TECHNICAL MANUAL

OPERATOR'S, ORGANIZATIONAL, AND DIRECT SUPPORT MAINTENANCE MANUAL INCLUDING REPAIR PARTS AND SPECIAL TOOLS LISTS AMPLIFIER-INTERFACE, TEST HEADSET AM-6789/G (NSN 5805-01-020-2827)

H E A D Q U A R T E R S , D E P A R T M E N T O F T H E A R M Y
APRIL 1977

WARNING

HIGH VOLTAGE
is used in the operation of this equipment.

DEATH ON CONTACT
may result if operating personnel fail to observe safety precautions.

DON'T TAKE CHANCES!

Be careful when working on the 115-volt ac line connections. Turn off the power and disconnect the line cord plug from the ac source before making any test connections or before working inside the chassis. Before connecting the AM-6789/G to a 115-volt ac source, be sure that the chassis is grounded properly.

WARNING

DANGEROUS CHEMICALS
are used to clean this equipment.

DEATH
or severe burns may result if personnel fail to observe safety precautions.

TECHNICAL MANUAL
No. 11-5805-691-13&P

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, DC, *13 April 1977*

OPERATOR'S, ORGANIZATIONAL, AND DIRECT SUPPORT

MAINTENANCE MANUAL INCLUDING REPAIR PARTS AND SPECIAL TOOLS LISTS

AMPLIFIER-INTERFACE, TEST HEADSET AM-6789/G

(NSN 5805-01-020-2827)

Current as of 16 February 1977

REPORTING OF ERRORS

You can improve this manual by recommending improvements using DA Form 2028-2 (Test) located in the back of the manual. Simply tear out the self-addressed form, fill it out as shown on the sample, fold it where shown, and drop it in the mail.
If there are no blank DA Form 2028-2 (Test) in the back of your manual, use the standard DA Form 2028 (Recommended Changes to Publications and Blank Forms) and forward to the Commander, US Army Electronics Command, ATTN DRSEL-MA-Q, Fort Monmouth, NJ 07703 In either case, a reply will be furnished direct to you.

Table of Contents

LIST OF ILLUSTRATIONS

CHAPTER 1

INTRODUCTION

Section I. GENERAL

1-1. Scope

a. This manual describes Amplifier-Interface, Test Headset AM-6789/G (fig. 1-1) and covers its installation, operation, and maintenance. Throughout this manual other publications are referenced where appropriate.

b. Appendix A contains a list of publications applicable to this manual, appendix B contains the repair parts and special tools list, and appendix C contains the maintenance allocation chart.

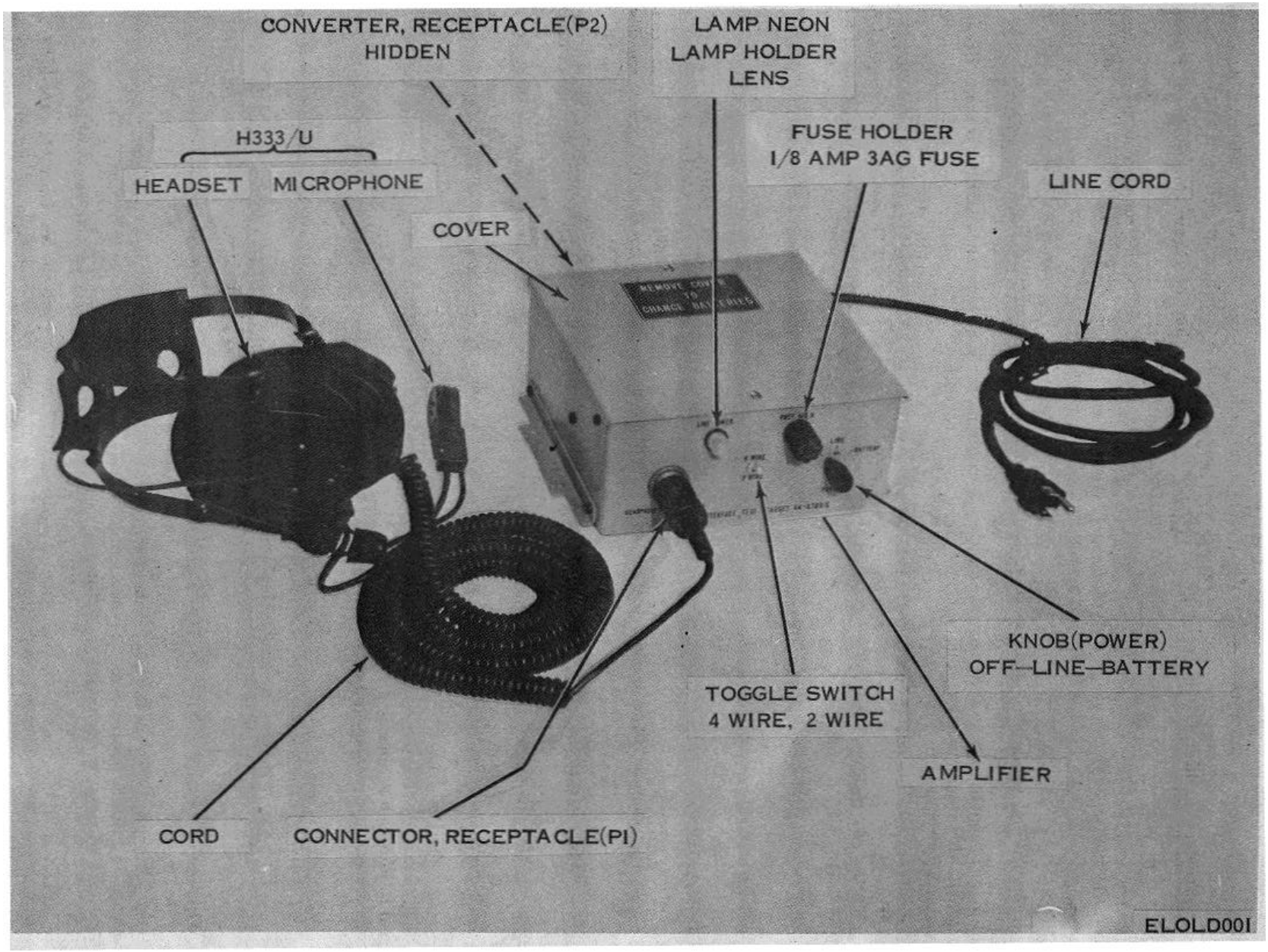

Figure 1-1. Amplifier-Interface, Test Headset AM-6789/G, Including Headset and Microphone.

1-2. Indexes of Publications

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

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

1-3. Forms and Records

a. Reports of Maintenance and Unsatisfactory Equipment. Maintenance forms, records, and reports which are to be used by maintenance personnel at all maintenance levels are listed in and prescribed by TM 38-750 (Army).

b. Report of Packaging and Handling Deficiencies. Fill out and forward DD Form 6 (Packaging Improvement Report) as prescribed in AR 700-58/NAVSUPINST 4030.20/AFR 1- 13/MCO P4030.29A, and DSAR 4145.8.

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

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

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

1-5. Administrative Storage

Administrative storage of equipment issued to and used by Army activities shall be in accordance with TM 740-90-1.

1-6. Reporting Equipment Improvement Recommendations (EIR)

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

Section II. DESCRIPTION AND DATA

1-7. Purpose and Use

a. The purpose of Amplifier-Interface Test Headset AM-6789/G is to provide operational testing and troubleshooting 2-wire and 4-wire telephone lines terminating at a communications control central, such as the AN/TSQ-84. The AM-6789/G enables the operator to communicate with the user at the distant end of the telephone lines under test for troubleshooting and testing purposes. It interfaces the test headset (earphones and microphone) and the telephone lines by providing the required impedance match, and the amplification needed to establish a suitable db level for the voice signals present at the input and output connections of the headset.

b. The AM-6789/G is used in conjunction with test/patch panels, similar to the RAPID PATCH/ TEST PANEL in the AN/TSQ-84, which provides a variety of patching options for testing and troubleshooting.

1-8. Description

The AM-6789/G is contained in a metal housing assembly, measuring 6-7/8 inches x 6-7/8 inches x 3- 3/8 inches, and weighs approximately 2 pounds. The front panel mounts a connector receptable for Headset H-333/U, a power indicator lamp and holder, a fuse (1/8a) and holder, a 4-WIRE/2-Wire switch and a OFF-LINE-BATTERY switch. The rear panel mounts a connector receptacle for connection to the patch panel and a line cord for connection to alternating current (ac) power source. The transmitting and receiving amplifiers and associated circuits and components are mounted on a printed circuit board (pcb). The unit may be operated from a 115-volt, 50/60-Hertz (Hz) alternating current (ac) power source or from two 9-volt batteries (BA-3090), mounted internally. Headset H-333/U is used with, but is not part of, the AM-6789/G.

1-9. Tabulated Data

a. Headset-Microphone H- 333/U:

Microphone output level	-56 dBm.
Microphone impedance	150 ohms.
Headset sensitivity	+3 dBm (normal listening)
Headset impedance	500 ohms.

b. Interface-Amplifier:

Impedance matching	600-ohm telephone lines to headset and microphone.
Transmitting amplifier	Amplifies the output signal of the microphone to proper transmission level (59-db gain).
Receiver amplifier	Amplifies input signal to the headset (22-db gain).

c. Direct Current Operation.

Power source	Two 9-volt batteries (BA 3090).
Operating limits	40 hours with 12.5-milliampere current drain.

d. Alternating Current Operation.

