

## TELEPHONE SETS

### 852A AND 2852A

#### 1. GENERAL

**1.01** This section contains identification, installation, connections, and maintenance information for the 852A and 2852A telephone sets.

#### 2. IDENTIFICATION

##### Purpose

**2.01** The 852A (rotary) and 2852A (TOUCH-TONE<sup>®</sup> dial) (Fig. 1) telephone sets are wall-mounted, 10-button, key telephone sets equipped to provide standard key system features.



Fig. 1—2852A Telephone Set

##### Application

**2.02** Used with central office, PBX or intercommunicating line circuits in 1A1, 1A2, or 6A key telephone systems (KTS). These sets are not for use with 1A KTS.

**2.03** The 852A and 2852A telephone sets may be used with either 3- or 4-type speakerphone.



*The limited number of mounting cord conductors can place a restriction on using these telephone sets with 3-type speakerphone (see 3.11).*

##### Ordering Guide

**2.04** To order a complete telephone set, list as follows:

- Set, Telephone, 852A-\*
- Set, Telephone, 2852A-\*

\* Complete code by adding color suffix from Table A.

TABLE A  
COLOR ORDERING GUIDE

HOUSING, CORDS, AND HANDSET		COORDINATED COLOR	
COLOR	SUFFIX	COLOR	SUFFIX
Black	—03	Charcoal	—70
Ivory	—50	Muted Ivory	—80
Green	—51	Light Green	—71
Red	—53	Muted Red	—69
Yellow	—56	Light Yellow	—72
White	—58	Light Gray	—73
Light Beige	—60	Muted Beige	—75
Aqua Blue	—62	Muted Blue	—76

## 2.05 Replaceable Components:

- Housing, 852A-\*
- Plate, Face, 851A-\* (852A telephone set)
- Plate, Face, 2851A-\* (2852A telephone set)
- Set, Hand, G3A6\*
- Ringer, P1B
- Dial, 8R-58 (852A telephone set)
- Dial, 35AF3A (2852A telephone set)
- Key, 652A5
- Lamp, 51A
- P-22F438 Resonator Assembly
- P-23F101 Collar
- KS-20419L1 Buzzer

## 2.06 Optional Components (order separately):

- KS-15724L1 Diode (for use with station busy lamp)
- P-90D170 Polarity Guard (optional for 2852A set)
- KS-8109L2 Buzzer (mounting provided for one buzzer)
- KS-20419L1 Buzzer (mounting provided for two additional buzzers)
- 8C-58 Dial (for 852A set used with speakerphone)

### Design Features

- 10-button (9-line pickup and hold)
- All pickup buttons convertible to signaling
- Hold key can be illuminated (lamp not furnished)
- Telephone set termination by means of connector

- KS-20419L1 buzzer provided and connected to dedicated connector leads
- Provisions for mounting one KS-8109L2 buzzer or two additional KS-20419L1 buzzers on chassis assembly
- Provisions for adding polarity guard assembly to 2852A telephone set (optional)
- An access hole is provided in the P1-type ringer for biasing spring adjustment. Refer to Section 501-259-101.



*Limited number of connector leads restricts number of optional features which may be provided*

### Operating Features

**2.07** The operating features for the 852A and 2852A telephone sets are the same as standard 6-button key telephone sets and CALL-DIRECTOR® type telephone sets.

## 3. INSTALLATION

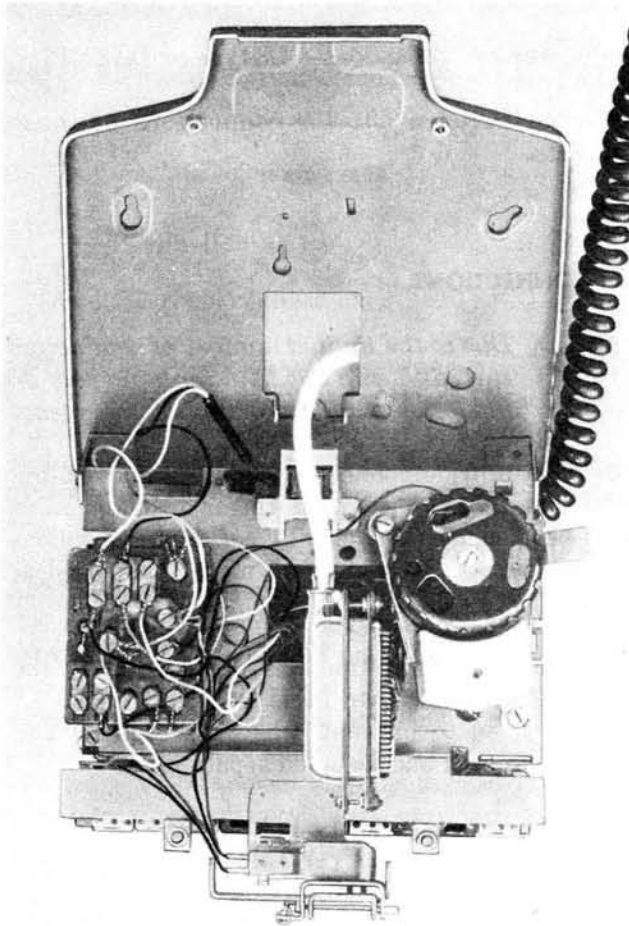
**3.01** When mounting the 852A or 2852A telephone set, select a location which provides at least 6 inches of clearance on all sides to permit removal of the handset and for maintenance.

