

# MULTIBUTTON TELEPHONES

## **3-LINE, ROTARY DIAL, DESK TELEPHONES**

GENERAL DESCRIPTION - SECTION 50-576-100, ISSUE 1  
REPLACEMENT PARTS - SECTION 50-576-101, ISSUE 2  
CIRCUIT LABELS - SECTION 50-576-102, ISSUE 3

## **3-LINE, PUSHBUTTON DIAL, DESK TELEPHONES**

GENERAL DESCRIPTION - SECTION 50-576-103, ISSUE 2  
REPLACEMENT PARTS - SECTION 50-576-104, ISSUE 2  
CIRCUIT LABELS - SECTION 50-576-105, ISSUE 3

## **6-BUTTON, ROTARY DIAL, KEY TELEPHONES**

GENERAL DESCRIPTION - SECTION 50-565-100, ISSUE 1  
REPLACEMENT PARTS - SECTION 50-565-101, ISSUE 2  
CIRCUIT LABELS - SECTION 50-565-102, ISSUE 3

## **6-BUTTON, PUSHBUTTON DIAL, KEY TELEPHONES**

GENERAL DESCRIPTION - SECTION 50-565-103, ISSUE 1  
REPLACEMENT PARTS - SECTION 50-565-104, ISSUE 2  
CIRCUIT LABELS - SECTION 50-565-105, ISSUE 2

## **10-BUTTON, ROTARY DIAL, DESK TELEPHONES**

GENERAL DESCRIPTION - SECTION 50-830-100, ISSUE 1  
REPLACEMENT PARTS - SECTION 50-830-101, ISSUE 2  
CIRCUIT LABELS - SECTION 50-830-102, ISSUE 2

## **10-BUTTON, PUSHBUTTON DIAL, DESK TELEPHONES**

GENERAL DESCRIPTION - SECTION 50-830-103, ISSUE 1  
REPLACEMENT PARTS - SECTION 50-830-104, ISSUE 2  
CIRCUIT LABELS - SECTION 50-830-105, ISSUE 2

## **20-BUTTON, ROTARY DIAL, DESK TELEPHONES**

GENERAL DESCRIPTION - SECTION 50-831-100, ISSUE 1  
REPLACEMENT PARTS - SECTION 50-831-101, ISSUE 2  
CIRCUIT LABELS - SECTION 50-831-102, ISSUE 2

## **20-BUTTON, PUSHBUTTON DIAL, DESK TELEPHONES**

GENERAL DESCRIPTION - SECTION 50-831-103, ISSUE 1  
REPLACEMENT PARTS - SECTION 50-831-104, ISSUE 2  
CIRCUIT LABELS - SECTION 50-831-105, ISSUE 2

## **10-BUTTON, ROTARY DIAL, DESK TELEPHONES WITH BUSY LAMP FIELD**

GENERAL DESCRIPTION - SECTION 50-835-100, ISSUE 1  
REPLACEMENT PARTS - SECTION 50-835-101, ISSUE 2  
CIRCUIT LABELS - SECTION 50-835-102, ISSUE 2

## **10-BUTTON, PUSHBUTTON DIAL, DESK TELEPHONES WITH BUSY LAMP FIELD**

GENERAL DESCRIPTION - SECTION 50-835-103, ISSUE 1  
REPLACEMENT PARTS - SECTION 50-835-104, ISSUE 2  
CIRCUIT LABELS - SECTION 50-835-105, ISSUE 2

## **10-BUTTON, ROTARY DIAL, WALL TELEPHONES**

GENERAL DESCRIPTION - SECTION 50-854-100, ISSUE 1  
REPLACEMENT PARTS - SECTION 50-854-101, ISSUE 2  
CIRCUIT LABELS - SECTION 50-854-102, ISSUE 2

## **10-BUTTON, PUSHBUTTON DIAL, WALL TELEPHONES**

GENERAL DESCRIPTION - SECTION 50-854-103, ISSUE 1  
REPLACEMENT PARTS - SECTION 50-854-104, ISSUE 2  
CIRCUIT LABELS - SECTION 50-854-105, ISSUE 2

## **30-BUTTON, ROTARY DIAL, DESK TELEPHONES**

GENERAL DESCRIPTION - SECTION 50-861-100, ISSUE 1  
REPLACEMENT PARTS - SECTION 50-861-101, ISSUE 2  
CIRCUIT LABELS - SECTION 50-861-102, ISSUE 2

## **30-BUTTON, PUSHBUTTON DIAL, DESK TELEPHONES**

GENERAL DESCRIPTION - SECTION 50-861-103, ISSUE 1  
REPLACEMENT PARTS - SECTION 50-861-104, ISSUE 2  
CIRCUIT LABELS - SECTION 50-861-105, ISSUE 2

## **10-BUTTON, ROTARY DIAL, DESK TELEPHONES WITH BUILT-IN CALL ANNOUNCER**

GENERAL DESCRIPTION - SECTION 50-870-100, ISSUE 1  
REPLACEMENT PARTS - SECTION 50-870-101, ISSUE 2  
CIRCUIT LABELS - SECTION 50-870-102, ISSUE 2

## **10-BUTTON, PUSHBUTTON DIAL, DESK TELEPHONES WITH BUILT-IN CALL ANNOUNCER**

GENERAL DESCRIPTION - SECTION 50-870-103, ISSUE 1  
REPLACEMENT PARTS - SECTION 50-870-104, ISSUE 2  
CIRCUIT LABELS - SECTION 50-870-105, ISSUE 2

## **20-BUTTON, ROTARY DIAL, DESK TELEPHONES WITH BUILT-IN CALL ANNOUNCER**

GENERAL DESCRIPTION - SECTION 50-871-100, ISSUE 1  
REPLACEMENT PARTS - SECTION 50-871-101, ISSUE 2  
CIRCUIT LABELS - SECTION 50-871-102, ISSUE 2

## **20-BUTTON, PUSHBUTTON DIAL, DESK TELEPHONES WITH BUILT-IN CALL ANNOUNCER**

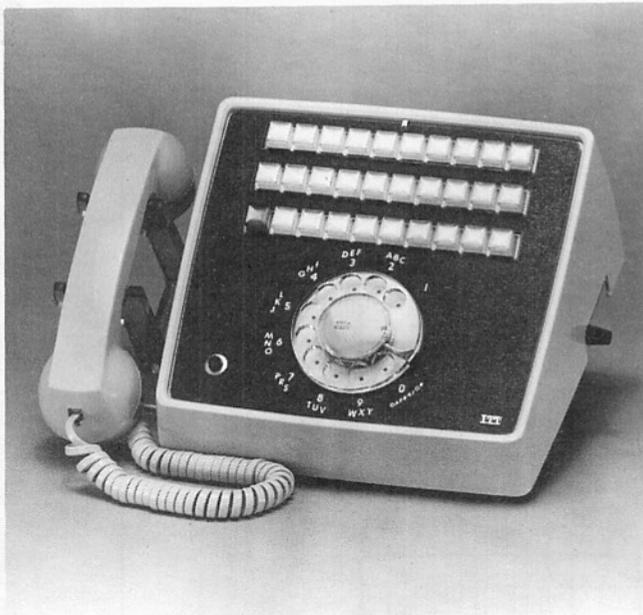
GENERAL DESCRIPTION - SECTION 50-871-103, ISSUE 1  
REPLACEMENT PARTS - SECTION 50-871-104, ISSUE 2  
CIRCUIT LABELS - SECTION 50-871-105, ISSUE 2

## 30-BUTTON, ROTARY DIAL, DESK TELEPHONES

### CIRCUIT LABELS

#### 1. GENERAL

**1.01** This document covers the 30-button, rotary dial, desk telephones. (See Figure 1.) Circuit labels for 30-button, rotary dial, desk telephones are included. (See Table A.)



AW 86-342

**Figure 1: 30-Button, Rotary Dial, Desk Telephone**

**1.02** This section is reissued to reflect changes in the 30-button, rotary dial, desk telephones.

**1.03** For additional information on description and installation of the telephones, refer to Section 50-861-100. A replacement parts list and an exploded-view drawing for the telephones are contained in Section 50-861-101. Related documents of the ITT Telephone Apparatus Practices Manual provide information on components.

**1.04** The Model 861 desk telephones are identified by a code number stamped in ink on the bottom of the base plate. Refer to Section 50-861-100 of the ITT Telephone Apparatus Practices Manual for ordering information and for an explanation of each code number.

**1.05** The Model 861 desk telephones are 30-button, rotary dial, anti-sidetone type units that operate efficiently over a wide range of loop resistances and line impedances. These telephones are designed for use with key telephone systems, such as the ITT 1A2 System, where several telephones have access to the same lines, CO trunks, or intercom lines.

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

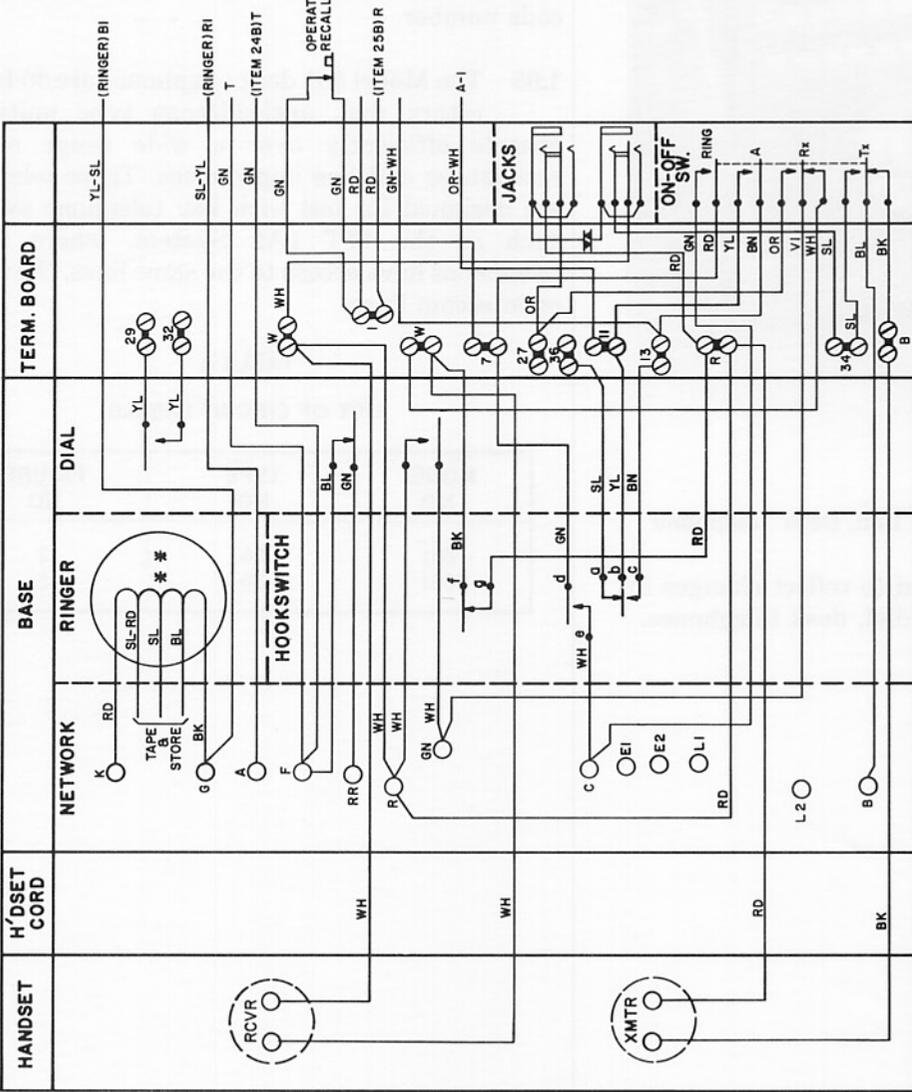
MODEL NO	TYPE NO	FIGURE NO
861	56	2
861	76	3

AW 86-427

861 TYPE TELEPHONE CIRCUIT

183539-101

- NOTES:
1. COMMON TIP, RING AND LAMPGROUND BRASS BUS LINES PLUG INTO KEY AND FIT BETWEEN KEY AND TERMINAL PLUG.
  2. BRASS STRAP ON TERMINAL BOARD CONNECTS TERMINALS 2,5 AND 8 AND 4,6 & 10 & 14,18 & 22 & 15,19 AND 23.
  3. NUMBERED SCREW TERMINALS SHOWN ARE PART OF THE TERMINAL BOARD ASSEMBLY.
  4. IF HOME RUN CABLES ARE NOT PROVIDED AND SETS ARE MULTIPLIED, ANY TIME ONE (1) GROUND LEAD IS REMOVED TO BE UTILIZED AS A SPARE ALL ASSOCIATED MULTIPLIED SETS MUST HAVE THE SAME LEAD REMOVED.
  5. IT IS RECOMMENDED THAT NOT MORE THAN THREE (3) LAMP GROUND (LG) LEADS BE DISCONNECTED FOR USE AS OPTIONAL SPARE LEADS AS THIS PRACTICE CAN RESULT IN CROSS TALK AND 60HZ NOISE WHEN SETS ARE MULTIPLIED ON LONG CABLE RUNS.
  6. \*\* SL,SL-RD & BL RINGER LEADS MANUFACTURE DISCONTINUED ON RINGERS DATE STAMPED 8-81 OR LATER.



2
ISSUE

Figure 2: Circuit Label, Model 861 Type 56 (Sheet 1 of 3)

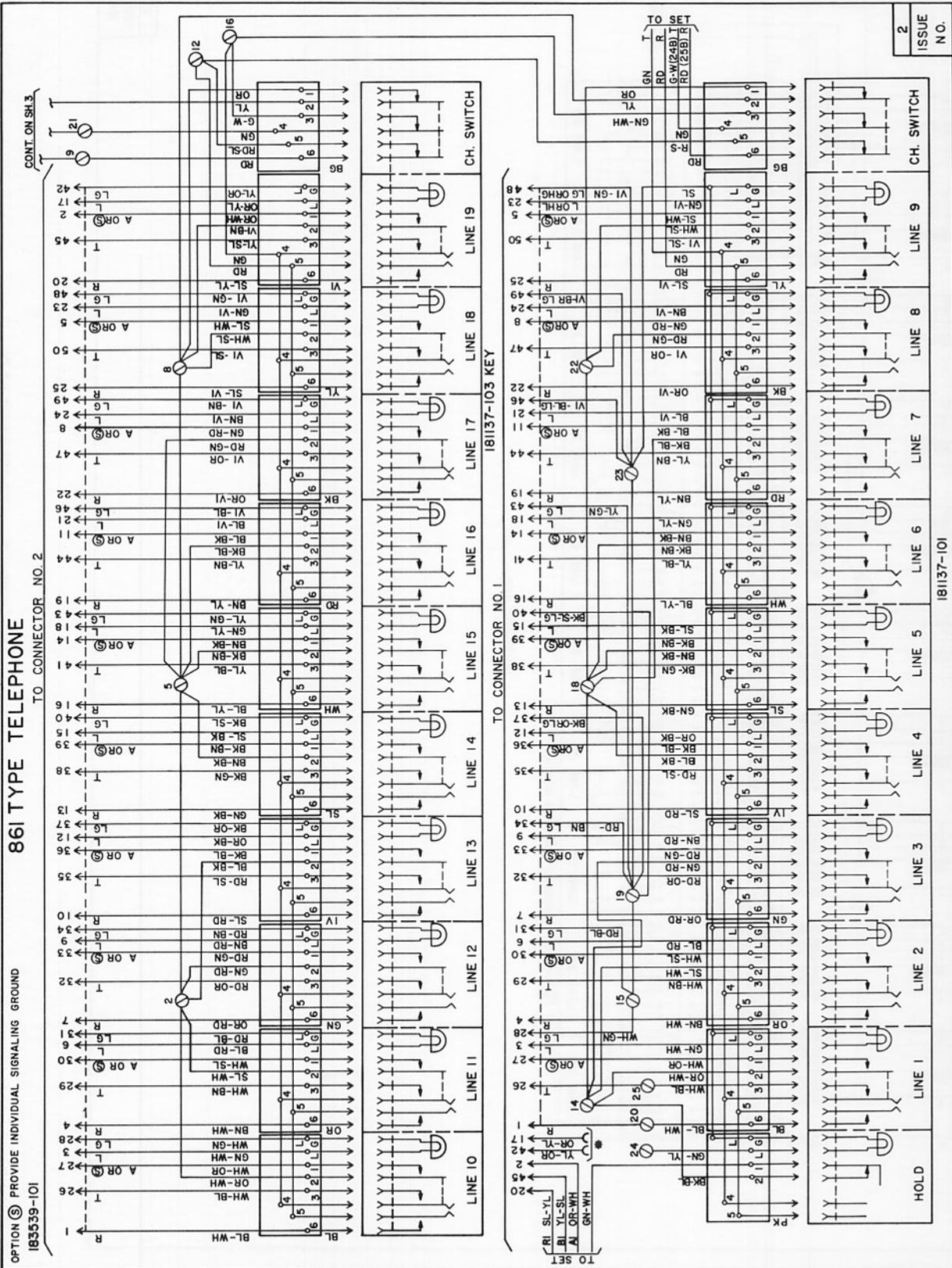


Figure 2: Circuit Label, Model 861 Type 56 (Sheet 2 of 3)

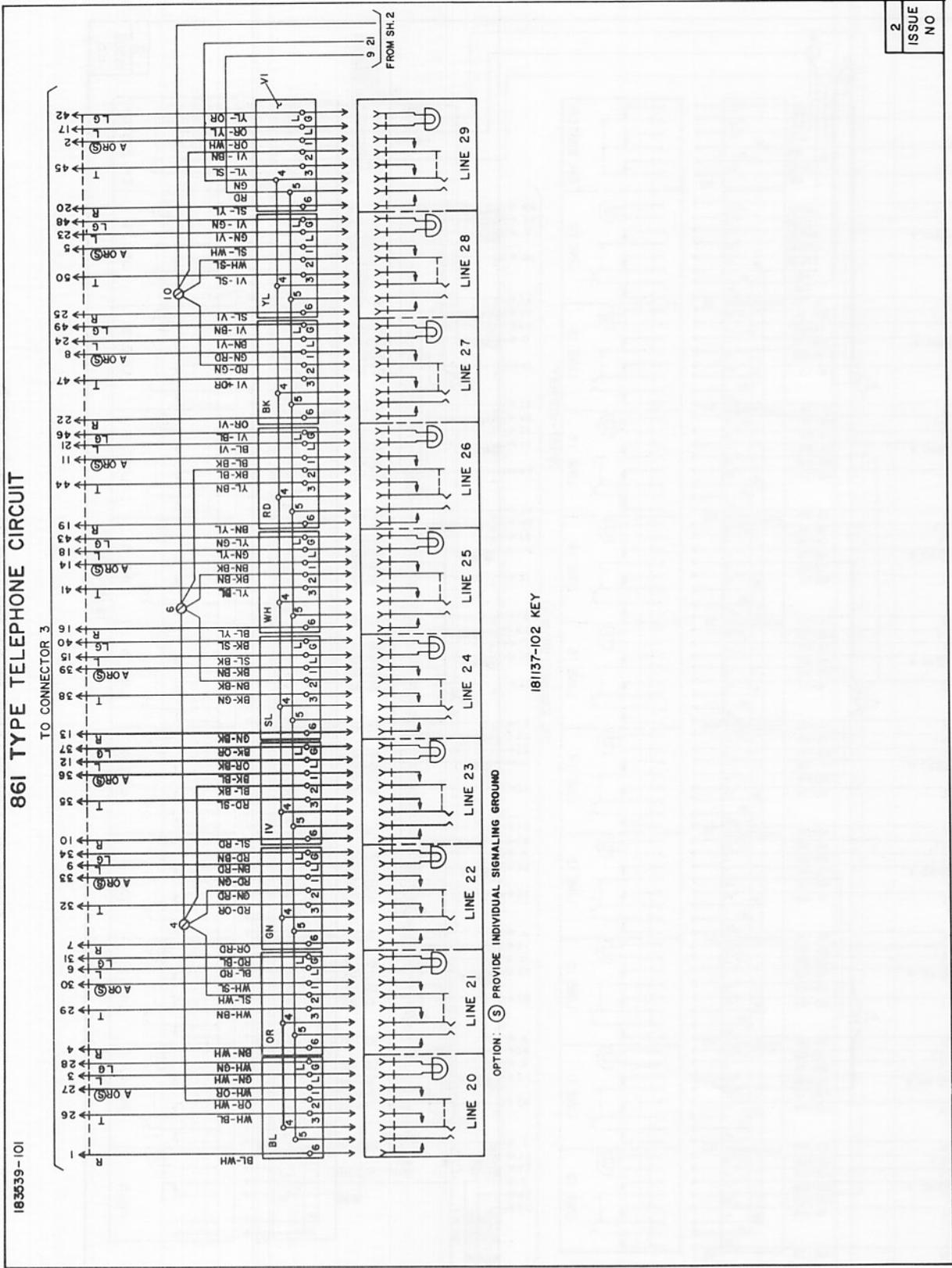


Figure 2: Circuit Label, Model 861 Type 56 (Sheet 3 of 3)



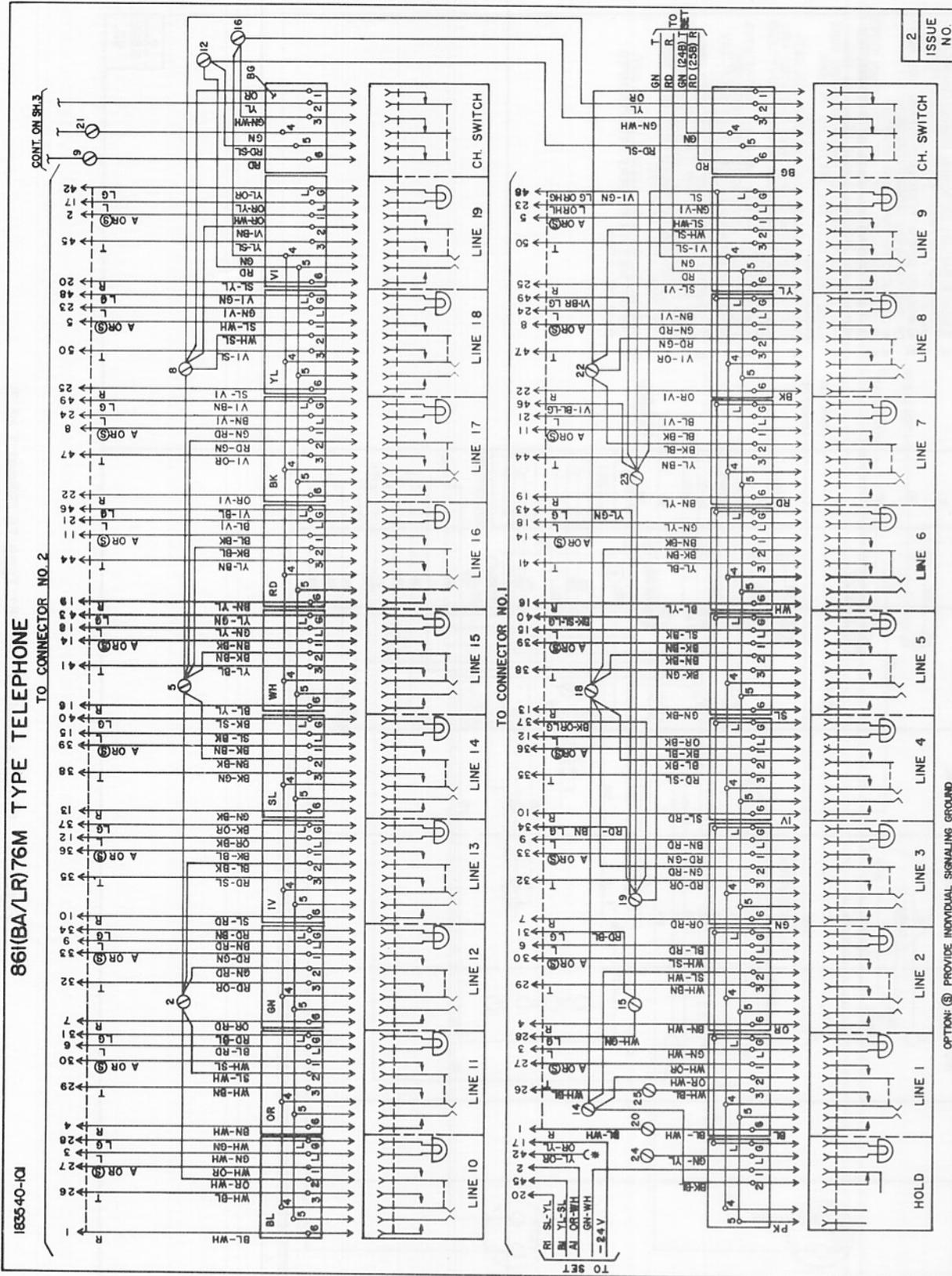


Figure 3: Circuit Label, Model 861 Type 76 (Sheet 2 of 3)



## 30-BUTTON, PUSHBUTTON DIAL, DESK TELEPHONES GENERAL DESCRIPTION

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AW 82-469

Figure 1: 30-Button, Pushbutton Dial, Desk Telephone

### 1. GENERAL DESCRIPTION

**1.01** This document covers the 30-button, pushbutton dial, desk telephone. (See Figure 1.) A general description plus information peculiar to 30-button, pushbutton dial, desk telephones is included.

**1.02** Whenever this section is reissued, reason for reissue will be listed in this paragraph.

**1.03** For additional information, refer to Section 50-861-104, Replacement Parts, and to Section 50-861-105, Circuit Labels. For information on installation, maintenance, and components or equipment, consult related documents of the ITT Telephone Apparatus Practices Manual.

**1.04** The Model 2861 desk telephones are 30-button, pushbutton dial, antisidetone type units that operate efficiently over a wide range of loop resistances and line impedances. These telephones are designed for use with key telephone systems, such as the ITT 1A2 System, where several telephones have access to the same lines, CO trunks, or intercom lines. All models are equipped with a mounting cord terminated in three Amphenol-type connectors.

**1.05** The Model 2861 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** Twenty-nine pushbutton keys on the telephone are used for line, trunk, or intercom lines. 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. All remaining keys may be used as line keys or may be wired as either intercom lines or signal keys.

TABLE A  
ORDERING INFORMATION – TELEPHONES

CODE NUMBERS															
TELEPHONE CODE NUMBERS ARE FORMED IN SIX STEPS AS FOLLOWS:															
				2861		15		O		BA		56		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									
2861	30-Button, Pushbutton Dial, Desk Telephone	00, 05, 13, 15, 44, And 45 (Available On All Models)	O	BA, LR	56, 76	M, R									
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	Conventional	LR	Less Ringer	56	Standard Telephone Equipped To Operate W/External Speakerphone (Includes Operator Recall Button, And Headset Jack W/Switch)	M	Metropolitan (Letters And Numerals)						
05	Moss Green			BA	Straight Line										
13	Beige														
15	White														
44	Light Ash														
45	Cocoa Brown														
					76	Standard Telephone Equipped To Operate W/External Speakerphone (Includes Automatic Exclusion And Release Button, And Headset Jack W/Switch)	R	Regular (Numerals Only)							

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1.07 A signal lamp beneath each of the twenty-nine line keys indicates status of the associated line. (See Table B.)

1.08 All 30-button telephones are equipped with a hookswitch restoration feature that restores any operated line key when the hookswitch is operated. These telephones include an operator headset jack with an ON/OFF switch.

*Note:* When using the operator headset the hookswitch restoration feature must be disabled as shown in paragraph 9.

1.09 Variations in the Model 2861 series telephones are briefly described below. Circuit label drawings for these models are contained in Section 50-861-105.

**MODEL 2861\*\* ( ) 56**

1.10 The Model 2861\*\* ( ) 56 is a standard 30-button, pushbutton dial, desk type, key telephone equipped to operate with an external speakerphone for handsfree operation. A set of contacts in the dial assembly disconnects the handsfree speaker during dialing; also, contacts in the hookswitch assembly provide ON/OFF control of the handsfree equipment. An operator recall button, containing normally closed contacts, is provided with this telephone to recall the operator if the hookswitch restoration feature is used. This model telephone also includes an operator headset jack with an ON/OFF switch. The Model 2861\*\* ( ) 56 is equipped with a 150-conductor mounting cord fitted with three 50-pin (25-pair) male connectors.

TABLE B  
LINE KEY SIGNALS

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

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## MODEL 2861\*\* ( ) 76

**1.11** The Model 2861\*\* ( ) 76 is a standard 30-button, pushbutton dial, desk type, key telephone equipped to operate with an external speakerphone for handsfree operation. A set of contacts in the dial assembly disconnects the handsfree speaker during dialing; also, contacts in the hookswitch assembly provide ON/OFF control of the handsfree equipment. This telephone also has an automatic exclusion (privacy) circuit with a release button. This release button contains normally open contacts. Where this feature is used, all telephones in the key system must contain the exclusion circuit and a release button. Also included with this telephone is an operator headset jack with an ON/OFF switch. The Model 2861\*\* ( ) 76 is equipped with a 150-conductor mounting cord fitted with three 50-pin (25-pair) male connectors.

