

60-TYPE HEAD TELEPHONE SETS

PIECE-PART DATA AND REPLACEMENT PROCEDURES

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1.04 Piece parts which may be replaced in the field are listed in Part 3.

1.05 Part 4 covers the approved procedures for the replacement of the piece parts designated in Part 3. No attempt should be made in the field to replace parts not so designated.

1.06 Part 5 of this section covers the methods of cleaning various parts of the head telephone set.

1. GENERAL

1.01 This section covers information necessary for ordering parts to be used in the repair of 60-type head telephone sets. It also covers approved procedures for repairing and cleaning those sets.

1.02 The reasons for reissuing this section are listed below. Since this reissue is a general revision, no revision arrows have been used to denote significant changes. The Equipment Test List is not affected.

- (1) To rate the 60B Head Telephone Set (Mfr Disc.), replaced by the 60B1 Head Telephone Set
- (2) To revise the List of Tools and Materials
- (3) To rate the 281A-50 Amplifier Mfr Disc., replaced by the 281B-50 Amplifier
- (4) To change the shell half part numbers of the 464A-50 plug.

1.03 The 60-type head telephone sets can be used in any application approved for the 52-type head telephone sets.

2. APPARATUS

2.01 *List of Tools and Materials:*

CODE OR SPEC NO.	DESCRIPTION
TOOLS	
KS-2348	Cord Repair Screwdriver (equipped with P-484700 bit)
KS-6854	3-1/2 Inch Screwdriver
KS-21233, L1	Test Fixture (for convenient servicing of 280A amplifier)
KS-21233,L2	Test Fixture [for convenient servicing of 281A (Mfr Disc.) and 281B amplifiers]
R-8950	Syringe
AT-7860	B Long-Nose Pliers
AT-7825	3-Inch C Screwdriver
1253	Screw-Starter (Quick Wedge or equivalent)

NOTICE

Not for use or disclosure outside the
Bell System except under written agreement

SECTION 028-362-801

MATERIALS

- KS-2423 Cloth
- Mild Powdered Soap
- Mild Detergent

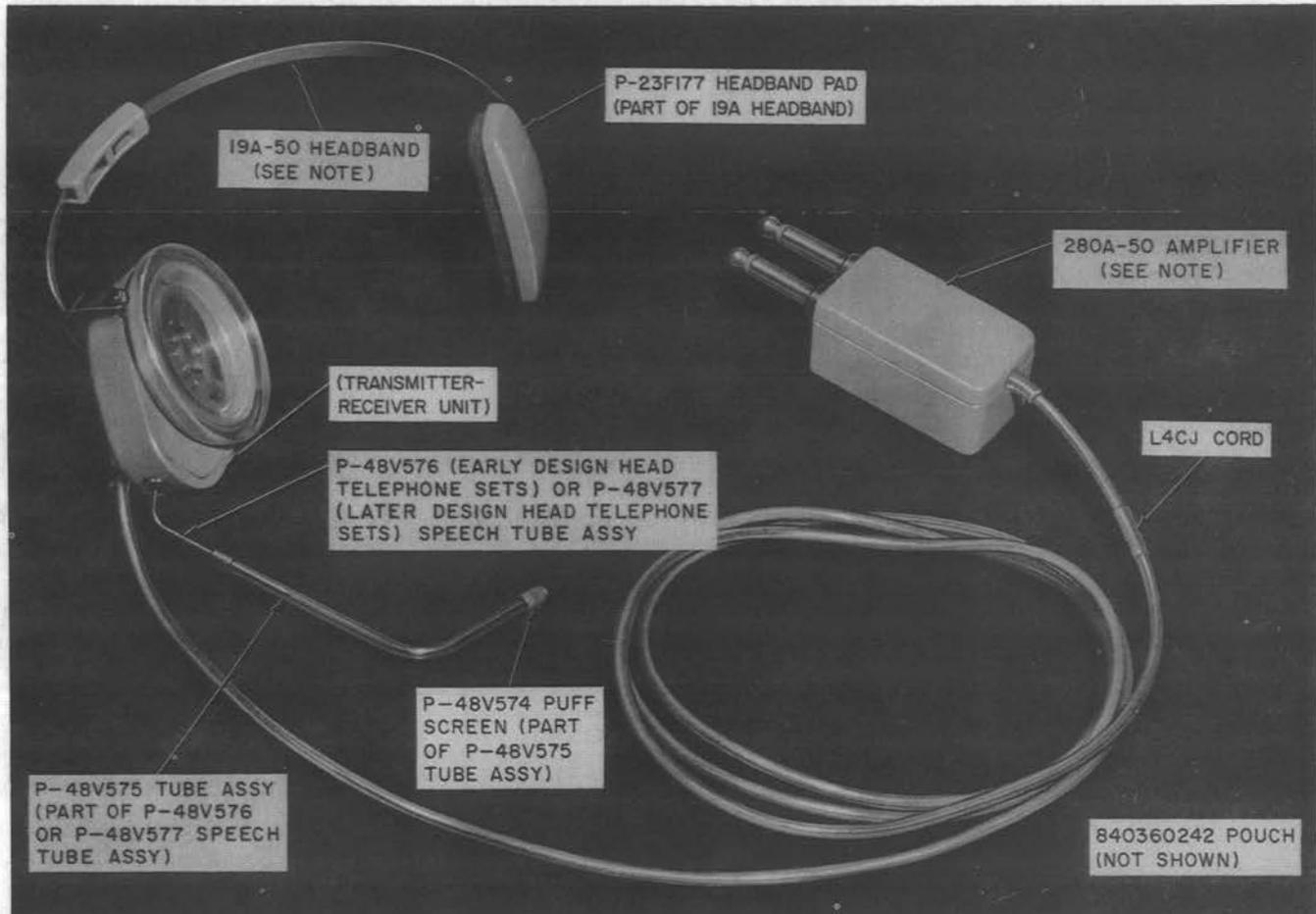
3. PIECE-PART DATA

3.01 Figures 1 through 7 show the relationship of the various parts of the head telephone sets. The piece-part numbers of these parts are given with the names as listed by the Western Electric Merchandise Department.

