

1A HOME INTERPHONE INSTALLATION AND MAINTENANCE

1.00 GENERAL

1.01 This section is reissued to:

- Change Fig. 1 to show alternate loud-speaker location in kitchen installation.
- Change wording of 3.06.
- Add notation on modified U1 receiver to 5.03 and Fig. 7.
- Add 7.03.

1.02 Installation requirements for the desk- and wall-type telephone sets are covered in the appropriate sections. Installation of wire and cable is also covered in the appropriate sections. Only additional station and wiring information is covered in this section.

1.03 The 1A home interphone is limited to five stations and two door-answering units. Sample arrangements are shown in Fig. 1.

1.04 Dial-light power is furnished from a separate 2012A or KS-16184 transformer.

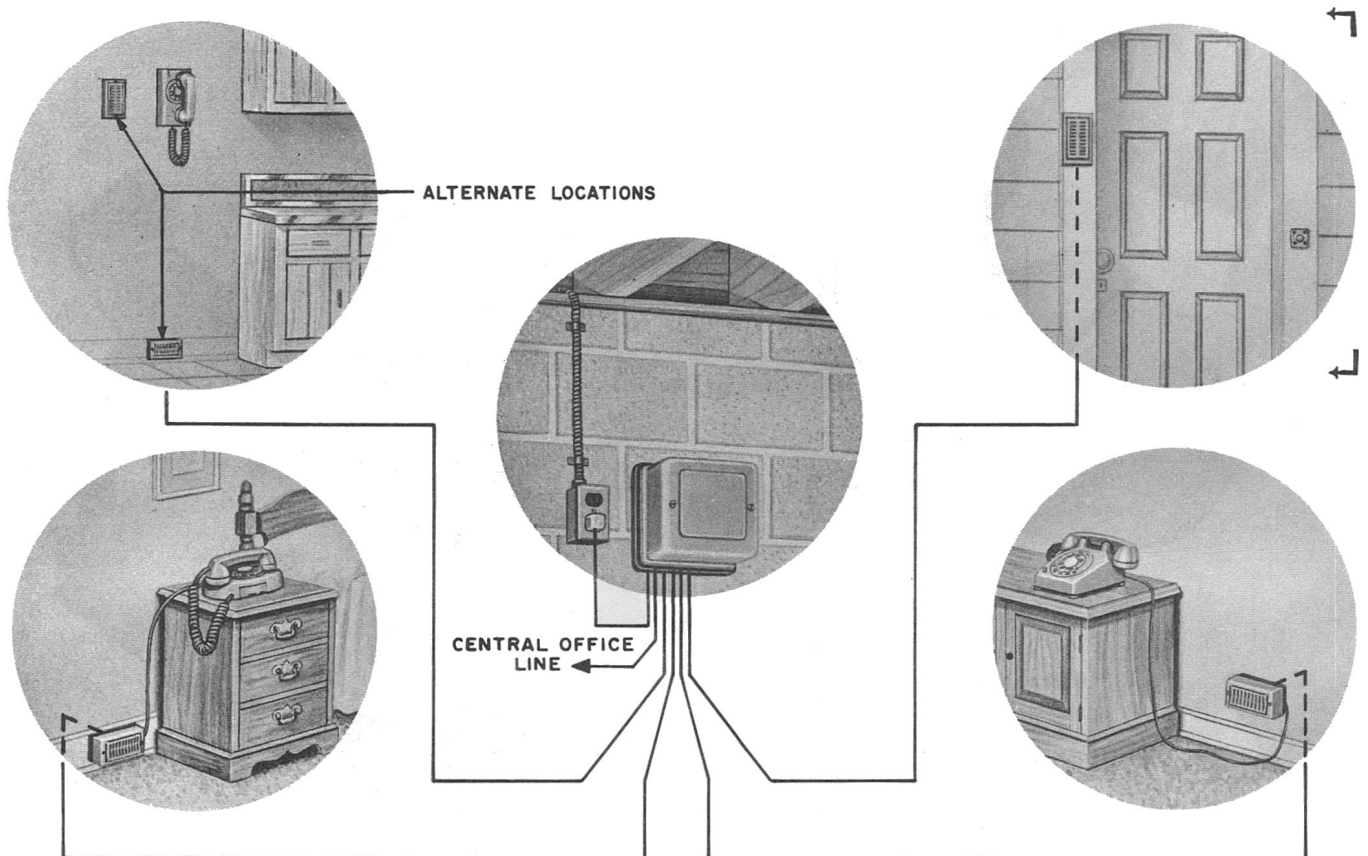
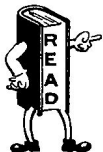


Fig. 1 - 1A Home Interphone

1.05 When installing a dial light transformer, make certain that telephone protector and/or signaling ground conductor is connected to the best ground available as outlined in the section entitled Protector and Signaling Grounds.



The dial light transformer can be damaged by lightning if a sufficient difference in ground potential occurs between the telephone plant and the power system. Be sure that the telephone and power grounds are bonded in accordance with section entitled Protector and Signaling Grounds.

2.00 COMPONENTS OF 1A HOME INTERPHONE

The following units are ordered separately:

- Control unit, 51A.
- Telephone sets, 511C/D, 558C/D, or 711B.

