

50A1 CONFERENCE SET

IDENTIFICATION, INSTALLATION, CONNECTIONS, OPERATION, AND MAINTENANCE

1. GENERAL

1.01 The section contains information on the 50A1 conference set which permits hands-free 2-way audience participation in a call placed over the telephone network. This set provides features not provided with the older 50A (MD) set such as A-lead control, multiple microphone use, and 4-wire operation for directly connected conference locations. The 50A1 is referred to as the portable conference telephone.

1.02 This section is reissued to:

- Add 220C-58 and 220AL-58 hand telephone sets
- Show 220A hand telephone set MD
- Add H4DU-58 cord
- Add 2500SM telephone set
- Show 2500S telephone set MD.

1.03 The 50A1 conference set is susceptible to radio frequency interference when used near a high power transmitter. The set can be modified on a **where needed** basis at the service center to suppress this interference. Send the Conference Telephone to the Indiana Service Center with instructions to modify per B.S.R.S. 455.218 paragraph 18. The words "Mod for RFI" will be stamped on the underside of the base upon completion of modification.

2. IDENTIFICATION

2.01 The 50A1 conference set (Fig. 1) consists of a 73B control unit, a modified 220A-58 (MD), 220AL-58, or 220C-58 hand telephone set plus the other accessories listed in paragraph 2.04 under the Ordering Guide.

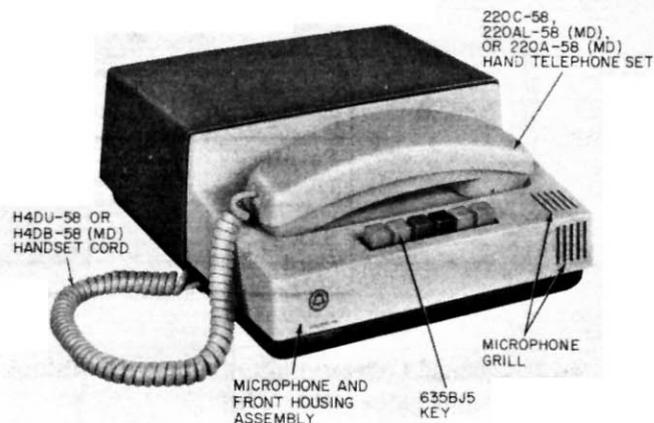


Fig. 1—Part of 50A1 Conference Set, Front View

2.02 Conference sets equipped with the 220C-58 hand telephone set have serial numbers starting at 100,000 preceded by the letter A. There are sets from previous production with serial numbers over 100,000 but do not have the letter prefix.

A. Ordering Guide

2.03 The 50A1 conference set can be ordered as a complete unit as follows.

- Set, Conference, 50A1.

2.04 The following components of the 50A1 conference set are field replaceable and can be ordered separately:

- KS-20653L1 Carrying Case
- Unit, Control, 73B (includes modified 220C-58 hand telephone set)

♦TABLE A♦

POLARITY GUARD AND S3A CORD CONNECTIONS
TO MODIFY 2500S (MD) OR 2500SM TELEPHONE SET

LEAD	COLOR	REMOVE FROM NET.	CONNECT TO		
			NET.	POLARITY GUARD	TERM. BOARD
Line Switch	W	C		S	
Dial	G-W BK	C RR		S T	
Polarity Guard	W G	— —	C RR		
S3A Cord	W BL R	— — —	— L1 L2	—	1

- KS-20660L1 (Green) microphone with 20-foot cord and color-coded plug
- KS-20660L2 (Gold) microphone with 20-foot cord and color-coded plug
- Set, Hand Telephone, ♦220C-58♦ (paragraph 5.03)
- Lamp, 51A
- Cord, Handset, ♦H4DU-58 (220C or 220AL)♦
- ♦Cord, Handset, H4DB—[220A (MD)]♦
- KS-20660L3 Lavalier Assembly (2)
- KS-20689L1 Power Cord (10-foot length)
- Cord, Mounting, D4BU (25-foot length)
- Adapter, 225A
- Holder, 54A (microphone desk stand) (2).

