

# 8A KEY TELEPHONE SYSTEM FOR USE AT 911 EMERGENCY REPORTING/ANSWERING BUREAUS INSTALLATION AND CONNECTIONS

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## NOTICE

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**1. GENERAL**

**1.01** This section describes the installation and connection of the J53053A,L1 equipment unit and the CALL DIRECTOR telephone sets of the 8A Key Telephone System.

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

**1.03** This issue of the section is based on the following drawing:

SD-69913-01, Issue 1—New Telephone System for 911 Emergency Reporting Service—Basic Features.

If this section is to be used with equipment or apparatus reflecting a later issue of the drawing, reference should be made to the SD and CD to determine the extent of the changes and the manner in which the section may be affected.

**2. INSTALLATION****2.01 Planning**

- Select and order the equipment unit(s), power unit(s), circuit packs (CPs), and KTUs to provide the required service features and options. Refer to Section 473-310-101 for ordering information.
- Select a wall location for mounting that is safe, substantial, and will allow a minimum of 14 inches between equipment units for full opening of the carriers.
- Select a location having a customer-provided 105- to 117-volt, 60-Hz outlet *not* under control of a switch (each of the first three J53053A,L1 equipment units of an 8A system requires one 60-Hz outlet when internal power supply is used).

When double-ended attendant station cables cannot be used between the J53053A,L1 equipment units and the CALL DIRECTOR telephone sets, it will be necessary to provide

an external cross-connect field using 66B3-50 connecting blocks.

**2.02 Installing J53053A Equipment Unit**

- (1) Use care when unpacking to prevent the mounting unit from falling from the cover.
- (2) Remove cover.
- (3) Mount unit on wall at the selected location using the template provided and the appropriate fasteners (Section 463-140-200). When mounting two or more J53053A,L1 equipment units, space the units a minimum of 14 inches apart to allow for full opening of the carriers.
- (4) Mount the 19C2 or 20C2 power supply in equipment unit(s) as shown in Fig. 2. Refer to Section 167-440-201 for mounting information.
- (5) Connect power cord to power unit.



***Do not connect power cord to commercial power outlet until installation and connections are complete.***

- (6) Extend KS-21651,L2 CP from connector and check for blown fuses. Correct as necessary.

**2.03 Installing Optional Traffic Register Cabinet****Desk Mount**

- (1) Place on desk or table and connect KS-16689,L3 plug to A25B connector cable.

**Wall Mount**

- (1) Mount 824445126 (P-44M512) backboard assembly plate on wall at desired location.
- (2) Secure 824445189 base to backboard assembly plate.
- (3) Rotate register assembly (180 degrees) on base.
- (4) Connect KS-16689,L3 plug to A25B connector cable.
- (5) Place housing on register unit.

## 2.04 *Installing Optional Tone Detector Circuit (AE47)*

- (1) Mount 620A or 642A modular panel as shown in Section 518-215-419.
- (2) Mount 92A connecting block adjacent to modular panel.
- (3) Plug connector of modular panel into 92A connecting block.
- (4) Insert one AE47 per line, as required, into connector of modular panel.
- (5) Place cable between modular panel and J53053A,L1 equipment unit.
- (6) See Part 3 and Fig. 3 of this section for connections.

## 3. CONNECTIONS

### FIRST J53053A,L1 EQUIPMENT UNIT

#### A. Standard Features

- 3.01** Connect A25B attendant position cables as shown in Fig. 4. The 18-button attendant stations require three A25B connector cables, and 30-button attendant stations require five A25B connector cables.
- 3.02** When A25B attendant position cables cannot be connected directly between the CALL DIRECTOR sets and the equipment unit, an external cross-connect field using 66B3-50 connecting blocks will be required.
- 3.03** When external cross-connect field is required, terminate all cables on 66B3-50 connecting blocks, group for group and color for color, following standard color code.
- 3.04** When more than one J53053A,L1 equipment unit is involved, connect the A25D cables between equipment units as shown in Fig. 4.
- 3.05** Terminate incoming tip(s) and ring(s) of 911 lines and 2-way lines on 66R3 connecting block as shown in Fig. 5.



**Tip and ring polarity must be maintained when terminating 911 lines and 2-way lines.**

- 3.06** Install necessary option straps on CPs and KTUs. For 400-type KTU, AE35 and AE39 CP options, see Table A.

- 3.07** Insert KTUs and CPs in connectors as illustrated in Fig. 1.



**Exercise care when handling KTUs and CPs to avoid damage to the printed wiring and components. Examine connectors for bent or damaged contacts.**

- 3.08** Place card retainers in down position.

- 3.09** Verify that the KS-19162,L12 plugs and KS-19163,L13 connectors are properly connected for first equipment unit as shown in Fig. 2.

#### Power Supply

- 3.10** Using power wiring harness provided, connect 20C2 power supply in J53053A,L1 equipment unit as shown in Table B.
- 3.11** When an externally mounted power source is used, use 20-gauge power wire and terminate wiring from external supply on terminal strips A and C of J53053A,L1 equipment unit as shown in Fig. 7.

**Caution: Do not connect power supply to commercial power outlet until installation and connections have been completed.**

#### J53053AA Interrupter and Floating Power Supply Unit

- 3.12** The KS-16672,L1 connector of the J53053AA unit connects to the KS-16671,L1 plug located adjacent to the 20C2 power supply (see Fig. 2) of the first J53053A,L1 equipment unit, and is secured in place by one screw.
- 3.13** One 70B (2 amp) fuse and one 70H (3/4 amp) fuse are provided with the J53053AA in fuse holders of unit as shown in Fig. 8. The 70B fuses the  $\pm 10$  Vdc lamp voltage supply to

## SECTION 473-310-110

FIRST EQUIPMENT UNIT  
J53053A, LIST 1 EQUIPPED FOR 5-911 TRUNKS,  
4-2 WAY DIAL LINES OR 4-PRIVATE LINES

SECOND EQUIPMENT UNIT  
J53053A, LIST 1 EQUIPPED FOR 5-911 TRUNKS,  
AND 4-PRIVATE LINES

CARRIER 1						
J1A	J2A	J3A	J4A	J5A	J6	J7
911 LINE CKT 400 D KTU	911 LINE CKT 400 D KTU	911 LINE CKT 400 D KTU	911 LINE CKT 400 D KTU	911 LINE CKT 400 D KTU	TR SW CKT	TR SW CKT
J1B	J2B	J3B	J4B	J5B	HK 7	HK 7
SW-HOOK STATUS CKT AE 37	SW-HOOK STATUS CKT AE 37	SW-HOOK STATUS CKT AE 37	SW-HOOK STATUS CKT AE 37	SW-HOOK STATUS CKT AE 37	(NOTE 2)	

CARRIER 1						
J1A	J2A	J3A	J4A	J5A	J6	J7
911 LINE CKT 400 D KTU	911 LINE CKT 400 D KTU	911 LINE CKT 400 D KTU	911 LINE CKT 400 D KTU	911 LINE CKT 400 D KTU	TR SW CKT	TR SW CKT
J1B	J2B	J3B	J4B	J5B	HK 7	HK 7
SW-HOOK STATUS CKT AE 37	SW-HOOK STATUS CKT AE 37	SW-HOOK STATUS CKT AE 37	SW-HOOK STATUS CKT AE 37	SW-HOOK STATUS CKT AE 37	(NOTE 2)	

CARRIER 2						
J1A	J2A	J3A	J4A	J5A	J6A	J7
TIE LINE CKT AE39 OR DIAL LINE CKT 4000 (NOTE 3)	TIE LINE CKT AE39 OR DIAL LINE CKT 4000 (NOTE 4)	TIE LINE TR CKT AE3B OR 1/2 DIAL LINE TR CKT HK9 (NOTE 3)	TIE LINE TR CKT AE3B OR 1/2 DIAL LINE TR CKT HK9 (NOTE 4)	POS TR CKT AE35	POS TR CKT AE35	A LEAD DETECTOR CKT HK B
J1B	J2B	J3B	J4B	J5B	J6B	A LEAD DETECTOR CKT HK B
TIE LINE CKT AE39 OR DIAL LINE CKT 4000 (NOTE 3)	TIE LINE CKT AE39 OR DIAL LINE CKT 4000 (NOTE 4)	TIE LINE TR CKT AE3B OR 1/2 DIAL LINE TR CKT HK9 (NOTE 3)	TIE LINE TR CKT AE3B OR 1/2 DIAL LINE TR CKT HK9 (NOTE 4)	FA, CA, AND TR CONT CKT AE40	FUSE CKT KS 21651 L2 (NOTE 5)	

CARRIER 2						
J1A	J2A	J3A	J4A	J5A	J6A	J7
TIE LINE CKT AE39	TIE LINE CKT AE39	TIE LINE TR CKT AE3B	TIE LINE TR CKT AE3B	POS TR CKT AE35	POS TR CKT AE35	A LEAD DETECTOR CKT HK B
TIE LINE CKT AE39	TIE LINE CKT AE39	TIE LINE CKT AE39	TIE LINE CKT AE39		FUSE CKT KS 21651 L2 (NOTE 5)	A LEAD DETECTOR CKT HK B

Fig. 1—KTU and Circuit Pack Locations in Carrier Positions of the J53053A,L1 Equipment Units for a Maximum of Twenty 911 Lines (Sheet 1 of 2)

the interrupter, and the 70H provides fusing for the -24 Vdc to operate the interrupter motor.

