

## 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 additional features such as A-lead control, multiple microphone use, and 2/4 wire operation not provided with the older 50A (MD) set. The 50A1 is sometimes referred to as the Portable Conference Telephone.

1.02 This section is reissued to include radio interference information.

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. 455.217 paragraph 18. "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 hand telephone set plus the other accessories listed in paragraph 2.03 under the Ordering Guide.

##### A. Ordering Guide

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

- Set, Conference, 50A1.

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

- KS-20653L1 Carrying Case



Fig. 1—73B Control Unit, Front View

- Unit, Control, 73B (includes modified 220A-58 hand telephone set)
- 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, 220A-58 (paragraph 5.03)
- Lamp, 51A
- Cord, Handset, H4DB-58
- KS-20660L3 Lavalier Assembly (2)
- KS-20689L1 Power Cord (10-foot length)
- Cord, Telephone Line, D4BU (25-foot length)
- Adapter, 225A

#### NOTICE

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

TABLE A

POLARITY GUARD AND S3A CORD CONNECTIONS  
TO MODIFY 2500S 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

- Holder, 54A (microphone desk stand) (2).

#### 2.04 Replaceable Common Components of 73B Control Unit:

- 840695142 Microphone and Front Housing Assembly
- Key, 635BJ5
- 840284152 Rear Housing Assembly
- Ringer Assembly, P1B.

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

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

#### B. Design Features

2.06 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
- 2- or 4-wire operation

- 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

2.07 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

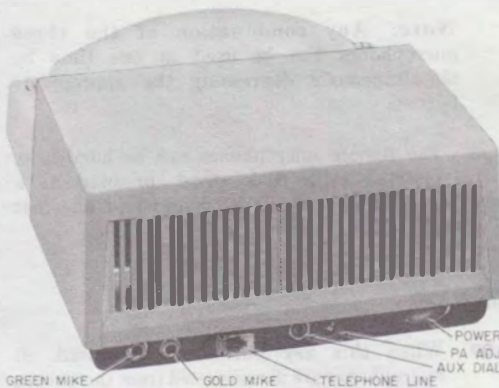
unit on a desk, table, etc. within 25 feet of the jack and within 10 feet of a grounded power outlet supplying 120 volts ac, 60 Hz.



**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).



**Fig. 2—73B Control Unit, Rear View**

**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 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).



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

**Fig. 3—73B Control Unit, Bottom View**

**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 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.

#### 4. OPERATION

##### A. Rotary Dial Service—220A 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 2220B TOUCH-TONE handset can be substituted for the 220A handset for TOUCH-TONE dialing and signaling with no modifications other than the lamp change noted in paragraph 5.03.

##### 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.

**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 2220B TOUCH-TONE handset in place of the 220A handset (see paragraph 5.03 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 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 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

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-16750 type 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 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 220A hand telephone set by connecting plug of 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 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.**