2.05 Replaceable Common Components of 73B Control Unit:

- 840695142 Microphone and Front Housing Assembly
- Key, 635BJ5
- 840284152 Rear Housing Assembly

- Ringer Assembly, P1B.

2.06 Associated Optional Apparatus or Equipment (Required for auxiliary dial):

- Set, Telephone, ♦2500SM♦
- Cord, S3A
- 819040528 (P-90D052) Guard Assembly.

B. Design Features

2.07 The 50A1 conference set is equipped with a TRIMLINE® hand telephone set and provides the following:

- Hands-free conference communication using any combination of the three microphones and a loudspeaker with output signal level adjustment
- 4-wire operation for directly connected conference locations
- Handset communication using a TRIMLINE hand telephone set
- Transferring between hands-free and handset during conversation
- One-way communication using the loudspeaker only

- A-lead control for use with key telephone systems
- Means to provide audible TOUCH-TONE® signals for computer data input
- Means to connect both transmitted and received signals to a public address system with output signal level adjustment
- Lighted OFF key lamp to indicate when the set is in operation.

C. Application

2.08 This set can be used on individual or bridged service on CO or PBX line circuits with 1A1, 1A2, or 6A key telephone systems where A-lead control is provided. It may also be used with 1A KTS where connection to tip and ring only are required.

3. INSTALLATION AND CONNECTIONS

3.01 Terminate incoming telephone line on 625C connecting block or equivalent. Place control unit on a desk, table, etc. within 25 feet of the connecting block and within 10 feet of a grounded power outlet supplying 120 volts ac, 60 Hz.



Ensure that the power cord is connected to an ac outlet not under control of a switch.

3.02 Arrange control unit so front is located at least six inches from table edge and with its loudspeaker facing the audience. For optimum performance, there should be no obstructions at the front, rear, or within one foot of the sides of the unit.

3.03 Install telephone line cord, ac power cord, and, as required, microphones or auxiliary TOUCH-TONE dial telephone set to the appropriate jacks located on rear of control unit (Fig. 2).

3.04 Provision is made for reproducing both transmitted and received signals over a customer-owned public address system. A public address adjustment (PA ADJ) (Fig. 2) control is located on the back of the set for adjusting the level of the transmitted signal at the PA terminals. Connections to the public address system are made