- Transmitter units, 659A, 660A, or 664A.
- Receiver unit (door answering), 730A.
- Loudspeaker unit, 759A.
- Adapter assembly, 146A.
- Transformer, 2012A or KS-16184.

3.00 LOCATION AND MOUNTING

3.01 The 51A control unit is mounted upright on a vertical surface. The method of fastening and type of fasteners are the same as those shown for 105-type apparatus boxes in the section entitled Equipment Cabinets and Apparatus Mountings.

3.02 The 659A and 660A transmitter units are mounted in telephone sets as shown in Fig. 2 and 3.

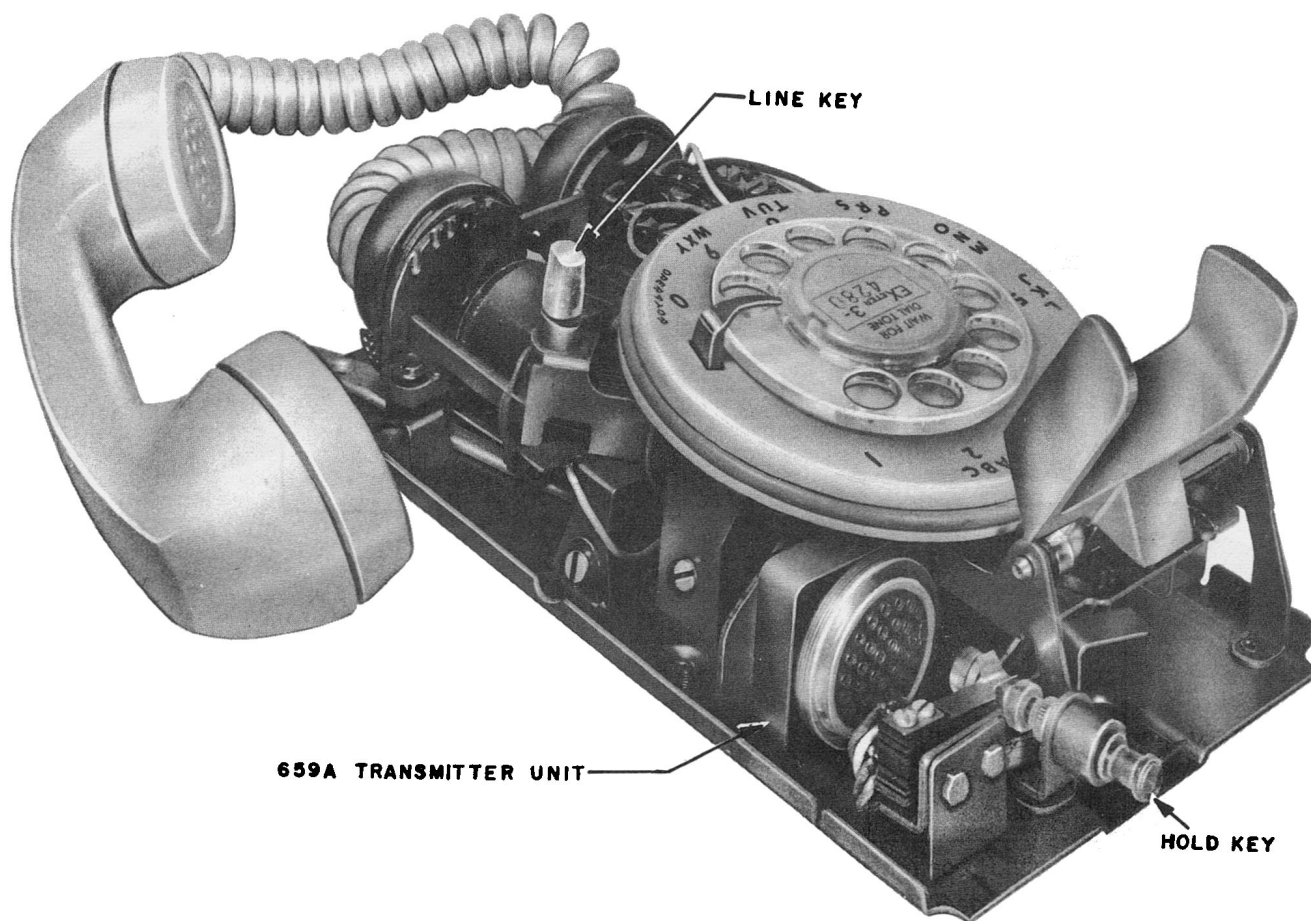


Fig. 2 — 659A Transmitter Unit Mounted in 558C/D Telephone Set

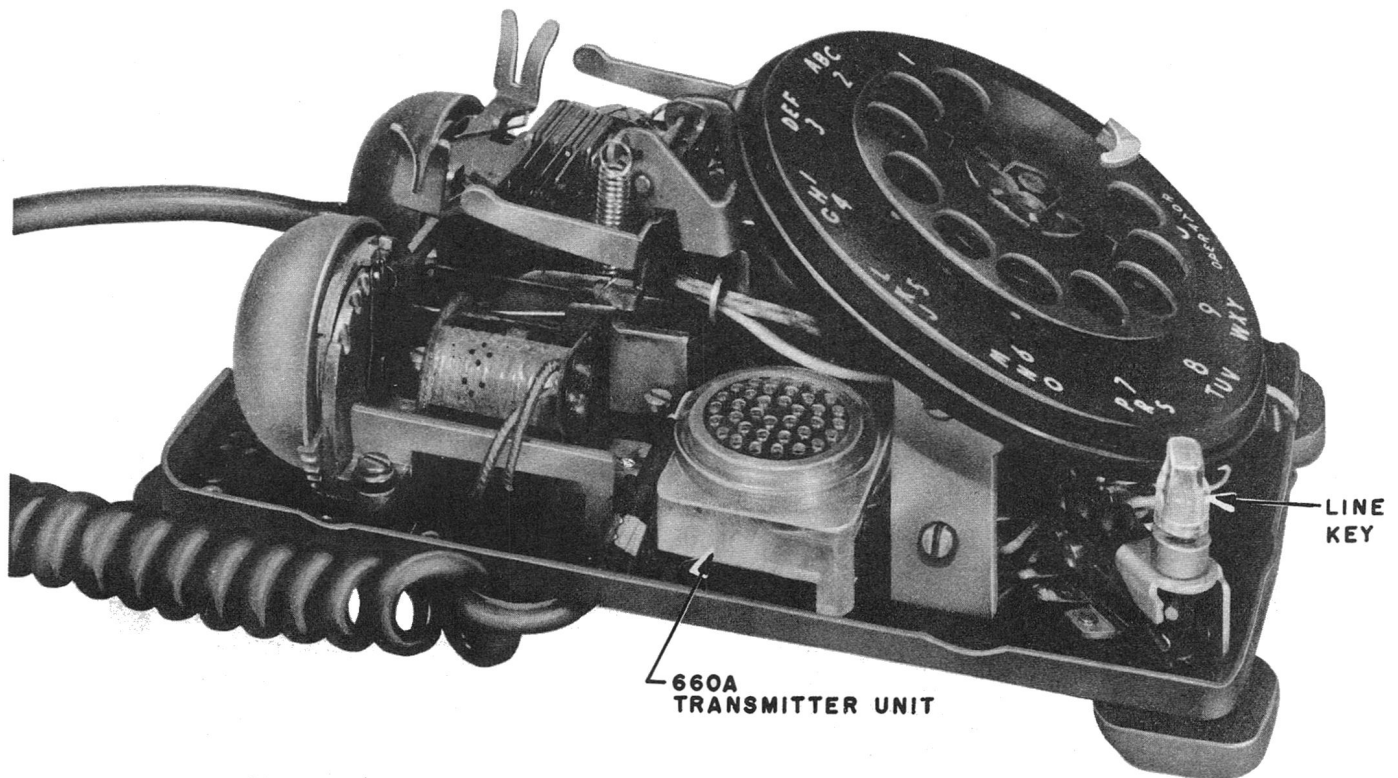


Fig. 3 — 660A Transmitter Unit Mounted in 511C/D Telephone Set

3.03 The 664A transmitter differs from the 659A and 660A transmitters in that it is not a one-piece unit. The transmitter unit and bracket are installed on the cord terminal strip while the component board assembly is installed under the dial as shown in Fig. 4 and 5. Be certain that the transmitter bracket is connected to terminal 9 on the cord terminal strip and lies between the two molded pegs of the terminal strip as shown. The component board assembly is notched on one end to fit in the slots of the dial mounting bracket and is held in place by a screw in the other end. The board is placed so that the components are on the under side when installed. Fig. 4 shows a transmitter and board assembly partially installed. Fig. 5 shows the completed installation.

3.04 Care should be exercised to avoid puncturing or otherwise damaging the delicate

membrane covering of the N-type transmitter unit. Damage may result in poor transmission quality.

3.05 The 759A loudspeaker is drilled to mount on a 63A bracket or, by using a 146A adapter assembly, it may be mounted on a standard electrical outlet box. A backboard is not required for mounting. Four mounting holes are provided in the base for securing to the mounting surface. The cord and cable may enter through two holes provided in the base or through the end by removing the knockouts. The 12-terminal connecting block serves as a junction for the telephone set cord and a 6-pair cable from the 51A control unit. A cord hook is provided on the connecting block to anchor the set cord (see Fig. 6). To prevent feedback on the interphone system, install the loudspeaker to the left of a wall-type telephone set. Where conditions permit, loudspeaker may be installed on baseboard as an alternate location.