### Fuse Alarm

3.14 Mount fuse alarm, if required, and connect to 66R3 connecting block as shown in Fig. 9(A) for audible alarm or Fig. 9(B) for visual alarm.



*Fuse alarm may only be connected in first J53053A,L1 equipment unit of 8A system.*

### Transfer Switch Wiring

3.15 Cut and insulate **Blue-Orange** straps on wire side of connectors J1A to J4A, carrier 1, as shown in Table C.

**Caution:** To ensure proper operation of equipment, extreme care must be taken to cut **ONLY** the straps specified.

### Common Audible

3.16 Connect common audible ringer as shown in Fig. 5 and Table D.

THIRD EQUIPMENT UNIT  
J53053A, LIST 1 EQUIPPED FOR 5-911 TRUNKS

CARRIER 1						
J1A	J2A	J3A	J4A	J5A	J6	J7
911 LINE CKT 400 D KTU	911 LINE CKT 400 D KTU	911 LINE CKT 400 D KTU	911 LINE CKT 400 D KTU	911 LINE CKT 400 D KTU	TR SW CKT	TR SW CKT
J1B	J2B	J3B	J4B	J5B	HK 7	HK 7
SW-HOOK STATUS CKT AE 37	SW-HOOK STATUS CKT AE 37	SW-HOOK STATUS CKT AE 37	SW-HOOK STATUS CKT AE 37	SW-HOOK STATUS CKT AE 37	(NOTE 2)	

FOURTH EQUIPMENT UNIT  
J53053A, LIST 1 EQUIPPED FOR 5-911 TRUNKS

CARRIER 1						
J1A	J2A	J3A	J4A	J5A	J6	J7
911 LINE CKT 400 D KTU	911 LINE CKT 400 D KTU	911 LINE CKT 400 D KTU	911 LINE CKT 400 D KTU	911 LINE CKT 400 D KTU	TR SW CKT	TR SW CKT
J1B	J2B	J3B	J4B	J5B	HK 7	HK 7
SW-HOOK STATUS CKT AE 37	SW-HOOK STATUS CKT AE 37	SW-HOOK STATUS CKT AE 37	SW-HOOK STATUS CKT AE 37	SW-HOOK STATUS CKT AE 37	(NOTE 2)	

CARRIER 2						
J1A	J2A	J3A	J4A	J5A	J6A	J7
				POS TR CKT AE35	POS TR CKT AE35	A LEAD DETECTOR CKT HK8
J1B	J2B	J3B	J4B	J5B	J6B	
					FUSE CKT KS 21651 L2 (NOTE 5)	

CARRIER 2						
J1A	J2A	J3A	J4A	J5A	J6A	J7
				POS TR CKT AE35	POS TR CKT AE35	A LEAD DETECTOR CKT HK8
J1B	J2B	J3B	J4B	J5B	J6B	
					FUSE CKT KS 21651 L2 (NOTE 5)	

## NOTES:

1. THE 914A CONNECTORS ARE KEY SLOTTED TO ACCEPT THE PLUG-INS ONLY AS SHOWN
2. HK7 REQUIRED IN THIS CONNECTOR ONLY WHEN TWO-WAY LINES EXCEED FOUR
3. WHEN J1A AND J1B ARE EQUIPPED WITH 400D KTU, J3A AND J3B MUST BE EQUIPPED WITH HK9. WHEN J1A AND J1B ARE EQUIPPED WITH AE39, J3A AND J3B MUST BE EQUIPPED WITH AE38
4. WHEN J2A AND J2B ARE EQUIPPED WITH 400D KTU, J4A AND J4B MUST BE EQUIPPED WITH HK9. WHEN J2A AND J2B ARE EQUIPPED WITH AE39, J4A AND J4B MUST BE EQUIPPED WITH AE38.

5. FUSE BOARD DOES NOT PULL OUT COMPLETELY, ONLY PARTIALLY FOR FUSE REPLACEMENT.

Fig. 1—KTU and Circuit Pack Locations in Carrier Positions of the J53053A,L1 Equipment Units for a Maximum of Twenty 911 Lines (Sheet 2 of 2)

## B. Optional Features

## Emergency Power

**3.17** Mount 47C1 power unit on wall adjacent to J53053A,L1 equipment unit. Connect 47C1 (option J) to J53053A,L1 as shown in Fig. 7.

**3.18** Remove option K from power distribution terminal of J53053A,L1 equipment unit as shown in Fig. 7.

**3.19** Connect 116A frequency generator and KS-20390,L1 battery to 47C1 power unit as shown in Section 167-449-101.

## Switchhook Status

**3.20** Cut and insulate **Orange** straps (Fig. 10) (option Z) on wire side of connectors J1B to J5B, carrier 1, as shown in Table C.

**3.21** When 7A-49 buzzer is used for switchhook status signal, connect as shown in Fig. 5 and Table E. Connections for KS-8109,L2 buzzer

TABLE A  
OPTION STRAPPING OF KTUs AND CPs

KTU OR CP	OPTION OR WIRING	TERMINALS	REMARKS	
400D	V and Y	1—2	All 400 D KTUs must have V and Y option installed.	
		4—8		
		7—10		
AE35	S	7—8	1st 2W Dial Line	Strap each AE35 for option S. All AE35 must be strapped for same options.
		5—6	2nd 2W Dial Line	
		3—4	3rd 2W Dial Line	
		1—2	4th 2W Dial Line	
AE39	R	5—8	All AE39 must have “R” option installed.	

mounted in CALL DIRECTOR telephone set are also found in Table E.

#### Message Registers

**3.22** Connect externally mounted J58876YH-1,L2 traffic register cabinet to 8A system as shown in Fig. 5 and 6 and Table F, using an A25B connector cable. Register leads (RC) for the five 911 lines appear on terminals H9-H13 of 66R3 connecting block. The RC leads for the four 2-way lines will appear on terminals H14-H17.

#### Tone Detector (Option T)

**3.23** Connect tone detector circuit (AE47) as follows:

- (1) Place strap between option terminals 3 and 4 on each AE47.
- (2) Connect leads between modular panel and 66R3 connecting block of J53053A,L1 equipment unit as shown in Fig. 3 and 5 (in Fig. 3 refer

to illustration A for 642A panel and illustration B for 620A panel).

- (3) Tone detector leads for five 911 lines will appear on 66R3 connecting block as follows:

1st 911 line — 21B

2nd 911 line — 22B

3rd 911 line — 22D

4th 911 line — 23B

5th 911 line — 23D

TD BATTERY — 24D

TD GRD — 24B

**Note:** TD battery lead will power up to a maximum of five AE47 CPs.

**TABLE B**  
**CONNECTION OF POWER WIRING HARNESS OF**  
**J53053A,L1 EQUIPMENT UNIT**

POWER SUPPLY	HARNESS WIRE COLOR	TERM. STRIP CONNECTIONS	TERMINATE ON 20C2	TERMINATE ON 19C2
±110V (GEN)	O-BL	A-1	X	X
GRD	O	A-2	X	X
±10V (B) (RELAY)	Y	A-3	X	X
GRD	W	A-4	X	X
±10V (A) (LAMP)	GR	A-5	X	X
GRD	BR	A-6	X	X
−24V (B) (SIG)	R	A-7	X	X
GRD	BK	A-8	X	X
−24V (A) (TALK)	R-BK	C-5	X	X
GRD	SL	C-6	X	X
±18V	BL	C-7	X	X
GRD	GR-W	C-8	X	X

*Note:* On 20C2 power unit, connect local GRD to LOC terminal.

#### **Recorder Connector—KS-19645, List 4**

**3.24** Refer to Section 463-340-120 for installation and connection information on KS-19645,L4 recorder connector.

**3.25** All remaining options and their locations may be found in Table C.

#### **SECOND AND THIRD J53053A,L1 EQUIPMENT UNITS**

##### **A. Standard Features**

**3.26** Connect A25B attendant position cables, if required, as shown in Fig. 4. The 18-button attendant stations require three A25B connector cables, and 30-button attendant stations require five A25B connector cables.

**3.27** When station cables cannot be connected directly between the CALL DIRECTOR sets and the equipment unit, an external cross-connect field using 66B3-50 connecting blocks will be required.

