

# **HANDSFREE TELEPHONES**

## **SINGLE-LINE, ROTARY DIAL, HANDSFREE TELEPHONES**

GENERAL DESCRIPTION - SECTION 50-844-100, ISSUE 2

REPLACEMENT PARTS - SECTION 50-844-101, ISSUE 2

CIRCUIT LABELS - SECTION 50-844-102, ISSUE 2

## **SINGLE-LINE, PUSHBUTTON DIAL, HANDSFREE TELEPHONES**

GENERAL DESCRIPTION - SECTION 50-844-103, ISSUE 2

REPLACEMENT PARTS - SECTION 50-844-104, ISSUE 2

CIRCUIT LABELS - SECTION 50-844-105, ISSUE 3

## **7-LINE, ROTARY DIAL, HANDSFREE TELEPHONES**

GENERAL DESCRIPTION - SECTION 50-842-100, ISSUE 2

REPLACEMENT PARTS - SECTION 50-842-101, ISSUE 2

CIRCUIT LABELS - SECTION 50-842-102, ISSUE 2

## **7-LINE, PUSHBUTTON DIAL, HANDSFREE TELEPHONES**

GENERAL DESCRIPTION - SECTION 50-842-103, ISSUE 2

REPLACEMENT PARTS - SECTION 50-842-104, ISSUE 2

CIRCUIT LABELS - SECTION 50-842-105, ISSUE 2

## **17-LINE, ROTARY DIAL, HANDSFREE TELEPHONES**

GENERAL DESCRIPTION - SECTION 50-843-100, ISSUE 2

REPLACEMENT PARTS - SECTION 50-843-101, ISSUE 2

CIRCUIT LABELS - SECTION 50-843-102, ISSUE 2

## **17-LINE, PUSHBUTTON DIAL, HANDSFREE TELEPHONES**

GENERAL DESCRIPTION - SECTION 50-843-103, ISSUE 2

REPLACEMENT PARTS - SECTION 50-843-104, ISSUE 2

CIRCUIT LABELS - SECTION 50-843-105, ISSUE 2

## 7-LINE, ROTARY DIAL, HANDSFREE TELEPHONES

### GENERAL DESCRIPTION

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**Figure 1: 7-Line, Rotary Dial, Handsfree Telephone**

resistances and line impedances. They offer the advantage of handsfree application and are designed to be used with key systems such as the ITT 1A2 System where several telephones have access to the same CO/PBX lines or intercom lines.

#### 1. GENERAL DESCRIPTION

**1.01** This document covers the 7-line, rotary dial, handsfree telephone. (See Figure 1.) A general description plus information peculiar to 7-line, rotary dial, handsfree telephones is included.

**1.02** This section is reissued to reflect changes in the 7-line, rotary dial, handsfree telephone and to incorporate the changes listed in the Telephone Apparatus Practices Change Notice, Section 11-510-100. Whenever this section is reissued, reason for reissue will be listed in this paragraph.

**1.03** For additional information on replacement parts and for an exploded-view drawing for the telephones, refer to Section 50-842-101. The circuit labels appear in Section 50-842-102. Related documents of the ITT Telephone Apparatus Practices Manual provide information on components.

**1.04** The Model 842 handsfree telephones are 7-line, rotary dial, anti-sidetone type units that operate efficiently over a wide range of loop

**1.05** The Model 842 handsfree telephones are identified by a code number stamped in ink on the bottom of the base plate. Refer to ordering information in Table A for an explanation of each code number.

**1.06** Handsfree telephones are equipped with a microphone and loudspeaker that combine with the telephone circuitry to permit their use without having to hold the handset. This feature may be switched ON or OFF. When OFF, the telephone is used in the normal manner. When ON, a user may converse on the telephone from any direction at a distance of several feet.

**1.07** There are ten pushbutton keys on the telephone. The red key on the far left is used as a hold key and allows any selected line or trunk to be placed in a hold condition. The seven pickup keys to the right of the hold key are used for CO/PBX lines or intercom lines. The remaining two keys are used for ON and OFF control of the handsfree equipment.

TABLE A  
ORDERING INFORMATION – TELEPHONES

CODE NUMBERS															
TELEPHONE CODE NUMBERS ARE FORMED IN SIX STEPS AS FOLLOWS:															
				842		15		O		BA		42		M	
(1)	Type Of Instrument (See Part 1)														
(2)	Color (See Part 2)														
(3)	Version (See Part 3)														
(4)	Ringer (See Part 4)														
(5)	Special Feature (See Part 5)														
(6)	Dial (See Part 6)														
PART 1 TYPE OF INSTRUMENT															
CODE	DESCRIPTION	COLOR OFFERED	VERSION OFFERED	RINGER OFFERED	FEATURE OFFERED	DIAL OFFERED									
842	7-Line, Handsfree, Rotary Dial, Desk Telephone	00, 05, 13, 15, 44, And 45 (Available On All Models)	O	BA	42, 76	M									
842	7-Line, Handsfree, Rotary Dial, Desk Telephone		M	BA	42, 76	M									
REFER TO INDIVIDUAL UNIT DESCRIPTION FOR COMPLETE DESCRIPTION OF FEATURE COMBINATIONS															
PART 2 COLORS		PART 3 VERSIONS		PART 4 RINGERS		PART 5 SPECIAL FEATURES		PART 6 DIALS							
CODE	COLORS	CODE	VERSIONS	CODE	RINGERS	CODE	SPECIAL FEATURES	CODE	DIALS						
00	Black	O	Nonmodular	BA	Straight-Line	42	Equipped For Handsfree Operation	M	Metropolitan (Letters & Numerals)						
05	Moss Green														
13	Beige	M	Full-Modular (With Handset Cord)			76	42 Combined With Automatic Exclusion And Release Button								
15	White														
44	Light Ash														
45	Cocoa Brown														

AW 84-781

**Warning:** On the Model 842 telephones equipped with the 76 exclusion feature, the last three pickup keys on the key strip are reserved for intercom lines. Since damage to the exclusion circuit may result if a pickup key with the A lead connected is used for intercom, the A leads are taped and stored inside the telephone. By connecting the A lead, modifications may be made to these pickup keys to enable their use for different applications such as CO/PBX lines or intercom lines in a system where the A lead may be connected.

**1.08** A lamp beneath each of the seven pickup keys indicates the status of the associated line. (See Table B.)

**1.09** The Model 842 telephones are available as nonmodular or full-modular versions. These versions are designated by a code letter that is placed in front of the ringer code letters in the order number of the telephone. (Refer to Table A.)

**1.10** Nonmodular version desk telephones include a hard-wired handset cord. This version is designated by the code letter O.

**1.11** Full-modular version desk telephones are available with a modular handset cord. The full-modular desk telephones are equipped with jacks to accept the plugs of a modular handset cord. The full-modular version of the telephone with a modular handset cord, terminated on each end with modular plugs, is designated by the code letter M.

TABLE B  
LINE KEY SIGNALS

CONDITION	LAMP INDICATION
Idle	Lamp Dark
Busy	Lamp Lit
Hold	Lamp Winking
Call Incoming	Lamp Flashing

AW 84-658

**1.12** The Model 842 telephones are described in the following paragraphs. The circuit labels for these telephones are contained in Section 50-842-102.

#### MODEL 842\*\* ( ) 42

**1.13** The Model 842\*\* ( ) 42 is a standard 7-line, rotary dial, handsfree telephone. The microphone and loudspeaker, which are mounted inside the telephone, combine with the telephone circuitry to provide for handsfree application. This telephone is equipped with a 50-conductor mounting cord fitted with a 50-pin male connector.

#### MODEL 842\*\* ( ) 76

**1.14** The Model 842\*\* ( ) 76 is the same as the Model 842\*\* ( ) 42 except it is equipped with an automatic exclusion (privacy) circuit and a release button. Where this feature is used, all telephones in the key system must provide the exclusion circuit and release button.

## 2. INSTALLATION

**2.01** Since these telephones are equipped with a connector-terminated mounting cord, installation consists of inserting the connector into the jack at the station connecting block and pressing to engage them. For specific wiring information, refer to the appropriate circuit label in Section 50-842-102. Cable connections for 7-line, handsfree telephones with feature code 42 are listed in Table C. Cable connections for 7-line, handsfree telephones with feature code 76 that differ from those listed in Table C are listed in Table D.

**2.02** The power transformer provided with the telephone must be connected to the four-conductor power cord of the telephone and plugged into a standard 110 VAC service outlet. Terminals are provided inside the telephone for connecting wiring if additional cord length is required. The four-conductor power cord with leads colored WH, BK, RD, and GN must be connected to the transformer terminals designated WH, BK, RD, and GN. The WH lead of the power cord connects to terminal WH of the transformer, the BK lead connects to terminal BK, the RD lead connects to terminal RD, and the GN lead connects to terminal GN.

*Note:* The transformer supplies power to the handsfree circuitry. Normal telephone operation using the handset is possible without the transformer.

## 3. MAINTENANCE

**3.01** For replacement parts information and for an exploded-view drawing of major assembly groups, refer to Section 50-842-101.

## 4. OPERATION

**4.01** To place or answer a call in the handsfree mode, press the ON key. The ON key lamp is lit while the handsfree circuit is enabled. The ON key may be released only by pressing the OFF key.

**4.02** When the telephone is in the handsfree mode, going off-hook inhibits the handsfree circuit and permits conversation using the handset. The ON key lamp will stay lit. Replacing the handset reactivates the handsfree circuit and returns the telephone to handsfree operation until the OFF key is pressed.

**4.03** To prevent the distant party from hearing local conversation during handsfree operation, press the hold key. The hold key will release when the line pickup key is pressed again.

**4.04** A lamp located in the OFF key acts as a visual transmit and receive indicator. The lamp is lit when the handsfree circuit is in the transmit mode and is dark when the circuit is in the receive mode. The lamp remains dark when the handsfree circuit is off.

TABLE C  
CABLE CONNECTIONS FOR 7-LINE  
HANDSFREE TELEPHONES  
(FEATURE CODE 42)

LINES 1 THROUGH 4				LINES 5 THROUGH 7			
TELEPHONE TERMINAL	LEAD COLOR	LEAD DESIG	CONNECTOR TERMINAL	TELEPHONE TERMINAL	LEAD COLOR	LEAD DESIG	CONNECTOR TERMINAL
Line 1 (Blue Plug)	WH-BL	T	26	Line 5 (Slate Plug)	BK-GN	T	38
	BL-WH	R	1		GN-BK	R	13
	WH-OR	A	27		BK-BN	A Or S	39
	WH-GN	LG	28		BK-SL	LG	40
	GN-WH	L	3		SL-BK	L	15
Line 2 (Orange Plug)	WH-BN	T	29	Line 6 (White Plug)	YL-BL	T	41
	BN-WH	R	4		BL-YL	R	16
	WH-SL	A Or S	30		BN-BK	A Or S	14
	RD-BL	LG	31		YL-GN	LG	43
	BL-RD	L	6		GN-YL	L	18
Line 3 (Green Plug)	RD-OR	T	32	Line 7 (Red Plug)	YL-BN	T	44
	OR-RD	R	7		BN-YL	R	19
	RD-GN	A Or S	33		BL-BK	A Or S	11
	RD-BN	LG	34		VI-BL	LG	46
	BN-RD	L	9		BL-VI	L	21
Line 4 (Ivory Plug)	RD-SL	T	35	10	OR-WH	A1	2
	SL-RD	R	10	G	YL-SL	B Or B1	45
	BK-BL	A Or S	36	A	SL-YL	R Or R1	20
	BK-OR	LG	37	15	YL-OR	BL, AG, Or Spare	42
	OR-BK	L	12	6	OR-YL	SG, LK, Or Spare	17

## NOTES:

1. The YL-OR and OR-YL leads are spare leads and are taped and stored inside the telephone.
2. The designation S indicates that the lead provides an individual signal ground.

AW 84-662

**4.05** The loudspeaker volume control is located underneath the right side of the telephone. Since the volume must be balanced to compensate for local noise level, this control also affects the performance of the telephone. Clipping or chopping of speech caused by excessive background noise may be controlled by increasing the volume. Volume is increased by rotating the volume control clockwise. If the voice being received is too loud, the volume should be decreased by rotating the volume control counterclockwise. If the called party is also using handsfree equipment, mutual adjustment of the volume controls may be necessary. Usually, a comfortable talk and listen level will ensure proper performance.

**4.06** It is important to note that a telephone equipped with the exclusion feature, which has been modified for trunk-to-trunk conferencing, can override its exclusion circuit and pick up a line with a call in progress.

*Note:* Handsfree telephones may be subject to some types of radio frequency interference.

## 5. BUTTON CONVERSIONS

**5.01** Any pickup key may be converted to signaling mode by removing the slotted head pin from the plunger shank. The slotted head pin is removed by being turned clockwise.

TABLE D

SPECIAL CABLE CONNECTIONS FOR  
7-LINE HANDSFREE TELEPHONES (FEATURE CODE 76)

TELEPHONE TERMINAL	LEAD COLOR	LEAD DESIG	CONNECTOR TERMINAL
Line 4 (Ivory Plug)	WH-RD	A Or S	36
Line 5 (Slate Plug)	RD-WH	A Or S	39
Line 6 (White Plug)	BL-SL	A Or S	14
Line 7 (Red Plug)	SL-BL	A Or S	11
6	OR-YL	-24 VDC	17

## NOTE:

This table lists those connections that differ from the connections for feature code 42 telephones shown in Table C.

AW 84 663

## 6. BUZZER INSTALLATION

**6.01** A buzzer may be installed as the signaling device of the telephone to be signaled. The buzzer may be installed on the dial mounting bracket or may be externally mounted. For telephones with feature code 42, the buzzer leads must be connected to the OR-YL and YL-OR leads inside the telephone. These leads are spare and can be found taped and stored inside the telephone. For telephones with feature code 76, a spare lead (BN-VI) is used instead of the OR-YL lead (provided the proper station cross-connections are made). Low voltage buzzers (6 to 40 VAC) or high voltage buzzers (105 VAC) may be selected for this use. (See Figure 2.)

**6.02** A buzzer may also be used in place of the ringer. A 105 VAC buzzer must be provided. The ringer leads are removed and replaced by the buzzer leads.

## 7. DESIGNATION TABS

**7.01** Designation tabs are included with each telephone. These tabs are installed by removing the cap from the key, placing the tab in the cap, and reinstalling the cap. The caps are removed by squeezing the sides of the cap and lifting. Note that locking surfaces are located on the right and left sides of the caps and keys. These locking surfaces must align properly.

## 8. GROUNDING PUSHBUTTON

**8.01** Modifications are made to line 7 of the telephone if a grounding pushbutton is required. A grounding pushbutton is required in some PBX applications for transferring calls, originating calls during a power failure, or other special functions. Modifications for converting line 7 to a grounding pushbutton are as follows:

- (a) Modify the button to nonlocking operation by removing the interlock pin from the line 7 plunger.
- (b) Cross-connect from the BL-BK lead to the PBX connection for the desired function.

*Note:* Ground is provided on the BK-BL (A1) lead by the key system. (No cross-connect is necessary for this lead.)

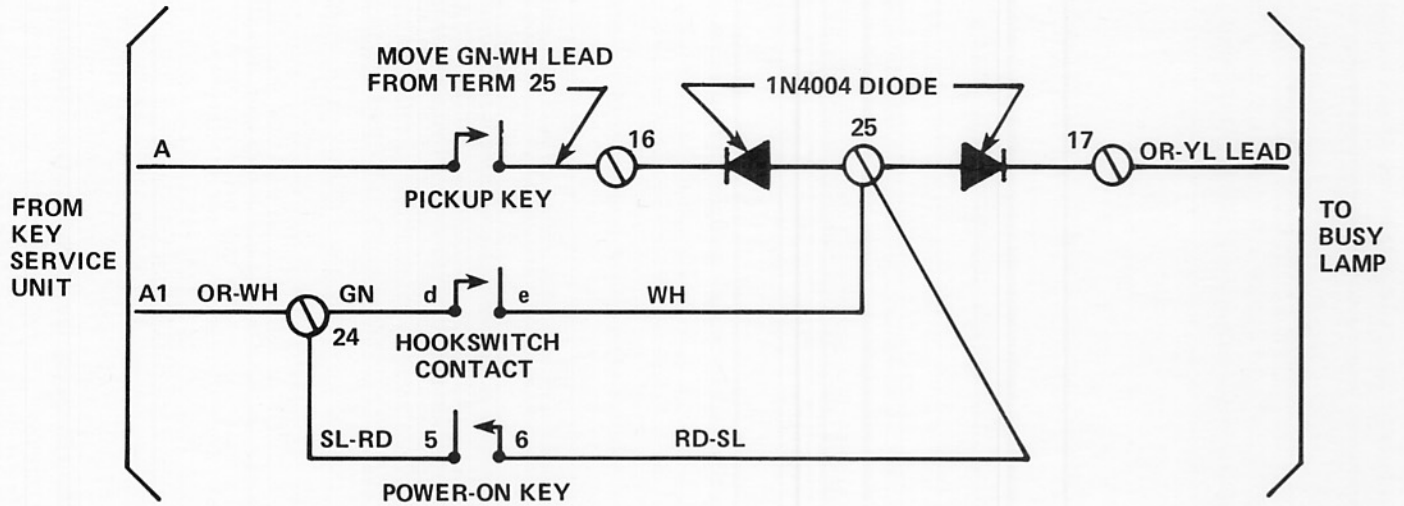
## 9. BUSY LAMP CONNECTIONS

**9.01** Busy lamp connections may vary depending on the type of key system being used. Modifications for the 7-line, handsfree, desk telephones with feature code 42 are as follows (refer to Figure 3):

- (a) Remove the GN-WH lead from terminal 25 and connect it to spare terminal 16 on the telephone terminal board.
- (b) Connect one 1N4004 diode between terminals 25 and 16 on the terminal board, and connect another 1N4004 diode between terminals 25 and 17 on the terminal board as shown in Figure 3.
- (c) Connect the OR-YL mounting cord lead to terminal 17 on the terminal board.

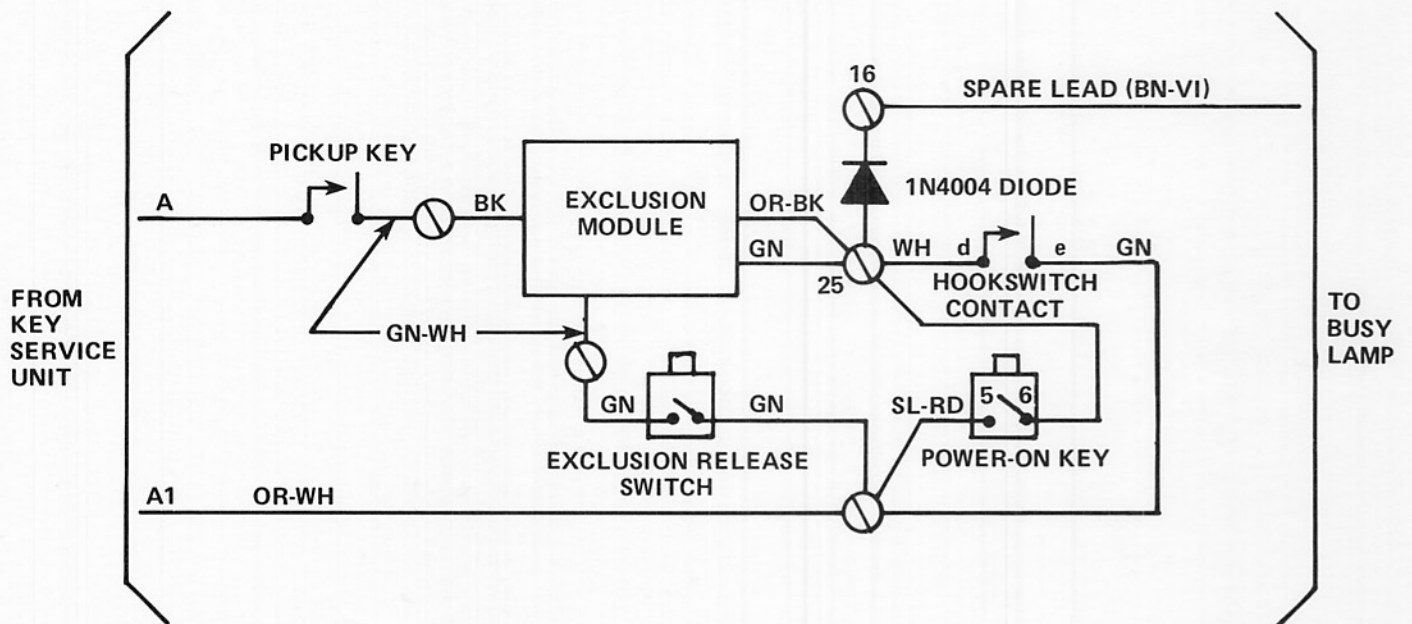
**9.02** Special busy lamp connections are required for telephones equipped with an exclusion circuit. Modifications for the 7-line, handsfree, desk telephones with feature code 76 are as follows (refer to Figure 4):

- (a) Connect one 1N4004 diode from terminal 25 to terminal 16 on the telephone terminal board as shown in Figure 4.
- (b) Connect any spare lead (BN-VI) to terminal 16 on the telephone terminal board. (Proper station cross-connections must be made to allow the use of a spare lead.)



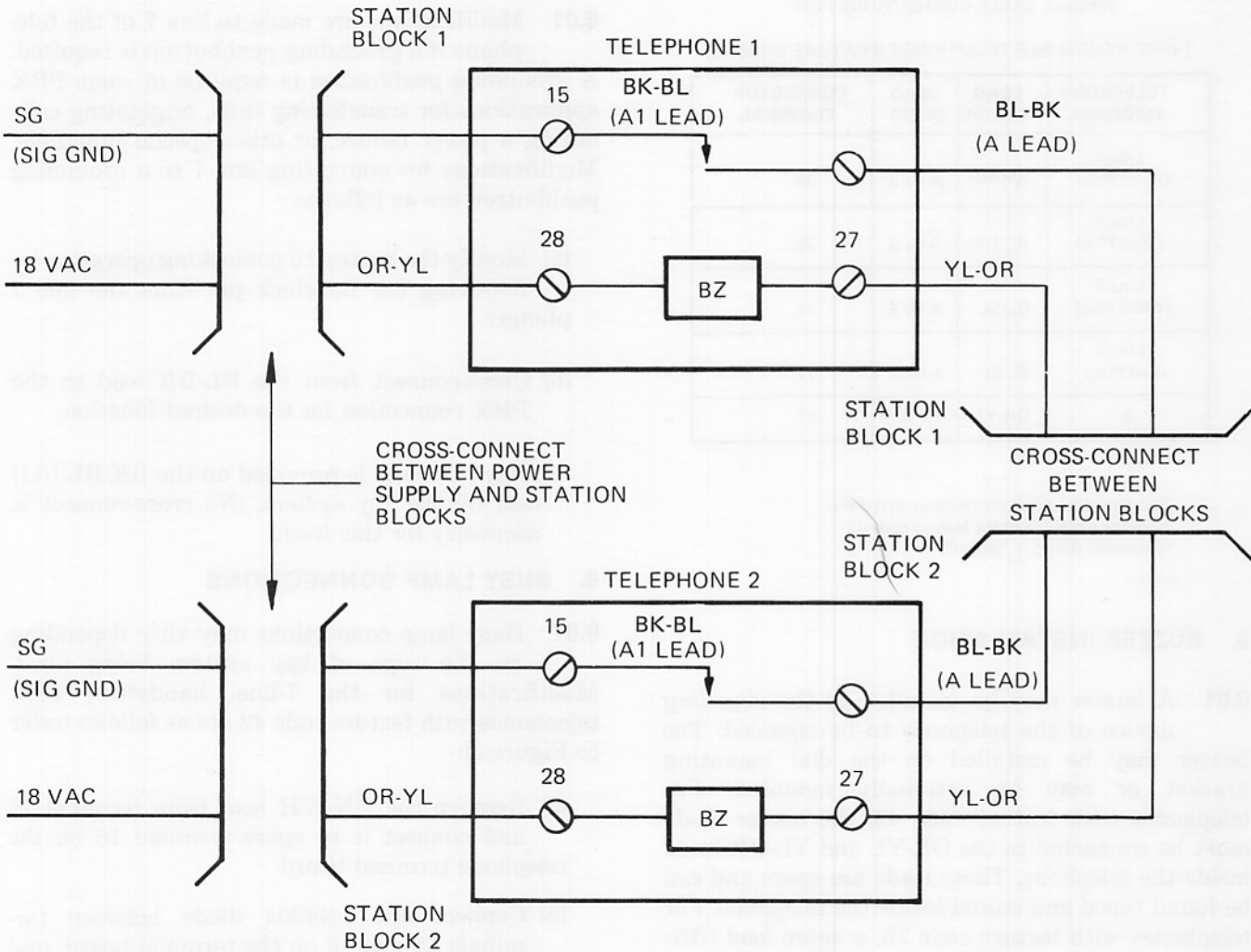
AW 82-574

Figure 3: Busy Lamp Connections for 7-Line, Handsfree Telephones with Feature Code 42



AW 82-575

Figure 4: Busy Lamp Connections for 7-Line, Handsfree Telephones with Feature Code 76



NOTES:

1. THE ARRANGEMENT SHOWN IS USING LINE 7 OF A TELEPHONE WITH FEATURE CODE 42 AS AN EXAMPLE. IF ANOTHER LINE IS USED, SUBSTITUTE THE APPROPRIATE A1 AND A LEADS FOR THAT LINE.
2. IN THE 7-LINE HANDSFREE TELEPHONE, GROUND IS CONNECTED TO TERMINAL 14 (BK-BL). NO CROSS-CONNECT IS NECESSARY FOR THIS LEAD.
3. FOR TELEPHONES WITH FEATURE CODE 76, A SPARE LEAD SUCH AS BN-VI IS USED INSTEAD OF THE OR-YL LEAD (PROVIDED THE PROPER STATION CROSS-CONNECTIONS ARE MADE).

AW 82-572

Figure 2: Typical Circuit Diagram for Signal Buzzer

## 7-LINE, ROTARY DIAL, HANDSFREE TELEPHONES

### REPLACEMENT PARTS

#### 1. GENERAL

**1.01** This document covers the 7-line, rotary dial, handsfree telephone. (See Figure 1.) An exploded-view drawing of the telephone with major assembly groups (see Figure 2) and a replacement parts list (see Table A) are included.

**1.02** This section is reissued to reflect changes in the 7-line, rotary dial, handsfree telephone and to incorporate the changes listed in the Telephone Apparatus Practices Change Notice, Section 11-510-100. Whenever this section is reissued, reason for reissue will be listed in this paragraph.

**1.03** For additional information on description and installation of the telephones, refer to Section 50-842-100. The circuit labels appear in Section 50-842-102. Related documents of the ITT Telephone Apparatus Practices Manual provide information on components.

**1.04** The Model 842 handsfree telephones are 7-line, rotary dial, anti-sidetone type units that operate efficiently over a wide range of loop

resistances and line impedances. They offer the advantage of handsfree application and are designed to be used with key systems such as the ITT 1A2 System where several telephones have access to the same CO/PBX lines or intercom lines.

**1.05** Handsfree telephones are equipped with a microphone and loudspeaker that combine with the telephone circuitry to permit their use without having to hold the handset. This feature may be switched ON or OFF. When OFF, the telephone is used in the normal manner. When ON, a user may converse on the telephone from any direction at a distance of several feet.

**1.06** The Model 842 handsfree telephones are identified by a code number stamped in ink on the bottom of the base plate. Refer to Section 50-842-100 of the ITT Telephone Apparatus Practices Manual for ordering information and for an explanation of each code number.