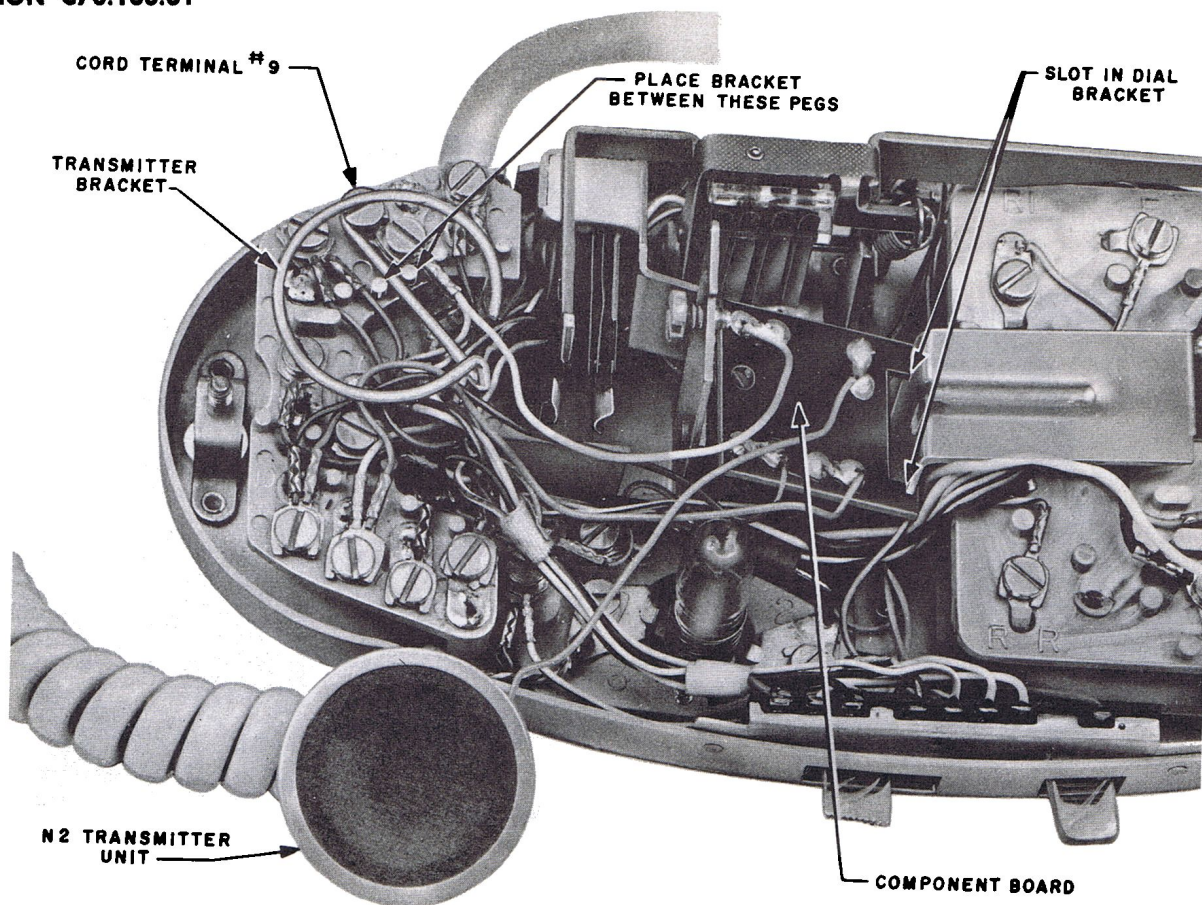


Fig. 4 — Location of 664A Transmitter Unit Components in 711B Telephone Set

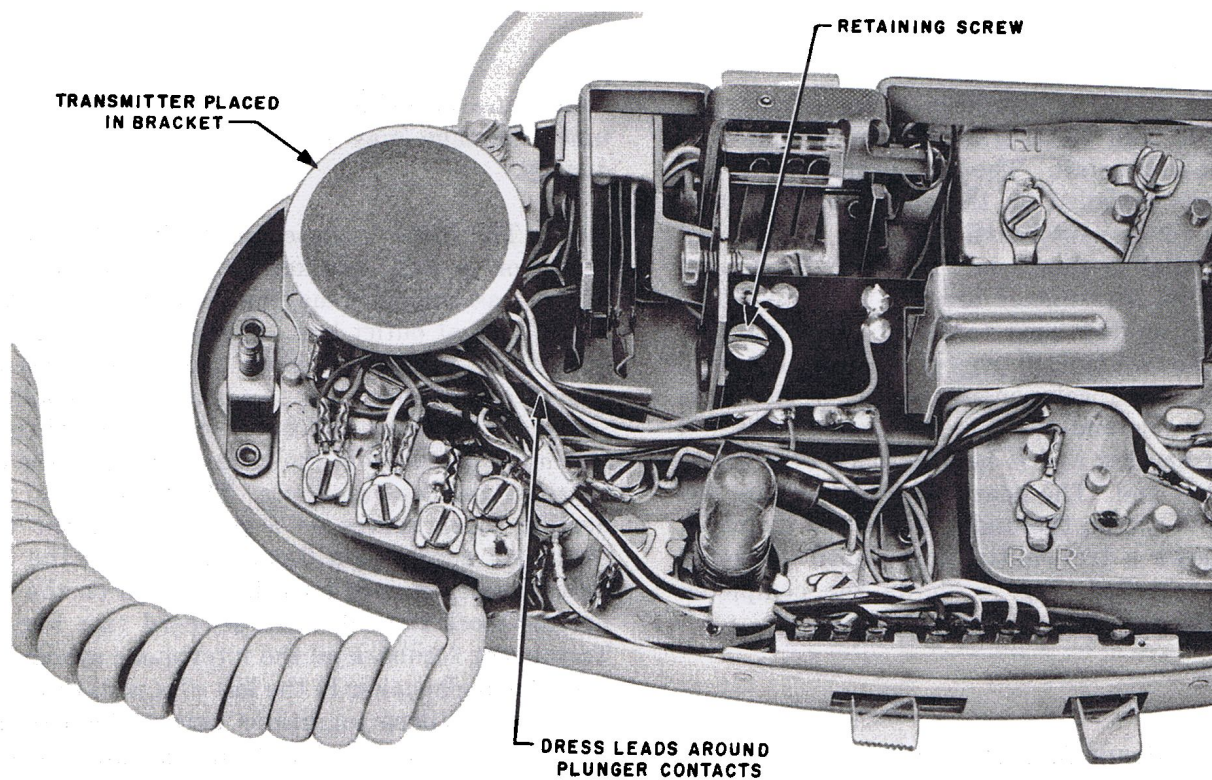


Fig. 5 — Final Assembly of 664A Transmitter Unit in 711B Telephone Set

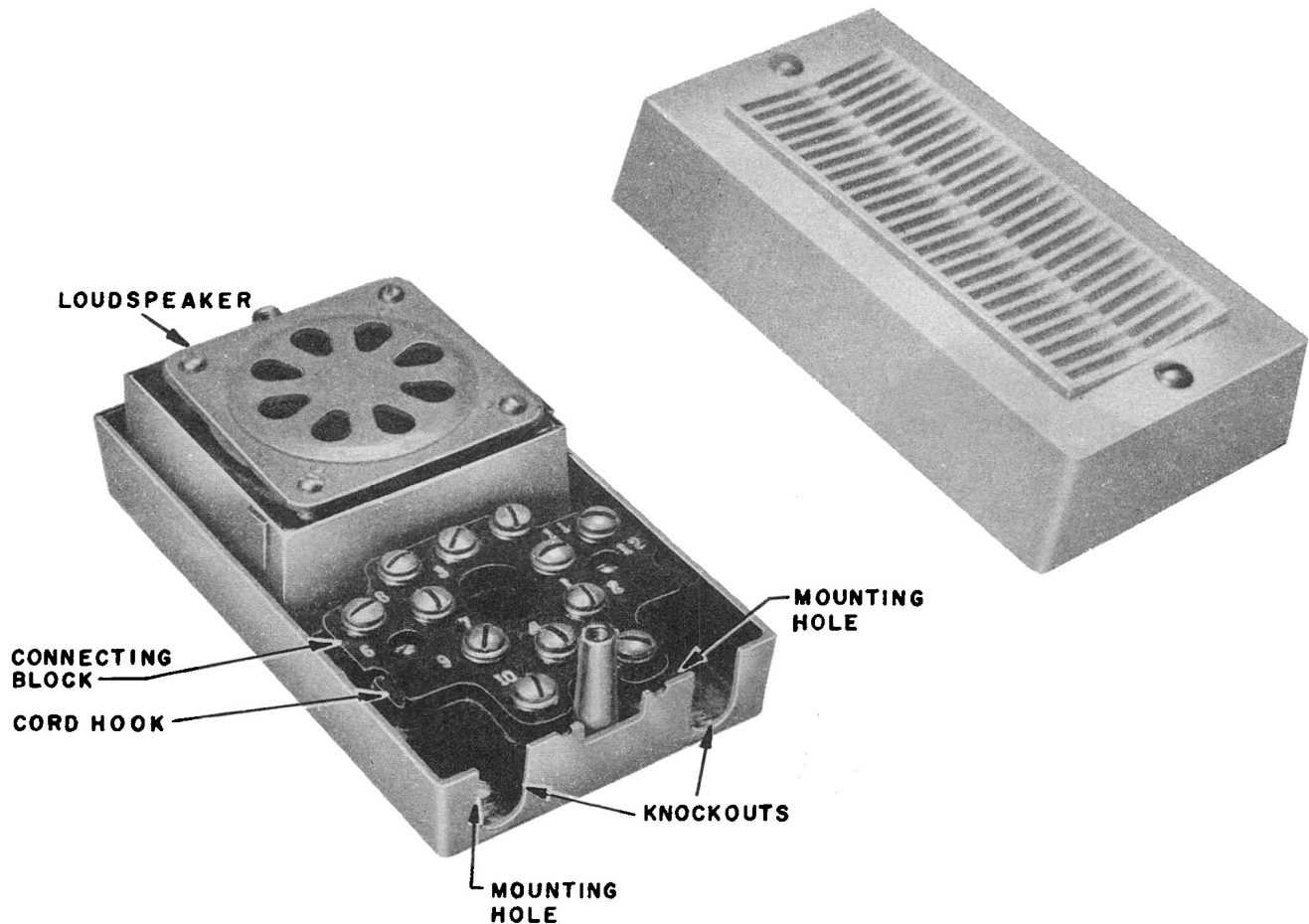


Fig. 6 – 759A Loudspeaker

3.06 The 730A receiver (door-answering), see Fig. 7, is mounted on the door casing or outside wall at a convenient height for microphone pickup and out of reach of children. If this location is not desirable, the speaker may be mounted overhead just above the door. Four mounting holes are provided in the base similar to those in the 759A loudspeaker. Wiring may enter through two holes provided in the base or through the end of the base by removing the knockouts. A backboard is not required for mounting. The 730A receiver is weatherproof. Additional weather protection is not required. Two cable pairs or a quad JKT are run directly to the 730A receiver. One pair is connected to screw terminals on the bottom of the P-14A464 receiver unit and the other pair is connected to the 2-terminal connecting block.

3.07 The 146A adapter assembly is provided to mount the 730A receiver or 759A loudspeaker to a standard electrical-outlet box. It is drilled and tapped, and screws are provided for mounting.

3.08 The 2012A or KS-16184 transformer plugs directly into a standard 105- to 130-volt 60-cycle convenience outlet. The 6- to 8-volt 60-cycle power for the 51A control unit appears on the two screw terminals. Transformer must operate from a power outlet not controlled by a switch.