**3.28** When external cross-connect field is required, terminate all cables on 66B3-50 connecting blocks, group for group and color for color, following standard color code.

**3.29** When more than one J53053A,L1 equipment unit is involved, connect the A25D cables between equipment units as shown in Fig. 4.

**3.30** Terminate incoming tip(s) and ring(s) of 911 lines and 2-way lines (2-way lines in second unit only) on 66R3 connecting block as shown in Fig. 5. The third equipment unit will have 911

TABLE C

OPTION AND WIRING STRAPS OF  
J53053A,L1 EQUIPMENT UNIT

KTU OR CP	WRG	COLOR	CARR	CONN	TERM.	REMARKS	
400D (911 Lines)	M	BK-W	1	J1A	15-16	1st 911 Line	Cut strap on each connector so equipped.
				J2A		2nd 911 Line	
				J3A		3rd 911 Line	
				J4A		4th 911 Line	
				J5A		5th 911 Line	
400D or AE39 (2-Way Lines)	M	BK-W	2	J1A	15-16	1st Two Way	Cut strap on each connector so equipped.
				J2A		2nd Two Way	
				J1B		3rd Two Way	
				J2B		4th Two Way	
AE35 (Position Transfer)	W	Y	2	J5A	0-28		Cut straps for attendant position 1 only when equipped for dial line transfer.
					29-38		
					30-39		
					19-31		
			2	J6A	0-28		Cut straps for attendant position 2 only when equipped for dial line transfer.
					29-38		
					30-39		
					19-31		



TABLE C (Cont)

OPTION AND WIRING STRAPS OF  
J53053A,L1 EQUIPMENT UNIT

KTU OR CP	WRG	COLOR	CARR	CONN	TERM.	REMARKS
HK7 (Transfer Switch)	X	BL	1	J6A and J6B	A29-30	Cut straps for first HK7.
					A35-36	
					B8-27	
					B20-21	
					B35-38	
		BL	1	J7A and J7B	A29-30	Cut straps for second HK7.
					A35-36	
					B8-27	
					B20-21	
					B35-38	
AE38 or HK9 (2-Way Line Transfer Circuit)	X	BL	2	J3A	2-4	1st Two Way
				J3B		2nd Two Way
				J4A		3rd Two Way
				J4B		4th Two Way
AE35 (Position Transfer)	X	BL	2	J5A	2-15	First Attendant
				J6A		Second Attendant
						Cut strap for each attendant position.

TABLE C (Cont)  
OPTION AND WIRING STRAPS OF  
J53053A,L1 EQUIPMENT UNIT

KTU OR CP	WRG	COLOR	CARR	CONN	TERM.	REMARKS
AE 37 (Switchhook Status Circuit)	Z	O	1	J1B	2-4	Cut straps on each connector equipped with AE37.
					3-5	
					9-13	
					12-14	
				J2B	2-4	
					3-5	
					9-13	
					12-14	
				J3B	2-4	
					3-5	
					9-13	
					12-14	
				J4B	2-4	
					3-5	
					9-13	
					12-14	

TABLE C (Cont)  
OPTION AND WIRING STRAPS OF  
J53053A,L1 EQUIPMENT UNIT

KTU OR CP	WRG	COLOR	CARR	CONN	TERM.	REMARKS
AE37 (Switchhook Status Circuit) (Cont)	Z	O	1	J5B	2-4	Cut straps on each connector equipped with AE37.
					3-5	
					9-13	
					12-14	
400D (911 Lines)	TR SW	BL-O	1	J1A	21-22	Cut straps on each connector of the first J53053A,L1 equipment unit ONLY that is equipped with 400D.
					24-25	
					27-28	
					30-31	
				J2A	21-22	
					24-25	
					27-28	
					30-31	
				J3A	21-22	
					24-25	
					27-28	
					30-31	

TABLE C (Cont)

OPTION AND WIRING STRAPS OF  
J53053A,L1 EQUIPMENT UNIT

KTU OR CP	WRG	COLOR	CARR	CONN	TERM.	REMARKS
400D (911 Lines) (Cont)	TR SW	BL-O	1	J4A	21-22	4th 911 line  Cut straps on each connector of the first J53053A,L1 equipment unit ONLY that is equipped with 400D.
					24-25	
					27-28	
					30-31	
400D (911 Lines)	TR SW	R-W	1	J1A	20-21	1st 911 Line  Cut straps on each connector of the second, third, and fourth J53053A,L1 equipment units ONLY that are equipped with 400D.
					23-24	
					26-27	
					29-30	
				J2A	20-21	2nd 911 Line
					23-24	
					26-27	
					29-30	
				J3A	20-21	3rd 911 Line
					23-24	
					26-27	
					29-30	
				J4A	20-21	4th 911 Line  Cut straps on each connector of the second, third, and fourth J53053A,L1 equipment units ONLY that are equipped with 400D.
					23-24	
					26-27	
					29-30	

TABLE D  
COMMON AUDIBLE OPTIONS

		OPTIONS		LOCATION OF OPTION
		PROVIDE	REMOVE	
Ringer in Tel Set	Steady Ringing	B, E	F	66R3 Connecting Block (See Fig. 5)
	Interrupted Ringing	B, F	E	
External Ringer	Steady Ringing	E	B, F	
	Interrupted Ringing	F	B, E	

*Note:* A maximum of five ringers may be connected to the common audible leads.

lines only, as all 2-way lines (maximum of eight) will be terminated in equipment units 1 and 2.



***Tip and ring polarity must be maintained when terminating 911 lines and 2-way lines.***

**3.31** Install necessary option straps on CPs and KTUs. For 400-type KTU, AE35 and AE39 CP options, refer to Table A.

**3.32** Insert KTUs and CPs in connectors as illustrated in Fig. 1.



***Exercise care when handling KTUs and CPs to avoid damage to the printed wiring and components. Examine connectors for bent or damaged contacts.***

**3.33** Place card retainers in down position.

#### KS-19162,L12 Plugs and KS-19163,L13 Connectors

**3.34** Rearrange KS-19163,L13 connectors (Fig. 2) of J53053A,L1 equipment unit as shown in Fig. 12 for second or third unit in system.

**3.35** All J53053A,L1 equipment units are factory-shipped with the KS-19163,L13

connectors arranged for the first unit of the system, and the connectors must be rearranged to avoid having lines crossed. In the third and fourth units it is not necessary to rearrange the connectors for the 2-way lines, as these are not used.

#### Power Supply

**3.36** Using power wiring harness provided, connect 19C2 power supply in J53053A,L1 equipment unit as shown in Table B.

**3.37** When externally mounted power source is used, use 20-gauge power wire and terminate external power supply wiring on terminal strips A and C of J53053A,L1 equipment unit as shown in Fig. 7.

***Caution: Do not connect power supply to commercial power outlet until installation has been completed.***

#### J53053AB Auxiliary Relay Circuit

**3.38** The KS-16672,L1 connector of the J53053AB unit (Fig. 13) connects to the KS-16671,L1 plug located adjacent to the 19C2 power supply of the second and third J53053A,L1 equipment units, and is secured in place by one screw.