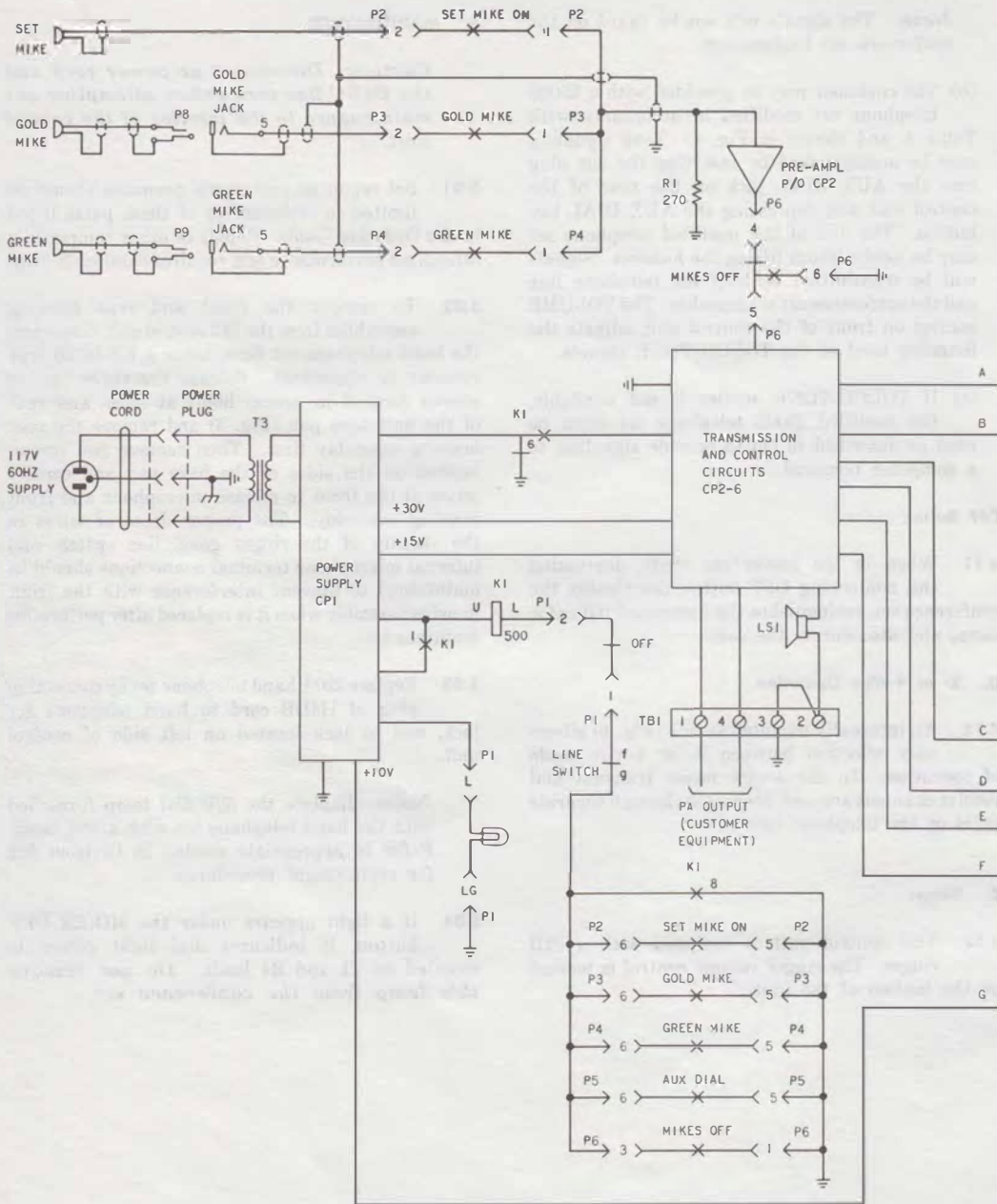


Fig. 4—50A1 Conference Set, Block Diagram (Sheet 1 of 2)