## 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. For specific wiring information, refer to the appropriate circuit label in Section 50-861-105. Cable connections for 30-button telephones with feature code 56 are listed in Table C. Cable connections for 30-button telephones with feature code 76 that differ from those listed in Table C are listed in Table D. For general installation information and installation of repair parts, refer to the applicable section of the ITT Telephone Apparatus Practices Manual.

## 3. MAINTENANCE

**3.01** For general maintenance information, refer to the maintenance section of the ITT Telephone Apparatus Practices Manual. For a pictorial view and parts list, refer to Section 50-861-104.

## 4. BUTTON CONVERSIONS

**4.01** Any line key may be converted to signaling mode by removing the slotted head pin from the plunger shank. The slotted head pin is removed by turning clockwise. (On earlier models of the 30-button telephone the pin is removed by turning counterclockwise.)

## 5. BUZZER INSTALLATION

**5.01** A buzzer may be installed as the signaling device of a telephone receiving an intercom call. The buzzer may be installed on the dial mounting bracket or mounted externally. For telephones with feature code 56, 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 lamp ground lead is used instead of the OR-YL lead (provided the proper station cross-connections are made). Buzzers selected for this use should operate at 18 VAC, 60 Hz. (See Figure 2.)

**5.02** 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.

## 6. DESIGNATION TABS

**6.01** 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 and lifting. Note that locking surfaces are located on each of the caps and keys. These locking surfaces must properly align when reinstalling.

## 7. GROUNDING PUSHBUTTON

**7.01** Modifications are made to line 9 of the telephone if a grounding pushbutton is required. A grounding pushbutton is required in some

TABLE C  
CABLE CONNECTIONS FOR 30-BUTTON  
TELEPHONES  
(FEATURE CODE 56)

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

## NOTES:

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

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TABLE D  
SPECIAL CABLE CONNECTIONS FOR  
30-BUTTON TELEPHONES (FEATURE CODE 76)

TELEPHONE TERMINAL	LEAD COLOR	LEAD DESIG.	CONNECTOR TERMINAL
Line 26 (Red Plug)	WH-RD	A or S	11
Line 27 (Black Plug)	RD-WH	A or S	8
Line 28 (Yellow Plug)	BL-SL	A or S	5
Line 29 (Violet Plug)	SL-BL	A or S	2
17	OR-YL	-24 VDC	17

## NOTE:

1. This table lists those connections that differ from the connections for feature code 56 telephones shown in Table C.

AW 82-515

PABX applications for transferring calls, originating calls during a power failure, or other special functions. To convert line 9 to a grounding pushbutton, the following modifications are made:

- (a) Modify button to non-locking operation by removing interlock pin from line 9 plunger.
- (b) Ground is provided on the WH-SL (A1) lead by the key system. (No cross-connect is necessary for this lead.)
- (c) Cross-connect from the SL-WH lead to the PABX connection for the desired function.

## 8. DISABLING HOOKSWITCH RESTORATION

**8.01** The hookswitch restoration feature used in multibutton telephones allows a station user to preselect a line key and then remove the handset to initiate a call. When the handset is returned to the cradle or the hookswitch is operated (hookswitch flash), the line key will be restored. To disable the hookswitch restoration feature, the following steps are taken:

- (a) Remove telephone faceplate.
- (b) Remove plastic trip arm by pulling up at the point directly above its mounting shaft.
- (c) Remove torsion spring by sliding it off the mounting shaft.
- (d) Reinstall telephone faceplate.

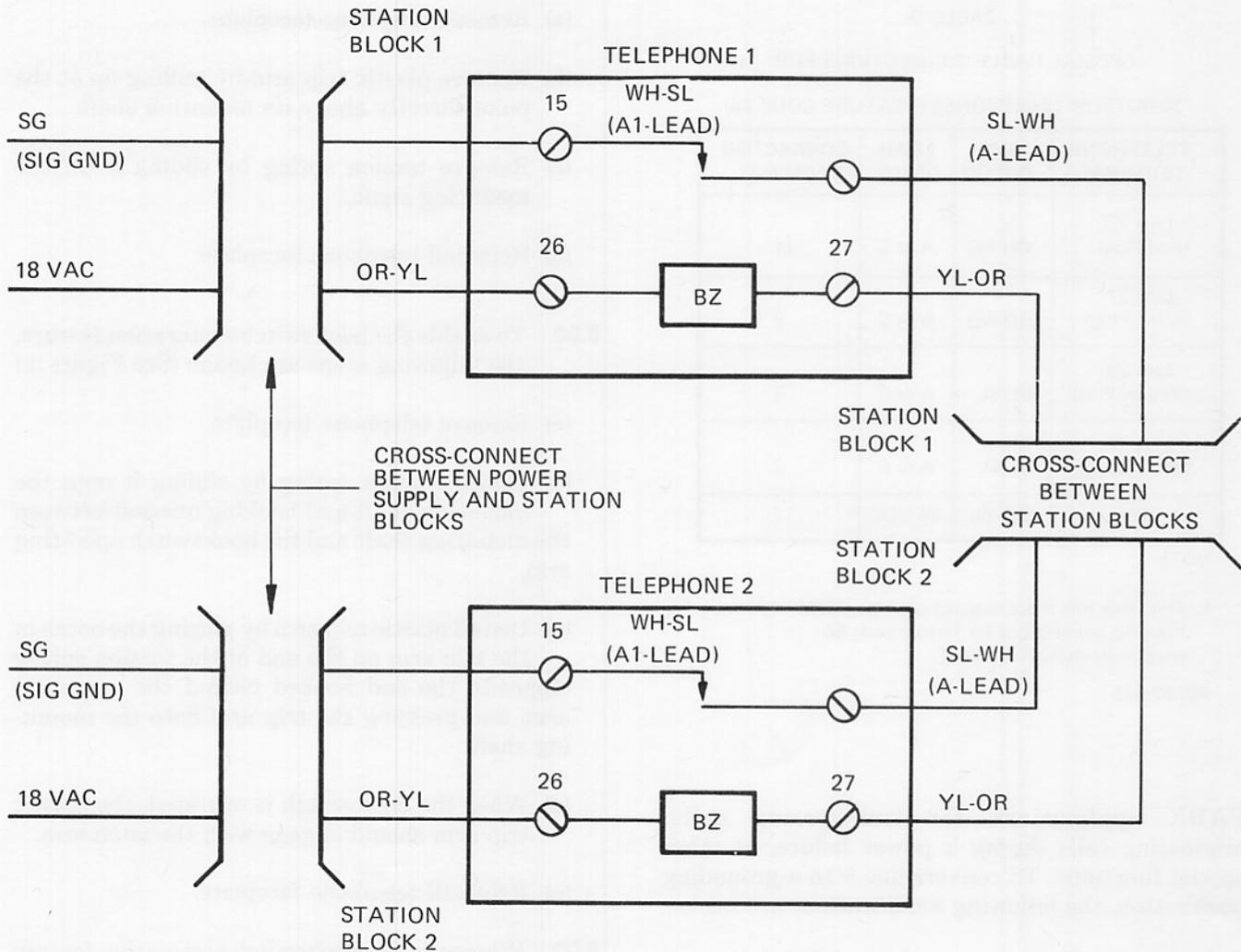
**8.02** To enable the hookswitch restoration feature, the following steps are taken: (See Figure 3.)

- (a) Remove telephone faceplate.
- (b) Install torsion spring by sliding it onto the mounting shaft and hooking one end between the mounting shaft and the hookswitch operating arm.
- (c) Install plastic trip arm by placing the notch in the trip arm on the end of the torsion spring (opposite the end hooked behind the operating arm) and pressing the trip arm onto the mounting shaft.
- (d) When the hookswitch is operated, the plastic trip arm should engage with the latch arm.
- (e) Reinstall telephone faceplate.

**8.03** Whenever the hookswitch restoration feature is disabled, it may become necessary to shorten or lengthen the spring connected to the operating arm to insure proper hookswitch operation. Proper operation requires the cradle to be fully depressed by the weight of the handset and return to the full up position when the handset is off-hook.

**8.04** Earlier models of multibutton telephones may not provide the preselect function with the hookswitch restoration feature. These models include an adjustment screw on the latch arm rather than the plastic trip arm or torsion spring. To disable hookswitch restoration in these telephones, the following steps are taken:

- (a) Remove telephone faceplate and housing.
- (b) Turn the screw in the latch arm approximately five turns counterclockwise.
- (c) Reinstall telephone faceplate and housing.



NOTES:

1. THE ARRANGEMENT SHOWN IS USING LINE 9 OF A TELEPHONE WITH FEATURE CODE 56 AS AN EXAMPLE. IF ANOTHER LINE IS USED, SUBSTITUTE THE APPROPRIATE A1 AND A-LEADS FOR THAT LINE.
2. IN THE 30-BUTTON TELEPHONE, GROUND IS CONNECTED TO TERMINAL 15 (WH-SL LEAD). NO CROSS-CONNECT IS NECESSARY FOR THIS LEAD.
3. FOR TELEPHONES WITH FEATURE CODE 76, A LAMP GROUND LEAD IS USED INSTEAD OF THE OR-YL LEAD (PROVIDED THE PROPER STATION CROSS-CONNECTIONS ARE MADE).

AW 82-501

Figure 2: Circuit Diagram For Signal Buzzer

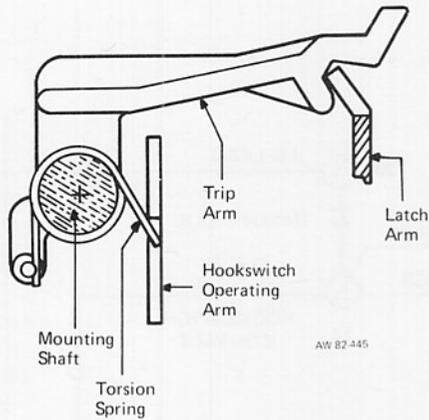


Figure 3: Installation of Trip Arm and Torsion Spring

**9. BUSY LAMP CONNECTIONS**

**9.01** Busy lamp connections vary depending on the type of key system being used. Modifications for the 30-button telephones with feature code 56 should be as follows: (Refer to Figure 4.)

- (a) Remove the GN-WH lead from terminal 13 and connect to terminal 35 on the telephone terminal board.
- (b) Connect one 1N4004 diode between terminals 13 and 35 on the terminal board, and connect another 1N4004 diode between terminals 13 and 28 on the terminal board as shown in Figure 4.
- (c) Connect OR-YL mounting cord lead to terminal 28 of terminal board.

**9.02** Modifications for the 30-button telephones with feature code 76 should be as follows: (Refer to Figure 5.)

- (a) Connect one 1N4004 diode from terminal 13 to terminal 28 on telephone terminal board as shown in Figure 5.
- (b) Connect any "LG" lamp ground lead to terminal 28 on the telephone terminal board. (Proper station cross-connections must be made to allow the use of an LG lead.)

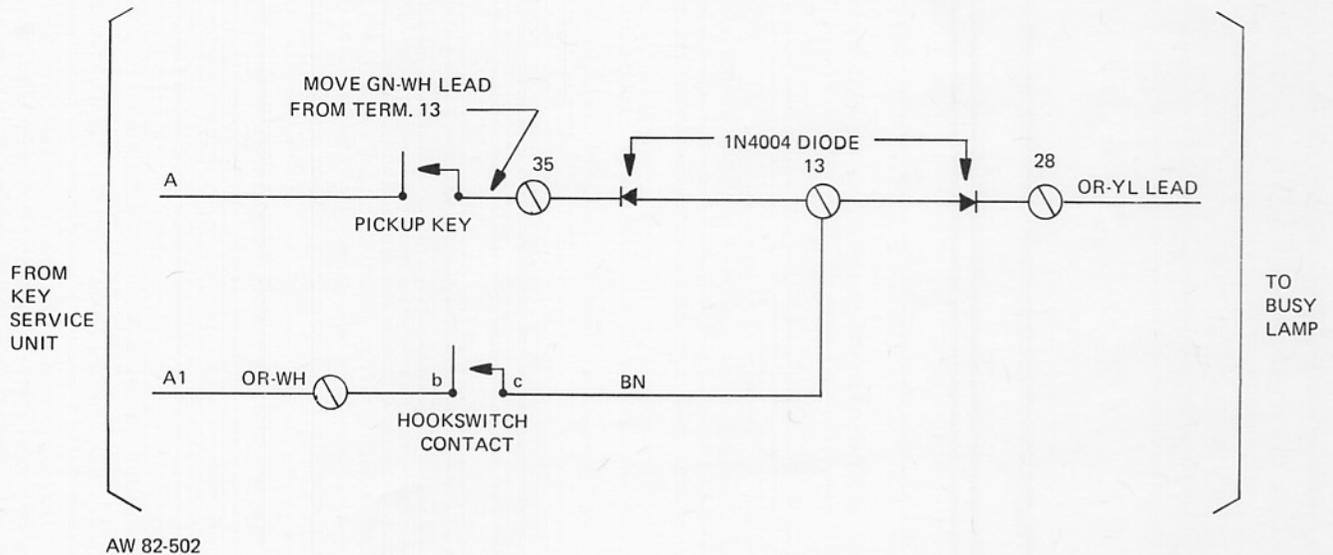
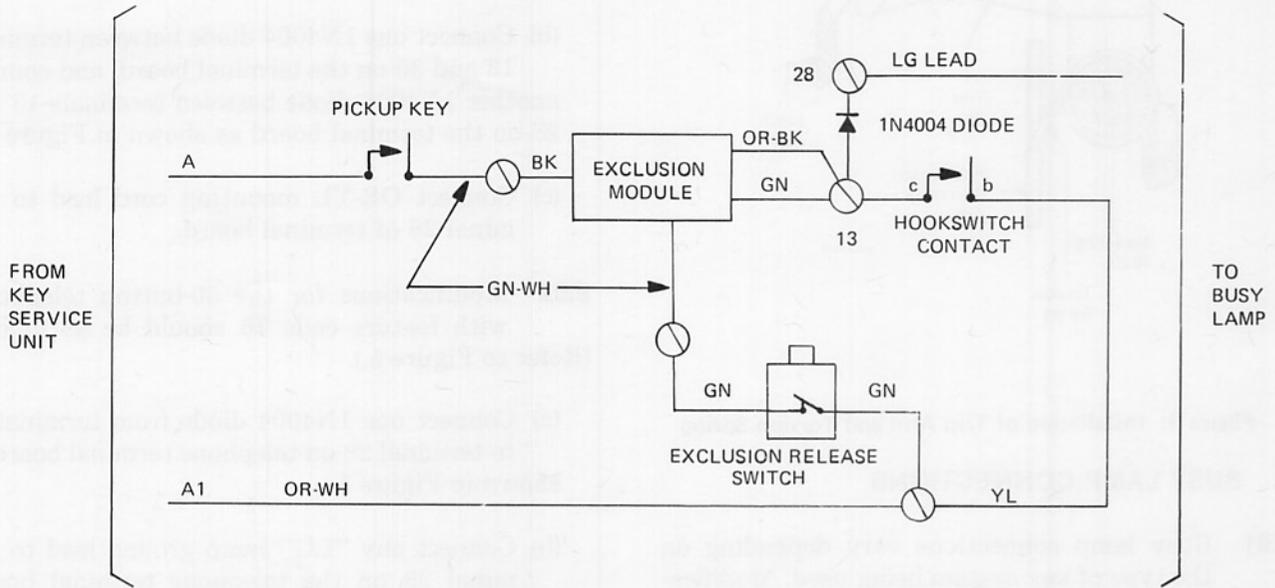


Figure 4: Busy Lamp Connections For 30-Button Telephones with Feature Code 56



AW 82-503

Figure 5: Busy Lamp Connections For 30-Button Telephones with Feature Code 76

## 30-BUTTON, PUSHBUTTON DIAL, DESK TELEPHONES

### REPLACEMENT PARTS

#### 1. GENERAL

**1.01** This document covers the 30-button, pushbutton dial, desk 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 30-button, pushbutton dial, desk 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 50-861-103. The circuit labels appear in Section

50-861-105. Related documents of the ITT Telephone Apparatus Practices Manual provide information on components.

**1.04** The Model 2861 desk telephones are 30-button, pushbutton dial, anti-sidetone type units that operate efficiently over a wide range of loop resistances and line impedances. These telephones are designed for use with key telephone systems, such as the ITT 1A2 System, where several telephones have access to the same lines, CO trunks, or intercom lines.

**1.05** The Model 2861 desk telephones are identified by a code number stamped in ink on the bottom of the base plate. Refer to Section 50-861-103 of the ITT Telephone Apparatus Practices Manual for ordering information and for an explanation of each code number.



AW 82-469

Figure 1: 30-Button, Pushbutton Dial, Desk Telephone



TABLE A  
REPLACEMENT PARTS LIST

INDEX NO	PART NUMBER	DESCRIPTION	QUANTITY USED	
			2861/56	2861/76
		<b>30-Button, Pushbutton Dial, Desk Telephone</b>	<b>2861/56</b>	<b>2861/76</b>
1	182155-***	Faceplate	1	1
2	182153-0**	Housing Assembly	1	1
2	187914-0**	Housing Assembly, Full-Modular	1	1
3	182152-0**	Housing	1	1
3	187923-0**	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	181131-102	Cap, Red	1	1
8	181131-101	Cap, Clear	29	29
9	181281-101	Tab, Key Designation (Strip Of 12)	3	3
10	181287-101	Collar, Key Strip	3	3
11	181137-101	Key Assembly (9 Lines With Hold)	1	1
11	181137-102	Key Assembly (10 Lines)	1	—
11	181137-103	Key Assembly (10 Lines)	1	1
11	182661-101	Key Assembly (10 Lines)	—	1
12	181122-101	Button	30	30
13	000051-00A	Lamp	29	29
14	095992-102	Screw	6	6
15	181292-101	Strip, Contact (GN Wire)	3	3
16	181292-102	Strip, Contact (RD Wire)	3	3
17	181292-105	Strip, Contact (SL Wire)	1	1
18	181154-101	Cord, Internal	1	1
18	181155-101	Cord, Internal	2	1
18	182662-101	Cord, Internal	—	1
19	181997-101	Slide	1	1
20	181996-102	Jack, Headset	2	2
21	095655-101	Varistor	1	1
22	182144-101	Switch, Headset/Handset	1	1
23	181979-101	Bracket, Headset Jack	1	1
24	077046-102	Set Screw, Knob	1	1
25	084774-103	Knob, Headset/Handset Switch	1	1
26	184356-102	Cord, Mounting (150-Conductor)	1	1

TABLE A  
REPLACEMENT PARTS LIST (Cont)

INDEX NO	PART NUMBER	DESCRIPTION	QUANTITY USED	
			2861/56	2861/76
		<b>30-Button, Pushbutton Dial, Desk Telephone</b>	<b>2861/56</b>	<b>2861/76</b>
27	182146-101	Base Assembly	1	1
28	181991-101	Plate, Base	1	1
29	181993-101	Bracket, Key Right	1	1
30	181989-101	Bracket, Plug	2	2
31	181254-102	Bracket, Dial	2	2
32	181427-102	PC Network (#183070-102) <sup>1</sup>	1	1
33	182175-101	Spacer, Network	1	1
34	096407-103	Screw, Network Mounting	1	1
35	182337-101	Foot	4	4
36	082486-102	Rivet, Foot	4	4
37	181260-101	Cradle Switch Assembly <sup>1</sup>	1	1
38	186212-101	Left Bracket Assembly	1	1
	181992-101	Bracket, Key Left	1	1
	185618-101	Bracket, Trip	1	1
39	181986-101	Terminal Board	1	1
40	182691-101	PC Board (Exclusion)	—	1
41	183105-102	Switch Hook Assembly	1	1
	182900-101	Cradle, Switch Hook	1	1
	181145-101	Screw, Switch Hook Cradle	3	3
	185494-101	Operating Arm Assembly	1	1
	185487-101	Arm, Operating	1	1
	075307-104	Spring, Cradle Return	1	1
	181282-101	Shaft, Pivot	1	1
	073538-110	Ring, Retainer	1	1
42	186213-101	Arm, Latch	1	1
43	181151-102	Spring, Latch Arm	1	1
44	073538-110	Ring, Retainer	2	2
45	181995-101	Pin, Pivot	1	1
46	185486-101	Arm, Trip	1	1
47	185485-101	Spring, Torsion	1	1

TABLE A  
REPLACEMENT PARTS LIST (Cont)

INDEX NO	PART NUMBER	DESCRIPTION	QUANTITY USED	
			2861/56	2861/76
		30-Button, Pushbutton Dial, Desk Telephone		
			2861/56	2861/76
48	000148-DBA	Ringer <sup>1</sup>	1	1
49	004600-OPG	Dial Assembly, Pushbutton Digital, Metropolitan (Letters And Numerals) <sup>1, 2</sup>	1	1
49	003600-OPG	Dial Assembly, Pushbutton Tel-Touch, Metropolitan (Letters And Numerals) <sup>1, 3</sup>	1	1
49	004600-OPD	Dial Assembly, Pushbutton Digital, Regular (Numerals Only) <sup>1, 4</sup>	1	1
49	003600-OPD	Dial Assembly, Pushbutton Tel-Touch, Regular (Numerals Only) <sup>1, 3</sup>	1	1
50	087514-101	Retainer, Number Card	1	1
51	087513-101	Card, Number	1	1
51	087513-102	Card, Number, Strip Of 6 (Not Shown) <sup>5</sup>	—	—
52	9018**-072	Cord, Handset, Modular	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	181973-101	Pushbutton, Operator Recall	1	—
54	181971-101	Pushbutton, Exclusion Release	—	1
	600152-611-001	Jack Assembly, Handset Cord, Modular (Not Shown)	1	1
	182990-105	Insulator Assembly, Modular (Not Shown)	1	1
	182794-101	Nameplate, Headset/Handset (Not Shown)	1	1
	187944-101	Nameplate, ITT (Not Shown)	1	1

AW 84-826

## 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		

## 30-BUTTON, PUSHBUTTON DIAL, DESK TELEPHONES

### CIRCUIT LABELS

**1. GENERAL**

**1.01** This document covers the 30-button, pushbutton dial, desk telephones. (See Figure 1.) Circuit labels for 30-button, pushbutton dial, desk telephones are included. (See Table A.)



AW 86-350

**Figure 1: 30-Button, Pushbutton Dial, Desk Telephone**

**1.02** This section is reissued to provide the latest issue of circuit labels for the following 30-button, pushbutton dial, desk telephones:

- (a) Model 2861, Type 56
- (b) Model 2861, Type 76

**1.03** For additional information on description and installation of the telephones, refer to Section 50-861-103. A replacement parts list and an exploded-view drawing for the telephones are contained in Section 50-861-104. Related documents of the ITT Telephone Apparatus Practices Manual provide information on components.

**1.04** The Model 2861 desk telephones are identified by a code number stamped in ink on the bottom of the base plate. Refer to Section 50-861-103 of the ITT Telephone Apparatus Practices Manual for ordering information and for an explanation of each code number.

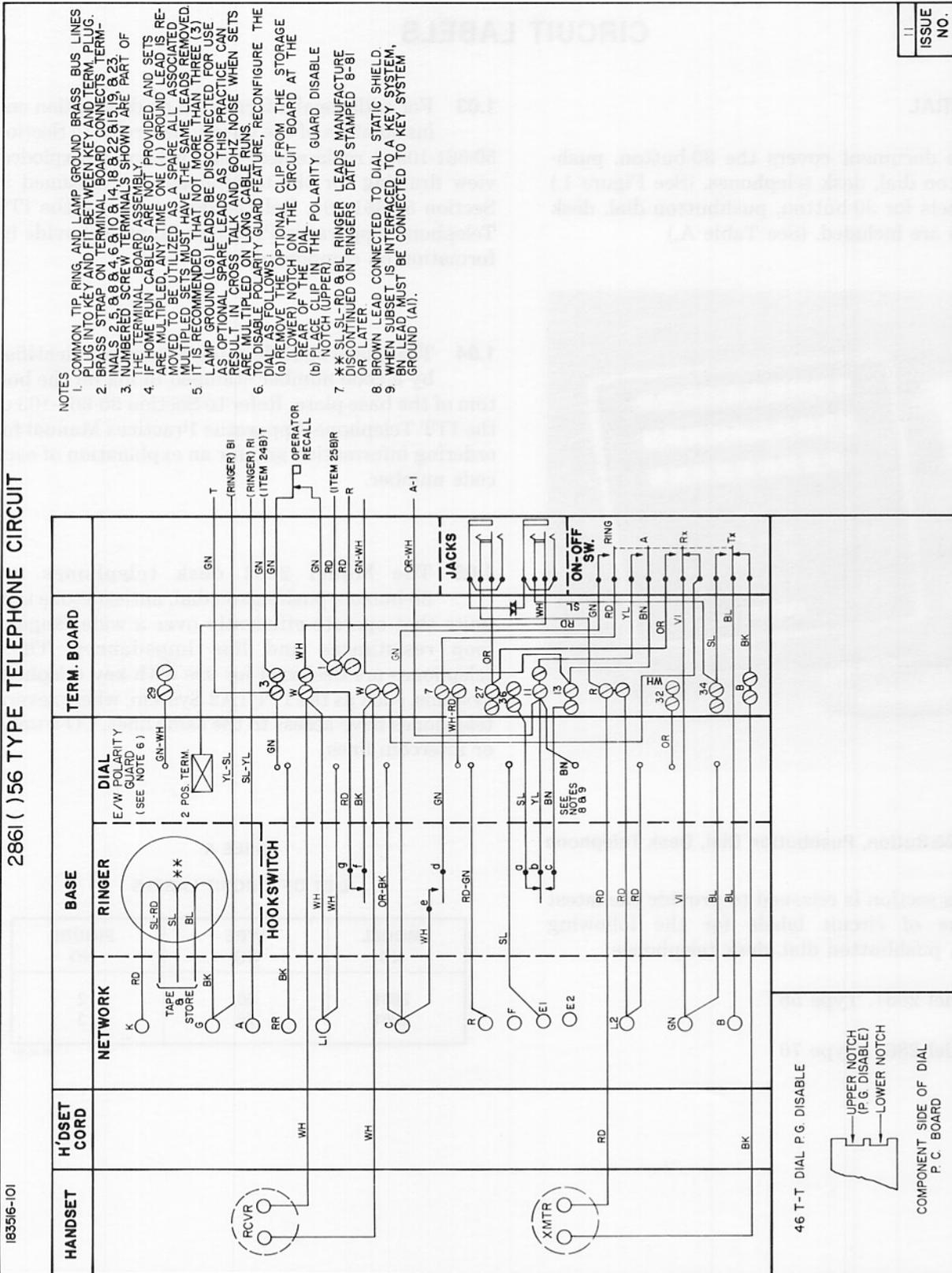
**1.05** The Model 2861 desk telephones are 30-button, pushbutton dial, anti-sidetone type units that operate efficiently over a wide range of loop resistances and line impedances. These telephones are designed for use with key telephone systems, such as the ITT 1A2 System, where several telephones have access to the same lines, CO trunks, or intercom lines.

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

MODEL NO	TYPE NO	FIGURE NO
2861	56	2
2861	76	3

AW 86-384

2861 ( ) 56 TYPE TELEPHONE CIRCUIT



- NOTES
- COMMON TIP, RING, AND LAMP GROUND BRASS BUS LINES PLUG INTO KEY AND FIT BETWEEN KEY AND TERM. PLUG.
  - BRASS STRAP ON TERMINAL BOARD CONNECTS TERMINALS 2, 5, 8, 8, 4, 6, 10, 8, 14, 18, 22, 8, 15, 19, 8, 23.
  - NUMBERED SCREW TERMINALS SHOWN ARE PART OF THE TERMINAL BOARD ASSEMBLY PROVIDED AND SETS FROM OTHER CABLES TIME ONE (1) GROUND LEAD IS RE-APPLIED TO THE SAME AS A SPARE GROUND LEAD ASSOCIATED WITH THE SETS. SETS MUST HAVE THE SAME LEADS REMOVED. IT IS RECOMMENDED THAT NOT MORE THAN THREE (3) LAMP GROUND (LG) LEADS BE DISCONNECTED FOR USE AS OPTIONAL SPARE LEADS AS THIS PRACTICE CAN RESULT IN CROSS TALK AND 60HZ NOISE WHEN SETS ARE MULTIPLED ON LONG CABLE RUNS.
  - TO DISABLE POLARITY GUARD FEATURE, RECONFIGURE THE DIAL AS FOLLOWS:
    - REMOVE THE OPTIONAL CLIP FROM THE STORAGE (LOWER) NOTCH ON THE CIRCUIT BOARD AT THE REAR OF THE DIAL
    - PLACE CLIP IN THE POLARITY GUARD DISABLE (UPPER) NOTCH
  - \*\* SL, RD & BL RINGER LEADS MANUFACTURE DISCONTINUED ON RINGERS DATE STAMPED 8-81 OR LATER
  - BROWN LEAD CONNECTED TO DIAL STATIC SHIELD WHEN SUBSET IS INTERFACED TO A KEY SYSTEM, BN LEAD MUST BE CONNECTED TO KEY SYSTEM GROUND (AI).