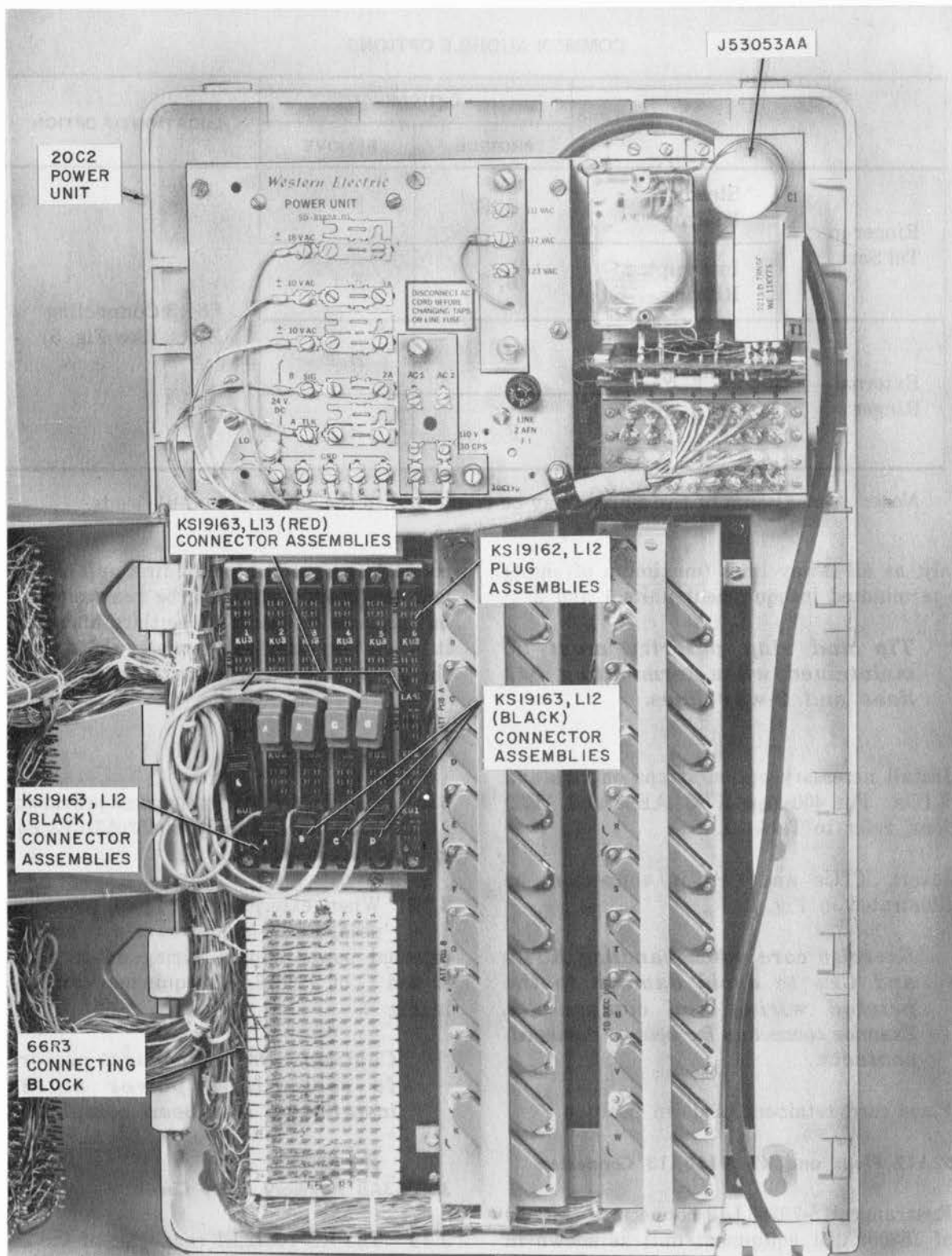


Fig. 2—J53053A,L1 Equipment Unit Illustrating KS-19162 Plug Assemblies and KS-19163 Connector Assemblies Arranged for First Unit of System

**Transfer Switch Wiring**

**3.39** Cut and insulate **Red-White** straps on wire side of connectors J1A to J4A, carrier 1, as shown in Table C.

**Caution:** *To ensure proper operation of equipment, extreme care must be taken to cut ONLY the straps specified.*

**B. Optional Features****Emergency Power**

**3.40** Mount 47C1 power unit on wall adjacent to J53053A,L1 equipment unit. Connect 47C1 (option J) to J53053A,L1 as shown in Fig. 7.

**3.41** Remove option K from power distribution terminals of J53053A,L1 equipment unit as shown in Fig. 7.

**3.42** Connect the KS-20390,L1 battery to the 47C1 power unit as shown in Section 167-449-101.

**Note:** 116A frequency generator is not required with second or third J53053A,L1 equipment unit.

**Switchhook Status**

**3.43** Cut and insulate **Orange** straps (Fig. 10) (option Z) on wire side of connectors J1B to J5B, carrier 1, as shown in Table C.

**3.44** When 7A-49 buzzer is used as switchhook status signal, connect as shown in Fig. 5 and Table C. Connections for KS-8109,L2 buzzer mounted in CALL DIRECTOR telephone set are also found in Table E.

**Message Registers**

**3.45** Connect externally mounted J58876YH-1,L2 traffic register cabinet to 8A system as shown in Fig. 5 and 6 and Table F, using an A25B connector cable. Register leads (RC) for the five 911 lines appear on terminals H9-H13 of 66R3 connecting block. The RC leads for four 2-way lines appear on terminals H14-H17 for the first and second equipment units only.

**Note:** 2-way lines appear only in first and second equipment units of system. Only 911 lines appear in third unit of system.

**Tone Detector (Option T)**

**3.46** Connect tone detector circuit (AE47) as follows:

(1) Place strap between option terminals 3 and 4 on each AE47.

(2) Connect leads between modular panel and 66R3 connecting block of J53053A,L1 equipment unit as shown in Fig. 3 and 5 (in Fig. 3 refer to illustration A for 642A panel and illustration B for 620A panel).

(3) Tone detector leads for five 911 lines will appear on 66R3 connecting block as follows:

1st 911 line — 21B

2nd 911 line — 22B

3rd 911 line — 22D

4th 911 line — 23B

5th 911 line — 23D

TD BATTERY — 24D

TD GRD — 24B

**Note:** TD battery lead will power up to a maximum of five AE47 CPs.

**Recorder Connector—KS-19645, List 4**

**3.47** Refer to Section 463-340-120 for installation and connection information on KS-19645,L4 recorder connector.

**3.48** All remaining options and their locations may be found in Table C.

**FOURTH J53053A,L1 EQUIPMENT UNIT****A. Standard Features**

**3.49** Connect A25B attendant position cables, if required, as shown in Fig. 4. The 18-button attendant stations require three A25B connector

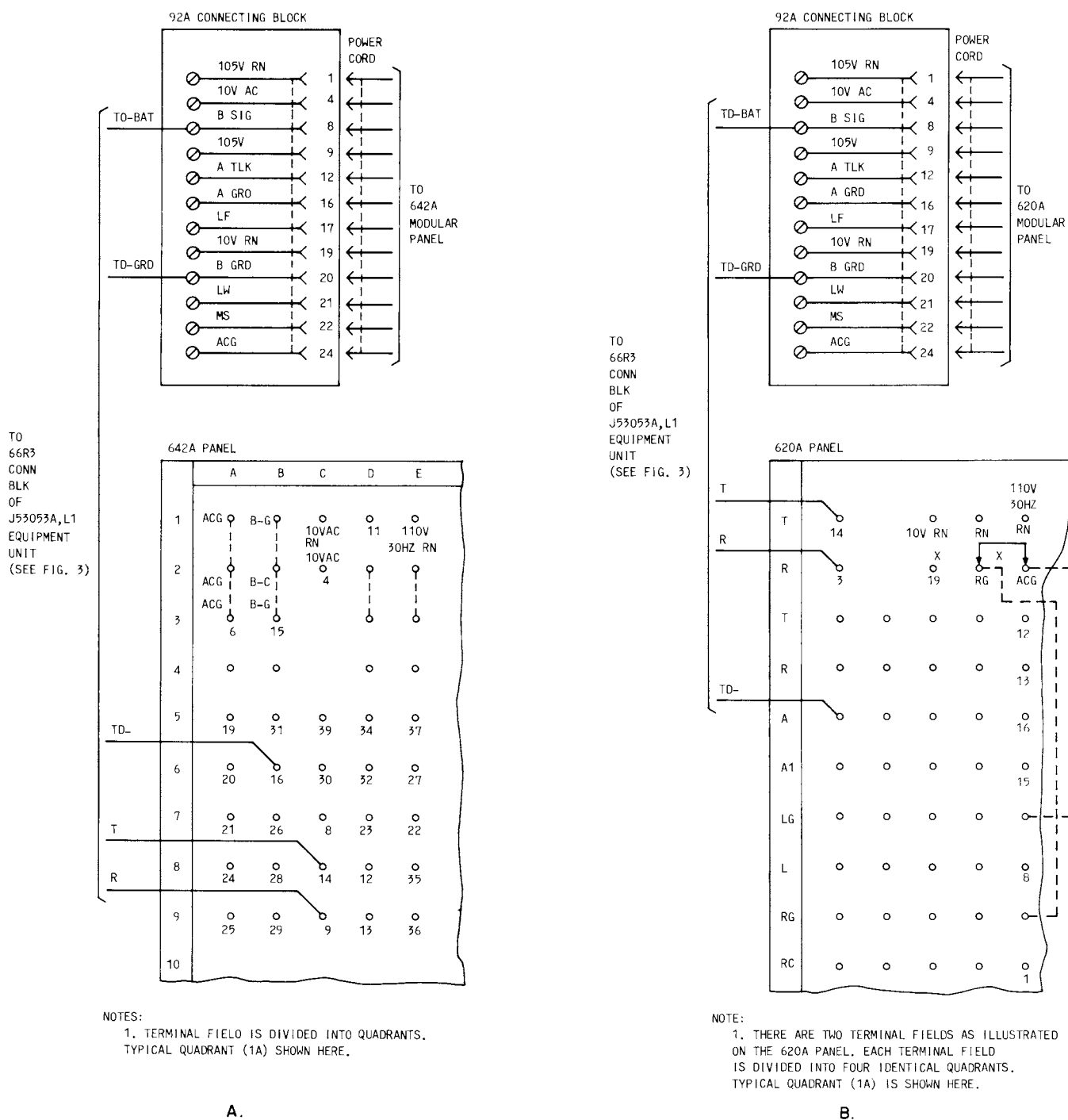


Fig. 3—Connections for AE47 Mounted in Modular Panel With Power Supplied Through 92A Connecting Block



cables, and 30-button attendant stations require five A25B connector cables.

