

## TELEPHONE SETS 3640 AND 3641 TYPES

### IDENTIFICATION, INSTALLATION, CONNECTIONS, AND MAINTENANCE

#### 1. GENERAL

- (a) Intended solely for use with specially engineered lines—*not for general telephone use.*



*Do not attempt any installation or connections of this equipment unless the practice has been read and thoroughly understood.*

- (b) This section is reissued to:

- Add the 66A3AD dial
- Add 661A key assembly
- Show 66A3A dial MD

#### 2. IDENTIFICATION

##### PURPOSE

The 3640- and 3641-type telephone sets are multikey type sets which can be switched between 2- and 4-wire telephone circuits by a relay provided within the telephone set.

##### ORDERING GUIDE

Set, Telephone, 3640-type (Tables A and B)

Set, Telephone, 3641-type (Tables A and B)

(a) **Replaceable Components:**

- Blank, Apparatus, 111A
- Cord, Mounting, D150P-87 (3640-type sets)
- Cord, Mounting, D250F-87 (3641-type sets)
- Dial, 66A3AD (nonilluminated)
- Dial, 66A4B (illuminated)

- Faceplate (Table A)
- Strip, Designation, Form E-5253
- Card, Number, Form E-5002A
- P-90D012 Polarity Guard
- Handset, G3Y-\*
- Key, 635A2C
- Key, 635C2C
- P-29E330 Collar (635 keys)
- Lamp, 51A (635 keys)
- Lamp, 53A (dial, exclusion switch, and 672A transmitter)
- Mat (Tables A and B)
- Ringer, T1A or N1A
- Transmitter, 672A
- 661A Key Assembly (exclusion switch)
- 840149975 Collar (exclusion key)

\*Refer to Table B for color.

(b) **Replaceable Optional Components:**

- Buzzer, KS-8109L2
- Buzzer, KS-20419L1

(c) **Loose Parts Furnished With Set:**

- Mat—Silver and Gold (Tables A and B)
- 840157218 Contact Strip Assembly (one per unused key module)



Fig. 1—3640A11A Telephone Set

- 840157200 Contact Strip Assembly (one per unused key module)
- P-20F840 Cap (exclusion button)
- P-25E803 Card Retainer
- 4-wire service
- AC or DC operated buzzer (optional)
- Speakerphone (optional)

#### DESIGN FEATURES

- 18-button set (3640-type)
- 30-button set (3641-type)
- All pickup keys convertible to signaling
- Common ringer
- Dial illumination (66A4B)
- Exclusion feature
- 2-wire service

#### 3. INSTALLATION

##### (a) *Planning:*

- Safety for yourself, customer, and maintenance personnel
- Location—desk, table, console, etc.
- Space requirements
- Distance between associated equipment or apparatus
- General appearance of installation

**TABLE A**  
**3640- AND 3641-TYPE TELEPHONE SETS ORDERING GUIDE (NOTE 1)**

SET CODE*	FACE EQUIPMENT LAYOUT (NOTE 2)	FACEPLATE	MAT†	HOUSING†	MOUNTING CORD
3640A1A- 3640A1B-	Dial P P B P P B P P B P P B H P B	P-29E340	P-80H000	P-88E600	D150P-87
3640A2A- 3640A2B-	Dial P P P P P P P P P P P P P P P H P P				
3640A11A- 3640A11B-	Dial P P P P OFF P P ON P P P P V H P T	P-29E341	P-80H100		
3641A1A- 3641A1B-	Dial P P P B B P P P B B P P P B B P P P B B P P P B B H P P B B	P-29E342	P-80H200	P-88E700	D250F-87
3641A2A- 3641A2B-	Dial P P P P B P P P P B P P P P B P P P P B P P P P B H P P P B				
3641A3A- 3641A3B-	Dial P H P P P P				
3641A16A- 3641A16B-	Dial P P P B P P P B OFF P P P B ON P P P B P P P B V H P P B T	P-29E343	P-80H300		
3641A17A- 3641A17B	Dial P P P P P P P P OFF P P P P ON P P P P P P P P V H P P P T				

\* Specify color; refer to Table B.

† Substitute color suffix for the last two digits of part number; refer to Table B.

Notes: 1 Sets coded with the suffix A1A, A2A, A11A etc., are equipped with a 66A3AD (nonilluminated) dial. Sets coded with the suffix A1B, A2B, A11B, etc., are equipped with a 66A4B (illuminated) dial.

2 Individual key module feature layout

635A2C Key	635C2C Key	111A App Blank	672A Tmtr	Symbols
P	P	B		B — Apparatus blank
P	P	B		H — Hold key
P	P	B	OFF	P — Pickup button
P	P	B	ON	OFF — Speakerphone control
P	P	B	V	ON — Illuminated speakerphone control
H	P	B	T	T — Position of speakerphone transmitter
				V — Volume Control (Potentiometer)

TABLE B  
COLOR ORDERING GUIDE

SET COLOR	SUFFIX	MAT COLORS	SUFFIX
Black	-03	Charcoal	-70
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
		Silver	-78
		Gold	-79

(b) *Installing:*

- Install sets in accordance with standard installation procedures.
- To avoid confusion line key plugs should be used in the color sequence shown in Table E. Rearrangement of lines on a key should not be made by interchanging the colored 508-type plugs.
- A 635C2C key may be installed in the space occupied by a 111A apparatus blank. Unused key plugs are stored by attaching to the apparatus blank. The common tip and ring contact strip assemblies must be plugged into the key before the key plugs are inserted. Refer to Fig. 5 or 6 for termination of assembly spade tip leads.