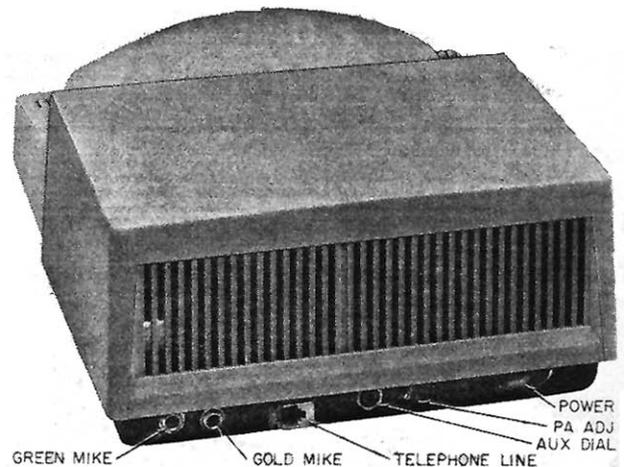


Fig. 2—Part of 50A1 Conference Set, Rear View

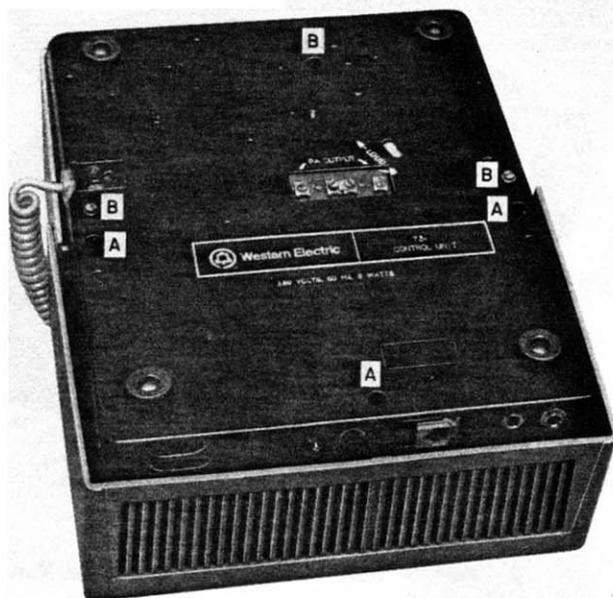
to the screw terminals on the bottom of the unit (Fig. 3). Connections should be made using a shielded pair, grounded at the customers' equipment only. If desired, the conference set loudspeaker can be deactivated by opening the shorting link between adjacent screw terminals on the base of the control unit (Fig. 3). Connection to and adjustment of the PA system is the customer's responsibility. Typical signal levels are—45dbv at 600-ohm impedance (balanced).

3.05 When the conference set is not in use or is being moved to another location, store the components and control unit in the carrying case.

3.06 When installed behind a 1A1, 1A2, or 6A KTS, the A and A1 leads from the KTS should be connected to the T1 and R1 leads, respectively, of the control unit to obtain A lead control. There are several ways to connect the 50A1 to a key system termination.

(1) A special connector (F-Specification 59888) can be ordered separately with a modular plug at the 50A1 end and a 153-type adapter wired to pick up tip, ring, A, and A1 leads at the key system end.

(2) If the customer desires to continue using his present key set, use of a KS-19252L1 bridging adapter is recommended. A surface-mounted 625C connecting block can be connected to a



A - REAR HOUSING ASSY CAPTIVE SCREW ACCESS HOLES
 B - MICROPHONE AND FRONT HOUSING ASSY SCREWS AND CAPTIVE SCREW ACCESS HOLE

Fig. 3—Part of 50A1 Conference Set, Bottom View

153C adapter, which is then plugged into the bridging adapter.

(3) If a 66-type connecting block is available, the 625C connecting block can be wired directly to it. Refer to appropriate section in Division 461 for connection information on 66-type connecting block and 153-type adapter.

3.08 When 4-wire operation is required, remove the rear housing assembly and with a screwdriver rotate selector switch to the 4W position (Fig. 6). The transmit line should be connected to the T and R leads from the control unit and the receive line should be connected to the T1 and R1 leads.

Note: ♦This set is not equipped for connection to a 4-wire transmission system; 4-wire operation is provided for directly connected conference locations.♦

4. OPERATION

A. Rotary Dial Service—220C, 220AL, or 220A (MD) Hand Telephone Set

4.01 The hand telephone set is used to establish all outgoing calls. Incoming calls may be answered using the hand telephone set or by depressing the SET MIKE ON button. Dial lamp power is provided when the power is connected.

B. TOUCH-TONE Service

4.02 A 2220C or 2220B (MD) TOUCH-TONE handset telephone set can be substituted for the 220C, 220AL, or 220A (MD) handset for TOUCH-TONE dialing and signaling with no modifications other than the 53B lamp furnished with the 2220B (MD) hand telephone set must be replaced with a 53A lamp.

C. Hands-Free Operation

4.03 The conference is transferred from the handset to hands-free operation by depressing one of the five locking key buttons (SET MIKE ON, GOLD MIKE, GREEN MIKE, AUX DIAL, or MIKES OFF) and then returning the handset to its cradle.