**3.50** When station cables cannot be connected directly between the CALL DIRECTOR sets and the equipment unit, an external cross-connect field using 66B3-50 connecting blocks will be required.

**3.51** When external cross-connect field is required, terminate all cables on 66B3-50 connecting block, group for group and color for color, following standard color code.

**3.52** Connect A25D cables to third J53053A,L1 equipment unit as shown in Fig. 4.

**3.53** Terminate incoming tip(s) and ring(s) of 911 lines on connecting block as shown in Fig. 5.



***Tip and ring polarity must be maintained when terminating 911 lines and 2-way lines.***

**3.54** Install necessary option straps on CPs and KTUs. For 400-type KTU, AE35 and AE39 CP options, see Table A.

**3.55** Insert KTUs and CPs in connectors as illustrated in Fig. 1.



***Exercise care when handling KTUs and CPs to avoid damage to the printed wiring and components. Examine connectors for bent or damaged contacts.***

**3.56** Place card retainers in down position.

#### **KS-19162,L12 Plugs and KS-19163,L13 Connectors**

**3.57** Rearrange KS-19163,L13 connectors (Fig. 12) of J53053A,L1 equipment unit as shown in Fig. 12 for the fourth unit in the system.

**3.58** All J53053A,L1 equipment units are factory-shipped with the KS-19163,L13 connectors arranged like the first unit of the system. The connectors must be rearranged to avoid having lines crossed. In the fourth unit it is necessary to rearrange only the five 911 connectors, as the 2-way connectors are not used.

#### **Power Supply**

**3.59** No power supply is required. The fourth equipment unit derives its power source from the third unit through the A25D connector cables.

#### **J53053AB Auxiliary Relay Circuit**

**3.60** The KS-16672,L1 connector of the J53053AB unit (Fig. 13) connects to the KS-16671,L1 plug located on upper right side of J53053A,L1 equipment unit backboard. The J53053AB is secured in place by one screw.

#### **Transfer Switch Wiring**

**3.61** Cut and insulate **Red-White** straps (Fig. 10 and 11) on wire side of connectors J1A to J4A, carrier 1, as shown in Table C.

***Caution: To ensure proper equipment operation, extreme care must be taken to cut ONLY the straps specified.***

#### **B. Optional Features**

##### **Switchhook Status**

**3.62** Cut and insulate **Orange** straps (Fig. 10) (option Z) on wire side of connectors J1B to J5B, carrier 1, as shown in Table C.

**3.63** When 7A-49 buzzer is used for switchhook status signal, connect as shown in Fig. 5 and Table E. Connections for KS-8109,L2 buzzer mounted in CALL DIRECTOR telephone set are also found in Table E.

##### **Message Registers**

**3.64** Connect externally mounted J58876YH-1,L2 traffic register cabinet to 8A system as shown in Fig. 5 and 6 and Table F, using an A25B connector cable. Register leads (RC) for the five 911 lines appear on terminals H9-H13 of 66R3 connecting block.

##### **Tone Detector (Option T)**

**3.65** Connect tone detector circuit (AE47) as follows:

- (1) Place strap between option terminals 3 and 4 on each AE47.

- (2) Connect leads between modular panel and 66R3 connecting block of J53053A,L1.
- (3) Tone detector leads for the five 911 lines will appear on 66R3 connecting block as follows:

1st 911 lines — 21B

2nd 911 line — 22B

3rd 911 line — 22D

4th 911 line — 23B

5th 911 line — 23D

TD BATTERY — 24D

TD GRD — 24B

**Note:** TD battery lead will power up to a maximum of five AE47 CPs.

**Recorder Connector—KS-19645, List 4**

**3.66** Refer to Section 463-340-120 for installation and connection information on KS-19645,L4 recorder connector.

**3.67** All remaining options and their locations may be found in Table C.

**4. CALL DIRECTOR TELEPHONE SET**

**4.01** When system is furnished with optional ringback feature, convert CALL DIRECTOR telephone for timed flash as follows:

- (1) Remove housing from CALL DIRECTOR telephone set.
- (2) Disconnect and remove KS-20419,L1 buzzer from telephone set.

- (3) Remove protective covering from adhesive on rear of timed flash board and mount timed flash board (D-180645 kit of parts) on dial assembly frame adjacent to headset jack (see Fig. 14) with relay arrows pointing up.

- (4) Connect D-180645 kit of parts and convert flash key as shown in Table G.

**Note:** A-243157 is the assembly drawing for 682AA and 683AA telephone sets. A-243158 is the assembly drawing for 2682AA and 2683AA telephone sets.

**4.02** When system is furnished with optional transfer features, convert last button of last key module (Fig. 15 and 16) as follows:

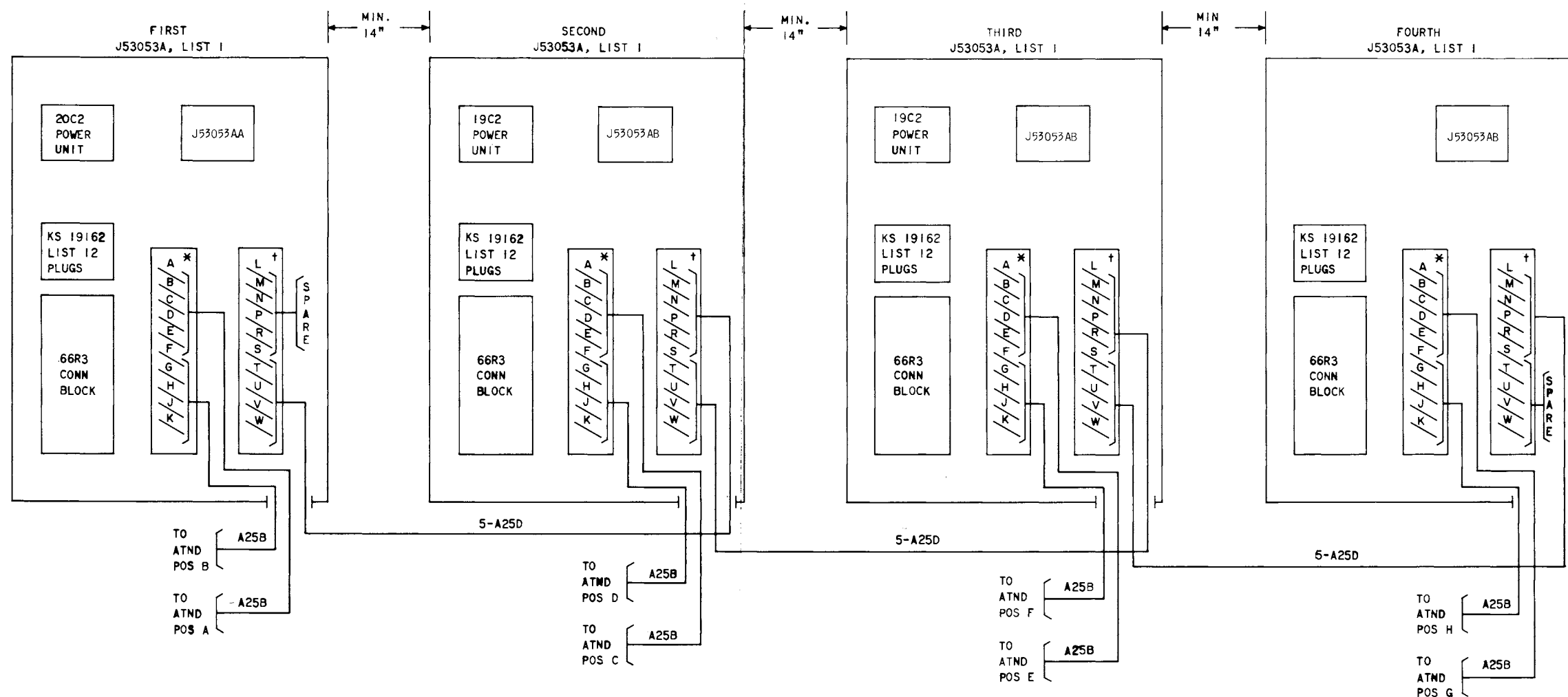
- (1) Convert button from locking to nonlocking by removing the 812857738 (P-28E778) locking pin from the plunger. See Section 512-230-101.
- (2) Connect wiring per Table H.