AW 82-371

Figure 1: 7-Line, Rotary Dial, Handsfree Telephone

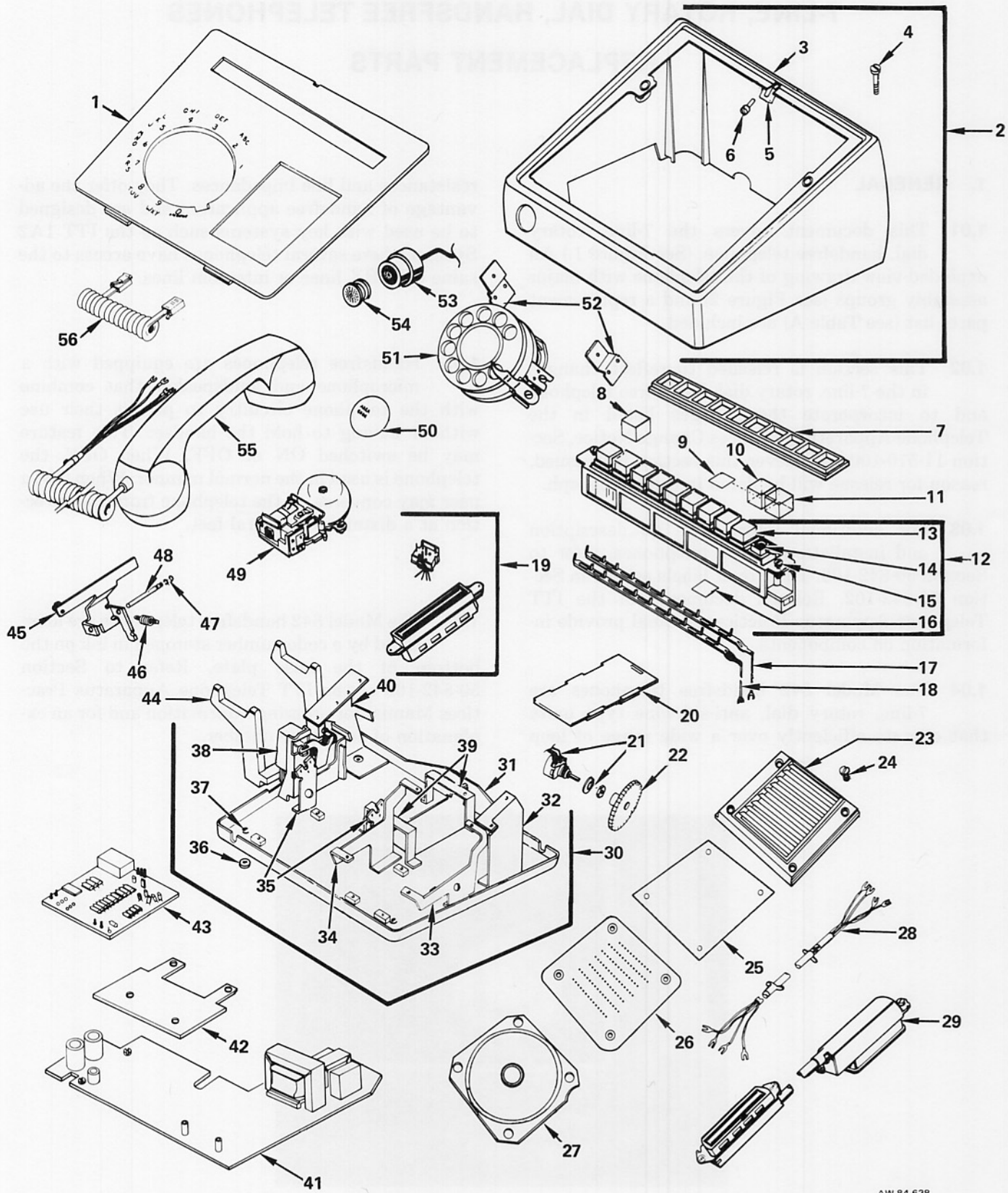


Figure 2: 7-Line, Rotary Dial, Handsfree Telephone, Exploded View

AW 84-638

TABLE A  
REPLACEMENT PARTS LIST

INDEX NO	PART NUMBER	DESCRIPTION	QUANTITY USED	
			842/42	842/76
		7-Line, Handsfree, Rotary Dial, Desk Telephone	842/42	842/76
1	181790-***	Faceplate	1	—
1	182782-***	Faceplate	—	1
2	186080-0**	Housing Assembly	1	1
2	187916-0**	Housing Assembly, Full-Modular	1	1
3	186079-0**	Housing	1	1
3	187915-0**	Housing, Full-Modular	1	1
4	095992-102	Screw, Housing	2	2
5	181100-101	Spring, Latch	1	1
6	181289-101	Screw, Latch Spring	1	1
7	181287-101	Collar, Key Strip	1	1
8	181131-102	Cap, Red	1	1
9	181281-101	Tab, Key Designation (Strip Of 12)	1	1
10	181131-101	Cap, Clear	7	7
11	181131-103	Cap, Yellow	2	2
12	181901-103	Key Assembly	1	—
12	182768-101	Key Assembly	—	1
13	181122-101	Button	10	10
14	000051-00A	Lamp	9	9
15	095992-102	Screw	2	2
16	181900-101	Tab, Key (ON/OFF)	1	1
17	181292-103	Strip, Contact (GN Wire)	1	1
18	181292-104	Strip, Contact (RD Wire)	1	1
19	181805-101	Cord, Internal	1	—
19	182780-101	Cord, Internal	—	1
20	181290-101	Slide	1	1
21	181809-102	Control, Volume	1	1
22	181808-101	Knob, Volume Control	1	1
23	181795-201	Grill, Speaker	1	1
24	181892-101	Screw, Speaker Grill	4	4
25	181899-101	Cloth, Speaker Grill	1	1
26	181794-101	Plate, Speaker <sup>2</sup>	1	1
27	181898-101	Speaker Assembly	1	1
28	182930-101	Cord, Transformer	1	1
29	184371-102	Cord, Mounting (50-Conductor)	1	1

TABLE A  
REPLACEMENT PARTS LIST (Cont)

INDEX NO	PART NUMBER	DESCRIPTION	QUANTITY USED	
			842/42	842/76
		7-Line, Handsfree, Rotary Dial, Desk Telephone	842/42	842/76
30	181811-101	Base Assembly	1	1
31	181141-103	Plate, Base	1	1
32	181251-101	Bracket, Key Right	1	1
33	181801-101	Bracket, Speaker Right	1	1
34	181800-101	Bracket, Speaker Left	1	1
35	181254-102	Bracket, Dial	2	2
36	182337-101	Foot	4	4
37	082486-102	Rivet, Foot	4	4
38	181810-101	Cradle Switch Assembly <sup>1</sup>	1	1
39	181255-102	Bracket, Plug	1	1
40	181150-101	Bracket, Key Left	1	1
41	185889-101	PC Board Assembly	1	1
42	181804-101	Terminal Board Assembly	1	1
43	182691-102	PC Board (Exclusion)	—	1
44	183105-101	Switch Hook Assembly	1	1
	182900-101	Cradle, Switch Hook	1	1
	181145-101	Screw, Switch Hook Cradle	3	3
	181297-102	Arm, Operating	1	1
	184198-101	Kit, Plastic Cradle (Replacement For Metal Cradle)	1	1
	183105-101	Switch Hook Assembly	1	1
	075307-104	Spring, Cradle Return	1	1
	181282-101	Shaft, Pivot	1	1
	073538-110	Ring, Retainer	1	1
	075307-104	Spring, Cradle Return	1	1
45	185488-101	Arm, Latch	1	1
46	181151-101	Spring, Latch Arm	1	1
47	073538-110	Ring, Retainer	2	2
48	181152-101	Pin, Pivot	1	1
49	000148-DBA	Ringer <sup>1</sup>	1	1
50	075415-101	Card, Number	1	1
51	003800-00H	Dial Assembly, Metropolitan (Letters And Numerals) <sup>1</sup>	1	1
52	181146-101	Bracket, Dial Adapter	2	2

TABLE A  
REPLACEMENT PARTS LIST (Cont)

INDEX NO	PART NUMBER	DESCRIPTION	QUANTITY USED	
			842/42	842/76
		7-Line, Handsfree, Rotary Dial, Desk Telephone	842/42	842/76
53	186088-101	Microphone Assembly	1	1
54	185893-0**	Grill, Microphone	1	1
55	0065**-0C2	Handset Assembly, Nonmodular <sup>1</sup>	1	1
55	0065**-0M2	Handset Assembly, Modular <sup>1</sup>	1	1
56	9018**-072	Cord, Handset, Modular	1	1
	600152-611 -001	Jack Assembly, Handset Cord, Modular (Not Shown)	1	1
	182990-105	Insulator Assembly, Modular (Not Shown)	1	1
	181768-101	Transformer (Not Shown)	1	1
	181971-104	Pushbutton, Exclusion Release (Not Shown)	—	1
	187944-101	Nameplate, ITT (Not Shown)	1	1

## NOTES:

AW 84-828

<sup>1</sup> Refer to Component Parts Section of this manual for Assembly Parts List.

<sup>2</sup> These products have been discontinued, but are included to provide a source of information for telephones still in service.

\*\* Substitute 2-digit color code when ordering.

\*\*\* Substitute 3-digit color code when ordering faceplate.

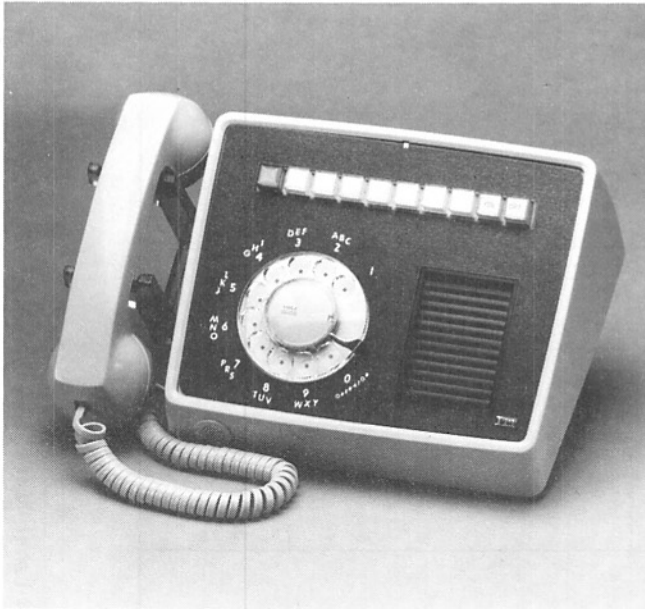
CODE	COLOR	CODE	COLOR	CODE	COLOR	CODE	COLOR
101	Charcoal	104	Light Gray	107	Cocoa Brown	110	Clear
102	Light Green	105	Burnt Orange	108	Harvest Gold	111	Woodgrain
103	Muted Beige	106	Light Ash	109	Cherry Red		

## 7-LINE, ROTARY DIAL, HANDSFREE TELEPHONES

### CIRCUIT LABELS

#### 1. GENERAL

**1.01** This document covers the 7-line, rotary dial, handsfree telephones. (See Figure 1.) Circuit labels for 7-line, rotary dial, handsfree telephones are included. (See Table A.)



AW 86-356

**Figure 1: 7-Line, Rotary Dial, Handsfree Telephone**

**1.02** This section is reissued to provide new circuit labels for the following 7-line, rotary dial, handsfree telephones:

- (a) Model 842, Type 42
- (b) Model 842, Type 76

**1.03** For additional information on description and installation of the telephones, refer to Section 50-842-100. A replacement parts list and

an exploded-view drawing for the telephones are contained in Section 50-842-101. Related documents of the ITT Telephone Apparatus Practices Manual provide information on components.

**1.04** The Model 842 handsfree telephones are identified by a code number stamped in ink on the bottom of the base plate. Refer to Section 50-842-100 of the ITT Telephone Apparatus Practices Manual for ordering information and an explanation of each code number.

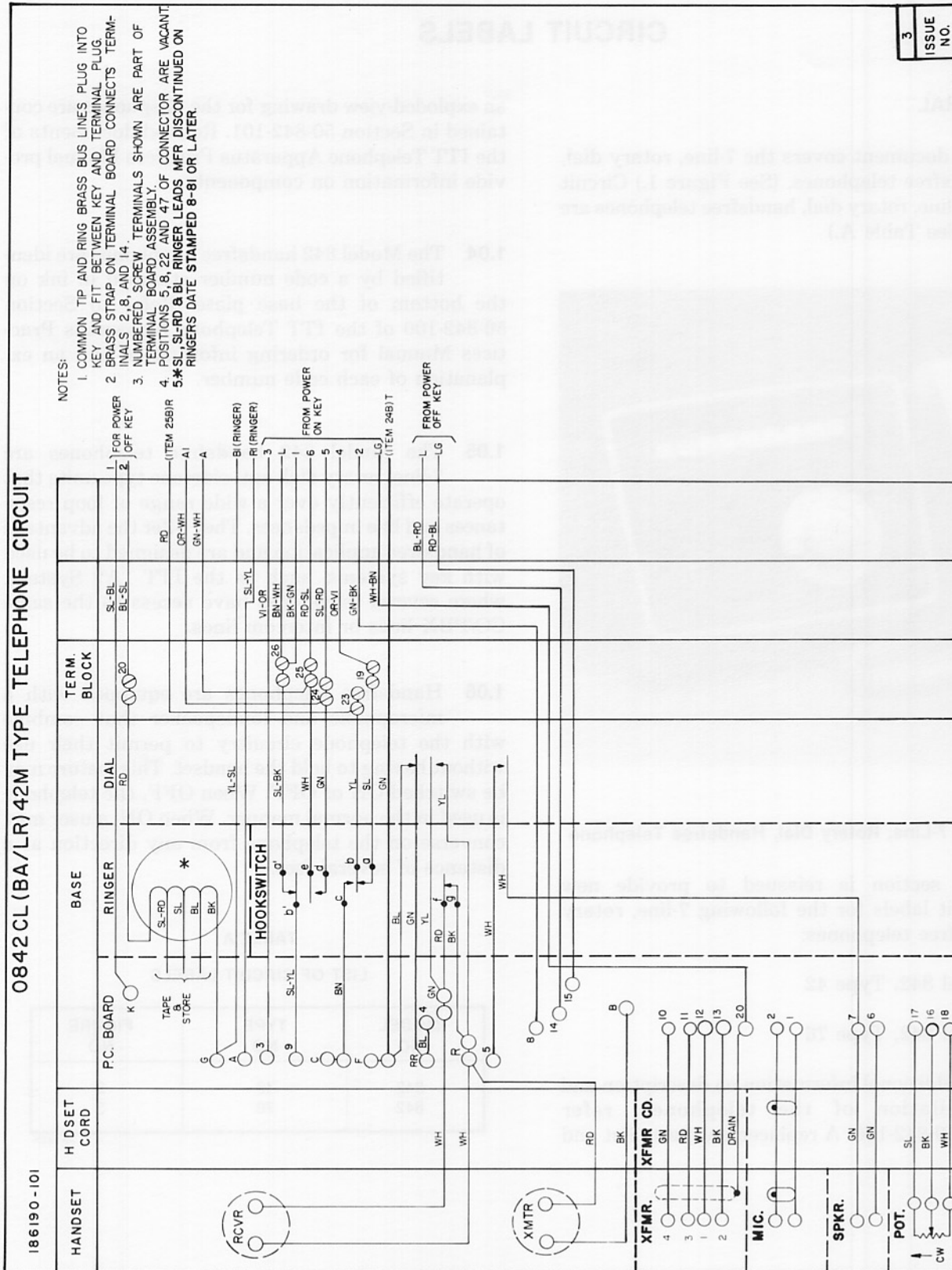
**1.05** The Model 842 handsfree telephones are 7-line, rotary dial, anti-sidetone type units that operate efficiently over a wide range of loop resistances and line impedances. They offer the advantage of handsfree application and are designed to be used with key systems, such as the ITT 1A2 System, where several telephones have access to the same CO/PBX lines or intercom lines.

**1.06** Handsfree telephones are equipped with a microphone and loudspeaker that combine with the telephone circuitry to permit their use without having to hold the handset. This feature may be switched ON or OFF. When OFF, the telephone is used in the normal manner. When ON, a user may converse on the telephone from any direction at a distance of several feet.

TABLE A  
LIST OF CIRCUIT LABELS

MODEL NO	TYPE NO	FIGURE NO
842	42	2
842	76	3

AW 86-332



3  
ISSUE NO.

Figure 2: Circuit Label, Model 842 Type 42 (Sheet 1 fo 2)

0842CL(BA/LR)42M TYPE TELEPHONE CIRCUIT

186190-101

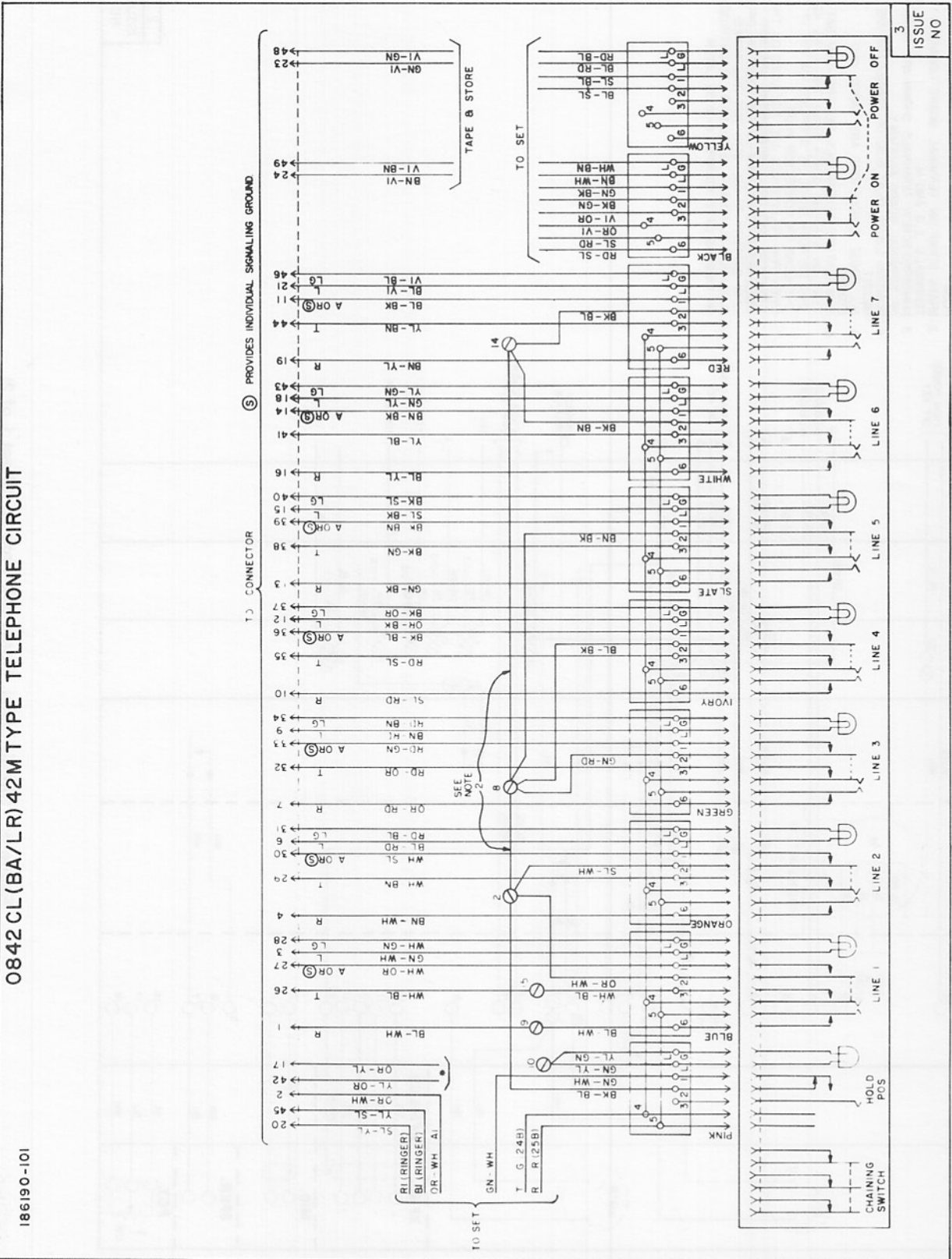
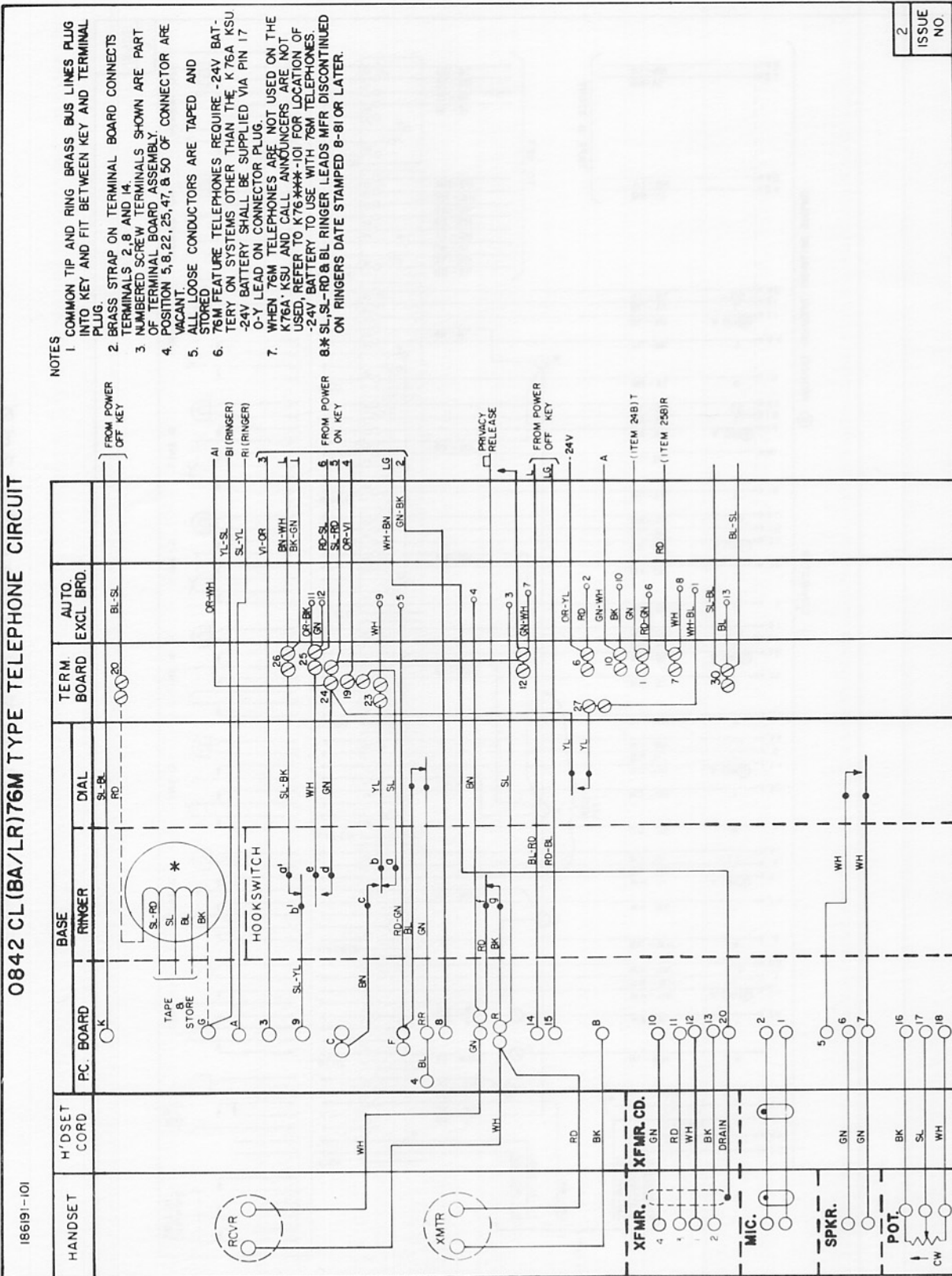


Figure 2: Circuit Label, Model 842 Type 42 (Sheet 2 of 2)

0842 CL (BA/LR)76M TYPE TELEPHONE CIRCUIT



2  
ISSUE  
NO

Figure 3: Circuit Label, Model 842 Type 76 (Sheet 1 of 2)



## 7-LINE, PUSHBUTTON DIAL, HANDSFREE TELEPHONES

### GENERAL DESCRIPTION

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3. MAINTENANCE .....	3
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5. BUTTON CONVERSIONS .....	4
6. BUZZER INSTALLATION .....	4
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Figure 1: 7-Line, Pushbutton Dial, Handsfree Telephone

#### 1. GENERAL DESCRIPTION

**1.01** This document covers the 7-line, pushbutton dial, handsfree telephone. (See Figure 1.) A general description plus information peculiar to 7-line, pushbutton dial, handsfree telephones is included.

**1.02** This section is reissued to reflect changes in the 7-line, pushbutton dial, handsfree telephone and to incorporate the changes listed in the Telephone Apparatus Practices Change Notice, Section 11-510-100. Whenever this section is reissued, reason for reissue will be listed in this paragraph.

**1.03** For additional information on replacement parts and for an exploded-view drawing for the telephones, refer to Section 50-842-104. The circuit labels appear in Section 50-842-105. Related documents of the ITT Telephone Apparatus Practices Manual provide information on components.

**1.04** The Model 2842 handsfree telephones are 7-line, pushbutton dial, anti-sidetone type units that operate efficiently over a wide range of loop resistances and line impedances. They offer the advantage of handsfree application and are designed to be used with key systems such as the ITT 1A2 System where several telephones have access to the same CO/PBX lines or intercom lines.

**1.05** The Model 2842 handsfree telephones are identified by a code number stamped in ink on the bottom of the base plate. Refer to ordering information in Table A for an explanation of each code number.

**1.06** Handsfree telephones are equipped with a microphone and loudspeaker that combine with the telephone circuitry to permit their use without having to hold the handset. This feature may be switched ON or OFF. When OFF, the telephone is used in the normal manner. When ON, a user may converse on the telephone from any direction at a distance of several feet.

**1.07** There are ten pushbutton keys on the telephone. The red key on the far left is used as a hold key and allows any selected line or trunk to be placed in a hold condition. The seven pickup keys

TABLE A  
ORDERING INFORMATION – TELEPHONES

CODE NUMBERS															
TELEPHONE CODE NUMBERS ARE FORMED IN SIX STEPS AS FOLLOWS:															
				2842		15		O		BA		42		M	
(1)	Type Of Instrument														
	(See Part 1)														
(2)	Color (See Part 2)														
(3)	Version (See Part 3)														
(4)	Ringer (See Part 4)														
(5)	Special Feature (See Part 5)														
(6)	Dial (See Part 6)														
PART 1 TYPE OF INSTRUMENT															
CODE	DESCRIPTION	COLOR OFFERED	VERSION OFFERED	RINGER OFFERED	FEATURE OFFERED	DIAL OFFERED									
2842	7-Line, Handsfree, Push-button Dial, Desk Telephone	00, 05, 13, 15, 44, And 45 (Available On All Models)	O	BA	42, 76	M, R									
2842	7-Line, Handsfree, Push-button Dial, Desk Telephone		M	BA	42, 76	M									
REFER TO INDIVIDUAL UNIT DESCRIPTION FOR COMPLETE DESCRIPTION OF FEATURE COMBINATIONS															
PART 2 COLORS		PART 3 VERSIONS		PART 4 RINGERS		PART 5 SPECIAL FEATURES		PART 6 DIALS							
CODE	COLORS	CODE	VERSIONS	CODE	RINGERS	CODE	SPECIAL FEATURES	CODE	DIALS						
00	Black	O	Nonmodular	BA	Straight-Line	42	Equipped For Handsfree Operation	M	Metropolitan (Letters & Numerals)						
05	Moss Green														
13	Beige	M	Full-Modular (With Handset Cord)			76	42 Combined With Automatic Exclusion And Release Button	R	Regular (Numerals Only)						
15	White														
44	Light Ash														
45	Cocoa Brown														

AW 84-774

to the right of the hold key are used for CO/PBX lines or intercom lines. The remaining two keys are used for ON and OFF control of the handsfree equipment.

**Warning:** On the Model 2842 telephones equipped with the 76 exclusion feature, the last three pickup keys on the key strip are reserved for intercom lines. Since damage to the exclusion circuit may result if a pickup key with the A lead connected is used for intercom, the A leads are taped and stored inside the telephone. By connecting the A lead, modifications may be made to these pickup keys to enable their use for different applications such as CO/PBX lines or intercom lines in a system where the A lead may be connected.

**1.08** A lamp beneath each of the seven pickup keys indicates the status of the associated line. (See Table B.)

**1.09** The Model 2842 telephones are available as nonmodular or full-modular versions. These versions are designated by a code letter that is placed in front of the ringer code letters in the order number of the telephone. (Refer to Table A.)

**1.10** Nonmodular version desk telephones include a hard-wired handset cord. This version is designated by the code letter O.

**1.11** Full-modular version desk telephones are available with a modular handset cord. The full-modular desk telephones are equipped with jacks to accept the plugs of a modular handset cord. The full-modular version of the telephone with a modular handset cord, terminated on each end with modular plugs, is designated by the code letter M.

**1.12** The Model 2842 telephones are described in the following paragraphs. The circuit labels for these telephones are contained in Section 50-842-105.

TABLE B  
LINE KEY SIGNALS

CONDITION	LAMP INDICATION
Idle	Lamp Dark
Busy	Lamp Lit
Hold	Lamp Winking
Call Incoming	Lamp Flashing

AW 84-658

### MODEL 2842\*\* ( ) 42

1.13 The Model 2842\*\* ( ) 42 is a standard 7-line pushbutton dial, handsfree telephone. The microphone and loudspeaker, which are mounted inside the telephone, combine with the telephone circuitry to provide for handsfree application. This telephone is equipped with a 50-conductor mounting cord fitted with a 50-pin male connector.

### MODEL 2842\*\* ( ) 76

1.14 The Model 2842\*\* ( ) 76 is the same as the Model 2842\*\* ( ) 42 except it is equipped with an automatic exclusion (privacy) circuit and a release button. Where this feature is used, all telephones in the key system must provide the exclusion circuit and release button.

## 2. INSTALLATION

2.01 Since these telephones are equipped with a connector-terminated mounting cord, installation consists of inserting the connector into the jack at the station connecting block and pressing to engage them. For specific wiring information, refer to the appropriate circuit label in Section 50-842-105. Cable connections for 7-line, handsfree telephones with feature code 42 are listed in Table C. Cable connections for 7-line, handsfree telephones with feature code 76 that differ from those listed in Table C are listed in Table D.

2.02 The power transformer provided with the telephone must be connected to the four-conductor power cord of the telephone and plugged into a standard 110 VAC service outlet. Terminals are provided inside the telephone for connecting wiring if additional cord length is required. The four-

conductor power cord with leads colored WH, BK, RD, and GN must be connected to the transformer terminals designated WH, BK, RD, and GN. The WH lead of the power cord connects to terminal WH of the transformer, the BK lead connects to terminal BK, the RD lead connects to terminal RD, and the GN lead connects to terminal GN.

*Note:* The transformer supplies power to the handsfree circuitry. Normal telephone operation using the handset is possible without the transformer.

## 3. MAINTENANCE

3.01 For replacement parts information and for an exploded-view drawing of major assembly groups, refer to Section 50-842-104.

## 4. OPERATION

4.01 To place or answer a call in the handsfree mode, press the ON key. The ON key lamp is lit while the handsfree circuit is enabled. The ON key may be released only by pressing the OFF key.

4.02 When the telephone is in the handsfree mode, going off-hook inhibits the handsfree circuit and permits conversation using the handset. The ON key lamp will stay lit. Replacing the handset reactivates the handsfree circuit and returns the telephone to handsfree operation until the OFF key is pressed.

4.03 To prevent the distant party from hearing local conversation during handsfree operation, press the hold key. The hold key will release when the line pickup key is pressed again.

4.04 A lamp located in the OFF key acts as a visual transmit and receive indicator. The lamp is lit when the handsfree circuit is in the transmit mode and is dark when the circuit is in the receive mode. The lamp remains dark when the handsfree circuit is off.

4.05 The loudspeaker volume control is located underneath the right side of the telephone. Since the volume must be balanced to compensate for local noise level, this control also affects the performance of the telephone. Clipping or chopping of speech caused by excessive background noise may be controlled by increasing the volume. Volume is

TABLE C  
CABLE CONNECTIONS FOR 7-LINE  
HANDSFREE TELEPHONES  
(FEATURE CODE 42)

LINES 1 THROUGH 4				LINES 5 THROUGH 7			
TELEPHONE TERMINAL	LEAD COLOR	LEAD DESIG	CONNECTOR TERMINAL	TELEPHONE TERMINAL	LEAD COLOR	LEAD DESIG	CONNECTOR TERMINAL
Line 1 (Blue Plug)	WH-BL	T	26	Line 5 (Slate Plug)	BK-GN	T	38
	BL-WH	R	1		GN-BK	R	13
	WH-OR	A	27		BK-BN	A Or S	39
	WH-GN	LG	28		BK-SL	LG	40
	GN-WH	L	3		SL-BK	L	15
Line 2 (Orange Plug)	WH-BN	T	29	Line 6 (White Plug)	YL-BL	T	41
	BN-WH	R	4		BL-YL	R	16
	WH-SL	A Or S	30		BN-BK	A Or S	14
	RD-BL	LG	31		YL-GN	LG	43
	BL-RD	L	6		GN-YL	L	18
Line 3 (Green Plug)	RD-OR	T	32	Line 7 (Red Plug)	YL-BN	T	44
	OR-RD	R	7		BN-YL	R	19
	RD-GN	A Or S	33		BL-BK	A Or S	11
	RD-BN	LG	34		VI-BL	LG	46
	BN-RD	L	9		BL-VI	L	21
Line 4 (Ivory Plug)	RD-SL	T	35	10	OR-WH	A1	2
	SL-RD	R	10	G	YL-SL	B Or B1	45
	BK-BL	A Or S	36	A	SL-YL	R Or R1	20
	BK-OR	LG	37	15	YL-OR	BL, AG, Or Spare	42
	OR-BK	L	12	6	OR-YL	SG, LK, Or Spare	17

## NOTES:

1. The YL-OR and OR-YL leads are spare leads and are taped and stored inside the telephone.
2. The designation S indicates that the lead provides an individual signal ground.