**3.02** Remove faceplate by using a KS-16750 type releaser or equivalent in catch in bottom of faceplate.

**3.03** Remove housing by loosening two captive screws under faceplate area.

**3.04** To expose the mounting holes, the hinged chassis assembly must be lowered by loosening the captive screws holding the top of the chassis. Where desired, the chassis assembly can be removed by springing the hinge brackets sufficiently to clear the pins. The basepan can be mounted directly to the wall using the keyhole slots, or holes are provided for mounting over an electrical outlet box.

**Caution:** *Avoid damage to wall or telephone set whenever chassis is in lowered position.*



**Fig. 2—852A or 2852A Telephone Set with Hinged Chassis Lowered**

**3.05** Sets can be wired using a connector cable. When mounted over an outlet box, bring wiring through opening in basepan before mounting. Allow 6-10 inches of cable inside set for routing and terminating and check that sufficient slack is provided to permit hinging action of chassis assembly.

**3.06 To install housing:**

- (1) If chassis assembly is in lowered position, raise and fasten in place with two captive screws.
- (2) Install collar on key.
- (3) Withdraw the two mounting screws until they are held in the housing by their threads.

With both line switch plungers fully lifted, move the housing directly into position around the telephone set. Depress both plungers to their on-hook position. Continue moving the housing into position against the base. Release plungers.

- (4) Fasten housing in place with two captive screws.
- (5) Check complete operation of line switch.

**3.07** Use a Form E-4203-G or E-4204-G as a station number card for rotary sets and Form E-5002-A or E-5002-B for a TOUCH-TONE station. Insert number card under fingerwheel of the 8-type dial or under card retainer of the 2851A faceplate.

**3.08 To install faceplate:**

- (1) Insert tabs on faceplate into slots of housing. Use a KS-16750 type releaser or equivalent to depress the tab of the faceplate retainer clip while seating the faceplate. To insure proper positioning of the retainer clip, raise the handle of the releaser well above horizontal before withdrawing the tool.
- (2) If the latching characteristic of the P-269524 retainer clip is inadequate, replace with a 840155618 clip.

**3.09** The 652A5 key uses a E-5837 form (key button designation tabs). To install, squeeze sides of cap to remove it from key button and insert designation tab. When replacing cap or key button make sure assembly snaps into place. If cap does not snap in place properly, rotate 90 degrees.

**Optional Features**

**3.10** Individual signaling may be provided by converting a locking key button to nonlocking. Remove the P-28E773 locking pin from the button to be converted, and make wiring changes shown in Table E.

**3.11** When providing 3-type speakerphone with the 852A or 2852A telephone set and the speakerphone leads are connected to the telephone sets through the connector cable the use of last two pick-up buttons must be sacrificed.

**3.12** To provide the maximum key features plus the 3-type speakerphone feature, install the 55-type control unit at the same location as the telephone set and connect the speakerphone leads to the telephone set using an auxiliary mounting cord (refer to Table G).

**3.13** If 4-type speakerphone is provided the 223A adapter is used to interconnect the 4-type speakerphone system (transmitter, loudspeaker set, and power unit).

**3.14** For connections to the 3- or 4-type speakerphone system, refer to appropriate section in Division 512.

**3.15** When adding speakerphone to 852A telephone sets; the 8R dial must be replaced by an 8C dial (ordered separately) to provide the additional off-normal contacts required for speakerphone connection.

**3.16** When an 852A or 2852A telephone set is multiplied with sets furnishing speakerphone features, certain leads must be disconnected, insulated, and stored to avoid interference with working circuits. The designation of leads to be removed are as follows: T1, R1, P3 or IT, P4 or IR, AG, and LK.