Note: ♦The speaker is not operational when handset is off hook.♦

4.04 A call is transferred to the handset mode and the control unit is deactivated whenever the handset is lifted.

4.05 Incoming calls are heard through the set loudspeaker. The output level is adjusted by means of the VOLUME control. Advance the VOLUME control only far enough for adequate listening level. However, when this control is set at 0, a lecturer speaking into the conference set will be heard more clearly at the remote location since the set will remain in the transmit mode.

SET MIKE ON

4.06 When the SET MIKE ON key button is depressed, the control unit microphone is activated. The person talking should position

himself in front of the unit, preferably at a distance of one or two feet for best transmission.

GOLD MIKE, GREEN MIKE

4.07 To use remote microphones, plugs should be inserted into the labeled jacks located on the rear of the control unit. The microphones will be activated when the gold or green key button is depressed.

Note: Any combination of the three microphones can be used at one time by simultaneously depressing the appropriate buttons.

4.08 The remote microphones can be hand-held, inserted in a desk stand, or used as a lavalier (Fig. 5). A talking distance of one foot is recommended.

MIKES OFF

4.09 When this key button is depressed all microphones are disconnected from the circuit, leaving the conference set in the receive mode only.

AUX DIAL

4.10 If TOUCH-TONE service is available, two means of signaling to a computer terminal are possible.

- (a) The customer can be provided with a 2220C or 2220B (MD) TOUCH-TONE handset in place of the 220C, 220AL, or 220A (MD) handset (see paragraph 4.02 for lamp change). Tone signaling may be accomplished by using the handset dial. The AUX DIAL key button need not be depressed.

Note: The signals will not be heard on the conference set loudspeaker.

- (b) The customer may be provided with a 2500S ♦(MD) or 2500SM♦ telephone set modified in accordance with Table A and shown in Fig. 4. Tone signaling may be accomplished by inserting the 309 plug into the AUX DIAL jack on the rear of the control unit and depressing the AUX DIAL key button. The dial of the modified telephone set may be used without lifting the handset. Signals will be transmitted to both

the telephone line and the conference set loudspeaker. The VOLUME control on front of the control unit adjusts the listening level of the TOUCH-TONE signals.

- (c) If TOUCH-TONE service is not available, the modified 2500S ♦(MD) or 2500SM♦ telephone set must be used as described in (b) to provide signaling to a computer terminal.

OFF Button

4.11 When in the hands-free mode, depressing the nonlocking OFF-button deactivates the conference set, extinguishes the associated indicator lamp, and disconnects the call.

D. 2- or 4-Wire Operation (See Paragraph 3.08)

4.12 An internally mounted switch (Fig. 6) allows easy selection between 2- or 4-wire mode of operation. In the 4-wire mode, transmit and receive channels are each connected through separate pairs of the telephone line.

E. Ringer

4.13 This control unit is equipped with a P1B ringer. The ringer volume control is located on the bottom of the unit.

5. MAINTENANCE

Caution: *Disconnect ac power cord and the D4BU line cord before attempting any maintenance to the interior of the control unit.*

5.01 Set repair at customers' premises should be limited to replacement of those parts listed in the Ordering Guide. Repair of other components affects set performance and requires detailed testing.

5.02 To remove the front and rear housing assemblies from the 73B control unit, disconnect the hand telephone set first, using a KS-21107L1 releaser or equivalent. Release the three captive screws located in access holes at sides and rear of the unit base pan (Fig. 3) and remove the rear housing assembly first. Then remove two screws located on the sides of the base pan and captive screw at the front to release microphone and front housing assembly. The proper dress of wires in the vicinity of the ringer gong, line switch, and

This page intentionally left blank

internal microphone terminal connections should be maintained to prevent interference with the front housing assembly when it is replaced after performing maintenance.

5.03 Replace 220C, 220AL, or 220A (MD) hand telephone set by connecting plug H4DU or H4DB cord to hand telephone set jack, and to jack located on left side of control unit.

Note: Replace the 53B dial lamp furnished with the 220A (MD) hand telephone set with a 53A lamp. Refer to appropriate section in Division 502 for replacement procedures.