3.02 When ordering replacement parts, give both the piece-part number and the name, for example: P-23F210 Screw. Do not refer to the BSP number.

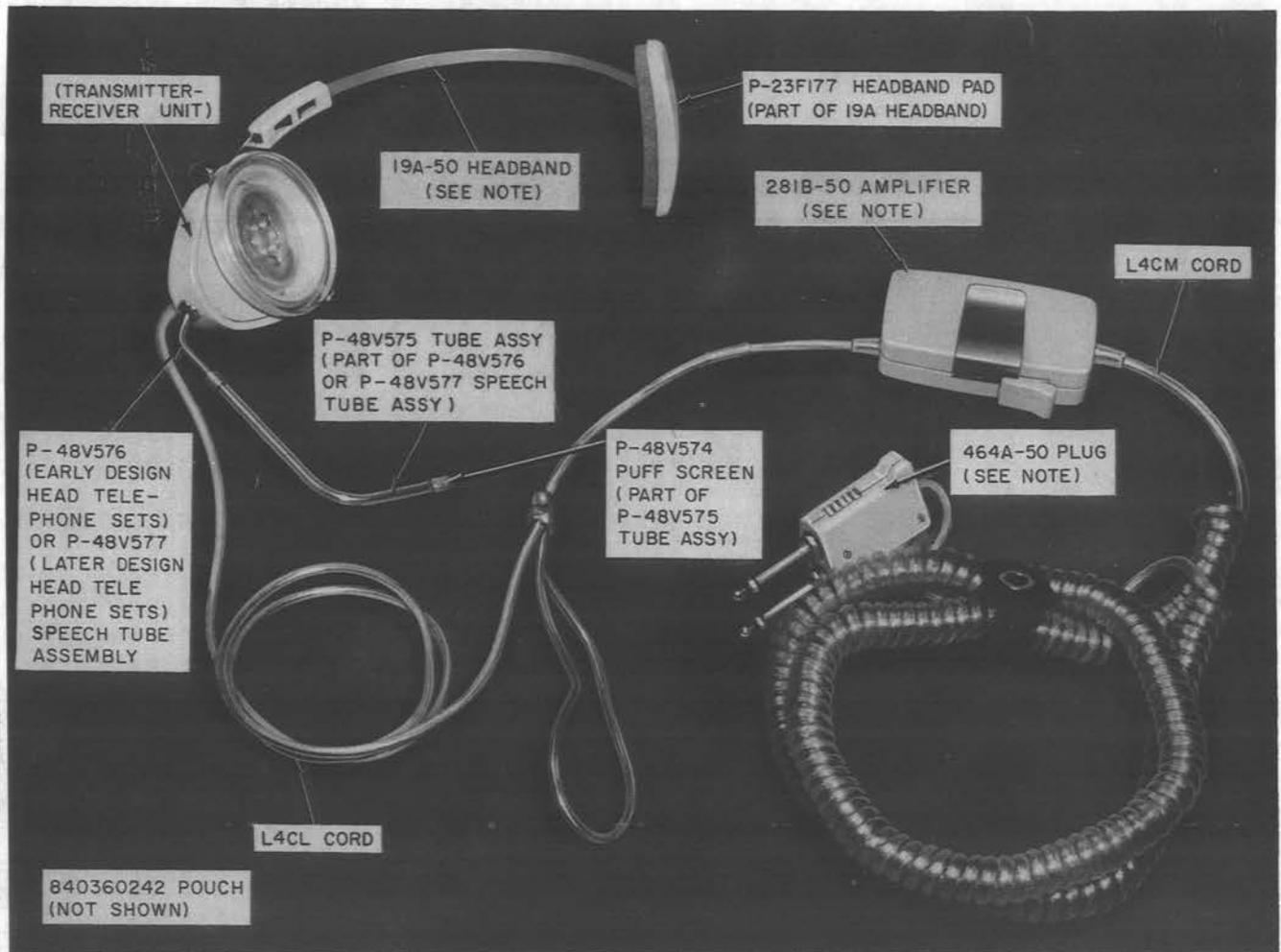
3.03 Information enclosed by parentheses () is not ordering information. This information may be references to notes, parts referred to in other portions of the section and not considered replaceable, or part names in general use in the field if these names differ from those assigned by the manufacturer.

3.04 The 60-type head telephone sets are available in ivory color only.



NOTE:
THE SUFFIX -50 INDICATES IVORY COLOR.

Fig. 1—60A Head Telephone Set



NOTE:
THE SUFFIX -50 INDICATES IVORY COLOR.