**3.17** The 852A and 2852A telephone sets are equipped with a KS-20419L1 (10 volt AC only) buzzer mounted on the chassis. The buzzer leads are connected to (O-Y) and (Y-O) connector leads. Plastic screw grommets and mounting screws are provided to install one KS-8109L2 or two additional KS-20419L1 buzzers, if required.

**3.18** ***Polarity Guard*** (2852A only): Should be used only when specified by local instructions for end-to-end signaling installations where battery and ground reversals may be encountered. A P-90D170 polarity guard assembly may be installed on the chassis below the dial.

**3.19** Operational tests of all features should be made to insure proper operation and customer satisfaction.

**3.20** Where conditions warrant, the G3A6 handset supplied with these sets can be replaced with other types as follows:

- For impaired hearing — G6-type

- For weak speech — G7-type

- For noisy location — G8-type or D-180413

Refer to Division 501 for connections of these handsets.

#### 4. CONNECTIONS



*Due to the limited number of conductors the 852A and 2852A telephone sets do not follow standard wiring arrangements.*

**4.01** To provide connector leads for illuminating the HOLD button, the ringer or buzzer leads must be used, meaning only two of the three options (ringer, buzzer, or hold lamp) may be provided at the same time.

**4.02** To provide station busy lamp, modify the telephone set per Table B. The KS-15724L1 diode is used to prevent false busy signals and must be ordered and installed separately.

**4.03** To provide priority hold (I HOLD) modify the telephone set per Table C.

**4.04** To provide individual signaling, modify the telephone set by converting the proper button(s) and make wiring changes per Table E. The key and its associated cord assembly are adaptable for individual signaling but not for common signaling.

**4.05** To provide 3-type speakerphone leads in the connector cable, the buzzer leads along with the lamp and lamp ground leads from the 8th and 9th pick-up key position must be used. Refer to Table F for connections.

**4.06** Connections in Table G are used when the control unit is located close to the telephone set and a D10R mounting cord is used as an auxiliary cord for connecting the 3-type speakerphone leads to the telephone set. With this arrangement the transmitter and loudspeaker may be connected directly to the control unit.

**4.07** To provide 4-type speakerphone connections, connect the M16C cord as shown in Table H.

## 5. MAINTENANCE

**5.01** Maintenance replacement should be limited to the following:

- Complete telephone sets
- Optional items
- Replaceable components

**5.02** When necessary to remove housing, the faceplate must first be removed by using a KS-16750 type releaser or equivalent in catch in bottom of faceplate. Housing can then be removed by loosening two captive screws under faceplate area.

**5.03** When dial replacement is necessary in the 852A telephone set, use an 8R dial for nonspeakerphone sets and an 8C dial for sets with speakerphone. Remove dial by loosening mounting screws and springing dial brackets sufficiently to release dial from locating pins. Left hand bracket may have to be moved slightly toward right side of set to permit dial to clear screw terminal field

(or loosen and move screw terminal field). Transfer adapter brackets from dial being replaced to new dial.

**5.04** Maintenance of the 35AF3A (TOUCH-TONE dial) dial is not recommended and the dial should be replaced. Adapter brackets are not involved when replacing the TOUCH-TONE dial.


**5.05** For maintenance of buzzers, dials, speakerphone components, and polarity guard, refer to appropriate sections pertaining to these items.

**5.06** Access to the ringer is obtained by lowering the hinged chassis assembly. The ringer can be removed by loosening the two shouldered mounting screws.

**5.07** The current production 652A keys have been modified for easy lamp replacement by merely removing the lamp cap and inserting a 553-type tool through the hole in the top of the button. In early production keys it was necessary to remove faceplate, housing, key collar, and button for lamp replacement.

TABLE B

STATION BUSY LAMP CONNECTIONS

LEAD	OPERATION
Hold Key (G-W)	Remove from terminal 11 and connect to 18
KS-15724L1 Diode	Connect as shown 
Connector (Y-O) (Note)	Remove from 20 connect to 11

*Note:* Use spare connector lead if (Y-O) lead is used to provide other options.

TABLE C

I HOLD CONNECTIONS (NOTE)

LEAD		REMOVE FROM	CONNECT TO
Hold Key	(G-W)	11	12
	(BK-BL)	12	11
SP Lead — Use (Y-O)* or spare connector conductor		20	15

\* (Y-O) lead may be used unless connected for other options.