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increased by rotating the volume control clockwise. If the voice being received is too loud, the volume should be decreased by rotating the volume control counterclockwise. If the called party is also using handsfree equipment, mutual adjustment of the volume controls may be necessary. Usually, a comfortable talk and listen level will ensure proper performance.

**4.06** It is important to note that a telephone equipped with the exclusion feature, which has been modified for trunk-to-trunk conferencing, can override its exclusion circuit and pick up a line with a call in progress.

*Note:* Handsfree telephones may be subject to some types of radio frequency interference.

## 5. BUTTON CONVERSIONS

**5.01** Any pickup key may be converted to signaling mode by removing the slotted head pin from the plunger shank. The slotted head pin is removed by being turned clockwise.

## 6. BUZZER INSTALLATION

**6.01** A buzzer may be installed as the signaling device of the telephone to be signaled. The buzzer may be installed on the dial mounting

TABLE D  
SPECIAL CABLE CONNECTIONS FOR  
7-LINE HANDSFREE TELEPHONES (FEATURE CODE 76)

TELEPHONE TERMINAL	LEAD COLOR	LEAD DESIG	CONNECTOR TERMINAL
Line 4 (Ivory Plug)	WH-RD	A Or S	36
Line 5 (Slate Plug)	RD-WH	A Or S	39
Line 6 (White Plug)	BL-SL	A Or S	14
Line 7 (Red Plug)	SL-BL	A Or S	11
6	OR-YL	-24 VDC	17

## NOTE:

This table lists those connections that differ from the connections for feature code 42 telephones shown in Table C.

AW 84-663

bracket or may be externally mounted. For telephones with feature code 42, the buzzer leads must be connected to the OR-YL and YL-OR leads inside the telephone. These leads are spare and can be found taped and stored inside the telephone. For telephones with feature code 76, a spare lead (BN-VI) is used instead of the OR-YL lead (provided the proper station cross-connections are made). Low voltage buzzers (6 to 40 VAC) or high voltage buzzers (105 VAC) may be selected for this use. (See Figure 2.)

**6.02** A buzzer may also be used in place of the ringer. A 105 VAC buzzer must be provided. The ringer leads are removed and replaced by the buzzer leads.

## 7. DESIGNATION TABS

**7.01** Designation tabs are included with each telephone. These tabs are installed by removing the cap from the key, placing the tab in the cap, and reinstalling the cap. The caps are removed by squeezing the sides of the cap and lifting. Note that locking surfaces are located on the right and left sides of the caps and keys. These locking surfaces must align properly.

## 8. GROUNDING PUSHBUTTON

**8.01** Modifications are made to line 7 of the telephone if a grounding pushbutton is required. A grounding pushbutton is required in some PBX applications for transferring calls, originating calls during a power failure, or other special functions. Modifications for converting line 7 to a grounding pushbutton are as follows:

- Modify the button to nonlocking operation by removing the interlock pin from the line 7 plunger.
- Cross-connect from the BL-BK lead to the PBX connection for the desired function.

*Note:* Ground is provided on the BK-BL (A1) lead by the key system. (No cross-connect is necessary for this lead.)

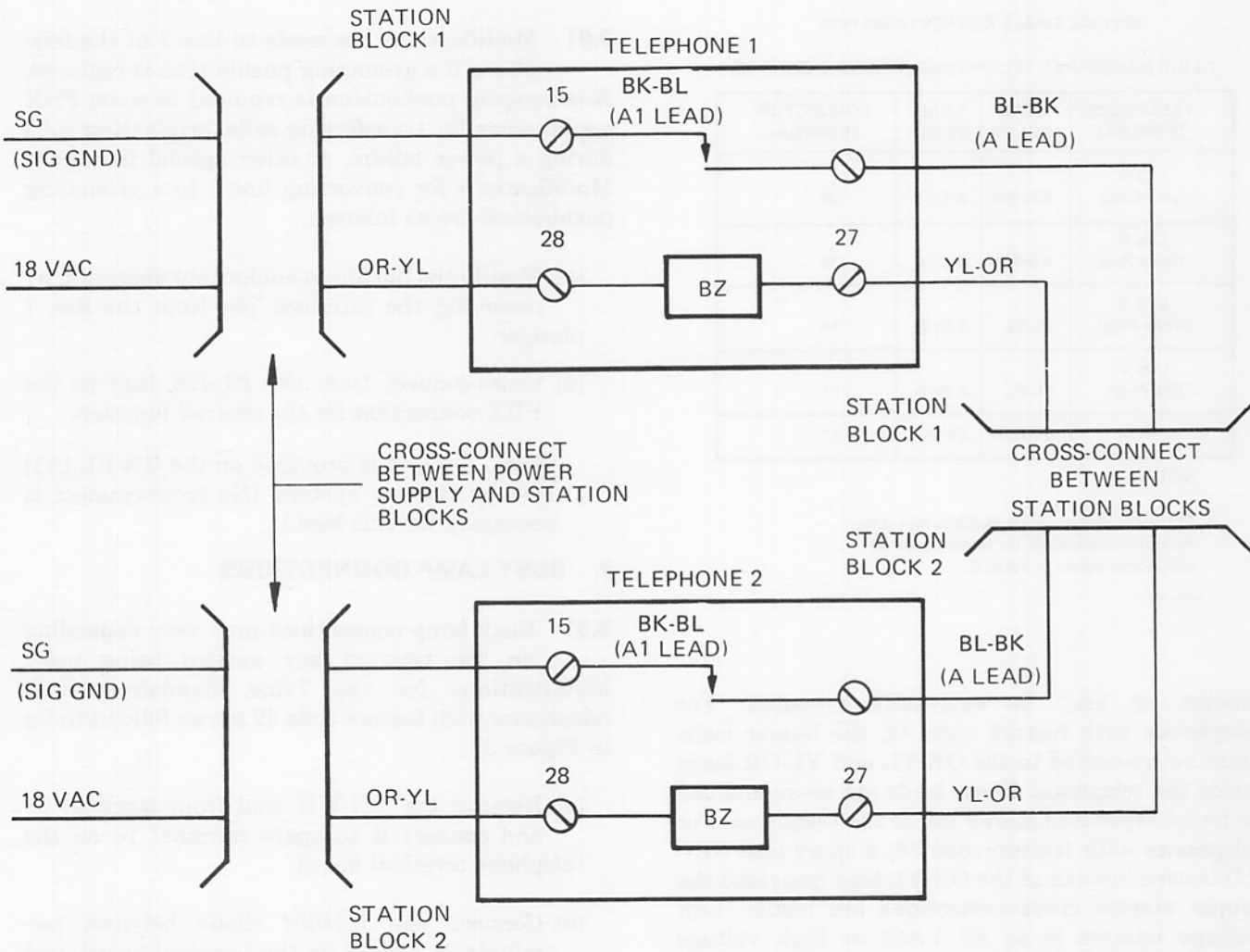
## 9. BUSY LAMP CONNECTIONS

**9.01** Busy lamp connections may vary depending on the type of key system being used. Modifications for the 7-line, handsfree, desk telephones with feature code 42 are as follows (refer to Figure 3):

- Remove the GN-WH lead from terminal 25 and connect it to spare terminal 16 on the telephone terminal board.
- Connect one 1N4004 diode between terminals 25 and 16 on the terminal board, and connect another 1N4004 diode between terminals 25 and 17 on the terminal board as shown in Figure 3.
- Connect the OR-YL mounting cord lead to terminal 17 on the terminal board.

**9.02** Special busy lamp connections are required for telephones equipped with an exclusion circuit. Modifications for the 7-line, handsfree, desk telephones with feature code 76 are as follows (refer to Figure 4):

- Connect one 1N4004 diode from terminal 25 to terminal 16 on the telephone terminal board as shown in Figure 4.
- Connect any spare lead (BN-VI) to terminal 16 on the telephone terminal board. (Proper station cross-connections must be made to allow the use of a spare lead.)

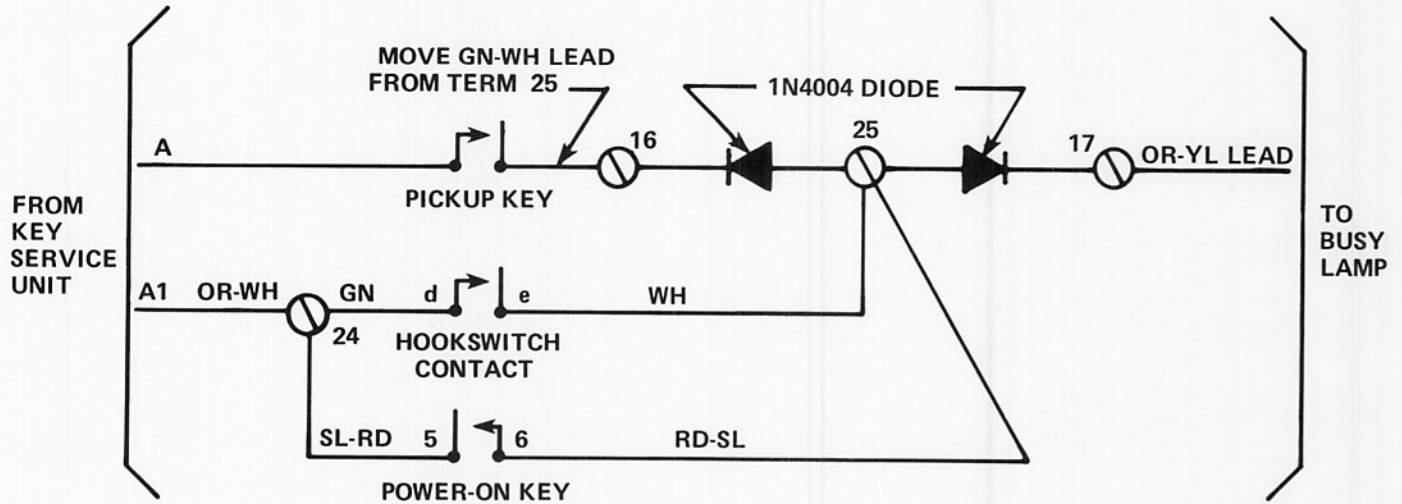


NOTES:

1. THE ARRANGEMENT SHOWN IS USING LINE 7 OF A TELEPHONE WITH FEATURE CODE 42 AS AN EXAMPLE. IF ANOTHER LINE IS USED, SUBSTITUTE THE APPROPRIATE A1 AND A LEADS FOR THAT LINE.
2. IN THE 7-LINE HANDSFREE TELEPHONE, GROUND IS CONNECTED TO TERMINAL 14 (BK-BL). NO CROSS-CONNECT IS NECESSARY FOR THIS LEAD.
3. FOR TELEPHONES WITH FEATURE CODE 76, A SPARE LEAD SUCH AS BN-VI IS USED INSTEAD OF THE OR-YL LEAD (PROVIDED THE PROPER STATION CROSS-CONNECTIONS ARE MADE).

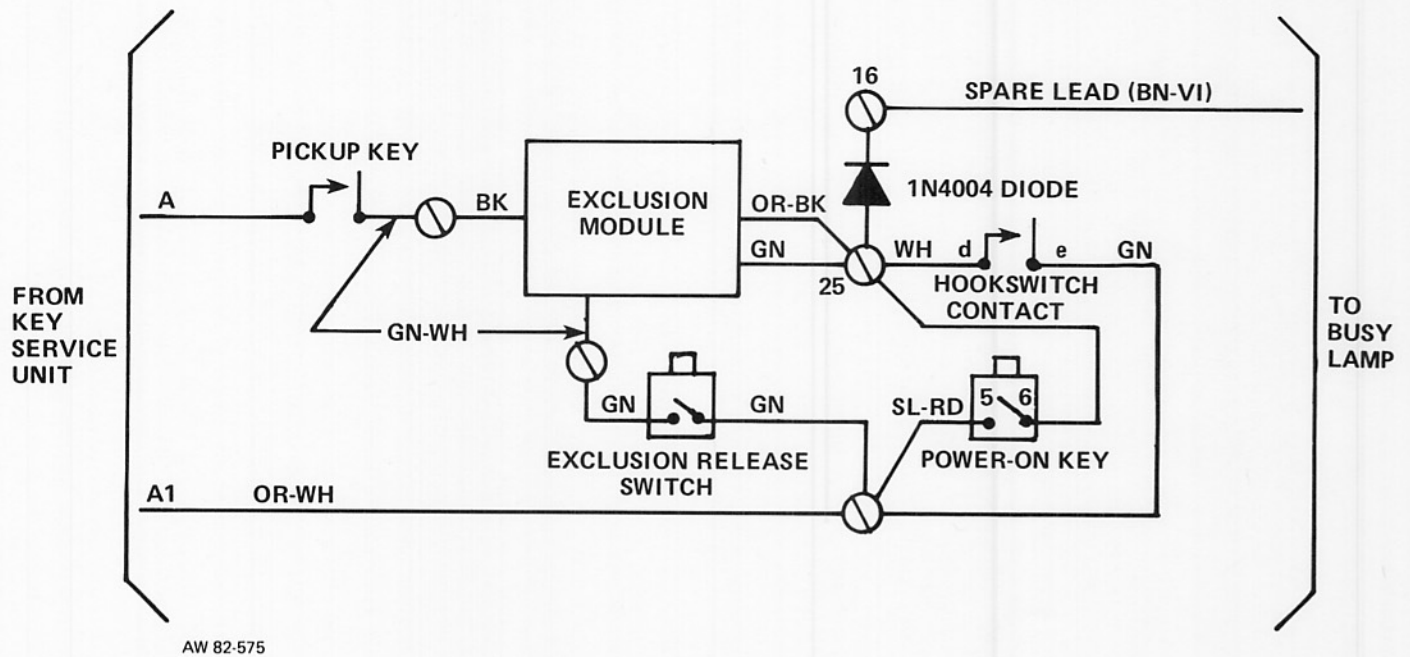
AW 82-572

Figure 2: Typical Circuit Diagram for Signal Buzzer



AW 82-574

Figure 4: Busy Lamp Connections for 7-Line, Handsfree Telephones with Feature Code 76



AW 82-575

Figure 3: Busy Lamp Connections for 7-Line, Handsfree Telephones with Feature Code 42

## 7-LINE, PUSHBUTTON DIAL, HANDSFREE TELEPHONES

### REPLACEMENT PARTS

#### 1. GENERAL

**1.01** This document covers the 7-line, pushbutton dial, handsfree telephone. (See Figure 1.) An exploded-view drawing of the telephone with major assembly groups (see Figure 2) and a replacement parts list (see Table A) are included.

**1.02** This section is reissued to reflect changes in the 7-line, pushbutton dial, handsfree telephone and to incorporate the changes listed in the Telephone Apparatus Change Notice, Section 11-510-100. Whenever this section is reissued, reason for reissue will be listed in this paragraph.

**1.03** For additional information on description and installation of the telephones, refer to Section 50-842-103. The circuit labels appear in Section 50-842-105. Related documents of the ITT Telephone Apparatus Practices Manual provide information on components.

**1.04** The Model 2842 handsfree telephones are 7-line, pushbutton dial, anti-sidetone type units that operate efficiently over a wide range of loop resistances and line impedances. They offer the advantage of handsfree application and are designed to be used with key systems such as the ITT 1A2 System where several telephones have access to the same CO/PBX lines or intercom lines.

**1.05** Handsfree telephones are equipped with a microphone and loudspeaker that combine with the telephone circuitry to permit their use without having to hold the handset. This feature may be switched ON or OFF. When OFF, the telephone is used in the normal manner. When ON, a user may converse on the telephone from any direction at a distance of several feet.

**1.06** The Model 2842 handsfree telephones are identified by a code number stamped in ink on the bottom of the base plate. Refer to Section 50-842-103 of the ITT Telephone Apparatus Practices Manual for ordering information and for an explanation of each code number.



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Figure 1: 7-Line, Pushbutton Dial, Handsfree Telephone

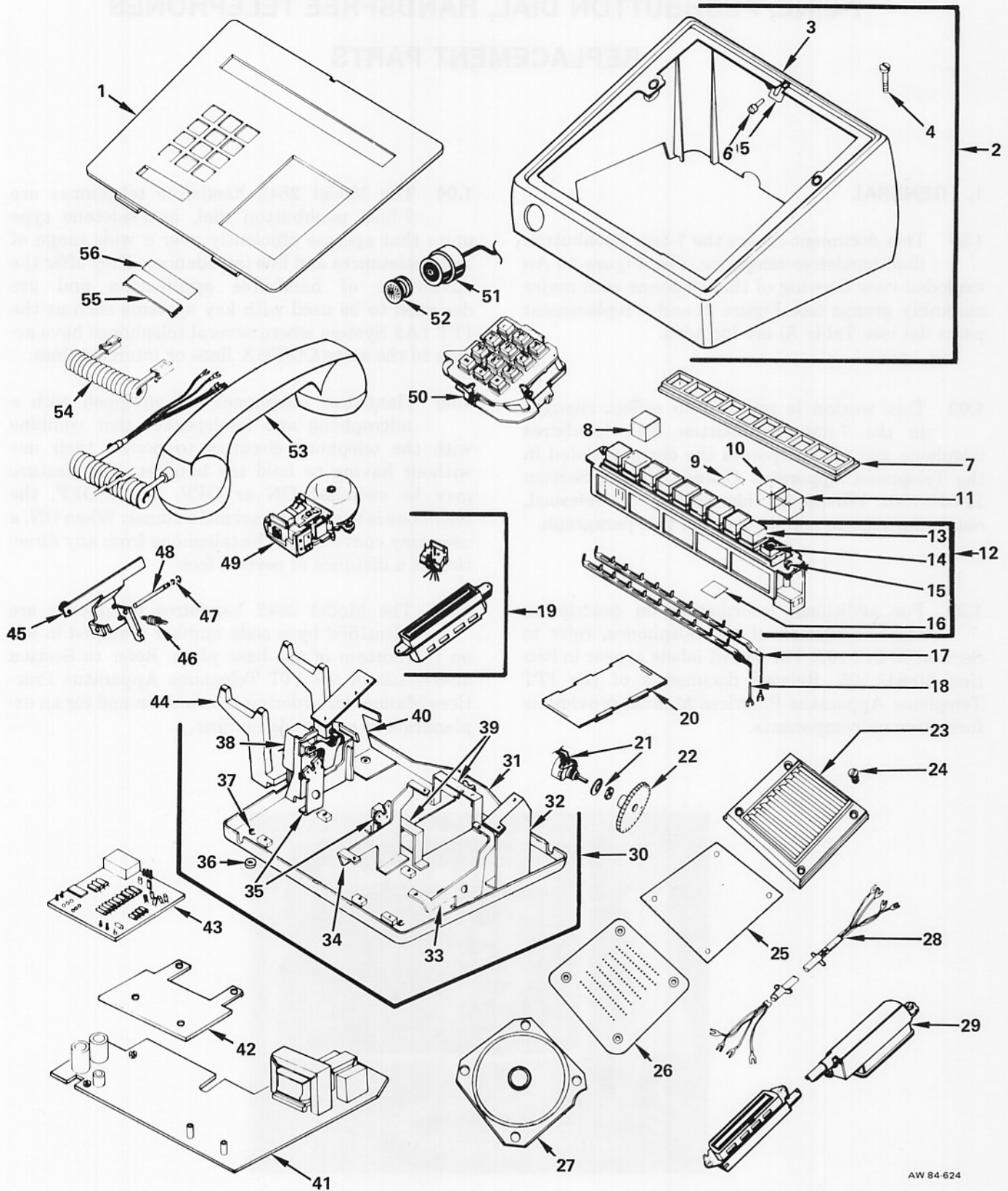


Figure 2: 7-Line, Pushbutton Dial, Handsfree Telephone, Exploded View

AW 84-624

TABLE A  
REPLACEMENT PARTS LIST

INDEX NO	PART NUMBER	DESCRIPTION	QUANTITY USED	
			2842/42	2842/76
		7-Line, Handsfree, Pushbutton Dial, Desk Telephone	2842/42	2842/76
1	181792-***	Faceplate	1	—
1	182783-***	Faceplate	—	1
2	186080-0**	Housing Assembly	1	1
2	187916-0**	Housing Assembly, Full-Modular	1	1
3	186079-0**	Housing	1	1
3	187915-0**	Housing, Full-Modular	1	1
4	095992-102	Screw, Housing	2	2
5	181100-101	Spring, Latch	1	1
6	181289-101	Screw, Latch Spring	1	1
7	181287-101	Collar, Key Strip	1	1
8	181131-102	Cap, Red	1	1
9	181281-101	Tab, Key Designation (Strip Of 12)	1	1
10	181131-101	Cap, Clear	7	7
11	181131-103	Cap, Yellow	2	2
12	181901-103	Key Assembly	1	—
12	182768-101	Key Assembly	—	1
13	181122-101	Button	10	10
14	000051-00A	Lamp	9	9
15	095992-102	Screw	2	2
16	181900-101	Tab, Key (ON/OFF)	1	1
17	181292-103	Strip, Contact (GN Wire)	1	1
18	181292-104	Strip, Contact (RD Wire)	1	1
19	181805-101	Cord, Internal	1	—
19	182780-101	Cord, Internal	—	1
20	181290-101	Slide	1	1
21	181809-102	Control, Volume	1	1
22	181808-101	Knob, Volume Control	1	1
23	181795-201	Grill, Speaker	1	1
24	181892-101	Screw, Speaker Grill	4	4
25	181899-101	Cloth, Speaker Grill	1	1
26	181794-101	Plate, Speaker <sup>3</sup>	1	1
27	181898-101	Speaker Assembly	1	1
28	182930-101	Cord, Transformer	1	1
29	184371-102	Cord, Mounting (50-Conductor)	1	1

TABLE A  
REPLACEMENT PARTS LIST (Cont)

INDEX NO	PART NUMBER	DESCRIPTION	QUANTITY USED	
			2842/42	2842/76
		7-Line, Handsfree, Pushbutton Dial, Desk Telephone		
30	181811-101	Base Assembly	1	1
31	181141-103	Plate, Base	1	1
32	181251-101	Bracket, Key Right	1	1
33	181801-101	Bracket, Speaker Right	1	1
34	181800-101	Bracket, Speaker Left	1	1
35	181254-102	Bracket, Dial	2	2
36	182337-101	Foot	4	4
37	082486-102	Rivet, Foot	4	4
38	181810-101	Cradle Switch Assembly <sup>1</sup>	1	1
39	181255-102	Bracket, Plug	2	2
40	181150-101	Bracket, Key Left	1	1
41	185889-101	PC Board Assembly	1	1
42	181804-101	Terminal Board Assembly	1	1
43	182691-102	PC Board (Exclusion)	—	1
44	183105-101	Switch Hook Assembly	1	1
	182900-101	Cradle, Switch Hook	1	1
	181145-101	Screw, Switch Hook Cradle	3	3
	181297-102	Arm, Operating	1	1
	184198-101	Kit, Plastic Cradle (Replacement For Metal Cradle)	1	1
	183105-101	Switch Hook Assembly	1	1
	075307-104	Spring, Cradle Return	1	1
	181282-101	Shaft, Pivot	1	1
	073538-110	Ring, Retainer	1	1
	075307-104	Spring, Cradle Return	1	1
45	185488-101	Arm, Latch	1	1
46	181151-101	Spring, Latch Arm	1	1
47	073538-110	Ring, Retainer	2	2
48	181152-101	Pin, Pivot	1	1
49	000148-DBA	Ringer <sup>1</sup>	1	1
50	004600-0PG	Dial Assembly, Pushbutton Digital, Metropolitan (Letters And Numerals) <sup>1, 2</sup>	1	1
50	003600-0PG	Dial Assembly, Pushbutton Tel-Touch, Metropolitan (Letters And Numerals) <sup>1, 3</sup>	1	1
50	004600-0PD	Dial Assembly, Pushbutton Digital, Regular (Numerals Only) <sup>1, 4</sup>	1	1
50	003600-0PD	Dial Assembly, Pushbutton Tel-Touch, Regular (Numerals Only) <sup>1, 3</sup>	1	1
51	186088-101	Microphone Assembly	1	1
52	185893-0**	Grill, Microphone	1	1
53	0065**-0C2	Handset Assembly, Nonmodular <sup>1</sup>	1	1
53	0065**-0M2	Handset Assembly, Modular <sup>1</sup>	1	1

TABLE A  
REPLACEMENT PARTS LIST (Cont)

INDEX NO	PART NUMBER	DESCRIPTION	QUANTITY USED	
			2842/42	2842/76
		7-Line, Handsfree, Pushbutton Dial, Desk Telephone	2842/42	2842/76
54	9018**-072	Cord, Handset, Modular	1	1
55	087514-101	Retainer, Number Card	1	1
56	087513-101	Card, Number	1	1
56	087513-102	Card, Number, Strip Of 6 (Not Shown) <sup>5</sup>	—	—
	600152-611 -001	Jack Assembly, Handset Cord, Modular (Not Shown)	1	1
	182990-105	Insulator Assembly, Modular (Not Shown)	1	1
	181768-101	Transformer (Not Shown)	1	1
	181971-104	Pushbutton, Exclusion Release (Not Shown)	—	1
	187944-101	Nameplate, ITT (Not Shown)	1	1

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## NOTES:

- <sup>1</sup> Refer to Component Parts Section of this manual for Assembly Parts List.
- <sup>2</sup> The 004600-OPG dial replaces the 003600-OPG dial.
- <sup>3</sup> These products have been discontinued, but are included to provide a source of information for telephones still in service.
- <sup>4</sup> The 004600-OPD dial replaces the 003600-OPD dial.
- <sup>5</sup> These products must be ordered separately.
- \*\* Substitute 2-digit color code when ordering.
- \*\*\* Substitute 3-digit color code when ordering faceplate.

CODE	COLOR	CODE	COLOR	CODE	COLOR	CODE	COLOR
101	Charcoal	104	Light Gray	107	Cocoa Brown	110	Clear
102	Light Green	105	Burnt Orange	108	Harvest Gold	111	Woodgrain
103	Muted Beige	106	Light Ash	109	Cherry Red		

## 7-LINE, PUSHBUTTON DIAL, HANDSFREE TELEPHONES

### CIRCUIT LABELS

**1. GENERAL**

**1.01** This document covers the 7-line, pushbutton dial, handsfree telephones. (See Figure 1.) Circuit labels for 7-line, pushbutton dial, handsfree telephones are included. (See Table A.)



AW 86-357

**Figure 1: 7-Line, Pushbutton Dial, Handsfree Telephone**

**1.02** This section is reissued to provide new circuit labels for the following 7-line, pushbutton dial, handsfree telephones:

- (a) Model 2842, Type 42
- (b) Model 2842, Type 76

**1.03** For additional information on description and installation of the telephones, refer to Section 50-842-103. A replacement parts list and an exploded-view drawing for the telephones are contained in Section 50-842-104. Related documents of the ITT Telephone Apparatus Practices Manual provide information on components.

**1.04** The Model 2842 handsfree telephones are identified by a code number stamped in ink on the bottom of the base plate. Refer to Section 50-842-103 of the ITT Telephone Apparatus Practices Manual for ordering information and an explanation of each code number.

**1.05** The Model 2842 handsfree telephones are 7-line, pushbutton dial, anti-sidetone type units that operate efficiently over a wide range of loop resistances and line impedances. They offer the advantage of handsfree application and are designed to be used with key systems, such as the ITT 1A2 System, where several telephones have access to the same CO/PBX lines or intercom lines.

**1.06** Handsfree telephones are equipped with a microphone and loudspeaker that combine with the telephone circuitry to permit their use without having to hold the handset. This feature may be switched ON or OFF. When OFF, the telephone is used in the normal manner. When ON, a user may converse on the telephone from any direction at a distance of several feet.