Power source	115 volts, 50/60 Hz.

1-10. Items comprising an Operable AM-6789/G

Items comprising an operable equipment consist of the Amplifier Interface, Test Headset AM-6789/G.

CHAPTER 2

SERVICE UPON RECEIPT AND INSTALLATION

2-1. Unpacking Equipment

No special unpacking instructions are necessary except to observe precautions normally taken with precision electronic equipment. Open the packing container and remove the contents.

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

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

c. For dimensions and weights, refer to paragraph 1-8.

2-2. Installation

Installation of the AM-6789/G consists of the following:

a. Mount the unit, using the required hardware, in the space allocated in the equipment configuration, such as the roadside wall of the AN/TSQ- 84.

b. Remove the top cover and insert the batteries as described in paragraph 2-3. Replace the cover.

c. Connect the U-77/U connector and cord (wired into the patch panel) to the U-79/U connector on the rear panel of the AM-6789/G.

d. Connect the headset-microphone connector (P1) to the HEADSET-MICROPHONE H-333/U connector (U-183/U) on the front panel of the AM- 6789/G.

e. Insert the power cord plug into the assigned AC receptacle.

2-3. Installation of batteries

(fig. 1-1 and B-1)

Remove the top cover of Amplifier-Interface Testset AM-6789/G (fig. 1-1). At the rear of the unit there are two battery clamps. Insert the two batteries (9 volt, BA-3090) into the clamps, making sure that their polarized terminal face the polarized clips. Press the clips on the batteries. Replace the cover.

2-4.Installation checks

After the unit has been installed, perform the following checks:

a. Operate the OFF-LINE-BATTERY switch (S2) to BATTERY.
b. The LINE POWER indicator lamp should not light.
c. Operate the 2-WIRE 4-WIRE switch alternately to the two positions and check for sidetone, using the H-333/U.
d. Sidetone should be heard in both positions of the switch.
e. Operate the OFF-LINE-BATTERY switch to LINE.
f. The LINE POWER indicator lamp should light.
g. Repeat step c, above. Sidetone should be heard in both positions of the switch.
h. Operate the OFF-LINE-Battery switch to OFF.

CHAPTER 3

OPERATION

3-1. Controls, Indicators, and Connectors

a. Front panel (fig. 1-1).

Control, indicator, or connector	*Function*
Connector, Receptable U-183/U	Provides connection for headset H-333/U.
Fuse (1/8 a)	Provides protection for ac power input.
4-WIRE, 2-WIRE switch	Provides selection for 2W or 4W test position.
LINE POWER indicator lamp	Lights when connected to ac power source.
OFF-LINE-BATTERY switch	OFF-position .No power input. LINE-position .....ac power. BATTERY .....dc power.

b. Rear panel

LINE cord	Provide connection to ac power source.
Connector, receptable U-79/U	Provides connection for signal input and output.

3-2. Operating Procedures

Special operating procedures are not required for the operation of the AM-6789/G, except for the following:

a. Operate the OFF-LINE-BATTERY switch to the position as determined by the power source (ac and dc) being used.

b. Operate the 2-WIRE, 4-WIRE switch determined by the mode of operation determined by the telephone lines under test.

c. Operate the OFF-LINE-BATTERY switch to OFF when the AM-6789/G is not in use.

CHAPTER 4

MAINTENANCE

SECTION I. OPERATOR'S MAINTENANCE

4-1. Scope of Operator's Maintenance

The maintenance duties assigned to the operator of the AM-6789/G are listed below; with a reference to the paragraphs covering the specified maintenance function.

a. Operator's daily preventive maintenance checks and services (para 4-4).
b. Cleaning (para 4-5).

4-2. Preventive Maintenance

Preventive maintenance is the systematic care, servicing, and inspection of equipment to prevent the occurrence of trouble, to reduce downtime, and to assure that the equipment is serviceable.

a. Systematic Care. The procedures given in paragraphs 4-4, and 4-5 cover routine systematic care and cleaning essential to proper upkeep and operation of the equipment. If the equipment is being maintained in a standby condition, perform the daily checks and services before the equipment is returned to service.

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

4-3. Preventive Maintenance Checks and Services Periods

Daily checks and services must be performed on the AM-6789/G. The daily preventive maintenance checks and services chart given in paragraph 4-4 specifies the checks which must be made during the following periods:

(a) Before the vehicle starts on a mission.
(b) When the equipment is installed initially.
(c) When the equipment is reinstalled after removal for any reason.

4-4. Daily Preventive Maintenance Checks and Services Chart

Sequence No.	Item	Procedure	References
1	Amplifier-Interface, Test Headset AM-6789/G.	Inspect equipment for completeness and satisfactory condition.	Para 1-10.
2	Exterior surfaces	Remove dirt, dust, grease, moisture, and fungus from the exterior of the case, front panel, controls, and meter. Inspect painted surfaces for bare spots, rust, and corrosion. Inspect meter glass and indicator lens for cracks and breaks.	Para 4-5.
3	Line cord and connectors.	Inspect the line cord for breaks, deterioration, and loose connections. Check tightness of all connectors.	
4	Controls and indicators	Observe that mechanical action of each knob, dial, and switch is smooth and free of external and internal binding, and there is no excessive looseness. Check meter for sticking or bent pointer. Be alert for any unusual indications and conditions.	

4-5. Cleaning

Inspect the exterior of the AM-6789/G. The exterior should be free of dust, dirt, grease, and fungus.

a. Remove loose dirt with a clean, soft cloth.

WARNING

The fumes of trichloroethane are toxic. Provide thorough ventilation whenever used. DO NOT use near open flame. Trichloroethane is not flammable, but exposure of the fumes to an open flame converts the fumes to highly toxic, dangerous gases.

b. Remove grease, fungus, and ground-in dirt from the microphone holder case, earphones, and microphone boom with a cloth dampened (not wet) with trichloroethane.

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

Section II. ORGANIZATIONAL MAINTENANCE

4-6. Scope of Organizational Maintenance

a. This section contains instructions covering organizational maintenance of AM-6789/G includes instructions for performing preventive and periodic maintenance services, and repair function to be accomplished by the organizational repair technician.

b. Organizational maintenance of AM-6789/G includes:

(1) Weekly preventive maintenance checks and services (para 4-9).
(2) Monthly preventive maintenance checks and services (para 4-10).
(3) Touchup painting (para 4-11).
(4) Troubleshooting (para 4-12 and 4-13).
(5) Replacement of easily accessible items (para 4-14).

4-7. Organizational Preventive Maintenance

a. Preventive maintenance is the systematic care, inspection, and servicing of equipment to maintain it in serviceable condition, prevent breakdowns, and assure maximum operational capability. Preventive maintenance is the responsibility of all categories of maintenance with the equipment, and includes the inspection, testing, and repair or replacement of parts, subassemblies, or units that inspection and tests indicate would probably fail before the next schedule periodic service. Preventive maintenance checks and services of AM-6789/G at organizational maintenance are made weekly and monthly unless otherwise directed by the commanding officer. The preventive maintenance checks and services should be scheduled concurrently with the periodic service schedule of the carrying vehicle for all vehicular installations.

b. Maintenance forms and records to be used and maintained on this equipment are specified in TM 38-750.

4-8. Weekly and Monthly Preventive Maintenance

Perform the maintenance functions indicated in the weekly and monthly preventive maintenance checks and services charts (para 4-9 and 4-10) on the AM- 6789/G at the intervals specified and in the sequence listed. Whenever an abnormal condition or result is observed, take corrective action in accordance with the paragraph listed under References Column. All deficiencies and shortcomings will be recorded, and those deficiencies not corrected during the preventive maintenance checks and services tests will be reported to higher category maintenance as specified in TM 38-750. Equipment that has deficiencies which cannot be corrected at organizational maintenance will be deadlined in accordance with TM 38-750. Equipment maintained in a standby condition (ready for immediate operation) must have monthly maintenance checks and services. Equipment in limited storage (requires services before operation) does not require monthly preventive maintenance.

NOTE

A month is defined as approximately 30 calendar days of 8-hour-a-day operation. For 16-hour-a-day operation, the monthly preventive maintenance checks and services will be performed at 15-day intervals. Adjustment of the maintenance interval must be made to compensate for any unusual operating conditions.

4-9. Weekly Preventive Maintenance Checks and Services Chart.

Sequence No.	Item	Procedure	References
1	Cables.....	Inspect cables for cracked, or frayed insulation. Replace connectors that are broken, stripped, or worn excessively.	Para 4-14
2	Fuse and lamp.....	Inspect and replace, if necessary.	Para 4-14
3	Metal surfaces.....	Inspect exposed metal surfaces for corrosion, scratches, and pitting. Clean and touchup paint as required.	Para 4-11
4	Panel mounting .... screws	Check all panel screws and retainers for tightness or breakage. Replace or tighten as necessary.	Para 4-14

4-10. Monthly Preventive Maintenance Check and Service Chart.

Sequence No.	Item	Procedure	. References
1	Publications.....	See that all publications are complete, serviceable, and current.	DA Pam 310-4
2	Modifications.....	Check DA Pam 310-7 to determine if new applicable MWO's have been published. All URGENT MWO's must be applied immediately. All NORMAI, MOW's must be scheduled.	TM 38-750 and DA Pam 310-7
3	Spare parts.....	Check all spare parts (operational and organizational) for general condition and method of storage. No over- stock should be evident, and all shortages must be on valid requisitions.	
4	Terminals	Inspect all terminals for tightness and good contact.	