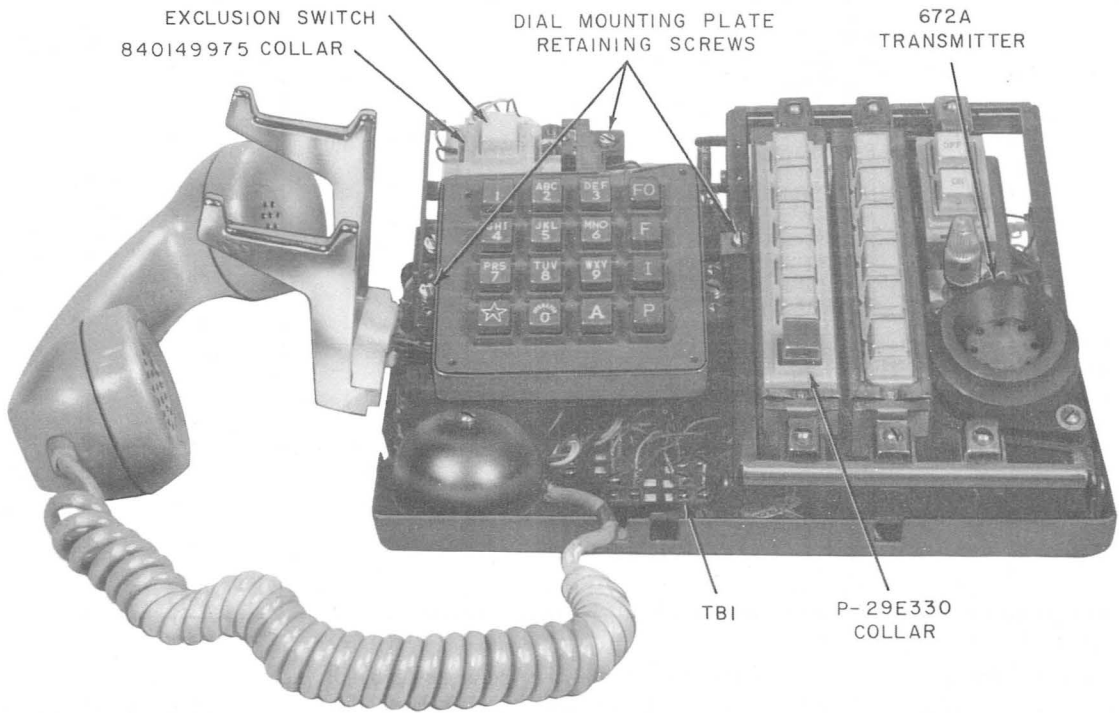


Fig. 2—3640A11A Telephone Set, Housing Removed

- A 672A transmitter unit may be installed in the last module position for use with 3-type speakerphone. The transmitter is connected as shown in Table C and Fig. 7. Refer to Table A for appropriate faceplate and mat for use with internal transmitter.
- To gain access to line key plugs, proceed as follows:
  - (1) Remove housing from set by loosening two screws located at rear of set.

- (2) Remove three dial mounting screws (Fig. 2) and lay dial aside.
- (3) Loosen two screws at lower rear of key frame and raise frame from rear to front of set.



*When a line key is added or rearranged, its designation strip should indicate the same change.*

- Install the optional KS-8109L2 buzzer (14-30 volt ac or dc) on P-20F688 bracket with hardware provided with bracket. The bracket is fastened to the same post which holds the 4-wire (FW) relay. The KS-20419L1 buzzer (10 volt AC only) can also be installed on the P-20F688 bracket or fastened to any screw in the set which will not place the buzzer in a position that could cause mechanical or electrical failure to the sets operation.

#### 4. CONNECTIONS



*No changes in wiring other than those specified in this practice shall be made.*

- (a) To convert a key position from pickup (locking) to signal (nonlocking), remove the P-28E773 locking pin in the plunger. Store pin in telephone set by taping to base.
- (b) When the telephone set is connected to an intercom circuit providing add-on Conference Feature, PB, and S1 leads both originate in the intercom circuit equipment and shall be connected in the set as follows:
  - (1) Select a pickup key not being used for other features or options.
  - (2) Remove the locking screw pin in the plunger.
  - (3) Identify color of the lead from pin 2 of the key plug.
  - (4) Disconnect the identified lead from terminal 6 of either TBI, II, III, IV, or V.
  - (5) Connect the identified lead to terminal 3 of TBA. This is the PB lead.

