

**LOUDSPEAKER SET—107 TYPE**  
**IDENTIFICATION, INSTALLATION, CONNECTION,**  
**OPERATION, AND MAINTENANCE**  
**"SPOKESMAN®" LOUDSPEAKER**

**1. GENERAL**

**1.01** This section provides information on the SPOKESMAN loudspeaker, 107A (MD) and 107B loudspeaker sets (Fig. 1, 2, and 3).

**1.02** This section is reissued to:

- Add information on the D2N-50 cord
- Expand information on wiring to single-line telephone sets
- Identify typical grandfathered and registered wiring arrangements.

**2. IDENTIFICATION**

**2.01 Purpose:**

- To amplify the incoming side of a telephone conversation using the 107A (MD) or 107B loudspeaker set.
- To provide voice signaling on manual intercom lines using the 107B loudspeaker set (see Section 518-010-109).

**2.02 Application:**

- For use with station sets on CO, PBX, or Centrex lines
- Special applications, such as private service systems

- 107B loudspeaker set may be used as a SPOKESMAN loudspeaker or for voice signaling on manual intercom, but the same 107B cannot be used for both applications at the same time. See Section 518-010-109 for installation, connection, and operation of 107B loudspeaker set installed for voice signaling on manual intercom.

**2.03 Ordering Guide:**

- Set, Loudspeaker, 107B-\*

**(a) Replaceable Components**

- Cord, Mounting, D4BT-87 (available in 7- or 14-foot lengths)—for use with 107A (MD) loudspeaker set
- Cord, Mounting, D6AF-87 (available in 7-, 14-, or 25-foot lengths)—for use with 107B loudspeaker set
- Housing, Set, Loudspeaker (see Table A).

**(b) Associated Apparatus (order separately if required)**

- Capacitor, 542C (0.25  $\mu$ F)—see paragraph 3.11 for use

\* Refer to Table A for color selection.

**NOTICE**

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

- Resistor, KS-14603L3A (619 ohm) or equivalent resistor between 600 $\Omega$  and 640 $\Omega$  with power rating of 2 watts minimum—see paragraph 3.11 for use
- Connector, D-161488
- Transformer, 2012D
- Clamp, 2A—used on 2012D transformer
- Block, Connecting, 44A
- Cord, D4BT-87—used as auxiliary cord between connecting block and telephone set
- Cord, D2N-50—used to connect SPOKESMAN loudspeaker to 2991C-type telephone sets.¶

## 2.04 Design Features:

- The 107A (MD) is equipped with a transistor amplifier and loudspeaker assembly with a power switch and volume control and can be used as a SPOKESMAN loudspeaker.
- The 107B is equipped with an integrated circuit (IC) amplifier and loudspeaker assembly with a power switch and volume control. The 107B can be used as a SPOKESMAN loudspeaker or to provide voice signaling on manual intercom lines, but not both simultaneously.
- Both loudspeaker sets can be used on all telephone sets or subscriber sets equipped with induction coils or networks.

## 3. INSTALLATION

### A. Planning

- 3.01 An external ac or dc power source is required. This power may be provided by:
- A 2012D transformer
  - The 18-volt ac terminals of available power plant (maximum current drawn by 107B at 18-volts ac is 50 mA RMS)
  - A 24-volt key system battery (maximum current drawn by 107B at 24-volts dc is 50 mA dc).

3.02 When a 2012D transformer is used for power, the customer must provide a separately fused ac receptacle which is *not* under control of a switch.

3.03 The maximum length of IW cable used between the power supply specified in paragraph 3.01 and loudspeaker set should not exceed 200 feet.

3.04 The maximum length of IW cable used between the loudspeaker set and the associated telephone set should not exceed 100 feet.

3.05 The loudspeaker set can be installed up to 1000 feet or 50 ohms (maximum) from power and signal source when power and signal is provided over the same cable pair (see paragraph 3.11).

3.06 The loudspeaker set should be separated from the associated telephone set by a minimum of 3 feet to prevent feedback.

### B. Installing

#### Single-Line Telephone Set

3.07 ¶Install the 107A (MD) or 107B loudspeaker set in registered or grandfathered arrangements as shown in Fig. 4, 5, or 6. In grandfathered arrangements or when used with key telephone sets, power may be supplied via telephone set mounting cord leads, when available. Registered arrangements should be connected as shown in Fig. 4 or 6. All connections are concentrated at the 44A connecting block. The auxiliary D4BT cord or IW can be taped to the set mounting cord or fastened in the set at any convenient location. The (G) and (R) conductors are terminated in the set per Table B and the (Y) and (BK) leads are insulated and stored.

3.08 If spare leads are not available in the telephone set mounting cord in grandfathered or key set installations, connect as described in paragraph 3.07 using a 44A connecting block (Fig. 4, 5, or 6) or one of the following ways:¶

- (1) ¶If the loudspeaker set cord is terminated directly in the telephone set, run a separate power cord or wire to the loudspeaker set and terminate directly to the power supply terminals as shown in Fig. 9 and 10. Insulate and store



both ends of the (Y) and (BK) leads of the loudspeaker set cord.