**4.03** When system has transfer release, convert the first button of first module on CALL DIRECTOR set (Fig. 15 and 16) as follows:

- (1) Convert button from locking to nonlocking by removing the 812857738 (P-28E778) locking pin from the plunger. See Section 512-230-101.
- (2) Connect wiring per Table I.

**4.04** Mount KS-8109,L2 buzzer for switchhook status signal using a 70A bracket mounted over the ringer coil of CALL DIRECTOR telephone. Connect buzzer as shown in Table E.

**4.05** Replace CALL DIRECTOR set housing and connect mounting cord to attendant station cables.



## NOTE:

EACH SINGLE LINE LEADING FROM THE CONNECTORS REPRESENTS FIVE CONNECTOR CABLES.

\* EACH ROW REPRESENTS 10-KS16671, L1 CONNECTORS, 5 TO EACH OF TWO ATTENDANT POSITIONS. 18-BUTTON ATTENDANT STATIONS WOULD USE 3-A25B CONNECTOR CABLES (A, B, C AND F, G, H) FOR EACH ATTENDANT POSITION. 30-BUTTON TELEPHONE SETS WILL USE 5-A25B CONNECTOR CABLES.

† EACH ROW REPRESENTS 10 CONNECTORS; THE UPPER 5 ARE KS-16671, L1 FOR CONNECTION TO THE PRECEDING J53053A, L1 EQUIPMENT UNIT.

THE LOWER 5 ARE KS-16672, L1 FOR CONNECTION TO THE SUCCEEDING J53053A, L1 EQUIPMENT.

Fig. 4—Functional Schematic of Cabling Between J53053A,L1 Equipment Units and From J53053A,L1 Equipment Units to Attendant Positions for Two to Eight Attendant Positions and Five to Twenty 911 Lines



TABLE E

## CONNECTIONS FOR OPTIONAL SWITCHHOOK STATUS BUZZER

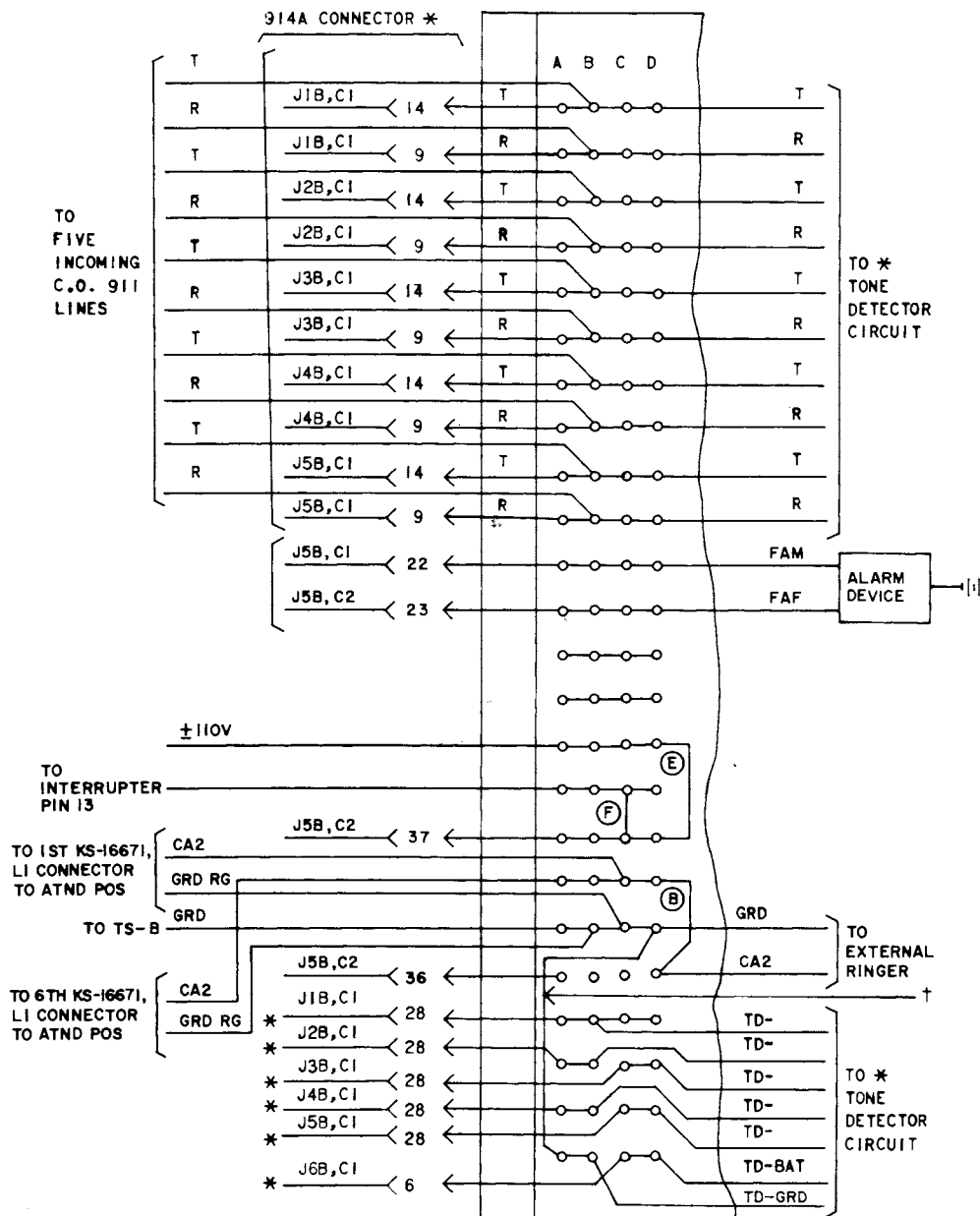
KS-8109,L2 Buzzer Mounted in CALL DIRECTOR Telephone Set

CONNECT FROM (0) BINDER OF CALL DIRECTOR MOUNTING CORD TO BUZZER				DISCONNECT AND REMOVE (SEE NOTE)	
LEAD	COLOR	FROM	TO	COLOR	FROM
BZ (GRD)	S-Y	TB1-27	Buzzer Case	BL	TB1-27
BZ1 (-24)	Y-S	TB1-22	DC Buzzer Terminal	BL	TB1-22

7A-49 Buzzer Mounted Externally From Telephone Set

CONNECTION ON 66R3 CONN BLOCK	LEAD
18G (See Fig. 3)	BZ1 (-24)
21H (See Fig. 3)	BZ (GRD)

*Note:* Disconnect and remove ac buzzer from all 682-, 2682-, 683-, and 2683-type CALL DIRECTOR telephone sets used with 8A KTS.



(B) INTERNAL RINGER OF CALL DIRECTOR TELEPHONE SET

(E) FOR STEADY RINGING GENERATOR TO COMMON AUDIBLE RELAY (K4) OF AE40

(F) FOR INTERRUPTED RINGING GENERATOR TO COMMON AUDIBLE RELAY (K4) OF AE40

\* DENOTES LEADS ARE SHOPWIRED

† PLACE 183A2 ADAPTER OVER C19-D19 AND PLACE STRAP FROM D19 TO A24 TO PROVIDE GRD FOR TONE DETECTOR CIRCUIT

Fig. 5—66R3 Connecting Block With Terminations (Sheet 1 of 2)