#### (c) Connections Index

Table C—Transmitter Connections

Table D—Ringer and Buzzer Connections

Table E—Key Plug Color Code

Fig. 3—Telephone Circuit For 3640- and 3641-Type Sets

Fig. 4—635A2C Key and Mounting Cord Connections

Fig. 5—635C2C Key and Mounting Cord Connections (2nd key 18-button set: 2nd, 3rd, or 4th key 30-button set)

Fig. 6—635C2C Key and Mounting Cord Connections (3rd key 18-button set: 5th key 30-button set)

Fig. 7—672A Transmitter, Circuit and Connections

Refer to SD-69540-01

#### 5. MAINTENANCE

- (a) Information contained in existing sections for CALL DIRECTOR® telephone sets applies to the 3640- and 3641-type telephone sets.
- (b) See appropriate section for maintenance of individual components such as handsets, keys, ringers, and dials.
- (c) The current production 635-type 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, key collar, and button for lamp replacement.

**TABLE C**  
**TRANSMITTER CONNECTIONS**

			INTERNAL TRANSMITTER (N) (NOTE 1)	EXTERNAL TRANSMITTER (X) (NOTE 2)
	LEAD	COLOR	TERMINATION	
672A TRMTR	A1	S-V	TBIV-4 or TBVI-4	
Mounting Cord	R1	G-V	TB1-3	TB1-3
	T1	V-G	TB1-1	TB1-1
	IR	BR-V	TB1-4	TB1-4
	IT	V-BR	Insulate and Store	Insulate and Store
	AG	V-S	TB1-13	TB1-13
	STRAP	S-V	TB1-19 To TBIV or TBVI-4	Insulate and Store
	LK	S-V	Insulate and Store	TB1-19
(Note 3)	P3	V-O	TB1-6	TB1-6
	P4	O-V	TB1-5	TB1-5

**Notes: 1** For internal transmitter (N option) connect mounting cord leads from last plug as shown. Connect [yellow MD] (white) plug for last key to jack on 672A transmitter. Move (Y-O) lead from terminal 6 of TBIII or V to terminal 3 of TBIV or VI.

**2** For external transmitter (X option) connect mounting cord leads from first plug as shown.

**3** These leads are connected when external rotary dial is used.

( ) Current production

[ ] Early production

**TABLE D**  
**RINGER AND BUZZER CONNECTIONS**

RINGER OPTION		WIRE OR LEAD		CONNECT TO	
				NET.	TB1
When used as bridged ringer on any one line (Note 1)		Ringer	(R)	K	
			(BK)		12
		Mtg cord (Note 4)	(S-Y)	A	
			(Y-S)		12
When used as Private line, Common Signal, Or other use (Note 2)	With Capacitor	Ringer	(R)	K	
			(BK)		12
		Mtg cord (Note 4)	(S-Y)	A	
			(Y-S)		12
	Without Capacitor	Ringer	(R)	A	
			(BK)		12
		Mtg cord (Note 4)	(S-Y)	A	
			(Y-S)		12
Set ringer not used (Note 3)		Ringer	(R)	K	
			(BK)		12
		Mtg cord	(S-Y)	A	
			(Y-S)		12
KS-8109L2 buzzer option	AC operation	Mtg cord (Note 4)	(BL-V)	Term. A of buzzer	
			(V-BL)	Term. C of buzzer	
	DC operation		(BL-V)	Buzzer frame	
			(V-BL)	Term. C of buzzer	
KS-20419L1 buzzer option	AC operation		(BL-V)	Blue buzzer leads	
			(V-BL)		

**Notes:** 1 Connect cable pair associated with R or R1 (S-Y) and B or B1 (Y-S) to the desired 2-wire line.

2 The ringer may be connected with or without capacitor for private line, common, or intercom line signals as desired. When power failure feature is provided, a capacitor is required.

3 Do not terminate associated cable pair at distribution terminal if set ringer is not used.

4 Buzzer leads BZ (BL-V) and BZ1 (V-BL) may be connected to the R, R1, or BZ and B, B1, or BZ1 terminals, respectively, at the distribution terminal to provide the required type of buzzer operation. For sets without speakerphone or speakerphone with external transmitter, use mounting cord leads from first plug. For sets with internal transmitter, use mounting cord leads from last plug.