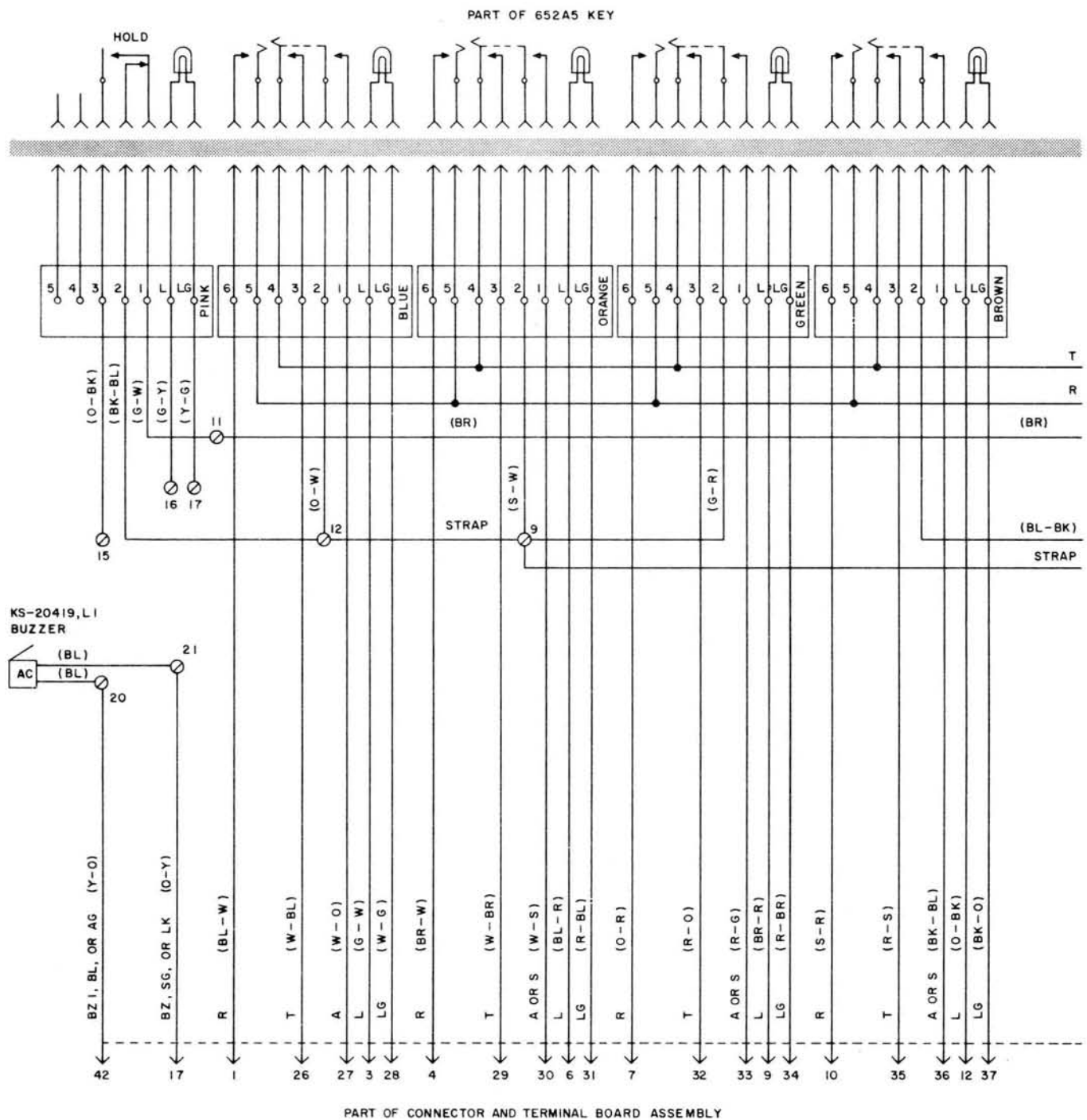


Fig. 3—852A and 2852A Telephone Set, Connections (Sheet 1 of 4)