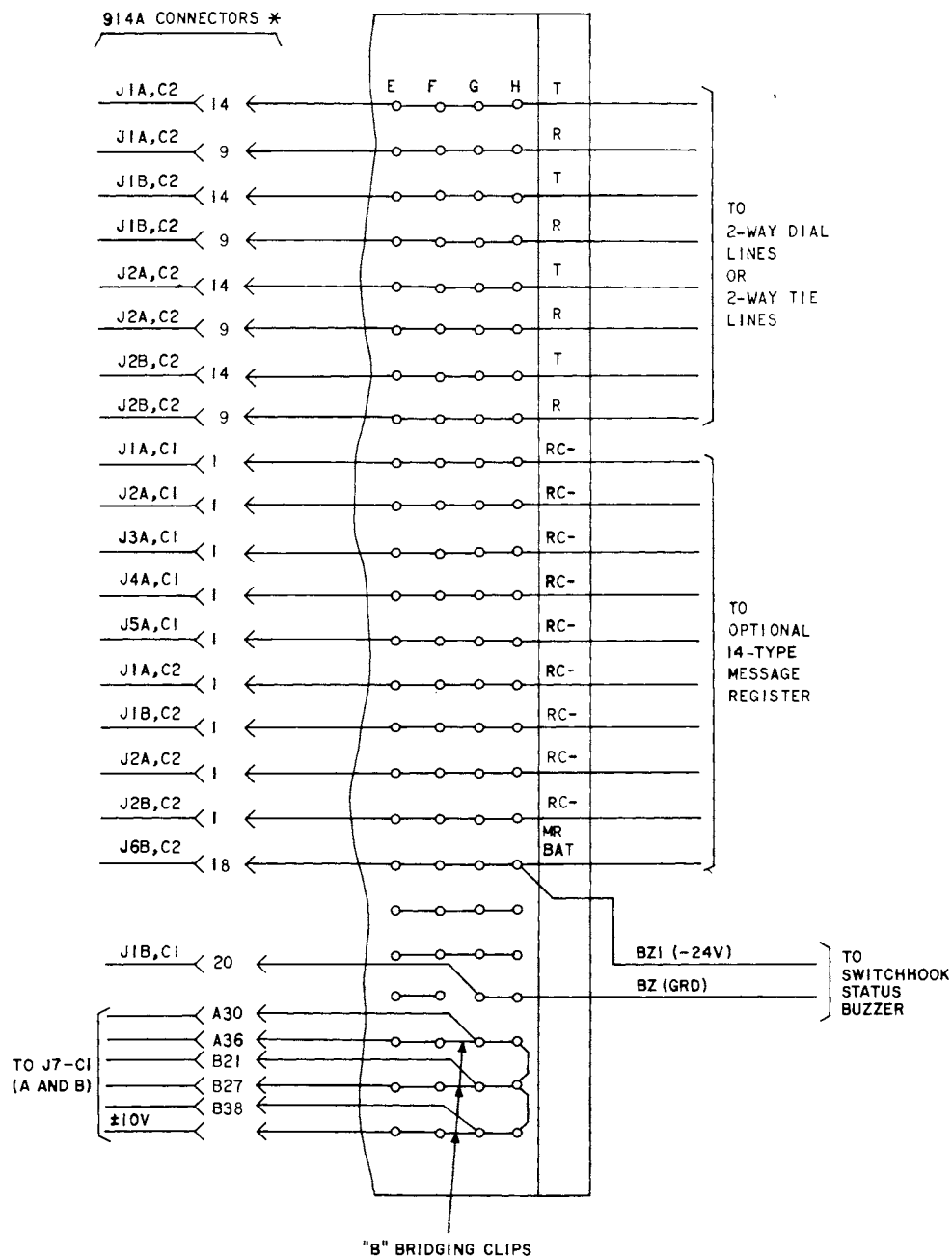
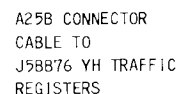


Fig. 5—66R3 Connecting Block With Terminations (Sheet 2 of 2)

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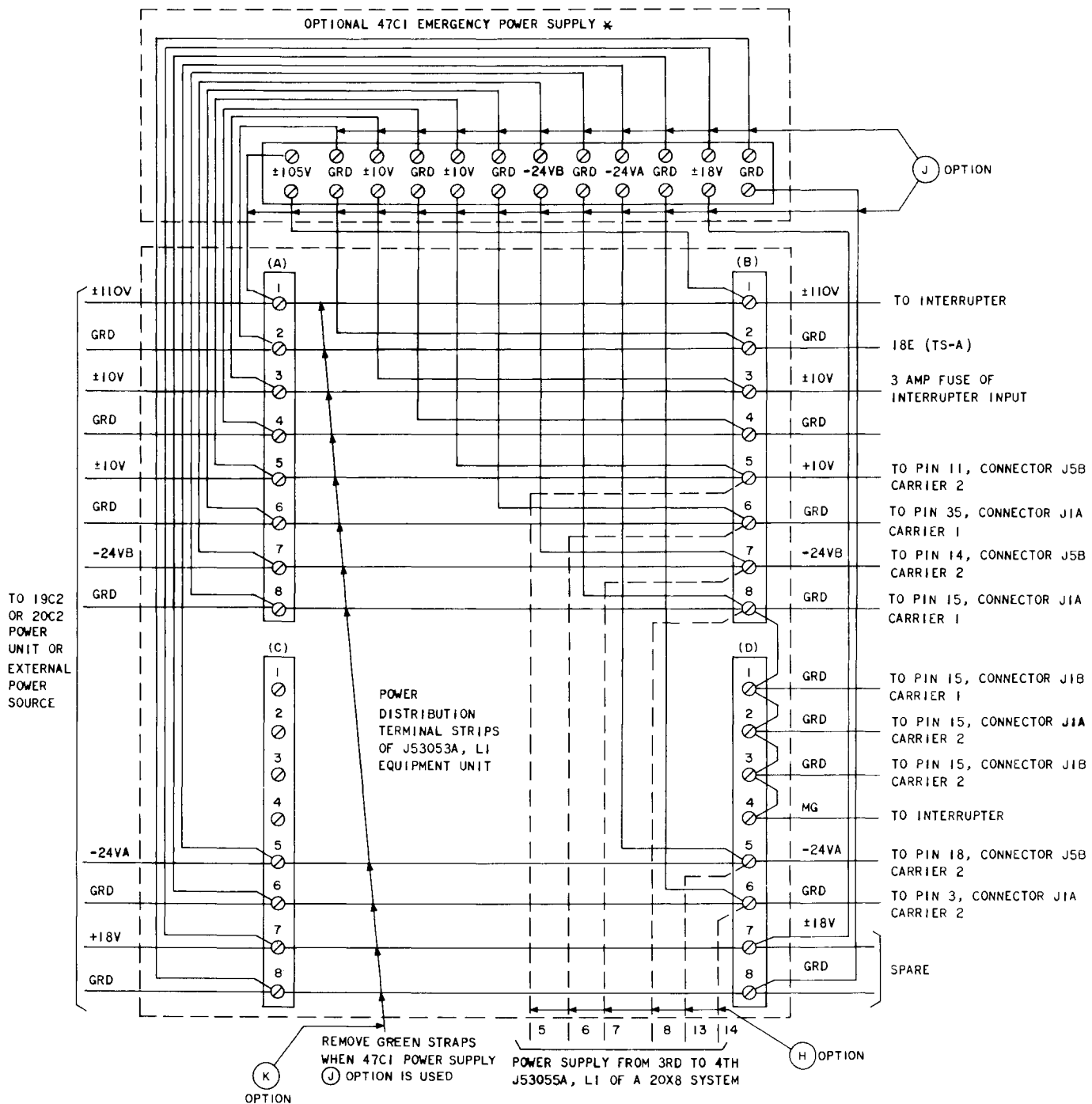
**Fig. 6—Connections for J58876YH Traffic Registers to J53053A,L1 Equipment Unit**



**TABLE F**  
**CONNECTION OF TRAFFIC REGISTERS TO**  
**J53053A,L1 EQUIPMENT UNIT**

REGISTER NUMBER	A25B CONNECTOR CABLE NO.	J53053A,L1 EQUIPMENT UNIT	911 LINE	66R3 CONN BLK TERM. NO.
1	BL-W	First	1	H-9
2	W-BL	First	2	H-10
3	O-W	First	3	H-11
4	W-O	First	4	H-12
5	G-W	First	5	H-13
6	W-G	Second	6	H-9
7	BR-W	Second	7	H-10
8	W-BR	Second	8	H-11
9	S-W	Second	9	H-12
10*	W-S	Second	10	H-13
11*	BL-R	Third	11	H-9
12	R-BL	Third	12	H-10
13	O-R	Third	13	H-11
14	R-O	Third	14	H-12
15	G-R	Third	15	H-13
16	R-G	Fourth	16	H-9
17	BR-R	Fourth	17	H-10
18	R-BR	Fourth	18	H-11
19	S-R	Fourth	19	H-12
20	R-S	Fourth	20	H-13

\* Cut strap between RB1 of register 10 and RB1 of register 11 when 11th register is connected.



\* THE 47C1 SHOULD BE INSTALLED AS SHOWN ONLY WHEN THE 19 OR 20 TYPE POWER UNIT IS INSTALLED IN THE J53053A, L1 EQUIPMENT CABINET. WHEN EXTERNAL POWER SUPPLY IS USED THE 47C1 SHOULD BE PLACED BETWEEN POWER DISTRIBUTION TERMINAL STRIP (B) AND THE EXTERNAL POWER SOURCE.