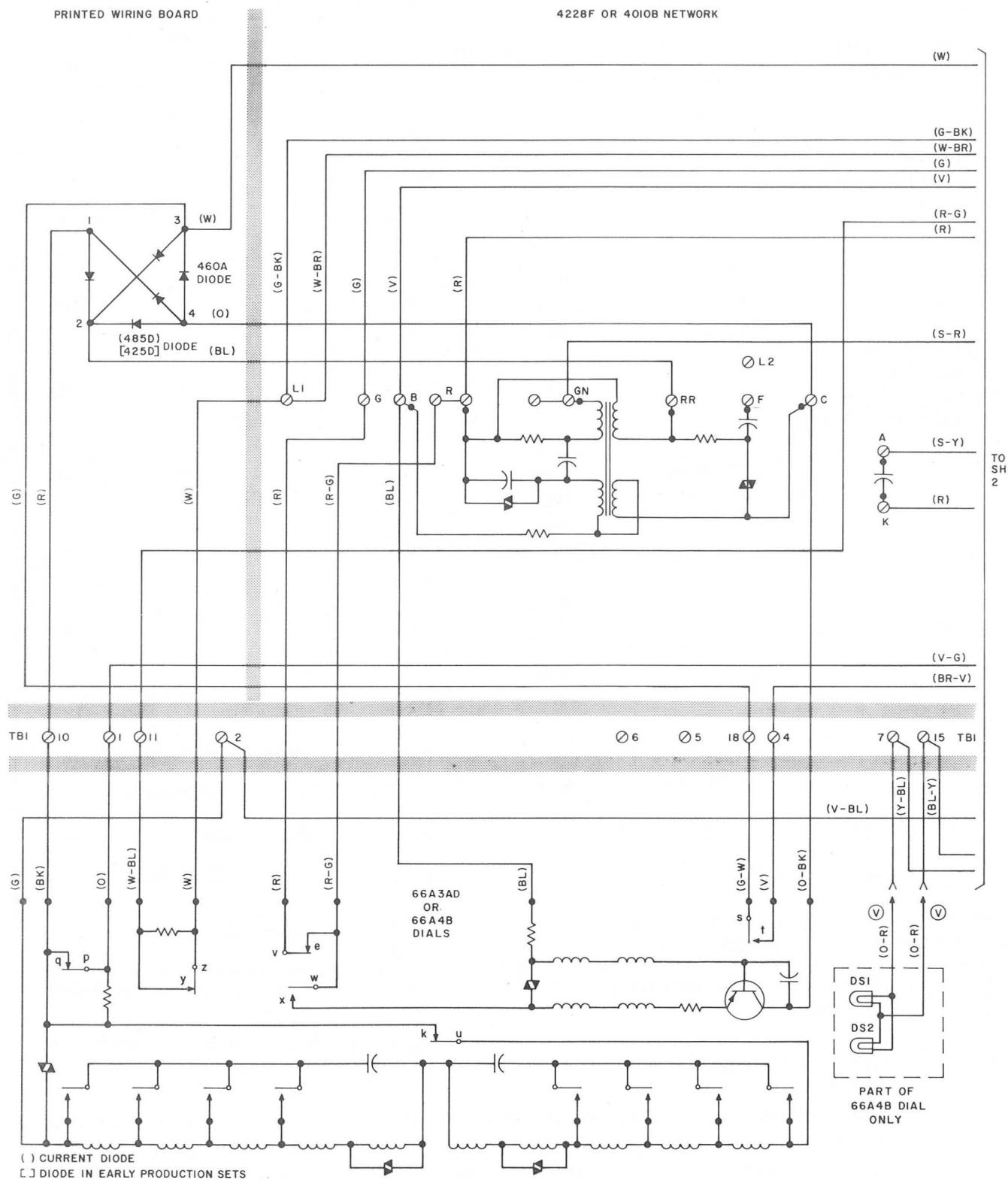


Fig. 3—Telephone Circuit For 3640- and 3641-Type Sets (Sheet 1 of 2)