Figure 2: Circuit Label, Model 2861 Type 56 (Sheet 1 of 3)





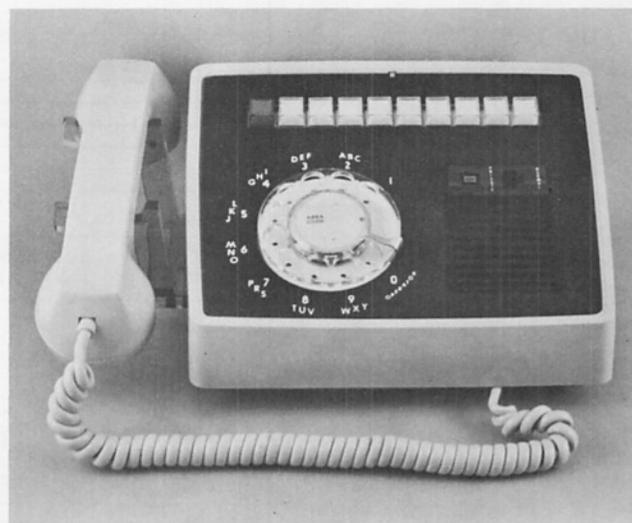






# 10-BUTTON, ROTARY DIAL, DESK TELEPHONES WITH BUILT-IN CALL ANNOUNCER GENERAL DESCRIPTION

	CONTENTS	PAGE
1.	GENERAL DESCRIPTION .....	1
	MODEL 870** ( ) 42 .....	2
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3.	MAINTENANCE .....	3
4.	BUTTON CONVERSIONS .....	3
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AW 82-470

Figure 1: 10-Button, Rotary Dial, Desk Telephone With Built-In Call Announcer

## 1. GENERAL DESCRIPTION

**1.01** This document covers the 10-button, rotary dial, desk telephone with built-in call announcer. (See Figure 1.) A general description plus information peculiar to 10-button, rotary dial, desk telephones with built-in call announcer is included.

**1.02** Whenever this section is reissued, reason for reissue will be listed in this paragraph.

**1.03** For additional information, refer to Section 50-870-101, Replacement Parts, and to Section 50-870-102, Circuit Labels. For information on installation, maintenance, and components or equipment, consult related documents of the ITT Telephone Apparatus Practices Manual.

**1.04** The Model 870 desk telephones are 10-button, rotary dial, antisidetone type units that operate efficiently over a wide range of loop resistances and line impedances. These telephones are designed for use with key telephone systems, such as the ITT 1A2 System, where several telephones have access to the same lines, CO trunks, or intercom lines. All models are equipped with a mounting cord terminated in an Amphenol-type connector.

**1.05** The Model 870 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** Nine pushbutton keys on the telephone are used for line, trunk, or intercom lines. 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. All remaining keys may be used as line keys or may be wired as either intercom lines or signal keys.



TABLE B  
LINE KEY SIGNALS

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

AW 81-96

contacts. Where this feature is used, all telephones in the key system must contain the exclusion circuit and a 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. For specific wiring information, refer to the appropriate circuit label in Section 50-870-102. Cable connections for 10-button telephones with built-in annunciator for feature codes 42 and 46 are listed in Table C. Cable connections for 10-button telephones with built-in call annunciator for feature code 76 are listed in Table D. For general installation information and installation of repair parts, refer to the applicable section of the ITT Telephone Apparatus Practices Manual.

## 3. MAINTENANCE

**3.01** For general maintenance information, refer to the maintenance section of the ITT Telephone Apparatus Practices Manual. For a pictorial view and parts list, refer to Section 50-870-101.

## 4. BUTTON CONVERSIONS

**4.01** Any line key may be converted to signaling mode by removing the slotted head pin from the plunger shank. The slotted head pin is removed by turning clockwise. (On earlier models of the 10-button telephone the pin is removed by turning counterclockwise.)

## 5. BUZZER INSTALLATION

**5.01** A buzzer may be installed as the signaling device of a telephone receiving an intercom call. The buzzer may be either installed on the dial mounting bracket or mounted externally. For telephones with feature codes 42, 46, and 76, buzzer leads are connected to lamp ground leads (provided the proper station cross-connections are made). Buzzers selected for this use must operate at 18 VAC, 60 Hz. (See Figure 2.)

**5.02** 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.

## 6. DESIGNATION TABS

**6.01** 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 and lifting. Note that locking surfaces are located on each of the caps and keys. These locking surfaces must properly align when reinstalling.

## 7. GROUNDING PUSHBUTTON

**7.01** Modifications are made to line 9 of the telephone if a grounding pushbutton is required. A grounding pushbutton is required in some PABX applications for transferring calls, originating calls during a power failure, or other special functions. To convert line 9 to a grounding pushbutton, the following modifications should be made:

- (a) Modify button to non-locking operation by removing interlock pin from the line 9 plunger.
- (b) Ground is provided on the WH-SL (A1) lead by the key system. (No cross-connect is necessary for this lead.)
- (c) Cross-connect from the SL-WH lead to the PABX connection for the desired function.

**SECTION 50-870-100, ISS 1**

**TABLE C**  
**CABLE CONNECTIONS FOR 10-BUTTON**  
**TELEPHONES WITH BUILT-IN CALL ANNOUNCER**  
**(FEATURE CODES 42 AND 46)**

LINES 1 THROUGH 5				LINES 6 THROUGH 9			
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 6 (White Plug)	YL-BL	T	41
	BL-WH	R	1		BL-YL	R	16
	WH-OR	A	27		BN-BK	A or S	14
	WH-GN	LG	28		YL-GN	LG	43
	GN-WH	L	3		GN-YL	L	18
Line 2 (Orange Plug)	WH-BN	T	29	Line 7 (Red Plug)	YL-BN	T	44
	BN-WH	R	4		BN-YL	R	19
	WH-SL	A or S	30		BL-BK	A or S	11
	RD-BL	LG	31		VI-BL	CA-24(VT)	46
	BL-RD	L	6	BL-VI	L	21	
Line 3 (Green Plug)	RD-OR	T	32	Line 8 (Black Plug)	VI-OR	T	47
	OR-RD	R	7		OR-VI	R	22
	RD-GN	A or S	33		GN-RD	A or S	8
	RD-BN	LG	34		VI-BN	CA RST	49
	BN-RD	L	9	BN-VI	L, P4 or 1T	24	
Line 4 (Ivory Plug)	RD-SL	T	35	Line 9 (Yellow Plug)	VI-SL	T	50
	SL-RD	R	10		SL-VI	R	25
	BK-BL	A or S	36		SL-WH	A or S	5
	BK-OR	LG	37		VI-GN	CA SIG	48
	OR-BK	L	12	GN-VI	L or R1	23	
Line 5 (Slate Plug)	BK-GN	T	38	10	OR-WH	A1	2
	GN-BK	R	13	G	YL-SL	B or B1	45
	BK-BN	A or S	39	A	SL-YL	R or R1	20
	BK-SL	LG	40	27	YL-OR	CA GND	42
	SL-BK	L	15	6	OR-YL	SG, LK or Spare	17

**NOTES:**

1. All lamp ground leads are common.
2. The designation S indicates that the lead provides an individual signal ground

AW 82-505

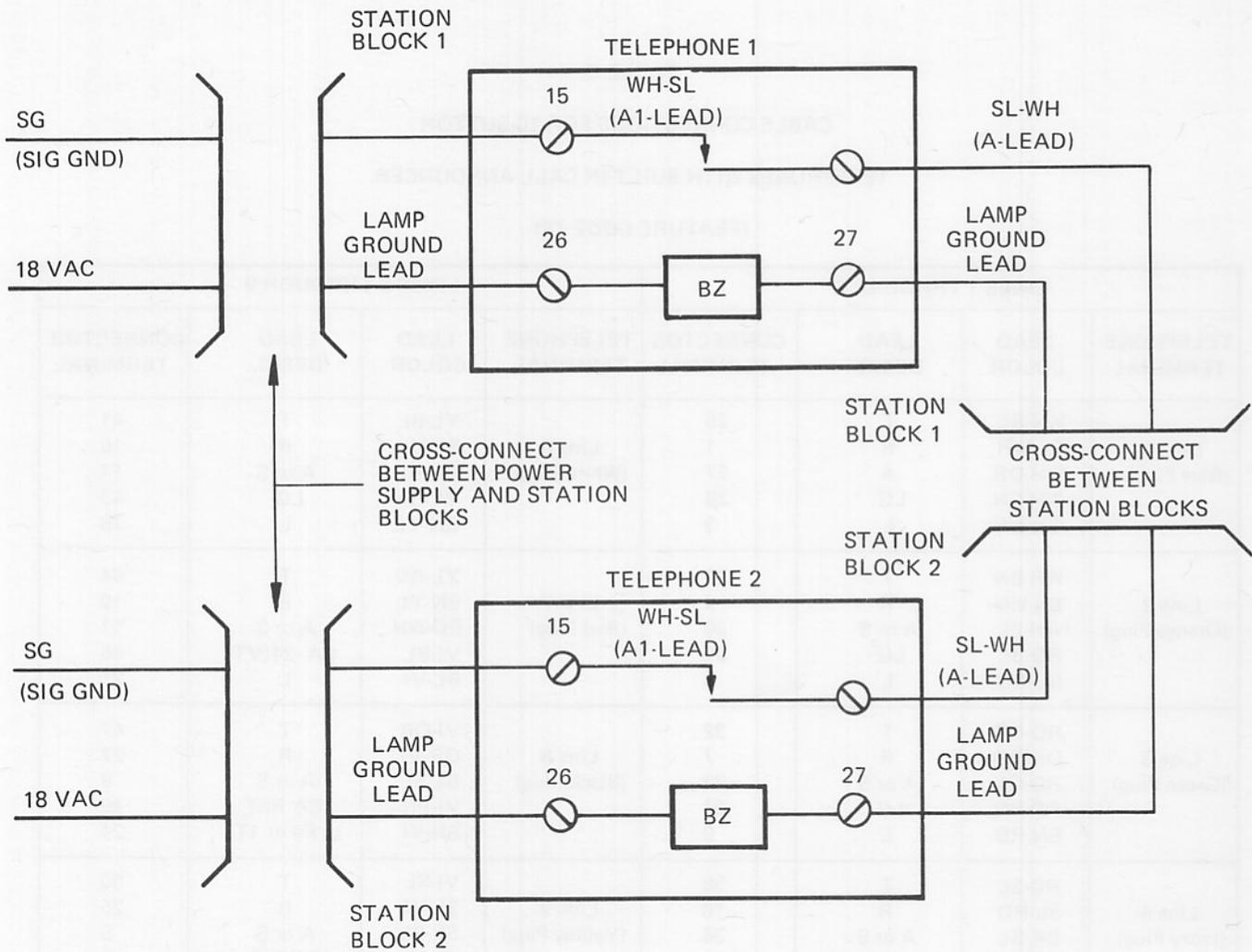
TABLE D  
CABLE CONNECTIONS FOR 10-BUTTON  
TELEPHONES WITH BUILT-IN CALL ANNOUNCER  
(FEATURE CODE 76)

LINES 1 THROUGH 5				LINES 6 THROUGH 9			
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 6 (White Plug)	YL-BL	T	41
	BL-WH	R	1		BL-YL	R	16
	WH-OR	A	27		WH-RD	A or S	14
	WH-GN	LG	28		YL-GN	LG	43
	GN-WH	L	3		GN-YL	L	18
Line 2 (Orange Plug)	WH-BN	T	29	Line 7 (Red Plug)	YL-BN	T	44
	BN-WH	R	4		BN-YL	R	19
	WH-SL	A or S	30		RD-WH	A or S	11
	RD-BL	LG	31		VI-BL	CA -24(VT)	46
	BL-RD	L	6		BL-VI	L	21
Line 3 (Green Plug)	RD-OR	T	32	Line 8 (Black Plug)	VI-OR	T	47
	OR-RD	R	7		OR-VI	R	22
	RD-GN	A or S	33		BL-SL	A or S	8
	RD-BN	LG	34		VI-BN	CA RST	49
	BN-RD	L	9		BN-VI	L, P4 or 1T	24
Line 4 (Ivory Plug)	RD-SL	T	35	Line 9 (Yellow Plug)	VI-SL	T	50
	SL-RD	R	10		SL-VI	R	25
	BK-BL	A or S	36		SL-BL	A or S	5
	BK-OR	LG	37		VI-GN	CA SIG	48
	OR-BK	L	12		GN-VI	L or R1	23
Line 5 (Slate Plug)	BK-GN	T	38	10	OR-WH	A1	2
	GN-BK	R	13	G	YL-SL	B or B1	45
	BK-BN	A or S	39	A	SL-YL	R or R1	20
	BK-SL	LG	40	27	YL-OR	CA GND	42
	SL-BK	L	15	17	OR-YL	-24	17

## NOTES:

1. All lamp ground leads are common.
2. The designation S indicates that the lead provides an individual signal ground.

AW 82-506



NOTES:

1. THE ARRANGEMENT SHOWN IS USING LINE 9 AS AN EXAMPLE. IF ANOTHER LINE IS USED, SUBSTITUTE THE APPROPRIATE A1 AND A-LEADS FOR THAT LINE.
2. IN THE 10-BUTTON TELEPHONE, GROUND IS CONNECTED TO TERMINAL 15 (WH-SL LEAD). NO CROSS-CONNECT IS NECESSARY FOR THIS LEAD.

AW 82-508

Figure 2: Circuit Diagram For Signal Buzzer

## 8. DISABLING HOOKSWITCH RESTORATION

**8.01** The hookswitch restoration feature used in multibutton telephones allows a station user to preselect a line key and then remove the handset to initiate a call. When the handset is returned to the cradle or the hookswitch is operated (hookswitch flash), the line key will be restored. To disable the hookswitch restoration feature, the following steps are taken:

- (a) Remove telephone faceplate.
- (b) Remove plastic trip arm by pulling up at the point directly above its mounting shaft.
- (c) Remove torsion spring by sliding it off the mounting shaft.
- (d) Reinstall telephone faceplate.

**8.02** To enable the hookswitch restoration feature, the following steps are taken: (See Figure 3.)

- (a) Remove telephone faceplate.
- (b) Install torsion spring by sliding it onto the mounting shaft and hooking one end between the mounting shaft and the hookswitch operating arm.
- (c) Install plastic trip arm by placing the notch in the trip arm on the end of the torsion spring (opposite the end hooked behind the operating arm) and pressing the trip arm onto the mounting shaft.
- (d) When the hookswitch is operated, the plastic trip arm should engage with the latch arm.

- (e) Reinstall telephone faceplate.

**8.03** Whenever the hookswitch restoration feature is disabled, it may become necessary to shorten or lengthen the spring connected to the operating arm to insure proper hookswitch operation. Proper operation requires the cradle to be fully depressed by the weight of the handset and return to the full up position when the handset is off-hook.

**8.04** Earlier models of multibutton telephones may not provide the preselect function with the hookswitch restoration feature. These models include an adjustment screw on the latch arm rather

than the plastic trip arm or torsion spring. To disable hookswitch restoration in these telephones, the following steps are taken:

- (a) Remove telephone faceplate and housing.
- (b) Turn the screw in the latch arm approximately five turns counterclockwise.
- (c) Reinstall telephone faceplate and housing.

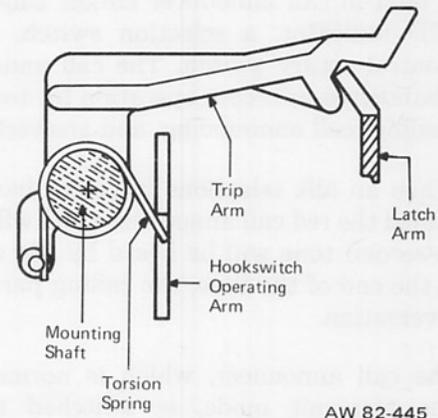


Figure 3: Installation of Trip Arm and Torsion Spring

## 9. BUSY LAMP CONNECTIONS

**9.01** Busy lamp connections vary depending on the type of key system being used. Modifications for the 10-button desk telephones with feature codes 42 and 46 should be as follows:

- (a) Remove GN-WH lead from terminal 22 and connect to terminal 16 on the telephone terminal board.
- (b) Connect one 1N4004 diode between terminals 22 and 16 on the terminal board, and connect another 1N4004 diode between terminals 22 and 28 on the terminal board as shown in Figure 4.
- (c) Connect a lamp ground lead to terminal 28 of the terminal board (provided proper station cross-connections are made).

**9.02** Modifications for the 10-button desk telephones with feature code 76 should be as follows: (Refer to Figure 5.)

**SECTION 50-870-100, ISS 1**

(a) Connect one 1N4004 diode from terminal 22 to terminal 28 on the telephone terminal board as shown in Figure 5.

(b) Connect a lamp ground lead to terminal 28 on the telephone terminal board (provided proper station cross-connections are made).

**10. BUILT-IN CALL ANNOUNCER**

**10.01** All model 870 telephones are equipped with a built-in call announcer circuit consisting of an LED indicator, a selection switch, and a volume control rotary switch. The call announcer provides handsfree intercom operation for tone and voice signaling, call announcing, and answerback.

**10.02** When an idle telephone intercom has been dialed the red call announcer LED will light and a one-second tone will be heard by the calling party. At the end of the tone, the calling party can begin conversation.

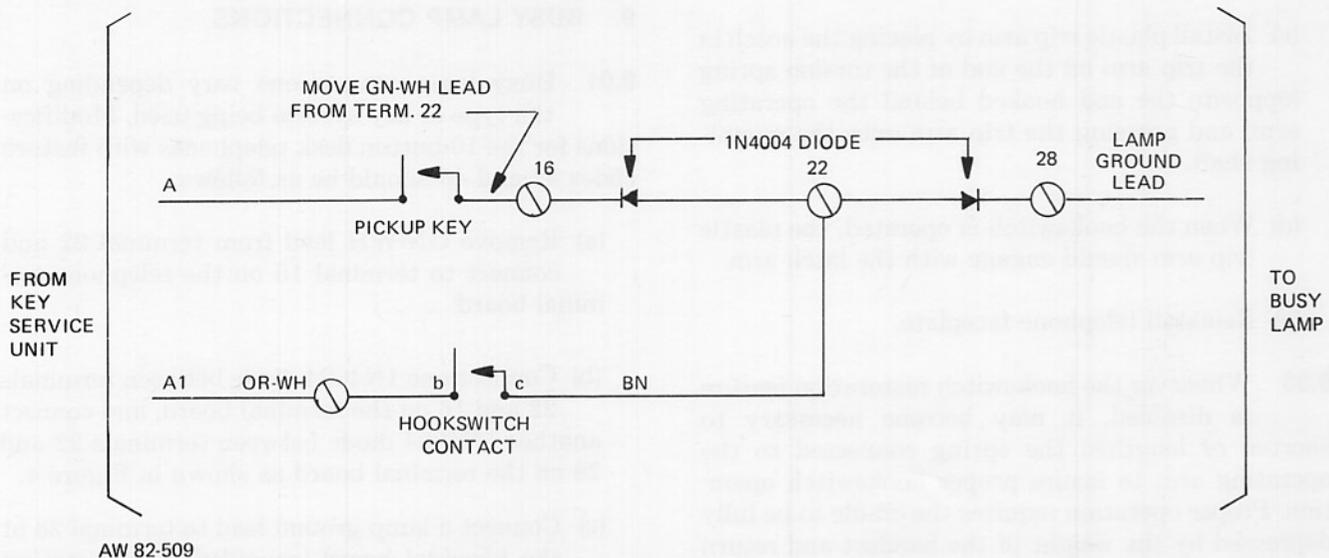
**10.03** The call announcer, which is normally in the transmit mode, is switched to the receive mode when the station is called. When the

signal or message ends, the call announcer returns to the transmit mode. The called party can then answerback handsfree through the call announcer.

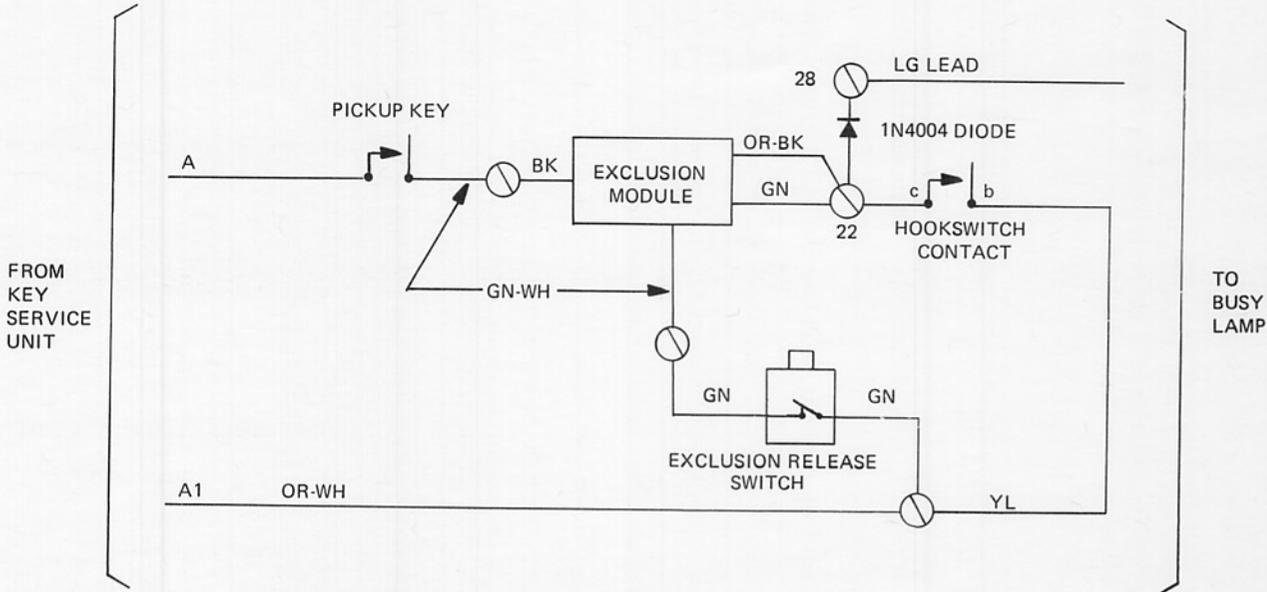
**10.04** A private/normal switch, is located above the speaker grill. The normal position of the switch allows handsfree answerback operation. When the switch is in the private position the answerback (transmit) circuit is turned off preventing the calling party from overhearing conversation near the signaled call announcer.

**10.05** A volume control, located under the right side of the telephone, adjusts the listening level of the call announcer.

**10.06** Lifting the telephone handset automatically disconnects the call announcer circuit and allows normal handset operation.



**Figure 4: Busy Lamp Connections For 10-Button Telephones with Feature Codes 42 and 46**



AW 82-482

Figure 5: Busy Lamp Connections For 10-Button Telephones with Feature Code 76

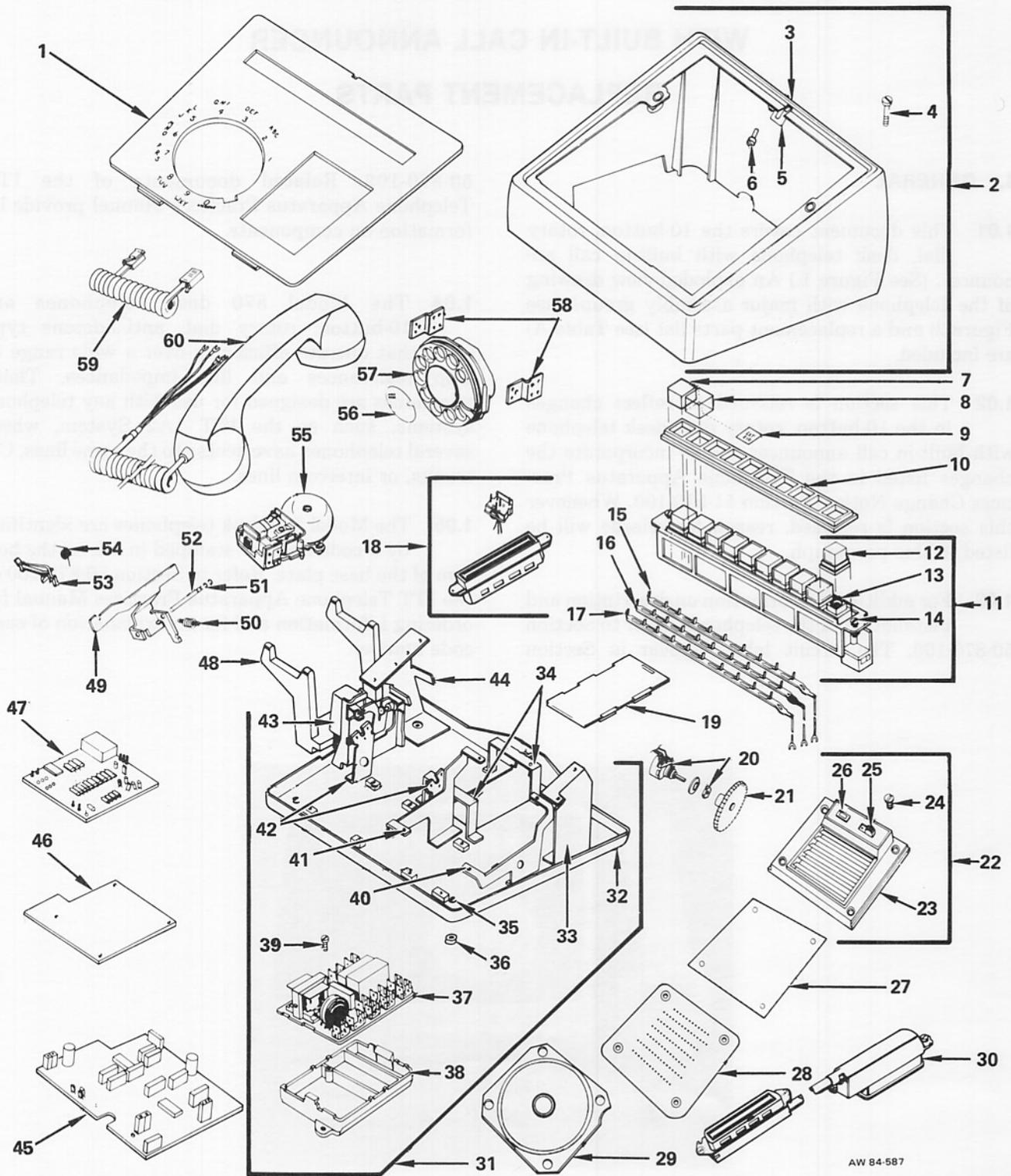


Figure 2: 10-Button, Rotary Dial, Desk Telephone With Built-In Call Announcer, Exploded View

TABLE A  
REPLACEMENT PARTS LIST

INDEX NO	PART NUMBER	DESCRIPTION	QUANTITY USED		
			870/42	870/46	870/76
		10-Button, Rotary Dial, Desk Telephone With Built-In Call Announcer	870/42	870/46	870/76
1	181790-***	Faceplate	1	—	—
1	182782-***	Faceplate	—	1	1
2	181102-0**	Housing Assembly	1	1	1
2	187906-0**	Housing Assembly, Full-Modular	1	1	1
3	181104-0**	Housing	1	1	1
3	187922-0**	Housing, Full-Modular	1	1	1
4	095992-102	Screw, Housing	2	2	2
5	181100-101	Spring, Latch	1	1	1
6	181289-101	Screw, Spring Latch	1	1	1
7	181131-102	Cap, Red	1	1	1
8	181131-101	Cap, Clear	9	9	9
9	181281-101	Tab, Key Designation (Strip Of 12)	1	1	1
10	181287-101	Collar, Key Strip	1	1	1
11	181137-104	Key Assembly	1	1	—
11	182552-102	Key Assembly	—	—	1
12	181122-101	Button	10	10	10
13	000051-00A	Lamp	9	9	9
14	095992-102	Screw	2	2	2
15	181292-101	Strip, Contact (GN Wire)	1	1	1
16	181292-102	Strip, Contact (RD Wire)	1	1	1
17	181292-105	Strip, Contact (SL Wire)	1	1	1
18	181154-101	Cord, Internal	1	1	—
18	182546-101	Cord, Internal	—	—	1
19	181290-101	Slide	1	1	1
20	184061-101	Control, Volume	1	1	1
21	181808-101	Knob, Volume Control	1	1	1
22	184054-201	Speaker Grill Assembly	1	1	1
23	184050-201	Grill, Speaker	1	1	1
24	181892-101	Screw, Speaker Grill	4	4	4
25	184052-101	Switch, Slide	1	1	1
26	184053-101	LED	1	1	1
27	181899-101	Cloth, Grill	1	1	1
28	181794-101	Plate, Speaker Baffle <sup>3</sup>	1	1	1
29	184060-101	Speaker Assembly	1	1	1
30	184371-102	Cord, Mounting (50-Conductor)	1	1	1

TABLE A  
REPLACEMENT PARTS LIST (Cont)

INDEX NO	PART NUMBER	DESCRIPTION	QUANTITY USED		
			870/42	870/46	870/76
		<b>10-Button, Rotary Dial, Desk Telephone With Built-In Call Announcer</b>			
31	184055-103	Base Assembly	1	1	1
32	181141-105	Plate, Base <sup>2</sup>	1	1	1
33	181251-101	Bracket, Key Right	1	1	1
34	181255-101	Bracket, Plug	2	2	2
35	082486-102	Rivet, Foot	4	4	4
36	182337-101	Foot	4	4	4
37	181427-101	PC Network (#183070-101) <sup>1</sup>	1	1	1
38	182175-101	Spacer, Network	1	1	1
39	096407-103	Screw, Network Mounting	1	1	1
40	181801-101	Bracket, Speaker Right	1	1	1
41	181800-101	Bracket, Speaker Left	1	1	1
42	181254-102	Bracket, Dial	2	2	2
43	181260-101	Cradle Switch Assembly <sup>1</sup>	1	1	1
44	181150-102	Left Bracket Assembly	1	1	1
	185619-101	Left Trip Bracket Assembly	1	1	1
	181252-101	Bracket, Key Left	1	1	1
	185618-101	Bracket, Trip	1	1	1
45	184059-101	PC Board (Call Announcer)	1	1	1
46	184056-101	Terminal Board	1	1	1
47	182691-101	PC Board (Exclusion)	—	—	1
48	183105-102	Switch Hook Assembly	1	1	1
	182900-101	Cradle, Switch Hook	1	1	1
	181145-101	Screw, Switch Hook Cradle	3	3	3
	185494-101	Operating Arm Assembly	1	1	1
	185487-101	Arm, Operating	1	1	1
	075307-104	Spring, Cradle Return	1	1	1
	181282-101	Shaft, Pivot	1	1	1
	073538-110	Ring, Retainer	1	1	1
49	185488-101	Arm, Latch	1	1	1
50	181151-101	Spring, Latch Arm	1	1	1
51	073538-110	Ring, Retainer	2	2	2
52	181152-101	Pin, Pivot	1	1	1

TABLE A  
REPLACEMENT PARTS LIST (Cont)

INDEX NO	PART NUMBER	DESCRIPTION	QUANTITY USED		
			870/42	870/46	870/76
		10-Button, Rotary Dial, Desk Telephone With Built-In Call Announcer	870/42	870/46	870/76
53	185486-101	Arm, Trip	1	1	1
54	185485-101	Spring, Torsion	1	1	1
55	000148-DBA	Ringer <sup>1</sup>	1	1	1
56	075415-101	Card, Number	1	1	1
57	003800-00H	Dial Assembly, Metropolitan (Letters And Numerals) <sup>1</sup>	1	1	1
58	181146-101	Bracket, Dial Adapter	2	2	2
59	9018**-072	Cord, Handset, Modular	1	1	1
60	0065**-0C2	Handset Assembly, Nonmodular <sup>1</sup>	1	1	1
60	0065**-0M2	Handset Assembly, Modular <sup>1</sup>	1	1	1
	600152-611-001	Jack Assembly, Handset Cord, Modular (Not Shown)	1	1	1
	182990-105	Insulator Assembly, Modular (Not Shown)	1	1	1
	181973-101	Pushbutton, Operator Recall (Not Shown)	—	1	—
	181971-101	Pushbutton, Exclusion Release (Not Shown)	—	—	1
	187944-101	Nameplate, ITT (Not Shown)	1	1	1

AW 84-811

NOTES:

- <sup>1</sup> Refer to Component Parts Section of this manual for Assembly Parts List.
- <sup>2</sup> This is an NSS item (not serviced separately).
- <sup>3</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		

## 10-BUTTON, ROTARY DIAL, DESK TELEPHONES WITH BUILT-IN CALL ANNOUNCER CIRCUIT LABELS

### 1. GENERAL

**1.01** This document covers the 10-button, rotary dial, desk telephones with built-in call announcer. (See Figure 1.) Circuit labels for 10-button, rotary dial, desk telephones are included. (See Table A.)