**TABLE A**  
**LIST OF CIRCUIT LABELS**

MODEL NO	TYPE NO	FIGURE NO
2842	42	2
2842	76	3

AW 86-331

2842CL (BA/LR) 42M TYPE TELEPHONE CIRCUIT

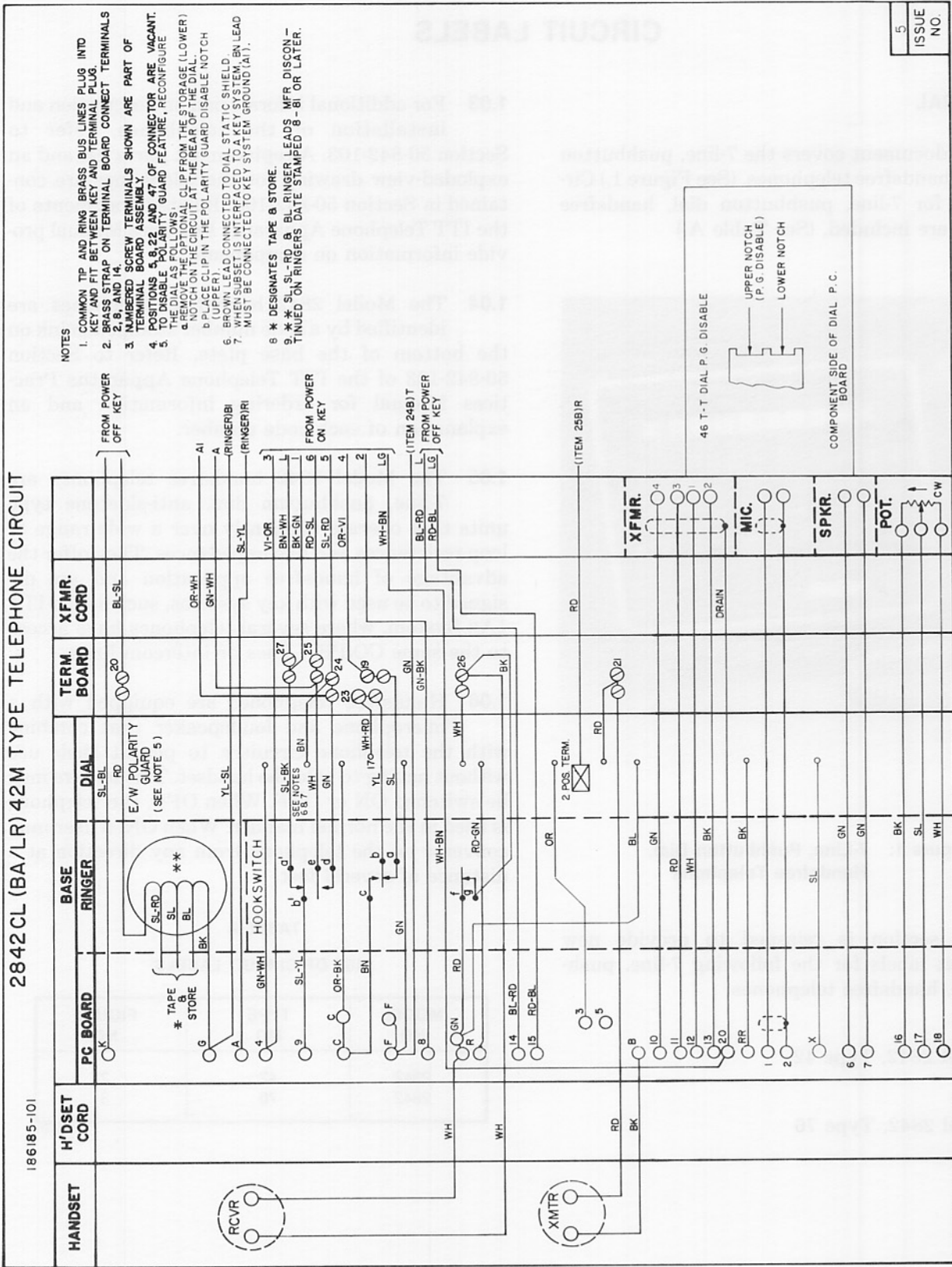


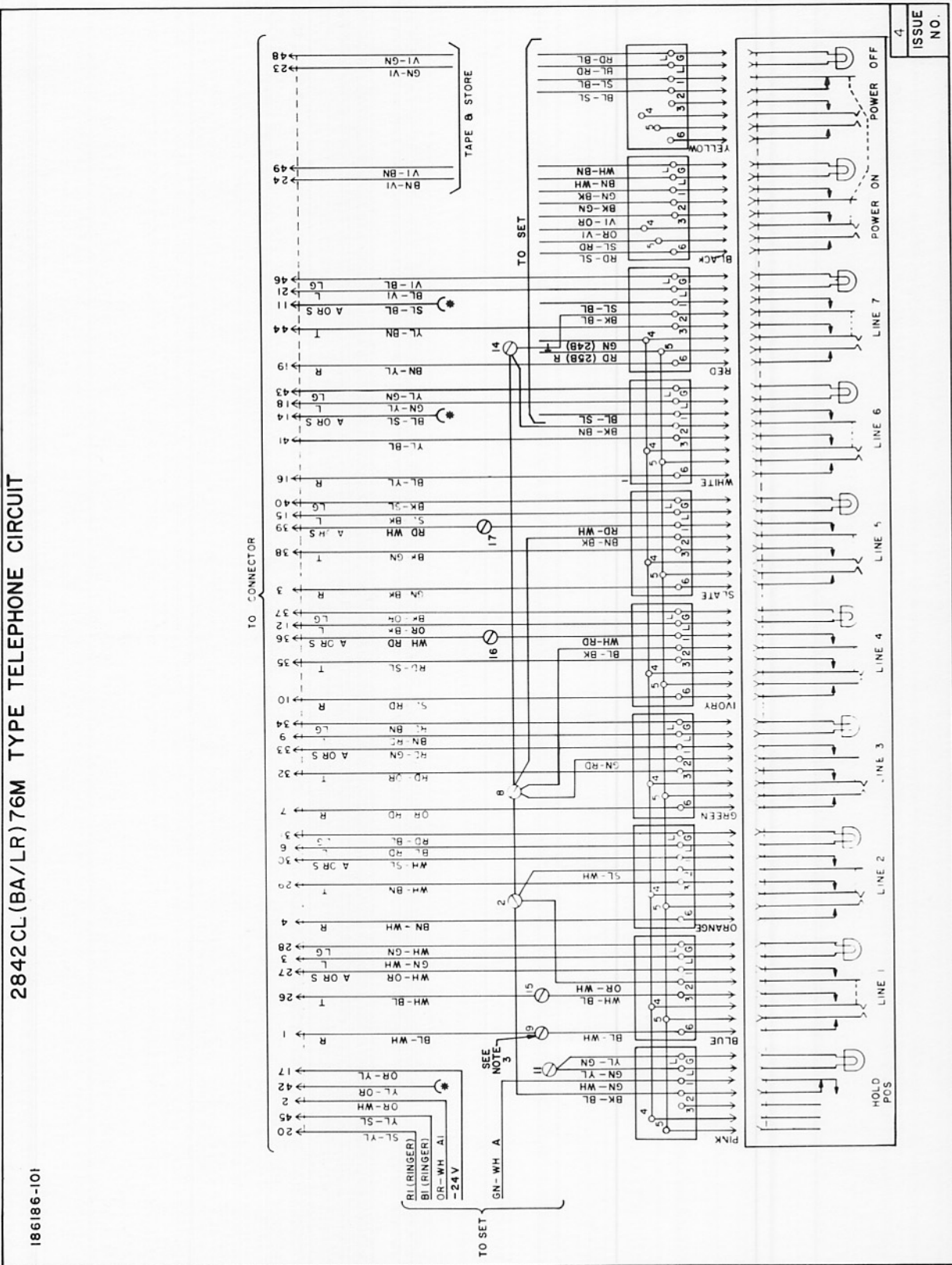
Figure 2: Circuit Label, Model 2842 Type 42 (Sheet 1 of 2)





2842CL(BA/LR)76M TYPE TELEPHONE CIRCUIT

186186-101



ISSUE NO. 4

Figure 3: Circuit Label, Model 2842 Type 76 (Sheet 2 of 2)

# 17-LINE, ROTARY DIAL, HANDSFREE TELEPHONES

## GENERAL DESCRIPTION

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AW 82-373

Figure 1: 17-Line, Rotary Dial, Handsfree Telephone

### 1. GENERAL DESCRIPTION

**1.01** This document covers the 17-line, rotary dial, handsfree telephone. (See Figure 1.) A general description plus information peculiar to 17-line, rotary dial, handsfree telephones is included.

**1.02** This section is reissued to reflect changes in the 17-line, rotary dial, handsfree telephone and to incorporate the changes listed in the Telephone Apparatus Practices Change Notice, Section 11-510-100. Whenever this section is reissued, reason for reissue will be listed in this paragraph.

**1.03** For additional information on replacement parts and for an exploded-view drawing for the telephones, refer to Section 50-843-101. The circuit labels appear in Section 50-843-102. Related documents of the ITT Telephone Apparatus Practices Manual provide information on components.

**1.04** The Model 843 handsfree telephones are 17-line, rotary dial, anti-sidetone type units that operate efficiently over a wide range of loop

resistances and line impedances. They offer the advantage of handsfree application and are designed to be used with key systems such as the ITT 1A2 System where several telephones have access to the same CO/PBX lines or intercom lines.

**1.05** The Model 843 handsfree telephones are identified by a code number stamped in ink on the bottom of the base plate. Refer to ordering information in Table A for an explanation of each code number.

**1.06** Handsfree telephones are equipped with a microphone and loudspeaker that combine with the telephone circuitry to permit their use without having to hold the handset. This feature may be switched ON or OFF. When OFF, the telephone is used in the normal manner. When ON, a user may converse on the telephone from any direction at a distance of several feet.

**1.07** There are twenty pushbutton keys on the telephone. The red key on the far left is used as a hold key and allows any selected line or trunk to be placed in a hold condition. The seven pickup keys to the right of the hold key are used for CO/PBX lines or intercom lines. The two keys to the right of these seven line keys are used for ON and OFF con-

TABLE A  
ORDERING INFORMATION – TELEPHONES

CODE NUMBERS									
TELEPHONE CODE NUMBERS ARE FORMED IN SIX STEPS AS FOLLOWS:									
<div style="display: flex; justify-content: space-around; margin-bottom: 10px;"> <span>843</span> <span>15</span> <span>O</span> <span>BA</span> <span>42</span> <span>M</span> </div> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>(1) Type Of Instrument (See Part 1) _____</p> <p>(2) Color (See Part 2) _____</p> <p>(3) Version (See Part 3) _____</p> <p>(4) Ringer (See Part 4) _____</p> <p>(5) Special Feature (See Part 5) _____</p> <p>(6) Dial (See Part 6) _____</p> </div> <div style="width: 5%; text-align: center;"> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> </div> </div>									
PART 1 TYPE OF INSTRUMENT									
CODE	DESCRIPTION	COLOR OFFERED	VERSION OFFERED	RINGER OFFERED	FEATURE OFFERED	DIAL OFFERED			
843	17-Line, Handsfree, Rotary Dial, Desk Telephone	00, 05, 13, 15, 44 And 45 (Available On All Models)	O	BA	42, 76	M			
843	17-Line, Handsfree, Rotary Dial, Desk Telephone		M	BA	42, 76	M			
REFER TO INDIVIDUAL UNIT DESCRIPTION FOR COMPLETE DESCRIPTION OF FEATURE COMBINATIONS									
PART 2 COLORS		PART 3 VERSIONS		PART 4 RINGERS		PART 5 SPECIAL FEATURES		PART 6 DIALS	
CODE	COLORS	CODE	VERSIONS	CODE	RINGERS	CODE	SPECIAL FEATURES	CODE	DIALS
00	Black	O	Nonmodular	BA	Straight-Line	42	Equipped For Handsfree Operation 42 Combined With Automatic Exclusion And Release Button	M	Metropolitan (Letters & Numerals)
05	Moss Green					76			
13	Beige	M	Full-Modular (With Handset Cord)						
15	White								
44	Light Ash								
45	Cocoa Brown								

AW 84-786

trol of the handsfree equipment. The remaining ten keys are used for CO/PBX lines or intercom lines.

**Warning:** On the Model 843 telephones equipped with the 76 exclusion feature, the last three pickup keys on the key strip are reserved for intercom lines. Since damage to the exclusion circuit may result if a pickup key with the A lead connected is used for intercom, the A leads are taped and stored inside the telephone. By connecting the A lead, modifications may be made to these pickup keys to enable their use for different applications such as CO/PBX lines or intercom lines in a system where the A lead may be connected.

**1.08** A lamp beneath each of the seventeen pickup keys indicates the status of the associated line. (See Table B.)

**1.09** The Model 843 telephones are available as nonmodular or full-modular versions. These versions are designated by a code letter that is placed in front of the ringer code letters in the order number of the telephone. (Refer to Table A.)

**1.10** Nonmodular version desk telephones include a hard-wired handset cord. This version is designated by the code letter O.

**1.11** Full-modular version desk telephones are available with a modular handset cord. The full-modular desk telephones are equipped with jacks to accept the plugs of a modular handset cord. The full-modular version of the telephone with a modular handset cord, terminated on each end with modular plugs, is designated by the code letter M.

TABLE B  
LINE KEY SIGNALS

CONDITION	LAMP INDICATION
Idle	Lamp Dark
Busy	Lamp Lit
Hold	Lamp Winking
Call Incoming	Lamp Flashing

AW 84-658

1.12 The Model 843 telephones are described in the following paragraphs. The circuit labels for these telephones are contained in Section 50-843-102.

#### MODEL 843\*\* ( ) 42

1.13 The Model 843\*\* ( ) 42 is a standard 17-line, rotary dial, handsfree telephone. The microphone and loudspeaker, which are mounted inside the telephone, combine with the telephone circuitry to provide for handsfree application. This telephone is equipped with a 100-conductor mounting cord fitted with two 50-pin male connectors.

#### MODEL 843\*\* ( ) 76

1.14 The Model 843\*\* ( ) 76 is the same as the Model 843\*\* ( ) 42 except it is equipped with an automatic exclusion (privacy) circuit and a release button. Where this feature is used, all telephones in the key system must provide the exclusion circuit and release button.

## 2. INSTALLATION

2.01 Since these telephones are equipped with a connector-terminated mounting cord, installation consists of inserting the connectors into the jacks at the station connecting block and pressing to engage them. For specific wiring information, refer to the appropriate circuit label in Section 50-843-102. Cable connections for 17-line, handsfree telephones with feature code 42 are listed in Table C. Cable connections for 17-line, handsfree telephones with feature code 76 that differ from those listed in Table C are listed in Table D.

2.02 The power transformer provided with the telephone must be connected to the four-conductor power cord of the telephone and plugged

into a standard 110 VAC service outlet. Terminals are provided inside the telephone for connecting wiring if additional cord length is required. The four-conductor power cord with leads colored WH, BK, RD, and GN must be connected to the transformer terminals designated WH, BK, RD, and GN. The WH lead of the power cord connects to terminal WH of the transformer, the BK lead connects to terminal BK, the RD lead connects to terminal RD, and the GN lead connects to terminal GN.

*Note:* The transformer supplies power to the handsfree circuitry. Normal telephone operation using the handset is possible without the transformer.

## 3. MAINTENANCE

3.01 For replacement parts information and for an exploded-view drawing of major assembly groups, refer to Section 50-843-101.

## 4. OPERATION

4.01 To place or answer a call in the handsfree mode, press the ON key. The ON key lamp is lit while the handsfree circuit is enabled. The ON key may be released only by pressing the OFF key.

4.02 When the telephone is in the handsfree mode, going off-hook inhibits the handsfree circuit and permits conversation using the handset. The ON key lamp will stay lit. Replacing the handset reactivates the handsfree circuit and returns the telephone to handsfree operation until the OFF key is pressed.

4.03 To prevent the distant party from hearing local conversation during handsfree operation, press the hold key. The hold key will release when the line pickup key is pressed again.

4.04 A lamp located in the OFF key acts as a visual transmit and receive indicator. The lamp is lit when the handsfree circuit is in the transmit mode and is dark when the circuit is in the receive mode. The lamp remains dark when the handsfree circuit is off.

4.05 The loudspeaker volume control is located underneath the right side of the telephone. Since the volume must be balanced to compensate for local noise level, this control also affects the performance of the telephone. Clipping or chopping of speech caused by excessive background noise may

TABLE C  
CABLE CONNECTIONS FOR 17-LINE  
HANDSFREE TELEPHONES  
(FEATURE CODE 42)

LINES 1 THROUGH 6				LINES 7 THROUGH 13				LINES 14 THROUGH 19			
TELEPHONE TERMINAL	LEAD COLOR	LEAD DESIG	CONNECTOR TERMINAL	TELEPHONE TERMINAL	LEAD COLOR	LEAD DESIG	CONNECTOR TERMINAL	TELEPHONE TERMINAL	LEAD COLOR	LEAD DESIG	CONNECTOR TERMINAL
Line 1 (Blue Plug)	WH-BL	T	26	Line 7 (Red Plug)	YL-BN	T	44	Line 14 (Slate Plug)	BK-GN	T	38
	BL-WH	R	1		BN-YL	R	19		GN-BK	R	13
	WH-OR	A Or S	27		BL-BK	A Or S	11		BK-BN	A Or S	39
	WH-GN	LG	28		VI-BL	LG	46		BK-SL	LG	40
	GN-WH	L	3		BL-VI	L	21		SL-BK	L	15
Line 2 (Orange Plug)	WH-BN	T	29	10 G A 15 6	OR-WH	A1	2	Line 15 (White Plug)	YL-BL	T	41
	BN-WH	R	4		YL-SL	B1	45		BL-YL	R	16
	WH-SL	A Or S	30		SL-YL	R1	20		BN-BK	A Or S	14
	RD-BL	LG	31		YL-OR	BL, AG, Or Spare	42		YL-GN	LG	43
	BL-RD	L	6		OR-YL	SG, LK, Or Spare	17		GN-YL	L	18
Line 3 (Green Plug)	RD-OR	T	32	Line 10 (Blue Plug)	WH-BL	T	26	Line 16 (Red Plug)	YL-BN	T	44
	OR-RD	R	7		BL-WH	R	1		BN-YL	R	19
	RD-GN	A Or S	33		WH-OR	A Or S	27		BL-BK	A Or S	11
	RD-BN	LG	34		WH-GN	LG	28		VI-BL	LG	46
	BN-RD	L	9		GN-WH	L	3		BL-VI	L	21
Line 4 (Ivory Plug)	RD-SL	T	35	Line 11 (Orange Plug)	WH-BN	T	29	Line 17 (Black Plug)	VI-OR	T	47
	SL-RD	R	10		BN-WH	R	4		OR-VI	R	22
	BK-BL	A Or S	36		WH-SL	A Or S	30		GN-RD	A Or S	8
	BK-OR	LG	37		RD-BL	LG	31		VI-BN	LG	49
	OR-BK	L	12		BL-RD	L	6		BN-VI	L	24
Line 5 (Slate Plug)	BK-GN	T	38	Line 12 (Green Plug)	RD-OR	T	32	Line 18 (Yellow Plug)	VI-SL	T	50
	GN-BK	R	13		OR-RD	R	7		SL-VI	R	25
	BK-BN	A Or S	39		RD-GN	A Or S	33		SL-WH	A Or S	5
	BK-SL	LG	40		RD-BN	LG	34		VI-GN	LG	48
	SL-BK	L	15		BN-RD	L	9		GN-VI	L	23
Line 6 (White Plug)	YL-BL	T	41	Line 13 (Ivory Plug)	RD-SL	T	35	Line 19 (Violet Plug)	YL-SL	T	45
	BL-YL	R	16		SL-RD	R	10		SL-YL	R	20
	BN-BK	A Or S	14		BK-BL	A Or S	36		OR-WH	A Or S	2
	YL-GN	LG	43		BK-OR	LG	37		YL-OR	LG	42
	GN-YL	L	18		OR-BK	L	12		OR-YL	L	17

## NOTES:

1. The YL-OR and OR-YL leads are spare leads and are taped and stored inside the telephone.
2. The designation S indicates that the lead provides an individual signal ground.

AW 84 659

be controlled by increasing the volume. Volume is increased by rotating the volume control clockwise. If the voice being received is too loud, the volume should be decreased by rotating the volume control counterclockwise. If the called party is also using handsfree equipment, mutual adjustment of the volume controls may be necessary. Usually, a comfortable talk and listen level will ensure proper performance.

**4.06** It is important to note that a telephone equipped with the exclusion feature, which has been modified for trunk-to-trunk conferencing, can override its exclusion circuit and pick up a line with a call in progress.

*Note:* Handsfree telephones may be subject to some types of radio frequency interference.

## 5. BUTTON CONVERSIONS

**5.01** Any pickup key may be converted to signaling mode by removing the slotted head pin from the plunger shank. The slotted head pin is removed by being turned clockwise.

## 6. BUZZER INSTALLATION

**6.01** A buzzer may be installed as the signaling device of the telephone to be signaled. The buzzer may be installed on the dial mounting bracket or may be externally mounted. For telephones with feature code 42, the buzzer leads must be connected to the OR-YL and YL-OR leads inside the telephone. These leads are spare and can be found taped and stored inside the telephone. For telephones with feature code 76, a spare lead (BN-

TABLE D  
SPECIAL CABLE CONNECTIONS FOR

## 17-LINE HANDSFREE TELEPHONES (FEATURE CODE 76)

TELEPHONE TERMINAL	LEAD COLOR	LEAD DESIG	CONNECTOR TERMINAL
6	OR-YL	-24 VDC	17
Line 16 (Red Plug)	WH-RD	A Or S	11
Line 17 (Black Plug)	RD-WH	A Or S	8
Line 18 (Yellow Plug)	BL-SL	A Or S	5
Line 19 (Violet Plug)	SL-BL	A Or S	2

## NOTE:

This table lists those connections that differ from the connections for feature code 42 telephones shown in Table C.

AW 84-660

VI) is used instead of the OR-YL lead (provided the proper station cross-connections are made). Low voltage buzzers (6 to 40 VAC) or high voltage buzzers (105 VAC) may be selected for this use. (See Figure 2.)

**6.02** A buzzer may also be used in place of the ringer. A 105 VAC buzzer must be provided. The ringer leads are removed and replaced by the buzzer leads.

## 7. DESIGNATION TABS

**7.01** Designation tabs are included with each telephone. These tabs are installed by removing the cap from each key, placing the tab in the cap, and reinstalling the cap. The caps are removed by squeezing the sides of the cap and lifting. Note that locking surfaces are located on the right and left sides of the caps and keys. These locking surfaces must align properly.

## 8. GROUNDING PUSHBUTTON

**8.01** Modifications are made to line 7 of the telephone if a grounding pushbutton is required. A grounding pushbutton is required in some PBX applications for transferring calls, originating calls

during a power failure, or other special functions. Modifications for converting line 7 to a grounding pushbutton are as follows:

- (a) Modify the button to nonlocking operation by removing the interlock pin from the line 7 plunger.
- (b) Cross-connect from the BL-BK lead to the PBX connection for the desired function.

*Note:* Ground is provided on the BK-BL (A1) lead by the key system. (No cross-connect is necessary for this lead.)

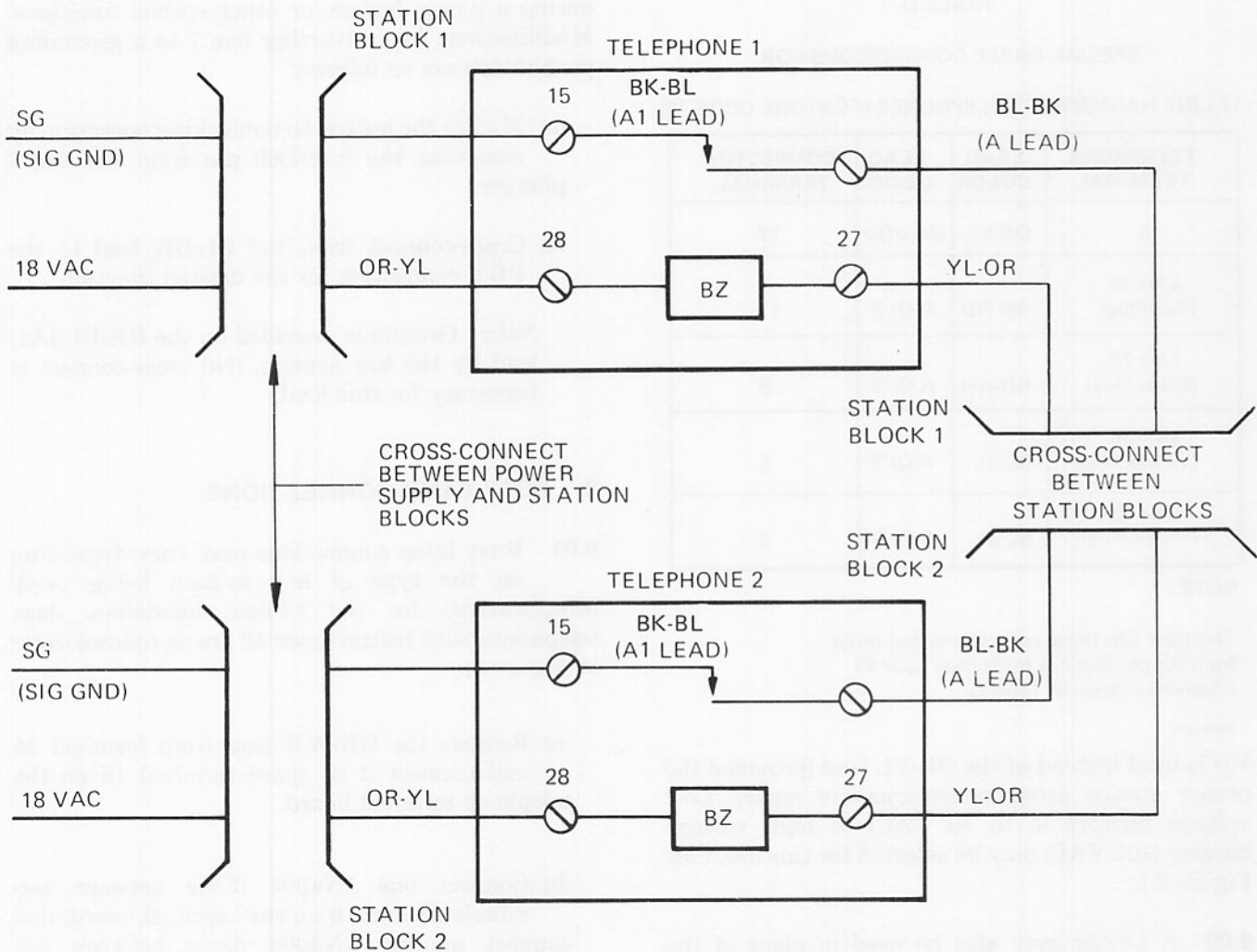
## 9. BUSY LAMP CONNECTIONS

**9.01** Busy lamp connections may vary depending on the type of key system being used. Modifications for the 17-line, handsfree, desk telephones with feature code 42 are as follows (refer to Figure 3):

- (a) Remove the GN-WH lead from terminal 25 and connect it to spare terminal 16 on the telephone terminal board.
- (b) Connect one 1N4004 diode between terminals 25 and 16 on the terminal board, and connect another 1N4004 diode between terminals 25 and 17 on the terminal board as shown in Figure 3.
- (c) Connect the OR-YL mounting cord lead to terminal 17 on the terminal board.

**9.02** Special busy lamp connections are required for telephones equipped with an exclusion circuit. Modifications for the 17-line, handsfree, desk telephones with feature code 76 are as follows (refer to Figure 4):

- (a) Connect one 1N4004 diode from terminal 25 to terminal 16 on the telephone terminal board as shown in Figure 4.
- (b) Connect any spare lead (BN-VI) to terminal 16 on the telephone terminal board. (Proper station cross-connections must be made to allow the use of a spare lead.)

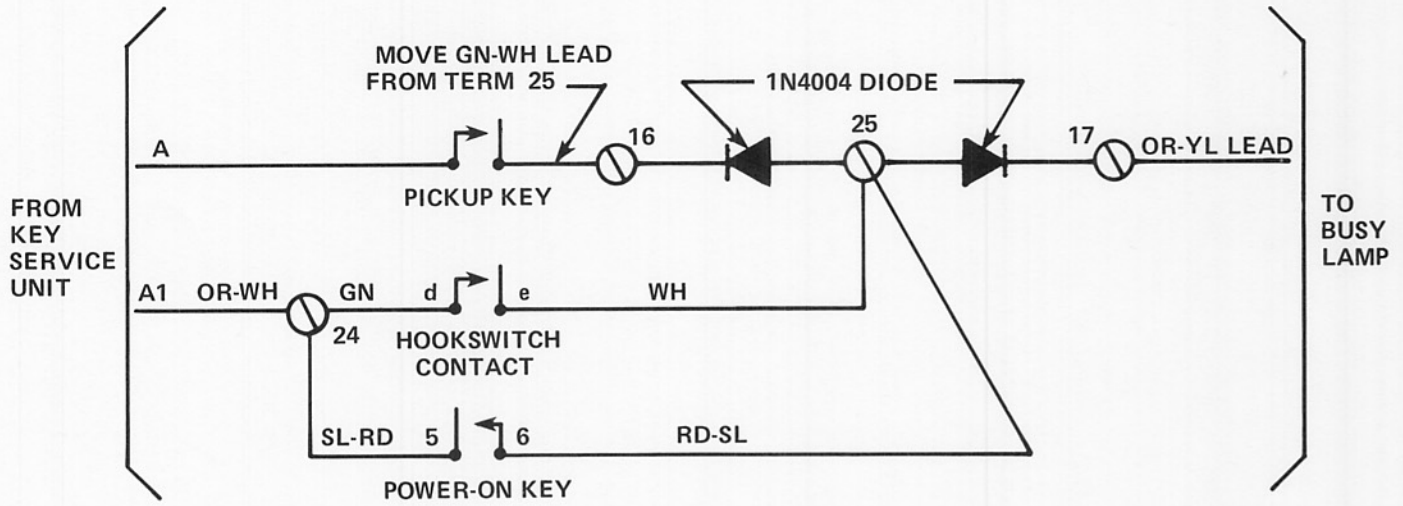


NOTES:

1. THE ARRANGEMENT SHOWN IS USING LINE 7 OF A TELEPHONE WITH FEATURE CODE 42 AS AN EXAMPLE. IF ANOTHER LINE IS USED, SUBSTITUTE THE APPROPRIATE A1 AND A LEADS FOR THAT LINE.
2. IN THE 17-LINE HANDSFREE TELEPHONE, GROUND IS CONNECTED TO TERMINAL 14 (BK-BL). NO CROSS-CONNECT IS NECESSARY FOR THIS LEAD.
3. FOR TELEPHONES WITH FEATURE CODE 76, A SPARE LEAD SUCH AS BN-VI IS USED INSTEAD OF THE OR-YL LEAD (PROVIDED THE PROPER STATION CROSS-CONNECTIONS ARE MADE).

