER indicator light DS1 is out.
			h. Measure resistance between: (1) J22–A and J5–E. (2) J22–A and J6–E. (3) J22–B and grd.	 (1) Short circuit. (2) Short circuit. (3) Short circuit.
			i. Connect cable CX–10888/U to J15, headset adapter to CX–10888/U, and microphone and headset terminations to headset adapter. Set ADF TEST switch S4 to 5, and DC POWER circuit breaker CB2 to ON. Set COMM CONT NO. 1 NAV switch to ON, and VOL control to max cw. Connect audio generator to J21 and adjust for following output: Frequency: 1 kHz. Amplitude: 2.75 volts rms. Measure audio voltage at headset termination, then disconnect audio generator and cable CX–10888/U from maintenance kit.	i. 1.26 volts rms minimum.
2	None.	Same as above.	a. Set ADF antenna selector switch S5 to COMP. Connect 50-ohm terminations to J25 and J26, with applicable DM to BNC adapters, and set DC POWER circuit breaker CB2 to ON. Connect RF generator to J23 and adjust for following output: Frequency: 3 MHz. Amplitude: 50 mv rms, unmodulated. Measure rf voltage at J24, using applicable DM to BNC adapter and BNC adapter jack UG–914/U between J24 and RF voltmeter.	a. 17 mv rms ±2.
			b. Set ADF antenna selector switch S5 to LOOP, then X. Measure RF voltage at J24 for each switch position.	b. 17 mv rms ±2 for both switch positions.

Step No.	Test equipment control settings	Equipment under test control settings	Test procedure	Performance standard
			c. Remove 50-ohm termination from J25 and connect it to J24. Set ADF antenna selector switch S5 to COMP. Measure RF voltage at J25.	c. 17 mv rms ± 2.
			d. Set ADF antenna selector switch S5 to LOOP, then Y. Measure RF voltage at J25 for each switch position.	d. 17 mv rms ± 2 for both switch positions.
			e. Remove 50-ohm termination from J26 and connect it to J25. Set ADF antenna selector switch S5 to COMP. Measure RF voltage at J26.	e. 12.0 mv rms ± 1.5.
			f. Set ADF antenna selector switch S5 to ANT. Measure RF voltage at J26.	f. 12.0 mv rms ± 1.5.
			g. Set ADF antenna selector switch S5 to OFF, and DC POWER circuit breaker CB2 to OFF. Disconnect RF generator and 50-ohm terminations from maintenance kit.	g. None.
3	None.	Same as above.	Measure resistance between:	
			a. J4—B and grd.	a. Short circuit.
			b. J4—C and grd.	b. Short circuit.
			c. J4—F and grd.	c. Short circuit.
			d. J4—H and J4—D.	d. Short circuit.
			e. J4—K and J4—L.	e. 100 ohms ±10.
			f. J4—M and grd.	f. Short circuit.
			g. J5—A and J6—A.	g. Short circuit.
			h. J5—B and J6—B.	h. Short circuit.
			i. J5—C and J6—C.	i. Short circuit.
			j. J5—D and J6—D.	j. Short circuit.
			k. J5—E and J6—E.	k. Short circuit.
			l. J5—F and J6—f.	l. Short circuit.
			m. J5—G and J6—G.	m. Short circuit.
			n. J5—L and J6—L.	n. Short circuit.
			o. J5—M and J6—M.	o. Short circuit.
			p. J5—P and J6—P.	p. Short circuit.
			q. J5—S and J6—S.	q. Short circuit.
			r. J5—T and J6—T.	r. Short circuit.

3-17. Interconnecting Box J-4247/AR Circuit Tests

a. Test Equipment and Material. Multimeter ME-26B/U.

b. Test Connections and Conditions. Tests are performed on the J-4247/AR (fig. 3-19) with no external connections. The multimeter is placed in the resistance measurement mode of operation for all tests. A detailed schematic of the Interconnecting Box J-4247/AR is provided as figure 5-10.

Step no.	*Test equipment control settings*	*Equipment under test control settings*	*Test procedure*	*Performance standard*
1	Resistance mode X10 scale	Any setting	Remove caps off all connectors of the J-4247/AR. Measure resistance between:	
			(1) P1-P and GND Test Point	(1) Short Circuit
			(2) P1-E and GND Test Point	(2) Short circuit
			(3) P1-K and AUD IN LVL ADJ Red Jack	(3) Short Circuit
			(4) P1-L and AUD IN LVL ADJ Black Jack	(4) Short circuit
			(5) P1-F and P4-11	(5) Short circuit
			(6) P1-F and P5-F	(6) Short circuit
			(7) P1-F and P3-F	(7) Short circuit
			(8) P1-F and AM-AGC Test Point	(8) Short circuit
			(9) P1-N and P4-4	(9) Short circuit
			(10) P1-N and AM ADF Test Point	(10) Short circuit
			(11) P1-R and P4-15	(11) Short circuit
			(12) P1-R and P6-R	(12) Short circuit
			(13) P1-R and ENBL HOM Test Point	(13) Short circuit
			(14) P1-T and P6-P	(14) Short circuit
			(15) P1-U and P6-N	(15) Short circuit
			(16) P1-U and ADF AUDIO Test Point	(16) Short circuit
			(17) P1-h and PTT Test Point	(17) Short circuit
			(18) P1-h and P3-h	(18) Short circuit
			(19) P1-M and P8-n	(19) Short circuit
			(20) P1-M and P9-p	(20) Short circuit
			(21) P1-M and J1-A	(21) Short circuit
			(22) P1-H and P3-A	(22) Short circuit
			(23) P1-H and P3-H	(23) Short circuit
			(24) P1-H and P6-Z	(24) Short circuit
			(25) P1-H and P6-A	(25) Short circuit
			(26) P1-e and P3-e	(26) Short circuit
			(27) P1-e and P9-b	(27) Short circuit
			(28) P1-e and P8-KK	(28) Short circuit
			(29) P1-a and P3-a	(29) Short circuit
			(30) P1-J and P3-J	(30) Short circuit
			(31) P1-X and P3-X	(31) Short circuit
			(32) P1-Y and P3-Y	(32) Short circuit
			(33) P1-g and P3-g	(33) Short circuit
			(34) P1-c and P3-c	(34) Short circuit
			(35) P1-Z and P3-Z	(35) Short circuit
			(36) P2-D and P8-EE	(36) Short circuit
			(37) P2-D and P9-j	(37) Short circuit
			(38) P2-D and INTLK X MODE Test Point	(38) Short circuit
			(39) P2-C and GND Test Point	(39) Short circuit
			(40) P2-C and P8-W	(40) Short circuit
			(41) P2-C and P9-i	(41) Short circuit
			(42) P2-H and 24 VDC Test Point	(42) Short circuit
			(43) P2-H and P4-5	(43) Short circuit
			(44) P2-H and P6-D	(44) Short circuit
			(45) P2-S and TN Key Test Point	(45) Short circuit
			(46) P2-S and P8-X	(46) Short circuit
			(47) P2-S and P9-h	(47) Short circuit
			(48) P2-M and Data – Test Point	(48) Short circuit
			(49) P2-M and P8-BB	(49) Short circuit

Step no.	*Test equipment control settings*	*Equipment under test control settings*	*Test procedure*	*Performance standard*
			(50) P2-M and P9-R	(50) Short circuit
			(51) P2-L and Data + Test Point	(51) Short circuit
			(52) P2-L and P8-CC	(52) Short circuit
			(53) P2-L and P9-P	(53) Short circuit
			(54) P2-J and Clock + Test Point	(54) Short circuit
			(55) P2-J and P8-T	(55) Short circuit
			(56) P2-J and P9-M	(56) Short circuit
			(57) P2-K and Clock − Test Point	(57) Short circuit
			(58) P2-K and P8-G	(58) Short circuit
			(59) P2-K and P9-N	(59) Short circuit
			(60) P2-G and UNATTEN LOW Test Point	(60) Short circuit
			(61) P2-G and P8-LL	(61) Short circuit
			(62) P2-G and P9-a	(62) Short circuit
			(63) P2-E and UNATTEN HIGH Test Point	(63) Short circuit
			(64) P2-E and P8-JJ	(64) Short circuit
			(65) P2-E and P9-e	(65) Short circuit
			(66) P2-P and P6-F	(66) Short circuit
			(67) P2-P and FM H BAND Test Point	(67) Short circuit
			(68) P2-R and 80 VDC Test Point	(68) Short circuit
			(69) P2-R and P4-13	(69) Short circuit
			(70) P2-R and P6-V	(70) Short circuit
			(71) P2-T and 5.1 VDC Test Point	(71) Short circuit
			(72) P2-T and P8-J	(72) Short circuit
			(73) P2-T and P9-U	(73) Short circuit
			(74) P2-T and P4-6	(74) Short circuit
			(75) P2-T and P6-W	(75) Short circuit
			(76) P2-U and ON/OFF PWR Test Point	(76) Short circuit
			(77) P2-U and P8-P	(77) Short circuit
			(78) P2-U and P9-T	(78) Short Circuit
			(79) P2-B and AM/FM CONT Test Point	(79) Short circuit
			(80) P2-B and P6-U	(80) Short circuit
			(81) P2-B and P4-7	(81) Short circuit
			(82) P3-U and P4-10	(82) Short circuit
			(83) P3-U and P5-U	(83) Short circuit
			(84) P3-R and P4-14	(84) Short circuit
			(85) P3-R and P5-R	(85) Short circuit
			(86) P3-T and P5-T	(86) Short circuit
			(87) P3-T and P4-9	(87) Short circuit
			(88) P3-D and P5-D	(88) Short circuit
			(89) P3-D and 27.5 VDC Test Point	(89) Short circuit
			(90) P3-B and P5-B	(90) Short circuit
			(91) P3-B and P4-2	(91) Short circuit
			(92) P3-V and P4-12	(92) Short circuit
			(93) P3-V and P5-V	(93) Short circuit
			(94) P3-P and GND Test Point	(94) Short circuit
			(95) P3-E and GND Test Point	(95) Short circuit