4-11. Touchup Painting Instructions

Remove rust and corrosion from metal surfaces by lightly sanding them with fine sandpaper. Brush two thin coats of paint on bare metal to protect it from further corrosion.

4-12. General Troubleshooting Information

Troubleshooting the equipment is based on the daily preventive maintenance checks and services chart. To troubleshoot the equipment, perform all functions given in the daily preventive maintenance checks and services chart (para 4-4) and proceed through the items until an abnormal condition or result is observed. Check the abnormal condition against the *Trouble symptom* column in the troubleshooting chart (4-13), and perform the checks and corrective actions indicated. If the corrective measures indicated do not result in correction of the trouble, higher category maintenance is required.

4-13. Troubleshooting Chart

Symptom	Probable Cause	Corrective Action
1. Does not operate when switch S2 is in BATTERY position.	Batteries dead.	Replace both BA-3090 9-volt batteries
2. Does not operate when switch S2 is in LINE position.	a. Fuse blown. b. Switch S2 defective.	Replace defective component
3. LINE POWER Lamp does not Light with switch S2 is in LINE position (unit operates however).	*a.* Neon lamp defective. b. Resistor in lamp holder defective.	*a.* Replace lamp.
4. No sidetone, but normal signals to line in 2W & 4W operation.	Defective circuit board.	Replace circuit board.
5. No sidetone; no signal output in 2W mode normal signal output in 4W mode	a. Switch S1 defective b. Defective circuit board.	*a.* Replace defective switch. b. Replace circuit board.

Symptom	Probable Cause	Corrective Action
6. No sidetone; no signal output to 2W or 4W lines. Power supply and/or batteries normal.	a. Connector P1 or P2 loose. *b.* Defective circuit board.	a. Tighten connectors. *b.* Replace circuit board
7. No output signals. Sidetone present but not normal in 2W mode	*a.* Connector P2 loose *b.* Defective circuit board.	*a.* Tighten connectors. *b.* Replace circuit board.
8. No output signal in 2W mode. Sidetone present but not normal in 2W mode.	a. Defective circuit board. b. Switch S1 defective.	*a.* Replace circuit board. b. Replace switch S1.
9. No received signals; sidetone normal.	Defective circuit board	Replace circuit board.
10. No received Signals, no sidetone.	*a.* Batteries dead. b. Defective circuit board. c. Connector P1 loose	*a.* Replace batteries. b. Replace circuit board. c. Tighten P1.
11. No output signals; sidetone abnormal.	Defective circuit board.	Replace circuit board.

4-14. Replacement of Easily Accessible Items

a. Replacement of Fuse (fig. 1-1). Press in fuseholder; rotate one-quarter turn counterclockwise, and remove fuseholder. Remove fuse from fuseholder and verify that link is broken. Insert replacement fuse in fuseholder twist lock.

b. Replacement of LINE POWER indicator lamp (fig. 1-1). Press lamp in holder; rotate one-quarter turn counterclockwise, and remove from holder. Insert replacement lamp in holder, and twist lock.

Section III. DIRECT SUPPORT MAINTENANCE

4-15. Scope of Direct Support Maintenance

Direct support maintenance of the AM-6789/G consists of troubleshooting, removal, and replacement or repair of chassis-mounted components including the printed circuit board, front and rear panel switches, connectors, fuse and lampholders, and power cord.

a. Troubleshooting. Troubleshooting the AM-6789/G at direct support maintenance is limited to operational checks as shown in the troubleshooting chart (para 4-13) and continuity checks.

b. Removal of Components. Removing chassis-mounted components from the AM-6789/G requires unsoldering of wires, removing the mounting hardware, and removal of component.

c. Replacement or Repair of Components. Repair of components is accomplished by replacement with new or repaired items, resoldering wires, and remounting parts.

4-16. Functioning

a. General.

(1) An AM-6789/G is required for the Communications Technical Control Center AN/TSQ-84 to operationally test telephone lines the rapid patch test panel, because of the electrical characteristics of the Headset-microphone H-333/U.

(2) The microphone is a dynamic type, having an output of approximately --56 dBm for an input sound pressure of 28 dynes/square centimeter; therefore, an amplifier is needed to raise the normal speech signals to a level suitable for line transmission. The impedance of the microphone is 150 ohms, so impedance transformation to the 600-ohm line impedance is also provided by the transmitting amplifier.

(3) The headset is composed of two H-251/U Earphones. The two earphones are operated in parallel and have a combined impedance of 500 ohms. The sensitivity of the headset is such that for comfortable listening normal line levels of approximately --10 dBm, must be raised to approximately +3 dBm; therefore, a receiving amplifier is needed to increase the level.

(4) A sidetone circuit is provided in the AM-6789/G so that the operator can hear himself talking into the microphone.

b. Transmitting Amplifier.

(1) The transmitting amplifier has a voltage-gain of approximately 59 dB and transforms the 150-ohm impedance of the microphone to 600 ohms.

(2) The circuit consists of an input transformer T1, operational amplifier A (1/2 IC1), and output transformer T3 for 4-wire operation, or transformer T4 for 2-wire operation.

(3) The input transformer, T1, provides

transformer coupling and approximately 19-dB of voltage gain. It is terminated by resistor R1.

(4) The operational amplifier, A, is set for approximately 40 dB of gain by resistor R2 and R7.

(5) Resistor R11 creates the proper source impedance for output transformer T3 and transformer T4 during 2-wire operation, so that the output impedance of the transmitting amplifier is 600 ohms.

(6) Capacitor C4 and resistors R9 and R10 create a sidetone feedback circuit which introduces a portion of the transmitted signal back into the receiving-amplifier to enable the operator to hear himself realistically.

(7) Switch S1 is used to select either 2-wire or 4-wire operation. In the 4-wire mode, the signal is transmitted via transformer T3 and through transformer T4 in the 2-wire mode. Transformer T4 is, of course, the receiving input transformer for both modes of operation.

(8) Zener diodes D1 and D2 are to protect the operational amplifier from line transients.

c. Receiving Amplifier.

(1) The receiving-amplifier has a voltage gain of approximately 22 dBm. The input impedance is 600 ohms and the output impedance is 500 ohms.

(2) The circuit consists of input transformer T4, operational amplifier, B (I/2IC1), and an output amplifier composed of transistor Q1 and associated components including transformer T2.

(3) Transformer T4 provides the proper impedance matching and line isolation.

(4) Capacitor C7 is placed between the two halves of the line-side winding, of T4, to block the 20-Hz ring-signal energy from harming the transformer.

(5) Resistors R15 and R14 form an input signal divider to create a proper level to enable the sidetone, circuit to work properly.

(6) Resistors R8 and R13 set the gain of the operational amplifier to be approximately 35 dB.

(7) Capacitor C3 couples the output amplifier to the operational amplifier.

(8) The output amplifier is a standard transformer coupled (T2), common-emitter amplifier employing degenerative current feedback for stabilization (provided by resistor R4).

(9) Diodes D3 and D4 protect the input of the receiving-amplifier from line transients.

d. Sidetone Circuit.

(1) The sidetone circuit as mentioned above enables the operator to hear himself talking.

(2) In the 4-wire mode of operation, the sidetone circuit is composed of capacitor C4 and resistor R10 feeding the signal into the receiving-amplifier (operational amplifier B).

(3) In the two-wire mode of operation, a proper sidetone is created by cancelling a portion of the transmitted signal which appears at the input (terminal 6) of the receiving-amplifier (operational amplifier B) by virtue of the common transmission path through transformer T4.

(4) This is accomplished by feeding a portion of the transmitted signal to inverting input (terminal 7) of the receiving-amplifier (operational amplifier B) via capacitor C9 and resistor R9.

(5) Since the signals at the two inputs of the operational amplifier B are the same and in phase only the difference- in amplitude between them is amplified and becomes the required sidetone.

e. Power supply.

(1) The unit has been designed to operate from the 115-vac, 50- to 60-Hz powerline or from two internal 9-volt (BA-3090) batteries provided for emergency operation in the event of a powerline failure.

(2) The line power supply will operate with line voltages between 105 vac minimum and 130 vac maximum, 50 to 60 Hz. The current drain is less than 20 milliamperes ac.

(3) The power is coupled to the bride recitifer through a step down transformer, T5. The secondary voltage provided is approximately 25 vac center tapped.

(4) The bridge-rectifier is formed by diodes D5 through D8, wired to produce both plus and minus 19 VDC at the capacitor input filters, C5 and C6,
respectively.

(5) The 19 volts is then regulated to 8.7 volts by zener diodes D9 and D10 and associated resistors R16 and R17.

(6) The current drain is approximately 12.5 milliamperes.

(7) Dc power supply consists of two 9-volt batteries internally mounted in the unit. These batteries can satisfactorily power the unit for approximately 40 hours.

4-17. Output Level Tests

a. Connect the equipment as shown in figure 4-1. Use a 110-volt ac, 60-Hz power source.

b. Adjust the oscillator (TS-421) output to 1 kiloHertz at zero dBm. Connect terminals B and C of the oscillator to terminals 2 and 1 of the test setup, respectively. Adjust the vtvm (ME-30E/U) to the + 10-dBm scale.

c. Connect the test lead of the ME-30E/U to terminal 3 of test setup. Place the AM-6789/G 2W/4W switch to 2W. Remove the strap between terminals 5 and 6 of the test setup. Place the AM-6789/G OFF-LINE-BATTERY switch to LINE. Set the ME-30E/U to the -50-dB scale and adjust the

oscillator output to --58 dBm. Reset the ME-30E/U to the + 10-dB scale.

d. Connect ME-30E/U test lead to terminal 4 of the test setup and check the meter. The meter should indicate + 7 dBm -+1.

e. Connect the ME-30E/U test lead to terminal 10 of the test setup and reset the meter to 0-dB scale. Check the meter. It should indicate -6 dBm l. Reset the ME-30E/U to the +10-dB scale.