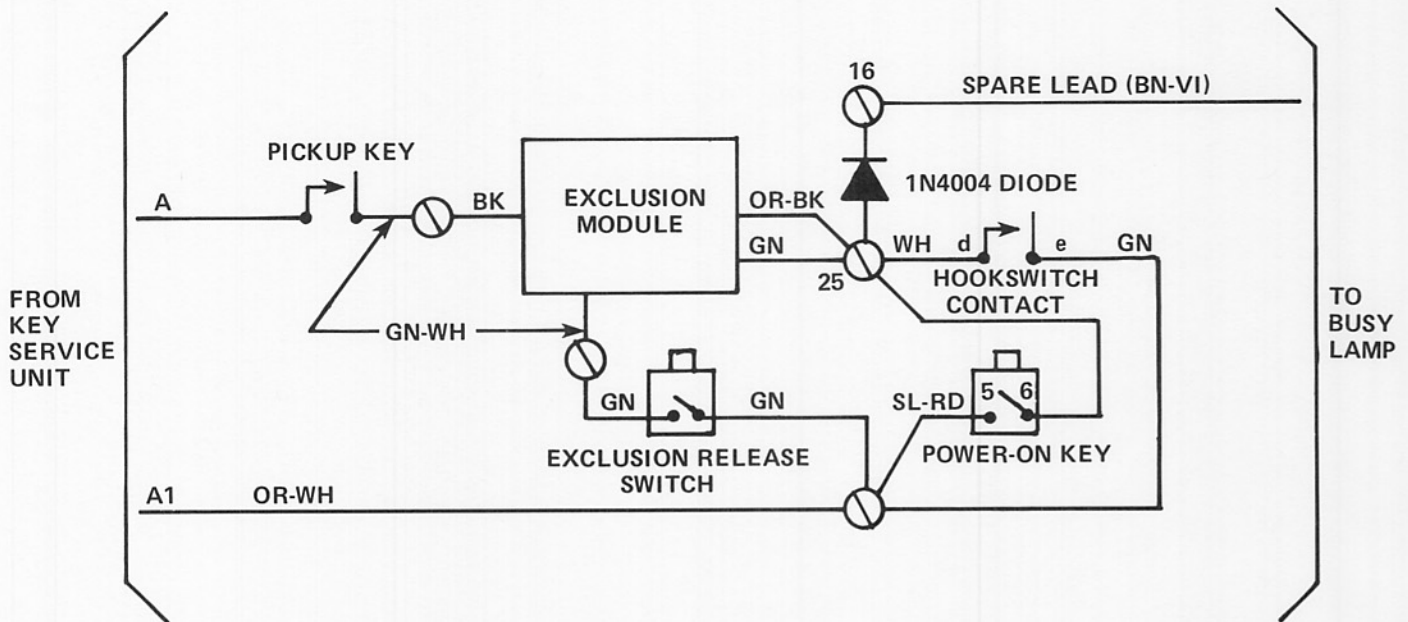
AW 82-573

Figure 2: Typical Circuit Diagram for Signal Buzzer



AW 82-574

Figure 3: Busy Lamp Connections for 17-Line, Handsfree Telephones with Feature Code 42



AW 82-575

Figure 4: Busy Lamp Connections for 17-Line, Handsfree Telephones with Feature Code 76

## 17-LINE, ROTARY DIAL, HANDSFREE TELEPHONES

### REPLACEMENT PARTS

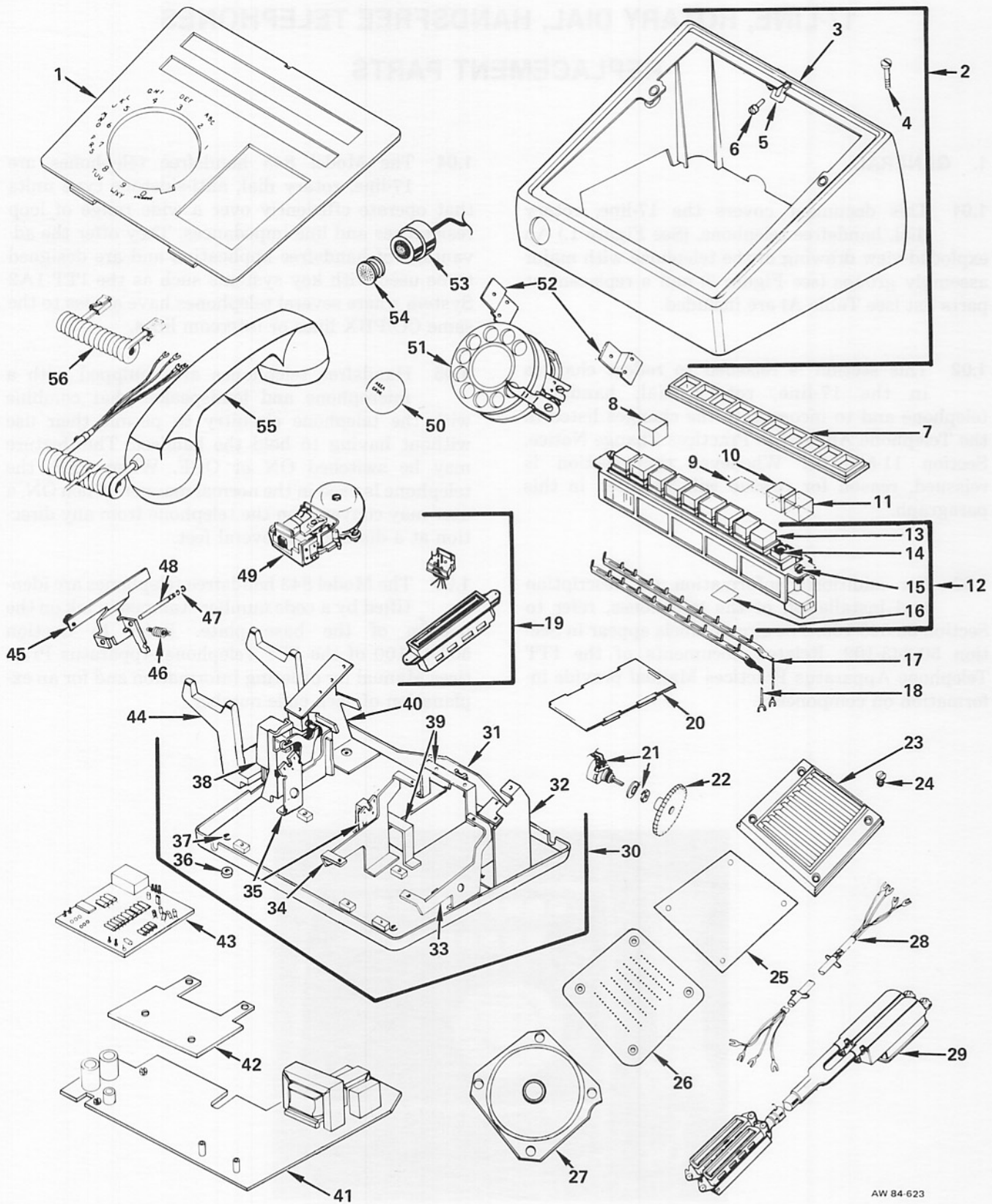
#### 1. GENERAL

- 1.01** This document covers the 17-line, rotary dial, handsfree telephone. (See Figure 1.) An exploded-view drawing of the telephone with major assembly groups (see Figure 2) and a replacement parts list (see Table A) are included.
- 1.02** This section is reissued to reflect changes in the 17-line, rotary dial, handsfree telephone and to incorporate the changes listed in the Telephone Apparatus Practices Change Notice, Section 11-510-100. Whenever this section is reissued, reason for reissue will be listed in this paragraph.
- 1.03** For additional information on description and installation of the telephones, refer to Section 50-843-100. The circuit labels appear in Section 50-843-102. Related documents of the ITT Telephone Apparatus Practices Manual provide information on components.
- 1.04** The Model 843 handsfree telephones are 17-line, rotary dial, anti-sidetone type units that operate efficiently over a wide range of loop resistances and line impedances. They offer the advantage of handsfree application and are designed to be used with key systems such as the ITT 1A2 System where several telephones have access to the same CO/PBX lines or intercom lines.
- 1.05** Handsfree telephones are equipped with a microphone and loudspeaker that combine with the telephone circuitry to permit their use without having to hold the handset. This feature may be switched ON or OFF. When OFF, the telephone is used in the normal manner. When ON, a user may converse on the telephone from any direction at a distance of several feet.
- 1.06** The Model 843 handsfree telephones are identified by a code number stamped in ink on the bottom of the base plate. Refer to Section 50-843-100 of the ITT Telephone Apparatus Practices Manual for ordering information and for an explanation of each code number.



AW 82-373

Figure 1: 17-Line, Rotary Dial, Handsfree Telephone



AW 84-623

Figure 2: 17-Line, Rotary Dial, Handsfree Telephone, Exploded View

TABLE A  
REPLACEMENT PARTS LIST

INDEX NO	PART NUMBER	DESCRIPTION	QUANTITY USED	
			843/42	843/76
		17-Line, Handsfree, Rotary Dial, Desk Telephone	843/42	843/76
1	181791-***	Faceplate	1	—
1	182784-***	Faceplate	—	1
2	186080-0**	Housing Assembly	1	1
2	187916-0**	Housing Assembly, Full-Modular	1	1
3	186079-0**	Housing	1	1
3	187915-0**	Housing, Full-Modular	1	1
4	095992-102	Screw, Housing	2	2
5	181100-101	Spring, Latch	1	1
6	181289-101	Screw, Latch Spring	1	1
7	181287-101	Collar, Key Strip	2	2
8	181131-102	Cap, Red	1	1
9	181281-101	Tab, Key Designation (Strip Of 12)	2	2
10	181131-101	Cap, Clear	17	17
11	181131-103	Cap, Yellow	2	2
12	181901-101	Key Assembly (7 Lines)	1	1
12	181137-102	Key Assembly (10 Lines)	1	—
12	182661-101	Key Assembly (10 Lines)	—	1
13	181122-101	Button	20	20
14	000051-00A	Lamp	19	19
15	095992-102	Screw	4	4
16	181900-101	Tab, Key (ON/OFF)	1	1
17	181292-103	Strip, Contact (GN Wire, 7 Lines)	1	1
17	181292-101	Strip, Contact (GN Wire, 10 Lines)	1	1
18	181292-104	Strip, Contact (RD Wire, 7 Lines)	1	1
18	181292-102	Strip, Contact (RD Wire, 10 Lines)	1	1
19	181805-101	Cord, Internal	1	1
19	181155-101	Cord, Internal	1	—
19	182662-101	Cord, Internal	—	1
20	181290-101	Slide	1	1
21	181809-102	Control, Volume	1	1
22	181808-101	Knob, Volume Control	1	1
23	181795-201	Grill, Speaker	1	1
24	181892-101	Screw, Speaker Grill	4	4
25	181899-101	Cloth, Speaker Grill	1	1
26	181794-101	Plate, Speaker <sup>2</sup>	1	1
27	181898-101	Speaker, Assembly	1	1

TABLE A  
REPLACEMENT PARTS LIST (Cont)

INDEX NO	PART NUMBER	DESCRIPTION	QUANTITY USED	
			843/42	843/76
		17-Line, Handsfree, Rotary Dial, Desk Telephone	843/42	843/76
28	182930-101	Cord, Transformer	1	1
29	184355-102	Cord, Mounting (100-Conductor)	1	1
30	181811-102	Base Assembly	1	1
31	181141-103	Plate, Base	1	1
32	181253-101	Bracket, Key Right	1	1
33	181801-101	Bracket, Speaker Right	1	1
34	181800-101	Bracket, Speaker Left	1	1
35	181254-102	Bracket, Dial	2	2
36	182337-101	Foot	4	4
37	082486-102	Rivet, Foot	4	4
38	181810-101	Cradle Switch Assembly <sup>1</sup>	1	1
39	181255-101	Bracket, Plug	2	2
40	181150-103	Bracket, Key Left	1	1
41	185889-101	PC Board Assembly	1	1
42	181804-102	Terminal Board Assembly	1	1
43	182691-102	PC Board (Exclusion)	—	1
44	183105-101	Switch Hook Assembly	1	1
	182900-101	Cradle, Switch Hook	1	1
	181145-101	Screw, Switch Hook Cradle	3	3
	181297-102	Arm, Operating	1	1
	184198-101	Kit, Plastic Cradle (Replacement For Metal Cradle)	1	1
	183105-101	Switch Hook Assembly	1	1
	075307-104	Spring, Cradle Return	1	1
	181282-101	Shaft, Pivot	1	1
	073538-110	Ring, Retainer	1	1
	075307-104	Spring, Cradle Return	1	1
45	185488-101	Arm, Latch	1	1
46	181151-101	Spring, Latch Arm	1	1
47	073538-110	Ring, Retainer	2	2
48	181152-101	Pin, Pivot	1	1
49	000148-DBA	Ringer <sup>1</sup>	1	1
50	075415-101	Card, Number	1	1
51	003800-00H	Dial Assembly, Metropolitan (Letters And Numerals) <sup>1</sup>	1	1
52	181146-101	Bracket, Dial Adapter	2	2
53	186088-101	Microphone Assembly	1	1

TABLE A

## REPLACEMENT PARTS LIST (Cont)

INDEX NO	PART NUMBER	DESCRIPTION	QUANTITY USED	
			843/42	843/76
		17-Line, Handsfree, Rotary Dial, Desk Telephone	843/42	843/76
54	185893-0**	Grill, Microphone	1	1
55	0065**-0C2	Handset Assembly, Nonmodular <sup>1</sup>	1	1
55	0065**-0M2	Handset Assembly, Modular <sup>1</sup>	1	1
56	9018**-072	Cord, Handset, Modular	1	1
	600152-611 -001	Jack Assembly, Handset Cord, Modular (Not Shown)	1	1
	182990-105	Insulator Assembly, Modular (Not Shown)	1	1
	181768-101	Transformer (Not Shown)	1	1
	181971-104	Pushbutton, Exclusion Release (Not Shown)	—	1
	187944-101	Nameplate, ITT (Not Shown)	1	1

AW 84-773

## NOTES:

- <sup>1</sup> Refer to Component Parts Section of this manual for Assembly Parts List.
- <sup>2</sup> These products have been discontinued, but are included to provide a source of information for telephones still in service.
- \*\* Substitute 2-digit color code when ordering.
- \*\*\* Substitute 3-digit color code when ordering faceplate.

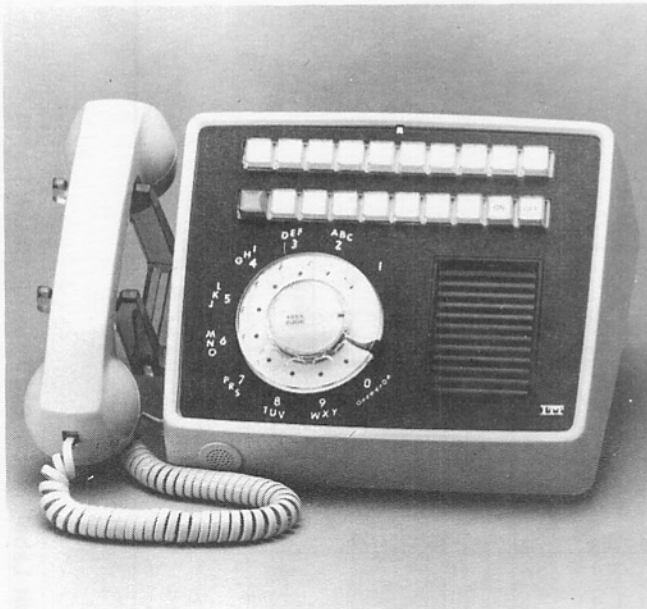
CODE	COLOR	CODE	COLOR	CODE	COLOR	CODE	COLOR
101	Charcoal	104	Light Gray	107	Cocoa Brown	110	Clear
102	Light Green	105	Burnt Orange	108	Harvest Gold	111	Woodgrain
103	Muted Beige	106	Light Ash	109	Cherry Red		

# 17-LINE, ROTARY DIAL, HANDSFREE TELEPHONES

## CIRCUIT LABELS

### 1. GENERAL

**1.01** This document covers the 17-line, rotary dial, handsfree telephones. (See Figure 1.) Circuit labels for 17-line, rotary dial, handsfree telephones are included. (See Table A.)



AW 86-358

**Figure 1:** 17-Line, Rotary Dial, Handsfree Telephone

**1.02** This section is reissued to provide new circuit labels for the following 17-line, rotary dial, handsfree telephones:

- (a) Model 843, Type 42
- (b) Model 843, Type 76

**1.03** For additional information on description and installation of the telephones, refer to Section 50-843-100. A replacement parts list and an

exploded-view drawing for the telephones are contained in Section 50-843-101. Related documents of the ITT Telephone Apparatus Practices Manual provide information on components.

**1.04** The Model 843 handsfree telephones are identified by a code number stamped in ink on the bottom of the base plate. Refer to Section 50-843-100 of the ITT Telephone Apparatus Practices Manual for ordering information and an explanation of each code number.

**1.05** The Model 843 handsfree telephones are 17-line, rotary dial, anti-sidetone type units that operate efficiently over a wide range of loop resistances and line impedances. They offer the advantage of handsfree application and are designed to be used with key systems, such as the ITT 1A2 System, where several telephones have access to the same CO/PBX lines or intercom lines.

**1.06** Handsfree telephones are equipped with a microphone and loudspeaker that combine with the telephone circuitry to permit their use without having to hold the handset. This feature may be switched ON or OFF. When OFF, the telephone is used in the normal manner. When ON, a user may converse on the telephone from any direction at a distance of several feet.

TABLE A

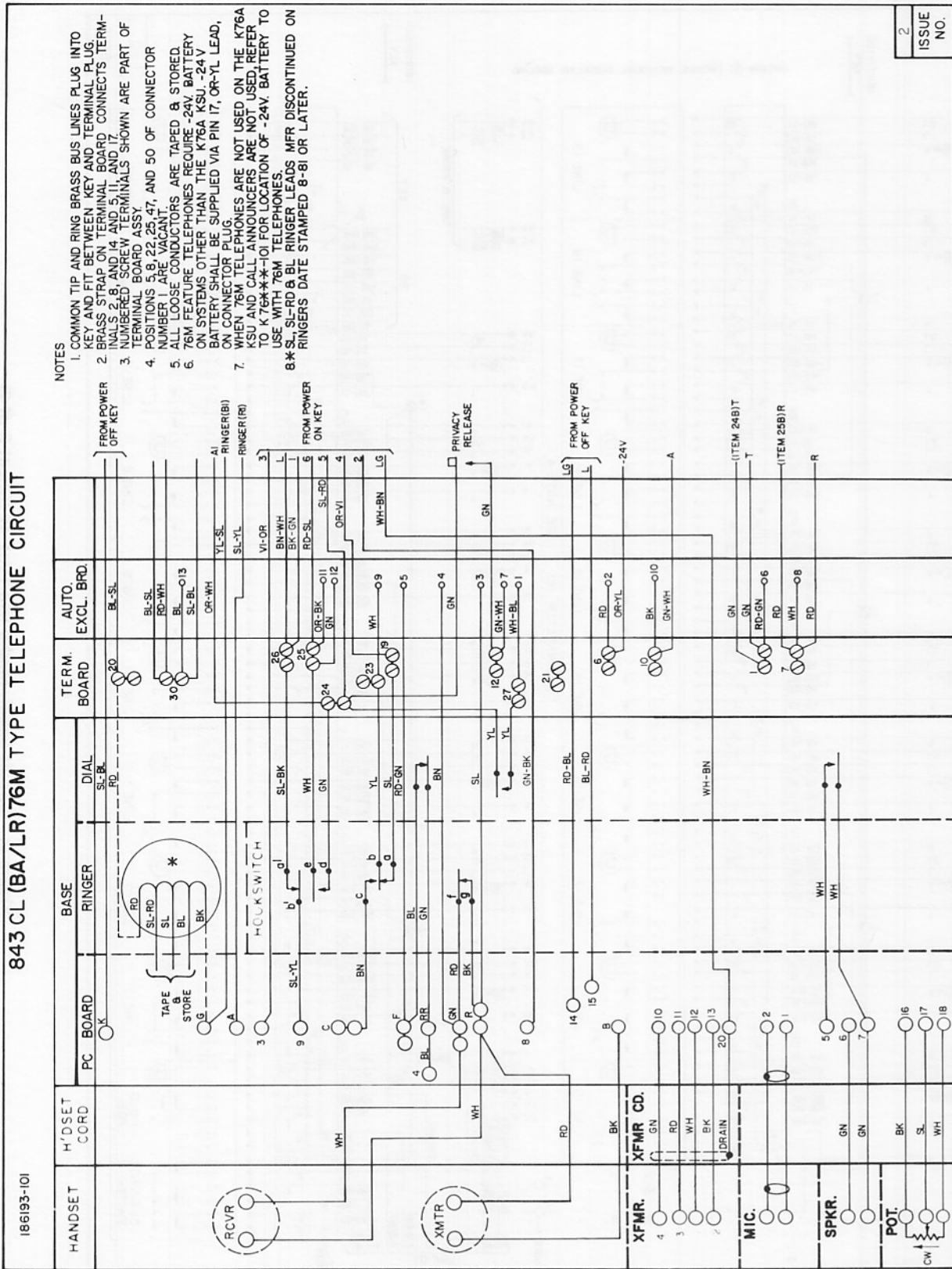
LIST OF CIRCUIT LABELS

MODEL NO	TYPE NO	FIGURE NO
843	42	2
843	76	3

AW 86-330







2  
ISSUE NO.

Figure 3: Circuit Label, Model 843 Type 76 (Sheet 1 of 2)



# 17-LINE, PUSHBUTTON DIAL, HANDSFREE TELEPHONES

## GENERAL DESCRIPTION

	CONTENTS	PAGE
1.	GENERAL DESCRIPTION .....	1
	MODEL 2843** ( ) 42 .....	3
	MODEL 2843** ( ) 76 .....	3
2.	INSTALLATION .....	3
3.	MAINTENANCE .....	3
4.	OPERATION .....	3
5.	BUTTON CONVERSIONS .....	4
6.	BUZZER INSTALLATION .....	4
7.	DESIGNATION TABS .....	5
8.	GROUNDING PUSHBUTTON .....	5
9.	BUSY LAMP CONNECTIONS .....	5



AW 82-462

Figure 1: 17-Line, Pushbutton Dial, Handsfree Telephone

### 1. GENERAL DESCRIPTION

**1.01** This document covers the 17-line, pushbutton dial, handsfree telephone. (See Figure 1.) A general description plus information peculiar to 17-line, pushbutton dial, handsfree telephones is included.

**1.02** This section is reissued to reflect changes in the 17-line, pushbutton dial, handsfree telephone and to incorporate the changes listed in the Telephone Apparatus Practices Change Notice, Section 11-510-100. Whenever this section is reissued, reason for reissue will be listed in this paragraph.

**1.03** For additional information on replacement parts and for an exploded-view drawing for the telephones, refer to Section 50-843-104. The circuit labels appear in Section 50-843-105. Related documents of the ITT Telephone Apparatus Practices Manual provide information on components.

**1.04** The Model 2843 handsfree telephones are 17-line, pushbutton dial, anti-sidetone type units that operate efficiently over a wide range of loop resistances and line impedances. They offer the advantage of handsfree application and are designed to be used with key systems such as the ITT 1A2 System where several telephones have access to the same CO/PBX lines or intercom lines.

**1.05** The Model 2843 handsfree telephones are identified by a code number stamped in ink on the bottom of the base plate. Refer to ordering information in Table A for an explanation of each code number.

**1.06** Handsfree telephones are equipped with a microphone and loudspeaker that combine with the telephone circuitry to permit their use without having to hold the handset. This feature may be switched ON or OFF. When OFF, the telephone is used in the normal manner. When ON, a user may converse on the telephone from any direction at a distance of several feet.

**1.07** There are twenty pushbutton keys on the telephone. The red key on the far left is used as a hold key and allows any selected line or trunk to be placed in a hold condition. The seven pickup keys

TABLE A  
ORDERING INFORMATION – TELEPHONES

CODE NUMBERS									
TELEPHONE CODE NUMBERS ARE FORMED IN SIX STEPS AS FOLLOWS:									
(1) Type Of Instrument (See Part 1)	2843	15	O	BA	42	M			
(2) Color (See Part 2)									
(3) Version (See Part 3)									
(4) Ringer (See Part 4)									
(5) Special Feature (See Part 5)									
(6) Dial (See Part 6)									
PART 1 TYPE OF INSTRUMENT									
CODE	DESCRIPTION	COLOR OFFERED	VERSION OFFERED	RINGER OFFERED	FEATURE OFFERED	DIAL OFFERED			
2843	17-Line, Handsfree, Push-button Dial, Desk Telephone	00, 05, 13, 15, 44, And 45 (Available On All Models)	O	BA	42, 76	M, R			
2843	17-Line, Handsfree, Push-button Dial, Desk Telephone		M	BA	42, 76	M			
REFER TO INDIVIDUAL UNIT DESCRIPTION FOR COMPLETE DESCRIPTION OF FEATURE COMBINATIONS									
PART 2 COLORS		PART 3 VERSIONS		PART 4 RINGERS		PART 5 SPECIAL FEATURES		PART 6 DIALS	
CODE	COLORS	CODE	VERSIONS	CODE	RINGERS	CODE	SPECIAL FEATURES	CODE	DIALS
00	Black	O	Nonmodular	BA	Straight-Line	42	Equipped For Handsfree Operation	M	Metropolitan (Letters & Numerals)
05	Moss Green								
13	Beige	M	Full-Modular (With Handset Cord)			76	42 Combined With Automatic Exclusion And Release button	R	Regular (Numerals Only)
15	White								
44	Light Ash								
45	Cocoa Brown								

AV 84 767

to the right of the hold key are used for CO/PBX lines or intercom lines. The two keys to the right of these seven line keys are used for ON and OFF control of the handsfree equipment. The remaining ten keys are used for CO/PBX lines or intercom lines.

**Warning:** On the Model 2843 telephones equipped with the 76 exclusion feature, the last three pickup keys on the key strip are reserved for intercom lines. Since damage to the exclusion circuit may result if a pickup key with the A lead connected is used for intercom, the A leads are taped and stored inside the telephone. By connecting the A lead, modifications may be made to these pickup keys to enable their use for different applications such as CO/PBX lines or intercom lines in a system where the A lead may be connected.

1.08 A lamp beneath each of the seventeen pickup keys indicates the status of the associated line. (See Table B.)

1.09 The Model 2843 telephones are available as nonmodular or full-modular versions. These versions are designated by a code letter that is placed in front of the ringer code letters in the order number of the telephone. (Refer to Table A.)

1.10 Nonmodular version desk telephones include a hard-wired handset cord. This version is designated by the code letter O.

1.11 Full-modular version desk telephones are available with a modular handset cord. The full-modular desk telephones are equipped with jacks to accept the plugs of a modular handset cord. The full-modular version of the telephone with a modular handset cord, terminated on each end with modular plugs, is designated by the code letter M.

1.12 The Model 2843 telephones are described in the following paragraphs. The circuit labels for these telephones are contained in Section 50-843-105.

TABLE B  
LINE KEY SIGNALS

CONDITION	LAMP INDICATION
Idle	Lamp Dark
Busy	Lamp Lit
Hold	Lamp Winking
Call Incoming	Lamp Flashing

AW 84-658

### MODEL 2843\*\* ( ) 42

1.13 The Model 2843\*\* ( ) 42 is a standard 17-line, pushbutton dial, handsfree telephone. The microphone and loudspeaker, which are mounted inside the telephone, combine with the telephone circuitry to provide for handsfree application. This telephone is equipped with a 100-conductor mounting cord fitted with two 50-pin male connectors.

### MODEL 2843\*\* ( ) 76

1.14 The Model 2843\*\* ( ) 76 is the same as the Model 2843\*\* ( ) 42 except it is equipped with an automatic exclusion (privacy) circuit and a release button. Where this feature is used, all telephones in the key system must provide the exclusion circuit and release button.

## 2. INSTALLATION

2.01 Since these telephones are equipped with a connector-terminated mounting cord, installation consists of inserting the connectors into the jacks at the station connecting block and pressing to engage them. For specific wiring information, refer to the appropriate circuit label in Section 50-843-105. Cable connections for 17-line, handsfree telephones with feature code 42 are listed in Table C. Cable connections for 17-line, handsfree telephones with feature code 76 that differ from those listed in Table C are listed in Table D.

2.02 The power transformer provided with the telephone must be connected to the four-conductor power cord of the telephone and plugged into a standard 110 VAC service outlet. Terminals are provided inside the telephone for connecting wiring if additional cord length is required. The four-

conductor power cord with leads colored WH, BK, RD, and GN must be connected to the transformer terminals designated WH, BK, RD, and GN. The WH lead of the power cord connects to terminal WH of the transformer, the BK lead connects to terminal BK, the RD lead connects to terminal RD, and the GN lead connects to terminal GN.

*Note:* The transformer supplies power to the handsfree circuitry. Normal telephone operation using the handset is possible without the transformer.

## 3. MAINTENANCE

3.01 For replacement parts information and for an exploded-view drawing of major assembly groups, refer to Section 50-843-104.

## 4. OPERATION

4.01 To place or answer a call in the handsfree mode, press the ON key. The ON key lamp is lit while the handsfree circuit is enabled. The ON key may be released only by pressing the OFF key.

4.02 When the telephone is in the handsfree mode, going off-hook inhibits the handsfree circuit and permits conversation using the handset. The ON key lamp will stay lit. Replacing the handset reactivates the handsfree circuit and returns the telephone to handsfree operation until the OFF key is pressed.

4.03 To prevent the distant party from hearing local conversation during handsfree operation, press the hold key. The hold key will release when the line pickup key is pressed again.

4.04 A lamp located in the OFF key acts as a visual transmit and receive indicator. The lamp is lit when the handsfree circuit is in the transmit mode and is dark when the circuit is in the receive mode. The lamp remains dark when the handsfree circuit is off.

4.05 The loudspeaker volume control is located underneath the right side of the telephone. Since the volume must be balanced to compensate for local noise level, this control also affects the performance of the telephone. Clipping or chopping of speech caused by excessive background noise may be controlled by increasing the volume. Volume is increased by rotating the volume control clockwise.