Fig. 2—60B (Mfr Disc.) and 60B1 Head Telephone Sets

4. REPLACEMENT PROCEDURES

4.01 No attempt shall be made to repair either the printed wiring board, speech tube assembly, or transmitter and boot assembly since these components are replaceable as complete units. These items should be returned in accordance with local instructions to the Western Electric Company.

4.02 After making replacement of parts which affect transmission, check the headset to see that it meets the tests specified in Section 028-362-501.

4.03 Receiver Unit (Fig. 4): To replace the unit, proceed as follows:

- (1) Unscrew the cap from the housing assembly, remove ring and wave washer.
- (2) Using the KS-6854 screwdriver, remove the receiver terminal screws and remove the receiver unit.
- (3) Place the new receiver unit in position and connect the lead terminals.

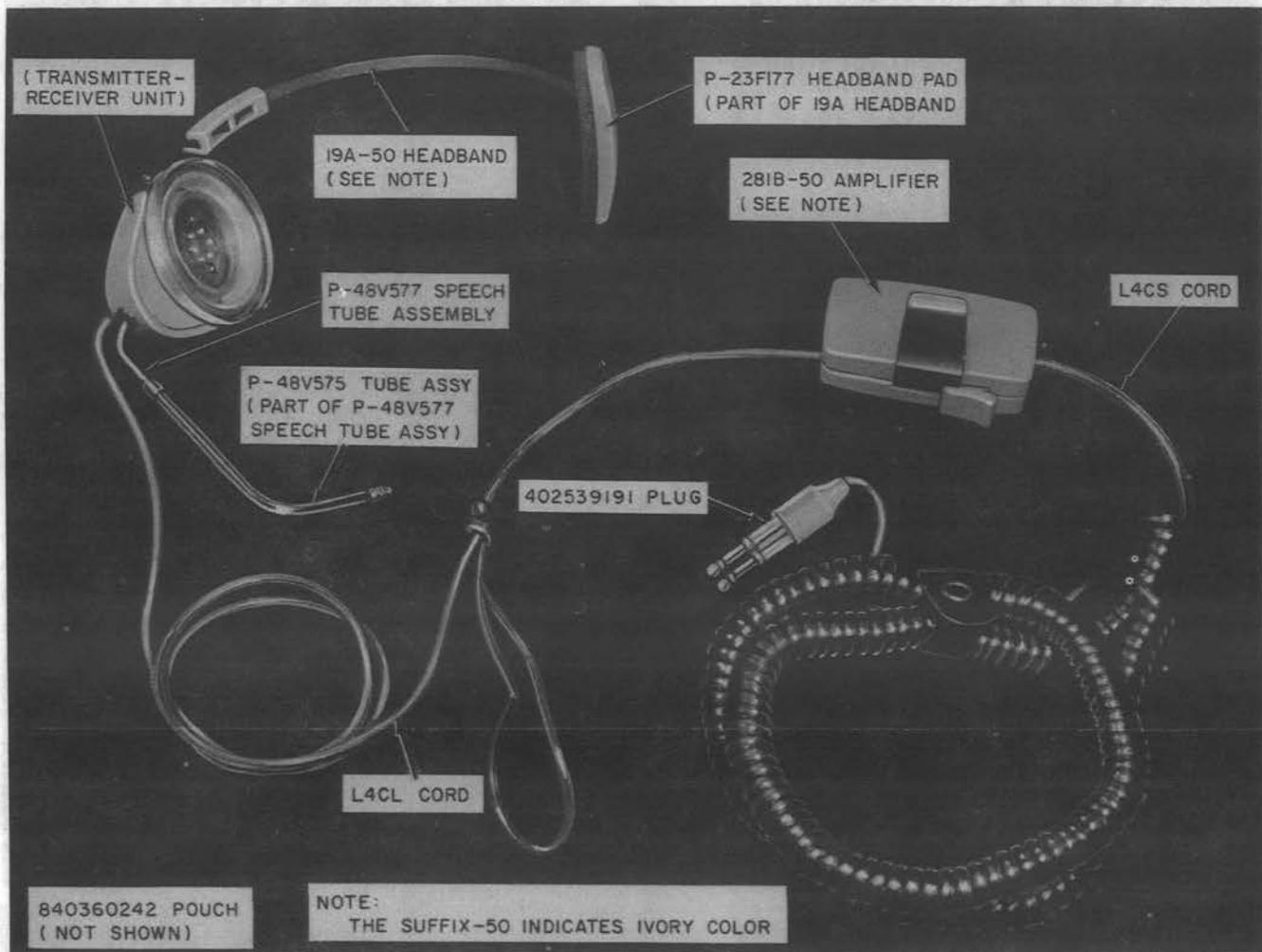


Fig. 3—60D Head Telephone Set

(4) Dress leads to ensure that they will not pinch; then replace the ring, wave washer, and cap.

4.04 Transmitter Unit (Fig. 4): To replace the transmitter unit, proceed as follows:

(1) Unscrew the receiver cap from the housing assembly and remove the wave washer, ring, and transmitter covers.