4.00 SYSTEM ADJUSTMENT

4.01 System adjustment requires that microphone and loudspeaker amplifier gain controls be adjusted to satisfy customer requirements. If properly adjusted, there should be no “sing” or “squeal” when any handset is removed.

4.02 Turn microphone and loudspeaker amplifier gain controls to their maximum counter-clockwise (minimum gain) position (see Fig. 8).

4.03 All station handsets must be in the on-hook position.

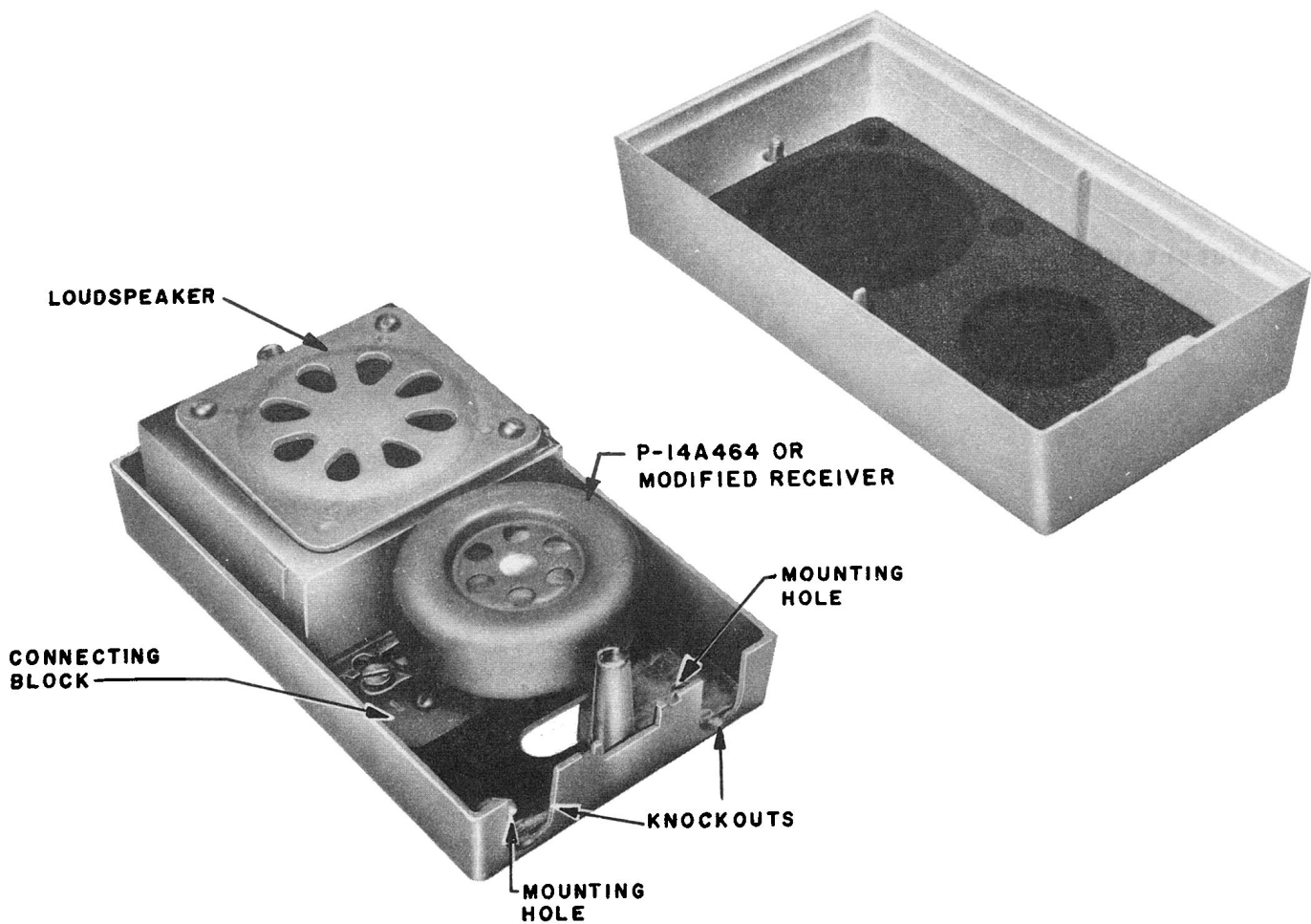


Fig. 7 – 730A Receiver

4.04 Connect 1011B, or equivalent, test set to terminals 2R and 2T on 51A control unit with switch in TALK position.

4.05 AMPLIFIER ADJUSTMENT

- Turn the loudspeaker amplifier gain control clockwise (from a minimum gain position) $\frac{1}{4}$ turn.
- Turn the microphone amplifier gain control clockwise (from a minimum gain position) until a squeal is heard in the test receiver and then counterclockwise until the ringing or squealing stops.

4.06 Final check of interphone and door answering features:

1. Operate line key to INTERPHONE position at test station.
2. Remove handset.
3. Test microphone sensitivity and loudspeaker volume at all locations in the house.
4. Momentarily depress pushbutton.
5. Test door-answering unit for satisfactory loudspeaker volume and microphone sensitivity.