## PART OF 652A5 KEY

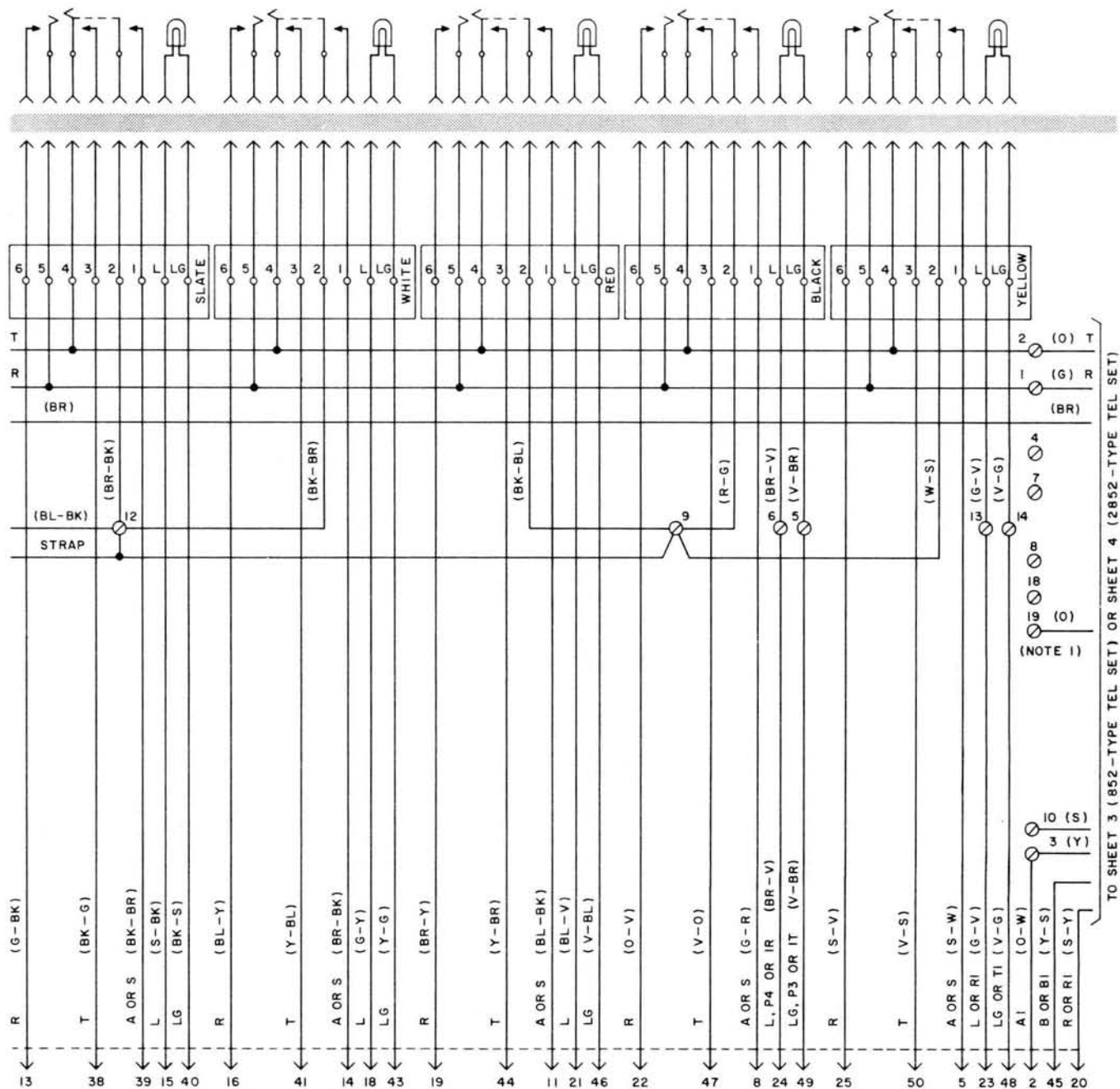


Fig. 3—852A and 2852A Telephone Set, Connections (Sheet 2 of 4)