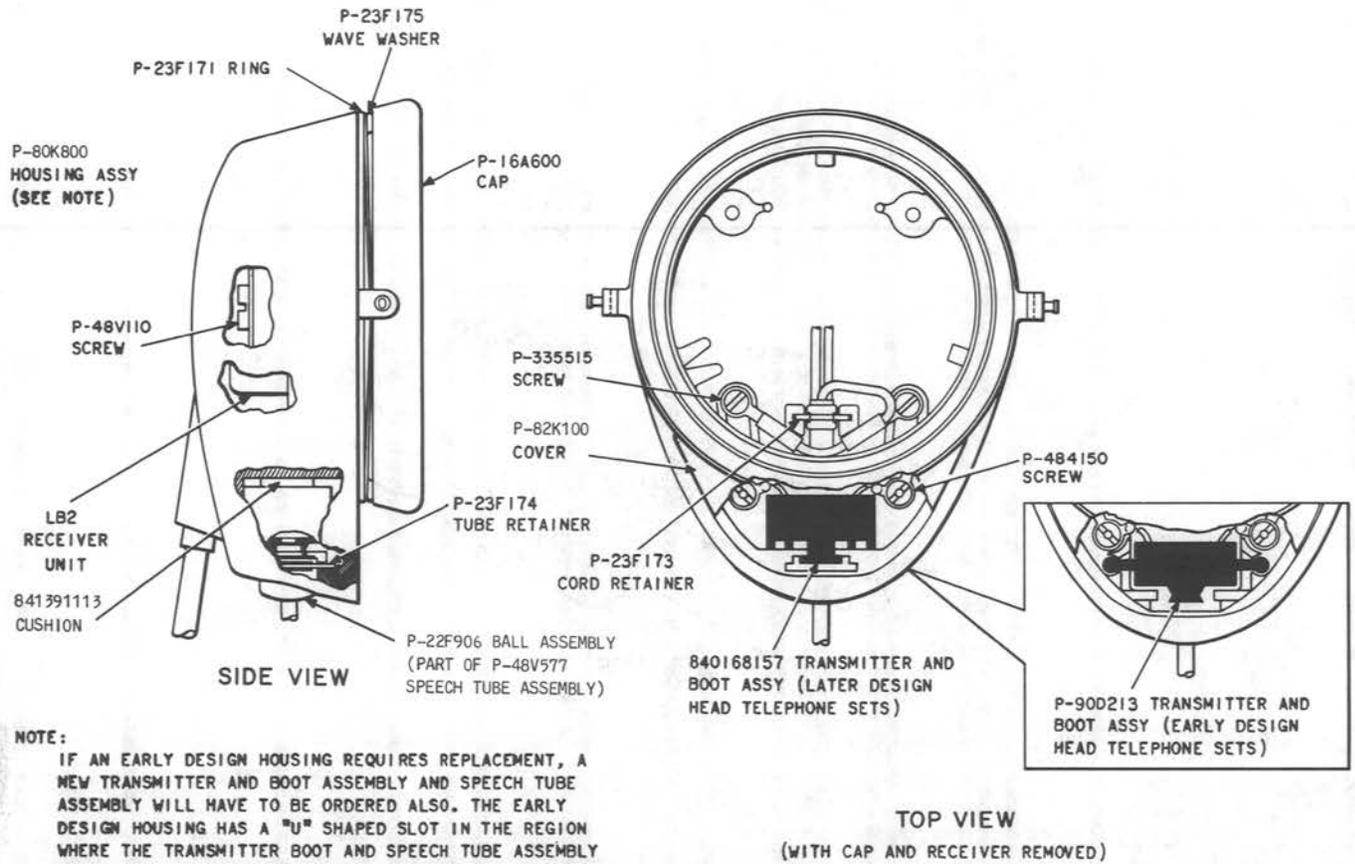
(2) Remove the tube retainer and lift the speech tube assembly out.

(3) Using the KS-2348 screwdriver, remove the transmitter terminal screws, transmitter, and boot assembly.

(4) Place the new transmitter and boot assembly in position and connect the transmitter lead terminals.

(5) Dress leads away from housing walls.

Note: Transmitter and boot assembly shall be positioned in a floating manner not bearing on housing wall.

**NOTE:**

IF AN EARLY DESIGN HOUSING REQUIRES REPLACEMENT, A NEW TRANSMITTER AND BOOT ASSEMBLY AND SPEECH TUBE ASSEMBLY WILL HAVE TO BE ORDERED ALSO. THE EARLY DESIGN HOUSING HAS A "U" SHAPED SLOT IN THE REGION WHERE THE TRANSMITTER BOOT AND SPEECH TUBE ASSEMBLY MEET. THE LATER DESIGN HOUSING HAS A "V" SHAPED SLOT ENDING IN A ROUND HOLE WHERE THE FLANGED TUBE OF THE TRANSMITTER BOOT SLIDES IN AND IS TRAPPED.

Fig. 4—Transmitter-Receiver Unit

(6) Replace speech tube assembly and make sure the assembly is sealed to transmitter boot.

(7) Replace tube retainer.

(8) Replace the transmitter cover, ring, wave washer, and receiver cap.

4.05 Speech Tube Assembly (Fig. 1, 2, and 3): The speech tube assembly consists of two assemblies, the P-48V575 tube assembly and the P-22F906 ball assembly. To replace the P-48V575 tube assembly, hold the ball assembly with one hand and pull the tube assembly off, then slide

new tube assembly on. To replace speech tube assembly or ball assembly proceed as follows:

(1) Unscrew the receiver cap from the housing assembly and remove wave washer, ring, and transmitter cover.

(2) Remove the tube retainer and lift the speech tube assembly out.

(3) Position the new speech tube assembly and replace the tube retainer.