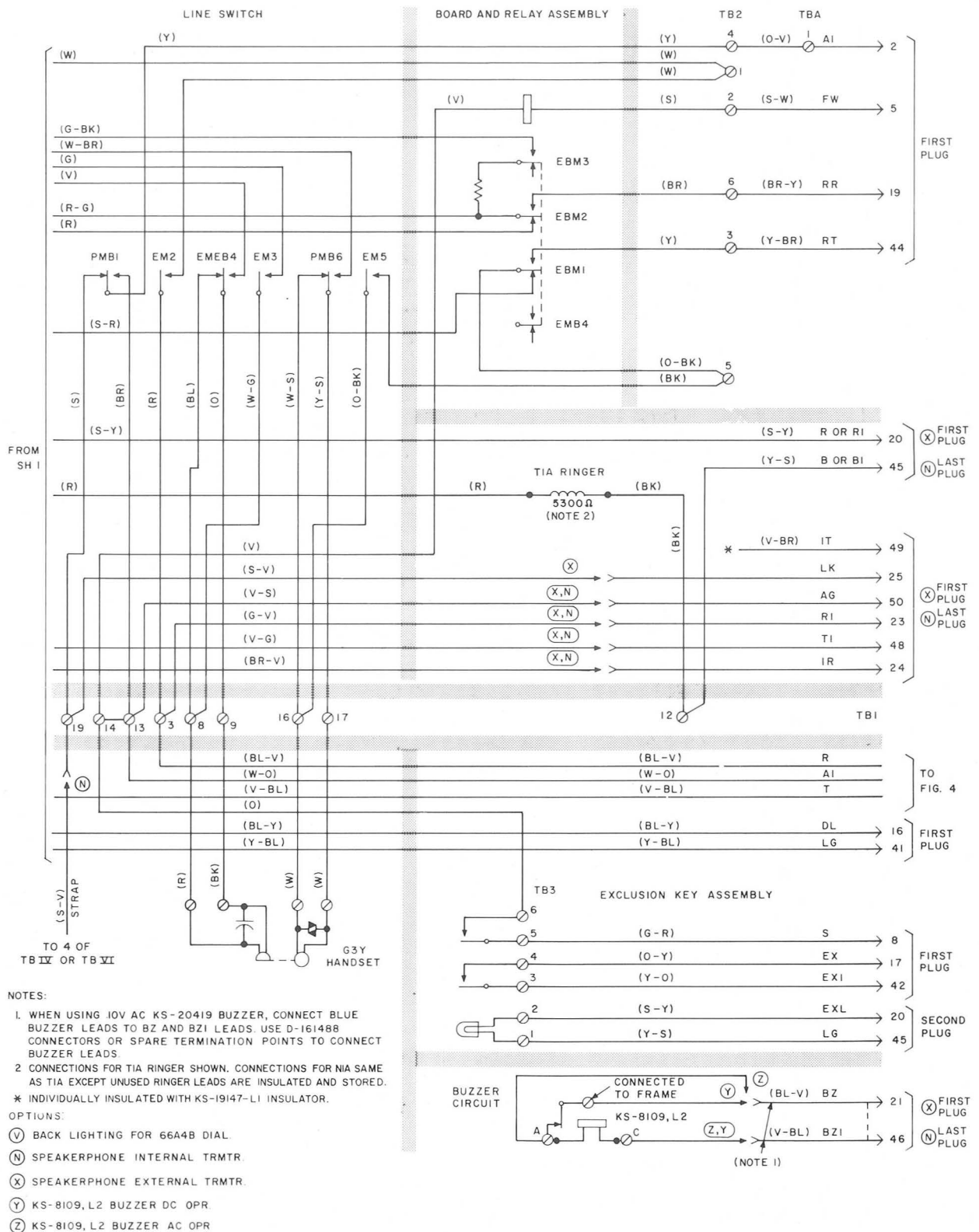


Fig. 3—Telephone Circuit For 3640- and 3641-Type Sets (Sheet 2 of 2)

TABLE E  
KEY PLUG COLOR CODE

635A2C 1ST KEY UNIT	635C2C 2ND KEY UNIT	635C2C 3RD KEY UNIT	635C2C 4TH KEY UNIT	635C2C 5TH KEY UNIT
CHAINING SWITCH (LT BEIGE) [WHITE]	CHAINING SWITCH (LT BEIGE) [WHITE]	CHAINING SWITCH (LT BEIGE) [WHITE]	CHAINING SWITCH (LT BEIGE) [WHITE]	
1ST PICKUP (BLUE) [BLUE]	1ST PICKUP (BLUE) [BLUE]	1ST PICKUP (BLUE) [BLUE]	1ST PICKUP (BLUE) [BLUE]	1ST PICKUP (BLUE) [BLUE]
2ND PICKUP (ORANGE) [BEIGE]	2ND PICKUP (ORANGE) [BEIGE]	2ND PICKUP (ORANGE) [BEIGE]	2ND PICKUP (ORANGE) [BEIGE]	2ND PICKUP (ORANGE) [BEIGE]
3RD PICKUP (GREEN) [RED]	3RD PICKUP (GREEN) [RED]	3RD PICKUP (GREEN) [RED]	3RD PICKUP (GREEN) [RED]	3RD PICKUP (GREEN) [RED]
4TH PICKUP (BROWN) [GRAY]	4TH PICKUP (BROWN) [GRAY]	4TH PICKUP (BROWN) [GRAY]	4TH PICKUP (BROWN) [GRAY]	4TH PICKUP (BROWN) [GRAY]
5TH PICKUP (SLATE) [GREEN]	5TH PICKUP (SLATE) [GREEN]	5TH PICKUP (SLATE) [GREEN]	5TH PICKUP (SLATE) [GREEN]	5TH PICKUP (SLATE) [GREEN]
HOLD (PINK) [YELLOW]	6TH PICKUP (WHITE) [YELLOW]	6TH PICKUP (WHITE) [YELLOW]	6TH PICKUP (WHITE) [YELLOW]	6TH PICKUP (WHITE) [YELLOW]
18-BUTTON 3640-TYPE SETS, D150P CORD		30-BUTTON 3641-TYPE SETS, D250F CORD		

( ) CURRENT PRODUCTION  
[ ] EARLY PRODUCTION

NOTE:  
BINDER COLORS, 1ST THRU 5TH KEY MODULE:  
BL, O, G, BR & S, RESPECTIVELY.