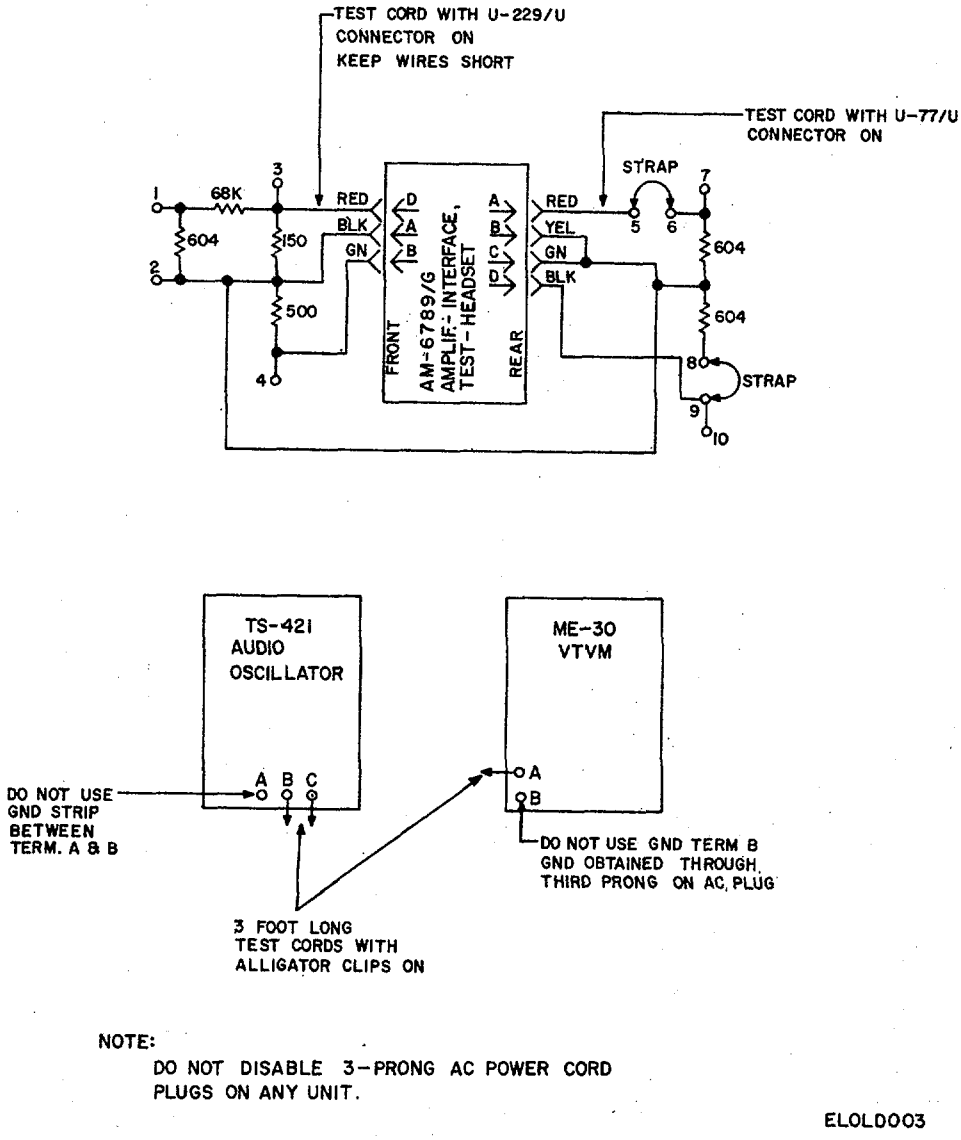

Figure 4-1. Amplifier-Interface, Test Headset AM-6789/G, test setup.