Step no.	*Test equipment control settings*	*Equipment under test control settings*	*Test procedure*	*Performance standard*
			(96) J1-C and GND Test Point	(96) Short circuit
			(97) J1-D and P1-M	(97) Short circuit
			(98) P4-3 and GND Test Point	(98) Short circuit
			(99) P5-a and GND Test Point	(99) Short circuit
			(100) P5-E and GND Test Point	(100) Short circuit
			(101) P5-A and FLAG CM-492 Test Point	(101) Short circuit
			(102) P6-m and GND Test Point	(102) Short circuit
			(103) P6-q and GND Test Point	(103) Short Circuit
			(104) P6-p and GND Test Point	(104) Short circuit
			(105) J1-A and P8-n	(105) Short circuit
			(106) J1-A and P9-p	(106) Short circuit
			(107) P8-B and GND Test Point	(107) Short circuit
			(108) P8-w and GND Test Point	(108) Short circuit
			(109) P9-z and GND Test Point	(109) Short circuit
			(110) P9-c and GND Test Point	(110) Short circuit
2	Resistance mode X10 Scale	PNL LAMP PWR switch: DC	Measure resistance between:	
			(1) P1-C and P8-a	(1) Short circuit
			(2) P1-C and P9-n	(2) Short circuit
			(3) P8-b and GND Test Point	(3) Short circuit
			(4) P9-m and GND Test Point	(4) Short circuit
		PNL LAMP PWR switch: OFF		
			(5) P1-C and P8-a	(5) Open circuit
			(6) P1-C and P9-n	(6) Open circuit
			(7) P9-m and GND Test Point	(7) Open circuit
		PNL LAMP PWR switch: AC	(8) P8-b and GND Test Point	(8) Open circuit
			(9) J1-B and P8-b	(9) Short circuit
			(10) J1-B and P9-m	(10) Short circuit
		PNL LAMP PWR switch: OFF	(11) J1-B and P1-C	(11) Short circuit
			(12) J1-B and P8-b	(12) Open circuit
			(13) J1-B and P9-m	(13) Open circuit
			(14) J1-B and P1-C	(14) Open circuit
3	Resistance mode X10 Scale	RT PWR switch: ON	Measure resistance between:	
			(1) P1-D and P3-D	(1) Short circuit
			(2) P1-D and P5-D	(2) Short circuit
			(3) P1-D and P8-a	(3) Short circuit
			(4) P1-D and 27.5 VDC Test Point	(4) Short circuit
			(5) P7-D and P2-U	(5) Short circuit
			(6) P7-D and P8-p	(6) Short circuit
			(7) P7-D and P9-T	(7) Short circuit
			(8) P7-D and PWR ON/OFF Test Point	(8) Short circuit
4	Resistance mode X10 Scale	ANT switch: FM	Measure resistance between:	
		ANT switch: AM	(1) P2-A and GND Test Point	(1) Short circuit
			(2) P2-A and GND Test Point	(2) Open circuit
5	Resistance mode X10 Scale	TAKE CONT switch: RMT	Measure resistance between:	
			(1) P2-N and GND Test Point	(1) Short circuit
			(2) P3-d and P8-N	(2) Short circuit
			(3) P3-d and P9-d	(3) Short circuit
			(4) P8-p and GND Test Point	(4) Open circuit
			(5) P3-d and P1-d	(5) Open circuit
		TAKE CONT switch: RT	(6) P2-N and GND Test Point	(6) Open circuit
			(7) P3-d and P9-d	(7) Open circuit
			(8) P8-p and GND Test Point	(8) Short circuit
			(9) P9-S and GND Test Point	(9) Short circuit
			(10) P3-d and P1-d	(10) Short circuit

Step no.	*Test equipment control settings*	*Equipment under test control settings*	*Test procedure*	*Performance standard*
6	Resistance mode X10 Scale	TAKE control: RT	Measure resistance between:	
			(1) P8-P and GND Test Point	(1) Short circuit
			(2) P9-S and GND Test Point	(2) Short circuit
			(3) P3-d and P1-d	(3) Short circuit
			Measure resistance between:	
7	Resistance mode X10 Scale	SQUELCH switch: DSBL	(1) P1-j and GND	(1) Short circuit
		SQUELCH switch: TN	(2) P1-j and GND	(2) Open circuit
			Measure resistance between:	
8	Resistance mode X-1 Scale	PARITY switch; EVEN	(1) P7-A (pos) and P7-D (neg)	(1) 5 to 15 ohms
		PARITY switch: ODD	(2) P7-A (pos) and P7-D (neg)	(2) Open circuit
			Measure resistance between:	
9	Resistance mode X10 Scale	X MODE switch: WB	(1) P6-P and GND	(1) Short circuit
			(2) GND and P1-T	(2) Short circuit
		X MODE switch: NB	(3) P6-P and GND	(3) Open circuit
			(4) GND and P1-T	(4) Open circuit
			Measure resistance between:	
10	Resistance mode X10 Scale	VOL CONT switch: GND	(1) P9-A and GND	(1) Short circuit
			(2) GND and P8-K	(2) Short circuit
		VOL CONT switch: OPR	(3) P9-A and GND	(3) Open circuit
			(4) GND and P8-K	(4) Open circuit
			Measure resistance between:	
11	Resistance mode X1 Scale	EMER switch: FM	(1) P7-D (neg) and P7-P (pos)	(1) 5 to 15 ohms
		EMER switch: NORM	(2) P7-D (neg) and P7-P (pos)	(2) Open circuit
		EMER switch: AM	(3) P7-D (neg) and P7-R (pos)	(3) 5 to 15 ohms
		EMER switch: NORM	(4) P7-D (neg) and P7-R (pos)	(4) Open circuit
12	Resistance mode X1 Scale	MODE switch: FLT	(1) P7-D (neg) and P7-T (pos)	(1) 5 to 15 ohms
		MODE switch: NORM	(2) P7-D (neg) and P7-T (pos)	(2) Open circuit
		MODE switch: LD	(3) P7-D (neg) and P7-M (pos)	(3) 5 to 15 ohms
		MODE switch: NORM	(4) P7-D (neg) and P7-M (pos)	(4) Open circuit
			(5) P7-D (neg) and P7-C (pos)	(5) 5 to 15 ohms
			(6) P7-D (neg) and P7-E (pos)	(6) 5 to 15 ohms
			(7) P7-D (neg) and P7-G (pos)	(7) 5 to 15 ohms
			(8) P7-D (neg) and P7-J (pos)	(8) 5 to 15 ohms
			(9) P7-D (pos) and P7-C (neg)	(9) Open circuit
			(10) P7-D (pos) and P7-E (neg)	(10) Open circuit
			(11) P7-D (pos) and P7-G (neg)	(11) Open circuit
			(12) P7-D (pos) and P7-J (neg)	(12) Open circuit

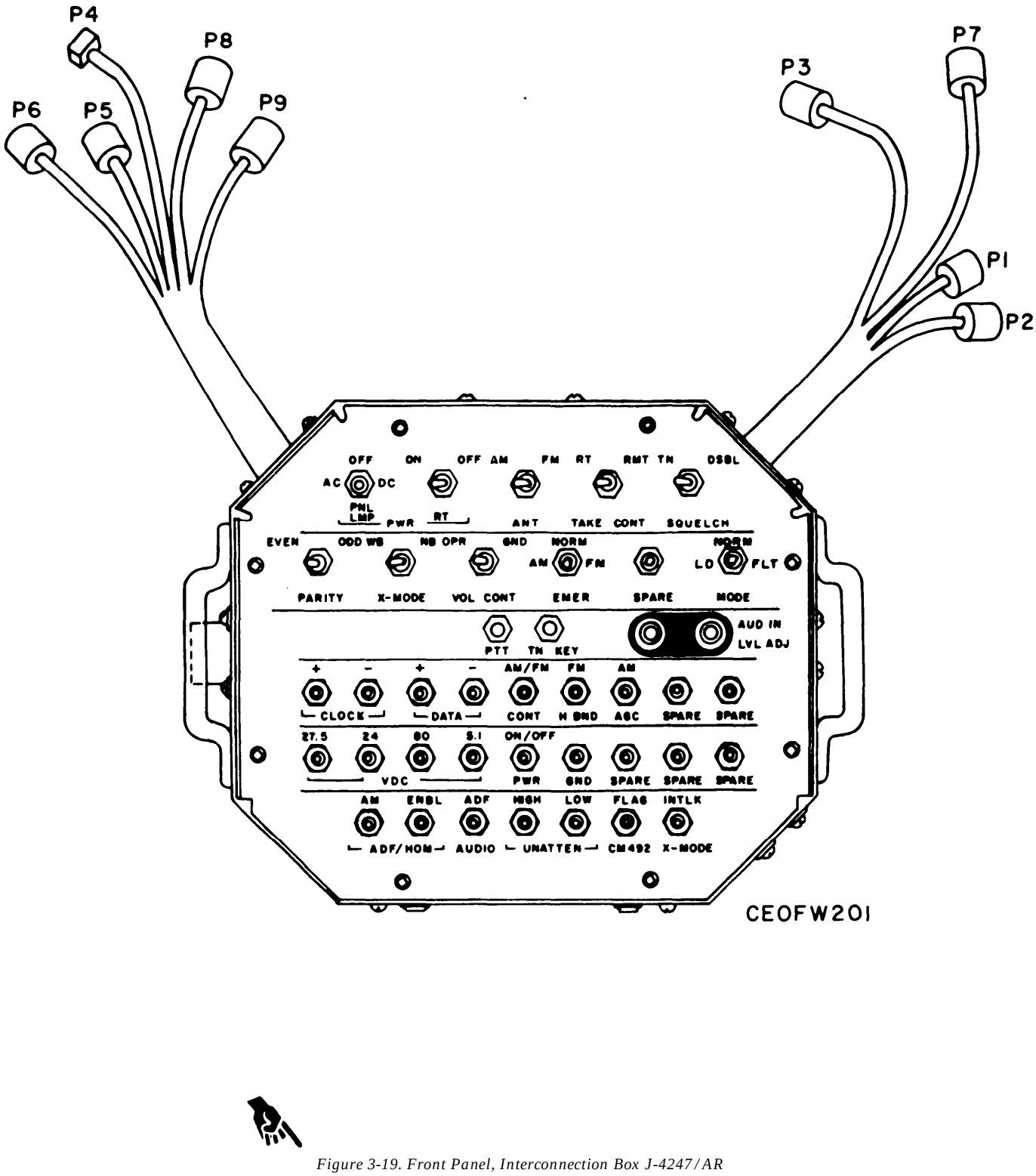


Figure 3-19. Front Panel, Interconnection Box J-4247/AR

CHAPTER 4
DEPOT MAINTENANCE AND OVERHAUL STANDARDS

Section I. DEPOT MAINTENANCE

4.1. Scope of Depot Maintenance

Depot maintenance consists of those maintenance procedures which are required to return the equipment to a performance status equivalent to that of new equipment. The maintenance procedures are those indicated for Direct and General Support plus those procedures that are mechanical and/or structural in nature as required for equipment rebuild. All rebuilding procedures must conform with the **general requirements for electronic equipment** as indicated in TB SIG 355 series bulletins (app A).