## 852-TYPE TELEPHONE SET

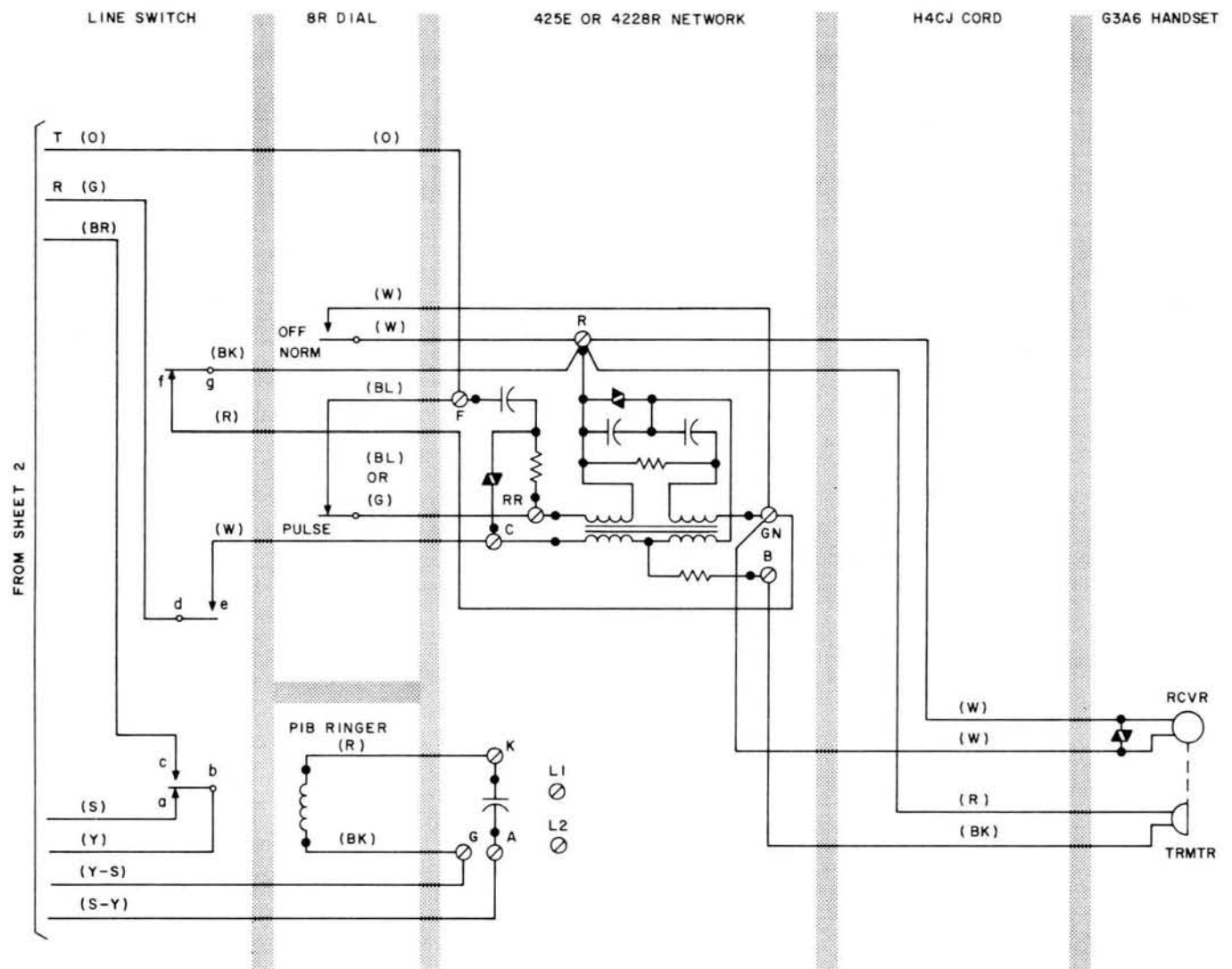


Fig. 3—852A and 2852A Telephone Set, Connections (Sheet 3 of 4)