AW 86-351

**Figure 1: 10-Button, Rotary Dial, Desk Telephone With Built-In Call Annunciator**

**1.02** This section is reissued to reflect changes in the 10-button, rotary dial, desk telephones with built-in call announcer.

**1.03** For additional information on description and installation of the telephones, refer to Section 50-870-100. A replacement parts list and an exploded-view drawing for the telephones are contained in Section 50-870-101. Related documents of the ITT Telephone Apparatus Practices Manual provide information on components.

**1.04** The Model 870 desk telephones are identified by a code number stamped in ink on the bottom of the base plate. Refer to Section 50-870-100 of the ITT Telephone Apparatus Practices Manual for ordering information and for an explanation of each code number.

**1.05** The Model 870 desk telephones are 10-button, rotary dial, anti-sidetone type units that operate efficiently over a wide range of loop resistances and line impedances. These telephones are designed for use with key telephone systems, such as the ITT 1A2 System, where several telephones have access to the same lines, CO trunks, or intercom lines.

**TABLE A  
LIST OF CIRCUIT LABELS**

MODEL NO	TYPE NO	FIGURE NO
870	42, 46	2
870	76	3

AW 86-428

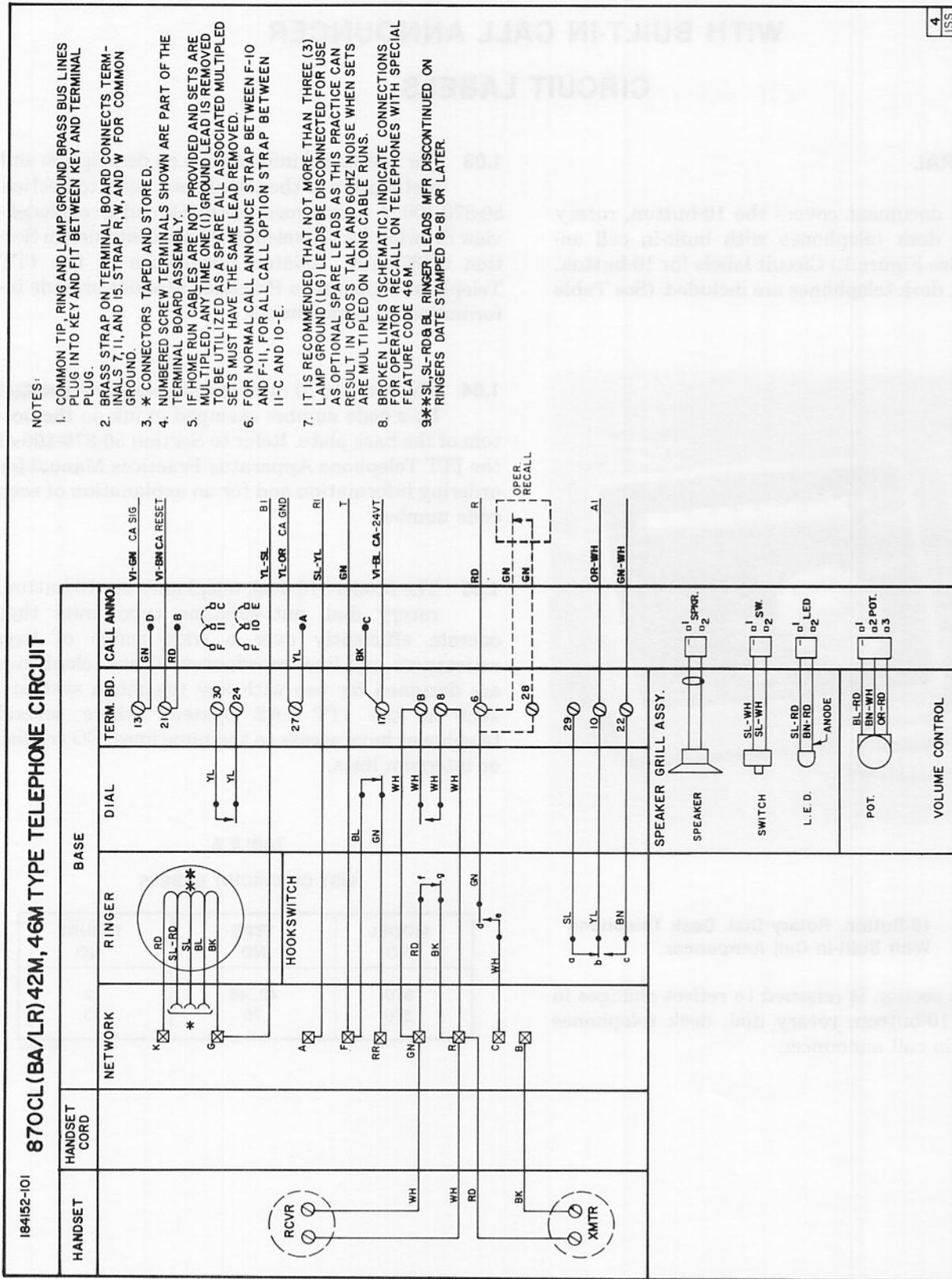


Figure 2: Circuit Label, Model 870 Types 42, 46 (Sheet 1 of 2)

870CL(BA/LR)42M, 46M TYPE TELEPHONE CIRCUIT

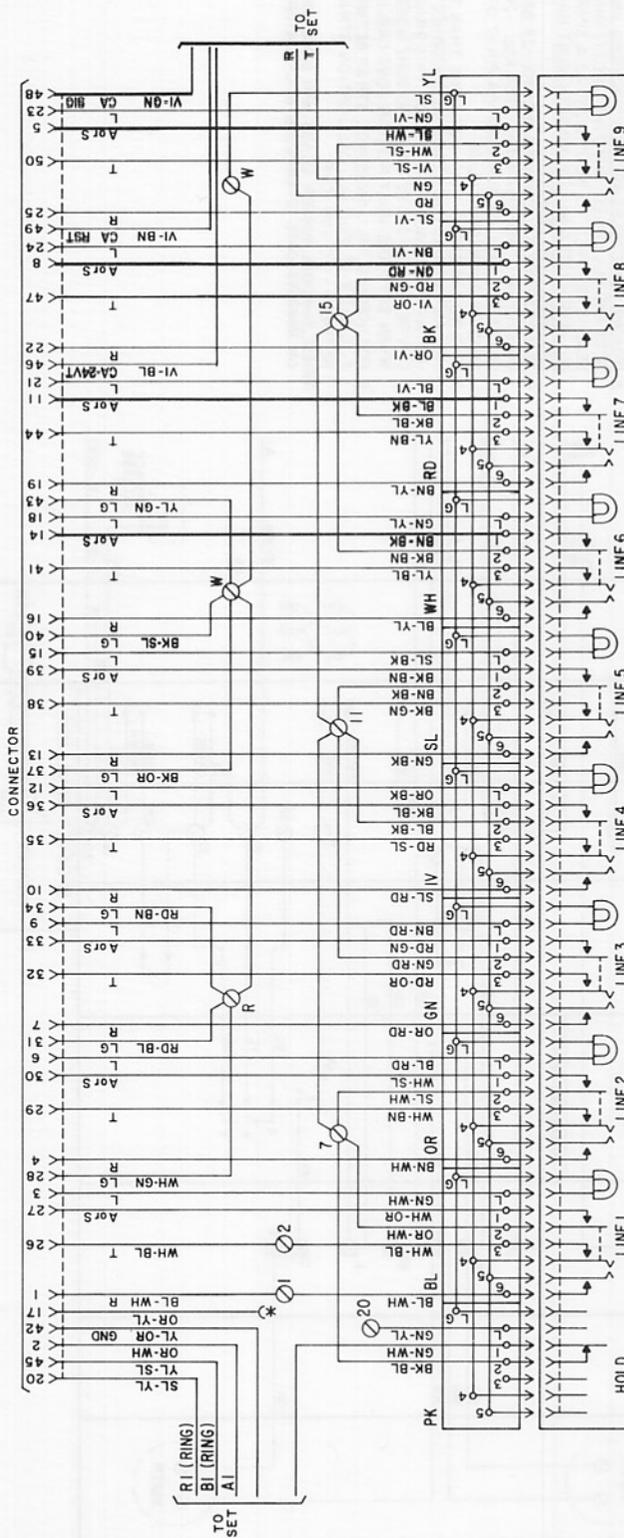
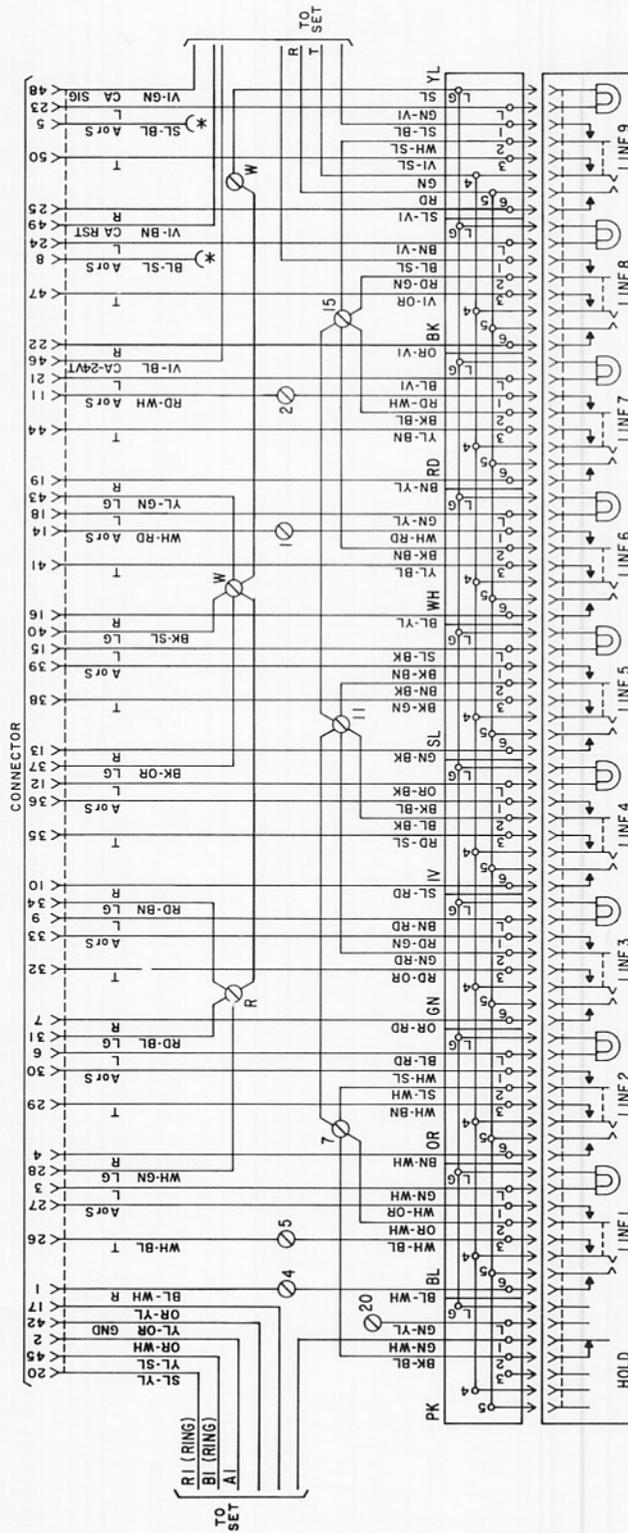


Figure 2: Circuit Label, Model 870 Types 42, 46 (Sheet 2 of 2)



870CL (BA/LR) 76M TYPE TELEPHONE CIRCUIT



4  
ISS

Figure 3: Circuit Label, Model 870 Type 76 (Sheet 2 of 2)

# 10-BUTTON, PUSHBUTTON DIAL, DESK TELEPHONES WITH BUILT-IN CALL ANNOUNCER

## GENERAL DESCRIPTION

CONTENTS	PAGE
1. GENERAL DESCRIPTION .....	1
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MODEL 2870** ( ) 46 .....	2
MODEL 2870** ( ) 76 .....	2
2. INSTALLATION .....	3
3. MAINTENANCE .....	3
4. BUTTON CONVERSIONS .....	3
5. BUZZER INSTALLATION .....	3
6. DESIGNATION TABS .....	3
7. GROUNDING PUSHBUTTON .....	3
8. DISABLING HOOKSWITCH RESTORATION .....	7
9. BUSY LAMP CONNECTIONS .....	7
10. BUILT-IN CALL ANNOUNCER .....	8

### 1. GENERAL DESCRIPTION

**1.01** This document covers the 10-button, pushbutton dial, desk telephone with built-in call announcer. (See Figure 1.) A general description plus information peculiar to 10-button, pushbutton dial, desk telephones with built-in call announcer is included.

**1.02** Whenever this section is reissued, reason for reissue will be listed in this paragraph.

**1.03** For additional information, refer to Section 50-870-104, Replacement Parts, and to Section 50-870-105, Circuit Labels. For information on installation, maintenance, and components or equipment, consult related documents of the ITT Telephone Apparatus Practices Manual.



AW 82-466

Figure 1: 10-Button, Pushbutton Dial, Desk Telephone With Built-In Call Announcer

**1.04** The Model 2870 desk telephones are 10-button, pushbutton dial, antisidetone type units that operate efficiently over a wide range of loop resistances and line impedances. These telephones are designed for use with key telephone systems, such as the ITT 1A2 System, where several telephones have access to the same lines, CO trunks, or intercom lines. All models are equipped with a mounting cord terminated in an Amphenol-type connector.

**1.05** The Model 2870 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** Nine pushbutton keys on the telephone are used for line, trunk, or intercom lines. 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. All remaining keys may be used as line keys or may be wired as either intercom lines or signal keys.

TABLE A  
ORDERING INFORMATION – TELEPHONES

CODE NUMBERS															
TELEPHONE CODE NUMBERS ARE FORMED IN SIX STEPS AS FOLLOWS:															
				870		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					
870	10-Button, Rotary Dial, Desk Telephone With Built-in Call Announcer	00, 05, 13, 15, 44, And 45 (Available On All Models)		O		BA		42, 46, 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	Conventional	BA	Straight Line	42	Standard Telephone	M	Metropolitan						
05	Moss Green					46	42 Combined With Operator Recall Button								
13	Beige					76	42 Combined With Automatic Exclusion, And Release Button								
15	White														
44	Light Ash														
45	Cocoa Brown														

AW 82-437

**1.07** A signal lamp beneath each of the nine line keys indicates status of the associated line. (See Table B.)

**1.08** All 10-button desk telephones are equipped with a hookswitch restoration feature that restores any operated line key when the hookswitch is operated.

**1.09** Variations in the Model 2870 series telephones are briefly described below. Circuit label drawings for these models are contained in Section 50-870-105.

**MODEL 2870\*\* ( ) 42**

**1.10** The Model 2870\*\* ( ) 42 is a standard 10-button, pushbutton dial, desk type, key telephone equipped with a built-in call announcer. A

set of contacts in the dial assembly disconnects the handsfree speaker during dialing; also, contacts in the hookswitch assembly provide on/off control of the handsfree equipment. The Model 2870\*\* ( ) 42 is equipped with a 50-conductor mounting cord fitted with a 50-pin (25-pair) male connector.

**MODEL 2870\*\* ( ) 46**

**1.11** The Model 2870\*\* ( ) 46 is the same as the Model 2870\*\* ( ) 42 with the addition of an operator recall button. This button, containing normally closed contacts, can be used to recall the operator if the hookswitch restoration feature is used.

**MODEL 2870\*\* ( ) 76**

**1.12** The Model 2870\*\* ( ) 76 is the same as the Model 2870\*\* ( ) 42 with the addition of an automatic exclusion (privacy) circuit with a release

TABLE B  
LINE KEY SIGNALS

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

AW 81-96

button. This release button contains normally open contacts. Where this feature is used, all telephones in the key system must contain the exclusion circuit and a 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. For specific wiring information, refer to the appropriate circuit label in Section 50-870-105. Cable connections for 10-button telephones with built-in call announcer for feature codes 42 and 46 are listed in Table C. Cable connections for 10-button telephones with built-in call announcer for feature code 76 are listed in Table D. For general installation information and installation of repair parts, refer to the applicable section of the ITT Telephone Apparatus Practices Manual.

## 3. MAINTENANCE

**3.01** For general maintenance information, refer to the maintenance section of the ITT Telephone Apparatus Practices Manual. For a pictorial view and parts list, refer to Section 50-870-104.

## 4. BUTTON CONVERSIONS

**4.01** Any line key may be converted to signaling mode by removing the slotted head pin from the plunger shank. The slotted head pin is removed by turning clockwise. (On earlier models of the 10-button telephone the pin is removed by turning counterclockwise.)

## 5. BUZZER INSTALLATION

**5.01** A buzzer may be installed as the signaling device of a telephone receiving an intercom call. The buzzer may be either installed on the dial mounting bracket or mounted externally. For telephones with feature codes 42, 46, and 76, buzzer leads are connected to lamp ground leads (provided the proper station cross-connections are made). Buzzers selected for this use should operate at 18 VAC, 60 Hz. (See Figure 2.)

**5.02** 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.

## 6. DESIGNATION TABS

**6.01** 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 and lifting. Note that locking surfaces are located on each of the caps and keys. These locking surfaces must properly align when reinstalling.

## 7. GROUNDING PUSHBUTTON

**7.01** Modifications are made to line 9 of the telephone if a grounding pushbutton is required. A grounding pushbutton is required in some PABX applications for transferring calls, originating calls during a power failure, or other special functions. To convert line 9 to a grounding pushbutton, the following modifications should be made:

- (a) Modify button to non-locking operation by removing interlock pin from the line 9 plunger.
- (b) Ground is provided on the WH-SL (A1) lead by the key system. (No cross-connect is necessary for the lead.)
- (c) Cross-connect from the SL-WH lead to the PABX connection for the desired function.

TABLE C  
CABLE CONNECTIONS FOR 10-BUTTON  
TELEPHONES WITH BUILT-IN CALL ANNOUNCER  
(FEATURE CODES 42 AND 46)

LINES 1 THROUGH 5				LINES 6 THROUGH 9			
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 6 (White Plug)	YL-BL	T	41
	BL-WH	R	1		BL-YL	R	16
	WH-OR	A	27		BN-BK	A or S	14
	WH-GN	LG	28		YL-GN	LG	43
	GN-WH	L	3		GN-YL	L	18
Line 2 (Orange Plug)	WH-BN	T	29	Line 7 (Red Plug)	YL-BN	T	44
	BN-WH	R	4		BN-YL	R	19
	WH-SL	A or S	30		BL-BK	A or S	11
	RD-BL	LG	31		VI-BL	CA-24(VT)	46
Line 3 (Green Plug)	BL-RD	L	6	Line 8 (Black Plug)	BL-VI	L	21
	RD-OR	T	32		VI-OR	T	47
	OR-RD	R	7		OR-VI	R	22
	RD-GN	A or S	33		GN-RD	A or S	8
	RD-BN	LG	34		VI-BN	CA RST	49
Line 4 (Ivory Plug)	BN-RD	L	9	Line 9 (Yellow Plug)	BN-VI	L, P4 or 1T	24
	RD-SL	T	35		VI-SL	T	50
	SL-RD	R	10		SL-VI	R	25
	BK-BL	A or S	36		SL-WH	A or S	5
	BK-OR	LG	37		VI-GN	CA SIG	48
Line 5 (Slate Plug)	OR-BK	L	12	10 G A 27 6	GN-VI	L or R1	23
	BK-GN	T	38		OR-WH	A1	2
	GN-BK	R	13		YL-SL	B or B1	45
	BK-BN	A or S	39		SL-YL	R or R1	20
	BK-SL	LG	40		YL-OR	CA GND	42
SL-BK	L	15	OR-YL	SG, LK or Spare	17		

## NOTES:

1. All lamp ground leads are common.
2. The designation S indicates that the lead provides an individual signal ground

AW 82-505

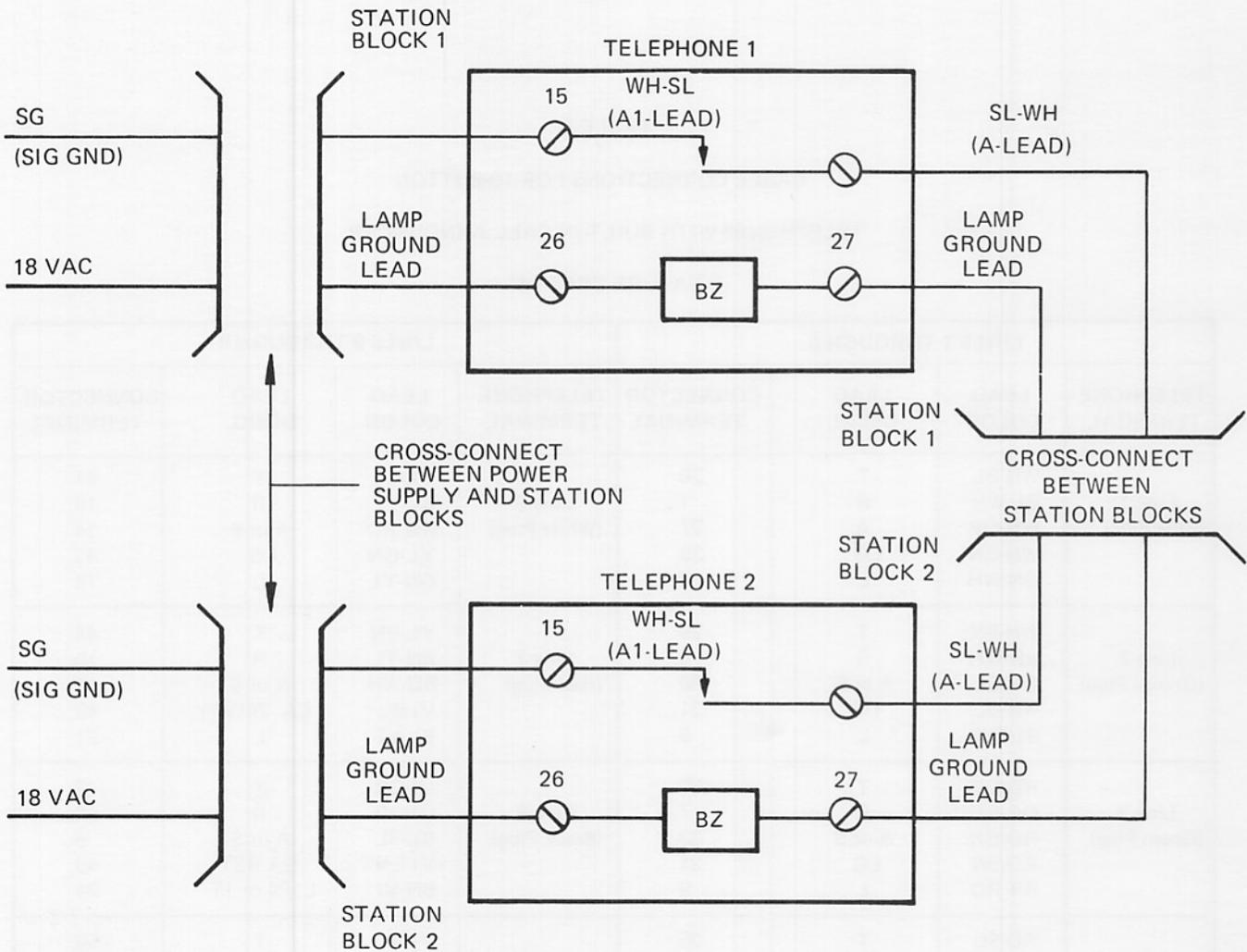
TABLE D  
CABLE CONNECTIONS FOR 10-BUTTON  
TELEPHONES WITH BUILT-IN CALL ANNOUNCER  
(FEATURE CODE 76)

LINES 1 THROUGH 5				LINES 6 THROUGH 9			
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 6 (White Plug)	YL-BL	T	41
	BL-WH	R	1		BL-YL	R	16
	WH-OR	A	27		WH-RD	A or S	14
	WH-GN	LG	28		YL-GN	LG	43
	GN-WH	L	3		GN-YL	L	18
Line 2 (Orange Plug)	WH-BN	T	29	Line 7 (Red Plug)	YL-BN	T	44
	BN-WH	R	4		BN-YL	R	19
	WH-SL	A or S	30		RD-WH	A or S	11
	RD-BL	LG	31		VI-BL	CA -24(VT)	46
	BL-RD	L	6		BL-VI	L	21
Line 3 (Green Plug)	RD-OR	T	32	Line 8 (Black Plug)	VI-OR	T	47
	OR-RD	R	7		OR-VI	R	22
	RD-GN	A or S	33		BL-SL	A or S	8
	RD-BN	LG	34		VI-BN	CA RST	49
	BN-RD	L	9		BN-VI	L, P4 or 1T	24
Line 4 (Ivory Plug)	RD-SL	T	35	Line 9 (Yellow Plug)	VI-SL	T	50
	SL-RD	R	10		SL-VI	R	25
	BK-BL	A or S	36		SL-BL	A or S	5
	BK-OR	LG	37		VI-GN	CA SIG	48
	OR-BK	L	12		GN-VI	L or R1	23
Line 5 (Slate Plug)	BK-GN	T	38	10	OR-WH	A1	2
	GN-BK	R	13	G	YL-SL	B or B1	45
	BK-BN	A or S	39	A	SL-YL	R or R1	20
	BK-SL	LG	40	27	YL-OR	CA GND	42
	SL-BK	L	15	17	OR-YL	-24	17

## NOTES:

1. All lamp ground leads are common.
2. The designation S indicates that the lead provides an individual signal ground.

AW 82-506



NOTES:

1. THE ARRANGEMENT SHOWN IS USING LINE 9 AS AN EXAMPLE. IF ANOTHER LINE IS USED, SUBSTITUTE THE APPROPRIATE A1 AND A-LEADS FOR THAT LINE.
2. IN THE 10-BUTTON TELEPHONE, GROUND IS CONNECTED TO TERMINAL 15 (WH-SL LEAD). NO CROSS-CONNECT IS NECESSARY FOR THIS LEAD.