4-2. Tools, Test Equipment, and Materials Required

Refer to paragraph 3-9 for those tools and test equipment required for Depot maintenance. No materials are required that are not readily available through normal Depot facilities.

Section II. DEPOT OVERHAUL STANDARDS

4-3. Applicability of Depot Overhaul Standards

Test Facilities Kit MK-994/AR must be tested thoroughly after rebuild or repair to insure that it meets adequate performance standards for return to stock and reissue. Use the tests described in this section to measure the performance of the repaired equipment. It is mandatory that equipment to be reissued, or returned to stock for reissue, meet all of the performance standards given in this section.

4-4. Applicable Standards

a. Repair Standards. Applicable procedures of the depots performing these tests and the general standards for repaired electronic equipment given in TB SIG 355-1, TB SIG 355-2 and TB SIG 355-3 form a part of the requirements for testing this equipment.

b. Modification Work Orders. Perform all modification work orders applicable to this equipment before making tests specified. DA Pam 310-7 lists all available modification work orders.

c. Technical Publications. The depot overhaul standards for Indicator, Heading—Radio Bearing ID-1351/A, a portion of Test Facilities Kit MK-994/AR, are contained in TM 11-5895-537-50.

4-5. Test Facilities Required

The following equipments, or suitable equivalents will be used in determining compliance with the requirements of this specific standard.

a. Test Equipment. Refer to paragraph 3-9.

b. Additional Equipment.

Equipment	*Quantity required*
+27.5 ±0.5 volts dc power source at 10 amp	1
+ 115 5 volts, 400 Hz, single-phase at 0.5 amp	1
Fabricated voltage divider and special test probes (see fig. 3-17 and para 3-11 for fabrication)	1

4-6. General Test Requirements

a. Fabricate voltage divider and special test probes in accordance with figure 3-17 and paragraph 3-11.

b. Set all power switches to OFF. Set dc power supply output for O volt and then disconnect from the power source.

4-7. Tests of Test Facilities Kit MK-994/AR

Perform the following tests in the sequence given. Tests shall be identical to the tests in chapter 3, section III.

a. Radio test circuit tests (para 3-14).

b. Communication control test circuit tests (para 3-15).

c. Adf test circuit tests (para 3-16).

d. Cable continuity checks (para 3-7).

CHAPTER 5

FINAL ILLUSTRATIONS

The following illustrations are provided for the use of direct, general, and depot maintenance personnel for troubleshooting and repairing the maintenance kit.

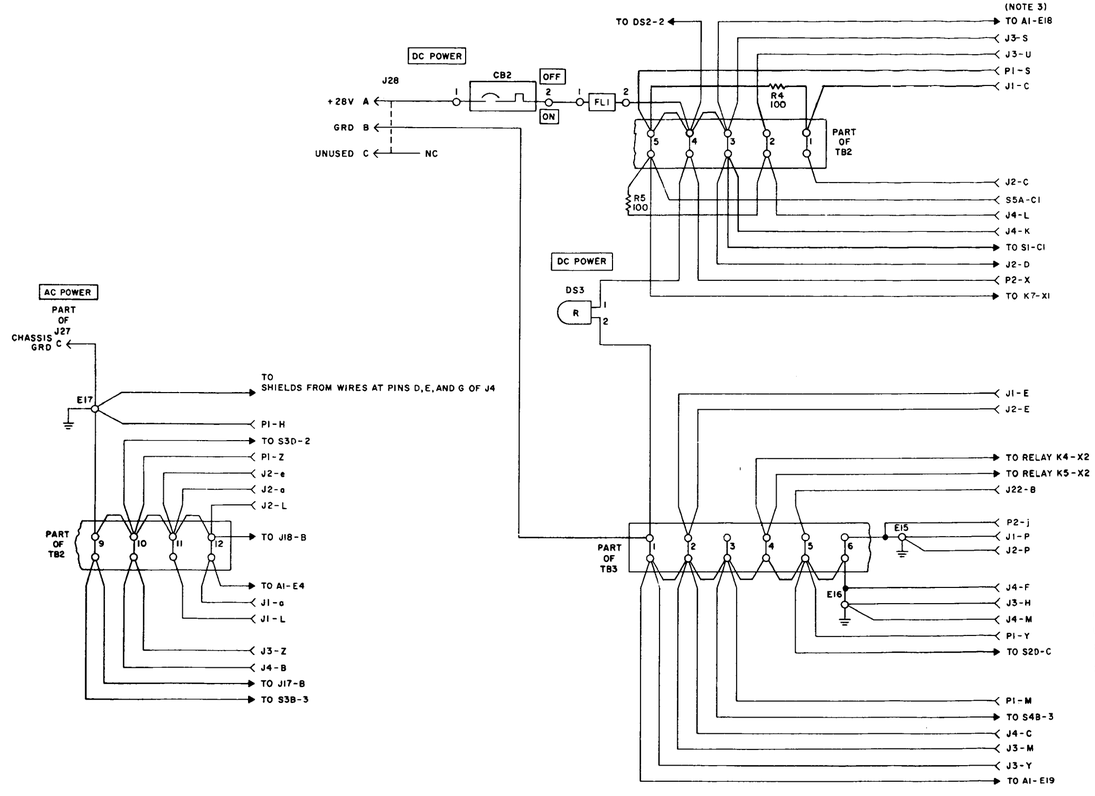


Figure 5-1. Power and ground circuit distribution, simplified schematic distribution.

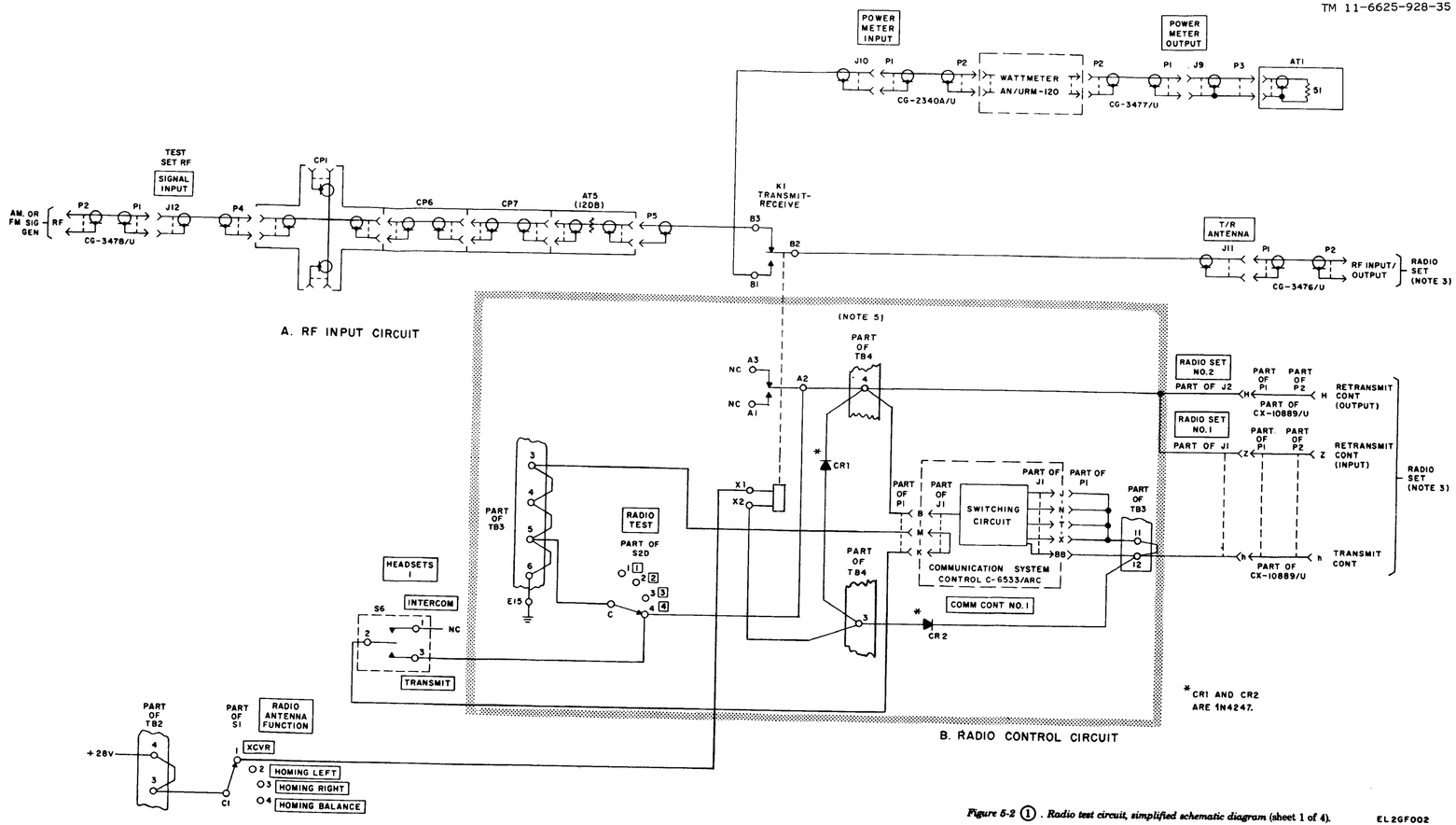
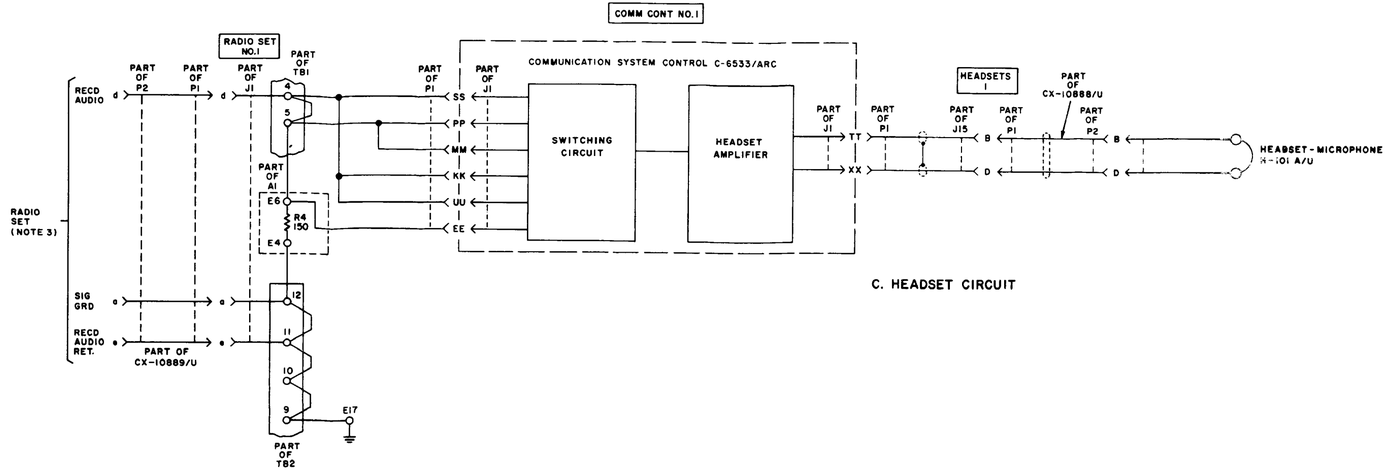