(2) Again, with the loudspeaker set cord terminated in the telephone set, run the power to the telephone set and connect to the (Y) and (BK) leads of the loudspeaker set cord using spare terminals or D-161488 connectors.¶

#### 6-Button Telephone Set

**3.09** When the 107-type loudspeaker set is used with a key telephone set, connect as shown in Table B and Fig. 9 [for 107A (MD)] or Fig. 10 (for 107B).

#### CALL DIRECTOR® Telephone Set

**3.10** When the 107-type loudspeaker set is used with a CALL DIRECTOR set, bring loudspeaker cord directly into the telephone set (Fig. 4). The power supply may be brought into the telephone set over spare cord conductors and connected to the loudspeaker set cord using spare terminals or D-161488 connectors. Insulate the connectors and the wing band of the cord with tape and store. Insulate and store the unused BL and W leads if a 107B is used.

**3.11** To install the 107A (MD) and B loudspeaker sets using a single-house cable pair for power and signal, refer to Fig. 7 and 8. The coil with a 1:1 (600:600 ohm) ratio (94E or equivalent) is used at the signal input end of the cable pair. Connect 48-volts dc to the secondary (SIMPLEX) of the coil. Install the 0.25  $\mu$ F (542C) capacitor and a 619-ohm resistor (KS-14603L3A or equivalent resistor between 600 $\Omega$  and 640 $\Omega$  with power rating of 2 watts minimum) at the 107-type loudspeaker set. The pigtail leads of the resistor and capacitor are secured under screw terminals inside the loudspeaker set. The capacitor blocks direct current from the signal input. The resistor provides the necessary voltage drop in order to supply correct voltage to the loudspeaker set and to prevent the loudspeaker set power supply from short-circuiting the speech transmission path. The blocking capacitor C1 and the dropping resistor R1 must be added locally. The leads should be cut short or insulated to avoid interference with other components. The green and yellow cord conductors of the 107A (MD) and the green, yellow, blue, and white cord conductors of the 107B are not used in this

arrangement. They should be terminated as shown in Fig. 6 and 7.

**3.12** ¶A D2N-50 cord is available for supplying SPOKESMAN service in 2991C-type telephone sets. The telephone set end is equipped with a 963-type connector and the opposite end has spade tips for connecting to the voice circuit of the loudspeaker set, either through the loudspeaker set cord or directly on the terminals.¶

#### 4. CONNECTIONS

**4.01** When used as a SPOKESMAN loudspeaker, connect the 107A (MD) and B loudspeaker sets to telephone set receiver circuit, which is under control of the switchhook and off-normal dial contacts (see Table B).

**4.02** The schematic and a typical connection for the 107A (MD) loudspeaker is shown in Fig. 9.

**4.03** The schematic and a typical connection for the 107B loudspeaker is shown in Fig. 10. The (R) and (G) leads of the D6AF-87 mounting cord connect to screw terminals 5 and 6 and are speech leads when the 107B is used as a SPOKESMAN loudspeaker. The (BL) and (W) leads, terminated on screw terminals 3 and 4, are speech leads for voice signaling on manual intercom and are not used for SPOKESMAN service. The (Y) and (BK) leads of the D6AF-87 mounting cord are for power connections.

**4.04** For connection to special applications such as a private service system, refer to appropriate associated equipment sections.

#### 5. OPERATION

##### SPOKESMAN LOUDSPEAKER

**5.01** The telephone set used in conjunction with the 107-type loudspeaker set is used in the normal manner. The handset of the telephone set must be off-hook to use the loudspeaker set.

**5.02** Operate loudspeaker as follows:

- (1) Turn the ON-OFF switch on the face of the 107-type loudspeaker set clockwise. This connects the power supply to the 107-type loudspeaker set.

- (2) Adjust the volume to a satisfactory level.
- (3) If the loudspeaker set "sings," increase the distance between the handset and the loudspeaker set, or readjust the volume control to a lower level.

**5.03** Turn the loudspeaker set off when not in use.

## 6. MAINTENANCE

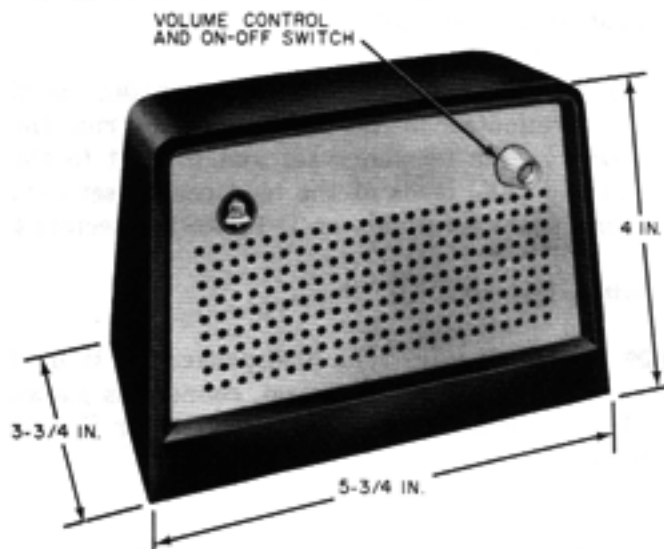
**Voice Paging on Manual Intercom (refer to Section 518-010-109)**

**6.01** For maintenance of the associated telephone set, refer to the section covering the type of set involved.

**6.02** Maintenance of the 107-type loudspeaker set is limited to replacement of the mounting cord and housing.

**6.03** To remove housing, remove the two screws in the base of the set. Carefully lift the housing up and off. To replace housing, carefully place housing over base and secure in place with two screws in base of set.