(4) Replace the transmitter cover, ring, wave washer, and receiver cap.

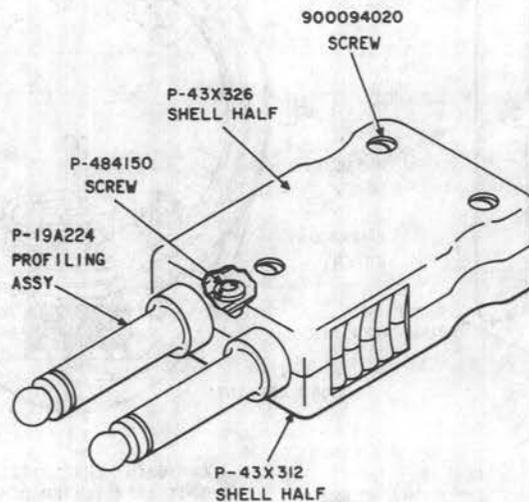


Fig. 5—464A-50 Plug

Warning: For best results, do not bend the speech tube assembly since it has been shaped by the manufacturer.

4.06 464A-50 Plug (Fig. 5): To replace the 464A-50 plug, proceed as follows:

- (1) With the KS-6854 screwdriver, remove the three 900094020 plug clamp screws.
- (2) Lift the P-43X326 shell half and note the color of the cord conductor connections to the terminals.
- (3) With the KS-2348 cord repair tool, remove the four P-484150 cord terminal screws.
- (4) Remove the cord from the profiling assembly and the P-43X312 shell half.
- (5) For reassembly, position the profiling assembly and cord in the P-43X312 shell half and connect terminals as noted in (2).

- (6) Position the P-43X326 shell half and replace the 900094020 plug clamp screws.

4.07 280A-50 Amplifier (Fig. 6): To replace the amplifier, proceed as follows:

Note: Assembly fixture KS-21233, L1, is available to assist in the disassembly and assembly of the 280A-50 amplifier. The fixture traps all loose parts. The 1253 screw starter is useful for starting the terminal board screws.

- (1) With the 3-inch C screwdriver, remove the two housing screws; lift off cover assembly.
- (2) Using the KS-2348 and the KS-6854 screwdrivers, remove terminal screw and remove the L4CJ cord from the amplifier.
- (3) With the new amplifier, connect the cord as shown in Fig. 8 and assemble the parts in reverse order of disassembly.

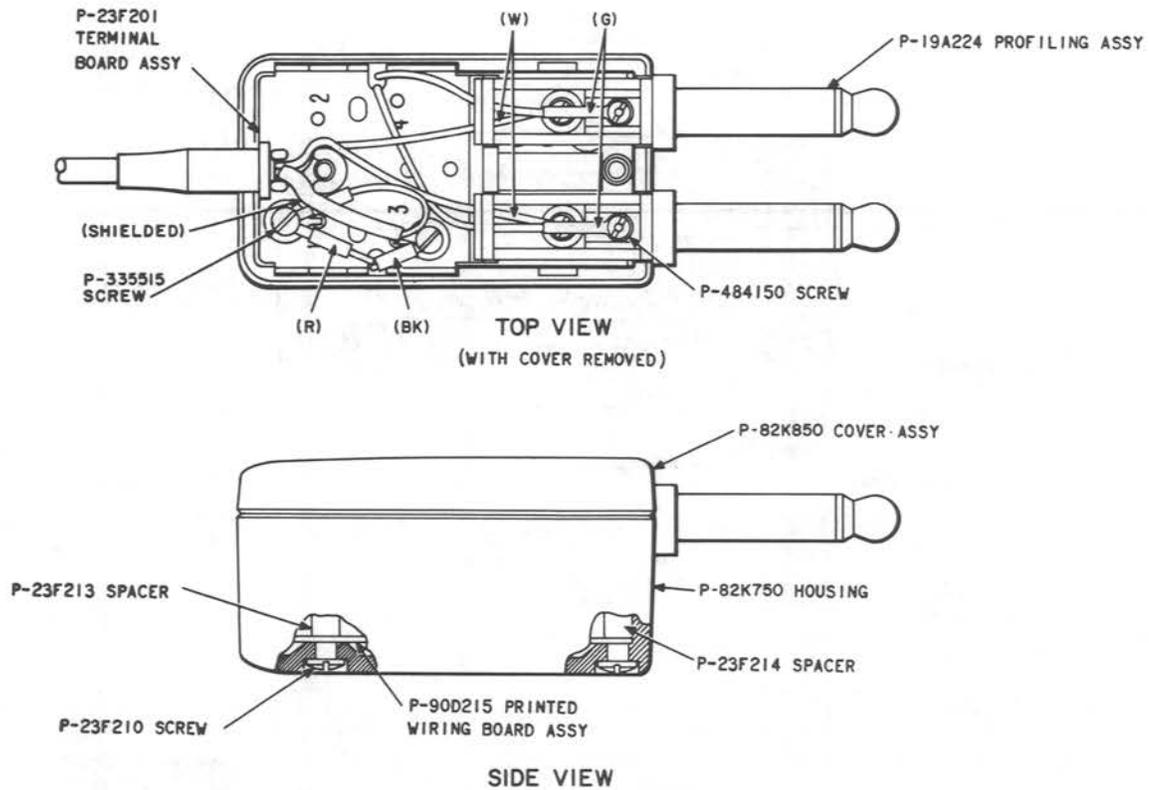


Fig. 6—280A-50 Amplifier

(4) Dress the leads as originally positioned.