Figure 5-2 (1). Radio test circuit, simplified schematic diagram (sheet 1 of 4). EL2GF002



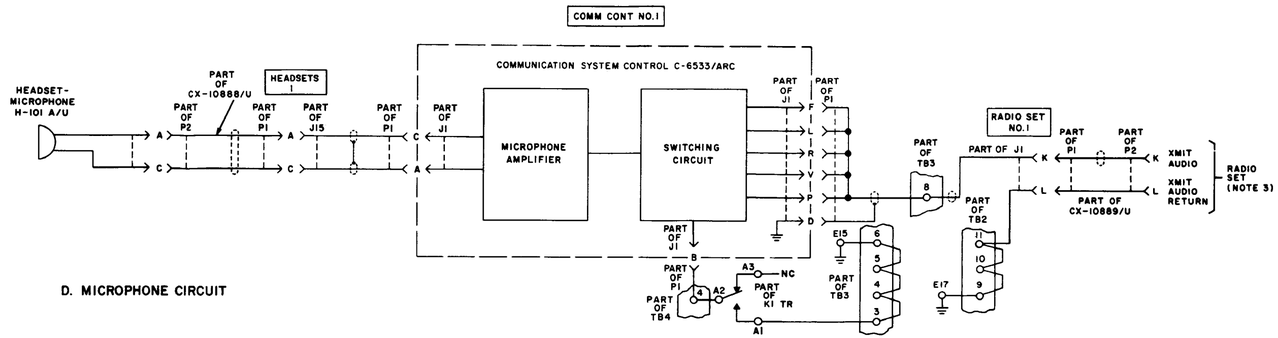
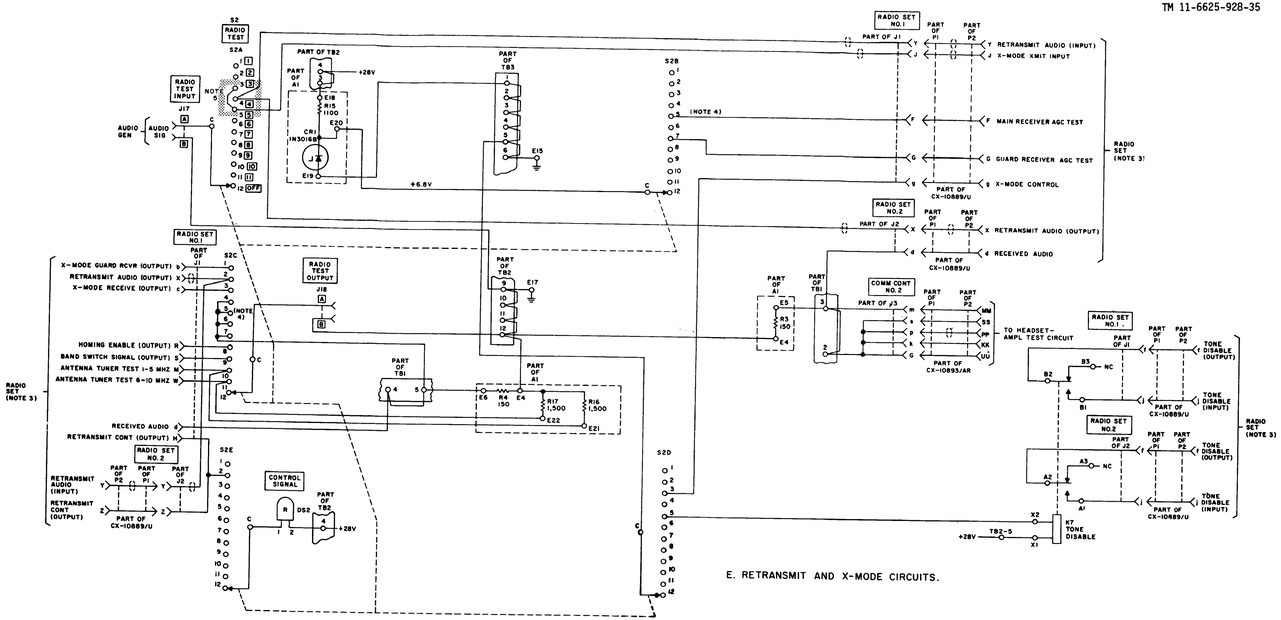


Figure 5-2(2). Radio test circuit, simplified schematic diagram (part 2 of 4).



E. RETRANSMIT AND X-MODE CIRCUITS.

Figure 5-2 (3). Radio test circuit, simplified schematic diagram (sheet 3 of 4). EL2GF003

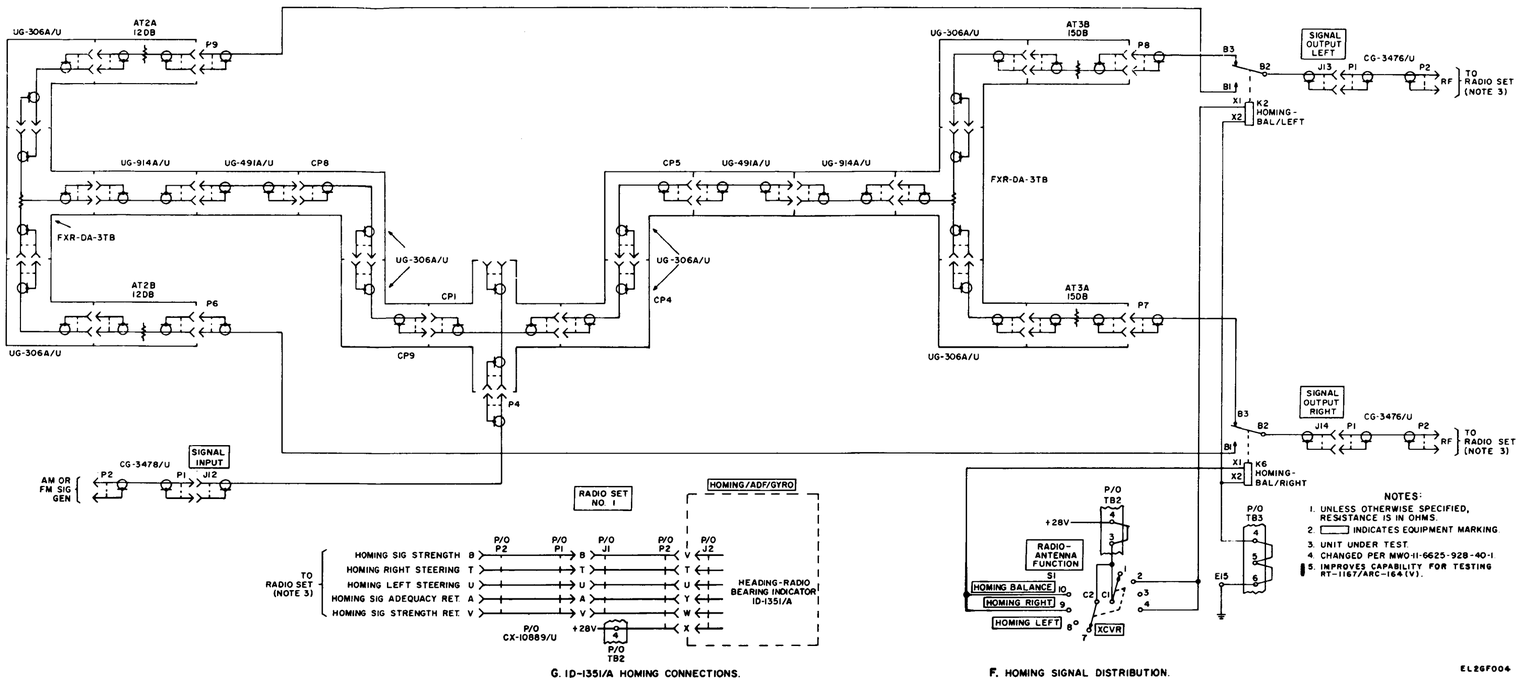


Figure 5-2 (4). *Radio test circuit, simplified schematic diagram* (sheet 4 of 4).