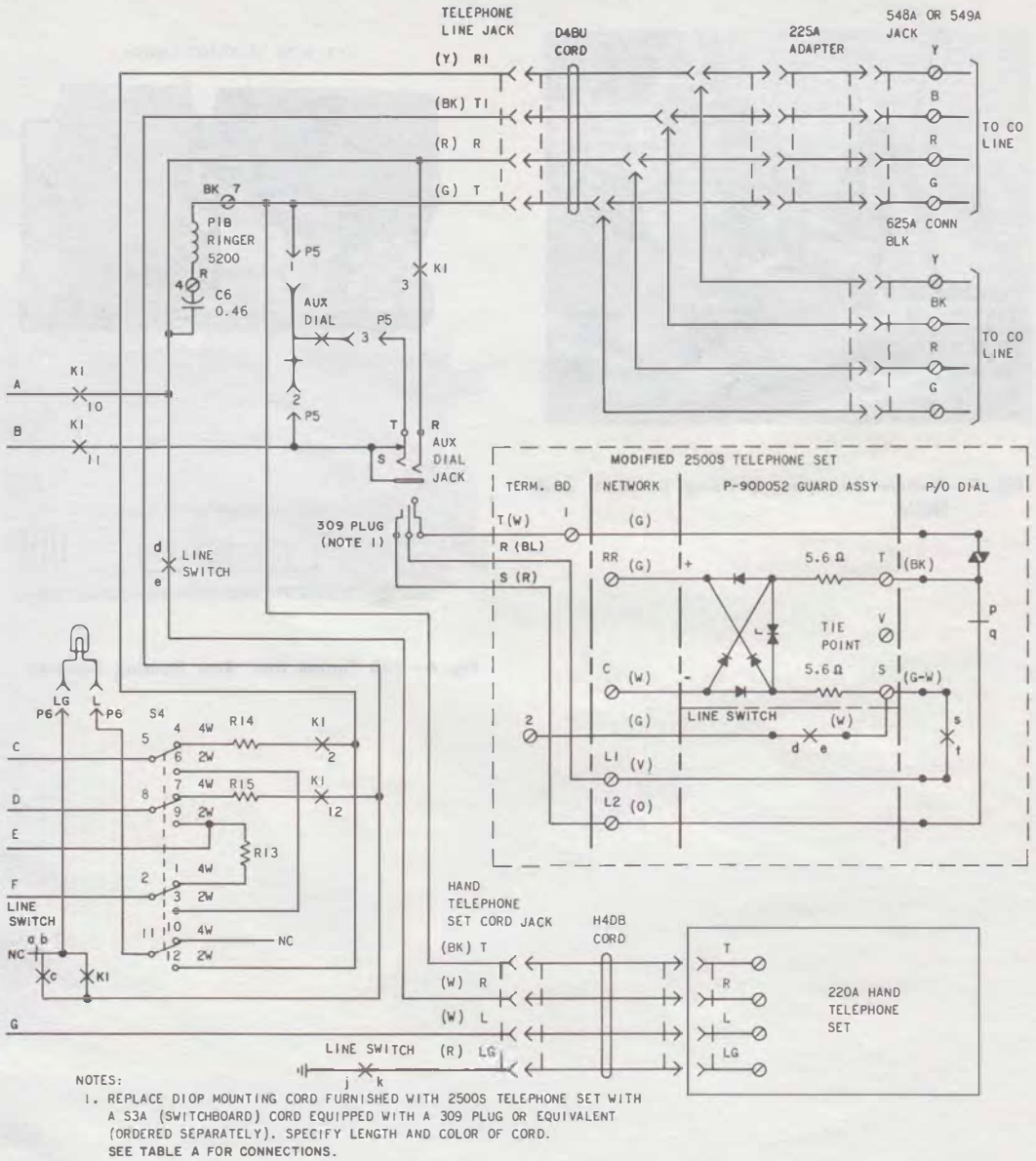


Fig. 4—50A1 Conference Set, Block Diagram (Sheet 2 of 2)



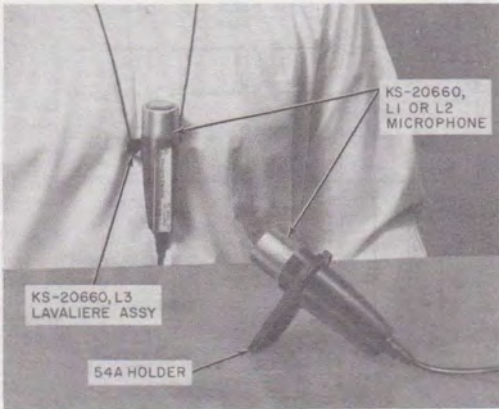


Fig. 5—Remote Microphones Using Lavalier and Holder

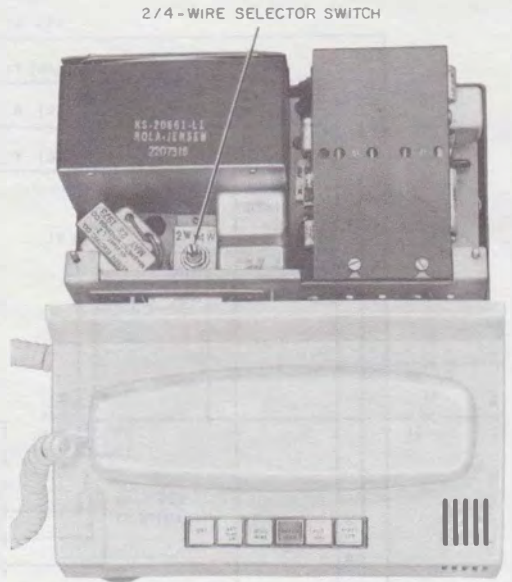


Fig. 6—73B Control Unit, Rear Housing Removed