AW 82-508

Figure 2: Circuit Diagram For Signal Buzzer

## 8. DISABLING HOOKSWITCH RESTORATION

**8.01** The hookswitch restoration feature used in multibutton telephones allows a station user to preselect a line key and then remove the handset to initiate a call. When the handset is returned to the cradle or the hookswitch is operated (hookswitch flash), the line key will be restored. To disable the hookswitch restoration feature, the following steps are taken:

- (a) Remove telephone faceplate.
- (b) Remove plastic trip arm by pulling up at the point directly above its mounting shaft.
- (c) Remove torsion spring by sliding it off the mounting shaft.
- (d) Reinstall telephone faceplate.

**8.02** To enable the hookswitch restoration feature, the following steps are taken: (See Figure 3.)

- (a) Remove telephone faceplate.
- (b) Install torsion spring by sliding it onto the mounting shaft and hooking one end between the mounting shaft and the hookswitch operating arm.
- (c) Install plastic trip arm by placing the notch in the trip arm on the end of the torsion spring (opposite the end hooked behind the operating arm) and pressing the trip arm onto the mounting shaft.
- (d) When the hookswitch is operated, the plastic trip arm should engage with the latch arm.
- (e) Reinstall telephone faceplate.

**8.03** Whenever the hookswitch restoration feature is disabled, it may become necessary to shorten or lengthen the spring connected to the operating arm to insure proper hookswitch operation. Proper operation requires the cradle to be fully depressed by the weight of the handset and return to the full up position when the handset is off-hook.

**8.04** Earlier models of multibutton telephones may not provide the preselect function with the hookswitch restoration feature. These models include an adjustment screw on the latch arm rather

than the plastic trip arm or torsion spring. To disable hookswitch restoration in these telephones, the following steps are taken:

- (a) Remove telephone faceplate and housing.
- (b) Turn the screw in the latch arm approximately five turns counterclockwise.
- (c) Reinstall telephone faceplate and housing.

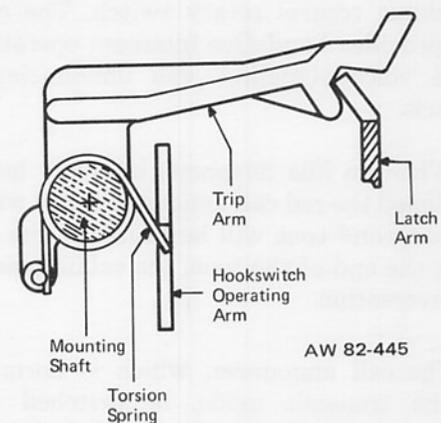


Figure 3: Installation of Trip Arm and Torsion Spring

## 9. BUSY LAMP CONNECTIONS

**9.01** Busy lamp connections vary depending on the type of key system being used. Modifications for the 10-button desk telephones with feature codes 42 and 46 should be as follows:

- (a) Remove GN-WH lead from terminal 22 and connect to terminal 16 on the telephone terminal board.
- (b) Connect one 1N4004 diode between terminals 22 and 16 on the terminal board, and connect another 1N4004 diode between terminals 22 and 28 on the terminal board as shown in Figure 4.
- (c) Connect a lamp ground lead to terminal 28 of the terminal board (provided proper station cross-connections are made).

**9.02** Modifications for the 10-button desk telephones with feature code 76 should be as follows: (Refer to Figure 5.)

**SECTION 50-870-103, ISS 1**

(a) Connect one 1N4004 diode from terminal 22 to terminal 28 on the telephone terminal board as shown in Figure 5.

(b) Connect a lamp ground lead to terminal 28 on the telephone terminal board (provided proper station cross-connections are made).

**10. BUILT-IN CALL ANNOUNCER**

**10.01** All model 2870 telephones are equipped with an LED indicator, a selection switch, and a volume control rotary switch. The call announcer provides handsfree intercom operation for tone and voice signaling, call announcing, and answerback.

**10.02** When an idle telephone intercom has been dialed the red call announcer LED will light and a one-second tone will be heard by the calling party. At the end of the tone, the calling party can begin conversation.

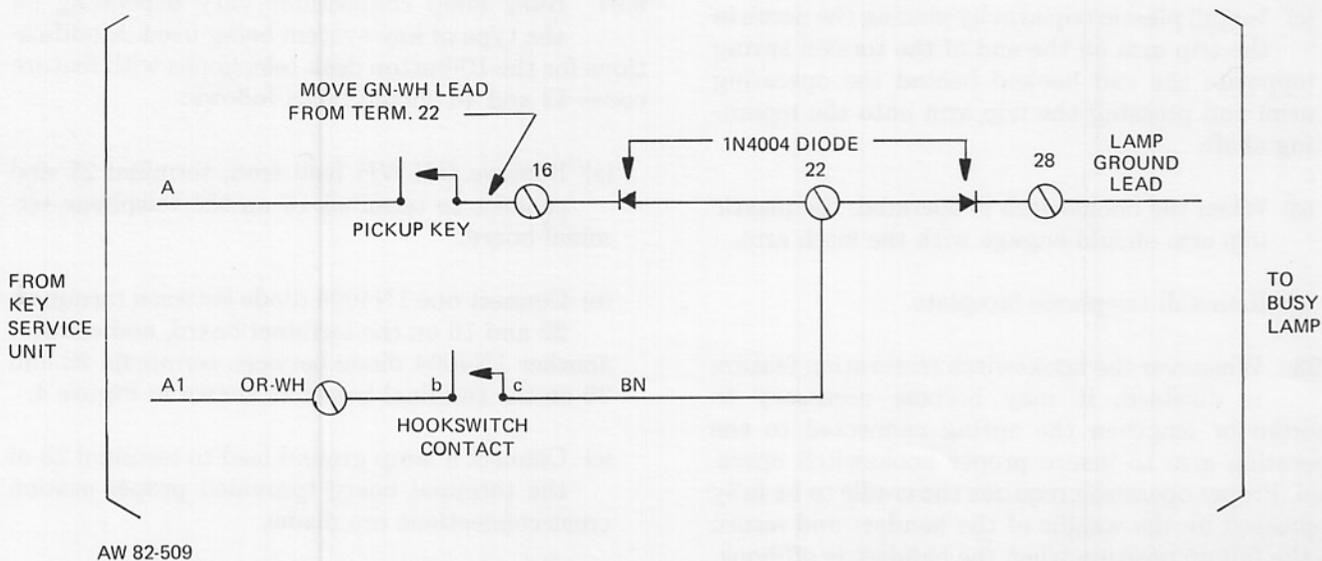
**10.03** The call announcer, which is normally in the transmit mode, is switched to the receive mode when the station is called. At the end

of each received signal or message, the call announcer returns to the transmit mode. The called party can then answerback handsfree through the call announcer.

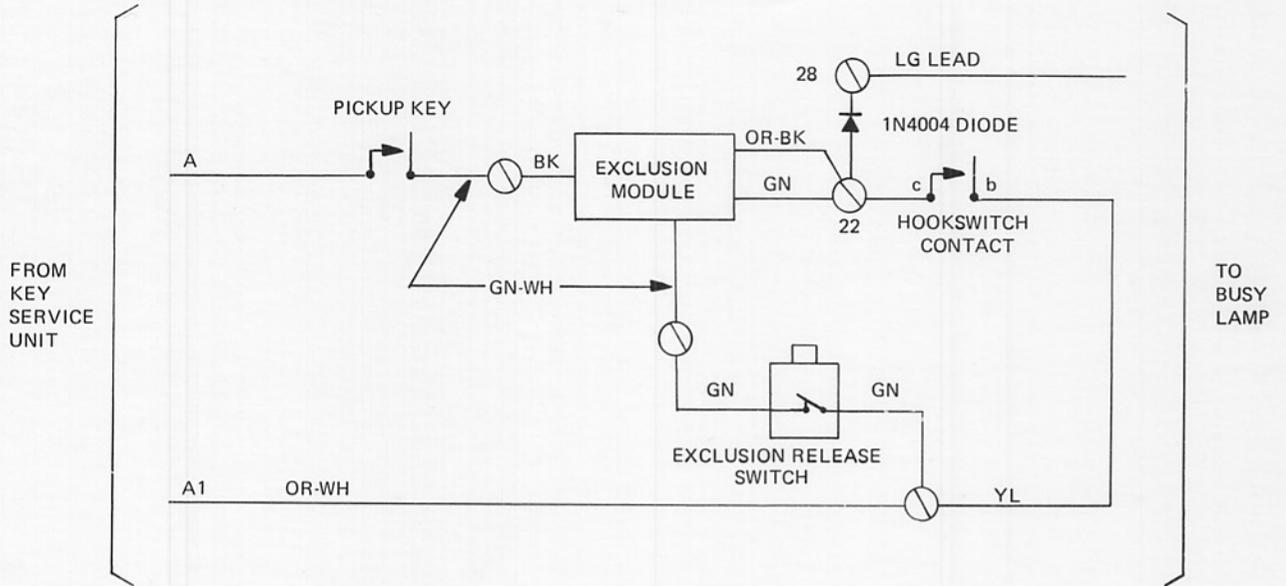
**10.04** A private/normal switch, is located above the speaker grill. The normal position of the switch allows handsfree answerback operation. When the switch is in the private position the answerback (transmit) circuit is turned off preventing the calling party from overhearing conversation near the signaled call announcer.

**10.05** A volume control switch is located under the right side of the telephone, and can be adjusted for the desired listening level of the call announcer.

**10.06** Lifting the telephone handset automatically disconnects the call announcer circuit and allows normal handset operation.



**Figure 4: Busy Lamp Connections For 10-Button Telephones with Feature Codes 42 and 46**



AW 82-482

Figure 5: Busy Lamp Connections For 10-Button Telephones with Feature Code 76

## 10-BUTTON, PUSHBUTTON DIAL, DESK TELEPHONES WITH BUILT-IN CALL ANNOUNCER REPLACEMENT PARTS

### 1. GENERAL

**1.01** This document covers the 10-button, pushbutton dial, desk telephone with built-in call announcer. (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 10-button, pushbutton dial, desk telephone with built-in call announcer 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 50-870-103. The circuit labels appear in Section

50-870-105. Related documents of the ITT Telephone Apparatus Practices Manual provide information on components.

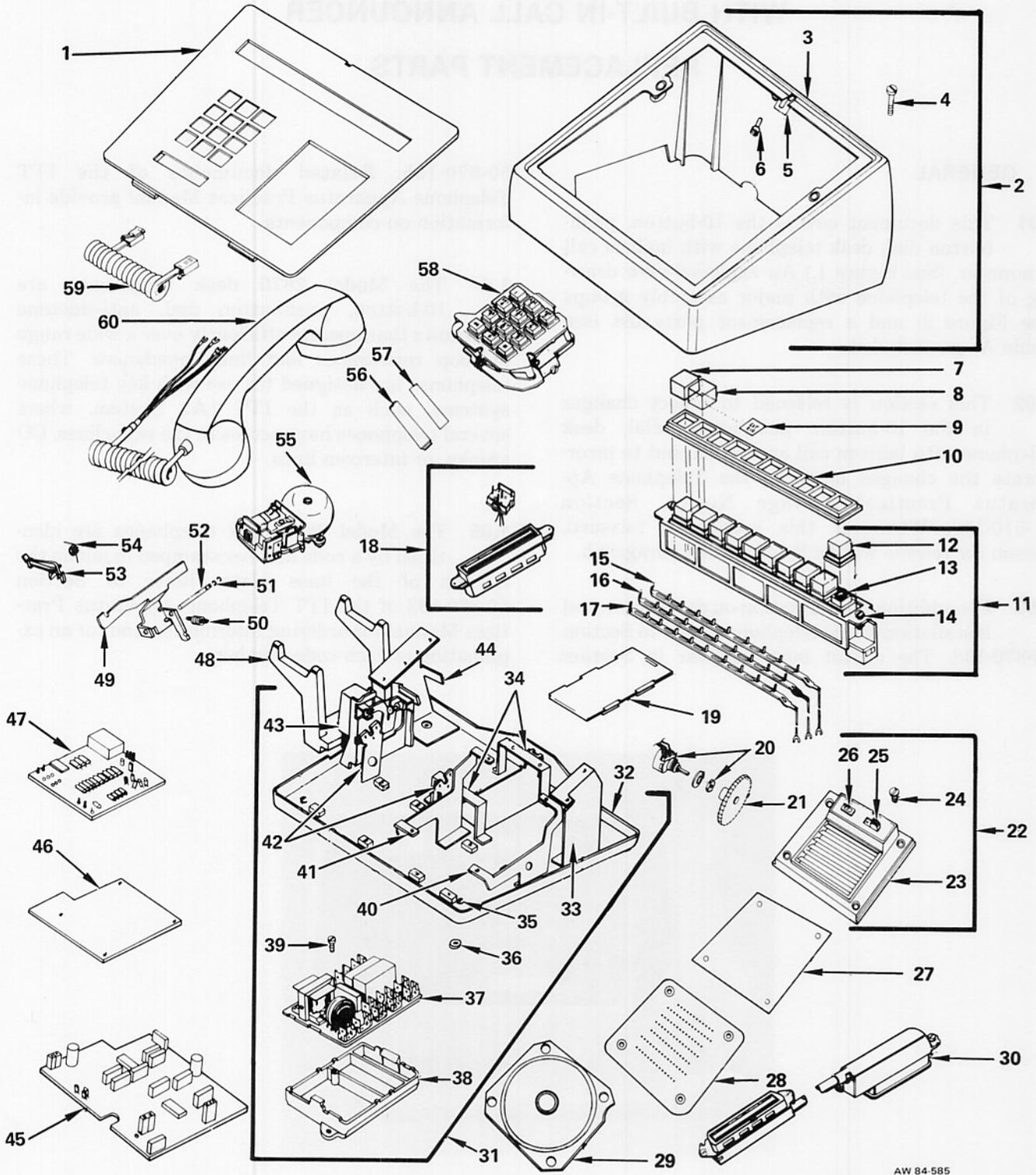
**1.04** The Model 2870 desk telephones are 10-button, pushbutton dial, anti-sidetone type units that operate efficiently over a wide range of loop resistances and line impedances. These telephones are designed for use with key telephone systems, such as the ITT 1A2 System, where several telephones have access to the same lines, CO trunks, or intercom lines.

**1.05** The Model 2870 desk telephones are identified by a code number stamped in ink on the bottom of the base plate. Refer to Section 50-870-103 of the ITT Telephone Apparatus Practices Manual for ordering information and for an explanation of each code number.



AW 82-466

**Figure 1: 10-Button, Pushbutton Dial, Desk Telephone  
With Built-In Call Announcer**



AW 84-585

Figure 2: 10-Button, Pushbutton Dial, Desk Telephone With Built-In Call Announcer, Exploded View

TABLE A  
REPLACEMENT PARTS LIST

INDEX NO	PART NUMBER	DESCRIPTION	QUANTITY USED		
			2870/42	2870/46	2870/76
		10-Button, Pushbutton Dial, Desk Telephone With Built-In Call Announcer	2870/42	2870/46	2870/76
1	181792-***	Faceplate	1	—	—
1	182783-***	Faceplate	—	1	1
2	181102-0**	Housing Assembly	1	1	1
2	187906-0**	Housing Assembly, Full-Modular	1	1	1
3	181104-0**	Housing	1	1	1
3	187922-0**	Housing, Full-Modular	1	1	1
4	095992-102	Screw, Housing	2	2	2
5	181100-101	Spring, Latch	1	1	1
6	181289-101	Screw, Latch Spring	1	1	1
7	181131-102	Cap, Red	1	1	1
8	181131-101	Cap, Clear	9	9	9
9	181281-101	Tab, Key Designation (Strip Of 12)	1	1	1
10	181287-101	Collar, Key Strip	1	1	1
11	181137-104	Key Assembly	1	1	—
11	182552-102	Key Assembly	—	—	1
12	181122-101	Button	10	10	10
13	000051-00A	Lamp	9	9	9
14	095992-102	Screw	2	2	2
15	181292-101	Strip, Contact (GN Wire)	1	1	1
16	181292-102	Strip, Contact (RD Wire)	1	1	1
17	181292-105	Strip, Contact (SL Wire)	1	1	1
18	181154-101	Cord, Internal	1	1	—
18	182546-101	Cord, Internal	—	—	1
19	181290-101	Slide	1	1	1
20	184061-101	Control, Volume	1	1	1
21	181808-101	Knob, Volume Control	1	1	1
22	184054-201	Speaker Grill Assembly	1	1	1
23	184050-201	Grill, Speaker	1	1	1
24	181892-101	Screw, Speaker Grill	4	4	4
25	184052-101	Switch, Slide	1	1	1
26	184053-101	LED	1	1	1
27	181899-101	Cloth, Grill	1	1	1
28	181794-101	Plate, Speaker Baffle <sup>4</sup>	1	1	1
29	184060-101	Speaker Assembly	1	1	1
30	184371-102	Cord, Mounting (50-Conductor)	1	1	1

TABLE A  
REPLACEMENT PARTS LIST (Cont)

INDEX NO	PART NUMBER	DESCRIPTION	QUANTITY USED		
			2870/42	2870/46	2870/76
		10-Button, Pushbutton Dial, Desk Telephone With Built-In Call Announcer	2870/42	2870/46	2870/76
31	184055-101	Base Assembly	1	1	1
32	181141-105	Plate, Base <sup>2</sup>	1	1	1
33	181251-101	Bracket, Key Right	1	1	1
34	181255-101	Bracket, Plug	2	2	2
35	082486-102	Rivet, Foot	4	4	4
36	182337-101	Foot	4	4	4
37	181427-102	PC Network (#183070-102) <sup>1</sup>	1	1	1
38	182175-101	Spacer, Network	1	1	1
39	096407-103	Screw, Network Mounting	1	1	1
40	181801-101	Bracket, Speaker Right	1	1	1
41	181800-101	Bracket, Speaker Left	1	1	1
42	181254-102	Bracket, Dial	2	2	2
43	181260-101	Cradle Switch Assembly <sup>1</sup>	1	1	1
44	181150-102	Left Bracket Assembly	1	1	1
	185619-101	Left Trip Bracket Assembly	1	1	1
	181252-101	Bracket, Key Left	1	1	1
	185618-101	Bracket, Trip	1	1	1
45	184059-101	PC Board (Call Announcer)	1	1	1
46	184056-101	Terminal Board	1	1	1
47	182691-101	PC Board (Exclusion)	—	—	1
48	183105-102	Switch Hook Assembly	1	1	1
	182900-101	Cradle, Switch Hook	1	1	1
	181145-101	Screw, Switch Hook Cradle	3	3	3
	185494-101	Operating Arm Assembly	1	1	1
	185487-101	Arm, Operating	1	1	1
	075307-104	Spring, Cradle Return	1	1	1
	181282-101	Shaft, Pivot	1	1	1
	073538-110	Ring, Retainer	1	1	1
49	185488-101	Arm, Latch	1	1	1
50	181151-101	Spring, Latch Arm	1	1	1
51	073538-110	Ring, Retainer	2	2	2
52	181152-101	Pin, Pivot	1	1	1

TABLE A  
REPLACEMENT PARTS LIST (Cont)

INDEX NO	PART NUMBER	DESCRIPTION	QUANTITY USED		
			2870/42	2870/46	2870/76
		<b>10-Button, Pushbutton Dial, Desk Telephone With Built-In Call Announcer</b>			
53	185486-101	Arm, Trip	1	1	1
54	185485-101	Spring, Torsion	1	1	1
55	000148-DBA	Ringer <sup>1</sup>	1	1	1
56	087514-101	Retainer, Number Card	1	1	1
57	087513-101	Card, Number	1	1	1
57	087513-102	Card, Number, Strip Of 6 (Not Shown) <sup>5</sup>	—	—	—
58	004600-OPG	Dial Assembly, Pushbutton Digital, Metropolitan (Letters and Numerals) <sup>1, 3</sup>	1	1	1
58	003600-OPG	Dial Assembly, Pushbutton Tel-Touch, Metropolitan (Letters And Numerals) <sup>1, 4</sup>	1	1	1
59	9018**-072	Cord, Handset, Modular	1	1	1
60	0065**-0C2	Handset Assembly, Nonmodular <sup>1</sup>	1	1	1
60	0065**-0M2	Handset Assembly, Modular <sup>1</sup>	1	1	1
	600152-611-001	Jack Assembly, Handset Cord, Modular (Not Shown)	1	1	1
	182990-105	Insulator Assembly, Modular (Not Shown)	1	1	1
	181973-101	Pushbutton, Operator Recall (Not Shown)	—	1	—
	181971-101	Pushbutton, Exclusion Release (Not Shown)	—	—	1
	187944-101	Nameplate, ITT (Not Shown)	1	1	1

AW 84-825

## NOTES:

- <sup>1</sup> Refer to Component Parts Section of this manual for Assembly Parts List.  
<sup>2</sup> This is an NSS item (not serviced separately).  
<sup>3</sup> The 004600-OPG dial replaces the 003600-OPG dial.  
<sup>4</sup> These products have been discontinued, but are included to provide a source of information for telephones still in service.  
<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		

## 10-BUTTON, PUSHBUTTON DIAL, DESK TELEPHONES WITH BUILT-IN CALL ANNOUNCER CIRCUIT LABELS

### 1. GENERAL

**1.01** This document covers the 10-button, pushbutton dial, desk telephones with built-in call announcer. (See Figure 1.) Circuit labels for 10-button, pushbutton dial, desk telephones are included. (See Table A.)



AW 86-352

**Figure 1: 10-Button, Pushbutton Dial, Desk Telephone With Built-In Call Announcer**

**1.02** This section is reissued to provide the latest issue of circuit labels for the following 10-button, pushbutton dial, desk telephones with built-in call announcer:

- (a) Model 2870, Types 42 and 46
- (b) Model 2870, Type 76

**1.03** For additional information on description and installation of the telephones, refer to Section 50-870-103. A replacement parts list and an exploded-view drawing for the telephones are contained in Section 50-870-104. Related documents of the ITT Telephone Apparatus Practices Manual provide information on components.

**1.04** The Model 2870 desk telephones are identified by a code number stamped in ink on the bottom of the base plate. Refer to Section 50-870-103 of the ITT Telephone Apparatus Practices Manual for ordering information and for an explanation of each code number.

**1.05** The Model 2870 desk telephones are 10-button, pushbutton dial, anti-sidetone type units that operate efficiently over a wide range of loop resistances and line impedances. These telephones are designed for use with key telephone systems, such as the ITT 1A2 System, where several telephones have access to the same lines, CO trunks, or intercom lines.

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

MODEL NO	TYPE NO	FIGURE NO
2870	42, 46	2
2870	76	3

AW 86-380



2870 CL (BA/LR) 42M, 46M, TYPE TELEPHONE CIRCUIT

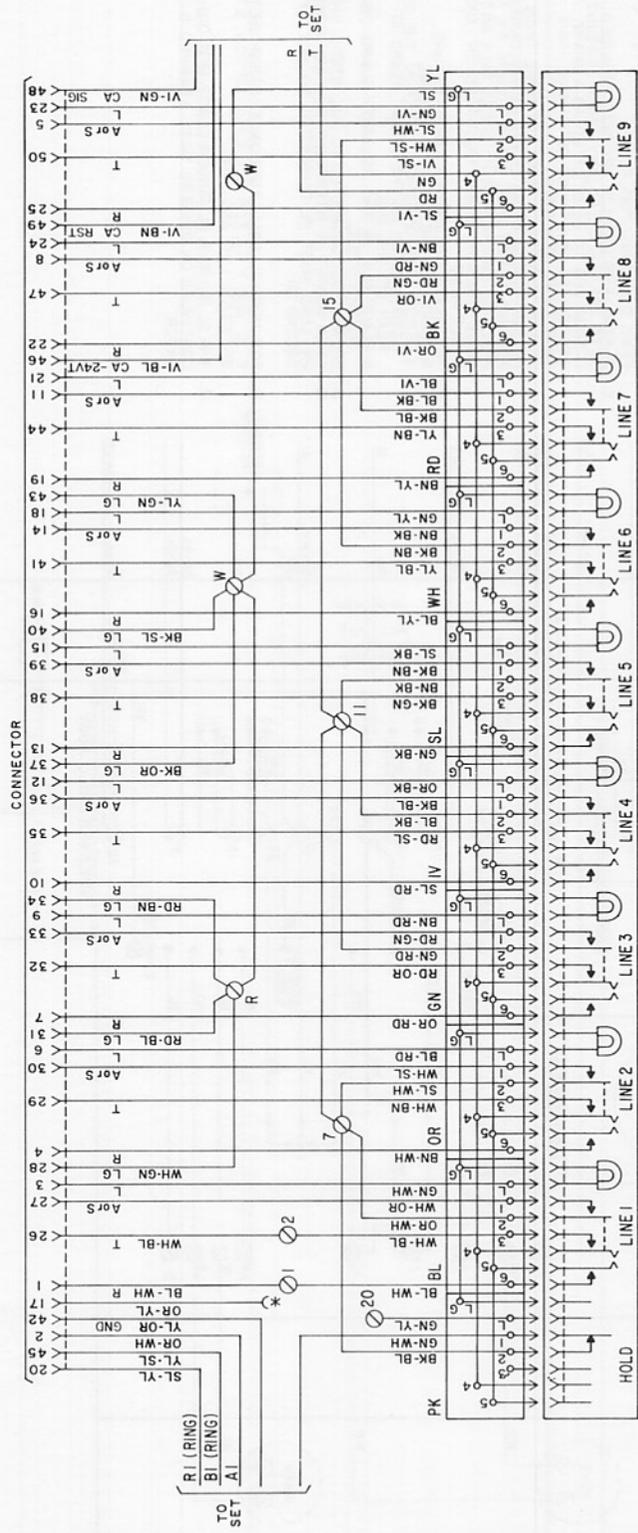
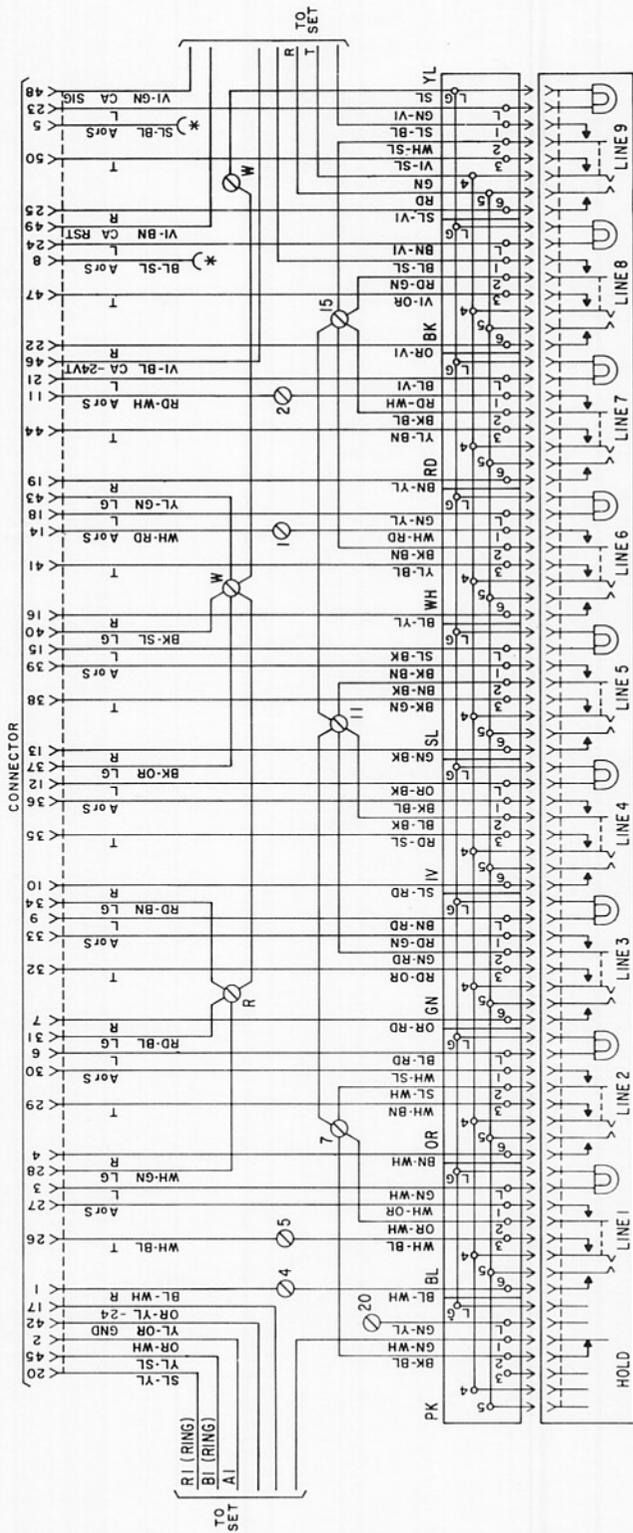


Figure 2: Circuit Label, Model 2870 Types 42, 46 (Sheet 2 of 2)



2870CL(BA/LR) 76M TYPE TELEPHONE CIRCUIT



ISS 9

Figure 3: Circuit Label, Model 2870 Type 76 (Sheet 2 of 2)

## 20-BUTTON, ROTARY DIAL, DESK TELEPHONES WITH BUILT-IN CALL ANNOUNCER GENERAL DESCRIPTION

CONTENTS	PAGE
1. GENERAL DESCRIPTION .....	1
MODEL 871** ( ) 42 .....	2
MODEL 871** ( ) 46 .....	2
MODEL 871** ( ) 76 .....	2
2. INSTALLATION .....	3
3. MAINTENANCE .....	3
4. BUTTON CONVERSIONS .....	3
5. BUZZER INSTALLATION .....	3
6. DESIGNATION TABS .....	3
7. GROUNDING PUSHBUTTON .....	3
8. DISABLING HOOKSWITCH RESTORATION .....	7
9. BUSY LAMP CONNECTIONS .....	7
10. BUILT-IN CALL ANNOUNCER .....	8

### 1. GENERAL DESCRIPTION

**1.01** This document covers the 20-button, rotary dial, desk telephone with built-in call announcer. (See Figure 1.) A general description plus information peculiar to 20-button, rotary dial, desk telephones with built-in call announcer is included.