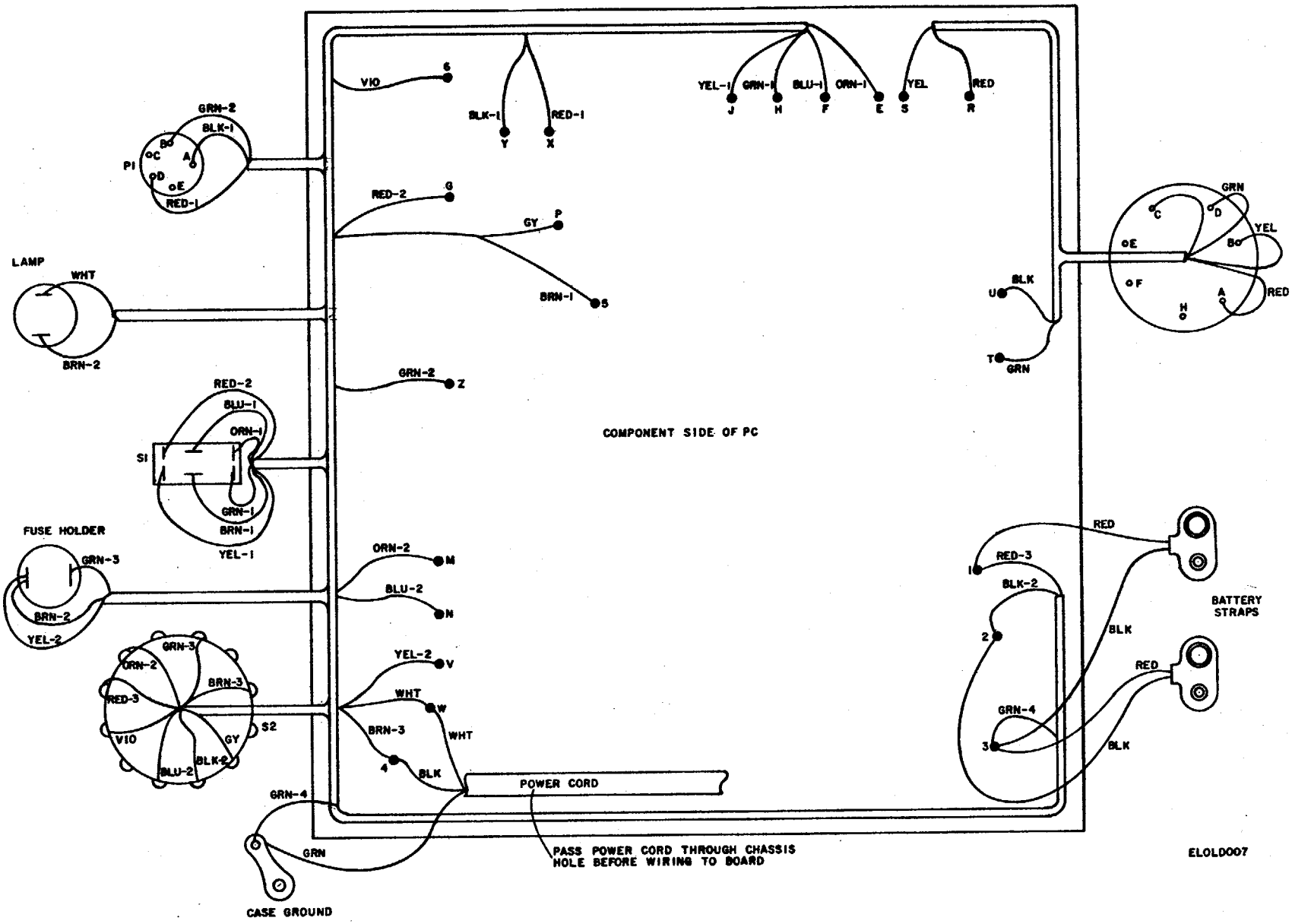

Figure 4-2. Amplifier-Interface, Test Headset AM - 6789/G, wiring diagram

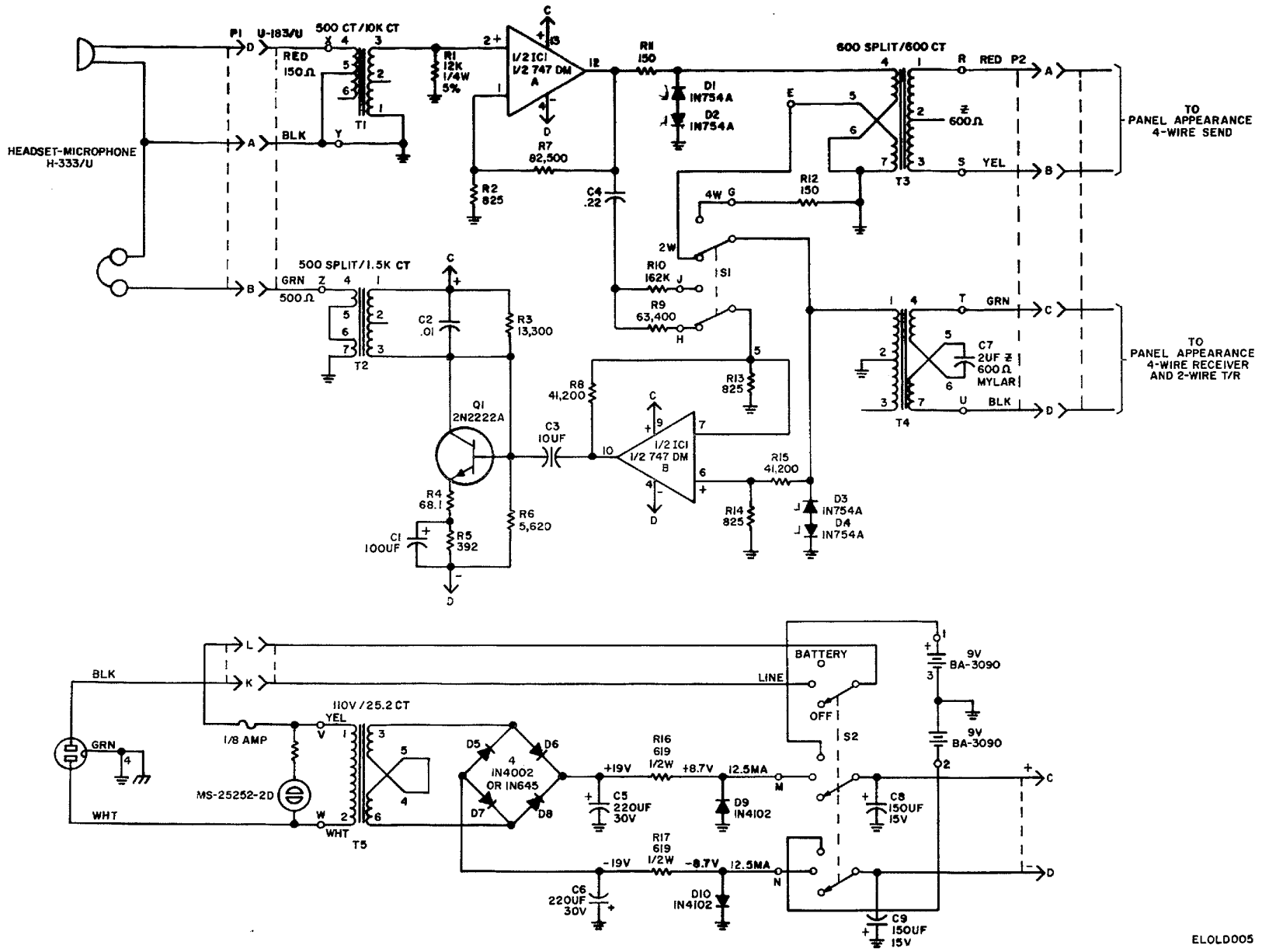

Figure 4-3. Amplifier - Interface, Test Headset AM-6789/G, schematic diagram.

f. Place the AM-6789/G 2W/4W switch to 4W, and replace the strap between terminals 5 and 6. Connect the ME-30E/U test lead to terminal 3 of the test setup. Reset the ME-30/U to the --50-dB scale; readjust the oscillator, if necessary, to -58 dBm. Reset the ME-30E/U to the +10-dB scale.

g. Connect the ME-30E/U test lead to terminal 7 of the test setup. Reset the ME-30E/U to the 0-dB scale and check the meter. It should indicate -4dBml1. Reset the meter to +10-dB scale.

h. Connect the ME-30E/U test lead to terminal 4 of the test setup. Check the meter. It should indicate +7 dBm +1.

i. Remove the strap between terminals 8 and 9 of the test setup. Set oscillator output level to 0 dBm, and connect oscillator lead C to terminal 9 of the test setup. Connect the ME-30E/U test lead to terminal 10 of the test setup. Reset the ME- 30E/U to the -10-dB scale. Adjust the oscillator output level to -10 dB. Reset the ME-30E/U to +10-dB scale.

j. Connect the ME-30E/U test lead to terminal 4 of the test setup and check the meter. It should indicate +3 dBm +1.5. Operate OFF-LINE- BATTERY switch to OFF.

k. Insert new batteries in the AM-6789/G and operate the OFF-LINE-BATTERY switch to BATTERY. Perform b through j above and note that results are the same for both dc and ac power sources.

APPENDIX A

REFERENCES

DA Pam 310-4	Index of Technical Manuals, Technical Bulletins, Supply Manuals (types 7, 8, and 9), Supply Bulletins, and Lubrication Orders.
DA Pam 310-7	U.S. Army Equipment Index of Modification Work Orders.
TM 11-5895-799-14	Operator's, Organizational, Direct Support and General Support Maintenance Manual for Communication Technical Control Center AN/TSQ-84. (NSN 5895-01-007-4788)
TM 11-6625-355-15-1	Operator's Organization, Direct Support, General Support and Depot Maintenance Manual; Audio Oscillator TS-421C/U (NSN 6625-00-435-2588)
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.
SB 38-100	Preservation, Packaging, and Packing Materials, Supplies, and Equipment Used by the Army.
TB 43-0118	Field Instructions for Painting and preserving Electronics Command Equipment. Including Camouflage pattern painting of Electronic Equipment Shelters.
TM 38-750	The Army Maintenance Management System (TAMMS).
TM 740-90-1	Administrative Storage.
TM 750-244-2	Procedures for Destruction of Electronics Material to Prevent Enemy Use (Electronics Command).

APPENDIX B

OPERATOR'S, ORGANIZATIONAL, AND DIRECT SUPPORT

MAINTENANCE REPAIR PARTS AND SPECIAL TOOLS LIST

Section I. INTRODUCTION

B-1. Scope

This manual lists repair parts required for operation and performance of organizational and direct sup- port maintenance of the AM-6789/G.

B-2. General

This Repair Parts List is divided into the following sections:

a. Section II-Basic Issue Items List. Not applicable.

b. Section III-Items Troop Installed or Authorized List. Not applicable.

c. Section IV-Repair Parts List. A list of repair parts authorized for use in the performance of maintenance. The list also includes parts which must be removed for replacement of the authorized parts. Parts lists are composed of functional groups in ascending numerical sequence, with the parts in each group listed in figure and item number sequence.

d. Section V-Special Tools List. Not applicable.

e. Section VI--National Stock Number and Part Number Index. A list, in ascending numerical sequence, of all National stock numbers appearing in the listings, followed by a list, in alphanumeric sequence, of all part numbers appearing in the listings. National stock numbers and part numbers are cross-referenced to each illustration figure and item number appearance.

B-3. Explanation, of Columns.

The following provides an explanation of columns found in the tabular listings:

a. Illustration. This column is divided as follows:

(1) Figure number. Indicates the figure number of the illustration in which the item is shown.

(*2) Item number.* The number used to identify each item called out in the illustration.

b. Source, Maintenance, and Recoverability Codes (SMR).

(1) Source code. Source codes are assigned to support items to indicate the manner of acquiring support items for maintenance, repair, or overhaul of end items. Source codes are entered in the first and second positions of the Uniform SMR Code format as follows:

Code	*Definition*
PA	Item procured and stocked for anticipated or known usage.
XD	A support item that is not stocked. When required, item will be procured through normal supply channels.

NOTE

Cannibalization or salvage may be used as a source of supply for any items source-coded above, except those coded XA, XD, and aircraft support items as restricted by AR 700-42.

(*2) Maintenance code.* Maintenance codes are assigned to indicate the levels of maintenance authorized to USE and REPAIR support items. The maintenance codes are entered in the third and fourth positions of the Uniform SMR Code format as follows:

*(*a) The maintenance code entered in the third position will indicate the lowest maintenance level authorized to remove, replace, and use the support item. The maintenance code entered in the third position will indicate one of the following levels of maintenance:

Code	*Application/ Explanation*
O	Support item is removed, replaced, used at the organizational level.
F	Support item is removed, replaced, used at the direct support level.

*(*b) The maintenance code entered in the fourth position indicates whether the item is to be repaired and identifies the lowest maintenance level with the capability to perform complete repair (i.e., all authorized maintenance functions). This position will contain the following maintenance code:

Code	*Application/ Explanation*
Z	Nonreparable. No repair is authorized.

(3) Recoverability code. Recoverability codes are assigned to support items to indicate the disposition action on unserviceable items. The recoverability code is entered in the fifth position of the Uniform SMR Code format as follows:

Recoverability Codes	*Definition*
Z	Nonreparable item. When unserviceable, condemn and dispose at the level indicated in position 3.

c. National Stock Number. Indicates the National stock number assigned to the item and will be used for requisitioning purposes.

b. Part Number. Indicates the primary number used by the manufacturer (individual, company, firm, corporation, or Government activity), which controls the design and characteristics of the item by means of its engineering drawings, specifications standards, and inspection requirements, to identify an item or range of items.

NOTE

When a stock-numbered item is requisitioned, the repair part received may have a different part number than the part being replaced.

e. Federal Supply Code for Manufacturer (FSCM). The FSCM is a 5-digit numeric code listed in SB 708-42 which is used to identify the manufacturer, distributor, or Government agency, etc.

f. Description. Indicates the Federal item name and, if required, a minimum description to identify the item.

g. Unit of Measure (U/M). Indicates the standard of the basic quantity of the listed item as used in performing the actual maintenance function. This measure is expressed by a two-character alphabetical abbreviation (e.g., ea, in, pr, etc.). When the unit of measure differs from the unit of issue, the lowest unit of issue that will satisfy the required units of measure will be requisitioned.

h. Quantity Incorporated in Unit. Indicates the quantity of the item used in the breakout shown on the illustration figure, which is prepared for a functional group, subfunctional group, or an assembly.

B-4. Special Information

(Not applicable)

B-5. How to Locate Repair Parts

a. When National stock number or part number is unknown:

(1) First. Using the table of contents, deter- mine the functional group within which the repair part belongs. This is necessary since illustrations are prepared for functional groups and listings are divided into the same groups.