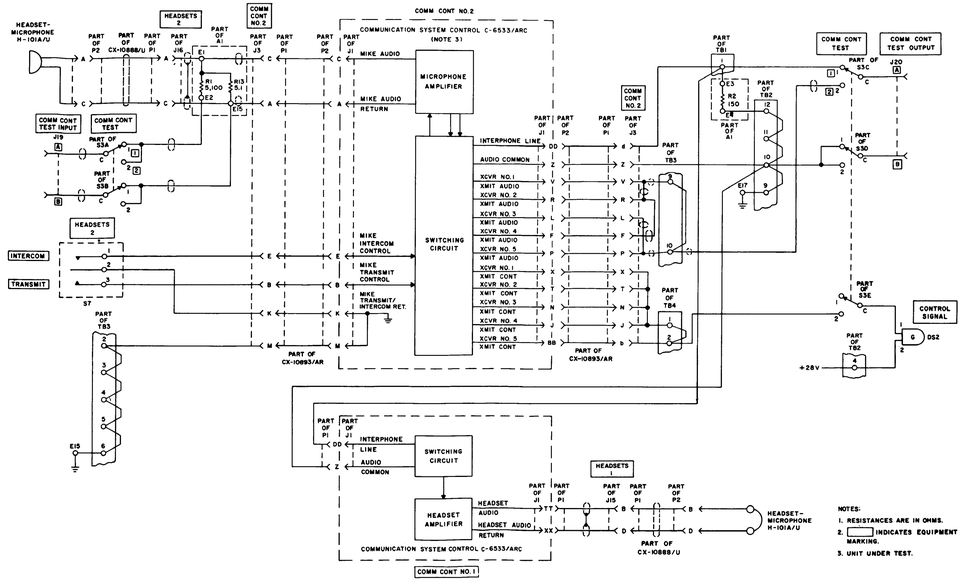


Figure 5-3. Microphone amplifier test circuit, simplified schematic diagram.

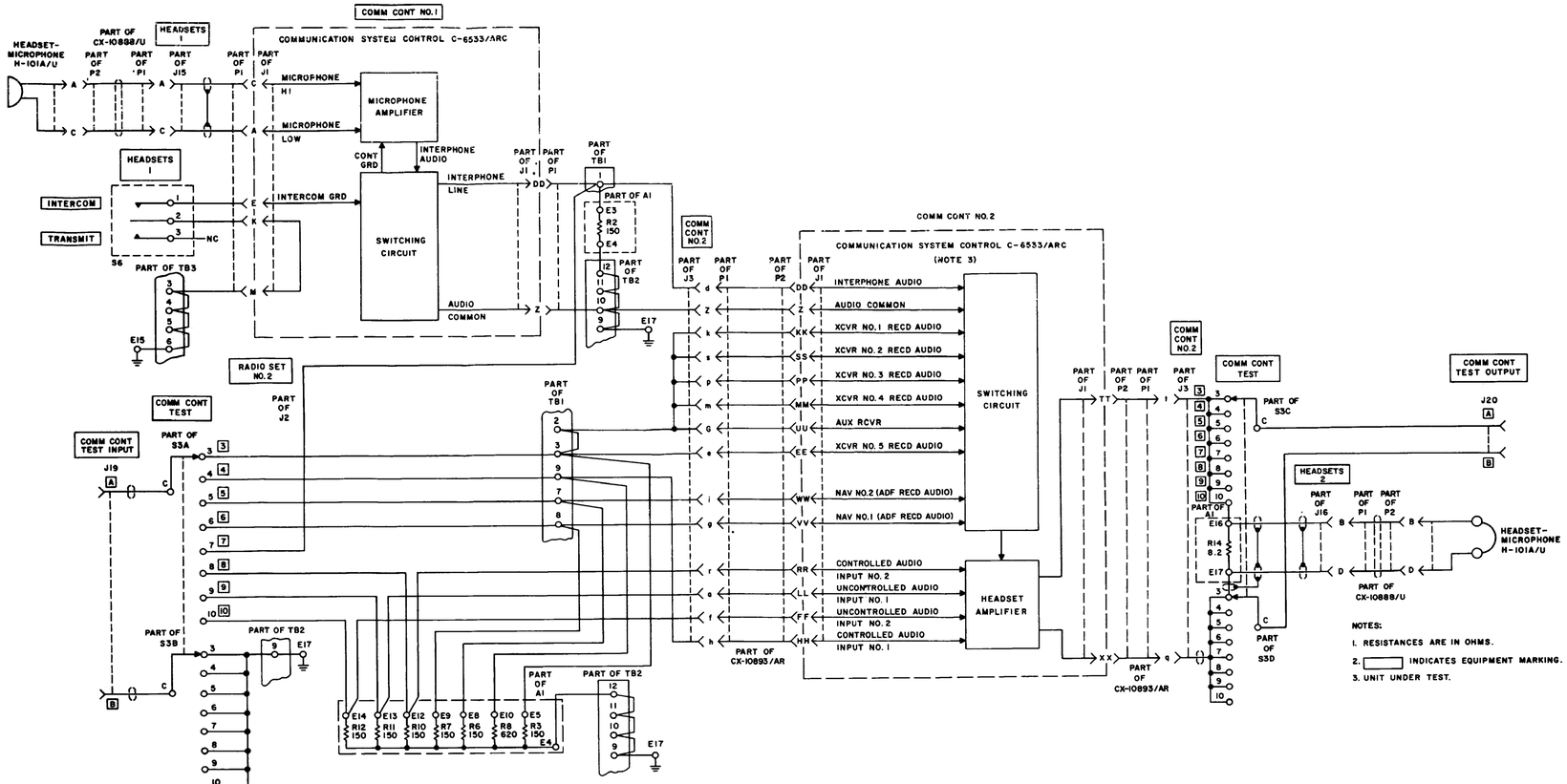


Figure 5-4. Headset amplifier test circuit, simplified schematic diagram.

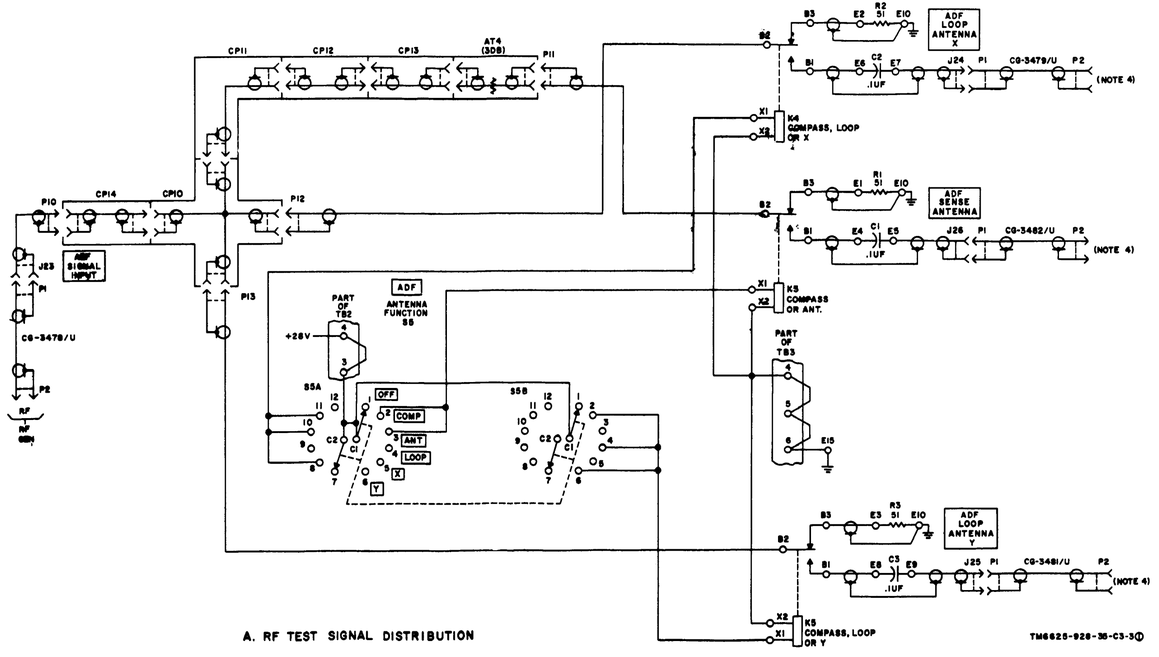
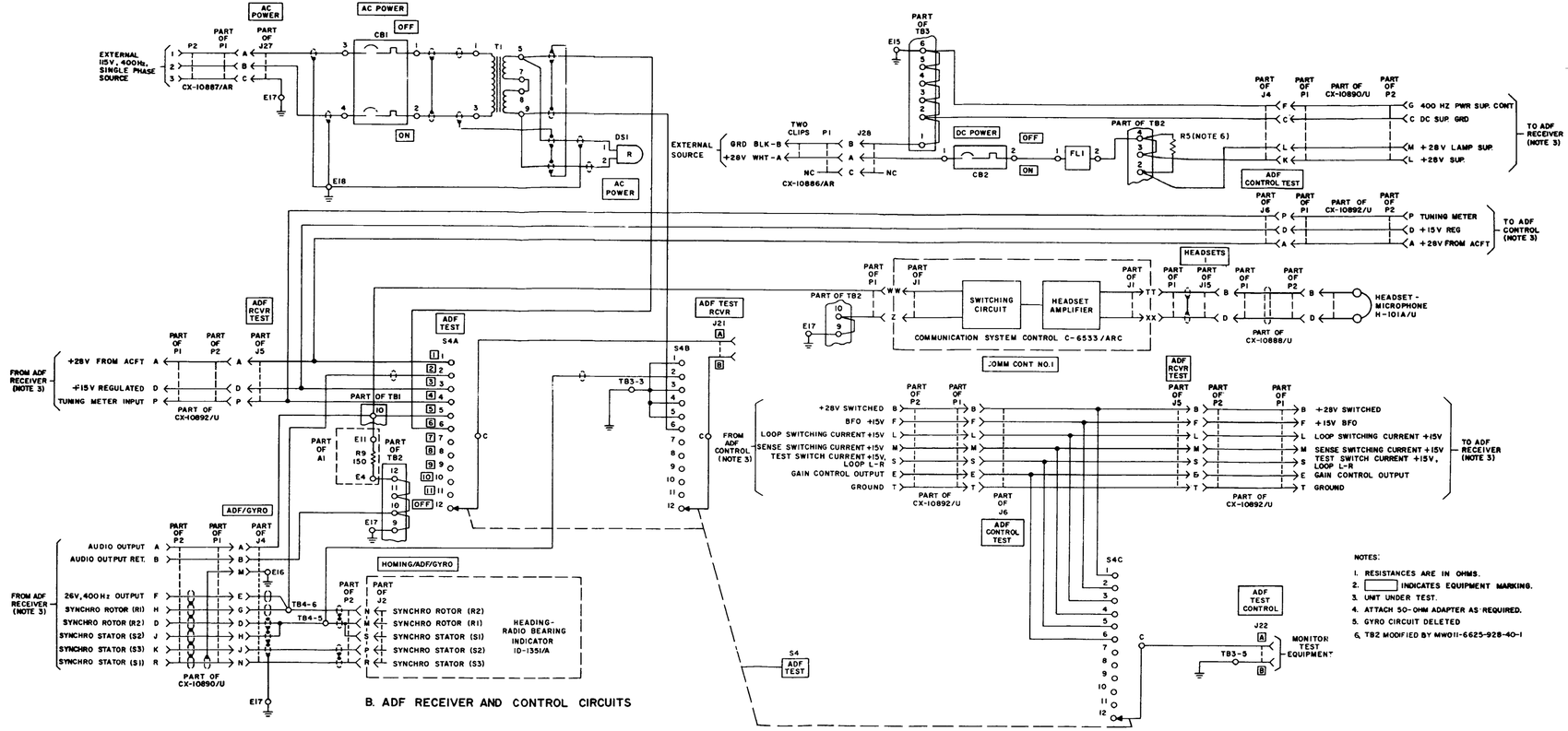