**1.02** Whenever this section is reissued, reason for reissue will be listed in this paragraph.

**1.03** For additional information, refer to Section 50-871-101, Replacement Parts, and to Section 50-871-102, Circuit Labels. For information on installation, maintenance, and components or equipment, consult related documents of the ITT Telephone Apparatus Practices Manual.



AW 82-467

**Figure 1: 20-Button, Rotary Dial, Desk Telephone With Built-In Call Announcer**

**1.04** The Model 871 desk telephones are 20-button, rotary dial, antisidetone type units that operate efficiently over a wide range of loop resistances and line impedances. These telephones are designed for use with key telephone systems, such as the ITT 1A2 System, where several telephones have access to the same lines, CO trunks, or intercom lines. All models are equipped with a mounting cord terminated in two Amphenol-type connectors.

**1.05** The Model 871 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** Nineteen pushbutton keys on the telephone are used for line, trunk, or intercom lines. 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. All remaining keys may be used as line keys or may be wired as either intercom lines or signal 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)	871	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			
871	20-Button, Rotary Dial, Desk Telephone With Built-In Call Announcer	00, 05, 13, 15, 44, And 45 (Available On All Models)	O	BA	42, 46, 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	Conventional	BA	Straight Line	42	Standard Telephone	M	Metropolitan (Letters & Numerals)
05	Moss Green					46	42 Combined With An Operator Recall Button		
13	Beige					76	42 Combined With Automatic Exclusion And Release Button		
15	White								
44	Light Ash								
45	Cocoa Brown								

AW 82-510

**1.07** A signal lamp beneath each of the nineteen line keys indicates status of the associated line. (See Table B.)

**1.08** All 20-button desk telephones are equipped with a hookswitch restoration feature that restores any operated line key when the hookswitch is operated.

**1.09** Variations in the Model 871 series telephones are briefly described below. Circuit label drawings for these models are contained in Section 50-871-102.

**MODEL 871\*\* ( ) 42**

**1.10** The Model 871\*\* ( ) 42 is a standard 20-button, rotary dial, desk type, key telephone equipped with a built-in call announcer. A set of con-

tacts in the dial assembly disconnects the handsfree speaker during dialing; also, contacts in the hookswitch assembly provide on/off control of the handsfree equipment. The Model 871\*\* ( ) 42 is equipped with a 100-conductor mounting cord fitted with two 50-pin (25-pair) male connectors.

**MODEL 871\*\* ( ) 46**

**1.11** The Model 871\*\* ( ) 46 is the same as the Model 871\*\* ( ) 42 with the addition of an operator recall button. This button, containing normally closed contacts, can be used to recall the operator if the hookswitch restoration feature is used.

**MODEL 871\*\* ( ) 76**

**1.12** The Model 871\*\* ( ) 76 is the same as the Model 871\*\* ( ) 42 with the addition of an automatic exclusion (privacy) circuit with a release

TABLE B  
LINE KEY SIGNALS

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

AW 81-96

button. This release button contains normally open contacts. Where this feature is used, all telephones in the key system must contain the exclusion circuit and a 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. For specific wiring information, refer to the appropriate circuit label in Section 50-871-102. Cable connections for 20-button telephones with built-in call announcer for feature codes 42 and 46 are listed in Table C. Cable connections for 20-button telephones with built-in call announcer for feature code 76 are listed in Table D. For general installation information and installation of repair parts, refer to the applicable section of the ITT Telephone Apparatus Practices Manual.

## 3. MAINTENANCE

**3.01** For general maintenance information, refer to the maintenance section of the ITT Telephone Apparatus Practices Manual. For a pictorial view and parts list, refer to Section 50-871-101.

## 4. BUTTON CONVERSIONS

**4.01** Any line key may be converted to signaling mode by removing the slotted head pin from the plunger shank. The slotted head pin is removed by turning clockwise. (On earlier models of the 20-button telephone the pin is removed by turning counterclockwise.)

## 5. BUZZER INSTALLATION

**5.01** A buzzer may be installed as the signaling device of a telephone receiving an intercom call. The buzzer may be either installed on the dial mounting bracket or mounted externally. For telephones with feature codes 42, 46, and 76, buzzer leads are connected to lamp ground leads (provided the proper station cross-connections are made). Buzzers selected for this use must operate at 18 VAC, 60 Hz. (See Figure 2.)

**5.02** 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.

## 6. DESIGNATION TABS

**6.01** 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 and lifting. Note that locking surfaces are located on each of the caps and keys. These locking surfaces must properly align when reinstalling.

## 7. GROUNDING PUSHBUTTON

**7.01** Modifications are made to line 9 of the telephone if a grounding pushbutton is required. A grounding pushbutton is required in some PABX applications for transferring calls, originating calls during a power failure, or other special functions. To convert line 9 to a grounding pushbutton, the following modifications should be made:

- (a) Modify button to non-locking operation by removing interlock pin from the line 9 plunger.
- (b) Ground is provided on the WH-SL (A1) lead by the key system. (No cross-connect is necessary for this lead.)
- (c) Cross-connect from the SL-WH lead to the PABX connection for the desired function.

**TABLE C**  
**CABLE CONNECTIONS FOR 20-BUTTON**  
**TELEPHONES WITH BUILT-IN CALL ANNOUNCER**  
**(FEATURE CODES 42 AND 46)**

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

**NOTES:**

1. All lamp ground leads are common.
2. The designation S indicates that the lead provides an individual signal ground.

AW 82-511

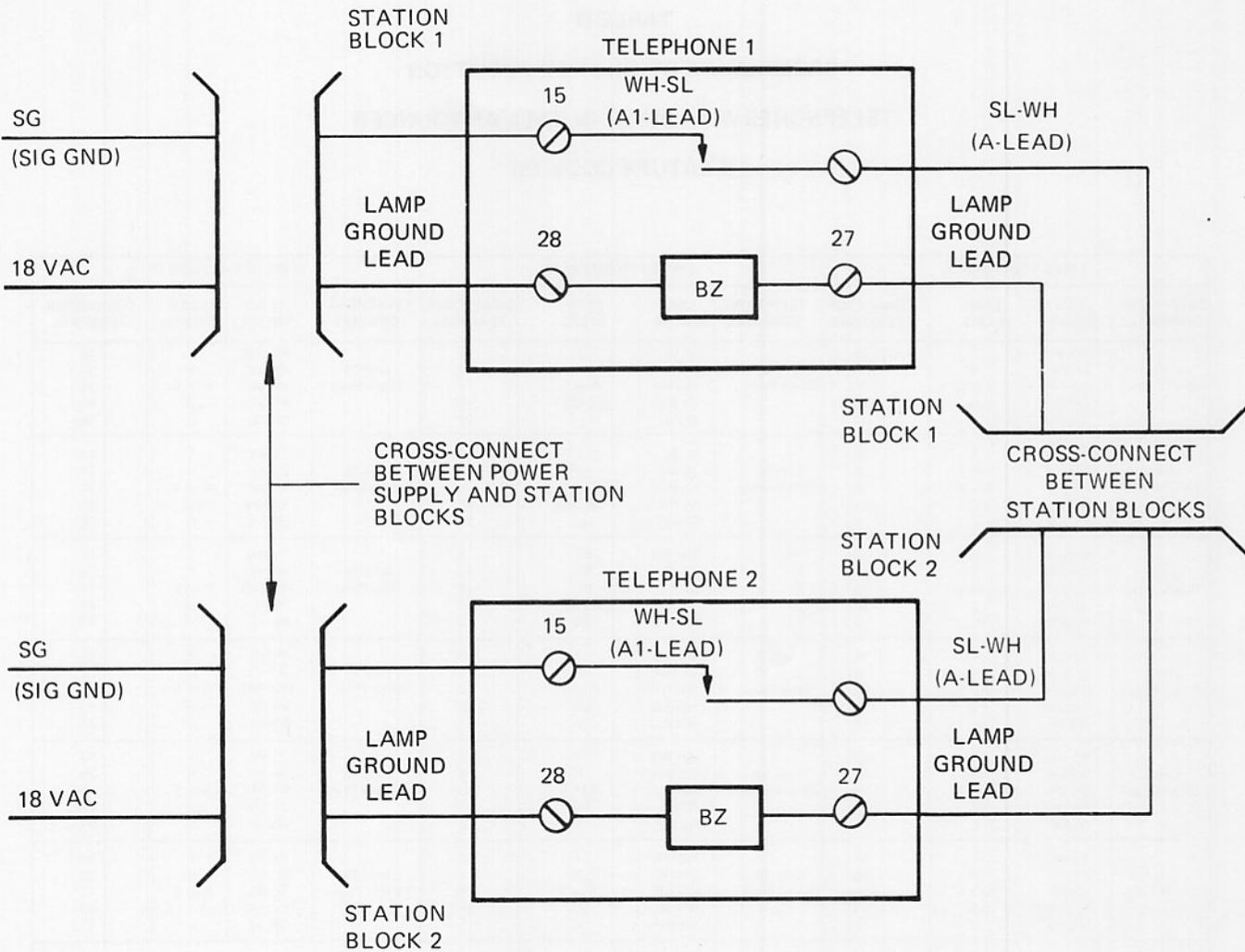
**TABLE D**  
**CABLE CONNECTIONS FOR 20-BUTTON**  
**TELEPHONES WITH BUILT-IN CALL ANNOUNCER**  
**(FEATURE CODE 76)**

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

**NOTES:**

1. All lamp ground leads are common.
2. The designation S indicates that the lead provides an individual signal ground.

AW 82-512



NOTES:

1. THE ARRANGEMENT SHOWN IS USING LINE 9 AS AN EXAMPLE. IF ANOTHER LINE IS USED, SUBSTITUTE THE APPROPRIATE A1 AND A-LEADS FOR THAT LINE.
2. IN THE 20-BUTTON TELEPHONE, GROUND IS CONNECTED TO TERMINAL 15 (WH-SL LEAD). NO CROSS-CONNECT IS NECESSARY FOR THIS LEAD.

AW 82-514

Figure 2: Circuit Diagram for Signal Buzzer

## 8. DISABLING HOOKSWITCH RESTORATION

**8.01** The hookswitch restoration feature used in multibutton telephones allows a station user to preselect a line key and then remove the handset to initiate a call. When the handset is returned to the cradle or the hookswitch is operated (hookswitch flash), the line key will be restored. To disable the hookswitch restoration feature, the following steps are taken:

- (a) Remove telephone faceplate.
- (b) Remove plastic trip arm by pulling up at the point directly above its mounting shaft.
- (c) Remove torsion spring by sliding it off the mounting shaft.
- (d) Reinstall telephone faceplate.

**8.02** To enable the hookswitch restoration feature, the following steps are taken: (See Figure 3.)

- (a) Remove telephone faceplate.
- (b) Install torsion spring by sliding it onto the mounting shaft and hooking one end between the mounting shaft and the hookswitch operating arm.
- (c) Install plastic trip arm by placing the notch in the trip arm on the end of the torsion spring (opposite the end hooked behind the operating arm) and pressing the trip arm onto the mounting shaft.
- (d) When the hookswitch is operated, the plastic trip arm should engage with the latch arm.
- (e) Reinstall telephone faceplate.

**8.03** Whenever the hookswitch restoration feature is disabled, it may become necessary to shorten or lengthen the spring connected to the operating arm to insure proper hookswitch operation. Proper operation requires the cradle to be fully depressed by the weight of the handset and return to the full up position when the handset is off-hook.

**8.04** Earlier models of multibutton telephones may not provide the preselect function with the hookswitch restoration feature. These models include an adjustment screw on the latch arm rather

than the plastic trip arm or torsion spring. To disable hookswitch restoration in these telephones, the following steps are taken:

- (a) Remove telephone faceplate and housing.
- (b) Turn the screw in the latch arm approximately five turns counterclockwise.
- (c) Reinstall telephone faceplate and housing.

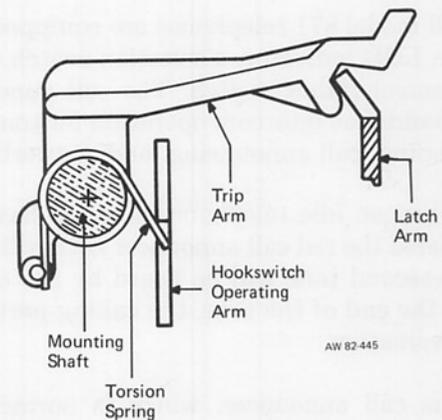


Figure 3: Installation of Trip Arm and Torsion Spring

## 9. BUSY LAMP CONNECTIONS

**9.01** Busy lamp connections may vary depending on the type of key system being used. Modifications for the 20-button desk telephones with built-in call announcer for feature codes 42 and 46 should be as follows: (Refer to Figure 4.)

- (a) Remove GN-WH lead from terminal 22 and connect to terminal 16 on the telephone terminal board.
- (b) Connect one 1N4004 diode between terminals 22 and 16 on the terminal board, and connect another 1N4004 diode between terminals 22 and 28 on the terminal board as shown in Figure 4.
- (c) Connect a lamp ground lead to terminal 28 of terminal board (provided proper station cross-connections are made).

**9.02** Modifications for the 20-button desk telephones with built-in call announcer for feature code 76 should be as follows: (Refer to Figure 5.)

**SECTION 50-871-100, ISS 1**

- (a) Connect one 1N4004 diode from terminal 22 to terminal 28 on telephone terminal board as shown in Figure 5.
- (b) Connect any "LG" lamp ground lead to terminal 28 on the telephone terminal board. (Proper station cross-connections must be made to allow the use of an LG lead.)

**10. BUILT-IN CALL ANNOUNCER**

**10.01** All model 871 telephones are equipped with an LED indicator, a selection switch, and a volume control rotary switch. The call announcer provides handsfree intercom operation for tone and voice signaling, call announcing, and answerback.

**10.02** When an idle telephone intercom has been dialed the red call announcer LED will light and a one-second tone will be heard by the calling party. At the end of the tone, the calling party can begin conversation.

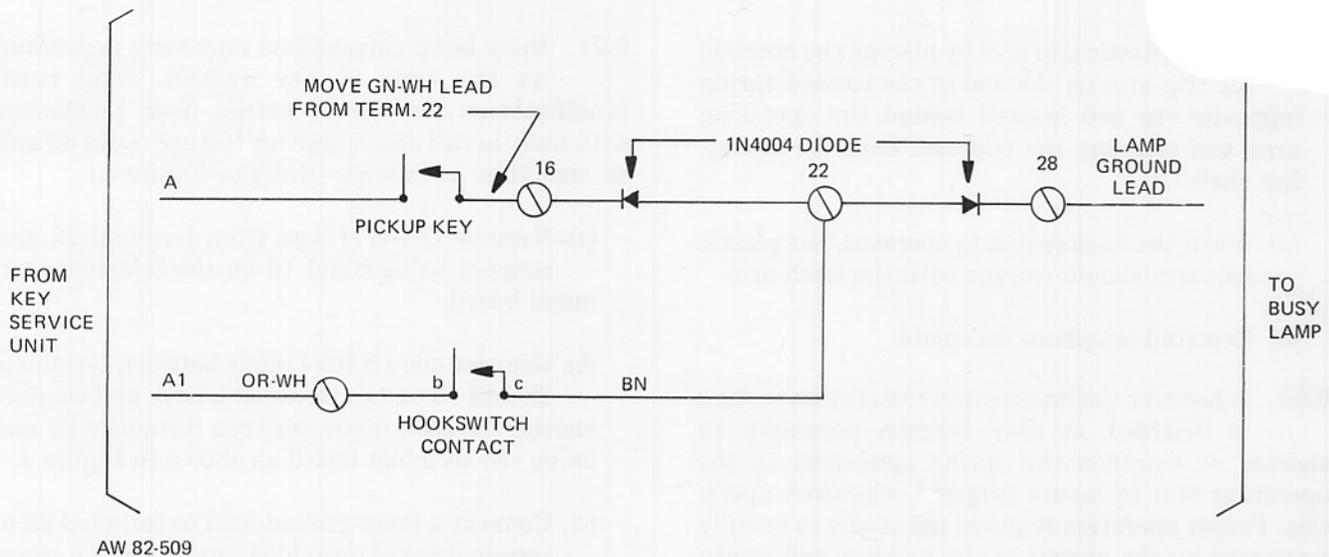
**10.03** The call announcer, which is normally in the transmit mode, is switched to the receive mode when the station is called. At the end

of each received signal or message, the call announcer returns to the transmit mode. The called party can then answerback handsfree through the call announcer.

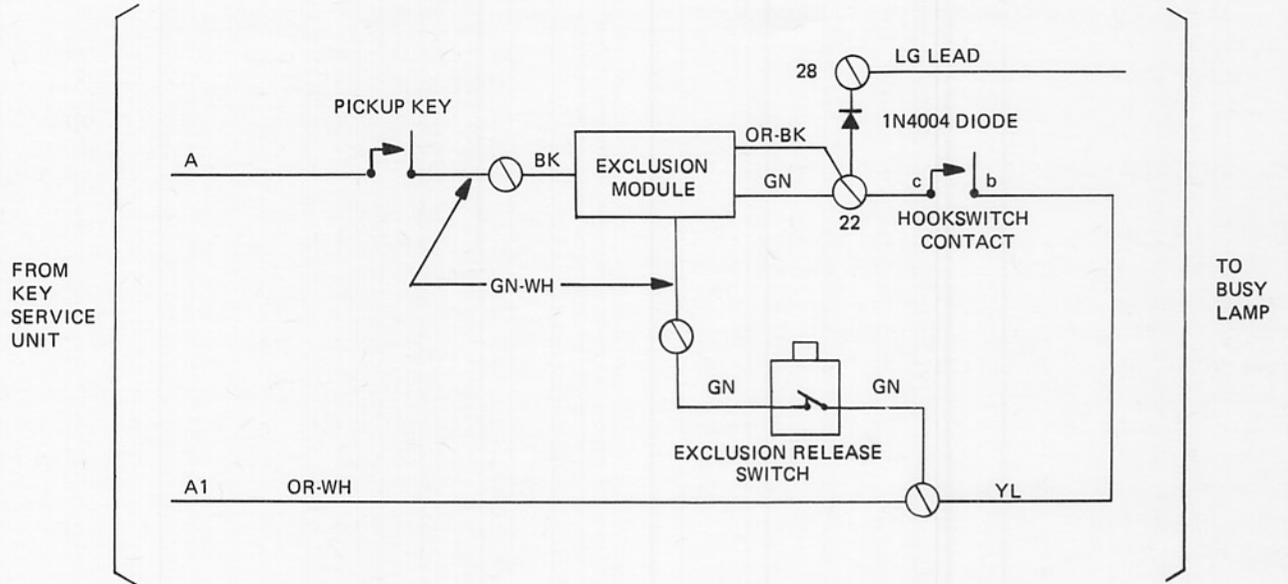
**10.04** A private/normal switch is located above the speaker grill. The normal position of the switch allows handsfree answerback operation. When the switch is in the private position the answerback (transmit) circuit is turned off preventing the calling party from overhearing conversation near the signaled station.

**10.05** A volume control switch is located under the right side of the telephone, and can be adjusted for the desired listening level of the call announcer.

**10.06** Lifting the telephone handset disconnects the call announcer circuit and allows normal handset operation.



**Figure 4: Busy Lamp Connections For 20-Button Telephones with Feature Codes 42 and 46**



AW 82-482

Figure 5: Busy Lamp Connections For 20-Button Telephones with Feature Code 76

## 20-BUTTON, ROTARY DIAL, DESK TELEPHONES WITH BUILT-IN CALL ANNOUNCER REPLACEMENT PARTS

### 1. GENERAL

**1.01** This document covers the 20-button, rotary dial, desk telephone with built-in call announcer. (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 20-button, rotary dial, desk telephone with built-in call announcer 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 50-871-100. The circuit labels appear in Sec-

tion 50-871-102. Related documents of the ITT Telephone Apparatus Practices Manual provide information on components.

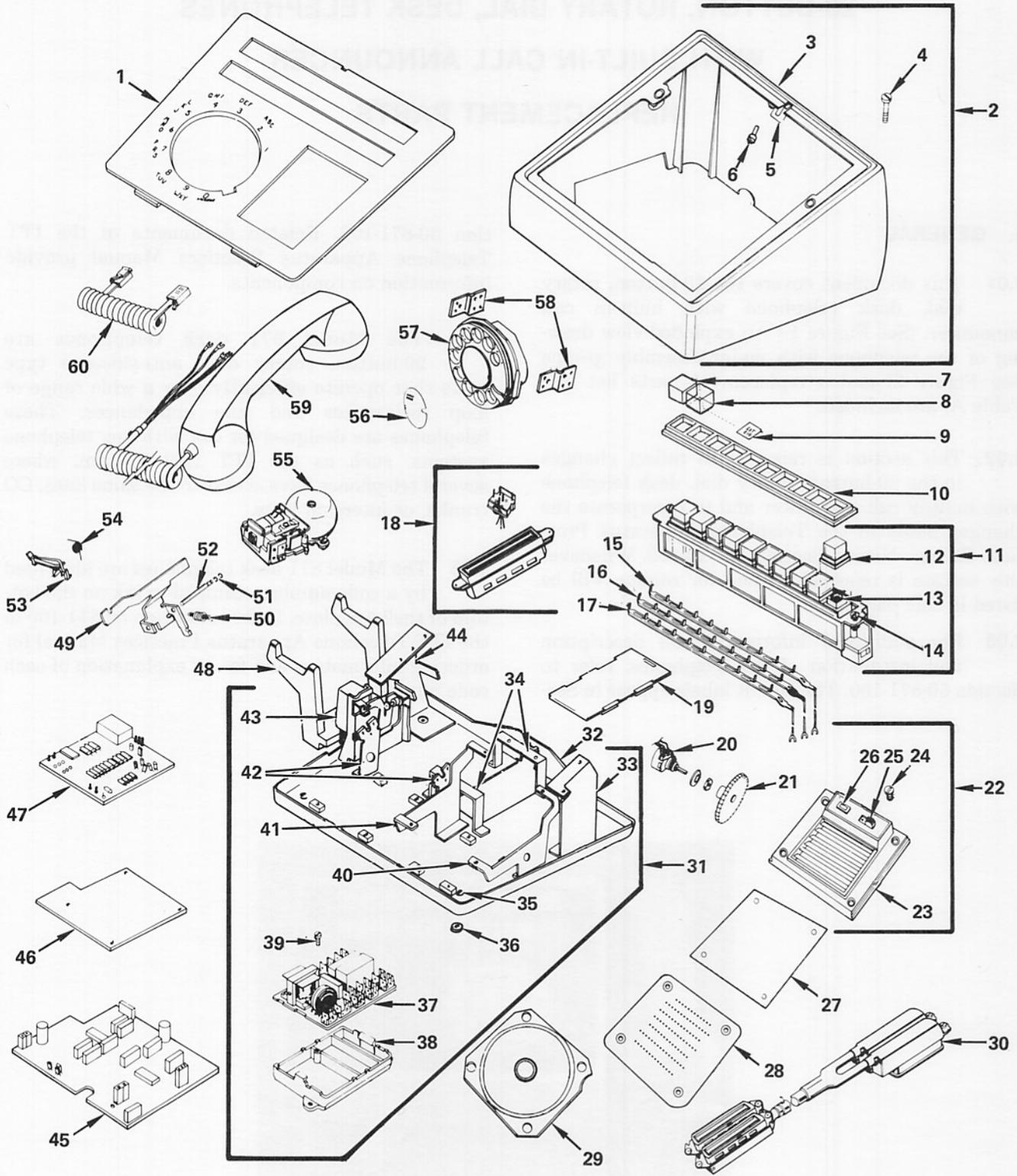
**1.04** The Model 871 desk telephones are 20-button, rotary dial, anti-sidetone type units that operate efficiently over a wide range of loop resistances and line impedances. These telephones are designed for use with key telephone systems, such as the ITT 1A2 System, where several telephones have access to the same lines, CO trunks, or intercom lines.

**1.05** The Model 871 desk telephones are identified by a code number stamped in ink on the bottom of the base plate. Refer to Section 50-871-100 of the ITT Telephone Apparatus Practices Manual for ordering information and for an explanation of each code number.