5.04 If a light appears under the MIKES OFF button, it indicates dial light power is supplied on T1 and R1 leads. ***Do not remove this lamp from the conference set.***

SECTION 512-630-111

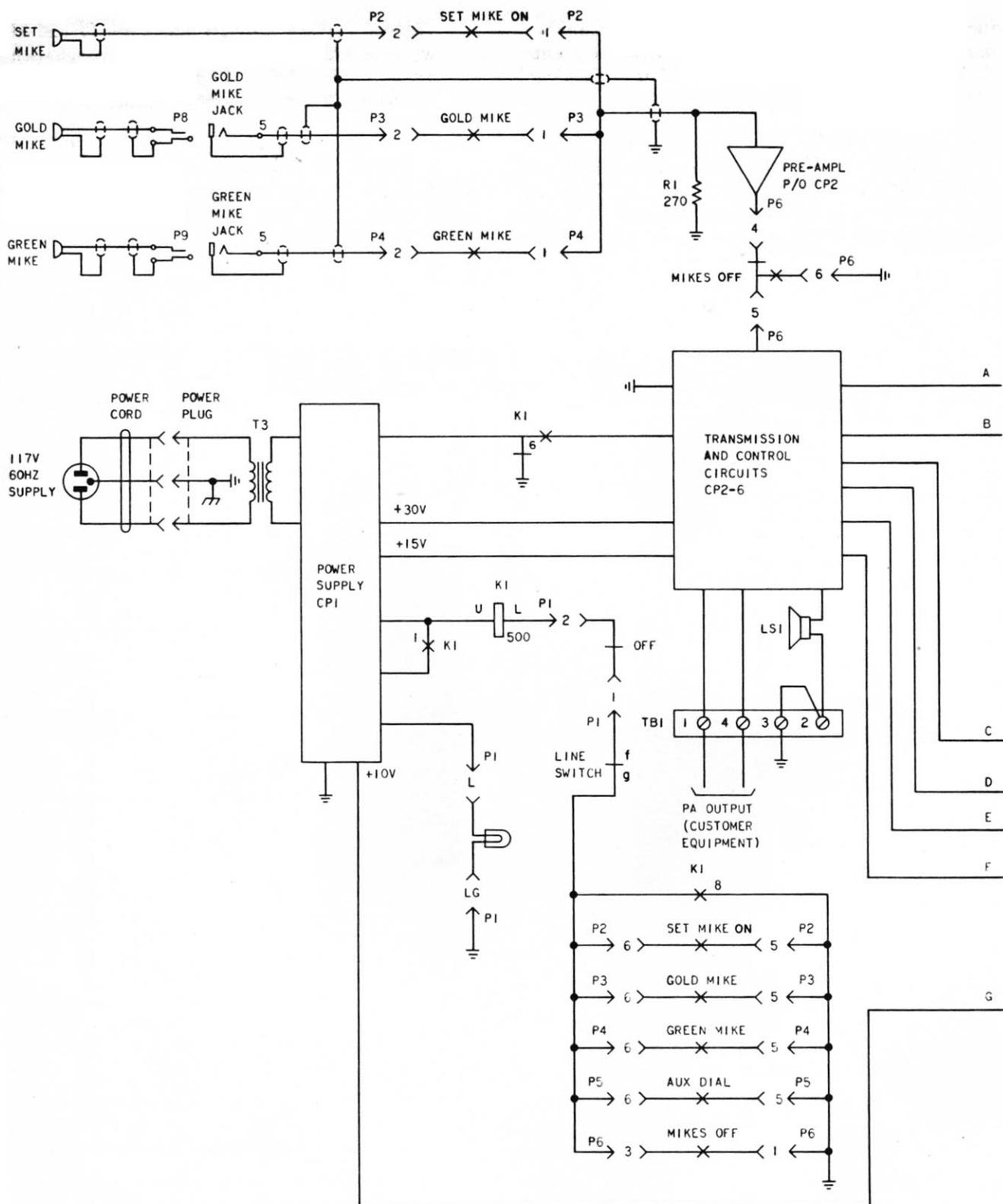
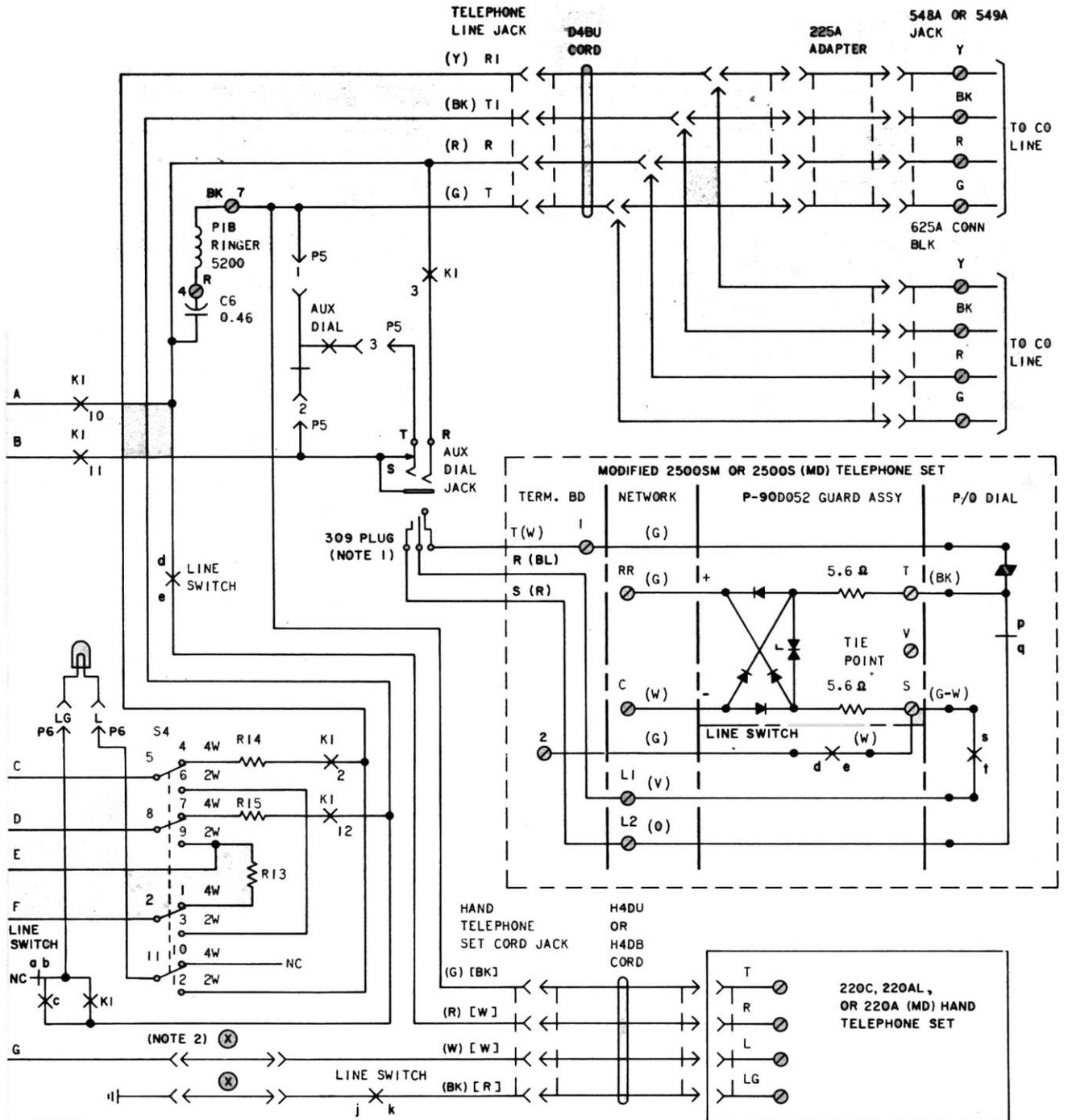