(*2) Second.* Find the illustration covering the functional group to which the repair part belongs.

(3) Third. Identify the repair part on the illustration and note the illustration figure and item number of the repair part.

(4) Fourth. Using the Repair Parts Listing, find the figure and item number noted on the illustration.

b. When National stock number or part number is known:

(1) First. Using the Index of National Stock Numbers and Part Numbers, find the pertinent National stock number or part number. This index is in ascending NSN sequence, followed by a list of part numbers in ascending alphameric sequence, cross- referenced to the illustration figure number and item number.

(*2) Second.* After finding the figure and item number, locate the figure and item number in the repair parts list.

B-6. Abbreviations

(Not applicable)

SECTION IV. REPAIR PARTS LIST

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION *USABLE ON CODE*	(7) U/M	(8) QTY INC IN UNIT
						GROUP: 00 AMPLIFIER-INTERFACE, TEST HEADSET AM-6789/G		
B-1	1	PAFZZ		1426C	83330	SCREW MACHINE BINDING HD SLOTTED 6-32 x 3/8	EA	2
B-1	2	PAFZZ	5305-00-984-4989	MS35206-229	96906	SCREW MACHINE PAN HD CROSSED REC 6-32 x 7/16	EA	4
B-1	3	PAOZZ	5355-00-888-7073	50-4-1G	49956	KNOB	EA	1
B-1	4	PAFZZ	5930-00-859-6406	PS-109	71590	SWITCH, ROTARY (S2)	EA	1
B-1	5	PAFZZ	5920-00-849-6564	342-004	75915	FUSEHOLDER	EA	1
B-1	6	PAOZZ	5920-00-812-3654	312-125	75915	FUSE 1/8 AMP 3AG	EA	1
B-1	7	PAFZZ	5930-00-947-8318	MS-75029-23	96906	SWITCH, TOGGLE (S1)	EA	1
B-1	8	PAOZZ	6210-00-023-7031	LC13WT2	81349	LENS	EA	1
B-1	9	PAFZZ	5935-00-823-0667	U-183/U	80058	CONNECTOR, RECEPTACLE (P1)	EA	1
B-1	10	PAFZZ	5340-00-714-2971	7303	04941	STRAP, RETAINING	EA	1
B-1	11	PAFZZ	5310-00-184-8977	MS35338-98	96906	LOCKWASHER #6 MEDIUM	EA	8
B-1	12	PAFZZ	5310-00-934-9763	MS35649-265	96906	HEX NUT #6-32	EA	3
B-1	13	PAFZZ	5305-00-984-4988	MS35206-228	96906	SCREW MACHINE PAN HEAD CROSSED REC 6-32 x 3/8	EA	13
B-1	14	PAFZZ	6150-00-071-1179	17238	70903	CORD, POWER	EA	1
B-1	15	XDFZZ		45-2	72825	STRAP, BATTERY	EA	2
B-1	16	XDFZZ		79	91833	CLIP, BATTERY	EA	2
B-1	17	XDFZZ		8545	86168	CLAMP, LOOP	EA	1
B-1	18	PAFZZ	5310-00-983-8483	MS27183-5	96906	FLAT WASHER #6	EA	6
B-1	19	PAFZZ	5940-00-813-0563	1558-B	71279	TERMINAL LUG	EA	1
B-1	20	PAFZZ		ES-D-212722	80063	CIRCUIT BOARD ASSY	EA	1
B-2	1	PAFZZ	6210-00-809-4274	LH-74/1	81349	LAMPHOLDER	EA	1
B-2	2	PAOZZ	6240-00-892-4420	MS25252-C7A	96906	LAMP NEON C7A/NE-2D	EA	1
B-2	3	PAFZZ	5935-00-549-2646	U-79/U	81349	CONNECTOR, RECEPTACLE (P2)	EA	1
B-2	4	PAFZZ	5975-00-376-1585	SR-5N-4	28520	BUSHING, STRAIN RELIEF	EA	1

SECTION VI. FEDERAL STOCK NUMBER AND PART NUMBER INDEX (CONTINUED)

STOCK NUMBER	FIG. NO.	ITEM NO.	STOCK NUMBER	FIG. NO.	ITEM NO.
5305-00-984-4988	B-1	13			
5305-00-984-4989	B-1	2			
5310-00-184-8977	B-1	11			
5310-00-934-9763	B-1	12			
5310-00-983-8483	B-1	18			
5340-00-714-2971	B-1	10			
5355-00-888-7073	B-1	3			
5920-00-812-3654	B-1	6			
5920-00-849-6554	B-1	5			
5930-00-859-6406	B-1	4			
5930-00-947-8318	B-1	7			
5935-00-549-2646	B-2	3			
5935-00-823-0667	B-1	9			
5940-00-159-0250	B-1	19			
5975-00-376-1585	B-2	4			
6150-00-071-1179	B-1	14			
6210-00-023-7031	B-1	8			
6210-00-809-4274	B-2	1			
6240-00-892-4420	B-2	2			

SECTION VI. NATIONAL STOCK NUMBER AND PART NUMBER INDEX (CONTINUED)

PART NUMBER	FSCM	FIG. NO.	ITEM NO.
ES-D-212722	80063	B-1	20
LC13WT2	81349	B-1	8
LH-74/1	81349	B-2	1
MS25252-C7A	96906	B-2	2
MS27183-5	96906	B-1	18
MS35206-228	96906	B-1	13
MS35206-229	96906	B-1	2
MS35338-98	96906	B-1	11
MS35649-265	96906	B-1	12
MS75029-23	96906	B-1	7
PS-109	71590	B-1	4
SR-5N-4	28520	B-2	4
U-183/U	80058	B-1	9
U-79/U	81349	B-2	3
1426C	83330	B-1	1
1558-B	71279	B-1	19
17238	70903	B-1	14
312-125	75915	B-1	6
342-004	75915	B-1	5
45-2	72825	B-1	15
50-4-1G	49956	B-1	3
7503	04941	B-1	10
79	91833	B-1	16
8545	86168	B-1	17

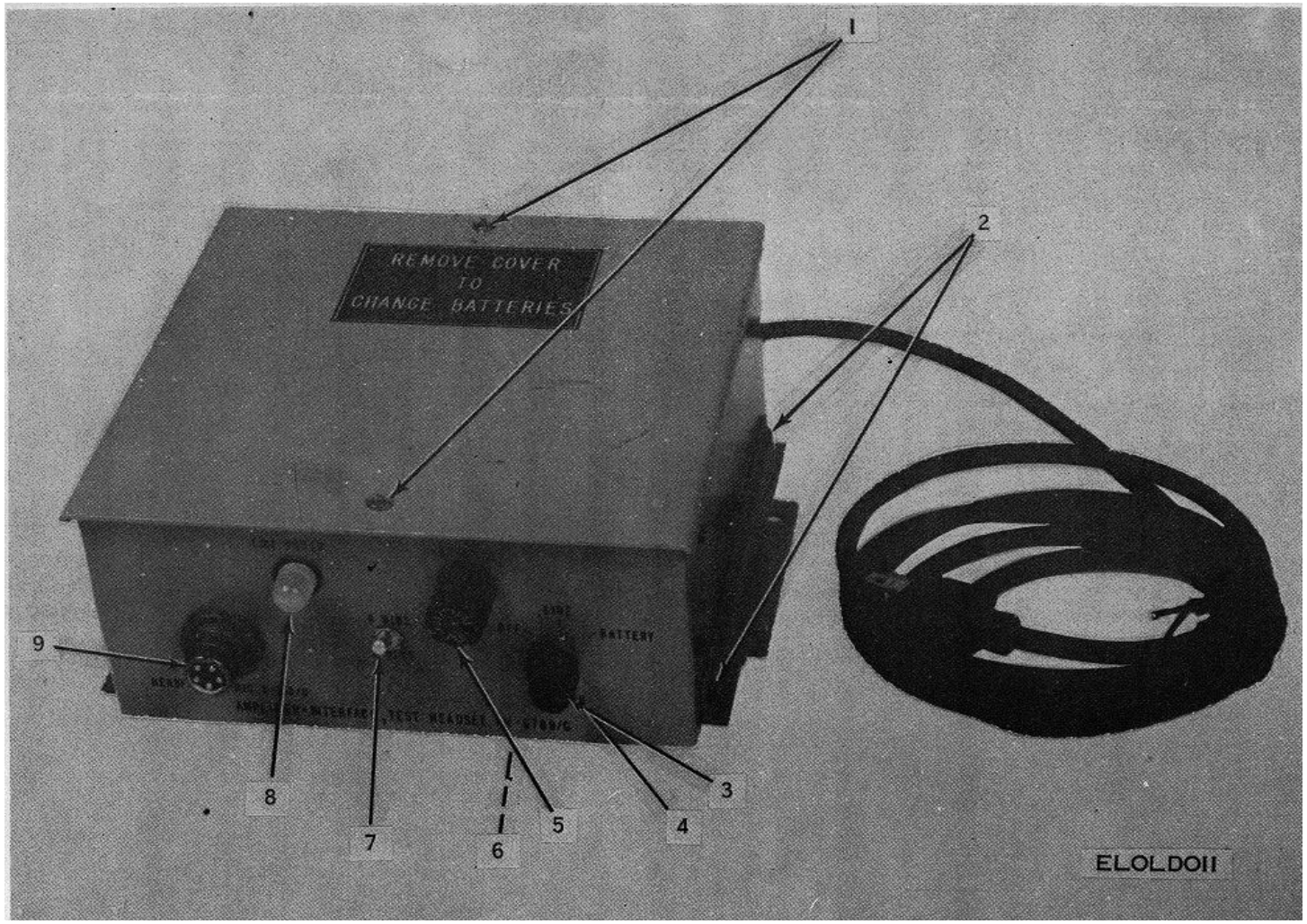

FIGURE B-1. (1) Main Housing Assy., Front View - With Cover

(SHEET 1 OF 3)