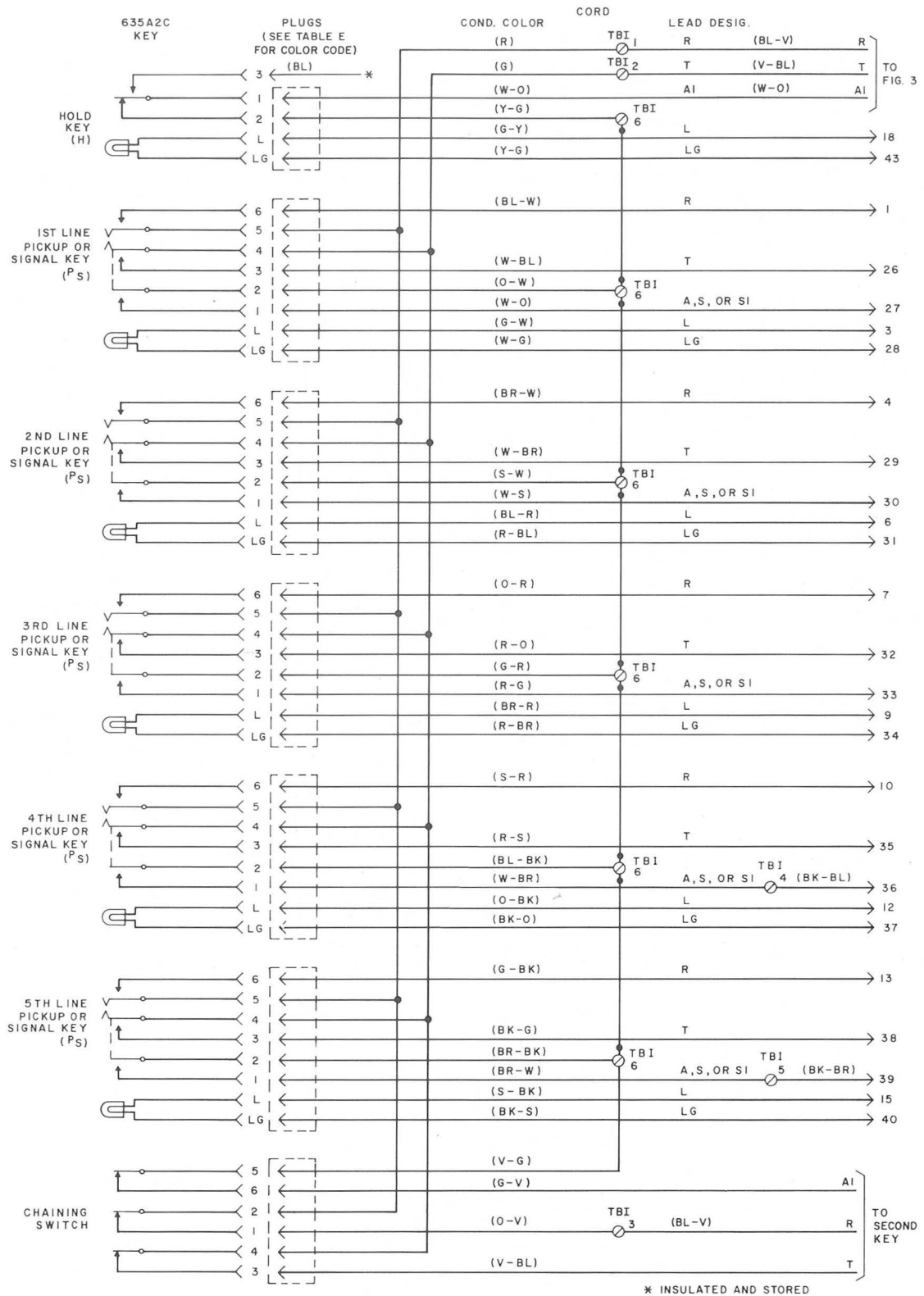
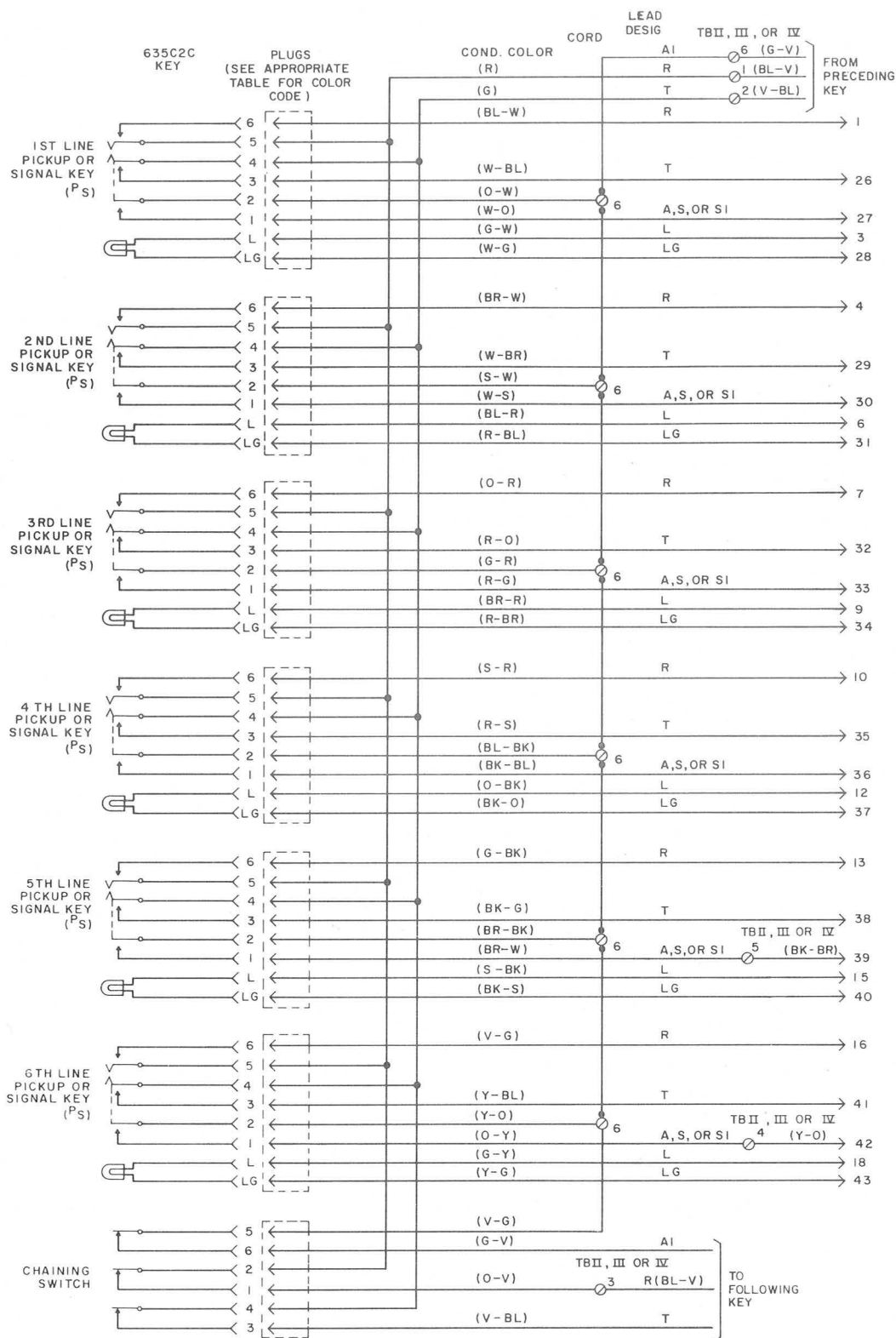