TABLE C  
CABLE CONNECTIONS FOR 17-LINE  
HANDSFREE TELEPHONES  
(FEATURE CODE 42)

LINES 1 THROUGH 6				LINES 7 THROUGH 13				LINES 14 THROUGH 19			
TELEPHONE TERMINAL	LEAD COLOR	LEAD DESIG	CONNECTOR TERMINAL	TELEPHONE TERMINAL	LEAD COLOR	LEAD DESIG	CONNECTOR TERMINAL	TELEPHONE TERMINAL	LEAD COLOR	LEAD DESIG	CONNECTOR TERMINAL
Line 1 (Blue Plug)	WH-BL	T	26	Line 7 (Red Plug)	YL-BN	T	44	Line 14 (Slate Plug)	BK-GN	T	38
	BL-WH	R	1		BN-YL	R	19		GN-BK	R	13
	WH-OR	A Or S	27		BL-BK	A Or S	11		BK-BN	A Or S	39
	WH-GN	LG	28		VI-BL	LG	46		BK-SL	LG	40
	GN-WH	L	3		BL-VI	L	21		SL-BK	L	15
Line 2 (Orange Plug)	WH-BN	T	29	10 G A 15 6	OR-WH	A1	2	Line 15 (White Plug)	YL-BL	T	41
	BN-WH	R	4		YL-SL	B1	45		BL-YL	R	16
	WH-SL	A Or S	30		SL-YL	R1	20		BN-BK	A Or S	14
	RD-BL	LG	31		YL-OR	BL, AG, Or Spare	42		YL-GN	LG	43
	BL-RD	L	6		OR-YL	SG, LK, Or Spare	17		GN-YL	L	18
Line 3 (Green Plug)	RD-OR	T	32	Line 10 (Blue Plug)	WH-BL	T	26	Line 16 (Red Plug)	YL-BN	T	44
	OR-RD	R	7		BL-WH	R	1		BN-YL	R	19
	RD-GN	A Or S	33		WH-OR	A Or S	27		BL-BK	A Or S	11
	RD-BN	LG	34		WH-GN	LG	28		VI-BL	LG	46
	BN-RD	L	9		GN-WH	L	3		BL-VI	L	21
Line 4 (Ivory Plug)	RD-SL	T	35	Line 11 (Orange Plug)	WH-BN	T	29	Line 17 (Black Plug)	VI-OR	T	47
	SL-RD	R	10		BN-WH	R	4		OR-VI	R	22
	BK-BL	A Or S	36		WH-SL	A Or S	30		GN-RD	A Or S	8
	BK-OR	LG	37		RD-BL	LG	31		VI-BN	LG	49
	OR-BK	L	12		BL-RD	L	6		BN-VI	L	24
Line 5 (Slate Plug)	BK-GN	T	38	Line 12 (Green Plug)	RD-OR	T	32	Line 18 (Yellow Plug)	VI-SL	T	50
	GN-BK	R	13		OR-RD	R	7		SL-VI	R	25
	BK-BN	A Or S	39		RD-GN	A Or S	33		SL-WH	A Or S	5
	BK-SL	LG	40		RD-BN	LG	34		VI-GN	LG	48
	SL-BK	L	15		BN-RD	L	9		GN-VI	L	23
Line 6 (White Plug)	YL-BL	T	41	Line 13 (Ivory Plug)	RD-SL	T	35	Line 19 (Violet Plug)	YL-SL	T	45
	BL-YL	R	16		SL-RD	R	10		SL-YL	R	20
	BN-BK	A Or S	14		BK-BL	A Or S	36		OR-WH	A Or S	2
	YL-GN	LG	43		BK-OR	LG	37		YL-OR	LG	42
	GN-YL	L	18		OR-BK	L	12		OR-YL	L	17

## NOTES:

1. The YL-OR and OR-YL leads are spare leads and are taped and stored inside the telephone.
2. The designation S indicates that the lead provides an individual signal ground.

AW 84 659

If the voice being received is too loud, the volume should be decreased by rotating the volume control counterclockwise. If the called party is also using handsfree equipment, mutual adjustment of the volume controls may be necessary. Usually, a comfortable talk and listen level will ensure proper performance.

**4.06** It is important to note that a telephone equipped with the exclusion feature, which has been modified for trunk-to-trunk conferencing, can override its exclusion circuit and pick up a line with a call in progress.

*Note:* Handsfree telephones may be subject to some types of radio frequency interference.

## 5. BUTTON CONVERSIONS

**5.01** Any pickup key may be converted to signaling mode by removing the slotted head pin from the plunger shank. The slotted head pin is removed by being turned clockwise.

## 6. BUZZER INSTALLATION

**6.01** A buzzer may be installed as the signaling device of the telephone to be signaled. The buzzer may be installed on the dial mounting bracket or may be externally mounted. For telephones with feature code 42, the buzzer leads must be connected to the OR-YL and YL-OR leads inside the telephone. These leads are spare and can be found taped and stored inside the telephone. For

TABLE D  
SPECIAL CABLE CONNECTIONS FOR

17-LINE HANDSFREE TELEPHONES (FEATURE CODE 76)

TELEPHONE TERMINAL	LEAD COLOR	LEAD DESIG	CONNECTOR TERMINAL
6	OR-YL	-24 VDC	17
Line 16 (Red Plug)	WH-RD	A Or S	11
Line 17 (Black Plug)	RD-WH	A Or S	8
Line 18 (Yellow Plug)	BL-SL	A Or S	5
Line 19 (Violet Plug)	SL-BL	A Or S	2

**NOTE:**

This table lists those connections that differ from the connections for feature code 42 telephones shown in Table C.

AW 84-660

telephones with feature code 76, a spare lead (BN-VI) is used instead of the OR-YL lead (provided the proper station cross-connections are made). Low voltage buzzers (6 to 40 VAC) or high voltage buzzers (105 VAC) may be selected for this use. (See Figure 2.)

**6.02** A buzzer may also be used in place of the ringer. A 105 VAC buzzer must be provided. The ringer leads are removed and replaced by the buzzer leads.

## 7. DESIGNATION TABS

**7.01** Designation tabs are included with each telephone. These tabs are installed by removing the cap from the key, placing the tab in the cap, and reinstalling the cap. The caps are removed by squeezing the sides of the cap and lifting. Note that locking surfaces are located on the right and left sides of the caps and keys. These locking surfaces must align properly.

## 8. GROUNDING PUSHBUTTON

**8.01** Modifications are made to line 7 of the telephone if a grounding pushbutton is required. A grounding pushbutton is required in some PBX applications for transferring calls, originating calls

during a power failure, or other special functions. Modifications for converting line 7 to a grounding pushbutton are as follows:

- (a) Modify the button to nonlocking operation by removing the interlock pin from the line 7 plunger.
- (b) Cross-connect from the BL-BK lead to the PBX connection for the desired function.

*Note:* Ground is provided on the BK-BL (A1) lead by the key system. (No cross-connect is necessary for this lead.)

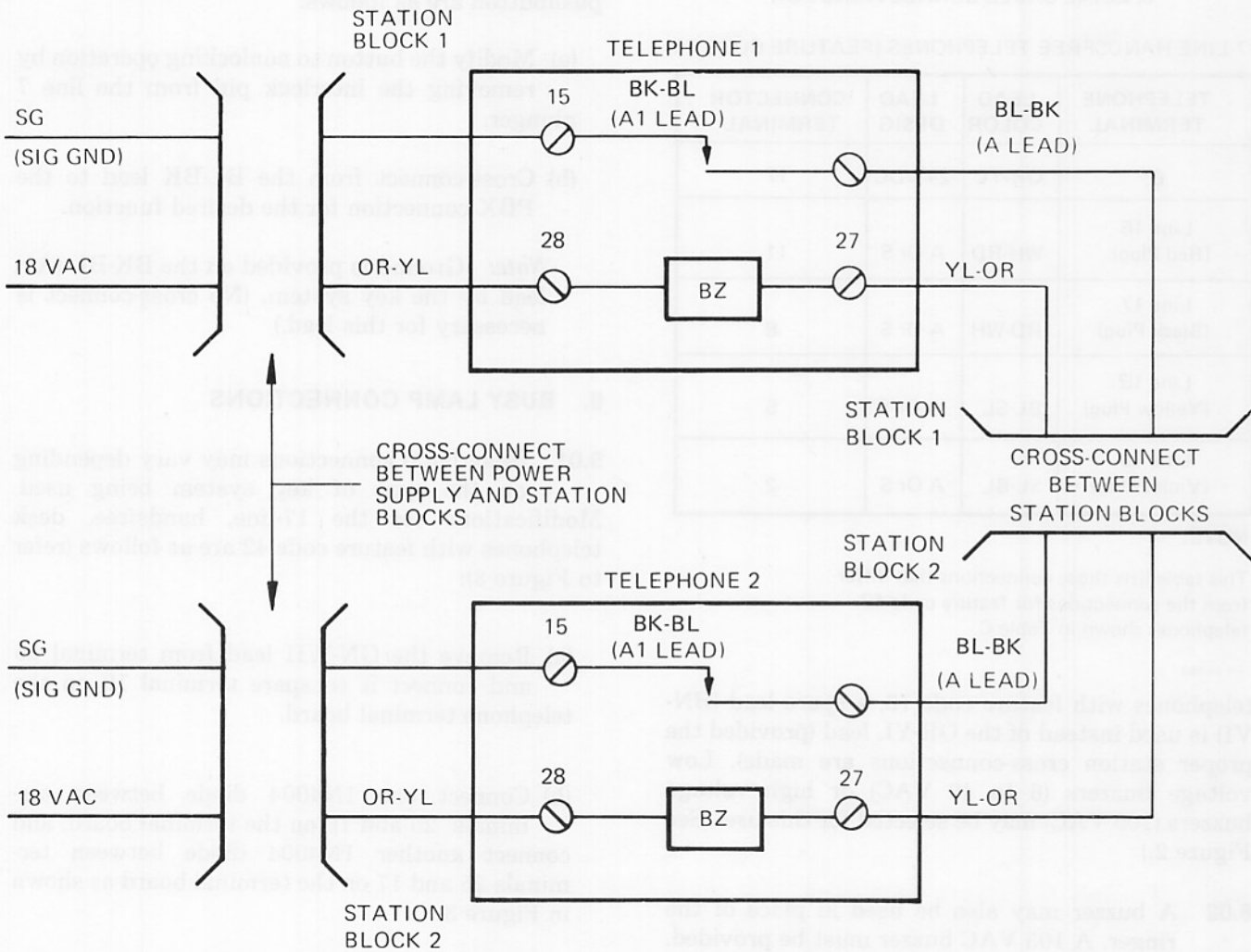
## 9. BUSY LAMP CONNECTIONS

**9.01** Busy lamp connections may vary depending on the type of key system being used. Modifications for the 17-line, handsfree, desk telephones with feature code 42 are as follows (refer to Figure 3):

- (a) Remove the GN-WH lead from terminal 25 and connect it to spare terminal 16 on the telephone terminal board.
- (b) Connect one 1N4004 diode between terminals 25 and 16 on the terminal board, and connect another 1N4004 diode between terminals 25 and 17 on the terminal board as shown in Figure 3.
- (c) Connect the OR-YL mounting cord lead to terminal 17 on the terminal board.

**9.02** Special busy lamp connections are required for telephones equipped with an exclusion circuit. Modifications for the 17-line, handsfree, desk telephones with feature code 76 are as follows (refer to Figure 4):

- (a) Connect one 1N4004 diode from terminal 25 to terminal 16 on the telephone terminal board as shown in Figure 4.
- (b) Connect any spare lead (BN-VI) to terminal 16 on the telephone terminal board. (Proper station cross-connections must be made to allow the use of a spare lead.)

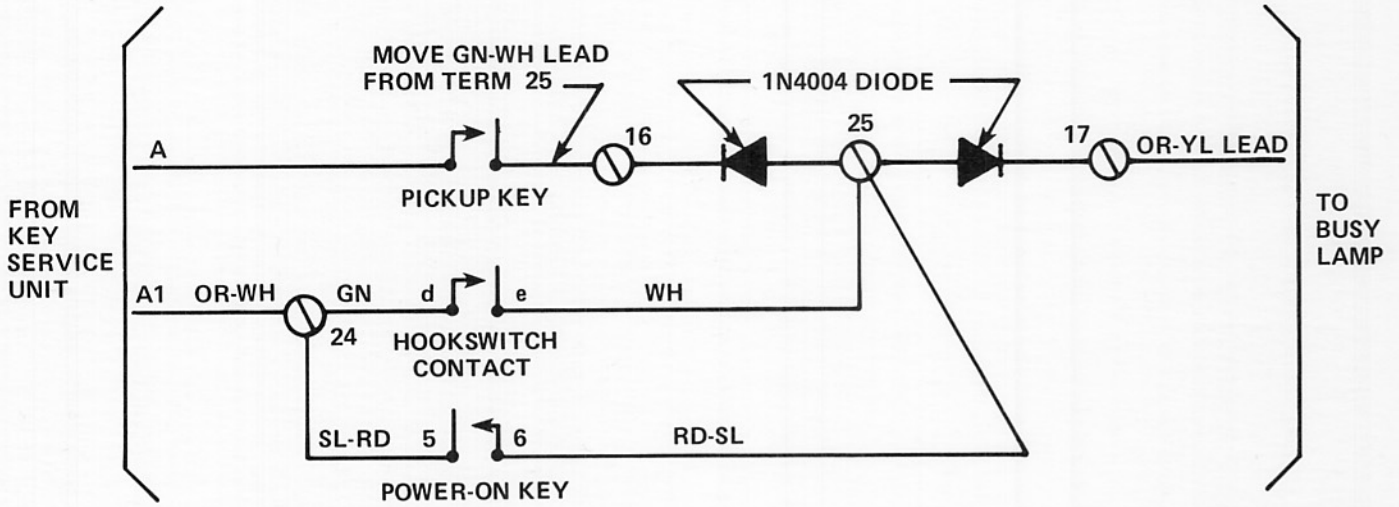


NOTES:

1. THE ARRANGEMENT SHOWN IS USING LINE 7 OF A TELEPHONE WITH FEATURE CODE 42 AS AN EXAMPLE. IF ANOTHER LINE IS USED, SUBSTITUTE THE APPROPRIATE A1 AND A LEADS FOR THAT LINE.
2. IN THE 17-LINE HANDSFREE TELEPHONE, GROUND IS CONNECTED TO TERMINAL 14 (BK-BL). NO CROSS-CONNECT IS NECESSARY FOR THIS LEAD.
3. FOR TELEPHONES WITH FEATURE CODE 76, A SPARE LEAD SUCH AS BN-VI IS USED INSTEAD OF THE OR-YL LEAD (PROVIDED THE PROPER STATION CROSS-CONNECTIONS ARE MADE).

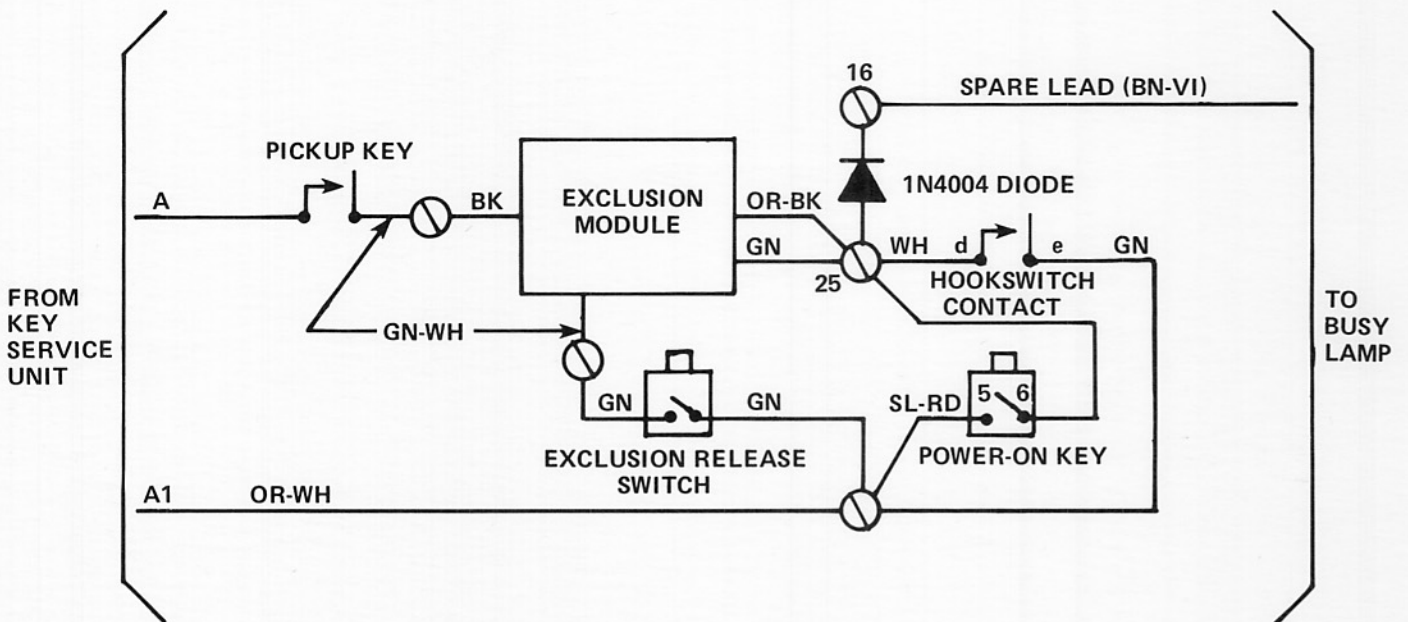
AW 82-573

Figure 2: Typical Circuit Diagram for Signal Buzzer



AW 82-574

Figure 3: Busy Lamp Connections for 17-Line Handsfree Telephones with Feature Code 42



AW 82-575

Figure 4: Busy Lamp Connections for 17-Line Handsfree Telephones with Feature Code 76

## 17-LINE, PUSHBUTTON DIAL, HANDSFREE TELEPHONES

### REPLACEMENT PARTS

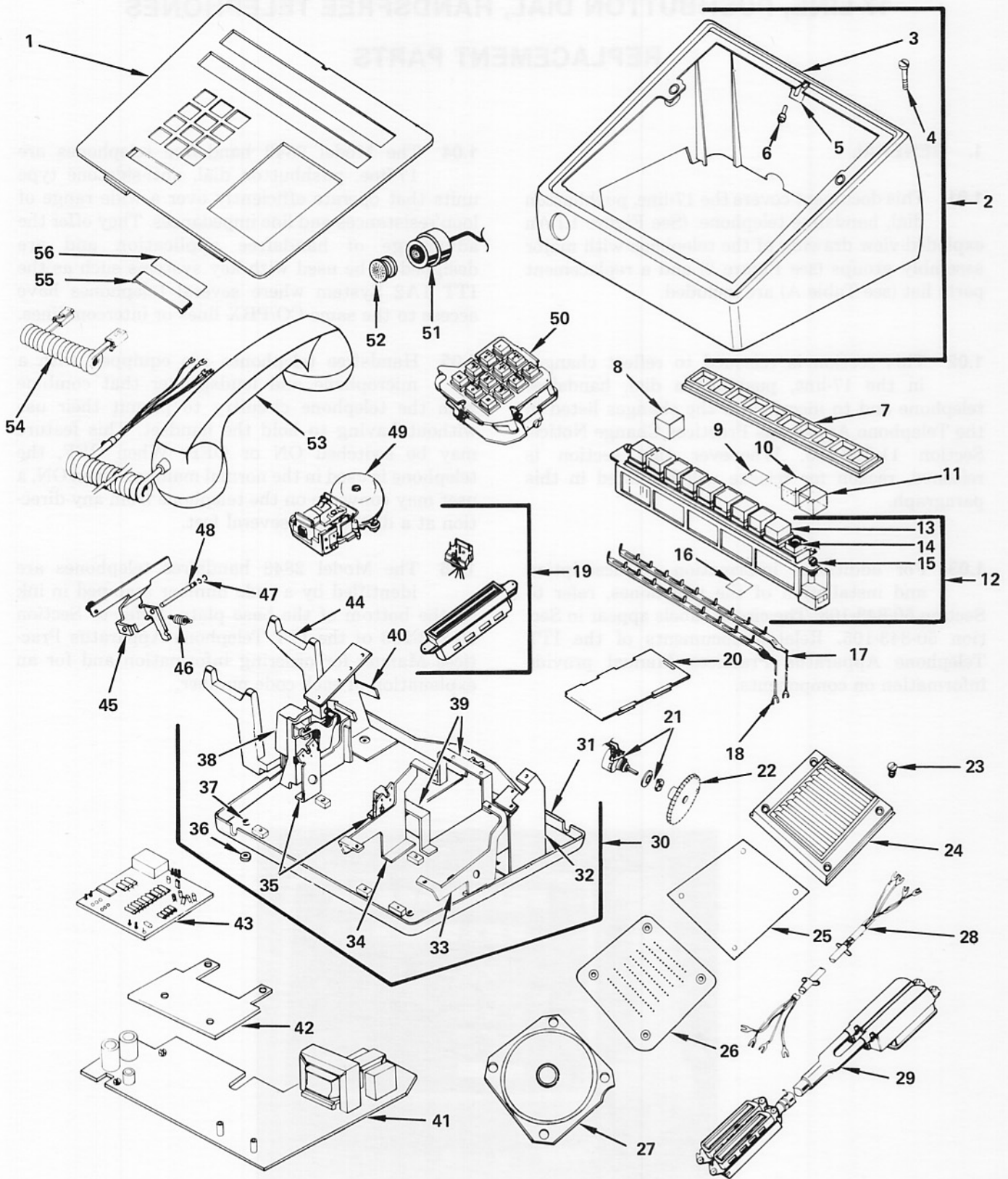
#### 1. GENERAL

- 1.01** This document covers the 17-line, pushbutton dial, handsfree telephone. (See Figure 1.) An exploded-view drawing of the telephone with major assembly groups (see Figure 2) and a replacement parts list (see Table A) are included.
- 1.02** This section is reissued to reflect changes in the 17-line, pushbutton dial, handsfree telephone and to incorporate the changes listed in the Telephone Apparatus Practices Change Notice, Section 11-510-100. Whenever this section is reissued, reason for reissue will be listed in this paragraph.
- 1.03** For additional information on description and installation of the telephones, refer to Section 50-843-103. The circuit labels appear in Section 50-843-105. Related documents of the ITT Telephone Apparatus Practices Manual provide information on components.
- 1.04** The Model 2843 handsfree telephones are 17-line, pushbutton dial, anti-sidetone type units that operate efficiently over a wide range of loop resistances and line impedances. They offer the advantage of handsfree application and are designed to be used with key systems such as the ITT 1A2 System where several telephones have access to the same CO/PBX lines or intercom lines.
- 1.05** Handsfree telephones are equipped with a microphone and loudspeaker that combine with the telephone circuitry to permit their use without having to hold the handset. This feature may be switched ON or OFF. When OFF, the telephone is used in the normal manner. When ON, a user may converse on the telephone from any direction at a distance of several feet.
- 1.06** The Model 2843 handsfree telephones are identified by a code number stamped in ink on the bottom of the base plate. Refer to Section 50-843-103 of the ITT Telephone Apparatus Practices Manual for ordering information and for an explanation of each code number.



AW 82-462

Figure 1: 17-Line, Pushbutton Dial, Handsfree Telephone



AW 84 614

Figure 2: 17-Line, Pushbutton Dial, Handsfree Telephone, Exploded View

TABLE A  
REPLACEMENT PARTS LIST

INDEX NO	PART NUMBER	DESCRIPTION	QUANTITY USED	
			2843/42	2843/76
		17-Line, Handsfree, Pushbutton Dial, Desk Telephone	2843/42	2843/76
1	181793-***	Faceplate	1	—
1	182785-***	Faceplate	—	1
2	186080-0**	Housing Assembly	1	1
2	187916-0**	Housing Assembly, Full-Modular	1	1
3	186079-0**	Housing	1	1
3	187915-0**	Housing, Full-Modular	1	1
4	095992-102	Screw, Housing	2	2
5	181100-101	Spring, Latch	1	1
6	181289-101	Screw, Latch Spring	1	1
7	181287-101	Collar, Key Strip	2	2
8	181131-102	Cap, Red	1	1
9	181281-101	Tab, Key Designation (Strip Of 12)	2	2
10	181131-101	Cap, Clear	17	17
11	181131-103	Cap, Yellow	2	2
12	181901-101	Key Assembly (7 Lines)	1	1
12	181137-102	Key Assembly (10 Lines)	1	—
12	182661-101	Key Assembly (10 Lines)	—	1
13	181122-101	Button	20	20
14	000051-00A	Lamp	19	19
15	095992-102	Screw	4	4
16	181900-101	Tab, Key (ON/OFF)	1	1
17	181292-103	Strip, Contact (GN Wire, 7 Lines)	1	1
17	181292-101	Strip, Contact (GN Wire, 10 Lines)	1	1
18	181292-104	Strip, Contact (RD Wire, 7 Lines)	1	1
18	181292-102	Strip, Contact (RD Wire, 10 Lines)	1	1
19	181805-101	Cord, Internal	1	1
19	181155-101	Cord, Internal	1	—
19	182662-101	Cord, Internal	—	1
20	181290-101	Slide	1	1
21	181809-102	Control, Volume	1	1
22	181808-101	Knob, Volume Control	1	1
23	181892-101	Screw, Speaker Grill	4	4
24	181795-201	Grill, Speaker	1	1
25	181899-101	Cloth, Speaker Grill	1	1
26	181794-101	Plate, Speaker <sup>3</sup>	1	1
27	181898-101	Speaker Assembly	1	1

TABLE A

## REPLACEMENT PARTS LIST (Cont)

INDEX NO	PART NUMBER	DESCRIPTION	QUANTITY USED	
			2843/42	2843/76
		17-Line, Handsfree, Pushbutton Dial, Desk Telephone	2843/42	2843/76
28	182930-101	Cord, Transformer	1	1
29	184355-102	Cord, Mounting (100-Conductor)	1	1
30	181811-102	Base Assembly	1	1
31	181141-103	Plate, Base	1	1
32	181253-101	Bracket, Key Right	1	1
33	181801-101	Bracket, Speaker Right	1	1
34	181800-101	Bracket, Speaker Left	1	1
35	181254-102	Bracket, Dial	2	2
36	182337-101	Foot	4	4
37	082486-102	Rivet, Foot	4	4
38	181810-101	Cradle Switch Assembly <sup>1</sup>	1	1
39	181255-101	Bracket, Plug	2	2
40	181150-103	Bracket, Key Left	1	1
41	185889-101	PC Board Assembly	1	1
42	181804-102	Terminal Board Assembly	1	1
43	182691-102	PC Board (Exclusion)	—	1
44	183105-101	Switch Hook Assembly	1	1
	182900-101	Cradle, Switch Hook	1	1
	181145-101	Screw, Switch Hook Cradle	3	3
	181297-102	Arm, Operating	1	1
	184198-101	Kit, Plastic Cradle (Replacement For Metal Cradle)	1	1
	183105-101	Switch Hook Assembly	1	1
	075307-104	Spring, Cradle Return	1	1
	181282-101	Shaft, Pivot	1	1
	073538-110	Ring, Retainer	1	1
	075307-104	Spring, Cradle Return	1	1
45	185488-101	Arm, Latch	1	1
46	181151-101	Spring, Latch Arm	1	1
47	073538-110	Ring, Retainer	2	2
48	181152-101	Pin, Pivot	1	1
49	000148-DBA	Ringer <sup>1</sup>	1	1
50	004600-OPG	Dial Assembly, Pushbutton Digital, Metropolitan (Letters And Numerals) <sup>1, 2</sup>	1	1
50	003600-OPG	Dial Assembly, Pushbutton Tel-Touch, Metropolitan (Letters And Numerals) <sup>1, 3</sup>	1	1
50	004600-OPD	Dial Assembly, Pushbutton Digital, Regular (Numerals Only) <sup>1, 4</sup>	1	1
50	003600-OPD	Dial Assembly, Pushbutton Tel-Touch, Regular (Numerals Only) <sup>1, 3</sup>	1	1

TABLE A  
REPLACEMENT PARTS LIST (Cont)

INDEX NO	PART NUMBER	DESCRIPTION	QUANTITY USED	
			2843/42	2843/76
		17-Line, Handsfree, Pushbutton Dial, Desk Telephone	2843/42	2843/76
51	186088-101	Microphone Assembly	1	1
52	185893-0**	Grill, Microphone	1	1
53	0065**-0C2	Handset Assembly, Nonmodular <sup>1</sup>	1	1
53	0065**-0M2	Handset Assembly, Modular <sup>1</sup>	1	1
54	9018**-072	Cord, Handset, Modular	1	1
55	087514-101	Retainer, Number Card	1	1
56	087513-101	Card, Number	1	1
56	087513-102	Card, Number, Strip Of 6 (Not Shown) <sup>5</sup>	—	—
	600152-611 -001	Jack Assembly, Handset Cord, Modular (Not Shown)	1	1
	182990-105	Insulator Assembly, Modular (Not Shown)	1	1
	181768-101	Transformer (Not Shown)	1	1
	181971-104	Pushbutton, Exclusion Release (Not Shown)	—	1
	187944-101	Nameplate, ITT (Not Shown)	1	1

## NOTES:

AW 84-782

- <sup>1</sup> Refer to Component Parts Section of this manual for Assembly Parts List.  
<sup>2</sup> The 004600-0PG dial replaces the 003600-0PG dial.  
<sup>3</sup> These products have been discontinued, but are included to provide a source of information for telephones still in service.  
<sup>4</sup> The 004600-0PD dial replaces the 003600-0PD dial.  
<sup>5</sup> These products must be ordered separately.  
\*\* Substitute 2-digit color code when ordering.  
\*\*\* Substitute 3-digit color code when ordering faceplate.

CODE	COLOR	CODE	COLOR	CODE	COLOR	CODE	COLOR
101	Charcoal	104	Light Gray	107	Cocoa Brown	110	Clear
102	Light Green	105	Burnt Orange	108	Harvest Gold	111	Woodgrain
103	Muted Beige	106	Light Ash	109	Cherry Red		

## 17-LINE, PUSHBUTTON DIAL, HANDSFREE TELEPHONES

### CIRCUIT LABELS

#### 1. GENERAL

**1.01** This document covers the 17-line, pushbutton dial, handsfree telephones. (See Figure 1.) Circuit labels for 17-line, pushbutton dial, handsfree telephones are included. (See Table A.)



AW 86-359

**Figure 1: 17-Line, Pushbutton Dial, Handsfree Telephone**

**1.02** This section is reissued to provide new circuit labels for the following 17-line, pushbutton dial, handsfree telephones:

- (a) Model 2843, Type 42
- (b) Model 2843, Type 76

**1.03** For additional information on description and installation of the telephones, refer to Section 50-843-103. A replacement parts list and an

exploded-view drawing for the telephones are contained in Section 50-843-104. Related documents of the ITT Telephone Apparatus Practices Manual provide information on components.

**1.04** The Model 2843 handsfree telephones are identified by a code number stamped in ink on the bottom of the base plate. Refer to Section 50-843-103 of the ITT Telephone Apparatus Practices Manual for ordering information and an explanation of each code number.