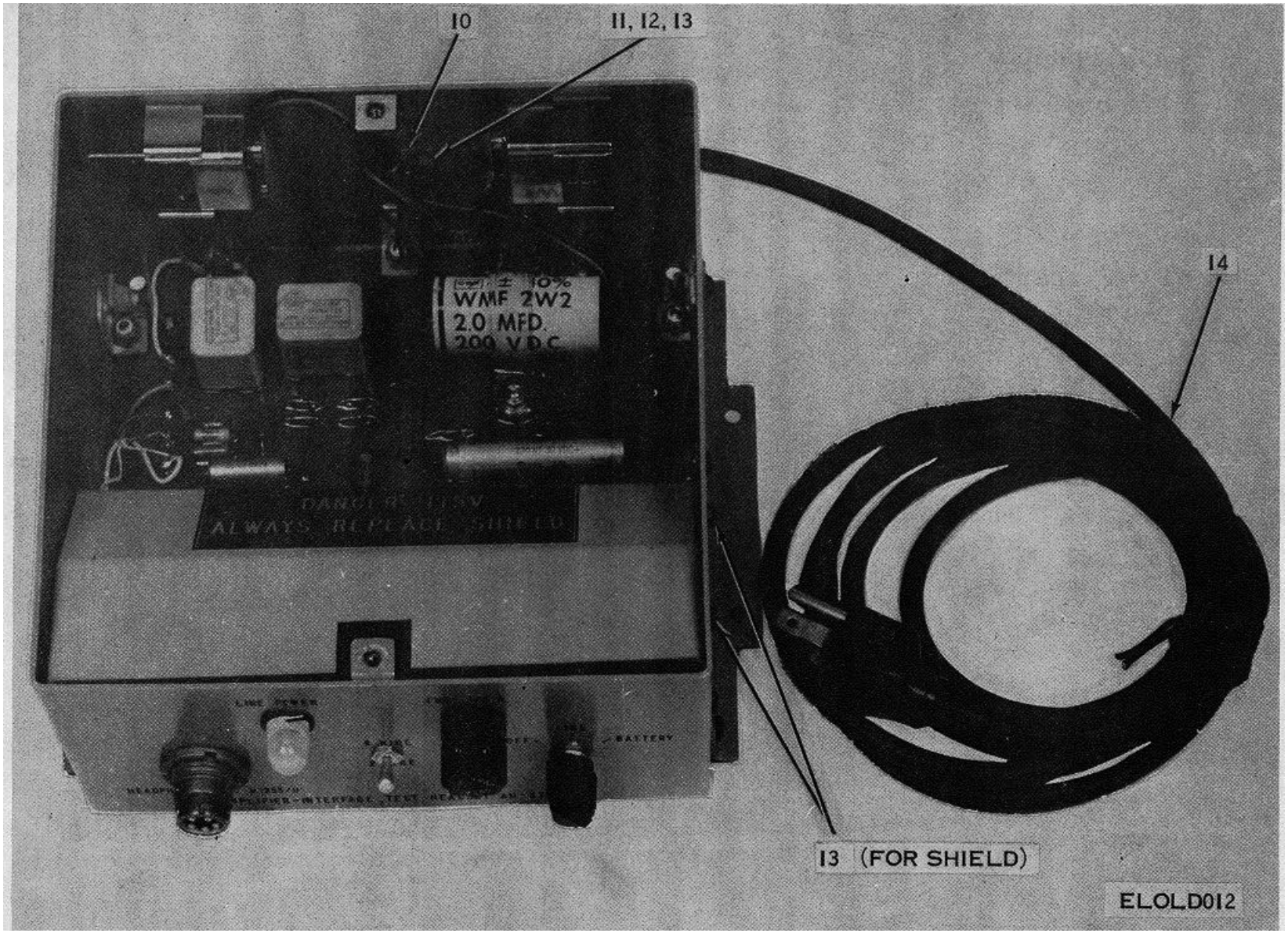

Figure B-1. (2) Main Housing Assy., Front View- With Shield

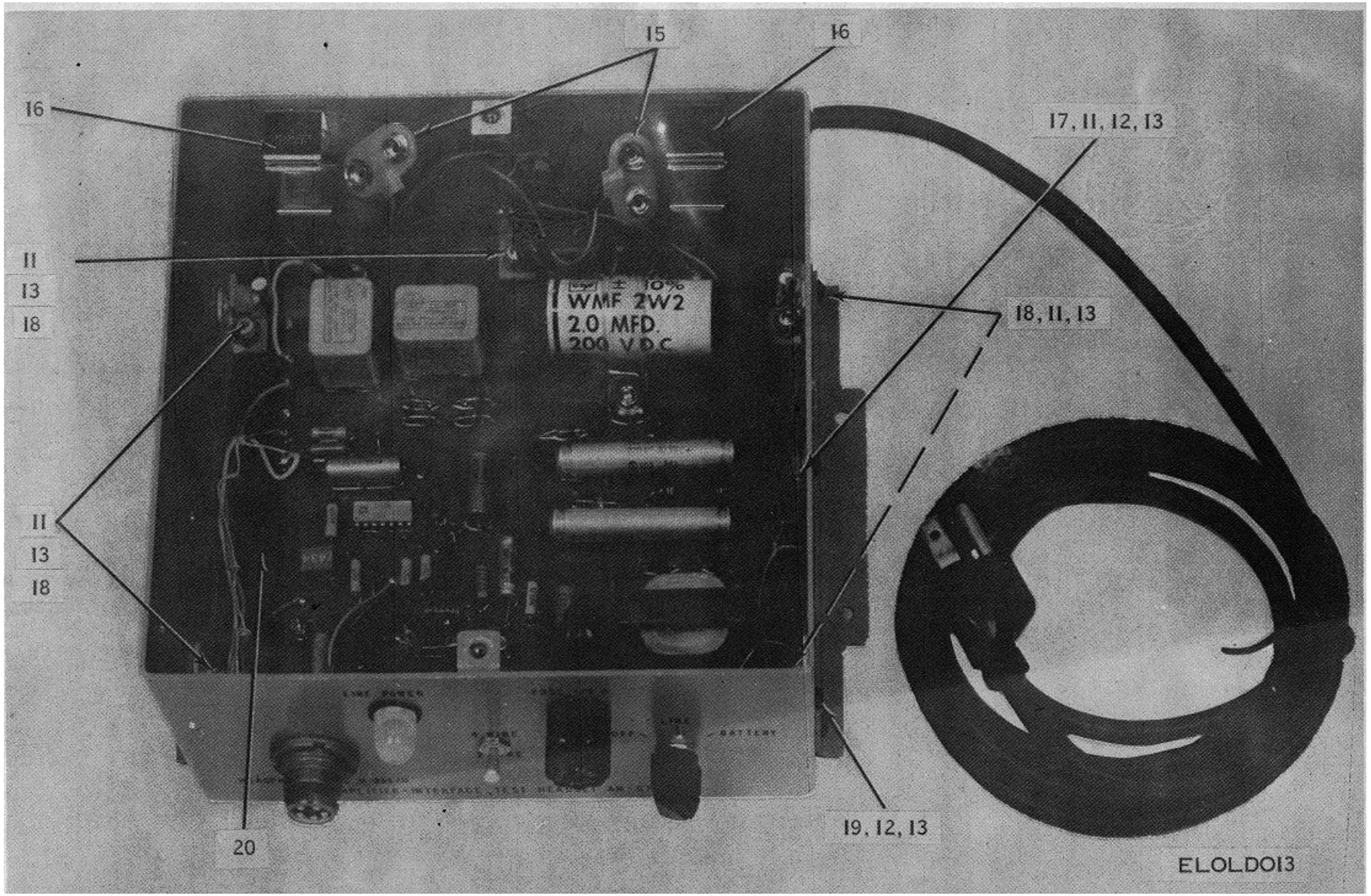

Figure B-1. (3) Main Housing Assy., Front View-Without Shield.