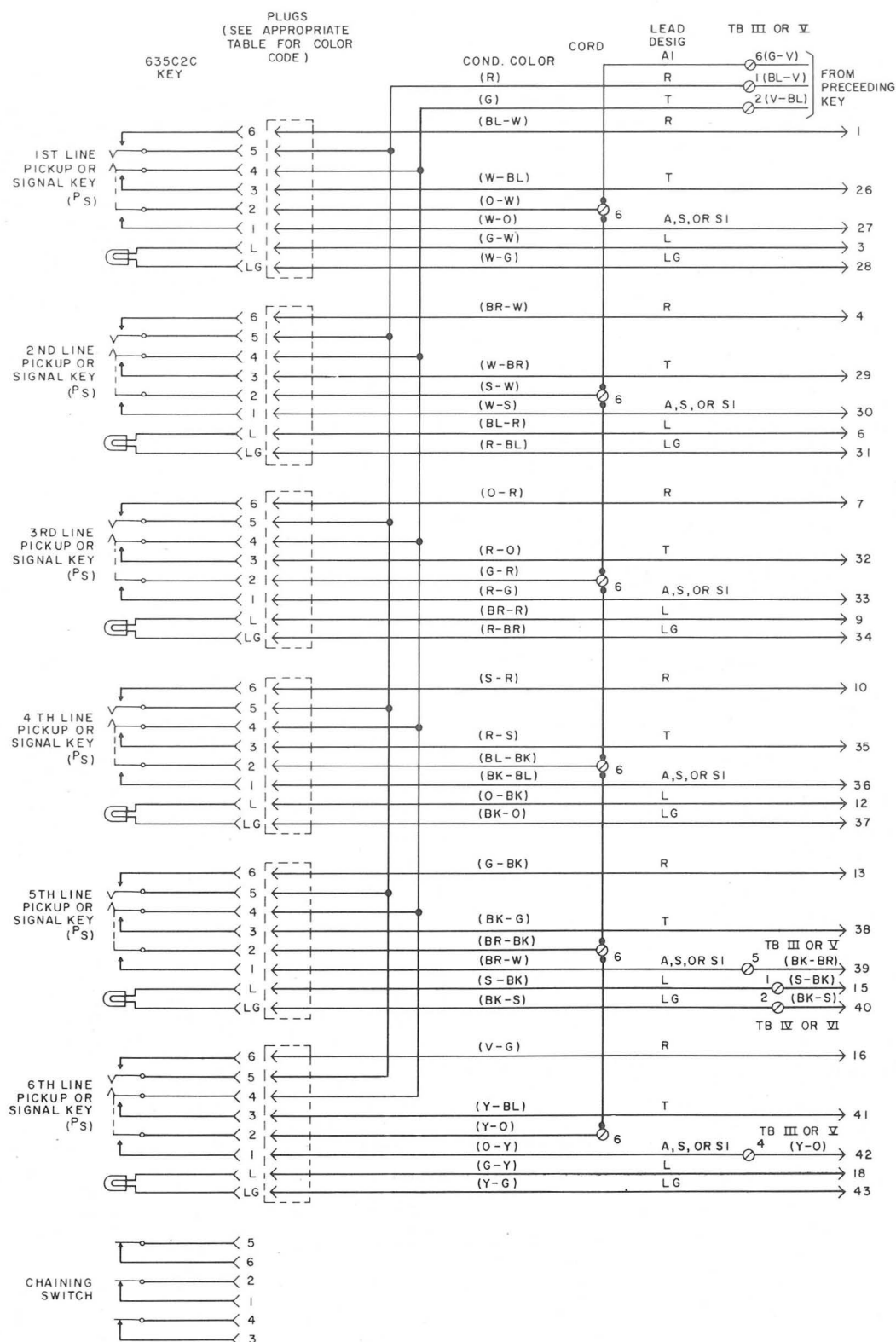