**6.04** To replace the cord, remove housing as described in paragraph 6.03. Mounting cord connections for the 107A (MD) loudspeaker set are shown in Fig. 9 and Fig. 10 shows the mounting cord connections for the 107B loudspeaker set. Replace the housing as described in paragraph 6.03.



**Fig. 1—107-Type Loudspeaker Set**

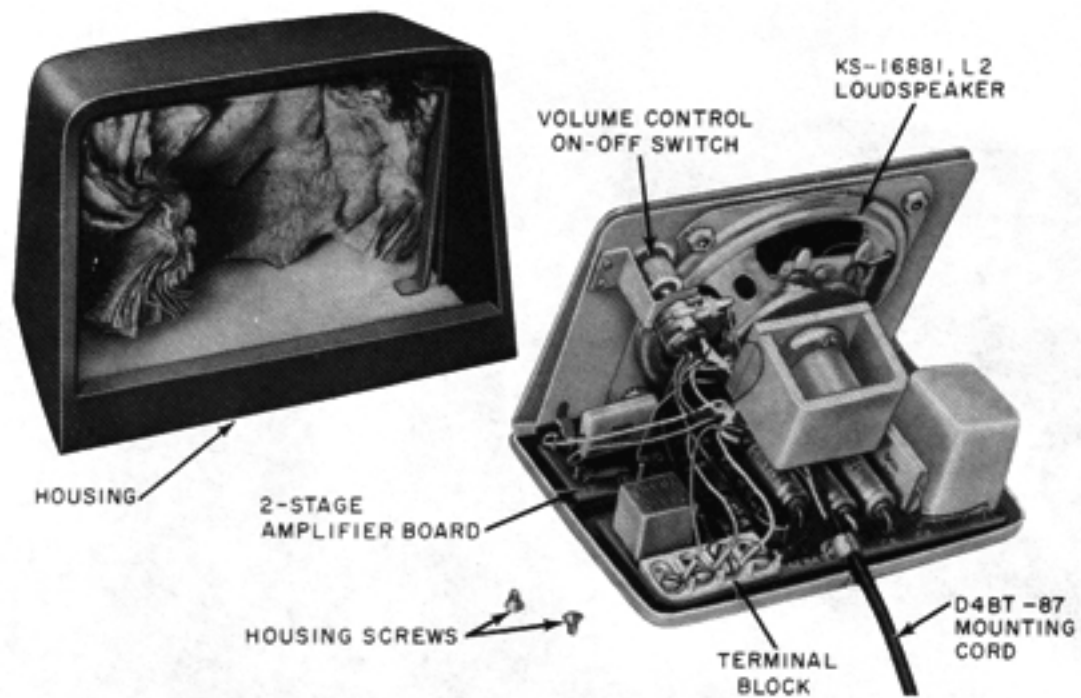


Fig. 2—107A (MD) Loudspeaker Set, Cover Removed

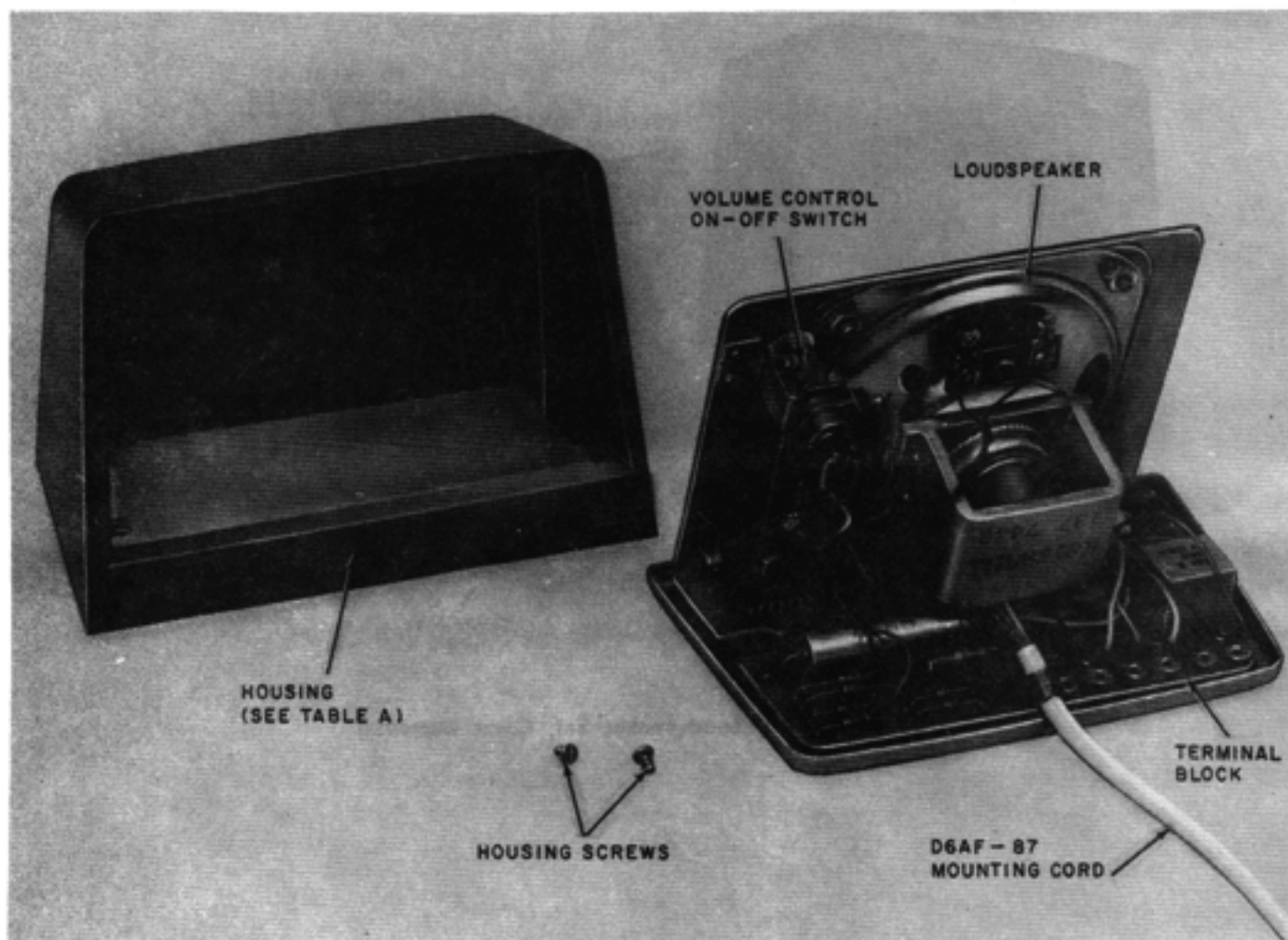


Fig. 3—#107B Loudspeaker Set, Cover Removed

TABLE A

## COLOR ORDERING GUIDE

APPARATUS	COLOR	SUFFIX	COMCODE
Housing, 107B Loudspeaker Set	Black	-08	828150037
	Ivory	-50	828150508
	Green	-51	828150516
	Red	-53	828150532
	Light Beige	-60	828150607
	Yellow	-56	828150565
	White	-58	828150581
	Aqua Blue	-62	828150623