(SHEET 3 OF 3)

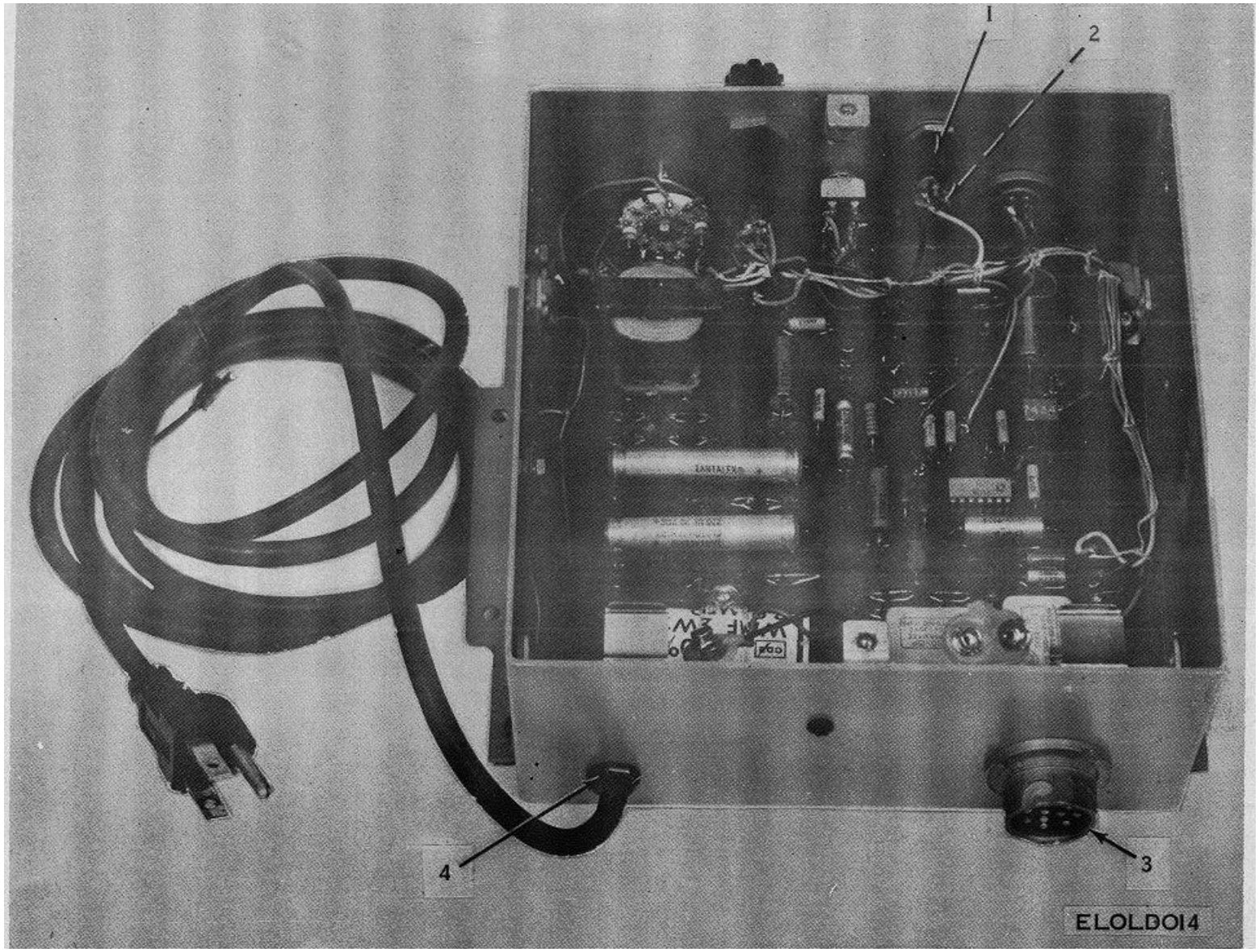

Figure B-2. Main Housing Assy., Rear View-Without Shield.

APPENDIX C

MAINTENANCE ALLOCATION

Section I. INTRODUCTION

C-1. General

This appendix provides a summary of the maintenance operations for the AM-6789/G. It authorizes categories of maintenance for specific maintenance functions on reparable items and components and the tools and equipment required to perform each function. This appendix may be used as an aid in planning maintenance operations.

C-2. Maintenance Function

Maintenance functions will be limited to and defined as follows:

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

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

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

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

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

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

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

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

i. Repair. The application of maintenance services (inspect, test, service, adjust, align, calibrate, replace) or other maintenance actions (welding, grinding, riveting, straightening, facing, remachining, or resurfacing) to restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, subassembly, module/component/assembly, end item or system. This function does not include the trial and error replacement of running spare type items such as fuses, lamps, or electron tubes.

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

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

C-3. Column Entries

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

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

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

d. Column 4, Maintenance Category. Column 4 specifies, by the listing of a "worktime" figure in

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

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

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

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

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

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

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

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

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

SECTION II MAINTENANCE ALLOCATION CHART
FOR
AMPLIFIER-INTERFACE, TEST, HEADSET AM-6789/G

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY FUNCTION	(3) MAINTENANCE	(4) MAINTENANCE TOOLS CATEGORY					(5) AND EQPT
			C	O	F	H	D	
00	AMPLIFIER-INTERFACE, TEST, HEADSET AM-6789/G	Inspect	0.1					
		Test 1	0.1					
		Test 2	0.2					1
		Test			0.5			1 thru 5
		Service	0.1					
		Repair			0.5			1 thru 5

(1) Operational test.
(2) Continuity test.

TABLE I. TOOL AND TEST EQUIPMENT REQUIREMENTS
FOR
APLIFIER-INTERFACE, TEST, HEADSET AM-6789/G

TOOL OR TEST EQUIPMENT REF CODE	MAINTENANCE CATEGORY	NOMENCLATURE	NATIONAL/NATO STOCK NUMBER	TOOL NUMBER
1	O,F	MULTIMETER AN/USM-223	6625-00-999-7465	
2	O,F	MULTIMETER ME-30E/U	6625-00-420-9354	
3	O,F	GENERATOR, SIGNAL TS-421C/U	6625-00-669-0228	
4	O,F	TOOL KIT, ELECTRONIC EQUIPMENT TK-101/G	5180-00-064-5178	
5	D	TOOL KIT, ELECTRONIC EQUIPMENT TK-105/G	5180-00-610-8177	

By Order of the Secretary of the Army:

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COE (1)
TSG (1)
USAARENBD (1)
DARCOM (1)
TECOM (2)
TRADOC (2)
USACC (4)
OS Maj Comd (4)
MDW (1)
Armies (2)
Corps (2)
Instl (2) except
- Ft Gillem (10)
- Ft Gordon (10)
- Ft Huachuca (10)
- Ft Carson (5)
- SAAD (30)
- LBAD (14)
- TOAD (14)
- SHAD (3)

HISA (Ft Monmouth) (33)
Ft Richardson (ECOM Ofc) (2)
Svc Colleges (1)
USAICS (3)
USAADS (2)
USAFAS (2)
USAARMS (2)
USAIS (2)
USAES (2)
MAAG (1)
USARMIS (1)
USAERDAA (1)
USAERDAW (1)
Sig FLDMS (1)

ARNG & USAR: None.
For explanation of abbreviations used, see AR 310-50.

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The Metric System and Equivalents

Linear Measure

1 centimeter = 10 millimeters = .39 inch
1 decimeter = 10 centimeters = 3.94 inches
1 meter = 10 decimeters = 39.37 inches
1 dekameter = 10 meters = 32.8 feet
1 hectometer = 10 dekameters = 328.08 feet
1 kilometer = 10 hectometers = 3,280.8 feet

Weights

1 centigram = 10 milligrams = .15 grain
1 decigram = 10 centigrams = 1.54 grains
1 gram = 10 decigram = .035 ounce
1 decagram = 10 grams = .35 ounce
1 hectogram = 10 decagrams = 3.52 ounces
1 kilogram = 10 hectograms = 2.2 pounds
1 quintal = 100 kilograms = 220.46 pounds
1 metric ton = 10 quintals = 1.1 short tons

Liquid Measure

1 centiliter = 10 milliters = .34 fl. ounce
1 deciliter = 10 centiliters = 3.38 fl. ounces
1 liter = 10 deciliters = 33.81 fl. ounces
1 dekaliter = 10 liters = 2.64 gallons
1 hectoliter = 10 dekaliters = 26.42 gallons
1 kiloliter = 10 hectoliters = 264.18 gallons

Square Measure

1 sq. centimeter = 100 sq. millimeters = .155 sq. inch
1 sq. decimeter = 100 sq. centimeters = 15.5 sq. inches
1 sq. meter (centare) = 100 sq. decimeters = 10.76 sq. feet
1 sq. dekameter (are) = 100 sq. meters = 1,076.4 sq. feet
1 sq. hectometer (hectare) = 100 sq. dekameters = 2.47 acres
1 sq. kilometer = 100 sq. hectometers = .386 sq. mile

Cubic Measure

1 cu. centimeter = 1000 cu. millimeters = .06 cu. inch
1 cu. decimeter = 1000 cu. centimeters = 61.02 cu. inches
1 cu. meter = 1000 cu. decimeters = 35.31 cu. feet

Approximate Conversion Factors

To change	*To*	*Multiply by*	*To change*	*To*	*Multiply by*
inches	centimeters	2.540	ounce-inches	Newton-meters	.007062
feet	meters	.305	centimeters	inches	.394
yards	meters	.914	meters	feet	3.280
miles	kilometers	1.609	meters	yards	1.094
square inches	square centimeters	6.451	kilometers	miles	.621
square feet	square meters	.093	square centimeters	square inches	.155
square yards	square meters	.836	square meters	square feet	10.764
square miles	square kilometers	2.590	square meters	square yards	1.196
acres	square hectometers	.405	square kilometers	square miles	.386
cubic feet	cubic meters	.028	square hectometers	acres	2.471
cubic yards	cubic meters	.765	cubic meters	cubic feet	35.315
fluid ounces	milliliters	29,573	cubic meters	cubic yards	1.308
pints	liters	.473	milliliters	fluid ounces	.034
quarts	liters	.946	liters	pints	2.113
gallons	liters	3.785	liters	quarts	1.057
ounces	grams	28.349	liters	gallons	.264
pounds	kilograms	.454	grams	ounces	.035
short tons	metric tons	.907	kilograms	pounds	2.205
pound-feet	Newton-meters	1.356	metric tons	short tons	1.102
pound-inches	Newton-meters	.11296			

Temperature (Exact)

°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C

PIN: 015472-000