Fig. 4—50A1 Conference Set, Block Diagram (Sheet 1 of 2)



- NOTES:
1. REPLACE DIOP MOUNTING CORD FURNISHED WITH 2500S (MD) OR 2500SM TELEPHONE SET WITH A S3A (SWITCHBOARD) CORD EQUIPPED WITH A 309 PLUG OR EQUIVALENT (ORDERED SEPARATELY). SPECIFY LENGTH AND COLOR OF CORD. SEE TABLE A FOR CONNECTIONS.
 2. OPTION (X) PROVIDED WITH 220A (MD) HAND TELEPHONE SET ONLY.
 - () LEAD COLORS FOR 616T JACK USED WITH H4DU CORD.
 - (X) LEAD COLORS FOR 840696298 (MD) JACK USED WITH H4DB (MD) CORD.

Fig. 4—50A1 Conference Set, Block Diagram (Sheet 2 of 2)

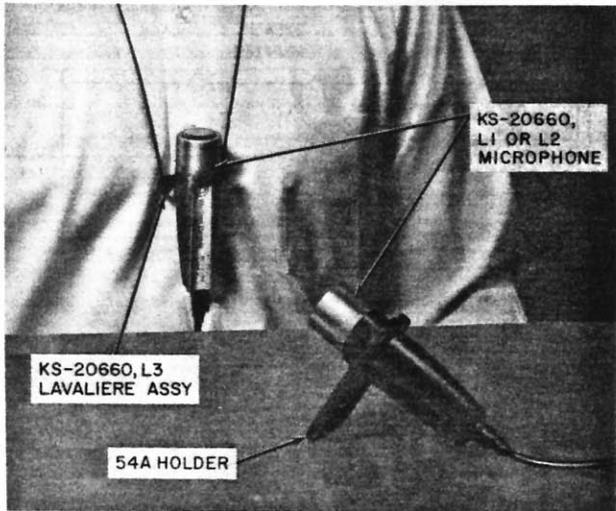


Fig. 5—Remote Microphones Using Lavalier and Holder

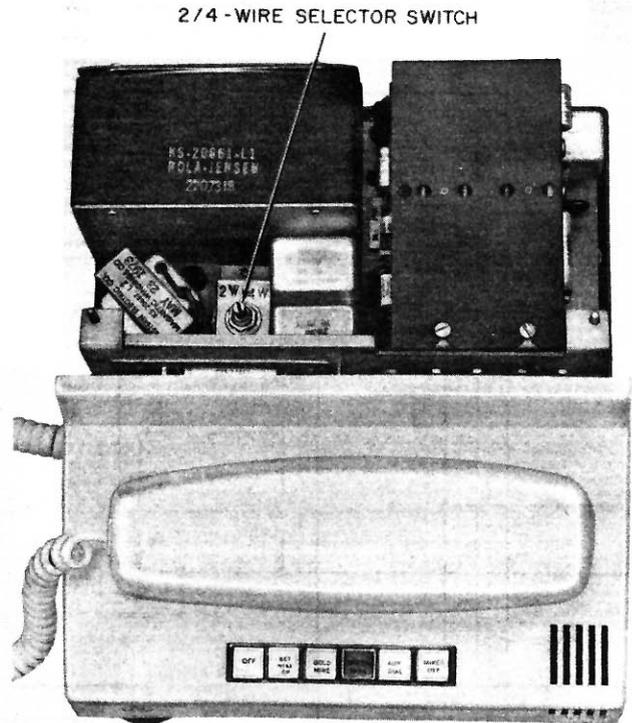


Fig. 6—Part of 50A1 Conference Set, Rear Housing Removed