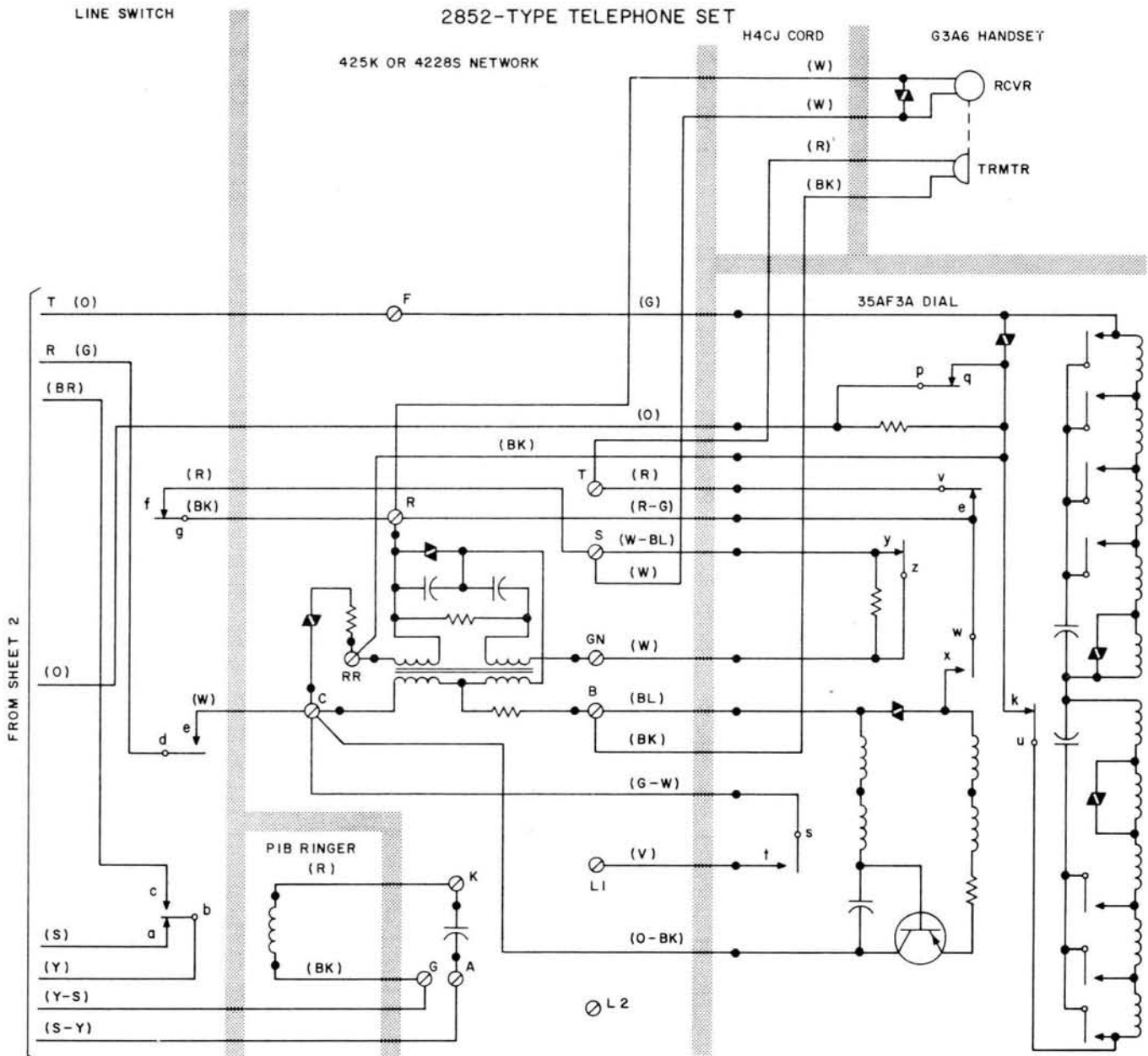


Fig. 3—852A and 2852A Telephone Set, Connections (Sheet 4 of 4)

**TABLE D**  
**POLARITY GUARD CONNECTIONS FOR 2852A**  
**TELEPHONE SET (P-90D170 GUARD ASSEMBLY)**

WIRE OR LEAD	COLOR	REMOVE FROM	CONNECT TO	
		NET.	GUARD ASSY.	NET.
Dial	BK	RR	T	
	G-W	C	S	
Line Switch	W	C	S	
Guard Assembly	G			RR
	W			C

**Note:** For use when specified by local instructions for end-to-end signaling installations.

**TABLE E**  
**PICKUP SIGNAL KEY CONVERSION**

CONVERSION OPTION (NOTE)	652A5 KEY LEADS								
	O-W	S-W	G-R	BL-BK	BR-BK	BK-BR	BK-BL	R-G	W-S
HPPPPPPPPP	12	9	9	12	12	12	9	9	9
HPPPPPPPPS	12	9	9	12	12	12	9	9	7
HPPPPPPPPSS	12	9	9	12	12	12	9	7	7
HPPPPPPSSS	12	9	9	12	12	12	7	7	7
HPPPPSSSSS	12	9	9	12	12	7	7	7	7
HPPPPSSSSS	12	9	9	12	7	7	7	7	7

**Note:** Move (O-Y) connector lead from terminal 21 to terminal 7. Beyond five signal conversions strap terminal 7 to 8 and move the signal leads consecutively to terminal 8. Example: (BL-BK) lead from terminal 12 to 8, then (G-R) from 9 to 8 etc.

TABLE F

3-TYPE SPEAKERPHONE CONNECTIONS  
(CONTROL UNIT AND APPARATUS  
CABINET AT SAME LOCATION)

SPEAKER- PHONE LEADS	LEAD COLOR	REMOVE FROM TERM	CONNECT TO TERM
T1 (Note 1)	V-G	14	19
R1	G-V	13	1
AG	Y-O	20	11
LK	O-Y	21	10
P3 or IT	V-BR	5	4
P4 of IR	BR-V	6	8 L1†
A1	O-W	—	3

## Notes:

1. Add strap from terminal 19 to network terminal C (852A only)
2. Replace 8R with 8C dial on 852A telephone sets. Connect (Y) leads of 8C dial to terminals 4 and 8.

† Network terminal.