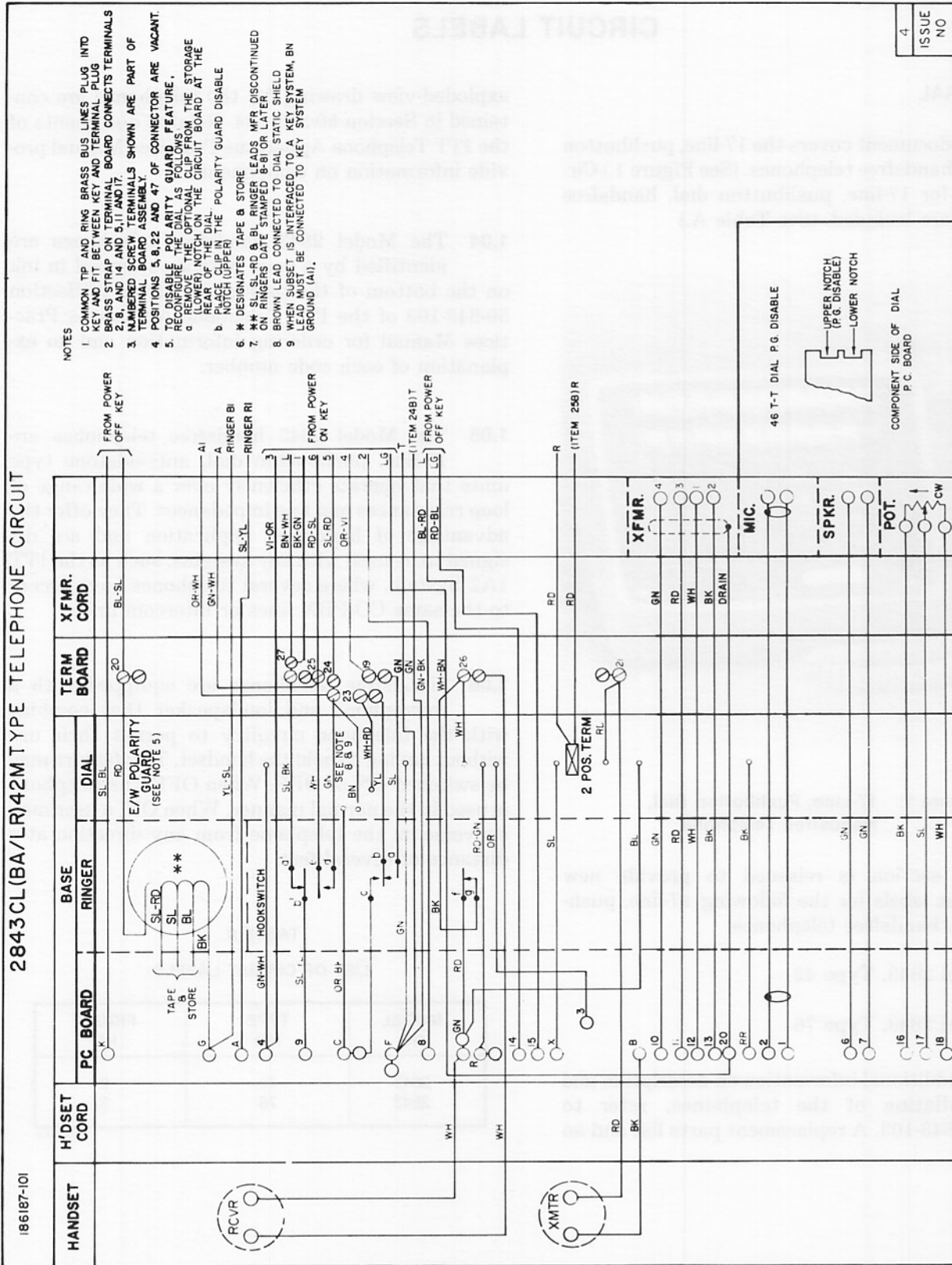
**1.05** The Model 2843 handsfree telephones are 17-line, pushbutton dial, anti-sidetone type units that operate efficiently over a wide range of loop resistances and line impedances. They offer the advantage of handsfree application and are designed to be used with key systems, such as the ITT 1A2 System, where several telephones have access to the same CO/PBX lines or intercom lines.

**1.06** Handsfree telephones are equipped with a microphone and loudspeaker that combine with the telephone circuitry to permit their use without having to hold the handset. This feature may be switched ON or OFF. When OFF, the telephone is used in the normal manner. When ON, a user may converse on the telephone from any direction at a distance of several feet.

**TABLE A**  
**LIST OF CIRCUIT LABELS**

MODEL NO	TYPE NO	FIGURE NO
2843	42	2
2843	76	3

AW 86-329



4  
ISSUE  
NO

Figure 2: Circuit Label, Model 2843 Type 42 (Sheet 1 of 2)

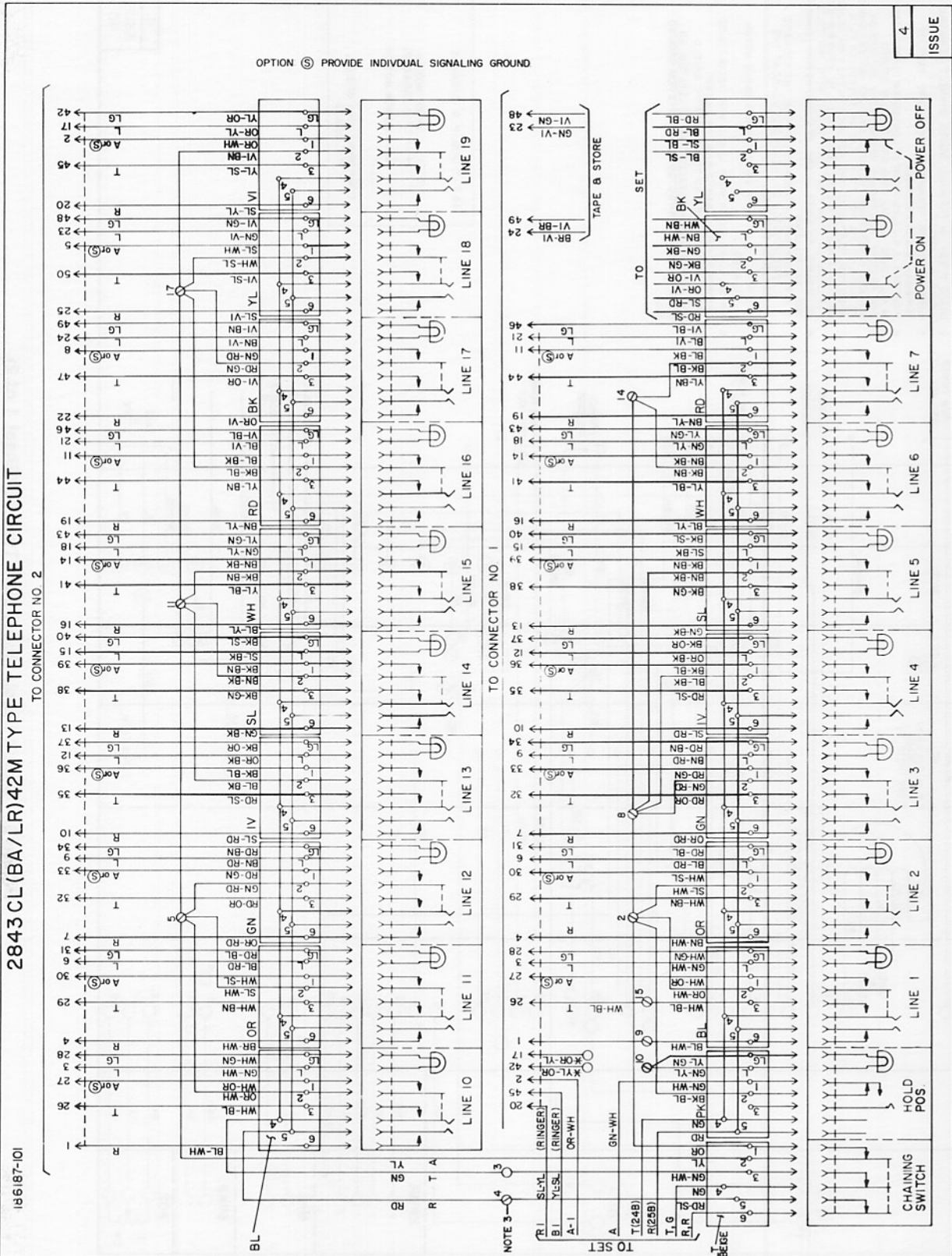


Figure 2: Circuit Label, Model 2843 Type 42 (Sheet 2 of 2)

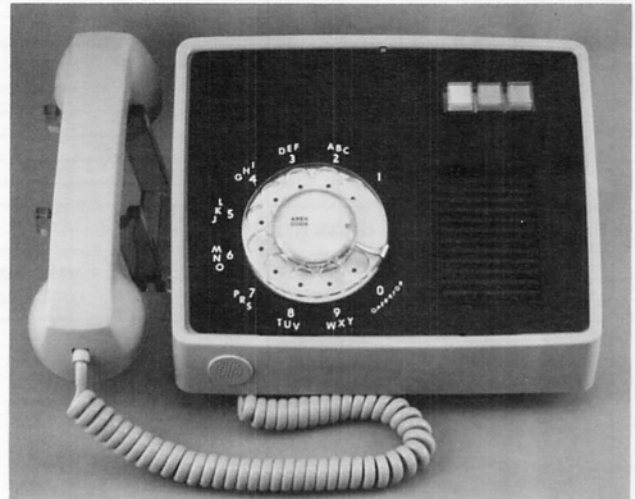




# SINGLE-LINE, ROTARY DIAL, HANDSFREE TELEPHONES

## GENERAL DESCRIPTION

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1.	GENERAL DESCRIPTION .....	1
	MODEL 844** ( ) 39 .....	2
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2.	INSTALLATION .....	3
3.	MAINTENANCE .....	3
4.	OPERATION .....	3
5.	DESIGNATION TABS .....	3



AW 82-460

**Figure 1: Single-Line, Rotary Dial, Handsfree Telephone**

### 1. GENERAL DESCRIPTION

**1.01** This document covers the single-line, rotary dial, handsfree telephone. (See Figure 1.) A general description plus information peculiar to single-line, rotary dial, handsfree telephones is included.

**1.02** This section is reissued to reflect changes in the single-line, rotary dial, handsfree telephone and to incorporate the changes listed in the Telephone Apparatus Practices Change Notice, Section 11-510-100. Whenever this section is reissued, reason for reissue will be listed in this paragraph.

**1.03** For additional information on replacement parts and for an exploded-view drawing for the telephones, refer to Section 50-844-101. The circuit labels appear in Section 50-844-102. Related documents of the ITT Telephone Apparatus Practices Manual provide information on components.

**1.04** The Model 844 handsfree desk telephones are single-line, rotary dial, anti-sidetone type units that operate efficiently over a wide range of loop resistances and line impedances.

**1.05** The Model 844 handsfree desk telephones are identified by a code number stamped in ink on the bottom of the base plate. Refer to ordering information in Table A for an explanation of each code number.

**1.06** Handsfree telephones are equipped with a microphone and loudspeaker that combine with the telephone circuitry to permit their use without having to hold the handset. This feature may be switched ON or OFF. When OFF, the telephone is used in the normal manner. When ON, a user may converse on the telephone from any direction at a distance of several feet.

**1.07** There are three pushbutton keys on the telephone. The clear key on the left is used as a privacy key. Pressing down and holding the privacy key disables the transmit mode, preventing the distant party from hearing local conversation. The remaining two keys are used for ON and OFF control of the handsfree equipment.

**1.08** The Model 844 telephones are available as nonmodular, quarter-modular, or full-modular versions. These versions are designated by a code letter that is placed in front of the ringer code letters in the order number of the telephone. (Refer to Table A.)

**1.09** Nonmodular version telephones include a hard-wired handset cord and a hard-wired line cord. This version is designated by the code letter O.

TABLE A

ORDERING INFORMATION – TELEPHONES

CODE NUMBERS															
TELEPHONE CODE NUMBERS ARE FORMED IN SIX STEPS AS FOLLOWS:															
				844		15		O		BA		39		M	
(1)	Type Of Instrument (See Part 1)														
(2)	Color (See Part 2)														
(3)	Version (See Part 3)														
(4)	Ringer (See Part 4)														
(5)	Special Feature (See Part 5)														
(6)	Dial (See Part 6)														
PART 1 TYPE OF INSTRUMENT															
CODE	DESCRIPTION	COLOR OFFERED		VERSION OFFERED	RINGER OFFERED		FEATURE OFFERED		DIAL OFFERED						
844	Single-Line, Handsfree, Rotary Dial, Desk Telephone	00, 05, 13, 15, 44, And 45 (Available On All Models)		O	BA		39		M						
844	Single-Line, Handsfree, Rotary Dial, Desk Telephone			Q	BA		29		M						
844	Single-Line, Handsfree, Rotary Dial, Desk Telephone			M	BA		39, 29		M						
REFER TO INDIVIDUAL UNIT DESCRIPTION FOR COMPLETE DESCRIPTION OF FEATURE COMBINATIONS															
PART 2 COLORS		PART 3 VERSIONS		PART 4 RINGERS		PART 5 SPECIAL FEATURES		PART 6 DIALS							
CODE	COLORS	CODE	VERSIONS	CODE	RINGERS	CODE	SPECIAL FEATURES	CODE	DIALS						
00	Black	O	Nonmodular	BA	Straight-Line	39	Equipped For Handsfree Operation, 4-Conductor Line Cord	M	Metropolitan (Letters & Numerals)						
05	Moss Green														
13	Beige	Q	Quarter-Modular												
15	White					29	Equipped For Handsfree Operation, 4-Conductor Silver-Satin Line Cord								
44	Light Ash	M	Full-Modular (With Handset Cord)												
45	Cocoa Brown														

AW 84 703

**1.10** Quarter-modular version telephones include a hard-wired handset cord and a plug-in line cord. The line cord is hard-wired on one end to the telephone base. The line cord is terminated on the other end with a modular plug that can be inserted into a modular wall jack. This version is designated by the code letter Q.

**1.11** Full-modular version telephones are available with a modular handset cord. The full-modular telephones are equipped with jacks to accept the plugs of a modular handset cord. The full-modular version telephones with feature code 39 include a hard-wired line cord. The full-modular version telephones with feature code 29 include a line cord that is hard-wired on one end to the telephone base. The line cord is terminated on the other end with a modular plug that can be inserted into a modular wall jack. The full-modular version of the telephone with a modular handset cord, terminated

on each end with modular plugs, is designated by the code letter M.

**1.12** The Model 844 handsfree desk telephones are described in the following paragraphs. The circuit label drawings for these telephones are contained in Section 50-844-102.

**MODEL 844\*\* ( ) 39**

**1.13** The Model 844\*\* ( ) 39 is a standard single-line, rotary dial, handsfree telephone. The microphone and loudspeaker, which are mounted inside the telephone, combine with the telephone circuitry to provide for handsfree application. This telephone is equipped with a flat-shaped, silver-colored, four-conductor line cord containing four 24 AWG leads colored RD, GN, BK, and YL. Also connected to this telephone is a round-shaped, gray-colored, four-conductor power cord to be connected

to the transformer (packaged with the telephones). This power cord contains four 22 AWG leads colored RD, GN, BK, and WH.

## MODEL 844\*\* ( ) 29

1.14 The Model 844\*\* ( ) 29 is the same as the Model 844\*\* ( ) 39 except it is equipped with a four-conductor line cord terminated on one end with a modular plug.

## 2. INSTALLATION

2.01 Since the modular versions of these telephones are equipped with modular plugs, installation consists of inserting this plug into an available wall jack. Refer to the appropriate circuit labels for wiring of nonmodular units. Station installation connections are made using the flat, silver, four-conductor line cord with leads colored RD, GN, BK, and YL.

**Warning:** *Serious damage to the telephone will result if the power transformer is connected improperly.*

2.02 The power transformer provided with the telephone must be connected to the four-conductor power cord of the telephone and plugged into a standard 110 VAC service outlet. Since both the line cord and the power cord are four-conductor, care must be taken to choose the round, gray cord with leads colored WH, BK, RD, and GN. The power cord must be connected to the transformer terminals designated WH, BK, RD, and GN. The WH lead of the power cord connects to terminal WH of the transformer, the BK lead connects to terminal BK, the RD lead connects to terminal RD, and the GN lead connects to terminal GN. Terminals are provided inside the telephone for connecting wiring if additional cord length is required.

**Note:** The transformer supplies power to the handsfree circuitry. Normal telephone operation using the handset is possible without the transformer.

## 3. MAINTENANCE

3.01 For replacement parts information and for an exploded-view drawing of major assembly groups, refer to Section 50-844-101.

## 4. OPERATION

4.01 To place or answer a call in the handsfree mode, press the ON key. The ON key lamp is lit while the handsfree circuit is enabled. The ON key may be released only by pressing the OFF key.

4.02 When the telephone is in the handsfree mode, going off-hook inhibits the handsfree circuit and permits conversation using the handset. The ON key lamp will stay lit. Replacing the handset reactivates the handsfree circuit and returns the telephone to handsfree operation until the OFF key is pressed.

4.03 To prevent the distant party from hearing local conversation during handsfree operation, press and hold the privacy key. Releasing the privacy key will enable handsfree operation.

4.04 A lamp located in the OFF key acts as a visual transmit and receive indicator. The lamp is lit when the handsfree circuit is in the transmit mode and is dark when the circuit is in the receive mode. The lamp remains dark when the handsfree circuit is off.

4.05 The loudspeaker volume control is located underneath the right side of the telephone. Since the volume must be balanced to compensate for local noise level, this control also affects the performance of the telephone. Clipping or chopping of speech caused by excessive background noise may be controlled by increasing the volume. Volume is increased by rotating the volume control clockwise. If the voice being received is too loud, the volume should be decreased by rotating the volume control counterclockwise. If the called party is also using handsfree equipment, mutual adjustment of the volume controls may be necessary. Usually, a comfortable talk and listen level will ensure proper performance.

**Note:** Handsfree telephones may be subject to some types of radio frequency interference.

## 5. DESIGNATION TABS

5.01 Designation tabs are included with each telephone. These tabs are installed by removing the cap from the key, placing the tab in the cap, and reinstalling the cap. The caps are removed by squeezing the sides of the cap and lifting. Note that locking surfaces are located on the right and left sides of the caps and keys. These locking surfaces must align properly.

# SINGLE-LINE, ROTARY DIAL, HANDSFREE TELEPHONES

## REPLACEMENT PARTS

### 1. GENERAL

**1.01** This document covers the single-line, rotary dial, handsfree telephone. (See Figure 1.) An exploded-view drawing of the telephone with major assembly groups (see Figure 2) and a replacement parts list (see Table A) are included.

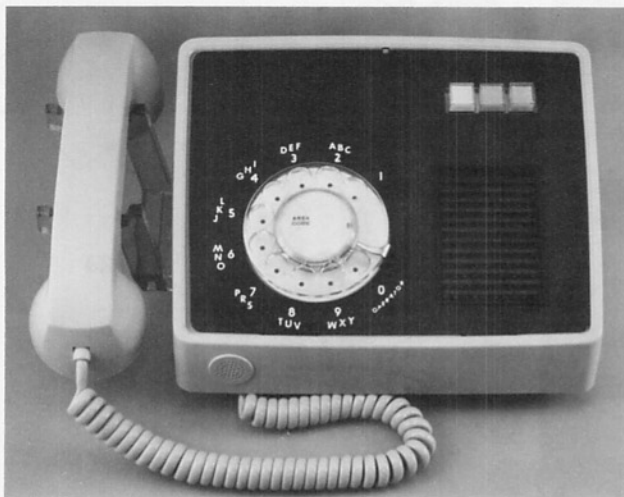
**1.02** This section is reissued to reflect changes in the single-line, rotary dial, handsfree telephone and to incorporate the changes listed in the Telephone Apparatus Practices Change Notice, Section 11-510-100. Whenever this section is reissued, reason for reissue will be listed in this paragraph.

**1.03** For additional information on description and installation of the telephones, refer to Section 50-844-100. The circuit labels appear in Section 50-844-102. Related documents of the ITT Telephone Apparatus Practices Manual provide information on components.

**1.04** The Model 844 handsfree telephones are single-line, rotary dial, anti-sidetone type units that operate efficiently over a wide range of loop resistances and line impedances.

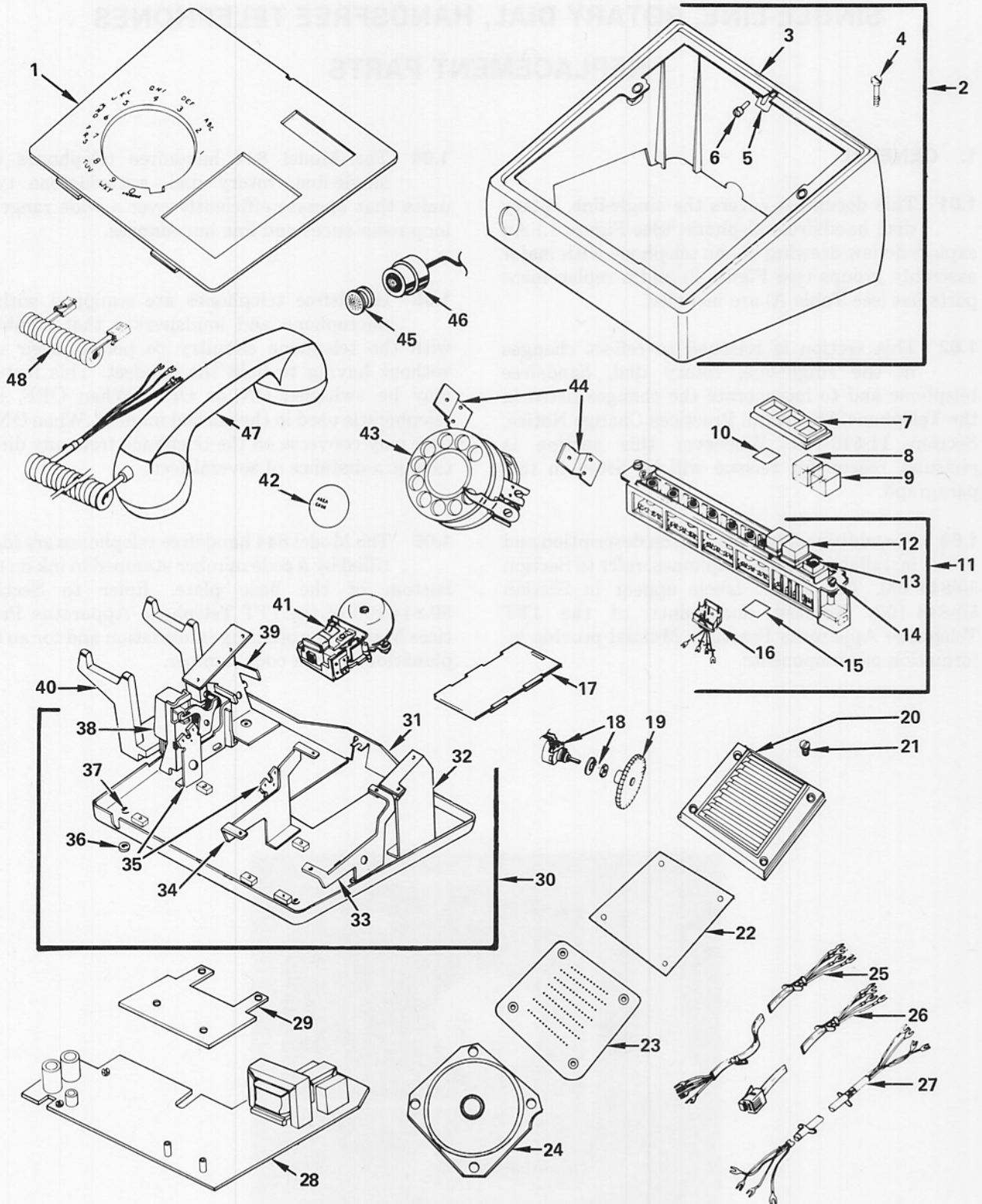
**1.05** Handsfree telephones are equipped with a microphone and loudspeaker that combine with the telephone circuitry to permit their use without having to hold the handset. This feature may be switched ON or OFF. When OFF, the telephone is used in the normal manner. When ON, a user may converse on the telephone from any direction at a distance of several feet.

**1.06** The Model 844 handsfree telephones are identified by a code number stamped in ink on the bottom of the base plate. Refer to Section 50-844-100 of the ITT Telephone Apparatus Practices Manual for ordering information and for an explanation of each code number.



AW 82-460

Figure 1: Single-Line, Rotary Dial, Handsfree Telephone



AW 84-657

Figure 2: Single-Line, Rotary Dial, Handsfree Telephone, Exploded View

TABLE A  
REPLACEMENT PARTS LIST

INDEX NO	PART NUMBER	DESCRIPTION	QUANTITY USED	
			844/29	844/39
		Single-Line, Handsfree, Rotary Dial, Desk Telephone	844/29	844/39
1	181875-***	Faceplate	1	1
2	186080-0**	Housing Assembly	1	1
2	187916-0**	Housing Assembly, Full-Modular	1	1
3	186079-0**	Housing	1	1
3	187915-0**	Housing, Full-Modular	1	1
4	095992-102	Screw, Housing	2	2
5	181100-101	Spring, Latch	1	1
6	181289-101	Screw, Latch Spring	1	1
7	181906-101	Collar, Key Strip	1	1
8	181131-101	Cap, Clear	1	1
9	181131-103	Cap, Yellow	2	2
10	181281-101	Tab, Key Designation (Strip Of 12)	1	1
11	181901-102	Key Assembly	1	1
12	181122-101	Button	3	3
13	000051-00A	Lamp	2	2
14	095992-102	Screw	2	2
15	181900-101	Tab, Key (ON/OFF)	1	1
16	181908-101	Plug And Wire Assembly (Black)	1	1
16	181909-101	Plug And Wire Assembly (Red)	1	1
16	181910-101	Plug And Wire Assembly (Yellow)	1	1
17	181290-101	Slide	1	1
18	181809-102	Control, Volume	1	1
19	181808-101	Knob, Volume Control	1	1
20	181795-201	Grill, Speaker	1	1
21	181892-101	Screw, Speaker Grill	4	4
22	181899-101	Cloth, Speaker Grill	1	1
23	181794-101	Plate, Speaker <sup>2</sup>	1	1
24	181898-101	Speaker Assembly	1	1
25	184377-102	Cord, Desk Stand (Nonmodular)	—	1
26	182957-084	Cord, Desk Stand (Quarter-Modular)	1	—
27	182930-101	Cord, Transformer	1	1

TABLE A  
REPLACEMENT PARTS LIST (Cont)

INDEX NO	PART NUMBER	DESCRIPTION	QUANTITY USED	
			844/29	844/39
		Single-Line, Handsfree, Rotary Dial, Desk Telephone	844/29	844/39
28	185889-101	PC Board Assembly	1	1
29	181907-101	Terminal Board Assembly	1	1
30	181811-103	Base Assembly	1	1
31	181141-103	Plate, Base	1	1
32	181251-101	Bracket, Key Right	1	1
33	181801-101	Bracket, Speaker Right	1	1
34	181800-101	Bracket, Speaker Left	1	1
35	181254-102	Bracket, Dial	2	2
36	182337-101	Foot	4	4
37	082486-102	Rivet, Foot	4	4
38	181810-101	Cradle Switch Assembly <sup>1</sup>	1	1
39	181252-101	Bracket, Key Left	1	1
40	183105-101	Switch Hook Assembly	1	1
	182900-101	Cradle, Switch Hook	1	1
	181145-101	Screw, Switch Hook Cradle	3	3
	181297-102	Arm, Operating	1	1
	184198-101	Kit, Plastic Cradle (Replacement For Metal Cradle)	1	1
	183105-101	Switch Hook Assembly	1	1
	075307-104	Spring, Cradle Return	1	1
	181282-101	Shaft, Pivot	1	1
	073538-110	Ring, Retainer	1	1
	075307-104	Spring, Cradle Return	1	1
41	000148-DBA	Ringer <sup>1</sup>	1	1
42	075415-101	Card, Number	1	1
43	003800-00H	Dial Assembly, Metropolitan (Letters And Numerals) <sup>1</sup>	1	1
44	181146-101	Bracket, Dial Adapter	2	2
45	185893-0**	Grill, Microphone	1	1
46	186088-101	Microphone Assembly	1	1
47	0065**-0C2	Handset Assembly, Nonmodular <sup>1</sup>	1	1
47	0065**-0M2	Handset Assembly, Modular <sup>1</sup>	1	1

TABLE A  
REPLACEMENT PARTS LIST (Cont)

INDEX NO	PART NUMBER	DESCRIPTION	QUANTITY USED	
			844/29	844/39
		Single-Line, Handsfree, Rotary Dial, Desk Telephone	844/29	844/39
48	9018**-072	Cord, Handset, Modular	1	1
	600152-611-001	Jack Assembly, Handset Cord, Modular (Not Shown)	1	1
	182990-105	Insulator Assembly, Modular (Not Shown)	1	1
	181768-101	Transformer (Not Shown)	1	1
	187944-101	Nameplate, ITT (Not Shown)	1	1

## NOTES:

AW 84-868

- <sup>1</sup> Refer to Component Parts Section of this manual for Assembly Parts List.  
<sup>2</sup> These products have been discontinued, but are included to provide a source of information for telephones still in service.  
 \*\* Substitute 2-digit color code when ordering.  
 \*\*\* Substitute 3-digit color code when ordering faceplate.

CODE	COLOR	CODE	COLOR	CODE	COLOR	CODE	COLOR
101	Charcoal	104	Light Gray	107	Cocoa Brown	110	Clear
102	Light Green	105	Burnt Orange	108	Harvest Gold	111	Woodgrain
103	Muted Beige	106	Light Ash	109	Cherry Red		

# SINGLE-LINE, ROTARY DIAL, HANDSFREE TELEPHONES

## CIRCUIT LABELS

### 1. GENERAL

**1.01** This document covers the single-line, rotary dial, handsfree telephones. (See Figure 1.) Circuit labels for single-line, rotary dial, handsfree telephones are included. (See Table A.)



AW 86-354

**Figure 1: Single-Line, Rotary Dial, Handsfree Telephone**

**1.02** This section is reissued to provide a new circuit label for the single-line, rotary dial, handsfree telephones.

**1.03** For additional information on description and installation of the telephones, refer to Section 50-844-100. A replacement parts list and an exploded-view drawing for the telephones are contained in

Section 50-844-101. Related documents of the ITT Telephone Apparatus Practices Manual provide information on components.

**1.04** The Model 844 handsfree telephones are identified by a code number stamped in ink on the bottom of the base plate. Refer to Section 50-844-100 of the ITT Telephone Apparatus Practices Manual for ordering information and an explanation of each code number.

**1.05** The Model 844 handsfree telephones are single-line, rotary dial, anti-sidetone type units that operate efficiently over a wide range of loop resistances and line impedances.

**1.06** Handsfree telephones are equipped with a microphone and loudspeaker that combine with the telephone circuitry to permit their use without having to hold the handset. This feature may be switched ON or OFF. When OFF, the telephone is used in the normal manner. When ON, a user may converse on the telephone from any direction at a distance of several feet.