Figure 5-5①. Adf and gyro test circuits, simplified schematic diagram (part 1 of 2).



B. ADF RECEIVER AND CONTROL CIRCUITS

Figure 5-5 ②. Adf and gyro test circuits, simplified schematic diagram (part 2 of 2).

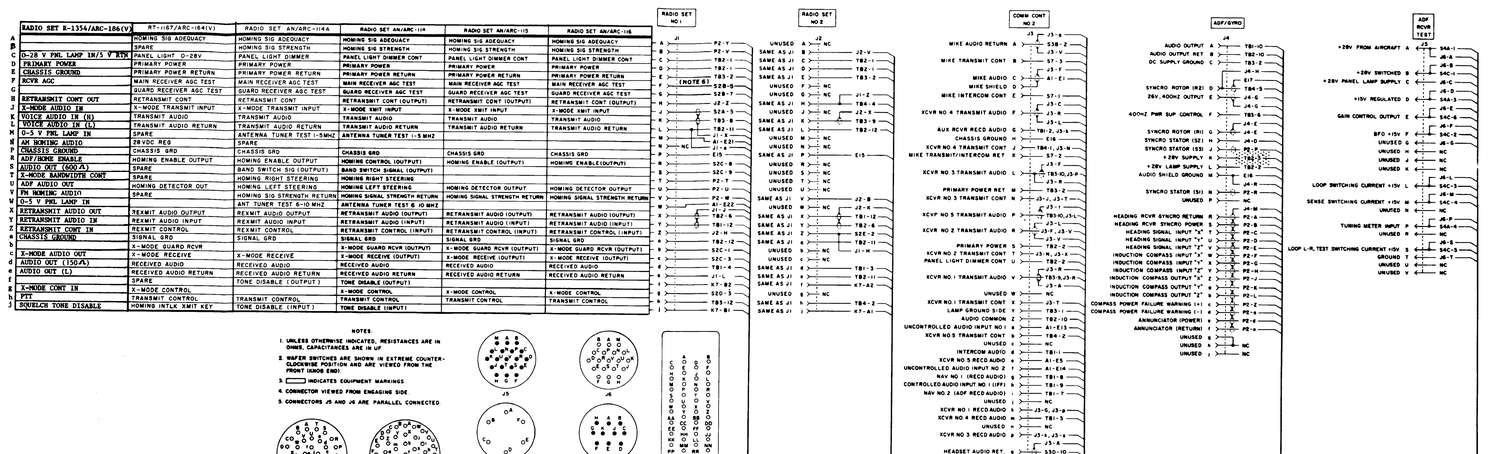


Figure 5-7 1 . Test Facilities Kit MK-994/AR (SM- B-625662) (sheet 1 of 4).

EL28F005

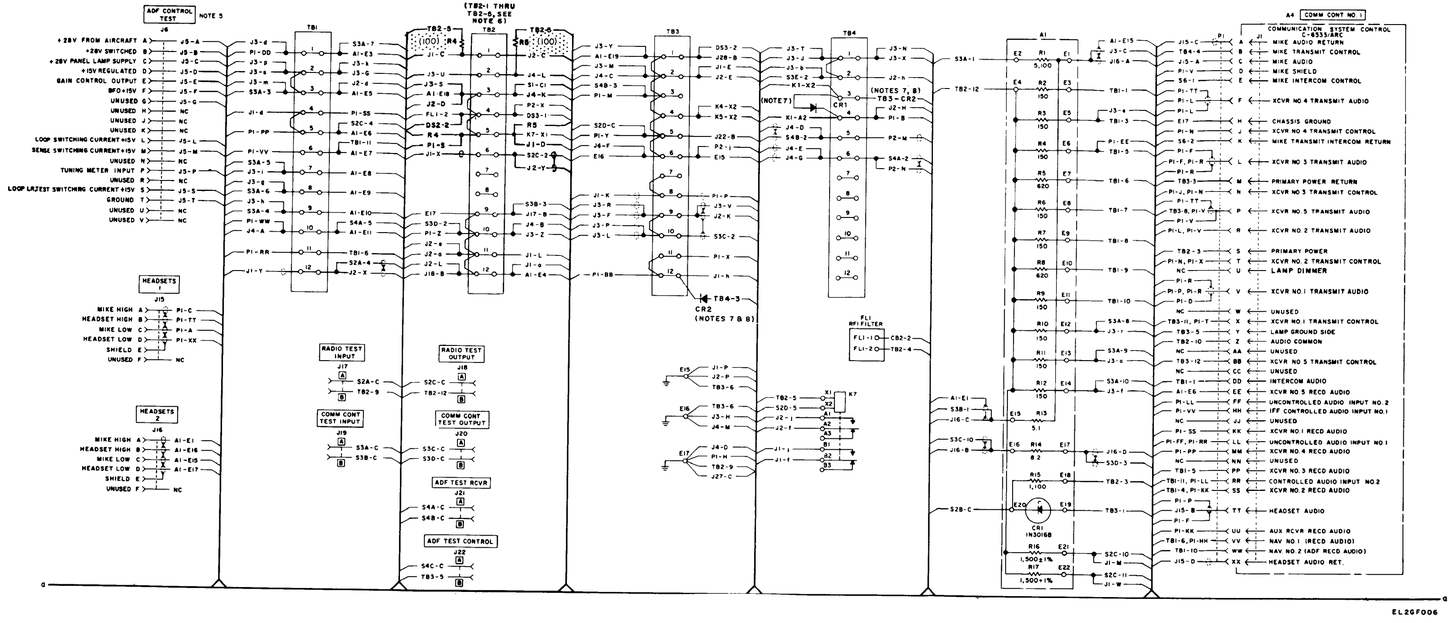


Figure 5-7 2 . Test Facilities Kit MK-994/AR (SM-B-625662) (sheet 2 of 4).