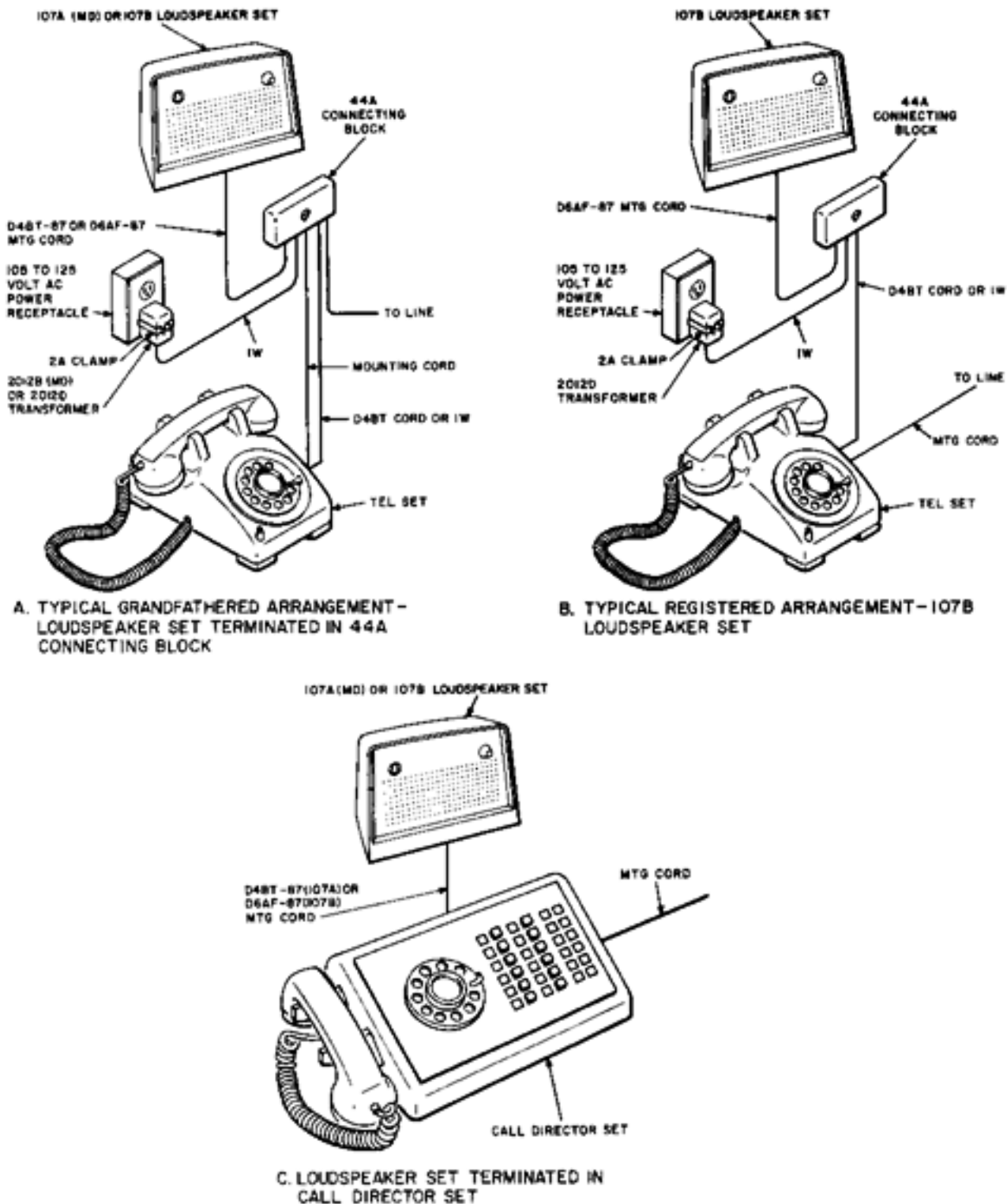


Fig. 4—107-Type Loudspeaker Set, Typical Installation Layouts