AW 82-467

Figure 1: 20-Button, Rotary Dial, Desk Telephone With Built-In Call Announcer



AW 84-668

Figure 2: 20-Button, Rotary Dial, Desk Telephone With Built-In Call Announcer, Exploded View

TABLE A  
REPLACEMENT PARTS LIST

INDEX NO	PART NUMBER	DESCRIPTION	QUANTITY USED		
			871/42	871/46	871/76
		<b>20-Button, Rotary Dial, Desk Telephone With Built-In Call Announcer</b>	<b>871/42</b>	<b>871/46</b>	<b>871/76</b>
1	181791-***	Faceplate	1	—	—
1	182784-***	Faceplate	—	1	1
2	181102-0**	Housing Assembly	1	1	1
2	187906-0**	Housing Assembly, Full-Modular	1	1	1
3	181104-0**	Housing	1	1	1
3	187922-0**	Housing, Full-Modular	1	1	1
4	095992-102	Screw, Housing	2	2	2
5	181100-101	Spring, Latch	1	1	1
6	181289-101	Screw, Latch Spring	1	1	1
7	181131-102	Cap, Red	1	1	1
8	181131-101	Cap, Clear	19	19	19
9	181281-101	Tab, Key Designation (Strip Of 12)	2	2	2
10	181287-101	Collar, Key Strip	2	2	2
11	181137-101	Key Assembly (9 Lines With Hold)	1	1	1
11	181137-102	Key Assembly (10 Lines)	1	1	—
11	182661-101	Key Assembly (10 Lines)	—	—	1
12	181122-101	Button	20	20	20
13	000051-00A	Lamp	19	19	19
14	095992-102	Screw	4	4	4
15	181292-101	Strip, Contact (GN Wire)	2	2	2
16	181292-102	Strip, Contact (RD Wire)	2	2	2
17	181292-105	Strip, Contact (SL Wire)	1	1	1
18	181154-101	Cord, Internal	1	1	1
18	181155-101	Cord, Internal	1	1	—
18	182662-101	Cord, Internal	—	—	1
19	181290-101	Slide	1	1	1
20	184061-101	Control, Volume	1	1	1
21	181808-101	Knob, Volume Control	1	1	1
22	184054-201	Speaker Grill Assembly	1	1	1
23	184050-201	Grill, Speaker	1	1	1
24	181892-101	Screw, Speaker Grill	4	4	4
25	184052-101	Switch, Slide	1	1	1
26	184053-101	LED	1	1	1
27	181899-101	Cloth, Grill	1	1	1
28	181794-101	Plate, Speaker Baffle <sup>3</sup>	1	1	1
29	184060-101	Speaker Assembly	1	1	1
30	184355-102	Cord, Mounting (100-Conductor)	1	1	1

## SECTION 50-871-101, ISS 2

TABLE A  
REPLACEMENT PARTS LIST (Cont)

INDEX NO	PART NUMBER	DESCRIPTION	QUANTITY USED		
			871/42	871/46	871/76
		20-Button, Rotary Dial, Desk Telephone With Built-In Call Announcer			
31	184055-104	Base Assembly	1	1	1
32	181141-105	Plate, Base <sup>2</sup>	1	1	1
33	181253-101	Bracket, Key Right	1	1	1
34	181255-101	Bracket, Plug	2	2	2
35	082486-102	Rivet, Foot	4	4	4
36	182337-101	Foot	4	4	4
37	181427-101	PC Network (#183070-101) <sup>1</sup>	1	1	1
38	182175-101	Spacer, Network	1	1	1
39	096407-103	Screw, Network Mounting	1	1	1
40	181801-101	Bracket, Speaker Right	1	1	1
41	181800-101	Bracket, Speaker Left	1	1	1
42	181254-102	Bracket, Dial	2	2	2
43	181260-101	Cradle Switch Assembly <sup>1</sup>	1	1	1
44	181150-102	Left Bracket Assembly	1	1	1
	185619-101	Left Trip Bracket Assembly	1	1	1
	181252-101	Bracket, Key Left	1	1	1
	185618-101	Bracket, Trip	1	1	1
45	184059-101	PC Board (Call Announcer)	1	1	1
46	184056-102	Terminal Board	1	1	1
47	182691-101	PC Board (Exclusion)	—	—	1
48	183105-102	Switch Hook Assembly	1	1	1
	182900-101	Cradle, Switch Hook	1	1	1
	181145-101	Screw, Switch Hook Cradle	3	3	3
	185494-101	Operating Arm Assembly	1	1	1
	185487-101	Arm, Operating	1	1	1
	075307-104	Spring, Cradle Return	1	1	1
	181282-101	Shaft, Pivot	1	1	1
	073538-110	Ring, Retainer	1	1	1
49	185488-101	Arm, Latch	1	1	1
50	181151-101	Spring, Latch Arm	1	1	1
51	073538-110	Ring, Retainer	2	2	2
52	181152-101	Pin, Pivot	1	1	1
53	185486-101	Arm, Trip	1	1	1
54	185485-101	Spring, Torsion	1	1	1

TABLE A  
REPLACEMENT PARTS LIST (Cont)

INDEX NO	PART NUMBER	DESCRIPTION	QUANTITY USED		
			871/42	871/46	871/76
		20-Button, Rotary Dial, Desk Telephone With Built-In Call Announcer	871/42	871/46	871/76
55	000148-DBA	Ringer <sup>1</sup>	1	1	1
56	075415-101	Card, Number	1	1	1
57	003800-00H	Dial Assembly, Metropolitan (Letters And Numerals) <sup>1</sup>	1	1	1
58	181146-101	Bracket, Dial Adapter	2	2	2
59	0065**-0C2	Handset Assembly, Nonmodular <sup>1</sup>	1	1	1
59	0065**-0M2	Handset Assembly, Modular <sup>1</sup>	1	1	1
60	9018**-072	Cord, Handset, Modular	1	1	1
	600152-611 -001	Jack Assembly, Handset Cord, Modular (Not Shown)	1	1	1
	182990-105	Insulator Assembly, Modular (Not Shown)	1	1	1
	181973-101	Pushbutton, Operator Recall (Not Shown)	—	1	—
	181971-101	Pushbutton, Exclusion Release (Not Shown)	—	—	1
	187944-101	Nameplate, ITT (Not Shown)	1	1	1

AW 84-870

## NOTES:

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

<sup>2</sup> This is an NSS item (not serviced 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		

## 20-BUTTON, ROTARY DIAL, DESK TELEPHONES WITH BUILT-IN CALL ANNOUNCER CIRCUIT LABELS

### 1. GENERAL

**1.01** This document covers the 20-button, rotary dial, desk telephones with built-in call announcer. (See Figure 1.) Circuit labels for 20-button, rotary dial, desk telephones with built-in call announcer are included. (See Table A.)



AW 86-353

**Figure 1: 20-Button, Rotary Dial, Desk Telephone With Built-In Call Annunciator**

**1.02** This section is reissued to reflect changes in the 20-button, rotary dial, desk telephones with built-in call announcer.

**1.03** For additional information on description and installation of the telephones, refer to Section 50-871-100. A replacement parts list and an exploded-view drawing for the telephones are contained in Section 50-871-101. Related documents of the ITT Telephone Apparatus Practices Manual provide information on components.

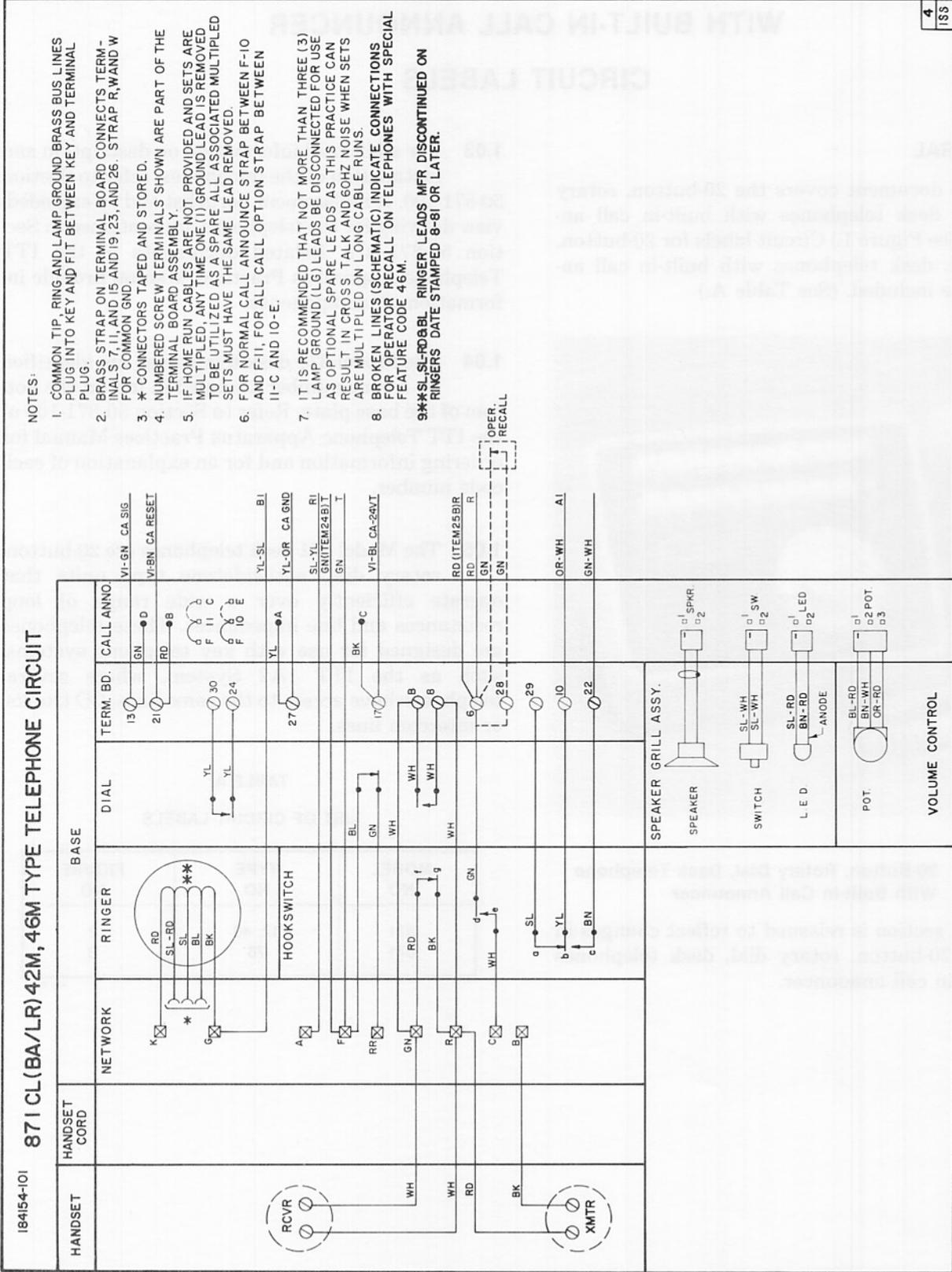
**1.04** The Model 871 desk telephones are identified by a code number stamped in ink on the bottom of the base plate. Refer to Section 50-871-100 of the ITT Telephone Apparatus Practices Manual for ordering information and for an explanation of each code number.

**1.05** The Model 871 desk telephones are 20-button, rotary dial, anti-sidetone type units that operate efficiently over a wide range of loop resistances and line impedances. These telephones are designed for use with key telephone systems, such as the ITT 1A2 System, where several telephones have access to the same lines, CO trunks, or intercom lines.

**TABLE A  
LIST OF CIRCUIT LABELS**

MODEL NO	TYPE NO	FIGURE NO
871	42, 46	2
871	76	3

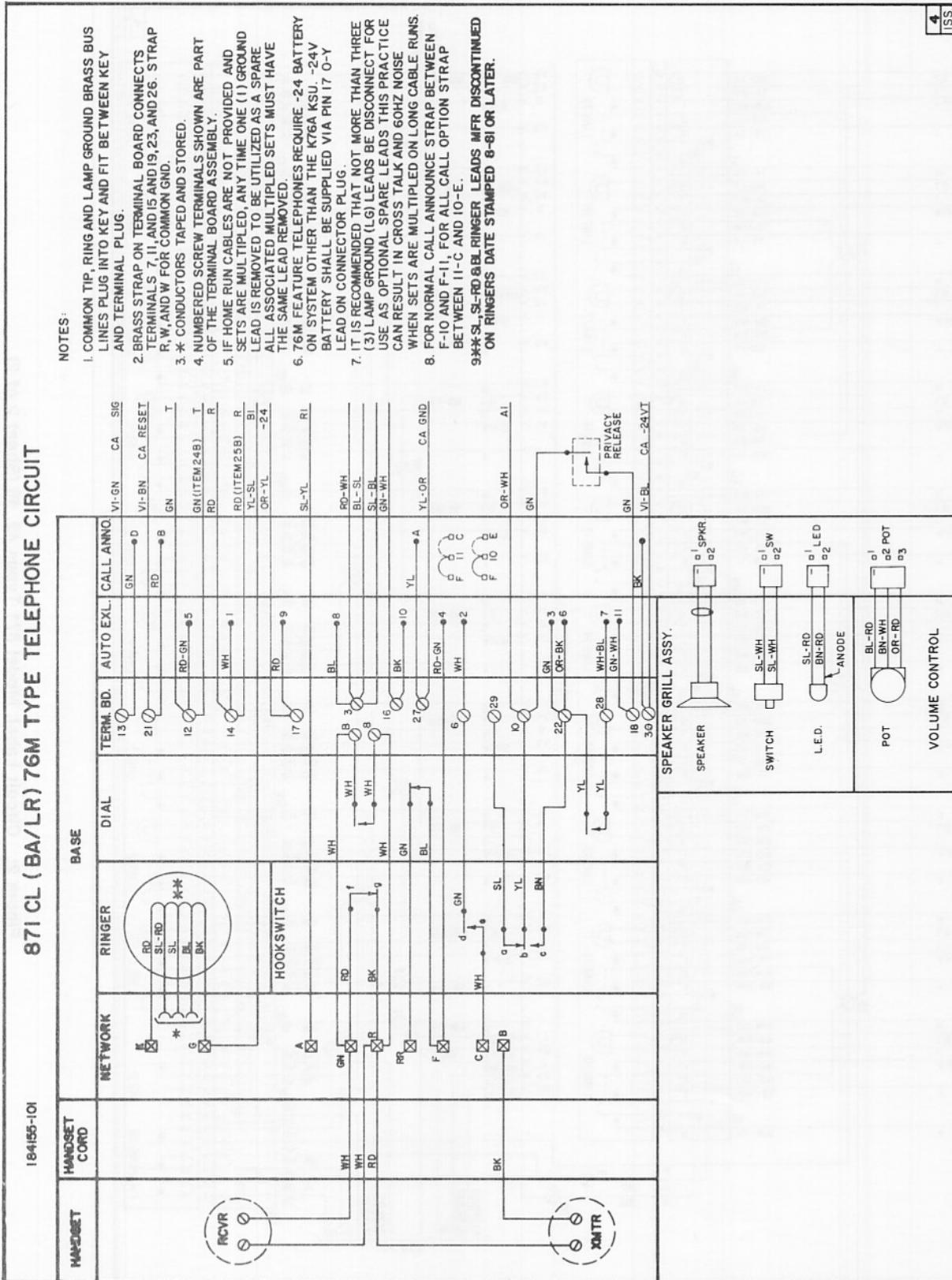
AW 86-429



4  
ISS

Figure 2: Circuit Label, Model 871 Types 42, 46 (Sheet 1 of 2)





4  
ISS

Figure 3: Circuit Label, Model 871 Type 76 (Sheet 1 of 2)



## 20-BUTTON, PUSHBUTTON DIAL, DESK TELEPHONES WITH BUILT-IN CALL ANNOUNCER GENERAL DESCRIPTION

	CONTENTS	PAGE
1.	GENERAL DESCRIPTION .....	1
	MODEL 2871** ( ) 42 .....	2
	MODEL 2871** ( ) 46 .....	2
	MODEL 2871** ( ) 76 .....	2
2.	INSTALLATION .....	3
3.	MAINTENANCE .....	3
4.	BUTTON CONVERSIONS .....	3
5.	BUZZER INSTALLATION .....	3
6.	DESIGNATION TABS .....	3
7.	GROUNDING PUSHBUTTON .....	3
8.	DISABLING HOOKSWITCH RESTORATION .....	7
9.	BUSY LAMP CONNECTIONS .....	7
10.	BUILT-IN CALL ANNOUNCER .....	8



AW 82-461

Figure 1: 20-Button, Pushbutton Dial, Desk Telephone With Built-In Call Announcer

### 1. GENERAL DESCRIPTION

**1.01** This document covers the 20-button, pushbutton dial, desk telephone with built-in call announcer. (See Figure 1.) A general description plus information peculiar to 20-button, pushbutton dial, desk telephones with built-in call announcer is included.

**1.02** Whenever this section is reissued, reason for reissue will be listed in this paragraph.

**1.03** For additional information, refer to Section 50-871-104, Replacement Parts, and to Section 50-871-105, Circuit Labels. For information on installation, maintenance, and components or equipment, consult related documents of the ITT Telephone Apparatus Practices Manual.

**1.04** The Model 2871 desk telephones are 20-button, pushbutton dial, antisidetone type units that operate efficiently over a wide range of loop resistances and line impedances. These telephones are designed for use with key telephone systems, such as the ITT 1A2 System, where several telephones have access to the same lines, CO trunks, or intercom lines. All models are equipped with a mounting cord terminated in two Amphenol-type connectors.

**1.05** The Model 2871 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** Nineteen pushbutton keys on the telephone are used for line, trunk, or intercom lines. 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. All remaining keys may be used as line keys or may be wired as either intercom lines or signal keys.

TABLE A  
ORDERING INFORMATION – TELEPHONES

CODE NUMBERS															
TELEPHONE CODE NUMBERS ARE FORMED IN SIX STEPS AS FOLLOWS:															
				2871		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					
871	20-Button, Pushbutton Dial, Desk Telephone With Built-In Call Announcer	00, 05, 13, 15, 44, And 45 (Available On All Models)		O		BA		42, 46, 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	Conventional	BA	Straight Line	42	Standard Telephone	M	Metropolitan (Letters & Numerals)						
05	Moss Green					46	42 Combined With An Operator Recall Button								
13	Beige														
15	White					76	42 Combined With Automatic Exclusion And Release Button								
44	Light Ash														
45	Cocoa Brown														

AW 82-516

**1.07** A signal lamp beneath each of the nineteen line keys indicates status of the associated line. (See Table B.)

**1.08** All 20-button desk telephones are equipped with a hookswitch restoration feature that restores any operated line key when the hookswitch is operated.

**1.09** Variations in the Model 2871 series telephones are briefly described below. Circuit label drawings for these models are contained in Section 50-871-105.

**MODEL 2871\*\* ( ) 42**

**1.10** The Model 2871\*\* ( ) 42 is a standard 20-button, pushbutton dial, desk type, key telephone equipped with a built-in call announcer. A

set of contacts in the dial assembly disconnects the handsfree speaker during dialing; also, contacts in the hookswitch assembly provide on/off control of the handsfree equipment. The Model 2871\*\* ( ) 42 is equipped with a 100-conductor mounting cord fitted with two 50-pin (25-pair) male connectors.

**MODEL 2871\*\* ( ) 46**

**1.11** The Model 2871\*\* ( ) 46 is the same as the Model 2871\*\* ( ) 42 with the addition of an operator recall button. This button, containing normally closed contacts, can be used to recall the operator if the hookswitch restoration feature is used.

**MODEL 2871\*\* ( ) 76**

**1.12** The Model 2871\*\* ( ) 76 is the same as the Model 2871\*\* ( ) 42 with the addition of an automatic exclusion (privacy) circuit with a release

TABLE B  
LINE KEY SIGNALS

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

AW 81-96

button. This release button contains normally open contacts. Where this feature is used, all telephones in the key system must contain the exclusion circuit and a 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. For specific wiring information, refer to the appropriate circuit label in Section 50-871-105. Cable connections for 20-button telephones with built-in call announcer for feature codes 42 and 46 are listed in Table C. Cable connections for 20-button telephones with built-in call announcer for feature code 76 are listed in Table D. For general installation information and installation of repair parts, refer to the applicable section of the ITT Telephone Apparatus Practices Manual.

## 3. MAINTENANCE

**3.01** For general maintenance information, refer to the maintenance section of the ITT Telephone Apparatus Practices Manual. For a pictorial view and parts list, refer to Section 50-871-104.

## 4. BUTTON CONVERSIONS

**4.01** Any line key may be converted to signaling mode by removing the slotted head pin from the plunger shank. The slotted head pin is removed by turning clockwise. (On earlier models of the 20-button telephone the pin is removed by turning counterclockwise.)

## 5. BUZZER INSTALLATION

**5.01** A buzzer may be installed as the signaling device of a telephone receiving an intercom call. The buzzer may be either installed on the dial mounting bracket or mounted externally. For telephones with feature codes 42, 46, and 76, buzzer leads are connected to lamp ground leads (provided proper station cross-connections are made). Buzzers selected for this use must operate at 18 VAC, 60 Hz. (See Figure 2.)

**5.02** 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.

## 6. DESIGNATION TABS

**6.01** 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 and lifting. Note that locking surfaces are located on each of the caps and keys. These locking surfaces must properly align when reinstalling.

## 7. GROUNDING PUSHBUTTON

**7.01** Modifications are made to line 9 of the telephone if a grounding pushbutton is required. A grounding pushbutton is required in some PABX applications for transferring calls, originating calls during a power failure, or other special functions. To convert line 9 to a grounding pushbutton, the following modifications should be made:

- (a) Modify button to non-locking operation by removing interlock pin from the line 9 plunger.
- (b) Ground is provided on the WH-SL (A1) lead by the key system. (No cross-connect is necessary for the lead.)
- (c) Cross-connect from the SL-WH lead to the PABX connection for the desired function.

TABLE C  
 CABLE CONNECTIONS FOR 20-BUTTON  
 TELEPHONES WITH BUILT-IN CALL ANNOUNCER  
 (FEATURE CODES 42 AND 46)

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

NOTES:

1. All lamp ground leads are common.
2. The designation S indicates that the lead provides an individual signal ground.

AW 82-511

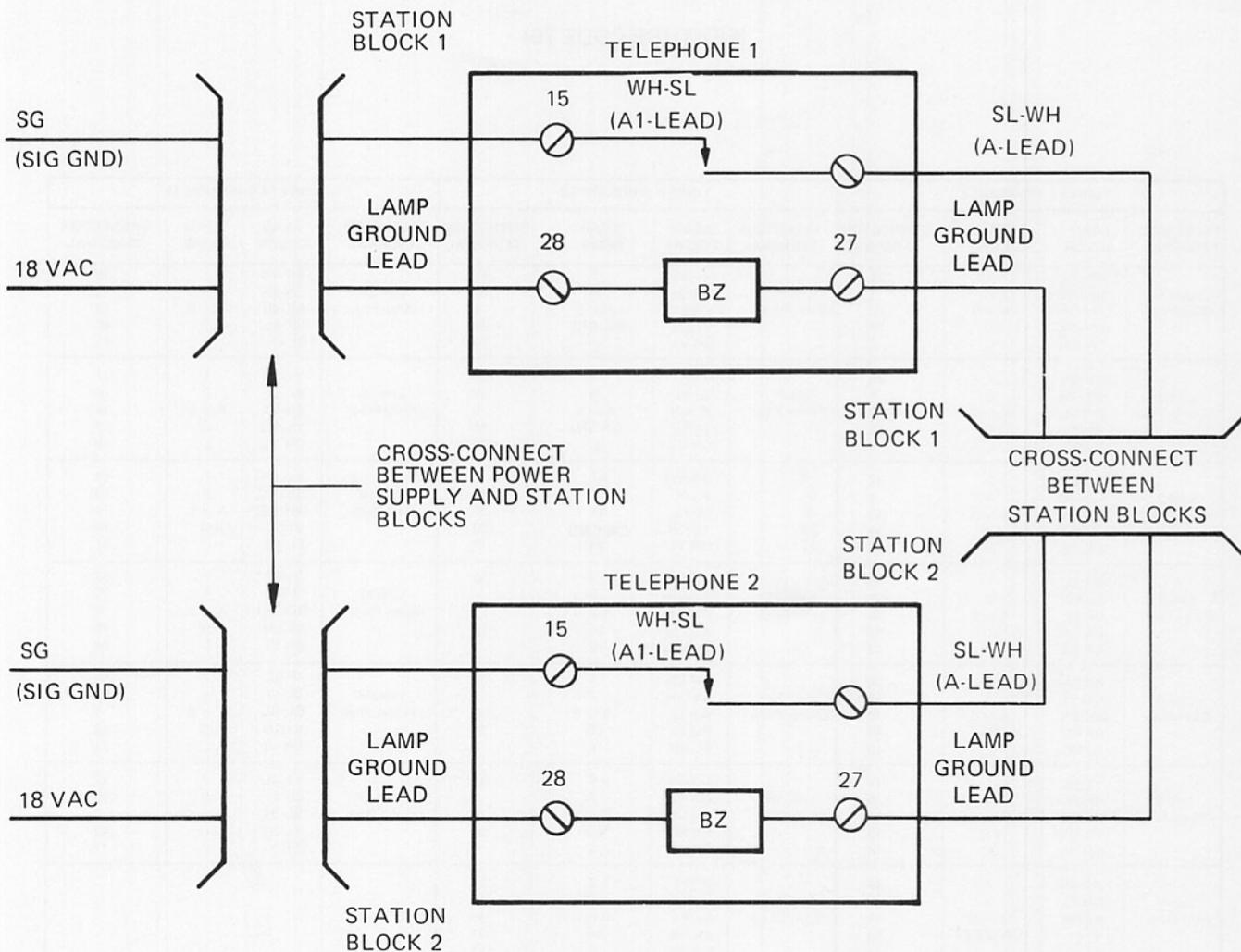
**TABLE D**  
**CABLE CONNECTIONS FOR 20-BUTTON**  
**TELEPHONES WITH BUILT-IN CALL ANNOUNCER**  
**(FEATURE CODE 76)**

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

**NOTES:**

1. All lamp ground leads are common.
2. The designation S indicates that the lead provides an individual signal ground.

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NOTES:

1. THE ARRANGEMENT SHOWN IS USING LINE 9 AS AN EXAMPLE. IF ANOTHER LINE IS USED, SUBSTITUTE THE APPROPRIATE A1 AND A-LEADS FOR THAT LINE.
2. IN THE 20-BUTTON TELEPHONE, GROUND IS CONNECTED TO TERMINAL 15 (WH-SL LEAD). NO CROSS-CONNECT IS NECESSARY FOR THIS LEAD.

AW 82-514

Figure 2: Circuit Diagram For Signal Buzzer

## 8. DISABLING HOOKSWITCH RESTORATION

**8.01** The hookswitch restoration feature used in multibutton telephones allows a station user to preselect a line key and then remove the handset to initiate a call. When the handset is returned to the cradle or the hookswitch is operated (hookswitch flash), the line key will be restored. To disable the hookswitch restoration feature, the following steps are taken:

- (a) Remove telephone faceplate.
- (b) Remove plastic trip arm by pulling up at the point directly above its mounting shaft.
- (c) Remove torsion spring by sliding it off the mounting shaft.
- (d) Reinstall telephone faceplate.

**8.02** To enable the hookswitch restoration feature, the following steps are taken: (See Figure 3.)

- (a) Remove telephone faceplate.
- (b) Install torsion spring by sliding it onto the mounting shaft and hooking one end between the mounting shaft and the hookswitch operating arm.
- (c) Install plastic trip arm by placing the notch in the trip arm on the end of the torsion spring (opposite the end hooked behind the operating arm) and pressing the trip arm onto the mounting shaft.
- (d) When the hookswitch is operated, the plastic trip arm should engage with the latch arm.
- (e) Reinstall telephone faceplate.

**8.03** Whenever the hookswitch restoration feature is disabled, it may become necessary to shorten or lengthen the spring connected to the operating arm to insure proper hookswitch operation. Proper operation requires the cradle to be fully depressed by the weight of the handset and return to the full up position when the handset is off-hook.

**8.04** Earlier models of multibutton telephones may not provide the preselect function with the hookswitch restoration feature. These models include an adjustment screw on the latch arm rather

than the plastic trip arm or torsion spring. To disable hookswitch restoration in these telephones, the following steps are taken:

- (a) Remove telephone faceplate and housing.
- (b) Turn the screw in the latch arm approximately five turns counterclockwise.
- (c) Reinstall telephone faceplate and housing.

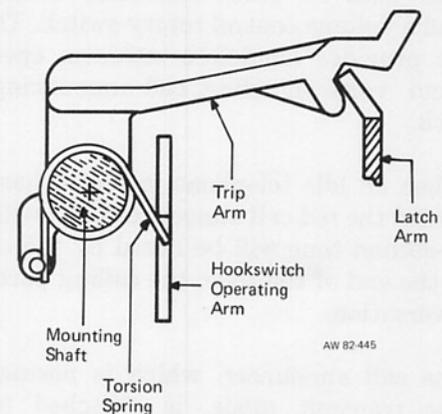


Figure 3: Installation of Trip Arm and Torsion Spring

## 9. BUSY LAMP CONNECTIONS

**9.01** Busy lamp connections may vary depending on the type of key system being used. Modifications for the 20-button desk telephones with built-in call announcer for feature codes 42 and 46 should be as follows: (Refer to Figure 4.)

- (a) Remove GN-WH lead from terminal 22 and connect to terminal 16 on the telephone terminal board.
- (b) Connect one 1N4004 diode between terminals 22 and 16 on the terminal board, and connect another 1N4004 diode between terminals 22 and 28 on the terminal board as shown in Figure 4.
- (c) Connect OR-YL mounting cord lead to terminal 28 of terminal board.

**9.02** Modifications for the 20-button desk telephones with built-in call announcer for feature code 76 should be as follows: (Refer to Figure 5.)

**SECTION 50-871-103, ISS 1**

- (a) Connect one 1N4004 diode from terminal 22 to terminal 28 on telephone terminal board as shown in Figure 5.
- (b) Connect any "LG" lamp ground lead to terminal 28 on the telephone terminal board. (Proper station cross-connections must be made to allow the use of an LG lead.)

**10. BUILT-IN CALL ANNOUNCER**

**10.01** All model 2871 telephones are equipped with an LED indicator, a selection switch, and a volume control rotary switch. The call announcer provides handsfree intercom operation for tone and voice signaling, call announcing, and answerback.

**10.02** When an idle telephone intercom has been dialed the red call announcer LED will light and a one-second tone will be heard by the calling party. At the end of the tone, the calling party can begin conversation.

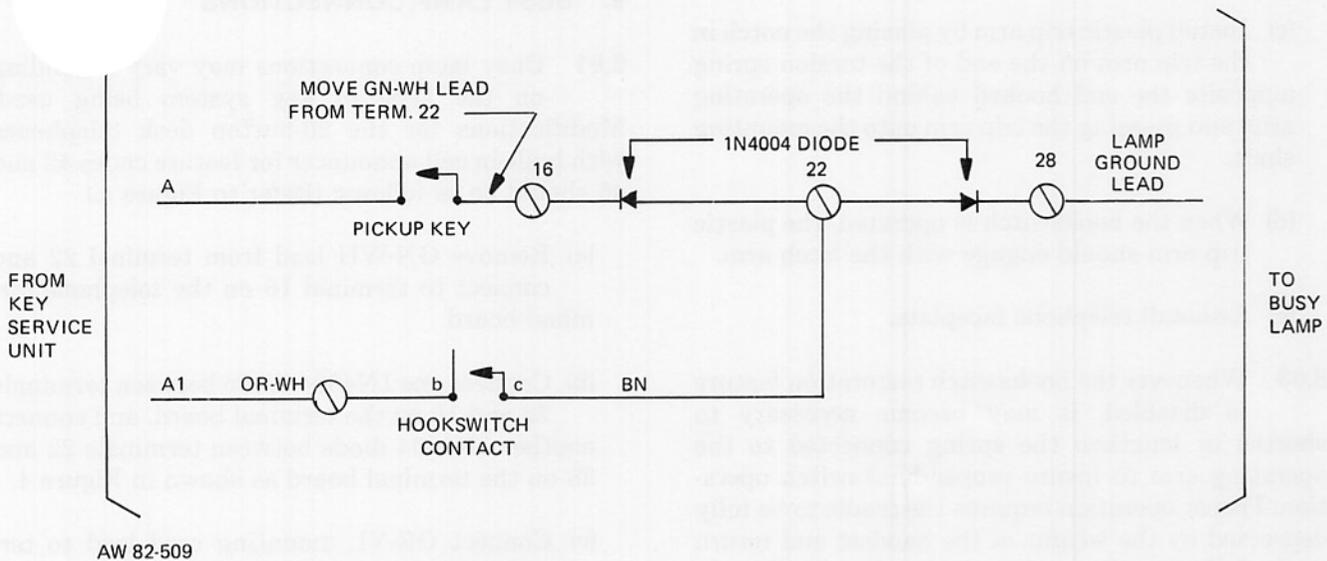
**10.03** The call announcer, which is normally in the transmit mode, is switched to the receive mode when the station is called. At the end

of each received signal or message, the call announcer returns to the transmit mode. The called party can then answerback handsfree through the call announcer.