○ 852A Telephone Set

□ 2852A Telephone Set

TABLE G

3-TYPE SPEAKERPHONE CONNECTIONS  
(USING AUXILIARY MOUNTING CORD)

LEAD DESIG	DIOR CORD COLOR	TEL SET TERM.
T1	W-BL	RR† 19
R1	BL-W	1
AG	W-O	11
LK	O-W	10
P3 or IT	W-G	4
P4 or IR	G-W	8 L1
A1	W-BR	3

Note: Replace 8R dial with 8C Dial on 852A telephone set. Correct (Y) leads of 8C dial to terminals 4 and 8.

† Terminals on network.

○ 852A Telephone Set

□ 2852A Telephone Set

TABLE H

## 4A SPEAKERPHONE CONNECTIONS

LEAD DESIG	M16C CORD COLOR	TEL SET TERM.
T1	W-BL	RR† 19
R1	BL-W	1
AG	W-O	11
LK	O-W	10
P3 or IT	W-G	4
P4 of IR	G-W	8 L1†
A1	W-BR	3

Note: Replace 8R dial with 8C dial on 852A telephone sets. Connect (Y) leads of 8C dial to terminal 4 and 8.

† Terminal on network.

○ 852A Telephone Set

□ 2852A Telephone Set

**TABLE I**  
**CONNECTOR AND CABLE CONDUCTOR ASSIGNMENT**

CONNECTOR AND TERM. BOARD ASSY				A25B CONN CABLE		
TEL SET TERM	LEAD COLOR	LEAD DESIG	PLUG TERM	CONN TERM	LEAD DESIG	LEAD COLOR
Line 1 (Blue) Plug	BL-W	R	1	1	R	BL-W
	W-BL	T	26	26	T	W-BL
	W-O	A	27	27	A	W-O
	G-W	L	3	3	L	G-W
	W-G	LG	28	28	LG	W-G
Line 2 (Orange) Plug	BR-W	R	4	4	R	BR-W
	W-BR	T	29	29	T	W-BR
	W-S	A or S	30	30	A or S	W-S
	BL-R	L	6	6	L	BL-R
	R-BL	LG	31	31	LG	R-BL
Line 3 (Green) Plug	O-R	R	7	7	R	O-R
	R-O	T	32	32	T	R-O
	R-G	A or S	33	33	A or S	R-G
	BR-R	L	9	9	L	BR-R
	R-BR	LG	34	34	LG	R-BR
Line 4 (Brown) Plug	S-R	R	10	10	R	S-R
	R-S	T	35	35	T	R-S
	BK-BL	A or S	36	36	A or S	BK-BL
	O-BK	L	12	12	L	O-BK
	BK-O	LG	37	37	LG	BK-O
Line 5 (Slate) Plug	G-BK	R	13	13	R	G-BK
	BK-G	T	38	38	T	BK-G
	BK-BR	A or S	39	39	A or S	BK-BR
	S-BK	L	15	15	L	S-BK
	BK-S	LG	40	40	LG	BK-S
Line 6 (White) Plug	BL-Y	R	16	16	R	BL-Y
	Y-BL	T	41	41	T	Y-BL
	BR-BK	A or S	14	14	A or S	BR-BK
	G-Y	L	18	18	L	G-Y
	Y-G	LG	43	43	LG	Y-G
Line 7 (Red) Plug	BR-Y	R	19	19	R	BR-Y
	Y-BR	T	44	44	T	Y-BR
	BL-BK	A or S	11	11	A or S	BL-BK
	BL-V	L	21	21	L	BL-V
	V-BL	LG	46	46	LG	V-BL
Line 8 (Black) Plug 6 5	O-V	R	22	22	R	O-V
	V-O	T	47	47	T	V-O
	G-R	A or S	8	8	A or S	G-R
	BR-V	L, P4 or IR	24	24	L, P4 or IR	BR-V
	V-BR	LG, P3 or IT	49	49	LG, P3 or IT	V-BR
Line 9 (Yellow) Plug 13 14	S-V	R	25	25	R	S-V
	V-S	T	50	50	T	V-S
	S-W	A or S	5	5	A or S	S-W
	G-V	L or R1	23	23	L or R1	G-V
	V-G	LG or T1	48	48	LG or T1	V-G
3	O-W	A1	2	2	A1	O-W
21	O-Y	BZ, SG, LK, or Spare	17	17	BZ, SG, LK, or Spare	O-Y
20	Y-O	BZ1, BL, AG, or Spare	42	42	BZ1, BL, AG, or Spare	Y-O
A	S-Y	R or R1	20	20	R or R1	S-Y
G	Y-S	B or B1	45	45	B or B1	Y-S