4.07 When possible, have the customer check the operation to ensure satisfactory adjustment.

4.08 If, after adjustment, the gain is not at a satisfactory level, it may be increased somewhat by the following method:

1. Proceed as in 4.02.
2. Lift the handset from *one* of the interphone stations to off-hook position. Be sure that the line switch is in the interphone position.
3. Connect 1011B, or equivalent test set, to terminals 2R and 2T on 51A control unit with test set switch in MONITOR position.
4. Proceed with adjustments as in 4.05.
5. Remove 1011B test set and restore station handset to on-hook position.
6. Check as in 4.06.

5.00 MAINTENANCE

Caution: Tests on 51A control unit must be confined to the terminal board. Use the 1011B test receiver or equivalent test set. Refer to section entitled *Procedures to Be Followed When Working on Circuits Containing Diodes, Varistors, or Transistors*.

5.01 Maintenance of 51A control unit should be limited to replacement of:

- Wiring board assembly P-11E655.
- 51A control unit.

5.02 Wiring board assembly is removed from the 51A control unit by removing the four mounting screws and pulling the board away from the jack connector (see Fig. 9).

5.03 The receiver unit of the 730A (door-answering) receiver is designated P-14A464. For replacement purposes, a U1 receiver with the 44A varistor removed from the rear of the receiver can be substituted for the P-14A464 receiver.