Fig. 4—635A2C Key and Mounting Cord Connections



**Fig. 5—635C2C Key and Mounting Cord Connections (2nd Key 18-Button Set; 2nd, 3rd, or 4th Key 30-Button Set)**



**Fig. 6—635C2C Key and Mounting Cord Connections (3rd Key 18-Button Set; 5th Key 30-Button Set)**

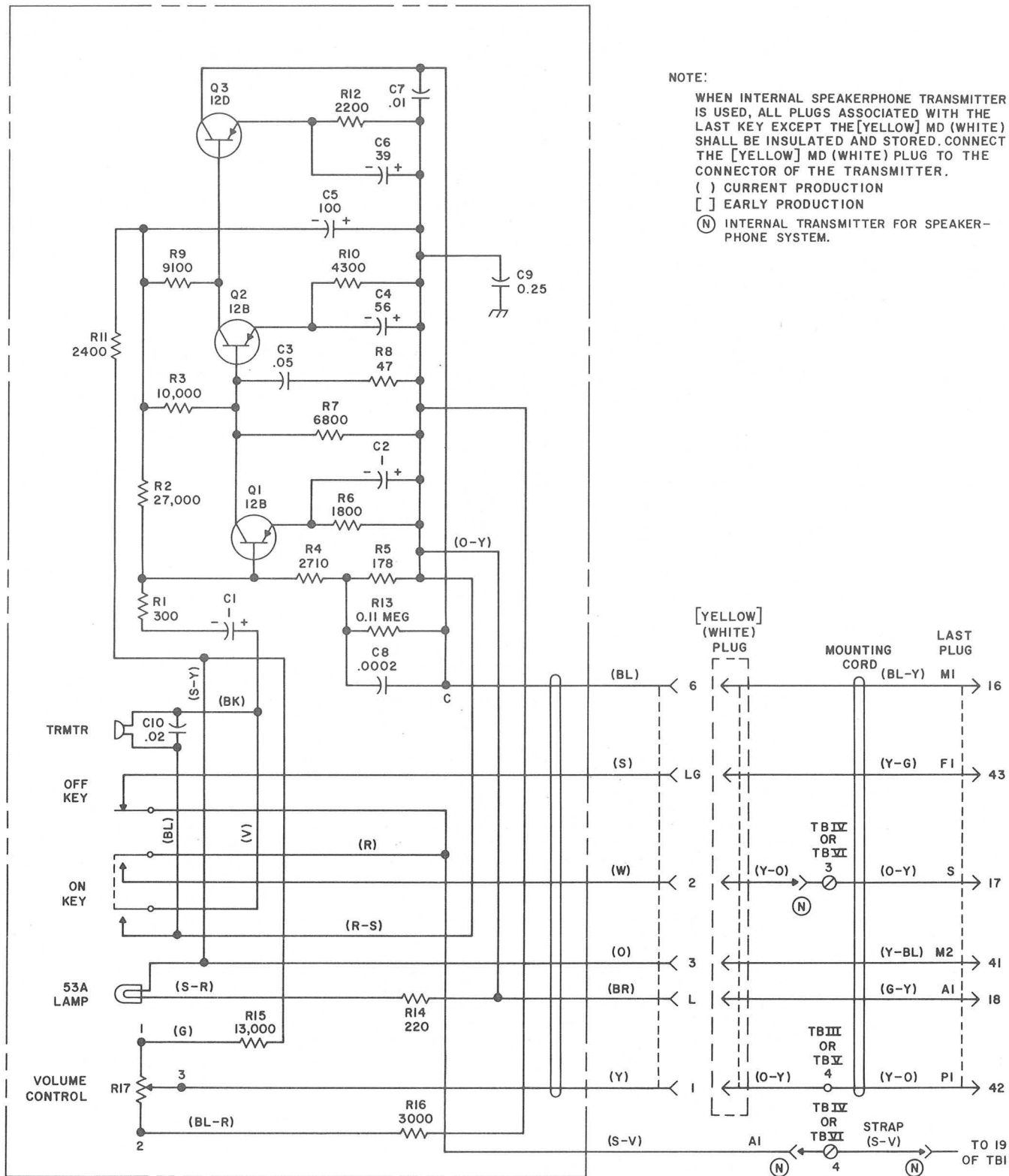


Fig. 7—672A Transmitter Circuit and Connections