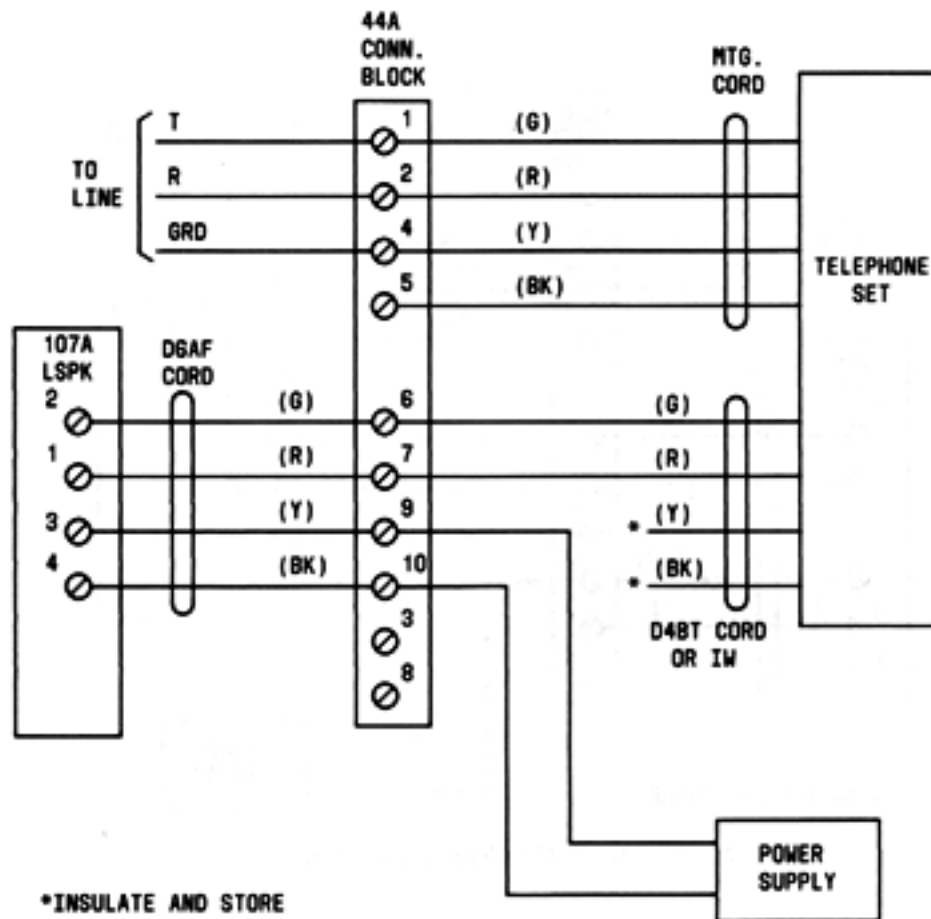
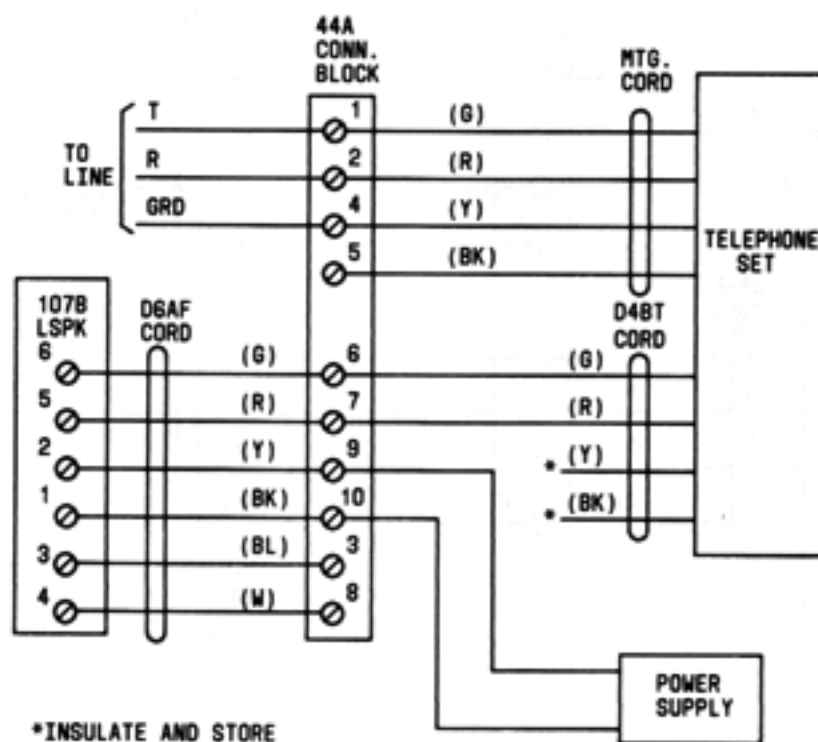
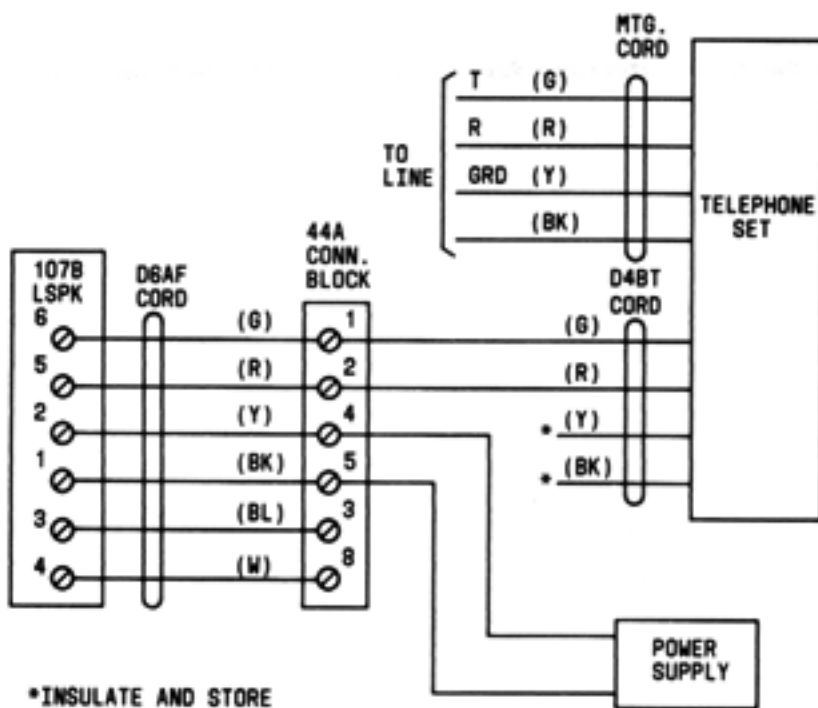