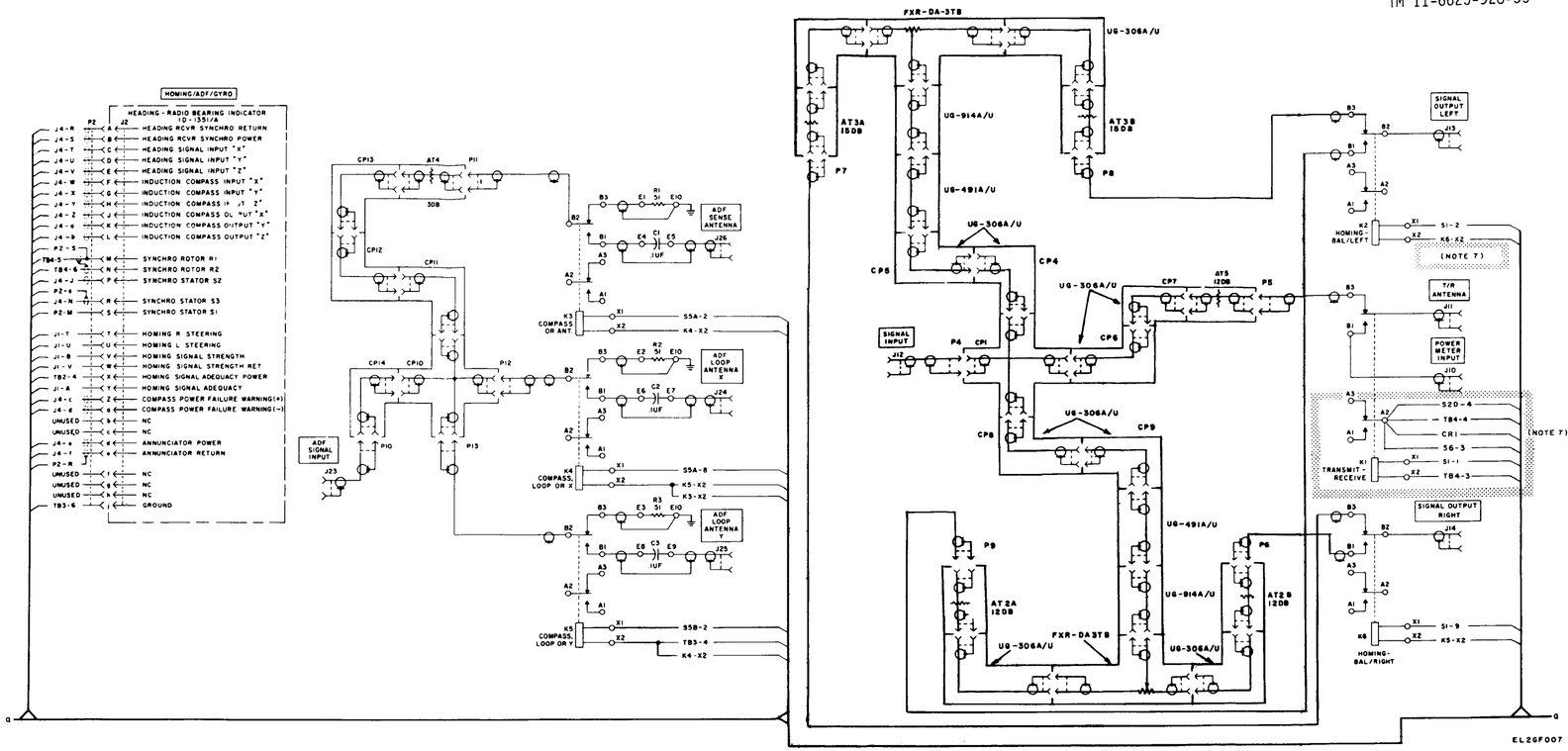


Figure 5-7 (3) . *Test Facilities Kit MK-994/AR (SM-B-625662)* (sheet 3 of 4).

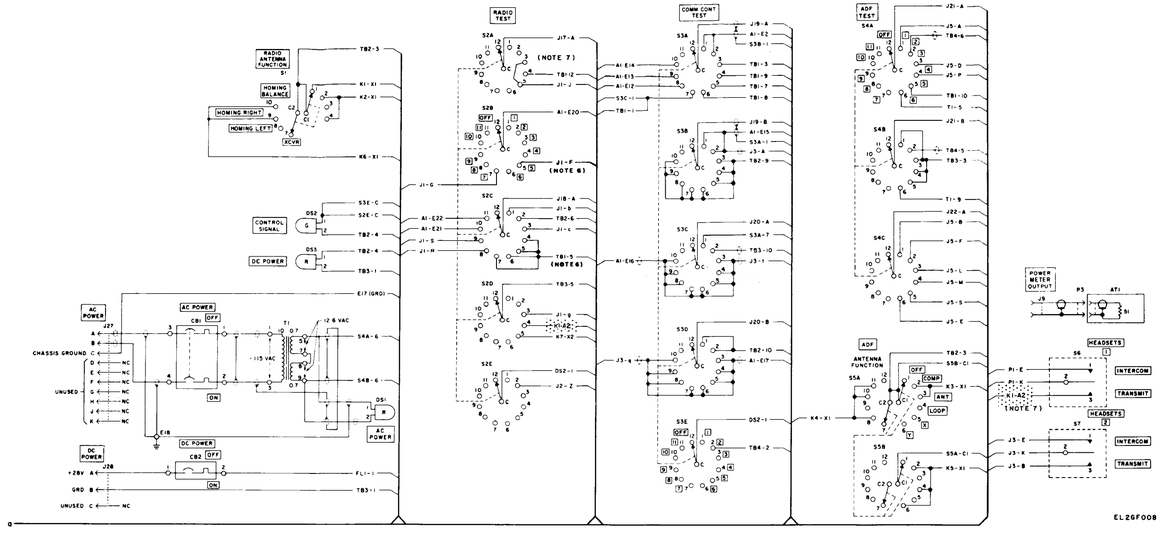


Figure 5-7 4 . Test Facilities Kit MK-994/AR (SM-B0625662) (sheet 4 of 4).

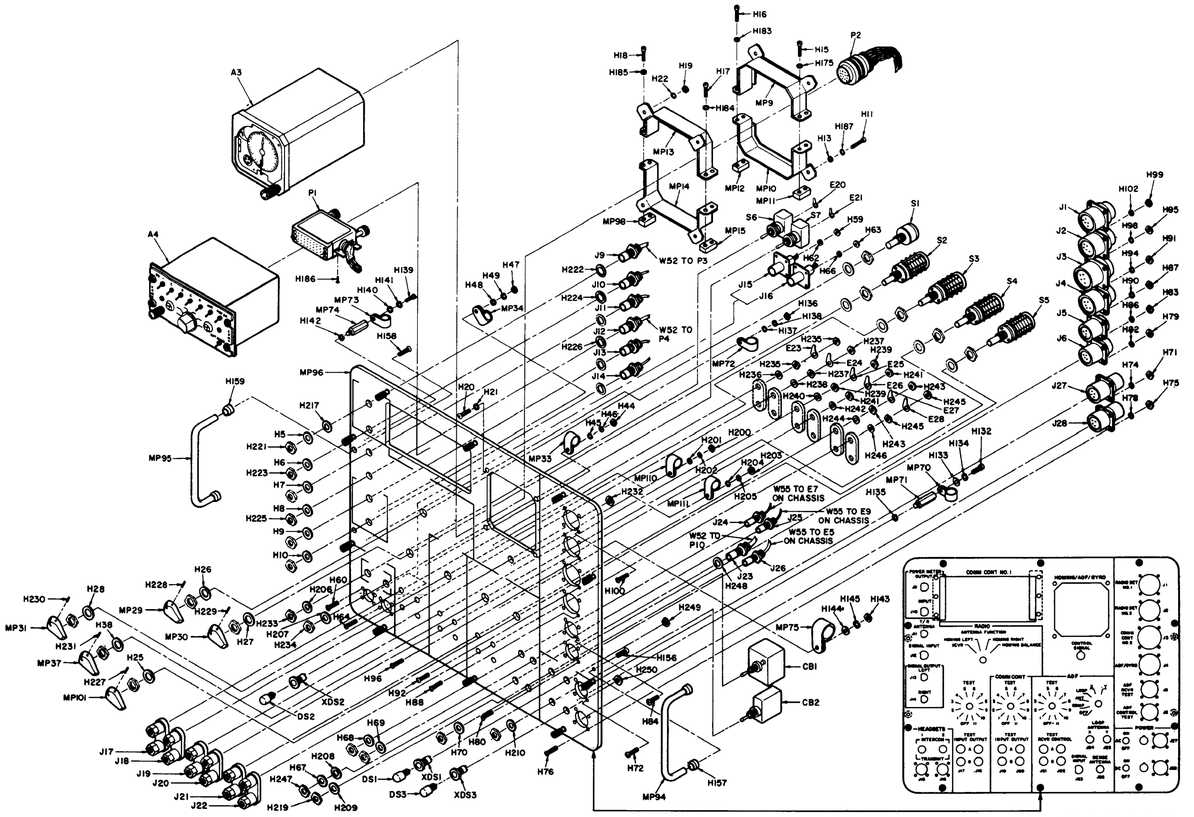


Figure 5-8. Panel assembly, exploded view.

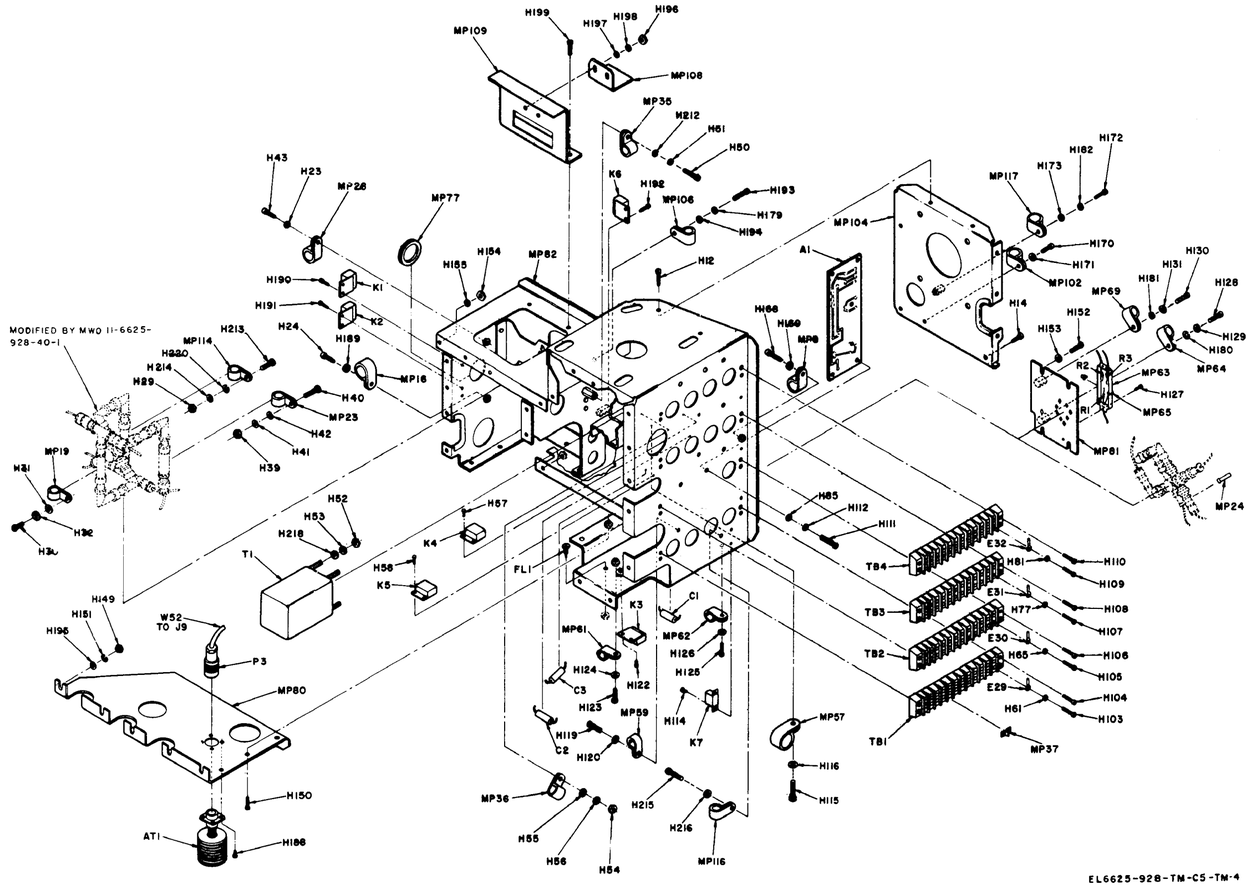


Figure 5-9. Chassis assembly exploded view.