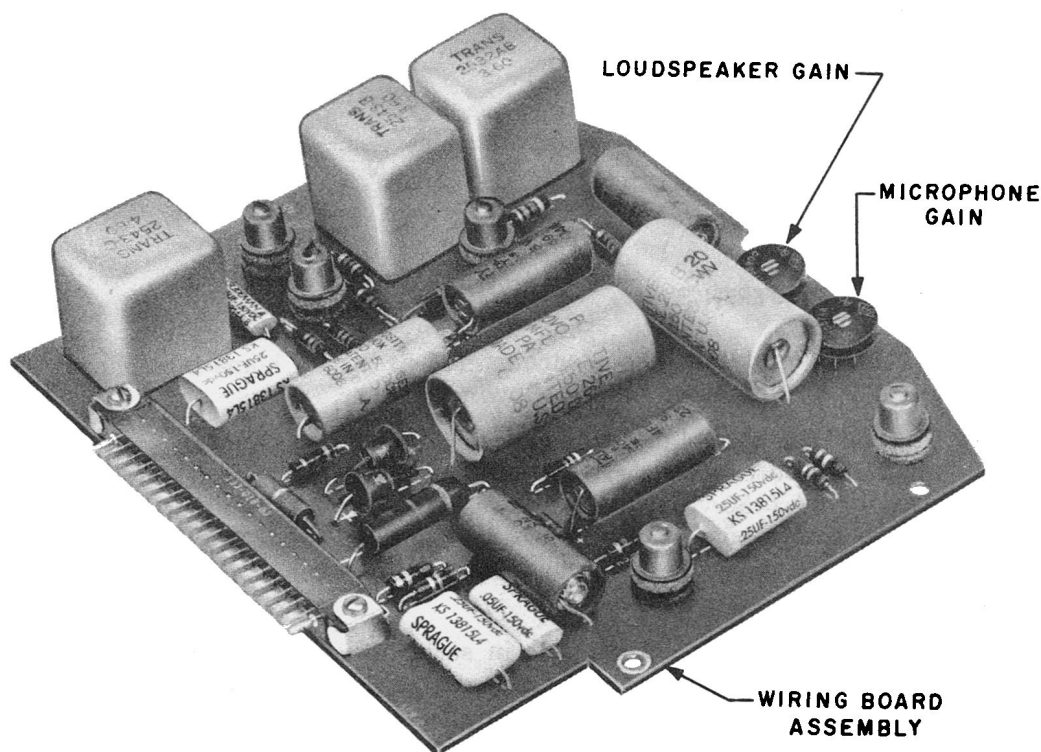


Fig. 8 — Amplifier Gain Controls

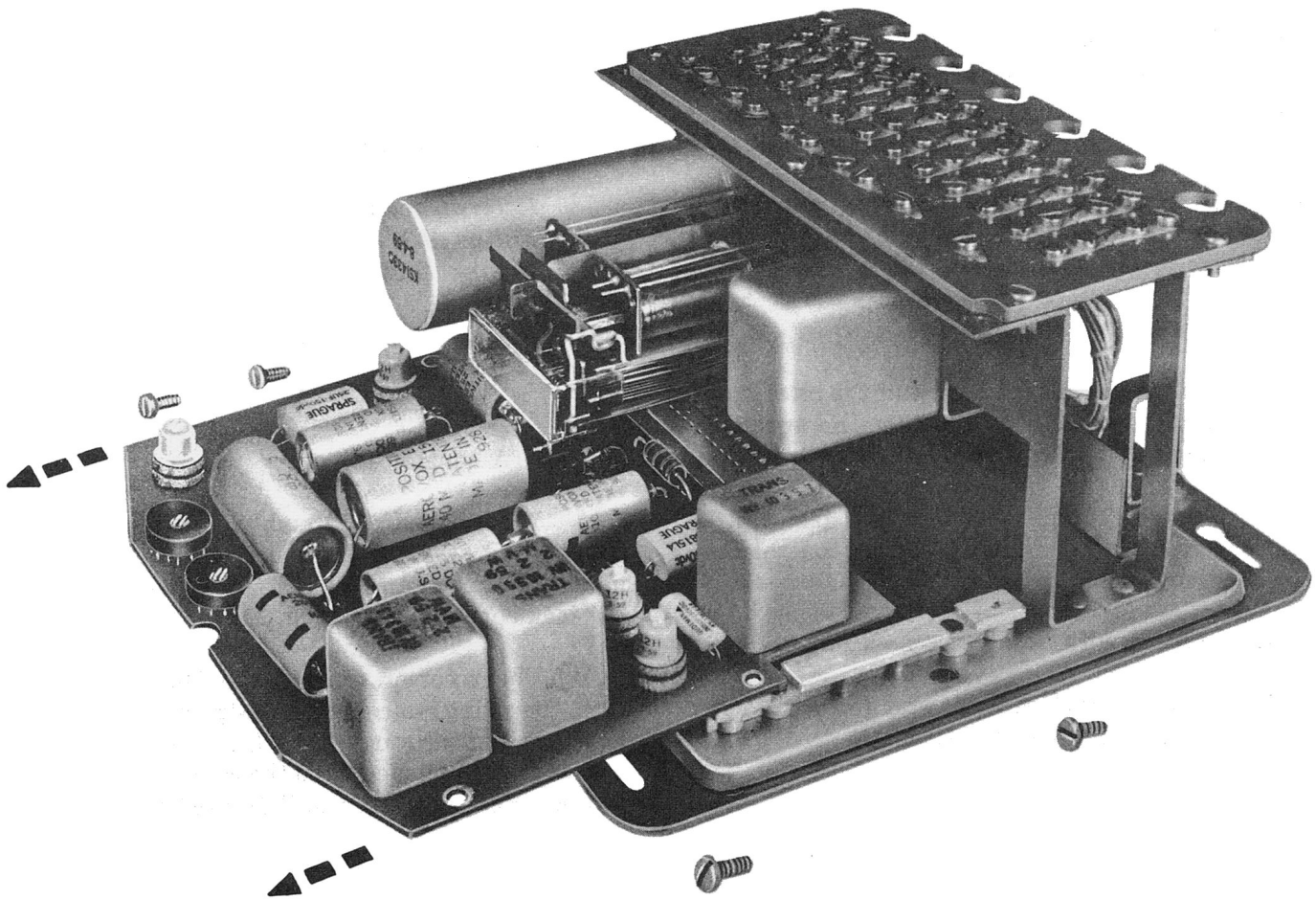


Fig. 9 – Wiring Board Assembly Removal

6.00 RADIO INTERFERENCE

→ When radio interference is encountered in the 1A home interphone
→ system, it may be suppressed in the following manner.

- (a) The P-11E655 amplifier wiring boards, series one and two, dated prior to 5-60 can be corrected by connecting a KS-13814, List 1 capacitor 0.1 mf (150-volt rating) between terminals M1 and M2. Also, connect the same type capacitor between terminals M3 and M4. The date is stamped at the top of the board, and the series number is stamped in the lower left corner.
- (b) The boards dated 5-60 or later in series other than one and two should have the radio interference controlled by a manufacturing change. The value of C15 was changed from 0.005-mf to a 0.05-mf capacitor. However, if radio interference is encountered, determine the lead that is acting as the antenna and then connect a 1542A inductor as described in the section entitled Radio Signal Suppression.

7.00 TROUBLE LOCATION

7.01 Table A is furnished to assist in locating trouble in the 1A home interphone.

TABLE A
TROUBLE LOCATION INFORMATION

Trouble Indications	Trouble Cause	Test For	Test Equipment	Trouble Correction
Interphone Dead	AC Power Failure	105 to 130V AC at Outlet	Trouble Lamp	Refer to subscriber.
	2012A or KS-16184 Transformer	6 to 8V AC Term. P1-P2 on 51A Unit	Voltmeter AC scale	Replace transformer or wire to transformer.
	Power Supply or Amplifiers	Interphone Talk Battery	Installer Test Set On Term. 2T and 2R (51A)	Replace amplifier board.
	K1A Relay	Interphone Talk Battery	Installer Test Set on Term. 2T and 2R (51A)	Clean relay contacts or Replace 51A control unit.
All Microphones Dead, Loudspeakers OK	Contact of K1B Relay Amplifier Board			Clean relay contacts. Replace amplifier board. Replace 51A control unit.
All Loudspeakers Dead, Microphones OK	Contacts of K1B Relay Amplifier Board			Clean relay contacts. Replace amplifier board. Replace 51A control unit.
Door Units Dead, Interphone Dead	Contacts of K1A Relay or K1B Relay			Clean relay contacts or Replace 51A control unit.

7.02 Trouble indications listed are, in general, limited to common troubles which may occur in the 51A control unit.

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7.03 For test purposes, the relays in the 51A control unit operate as follows:

(a) K1A relay

- Operates when line switch on any telephone is operated to interphone and associated handset is removed from switchhook.
- Will remain operated as long as any handset is off hook and line key is left in interphone position.

(b) K1B relay

- Operates by momentarily depressing pushbutton on 711B or line key on 511C/D or 558C/D while line key is in interphone position. Transfers amplifiers from loudspeakers to door-answering.
 - Locks up through its own contacts under control of the K1A relay.
 - Releases only if K1A relay is momentarily released by depressing switchhook or operating line key momentarily to central office position.
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