Fig. 5—Typical Connections, Grandfathered Arrangement of 107A Loudspeaker Set With Nonkey Sets



A. TYPICAL GRANDFATHERED ARRANGEMENT



B. TYPICAL REGISTERED ARRANGEMENT

Fig. 6—Typical Connections, 107B Loudspeaker Set With Nonkey Sets

TABLE B

**CONNECTIONS TO TELEPHONE SET  
FOR 107A (MD) AND 107B LOUDSPEAKER  
SETS (R AND G LEADS) WHEN  
USED AS SPOKESMAN® LOUDSPEAKER**

STATION SET	TERMINALS
<u>Telephone Sets:</u> 332, 334	Connect to BB of dial and R of induction coil.
302, 304, 305, 306, 354, 356, 401, 402, 410, 411, 412, and all 440 and 460 types.	Connect to W of dial and R of induction coil.
500, 600, 700, and 800 series	Connect to R and GN of network.
500, 600, 700, and 800 series with 1035- or 1036-type dials	Connect across receiver (see set and dial connection sections).
1500, 1600, 1700, 2500, 2600, 2700, 2800, 3500, 3600 960, 2960 series	Connect across receiver (see set connection section).

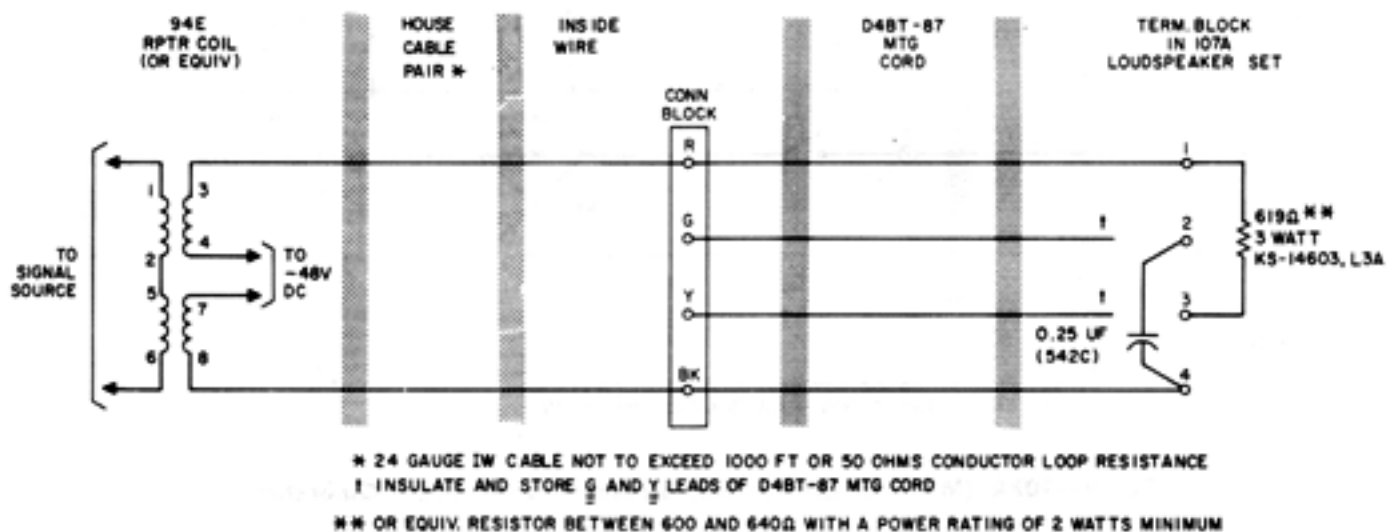


Fig. 7—107A (MD) Loudspeaker Set, Power and Signal Over Same Cable Pair

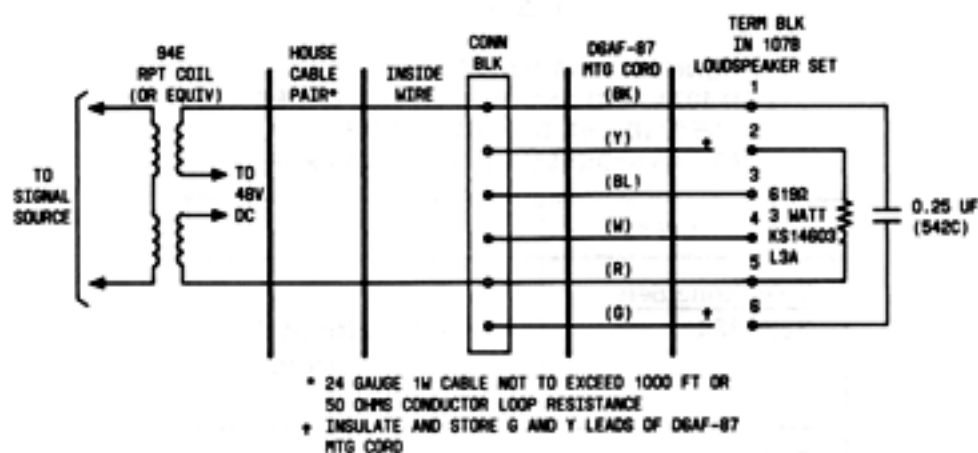


Fig. 8—107B Loudspeaker Set, Power and Signal Over Same Cable Pair

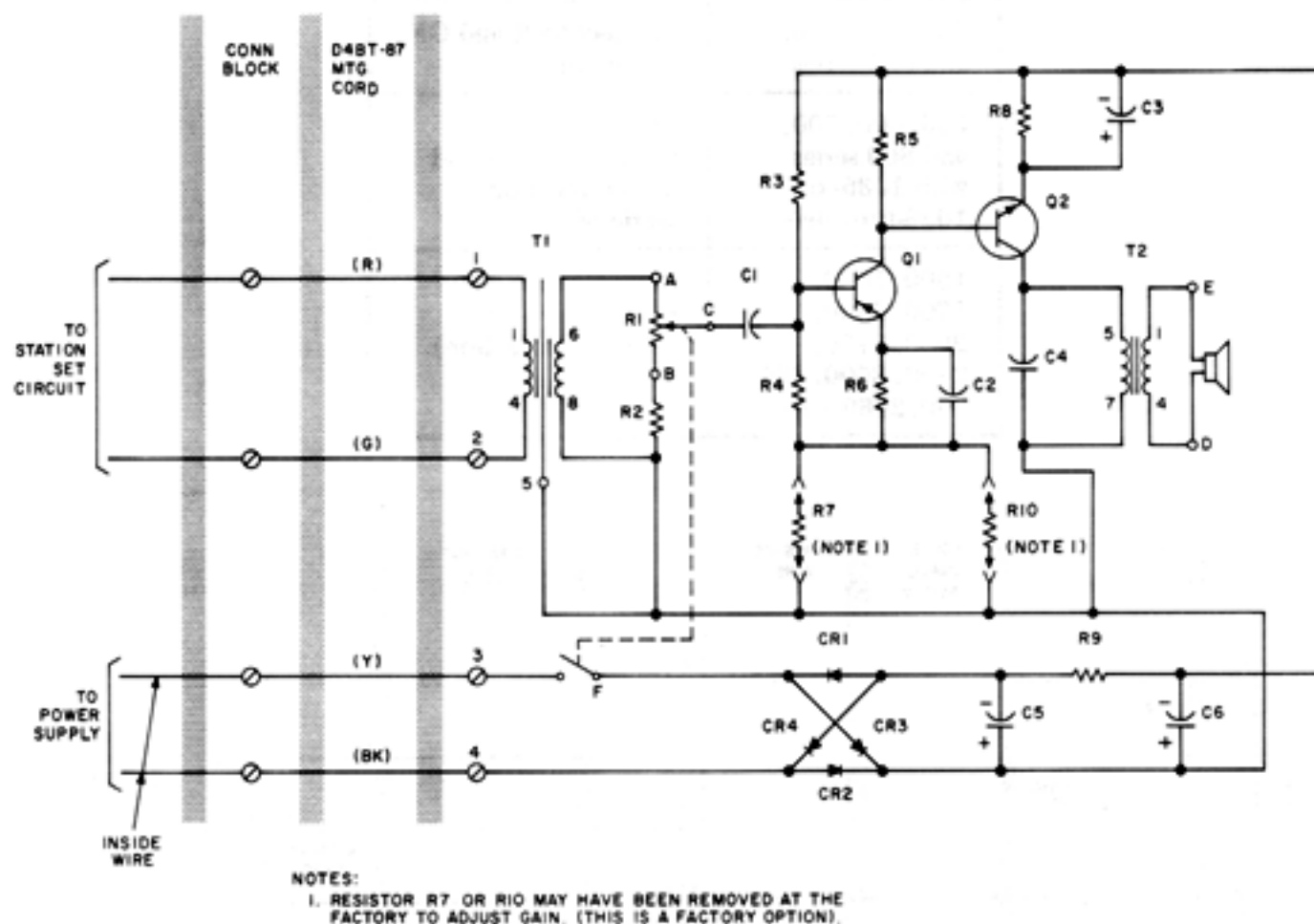


Fig. 9—107A (MD) Loudspeaker Set, Schematic and Typical Connections



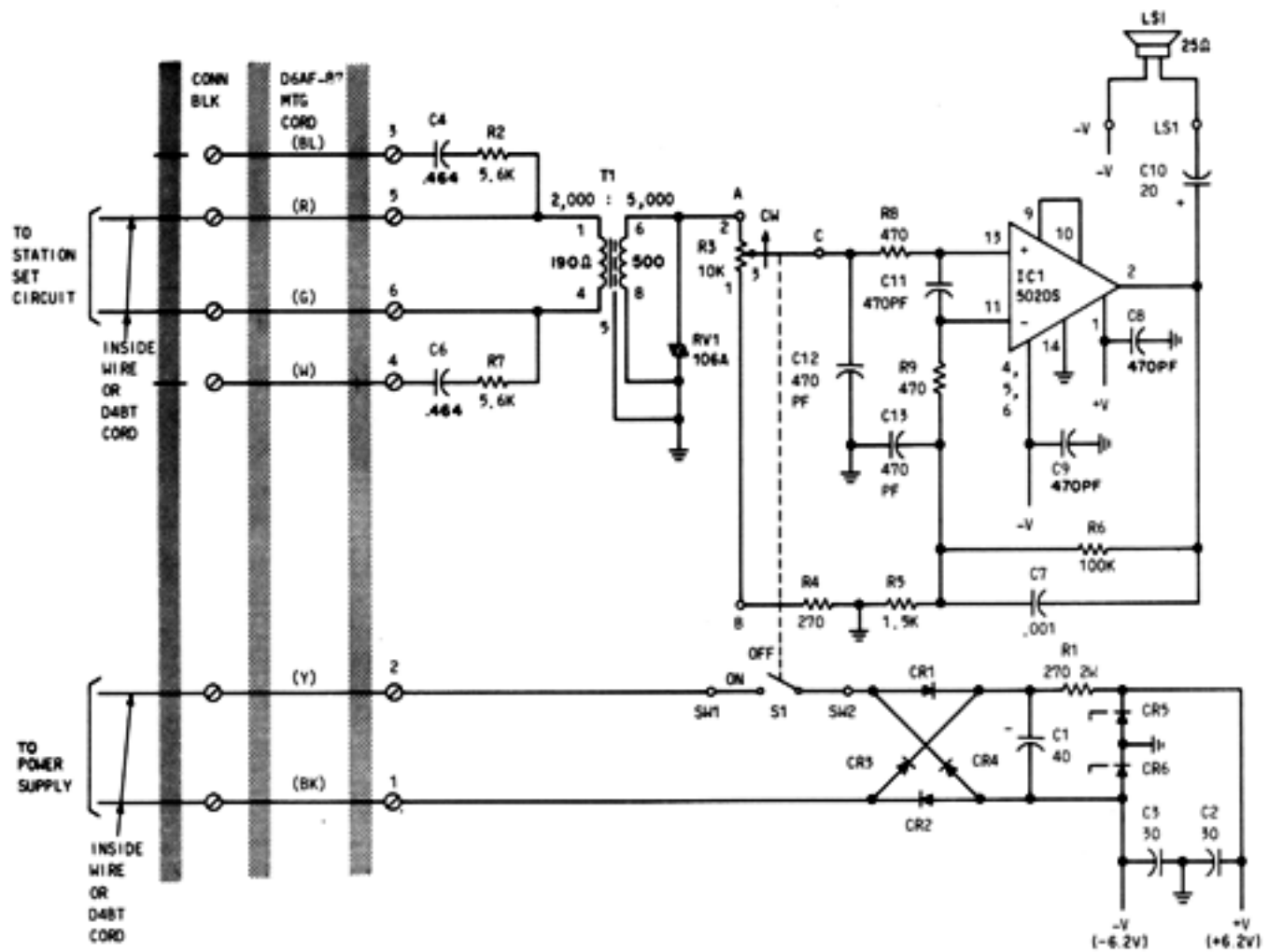


Fig. 10—107B Loudspeaker Set, Schematic and Typical Connections