4.08 Profiling Assembly Associated with 280A-50 Amplifier (Fig. 6): Remove the profiling assembly as follows:

- (1) With the 3-inch C screwdriver, remove the two housing screws and lift off cover assembly.
- (2) Using the KS-2348 and KS-6854 screwdrivers, remove the lead and cord terminals connected to the profiling assembly.
- (3) Remove profiling assembly.
- (4) Position the new profiling assembly in the shell half and reassemble the parts in reverse order of disassembly, connecting the lead and cord terminals as shown in Fig. 8.

(5) Dress leads as originally positioned.

4.09 Printed Wiring Board Associated With 280A-50 Amplifier (Fig. 6): Remove the printed wiring board as follows:

- (1) With the 3-inch C screwdriver, remove the two housing screws; lift off cover assembly. Note dress of leads.
- (2) Using the KS-2348 and KS-6854 screwdrivers, remove the four screws securing the printed wiring board leads.
- (3) Remove the terminal board assembly and the printed wiring board.
- (4) Position the new printed wiring board and the terminal board assembly.
- (5) Connect the lead as shown in Fig. 8.
- (6) Assemble parts in reverse order of disassembly.

(7) Dress leads as originally positioned.

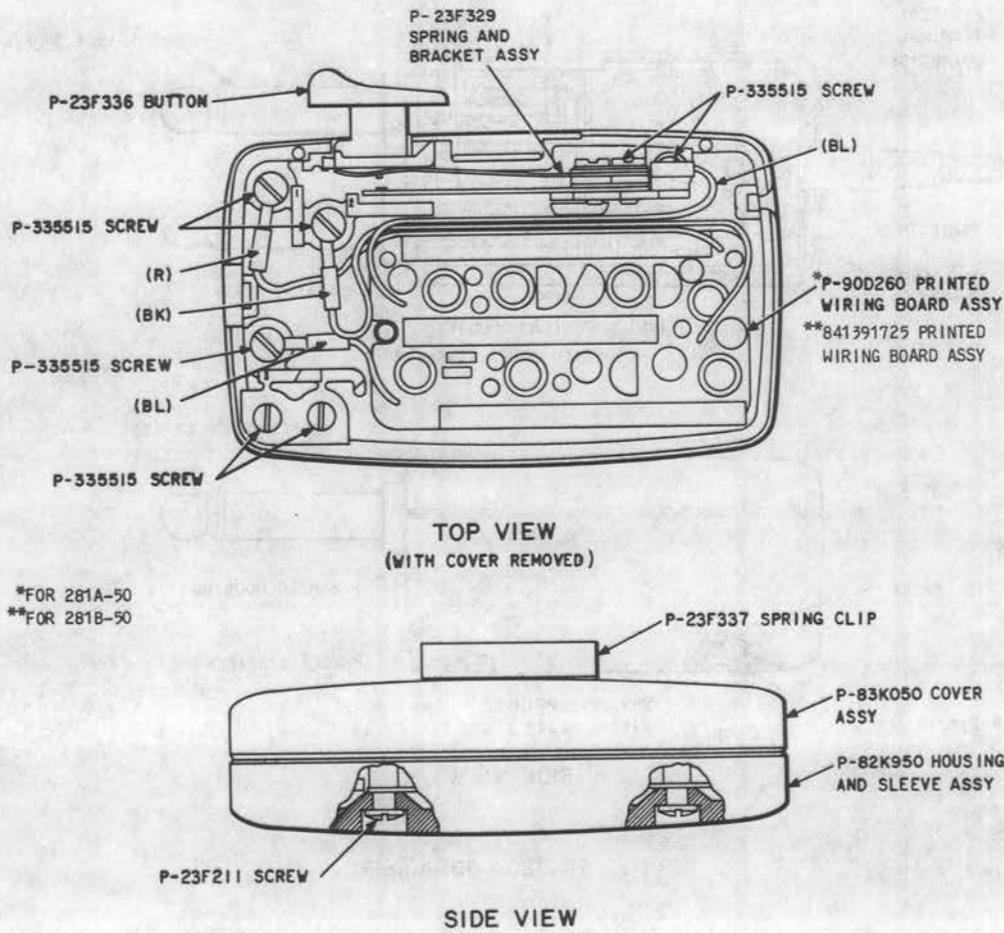


Fig. 7—281A-50 (Mfr Disc.) Amplifier

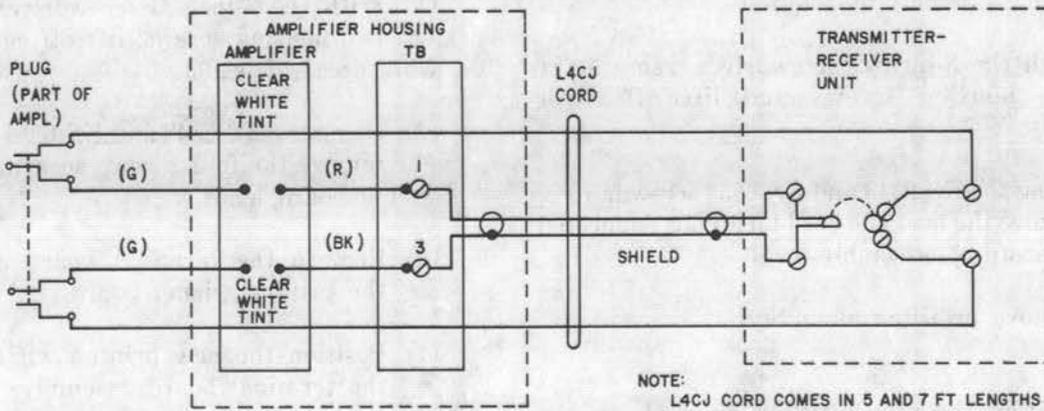


Fig. 8—280A-50 Amplifier Connecting Diagram

4.10 **L4CJ Cord** (Fig. 1): Replace the L4CJ cord as follows:

- (1) At the transmitter-receiver unit, unscrew the cap from the housing assembly and remove wave washer and ring.
- (2) With the KS-6854 screwdriver, remove the screws holding the cord terminals and remove cord retainer and cord.
- (3) Position new cord in housing assembly, replace cord retainer, and connect terminals as shown in Fig. 8.
- (4) Replace ring, wave washer, and cap.
- (5) At the 280A-50 amplifier, remove the housing screws using the 3-inch C screwdriver; lift off cover assembly.
- (6) With the KS-2348 and KS-6854 screwdrivers, remove the terminal screws and remove the L4CJ cord from the amplifier.
- (7) Position new L4CJ cord in amplifier and connect terminals as shown in Fig. 8.
- (8) Dress leads as originally positioned.
- (9) Reassemble parts in reverse order of disassembly.

4.11 **281A-50 (Mfr Disc.) or 281B-50 Amplifier** (Fig. 7): Replace the amplifier as follows:

Note: Assembly fixture KS-21233, L2, is available to assist in the disassembly and assembly of the 281A-50 (Mfr Disc.) or the 281B-50 amplifier. The fixture traps all loose parts. The 1253 screw-starter is useful for starting the terminal board screws.

- (1) With the 3-inch C screwdriver, remove the housing screws, lift off cover assembly, and remove spring clip.
- (2) With the KS-6854 screwdriver, remove the terminal screws and lift the L4CL cord and the L4CM or the L4CS cord from the amplifier.
- (3) Connect the cords in the new amplifier as shown in Fig. 9 or 10.
- (4) Dress leads as originally positioned.
- (5) Reassemble parts in reverse order of removal.

4.12 **Switch Associated with 281A-50 (Mfr Disc.) or 281B-50 Amplifier:** Replace the switch as follows:

- (1) With the 3-inch C screwdriver, remove the housing screws, lift off cover assembly, and remove spring clip.