TABLE A  
LIST OF CIRCUIT LABELS

MODEL NO	TYPE NO	FIGURE NO
844	39, 29	2

AW 86-327

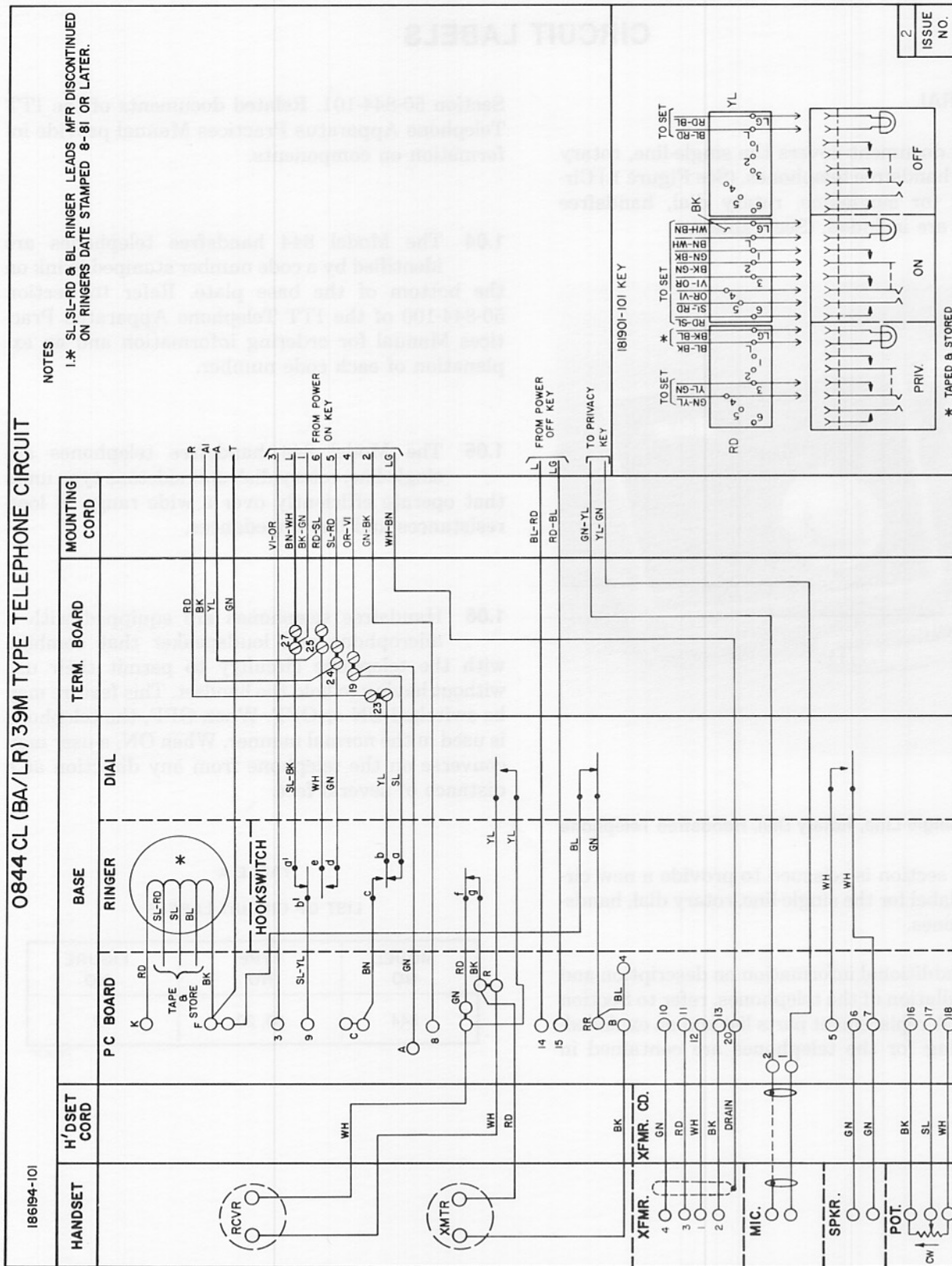


Figure 2: Circuit Label, Model 844 Types 39, 29

# SINGLE-LINE, PUSHBUTTON DIAL, HANDSFREE TELEPHONES

## GENERAL DESCRIPTION

	CONTENTS	PAGE
1.	GENERAL DESCRIPTION .....	1
	MODEL 2844** ( ) 39 .....	2
	MODEL 2844** ( ) 29 .....	3
2.	INSTALLATION .....	3
3.	MAINTENANCE .....	3
4.	OPERATION .....	3
5.	DESIGNATION TABS .....	3

### 1. GENERAL DESCRIPTION

**1.01** This document covers the single-line, pushbutton dial, handsfree telephone. (See Figure 1.) A general description plus information peculiar to single-line, pushbutton dial, handsfree telephones is included.

**1.02** This section is reissued to reflect changes in the single-line, pushbutton dial, handsfree telephone and to incorporate the changes listed in the Telephone Apparatus Practices Change Notice, Section 11-510-100. Whenever this section is reissued, reason for reissue will be listed in this paragraph.

**1.03** For additional information on replacement parts and for an exploded-view drawing for the telephones, refer to Section 50-844-104. The circuit labels appear in Section 50-844-105. Related documents of the ITT Telephone Apparatus Practices Manual provide information on components.

**1.04** The Model 2844 handsfree desk telephones are single-line, pushbutton dial, anti-sidetone type units that operate efficiently over a wide range of loop resistances and line impedances.

**1.05** The Model 2844 handsfree desk telephones are identified by a code number stamped in ink on the bottom of the base plate. Refer to ordering information in Table A for an explanation of each code number.



AW 82-463

Figure 1: Single-Line, Pushbutton Dial, Handsfree Telephone

**1.06** Handsfree telephones are equipped with a microphone and loudspeaker that combine with the telephone circuitry to permit their use without having to hold the handset. This feature may be switched ON or OFF. When OFF, the telephone is used in the normal manner. When ON, a user may converse on the telephone from any direction at a distance of several feet.

**1.07** There are three pushbutton keys on the telephone. The clear key on the left is used as a privacy key. Pressing down and holding the privacy key disables the transmit mode, preventing the distant party from hearing local conversation. The remaining two keys are used for ON and OFF control of the handsfree equipment.

**1.08** The Model 2844 telephones are available as nonmodular, quarter-modular, or full-modular versions. These versions are designated by a code letter that is placed in front of the ringer code letters in the order number of the telephone. (Refer to Table A.)

**1.09** Nonmodular version telephones include a hard-wired handset cord and a hard-wired line cord. This version is designated by the code letter O.

TABLE A  
ORDERING INFORMATION – TELEPHONES

CODE NUMBERS									
TELEPHONE CODE NUMBERS ARE FORMED IN SIX STEPS AS FOLLOWS:									
(1) Type Of Instrument (See Part 1)	2844		15	O	BA	39	M		
(2) Color (See Part 2)									
(3) Version (See Part 3)									
(4) Ringer (See Part 4)									
(5) Special Feature (See Part 5)									
(6) Dial (See Part 6)									
PART 1 TYPE OF INSTRUMENT									
CODE	DESCRIPTION	COLOR OFFERED	VERSION OFFERED	RINGER OFFERED	FEATURE OFFERED	DIAL OFFERED			
2844	Single-Line, Handsfree, Pushbutton Dial, Desk Telephone	00, 05, 13, 15, 44, And 45 (Available On All Models)	O	BA	39	M, R			
2844	Single-Line, Handsfree, Pushbutton Dial, Desk Telephone		Q	BA	29	M, R			
2844	Single-Line, Handsfree, Pushbutton Dial, Desk Telephone		M	BA	39, 29	M			
REFER TO INDIVIDUAL UNIT DESCRIPTION FOR COMPLETE DESCRIPTION OF FEATURE COMBINATIONS									
PART 2 COLORS		PART 3 VERSIONS		PART 4 RINGERS		PART 5 SPECIAL FEATURES		PART 6 DIALS	
CODE	COLORS	CODE	VERSIONS	CODE	RINGERS	CODE	SPECIAL FEATURES	CODE	DIALS
00	Black	O	Nonmodular	BA	Straight-Line	39	Equipped For Handsfree Operation, 4-Conductor Line Cord	M	Metropolitan (Letters & Numerals)
05	Moss Green								
13	Beige	Q	Quarter-Modular			29	Equipped For Handsfree Operation, 4-Conductor Silver-Satin Line Cord	R	Regular (Numerals Only)
15	White								
44	Light Ash	M	Full-Modular (With Handset Cord)						
45	Cocoa Brown								

AW 84-787

**1.10** Quarter-modular version telephones include a hard-wired handset cord and a plug-in line cord. The line cord is hard-wired on one end to the telephone base. The line cord is terminated on the other end with a modular plug that can be inserted into a modular wall jack. This version is designated by the code letter Q.

**1.11** Full-modular version telephones are available with a modular handset cord. The full-modular telephones are equipped with jacks to accept the plugs of a modular handset cord. The full-modular version telephones with feature code 39 include a hard-wired line cord. The full-modular version telephones with feature code 29 include a line cord that is hard-wired on one end to the telephone base. The line cord is terminated on the other end with a modular plug that can be inserted into a

modular wall jack. The full-modular version of the telephone with a modular handset cord, terminated on each end with modular plugs, is designated by the code letter M.

**1.12** The Model 2844 handsfree desk telephones are described in the following paragraphs. The circuit label drawings for these telephones are contained in Section 50-844-105.

**MODEL 2844\*\* ( ) 39**

**1.13** The Model 2844\*\* ( ) 39 is a standard single-line, pushbutton dial, handsfree telephone. The microphone and loudspeaker, which are mounted inside the telephone, combine with the telephone circuitry to provide for handsfree application. This telephone is equipped with a flat-shaped,

silver-colored, four-conductor line cord containing four 24 AWG leads colored RD, GN, BK, and YL. Also connected to this telephone is a round-shaped, gray-colored, four-conductor power cord to be connected to the transformer (packaged with the telephones). This power cord contains four 22 AWG leads colored RD, GN, BK, and WH.

## MODEL 2844\*\* ( ) 29

**1.14** The Model 2844\*\* ( ) 29 is the same as the Model 2844\*\* ( ) 39 except it is equipped with a four-conductor line cord terminated on one end with a modular plug.

## 2. INSTALLATION

**2.01** Since the modular versions of these telephones are equipped with modular plugs, installation consists of inserting this plug into an available wall jack. Refer to the appropriate circuit labels for wiring of nonmodular units. Station installation connections are made using the flat, silver, four-conductor line cord with leads colored RD, GN, BK, and YL.

**Warning:** *Serious damage to the telephone will result if the power transformer is connected improperly.*

**2.02** The power transformer provided with the telephone must be connected to the four-conductor power cord of the telephone and plugged into a standard 110 VAC service outlet. Since both the line cord and the power cord are four-conductor, care must be taken to choose the round gray cord with leads colored WH, BK, RD, and GN. The power cord must be connected to the transformer terminals designated WH, BK, RD, and GN. The WH lead of the power cord connects to terminal WH of the transformer, the BK lead connects to terminal BK, the RD lead connects to terminal RD, and the GN lead connects to terminal GN. Terminals are provided inside the telephone for connecting wiring if additional cord length is required.

**Note:** The transformer supplies power to the handsfree circuitry. Normal telephone operation using the handset is possible without the transformer.

## 3. MAINTENANCE

**3.01** For replacement parts information and for an exploded-view drawing of major assembly groups, refer to Section 50-844-104.

## 4. OPERATION

**4.01** To place or answer a call in the handsfree mode, press the ON key. The ON key lamp is lit while the handsfree circuit is enabled. The ON key may be released only by pressing the OFF key.

**4.02** When the telephone is in the handsfree mode, going off-hook inhibits the handsfree circuit and permits conversation using the handset. The ON key lamp will stay lit. Replacing the handset reactivates the handsfree circuit and returns the telephone to handsfree operation until the OFF key is pressed.

**4.03** To prevent the distant party from hearing local conversation during handsfree operation, press and hold the privacy key. Releasing the privacy key will enable handsfree operation.

**4.04** A lamp located in the OFF key acts as a visual transmit and receive indicator. The lamp is lit when the handsfree circuit is in the transmit mode and is dark when the circuit is in the receive mode. The lamp remains dark when the handsfree circuit is off.

**4.05** The loudspeaker volume control is located underneath the right side of the telephone. Since the volume must be balanced to compensate for local noise level, this control also affects the performance of the telephone. Clipping or chopping of speech caused by excessive background noise may be controlled by increasing the volume. Volume is increased by rotating the volume control clockwise. If the voice being received is too loud, the volume should be decreased by rotating the volume control counterclockwise. If the called party is also using handsfree equipment, mutual adjustment of the volume controls may be necessary. Usually, a comfortable talk and listen level will ensure proper performance.

**Note:** Handsfree telephones may be subject to some types of radio frequency interference.

## 5. DESIGNATION TABS

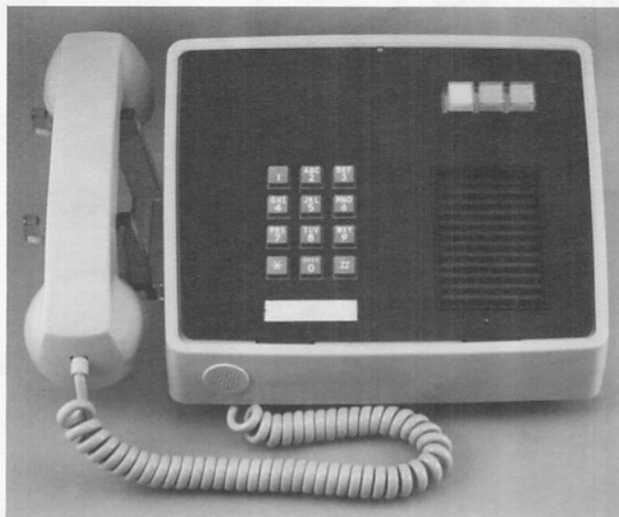
**5.01** Designation tabs are included with each telephone. These tabs are installed by removing the cap from the key, placing the tab in the cap, and reinstalling the cap. The caps are removed by squeezing the sides of the cap and lifting. Note that locking surfaces are located on the right and left sides of the caps and keys. These locking surfaces must align properly.

## SINGLE-LINE, PUSHBUTTON DIAL, HANDSFREE TELEPHONES

### REPLACEMENT PARTS

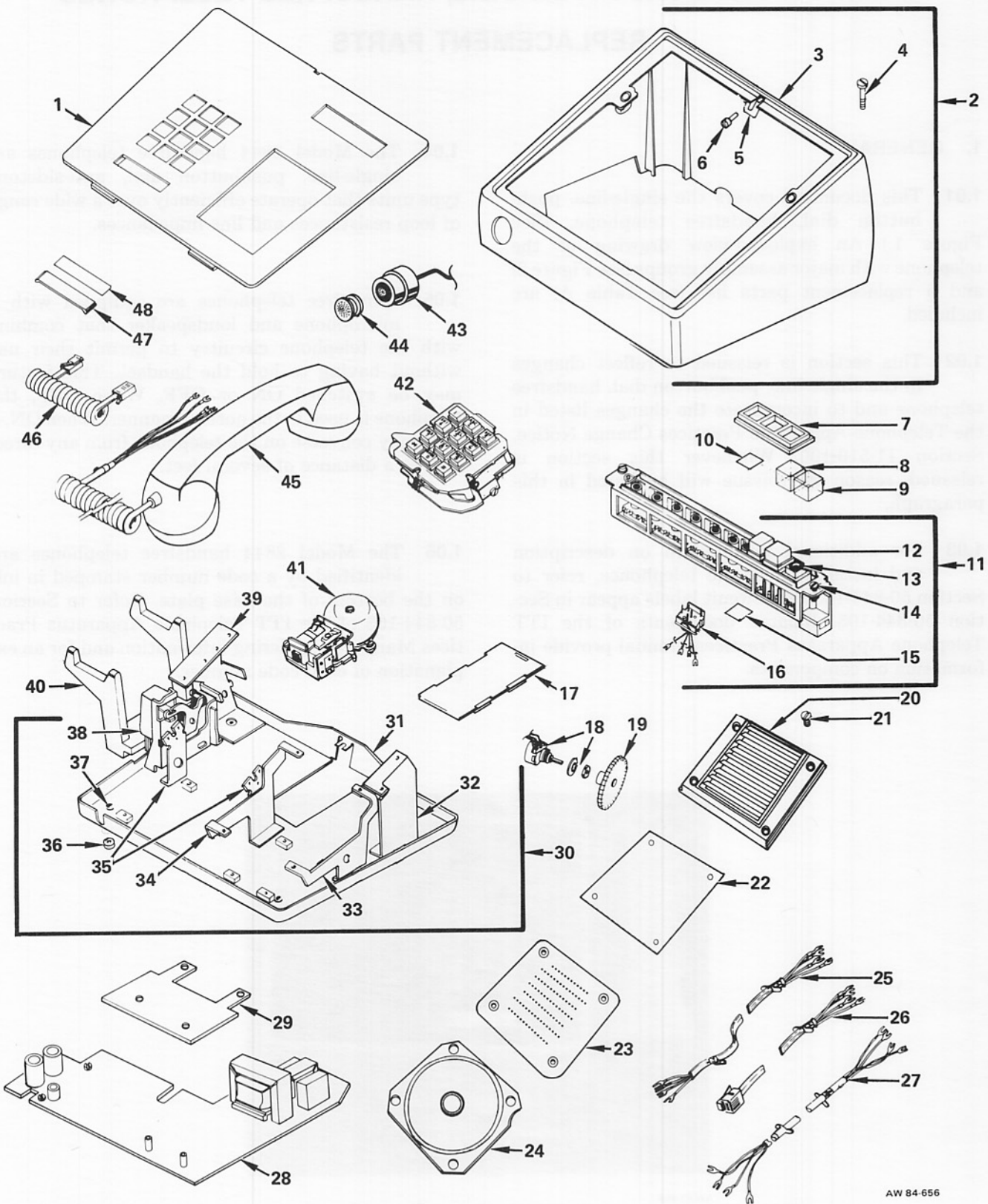
#### 1. GENERAL

- 1.01** This document covers the single-line, pushbutton dial, handsfree telephone. (See Figure 1.) An exploded-view drawing of the telephone with major assembly groups (see Figure 2) and a replacement parts list (see Table A) are included.
- 1.02** This section is reissued to reflect changes in the single-line, pushbutton dial, handsfree telephone and to incorporate the changes listed in the Telephone Apparatus Practices Change Notice, Section 11-510-100. Whenever this section is reissued, reason for reissue will be listed in this paragraph.
- 1.03** For additional information on description and installation of the telephones, refer to Section 50-844-103. The circuit labels appear in Section 50-844-105. Related documents of the ITT Telephone Apparatus Practices Manual provide information on components.
- 1.04** The Model 2844 handsfree telephones are single-line, pushbutton dial, anti-sidetone type units that operate efficiently over a wide range of loop resistances and line impedances.
- 1.05** Handsfree telephones are equipped with a microphone and loudspeaker that combine with the telephone circuitry to permit their use without having to hold the handset. This feature may be switched ON or OFF. When OFF, the telephone is used in the normal manner. When ON, a user may converse on the telephone from any direction at a distance of several feet.
- 1.06** The Model 2844 handsfree telephones are identified by a code number stamped in ink on the bottom of the base plate. Refer to Section 50-844-103 of the ITT Telephone Apparatus Practices Manual for ordering information and for an explanation of each code number.



AW 82-463

Figure 1: Single-Line, Pushbutton Dial, Handsfree Telephone



AW 84-656

Figure 2: Single-Line, Pushbutton Dial, Handsfree Telephone, Exploded View

TABLE A  
REPLACEMENT PARTS LIST

INDEX NO	PART NUMBER	DESCRIPTION	QUANTITY USED	
			2844/29	2844/39
		Single-Line, Handsfree, Pushbutton Dial, Desk Telephone	2844/29	2844/39
1	181876-***	Faceplate	1	1
2	186080-0**	Housing Assembly	1	1
2	187916-0**	Housing Assembly, Full-Modular	1	1
3	186079-0**	Housing	1	1
3	187915-0**	Housing, Full-Modular	1	1
4	095992-102	Screw, Housing	2	2
5	181100-101	Spring, Latch	1	1
6	181289-101	Screw, Latch Spring	1	1
7	181906-101	Collar, Key Strip	1	1
8	181131-101	Cap, Clear	1	1
9	181131-103	Cap, Yellow	2	2
10	181281-101	Tab, Designation Key (Strip Of 12)	1	1
11	181901-102	Key Assembly	1	1
12	181122-101	Button	3	3
13	000051-00A	Lamp	2	2
14	095992-102	Screw	2	2
15	181900-101	Tab, Key (ON/OFF)	1	1
16	181908-101	Plug And Wire Assembly (Black)	1	1
16	181909-101	Plug And Wire Assembly (Red)	1	1
16	181910-101	Plug And Wire Assembly (Yellow)	1	1
17	181290-101	Slide	1	1
18	181809-102	Control, Volume	1	1
19	181808-101	Knob, Volume Control	1	1
20	181795-201	Grill, Speaker	1	1
21	181892-101	Screw, Speaker Grill	4	4
22	181899-101	Cloth, Speaker Grill	1	1
23	181794-101	Plate, Speaker <sup>3</sup>	1	1
24	181898-101	Speaker Assembly	1	1
25	184377-102	Cord, Desk Stand (Nonmodular)	—	1
26	182957-084	Cord, Desk Stand (Quarter-Modular)	1	—
27	182930-101	Cord, Transformer	1	1

TABLE A  
REPLACEMENT PARTS LIST (Cont)

INDEX NO	PART NUMBER	DESCRIPTION	QUANTITY USED	
			2844/29	2844/39
		Single-Line, Handsfree, Pushbutton Dial, Desk Telephone	2844/29	2844/39
28	185889-101	PC Board Assembly	1	1
29	181907-101	Terminal Board Assembly	1	1
30	181811-103	Base Assembly	1	1
31	181811-101	Plate, Base	1	1
32	181251-101	Bracket, Key Right	1	1
33	181800-101	Bracket, Speaker Right	1	1
34	181801-101	Bracket, Speaker Left	1	1
35	181254-102	Bracket, Dial	2	2
36	182337-101	Foot	4	4
37	082486-102	Rivet, Foot	4	4
38	181810-101	Cradle Switch Assembly <sup>1</sup>	1	1
39	181252-101	Bracket, Key Left	1	1
40	183105-101	Switch Hook Assembly	1	1
	182900-101	Cradle, Switch Hook	1	1
	181145-101	Screw, Switch Hook Cradle	3	3
	181297-102	Arm, Operating	1	1
	184198-101	Kit, Plastic Cradle (Replacement For Metal Cradle)	1	1
	183105-101	Switch Hook Assembly	1	1
	075307-104	Spring, Cradle Return	1	1
	181282-101	Shaft, Pivot	1	1
	073538-110	Ring, Retainer	1	1
	075307-104	Spring, Cradle Return	1	1
41	000148-DBA	Ringer <sup>1</sup>	1	1
42	004600-OPG	Dial Assembly, Pushbutton Digital, Metropolitan (Letters And Numerals) <sup>1, 2</sup>	1	1
42	003600-OPG	Dial Assembly, Pushbutton Tel-Touch, Metropolitan (Letters And Numerals) <sup>1, 3</sup>	1	1
43	186088-101	Microphone Assembly	1	1
44	185893-0**	Grill, Microphone	1	1
45	0065**-0C2	Handset Assembly, Nonmodular <sup>1</sup>	1	1
45	0065**-0M2	Handset Assembly, Modular <sup>1</sup>	1	1
46	9018**-022	Cord, Handset, Modular	1	1
47	087514-101	Retainer, Number Card	1	1
48	087513-101	Card, Number	1	1
48	087513-102	Card, Number, Strip Of 6 (Not Shown) <sup>4</sup>	—	—

TABLE A  
REPLACEMENT PARTS LIST (Cont)

INDEX NO	PART NUMBER	DESCRIPTION	QUANTITY USED	
			2844/29	2844/39
		Single-Line, Handsfree, Pushbutton Dial, Desk Telephone	2844/29	2844/39
	600152-611 -001	Jack Assembly, Handset Cord, Modular (Not Shown)	1	1
	182990-105	Insulator Assembly, Modular (Not Shown)	1	1
	181768-101	Transformer (Not Shown)	1	1
	187944-101	Nameplate, ITT (Not Shown)	1	1

AW 84-830

## NOTES:

- <sup>1</sup> Refer to Component Parts Section of this manual for Assembly Parts List.  
<sup>2</sup> The 004600-OPG dial replaces the 003600-OPG dial.  
<sup>3</sup> These products have been discontinued, but are included to provide a source of information for telephones still in service.  
<sup>4</sup> These products must be ordered separately.  
\*\* Substitute 2-digit color code when ordering.  
\*\*\* Substitute 3-digit color code when ordering faceplate.

CODE	COLOR	CODE	COLOR	CODE	COLOR	CODE	COLOR
101	Charcoal	104	Light Gray	107	Cocoa Brown	110	Clear
102	Light Green	105	Burnt Orange	108	Harvest Gold	111	Woodgrain
103	Muted Beige	106	Light Ash	109	Cherry Red		

# SINGLE-LINE, PUSHBUTTON DIAL, HANDSFREE TELEPHONES

## CIRCUIT LABELS

### 1. GENERAL

**1.01** This document covers the single-line, pushbutton dial, handsfree telephones. (See Figure 1.) Circuit labels for single-line, pushbutton dial, handsfree telephones are included. (See Table A.)



AW 86-355

**Figure 1: Single-Line, Pushbutton Dial, Handsfree Telephone**

**1.02** This section is reissued to provide the latest issue circuit label for the single-line, pushbutton dial, handsfree telephones. Issue 2 of this section provided a new circuit label of the telephones.

**1.03** For additional information on description and installation of the telephones, refer to Section 50-844-103. A replacement parts list and an exploded-view drawing for the telephones are contained in Section 50-844-104. Related documents of the ITT Telephone Apparatus Practices Manual provide information on components.

**1.04** The Model 2844 handsfree telephones are identified by a code number stamped in ink on the bottom of the base plate. Refer to Section 50-844-103 of the ITT Telephone Apparatus Practices Manual for ordering information and for an explanation of each code number.

**1.05** The Model 2844 handsfree telephones are single-line, pushbutton dial, anti-sidetone type units that operate efficiently over a wide range of loop resistances and line impedances.

**1.06** Handsfree telephones are equipped with a microphone and loudspeaker that combine with the telephone circuitry to permit their use without having to hold the handset. This feature may be switched ON or OFF. When OFF, the telephone is used in the normal manner. When ON, a user may converse on the telephone from any direction at a distance of several feet.

TABLE A  
LIST OF CIRCUIT LABELS

MODEL NO	TYPE NO	FIGURE NO
2844	39, 29	2

AW 86-328

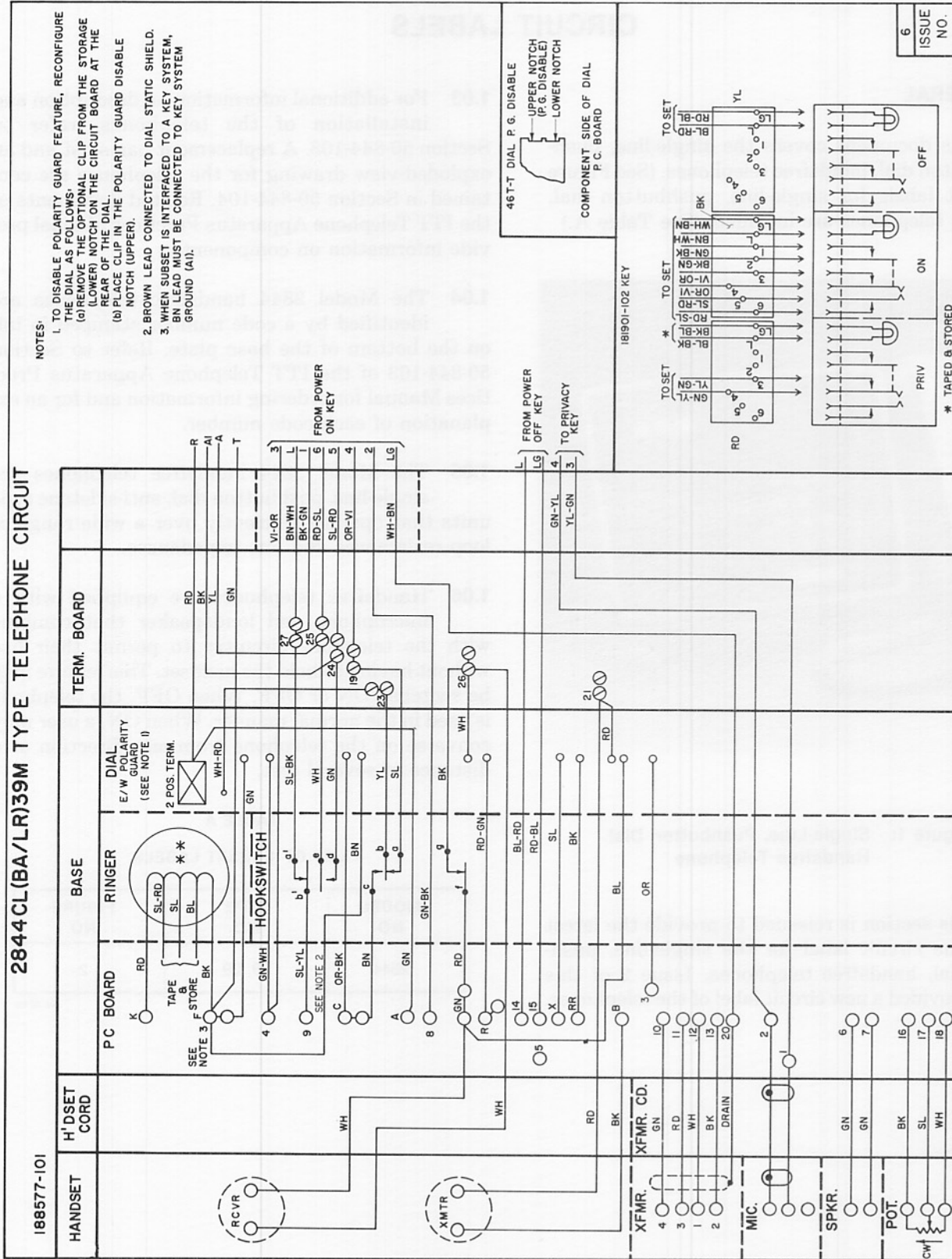


Figure 2: Circuit Label, Model 2844 Types 39, 29