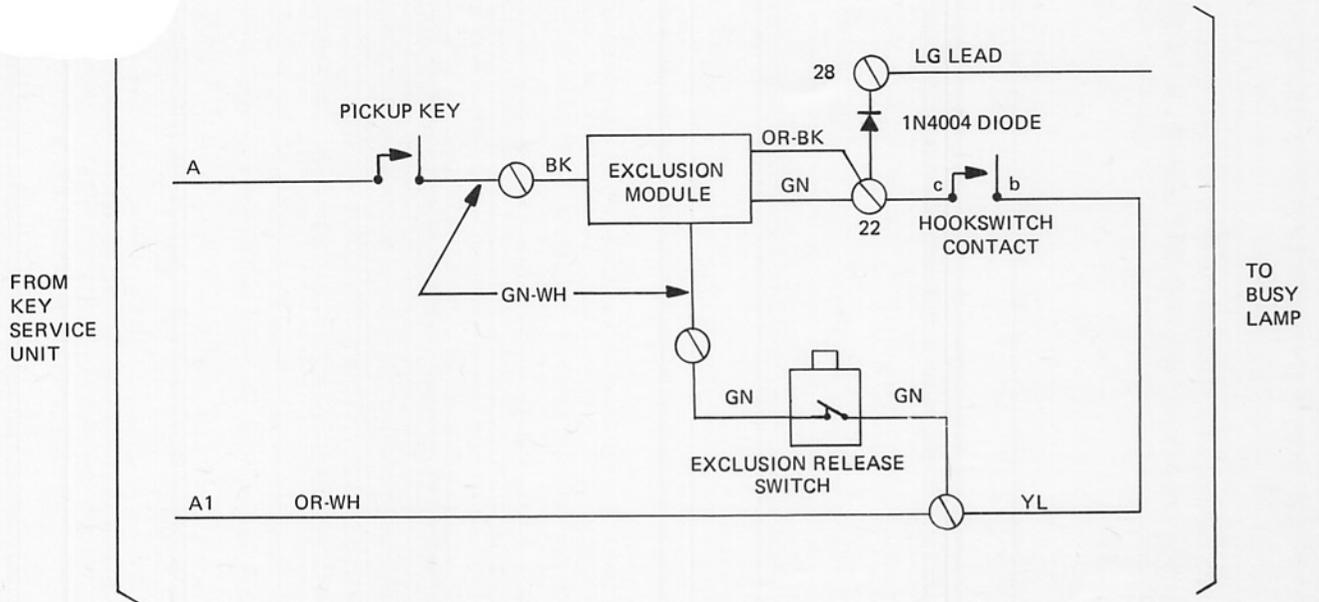
**10.04** A private/normal switch is located above the speaker grill. The normal position of the switch allows handsfree answerback operation. When the switch is in the private position the answerback (transmit) circuit is turned off preventing the calling party from overhearing conversation near the signaled station.

**10.05** A volume control switch is located under the right side of the telephone, and can be adjusted for the desired listening level of the call announcer.

**10.06** Lifting the telephone handset disconnects the call announcer circuit and allows normal handset operation.



**Figure 4: Busy Lamp Connections For 20-Button Telephones with Feature Codes 42 and 46**



AW 82-482

Figure 5: Busy Lamp Connections For 20-Button Telephones with Feature Code 76

## 20-BUTTON, PUSHBUTTON DIAL, DESK TELEPHONES WITH BUILT-IN CALL ANNOUNCER REPLACEMENT PARTS

### 1. GENERAL

**1.01** This document covers the 20-button, pushbutton dial, desk telephone with built-in call announcer. (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 20-button, pushbutton dial, desk telephone with built-in call announcer 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 50-871-103. The circuit labels appear in Section

50-871-105. Related documents of the ITT Telephone Apparatus Practices Manual provide information on components.

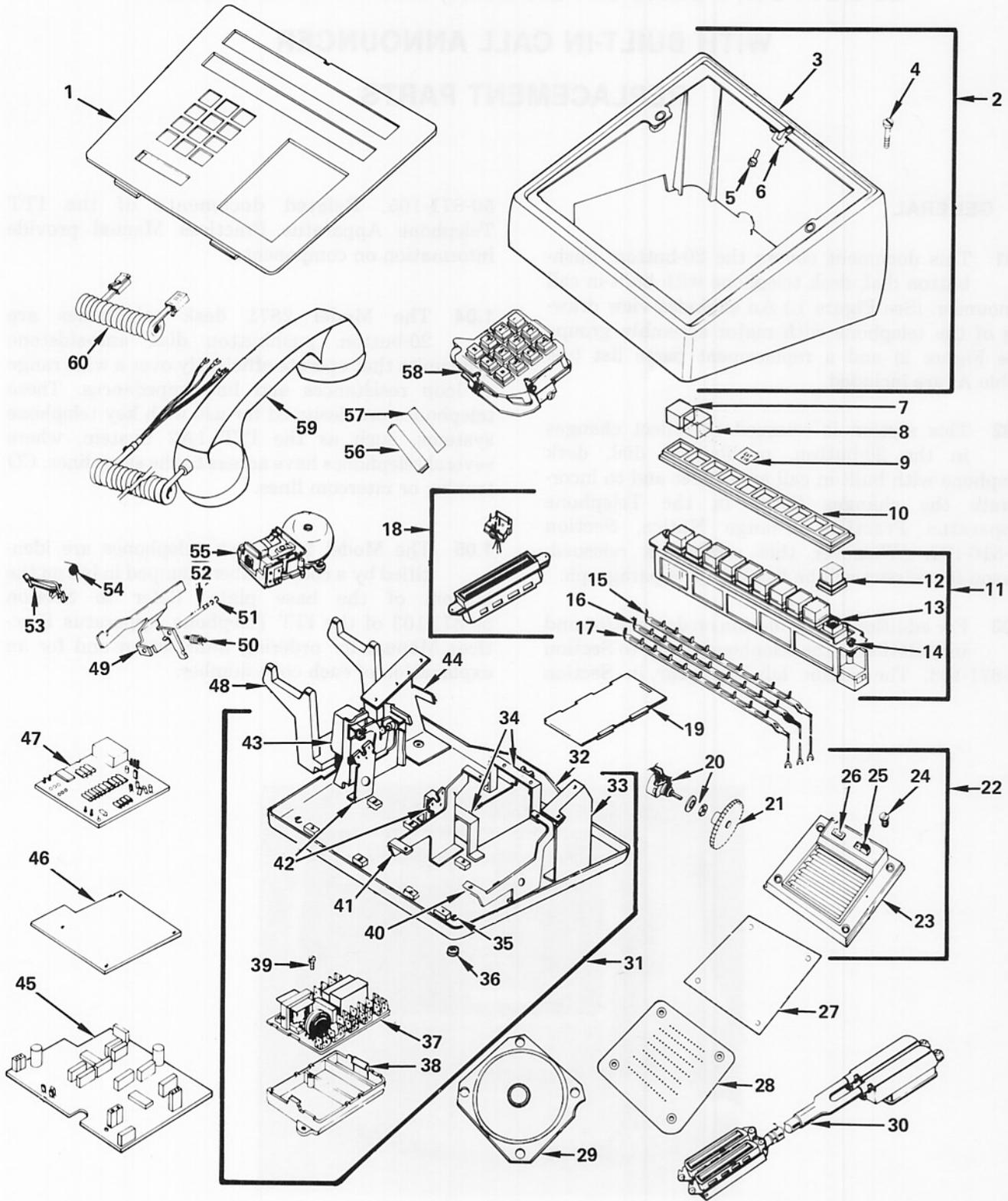
**1.04** The Model 2871 desk telephones are 20-button, pushbutton dial, anti-sidetone type units that operate efficiently over a wide range of loop resistances and line impedances. These telephones are designed for use with key telephone systems, such as the ITT 1A2 System, where several telephones have access to the same lines, CO trunks, or intercom lines.

**1.05** The Model 2871 desk telephones are identified by a code number stamped in ink on the bottom of the base plate. Refer to Section 50-871-103 of the ITT Telephone Apparatus Practices Manual for ordering information and for an explanation of each code number.



AW 82 461

Figure 1: 20-Button, Pushbutton Dial, Desk Telephone With Built-In Call Announcer



AW 84-661

Figure 2: 20-Button, Pushbutton Dial, Desk Telephone With Built-In Call Announcer, Exploded View

TABLE A  
REPLACEMENT PARTS LIST

INDEX NO	PART NUMBER	DESCRIPTION	QUANTITY USED		
			2871/42	2871/46	2871/76
		<b>20-Button, Pushbutton Dial, Desk Telephone With Built-In Call Announcer</b>			
1	181793-***	Faceplate	1	—	—
1	182785-***	Faceplate	—	1	1
2	181102-0**	Housing Assembly	1	1	1
2	187906-0**	Housing Assembly, Full-Modular	1	1	1
3	181104-0**	Housing	1	1	1
3	187922-0**	Housing, Full-Modular	1	1	1
4	095992-102	Screw, Housing	2	2	2
5	181100-101	Spring, Latch	1	1	1
6	181289-101	Screw, Latch Spring	1	1	1
7	181131-102	Cap, Red	1	1	1
8	181131-101	Cap, Clear	19	19	19
9	181281-101	Tab, Key Designation (Strip Of 12)	2	2	2
10	181287-101	Collar, Key Strip	2	2	2
11	181137-101	Key Assembly (9 Lines With Hold)	1	1	1
11	181137-102	Key Assembly (10 Lines)	1	1	—
11	182661-101	Key Assembly (10 Lines)	—	—	1
12	181122-101	Button	20	20	20
13	000051-00A	Lamp	19	19	19
14	095992-102	Screw	4	4	4
15	181292-101	Strip, Contact (GN Wire)	2	2	2
16	181292-102	Strip, Contact (RD Wire)	2	2	2
17	181292-105	Strip, Contact (SL Wire)	1	1	1
18	181154-101	Cord, Internal	1	1	1
18	181155-101	Cord, Internal	1	1	—
18	182662-101	Cord, Internal	—	—	1
19	181290-101	Slide	1	1	1
20	184061-101	Control, Volume	1	1	1
21	181808-101	Knob, Volume Control	1	1	1
22	184054-201	Speaker Grill Assembly	1	1	1
23	184050-201	Grill, Speaker	1	1	1
24	181892-101	Screw, Speaker Grill	4	4	4
25	184052-101	Switch, Slide	1	1	1
26	184053-101	LED	1	1	1
27	181899-101	Cloth, Grill	1	1	1
28	181794-101	Plate, Speaker Baffle <sup>4</sup>	1	1	1
29	184060-101	Speaker Assembly	1	1	1
30	184355-102	Cord, Mounting (100-Conductor)	1	1	1

## SECTION 50-871-104, ISS 2

TABLE A  
REPLACEMENT PARTS LIST (Cont)

INDEX NO	PART NUMBER	DESCRIPTION	QUANTITY USED		
			2871/42	2871/46	2871/76
		20-Button, Pushbutton Dial, Desk Telephone With Built-In Call Announcer			
31	184055-102	Base Assembly	1	1	1
32	181141-105	Plate, Base <sup>2</sup>	1	1	1
33	181253-101	Bracket, Key Right	1	1	1
34	181255-101	Bracket, Plug	2	2	2
35	082486-102	Rivet, Foot	4	4	4
36	182337-101	Foot	4	4	4
37	181427-102	PC Network (#183070-102) <sup>1</sup>	1	1	1
38	182175-101	Spacer, Network	1	1	1
39	096407-103	Screw, Network Mounting	1	1	1
40	181801-101	Bracket, Speaker Right	1	1	1
41	181800-101	Bracket, Speaker Left	1	1	1
42	181254-102	Bracket, Dial	2	2	2
43	181260-101	Cradle Switch Assembly <sup>1</sup>	1	1	1
44	181150-102	Left Bracket Assembly	1	1	1
	185619-101	Left Trip Bracket Assembly	1	1	1
	181252-101	Bracket, Key Left	1	1	1
	185618-101	Bracket, Trip	1	1	1
45	184059-101	PC Board (Call Announcer)	1	1	1
46	184056-102	Terminal Board	1	1	1
47	182691-101	PC Board (Exclusion)	—	—	1
48	183105-102	Switch Hook Assembly	1	1	1
	182900-101	Cradle, Switch Hook	1	1	1
	181145-101	Screw, Switch Hook Cradle	3	3	3
	185494-101	Operating Arm Assembly	1	1	1
	185487-101	Arm, Operating	1	1	1
	075307-104	Spring, Cradle Return	1	1	1
	181282-101	Shaft, Pivot	1	1	1
	073538-110	Ring, Retainer	1	1	1
49	185488-101	Arm, Latch	1	1	1
50	181151-101	Spring, Latch Arm	1	1	1
51	073538-110	Ring, Retainer	2	2	2
52	181152-101	Pin, Pivot	1	1	1
53	185486-101	Arm, Trip	1	1	1
54	185485-101	Spring, Torsion	1	1	1

TABLE A  
REPLACEMENT PARTS LIST (Cont)

INDEX NO	PART NUMBER	DESCRIPTION	QUANTITY USED		
			2871/42	2871/46	2871/76
		20-Button, Pushbutton Dial, Desk Telephone With Built-In Call Announcer			
55	000148-DBA	Ringer <sup>1</sup>	1	1	1
56	087514-101	Retainer, Number Card	1	1	1
57	087513-101	Card, Number	1	1	1
57	087513-102	Card, Number, Strip Of 6 (Not Shown) <sup>5</sup>	—	—	—
58	004600-0PG	Dial Assembly, Pushbutton Digital, Metropolitan (Letters And Numerals) <sup>1, 3</sup>	1	1	1
58	003600-0PG	Dial Assembly, Pushbutton Tel-Touch, Metropolitan (Letters And Numerals) <sup>1, 4</sup>	1	1	1
59	0065**-0C2	Handset Assembly, Nonmodular <sup>1</sup>	1	1	1
59	0065**-0M2	Handset Assembly, Modular <sup>1</sup>	1	1	1
60	9018**-072	Cord, Handset, Modular	1	1	1
	600152-611-001	Jack Assembly, Handset Cord, Modular (Not Shown)	1	1	1
	182990-105	Insulator Assembly, Modular (Not Shown)	1	1	1
	181973-101	Pushbutton, Operator Recall (Not Shown)	—	1	—
	181971-101	Pushbutton, Exclusion Release (Not Shown)	—	—	1
	187944-101	Nameplate, ITT (Not Shown)	1	1	1

AW 84-869

## NOTES:

- <sup>1</sup> Refer to Components Parts Section of this manual for Assembly Parts List.  
<sup>2</sup> This is an NSS item (not serviced separately).  
<sup>3</sup> The 004600-0PG dial replaces the 003600-0PG dial.  
<sup>4</sup> These products have been discontinued, but are included to provide a source of information for telephones still in service.  
<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		

## 20-BUTTON, PUSHBUTTON DIAL, DESK TELEPHONES WITH BUILT-IN CALL ANNOUNCER CIRCUIT LABELS

### 1. GENERAL

1.01 This document covers the 20-button, pushbutton dial, desk telephones with built-in call announcer. (See Figure 1.) Circuit labels for 20-button, pushbutton dial, desk telephones with built-in call announcer, are included. (See Table A.)



AW 86-343

**Figure 1: 20-Button, Pushbutton Dial, Desk Telephone With Built-In Call Announcer**

1.02 This section is reissued to provide the latest issue of circuit labels for the following 20-button, pushbutton dial, desk telephones with built-in call announcer:

- (a) Model 2871, Types 42 and 46
- (b) Model 2871, Type 76

1.03 For additional information on description and installation of the telephones, refer to Section 50-871-103. A replacement parts list and an exploded-view drawing for the telephones are contained in Section 50-871-104. Related documents of the ITT Telephone Apparatus Practices Manual provide information on components.

1.04 The Model 2871 desk telephones are identified by a code number stamped in ink on the bottom of the base plate. Refer to Section 50-871-103 of the ITT Telephone Apparatus Practices Manual for ordering information and for an explanation of each code number.

1.05 The Model 2871 desk telephones are 20-button, pushbutton dial, anti-sidetone type units that operate efficiently over a wide range of loop resistances and line impedances. These telephones are designed for use with key telephones systems, such as the ITT 1A2 System, where several telephones have access to the same lines, CO trunks, or intercom lines.

TABLE A  
LIST OF CIRCUIT LABELS

MODEL NO	TYPE NO	FIGURE NO
2871	42, 46	2
2871	76	3

AW 86-400



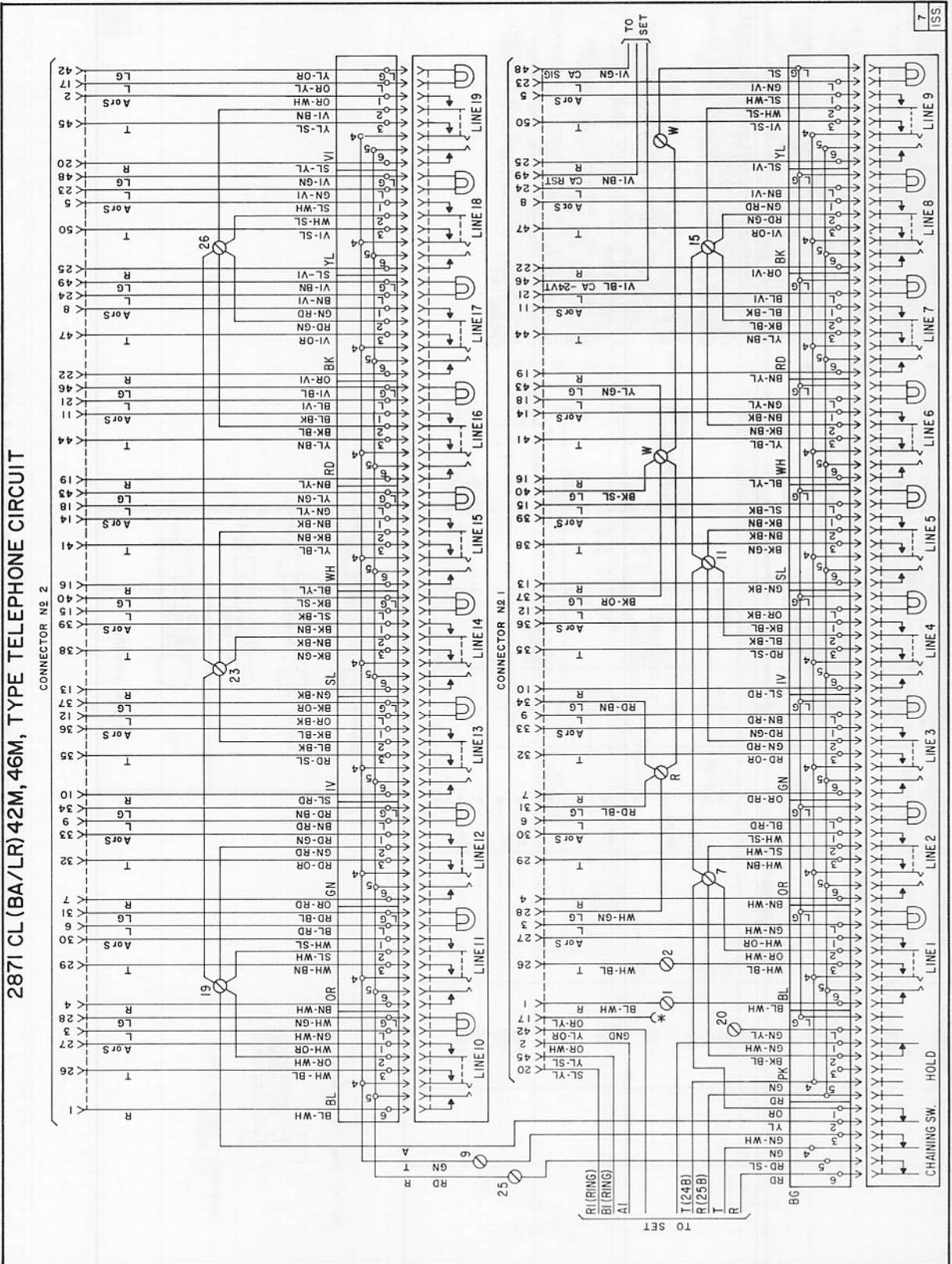
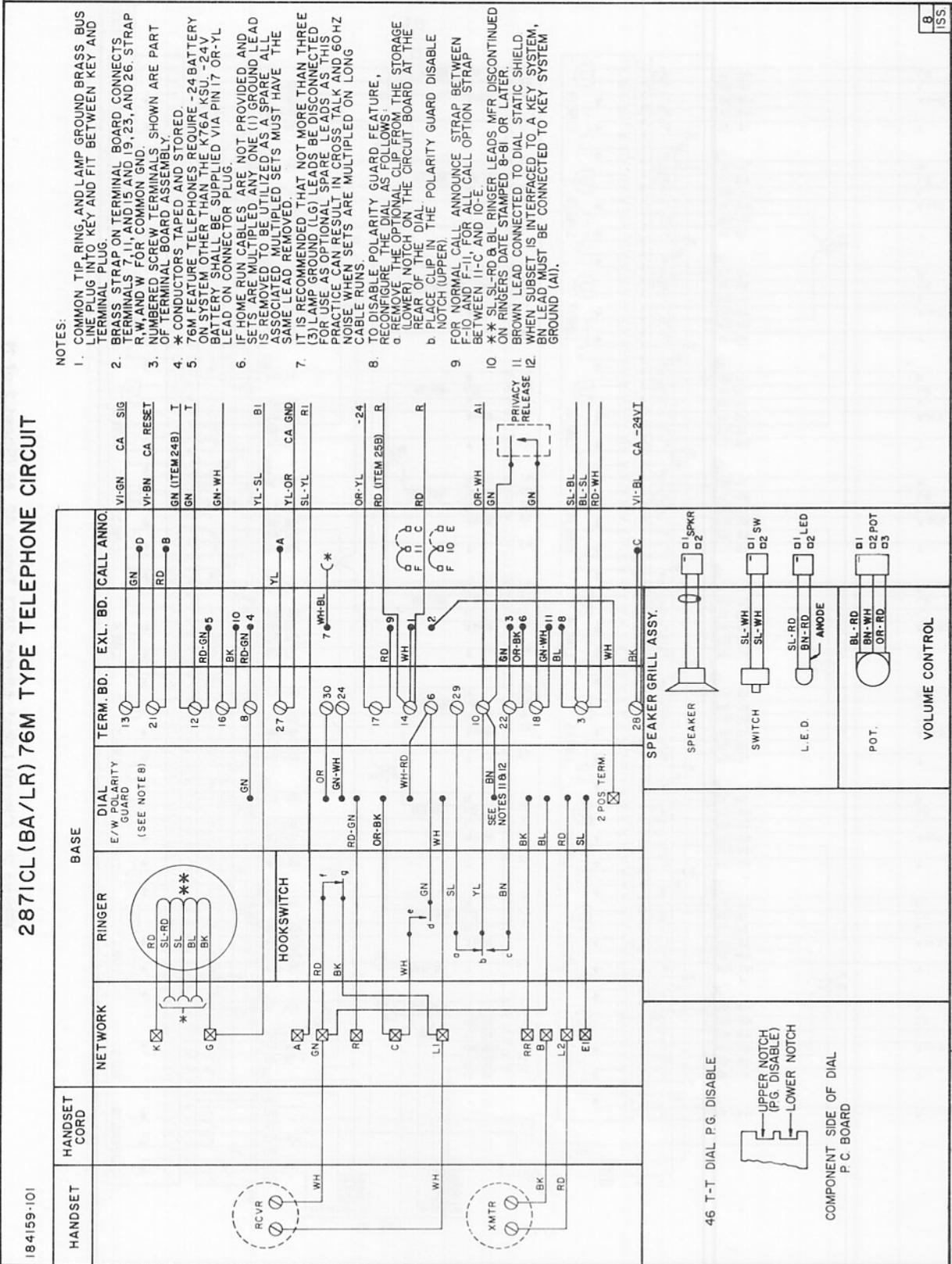


Figure 2: Circuit Label, Model 2871 Types 42, 46 (Sheet 2 of 2)



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Figure 3: Circuit Label, Model 2871 Type 76 (Sheet 1 of 2)

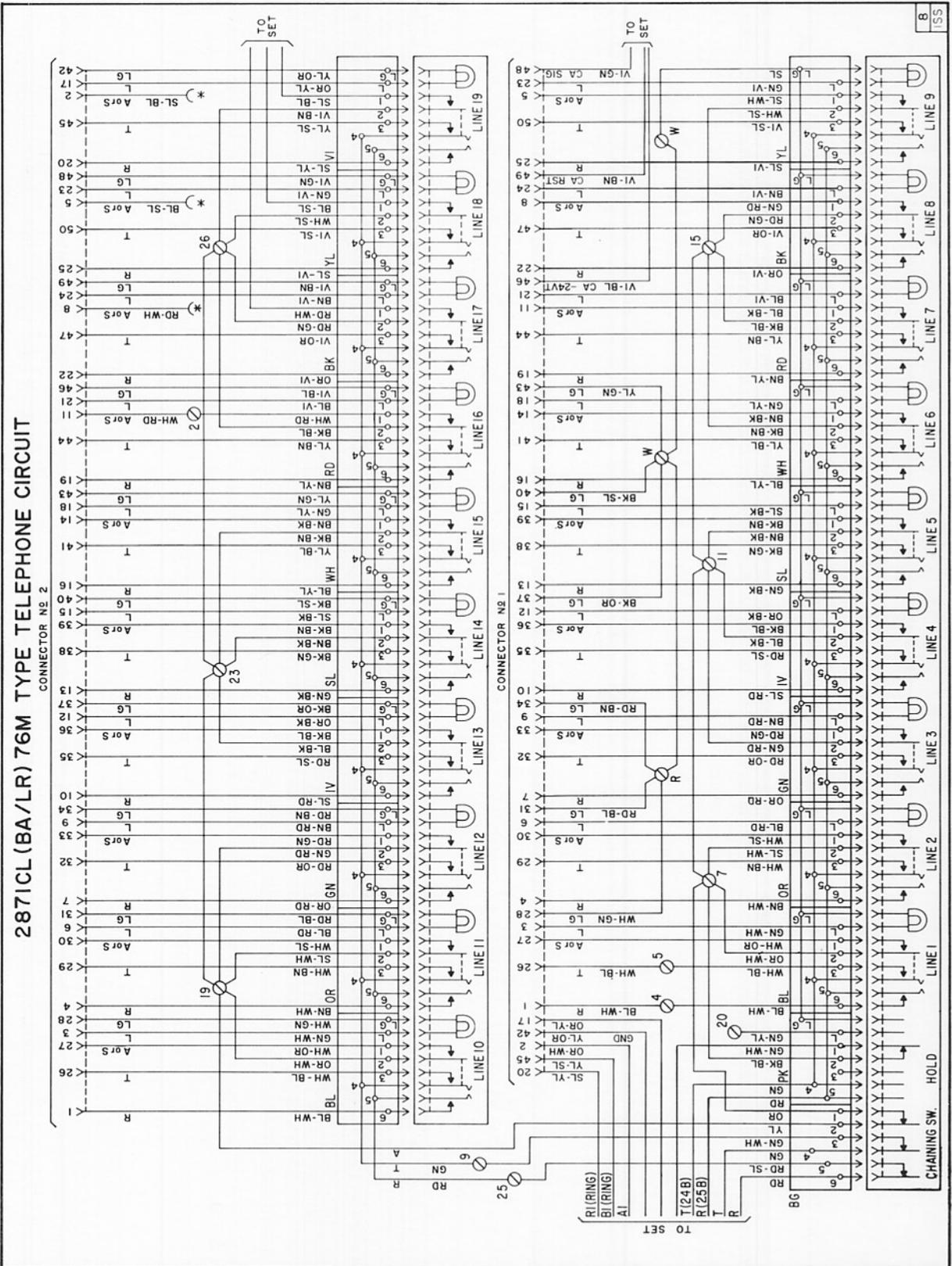


Figure 3: Circuit Label, Model 2871 Type 76 (Sheet 2 of 2)