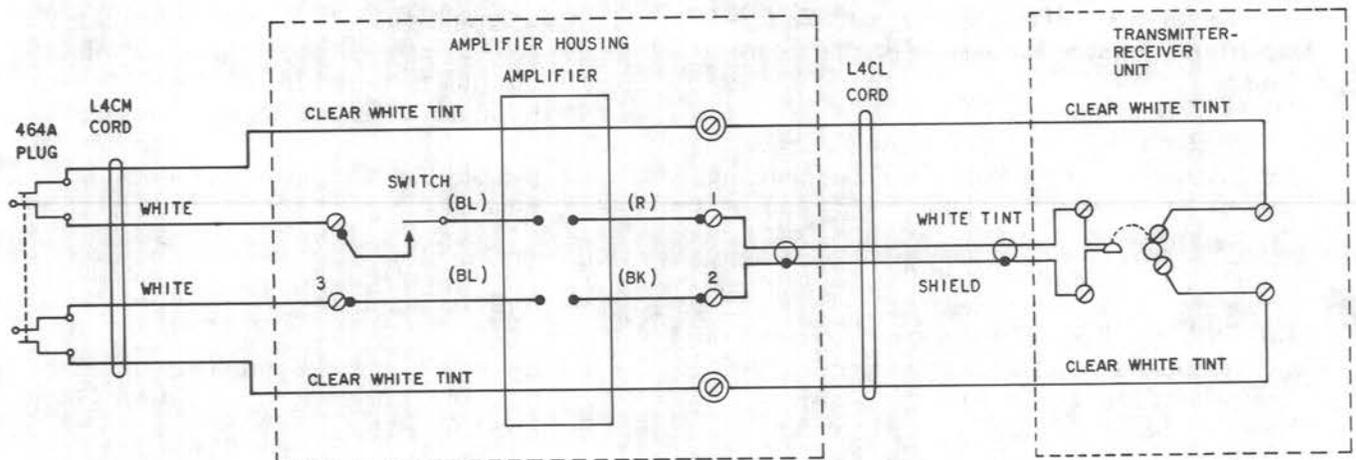


Fig. 9—281A-50 (Mfr Disc.) Amplifier Connecting Diagram

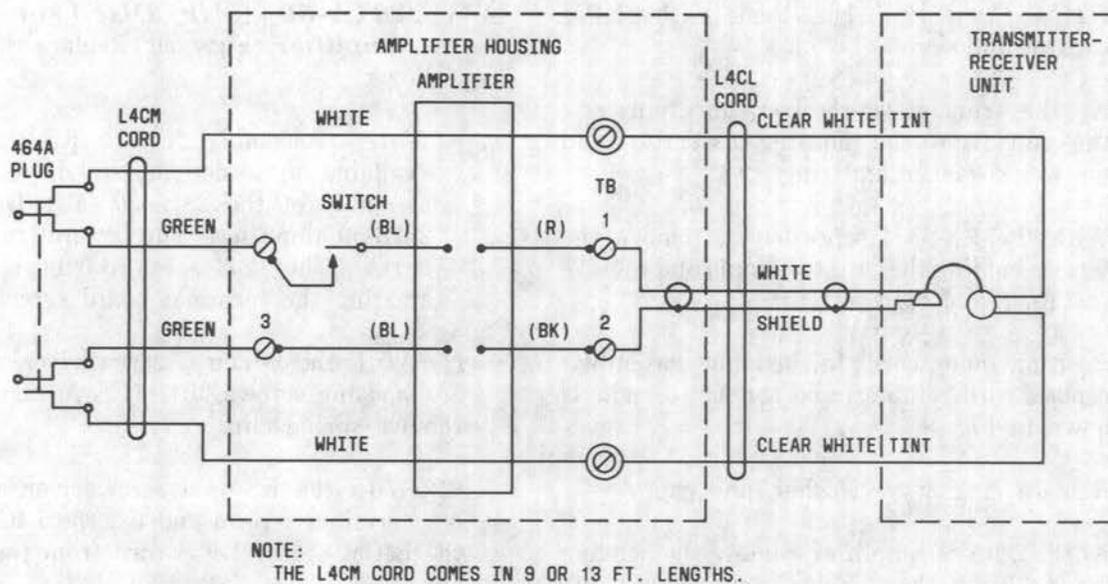


Fig. 10—281B-50 Amplifier Connecting Diagram

- (2) With the KS-6854 screwdriver, remove the terminal and mounting screws and lift the switch out.
- (3) Position new switch in amplifier, replace mounting screws, and connect leads as shown in Fig. 9 or 10.
- (4) Dress leads as originally positioned.
- (5) Reassemble in reverse order of removal.

4.13 Printed Wiring Board Associated with 281A-50 (Mfr Disc.) or 281B-50 Amplifier: Replace the printed wiring board as follows:

- (1) With the 3-inch C screwdriver, remove the housing screws, lift off cover assembly, and remove spring clip.
- (2) Note the dress of the leads.
- (3) With the KS-6854 screwdriver, remove the terminal screws holding the printed wiring board terminals and remove the board.
- (4) Position the new printed wiring board and reassemble in reverse order of removal, connecting the terminal leads as shown in Fig. 9 or 10.

- (5) Dress the leads as originally positioned.

4.14 L4CM Cord (Fig. 2): Replace the L4CM cord as follows:

- (1) Remove the old cord from the 464A-50 plug as covered in paragraph 4.06.
- (2) Position new cord and reassemble the parts in the reverse order of removal.
- (3) At the 281A-50 (Mfr Disc.) or 281B-50 amplifier, disconnect the old cord as covered in paragraph 4.11.
- (4) Position new cord in amplifier and connect terminals as shown in Fig. 9 or 10.
- (5) Reassemble the parts in reverse order of removal.

4.15 L4CS Cord (Fig. 3): Replace the L4CS cord as follows.

- (1) Disconnect the old cord from the 281A-50 (Mfr Disc.) or 281B-50 amplifier as covered in paragraph 4.11.
- (2) Position the new cord in amplifier and connect terminals as shown in Fig. 9 or 10.

- (3) Reassemble the parts in reverse order of removal.

4.16 L4CL Cord (Fig. 2 and 3): Replace L4CL cord as follows.

- (1) At the transmitter-receiver unit, unscrew the cap from the housing assembly and remove wave washer and ring.
- (2) With the KS-6854 screwdriver, remove the screws holding the cord terminals, remove cord retainer and cord.
- (3) Position new cord in housing assembly, replace cord retainer, and connect terminals as shown in Fig. 9 or 10.
- (4) Replace ring, wave washer, and cap.
- (5) At the 281A-50 (Mfr Disc.) or 281B-50 amplifier, remove the housing screws using the 3-inch C screwdriver, lift off cover assembly, and remove spring clip.
- (6) With the KS-6854 screwdriver, remove the terminal screws and lift the L4CL cord from the amplifier.
- (7) Connect the new L4CL cord in the amplifier as shown in Fig. 9 or 10.
- (8) Dress leads as originally positioned.
- (9) Assemble parts in reverse order of removal.

4.17 Headband Pad: To replace the headband pad, remove the old pad from the headband.

Remove the paper from the pressure sensitive backing of the new pad and substitute for the old pad.

5. CLEANING PROCEDURES

PLUGS

- 5.01** Clean plugs in accordance with Section 069-380-811 or 069-380-812.

CASES AND RECEIVER CAPS

- 5.02** Shake or blow dirt and dust out of the amplifier and transmitter-receiver cases with the R-8950 syringe and wipe the exteriors with a cloth slightly dampened with water.

Warning: *Do not use alcohol base cleaner as this will attack the case and cap material and may render the set flammable.*

- 5.03** Remove caps which are dirty and wash in a solution of soap and lukewarm water. If the caps cannot be released for washing, wipe them with a clean, dry KS-2423 cloth.

HEADBAND PAD

- 5.04** Wipe with a clean KS-2423 cloth slightly dampened with a solution of mild detergent and water. Care should be exercised when wiping the pad so water will not get on the inside surface of the pad at the end. Allow to dry before using.