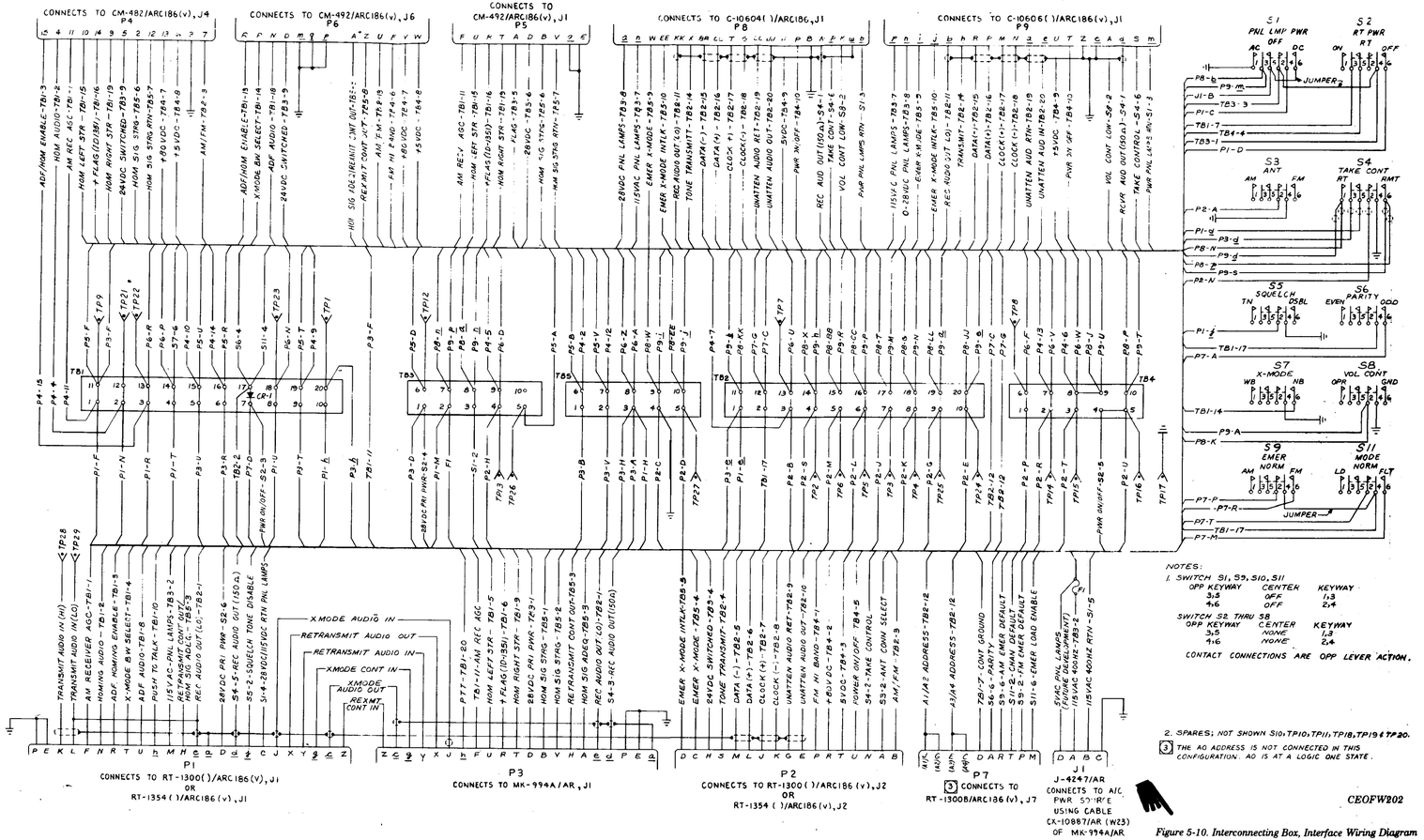


Figure 5-10. Interconnecting Box, Interface Wiring Diagram

APPENDIX A
REFERENCES

AR 55-38	Reporting of Transportation Discrepancies in Shipments.
AR 735-11-2	Reporting of Item and Packaging Discrepancies.
DA Pam 310-1	Consolidated Index of Army Publications and Blank Forms.
DA Pam 738-750	The Army Maintenance Management System (TAMMS).
SB 38-100	Preservation, Packaging, Packing and Marking Materials, Supplies, and Equipment Used by the Army.
TB 11-6625-596-12/1	Operator and Organizational Preventive Maintenance Checks and Services for Generator, Signal SG-297( )/URM-103.
TB SIG 355-1	Depot Inspection Standard for Repaired Signal Equipment.
TB SIG 355-2	Depot Inspection Standard for Refinishing Repaired Signal Equipment.
TB SIG 355-3	Depot Inspection Standard for Moisture and Fungus Resistant Treatment.
TB 43-0118	Field Instructions for Painting and Preserving Electronics Command Equipment Including Camouflage Pattern Painting of Electrical Equipment Shelters.
TM 11-5551-D	R.F. Signal Generator Set AN/URM-25D.
TM 11-5821-259-20	Organizational Maintenance Manual for Radio Sets, AN/ARC- 114 (NSN 5821-00-935-5071) and AN/ARC-l14A (5821-00-165-2970): Network, Impedance Matching, CU-1794/ARC-l14 (5915-00-056-4953) and Network, Impedance Matching-Quadrature Hybrid, CU-1796/ARC-l14 (5915-00-056-4951).
TM 11-5821-259-35	Direct Support, General Support, and Depot Maintenance Manual: Radio Sets AN/ARC-l14 and AN/ARC-l14A.
TM 11-5821 -260-12-1	Operator's and Organizational Maintenance Manual: Radio Set, AN/ARC-115(V)1 (NSN 5821-01-057-4037).
TM 11-5821-260-20	organizational Maintenance Manual: Radio Set AN/ARC- 115.
TM 11-5821-260-35	Direct Support, General Support, and Depot Maintenance Manual: Radio Set ANIARC-15.
TM 11-5821-261-20	organizational Maintenance Manual: Radio Set AN/ARC- 116.
TM 11-5821-261-35	Direct Support and General Support Maintenance Manual: Radio Set AN/ARC-116 (NSN 5821-00-935-5073).
TM 11-5821-262-20	Organizational Maintenance Manual: Control, Communication System, C-65331ARC.
TM 11-5821-262-35	Direct Support, General Support, and Depot Maintenance Manual: Control, Communication System, C-6533/ARC.
TM 11-5821-311-12	Operator's and Organizational Maintenance Manual for Receiver-Transmitter, Radio RT-1167/ARC-164(V) (NSN 5821-00-138-7990).
TM 11-5821-311-34	Direct Support and General Support Maintenance Manual: Receiver-Transmitter, Radio RT-1167/ARC-164(V) (NSN 5821-00-138-7990).
TM 11-5821-318-30	Operator's and Aviation Unit Maintenance Manual for Receiver-Transmitter, RT-1354/ARC-186(V) (NSN 5821-01-070-4720).
TM 11-5895-537-50	Depot Maintenance Manual for indicators, Heading Radio Bearing, ID-135l/A, ID-1351(A)/A and ID-1351(B)/A (NSN 5826-00-999-7143 and 5826-00-933-4038), ID-1351(C)/A (5826-01-070-4406) and ID-1351(D)/A (5826-01-063-1920).
TM 11-6625-200-15	Operator's Organizational, Direct Support, General Support and Depot Maintenance Manual: Multimeters ME-26A/U (NSN 6625-00-360-2493), ME 26 B/U and ME-26C/U (6625-00-646-9409), and ME-26 D/U (6625-00-913-9781).
TM 11-6625-320-12	Operator's and Organizational Maintenance Manual: Voltmeter, Meter ME-30A/U and Voltmeters, Electronic ME-30B/U, ME-30C/U, and ME-30E/U.
TM 11-6625-438-15	Organizational, Direct Support, General Support, and Depot Maintenance Manual: Voltmeter, Electronic AN/USM-98.
TM 11-6625-446-15	Operator's, Organizational, Direct Support, General Support, and Depot Maintenance Manual for Wattmeter, AN/URM-120 (NSN 6625-00-813-8430).

TM 11-6625-508-10	Operator's Manual: Signal Generators AN/USM-44 and AN/USM-44A.
TM 11-6625-524-14	Operator's, Organizational and Field Maintenance Manual: Voltmeter Electronic AN/URM-145.
TM 11-6625-683-14	Operator's Organizational, Direct Support and General Support Maintenance Manual for Signal Generator AN/URM-127 (NSN 6625-00-783-5965).
TM 11-6625-928-12	Operator and Organizational Maintenance Manual: Test Facilities Kit MK-994/AR (NSN 6625-00-802-7191).

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