Fig. 7—Functional Schematic of J53053A, L1 Power Distribution System (Shown With Optional 47C1 Emergency Power Unit)

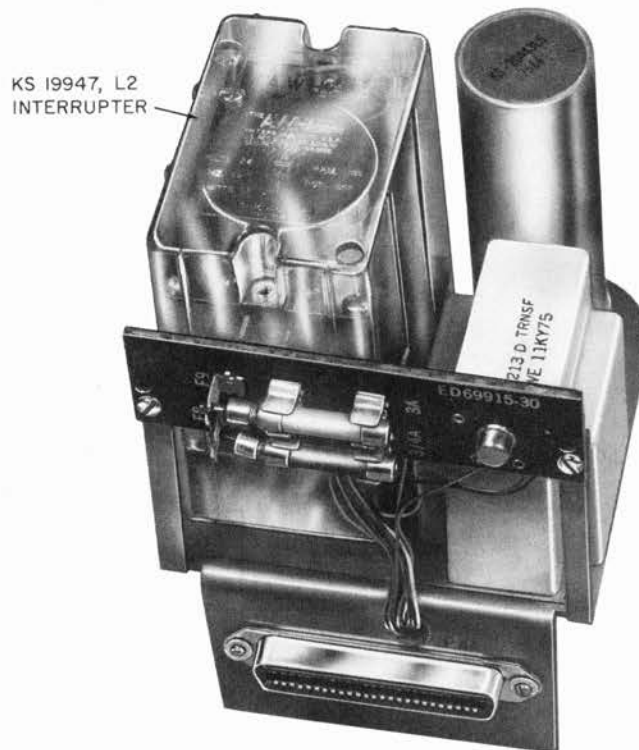
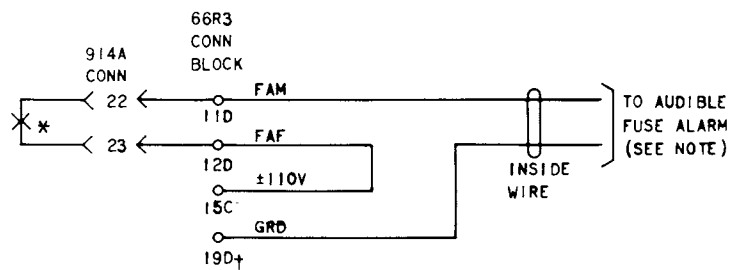
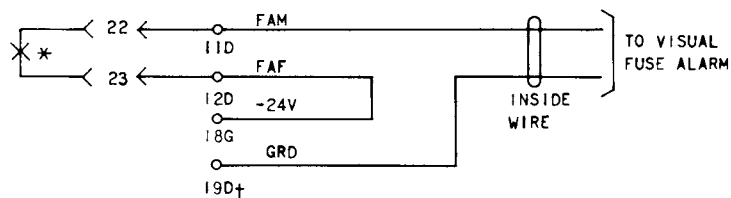


Fig. 8—J53053AA Interrupter and Floating Power Supply



A. CONNECTING AUDIBLE FUSE ALARM



B. CONNECTING VISUAL FUSE ALARM

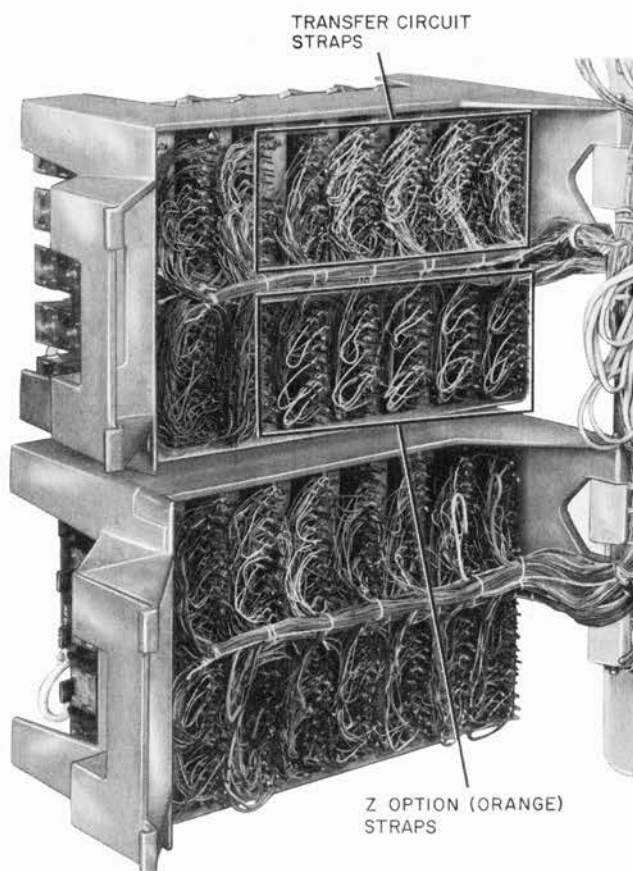
NOTE:

WHEN AUDIBLE FUSE ALARM IS FURNISHED, AN ALARM CUT-OFF KEY SHOULD ALWAYS BE FURNISHED AND LOCATED AS CLOSE TO THE ATTENDANT POSITIONS AS POSSIBLE.

\* MAKE CONTACT OF FUSE ALARM RELAY OF CIRCUIT PACK AE40.

† WHEN EXTERNAL COMMON AUDIBLE RINGER IS USED, IT WILL BE NECESSARY TO USE A 182 B2 ADAPTER WHEN CONNECTING FUSE ALARM TO TERMINAL 19D OF 66R3 CONNECTING BLOCK.

Fig. 9—Connections for Audible or Visual Fuse Alarm to 66R3 Connecting Block



**Fig. 10—Rear View of Carriers Showing Option Straps**

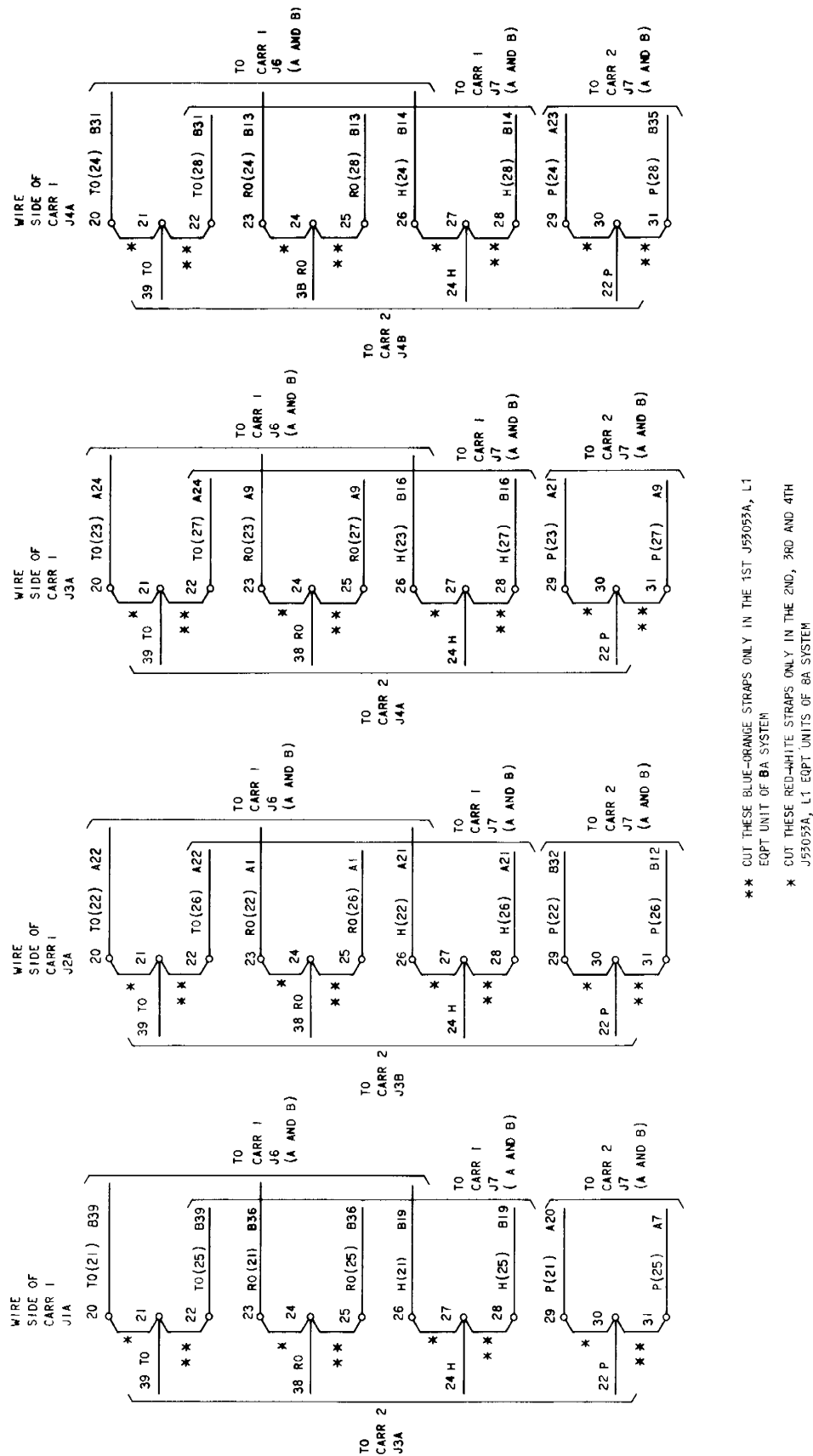
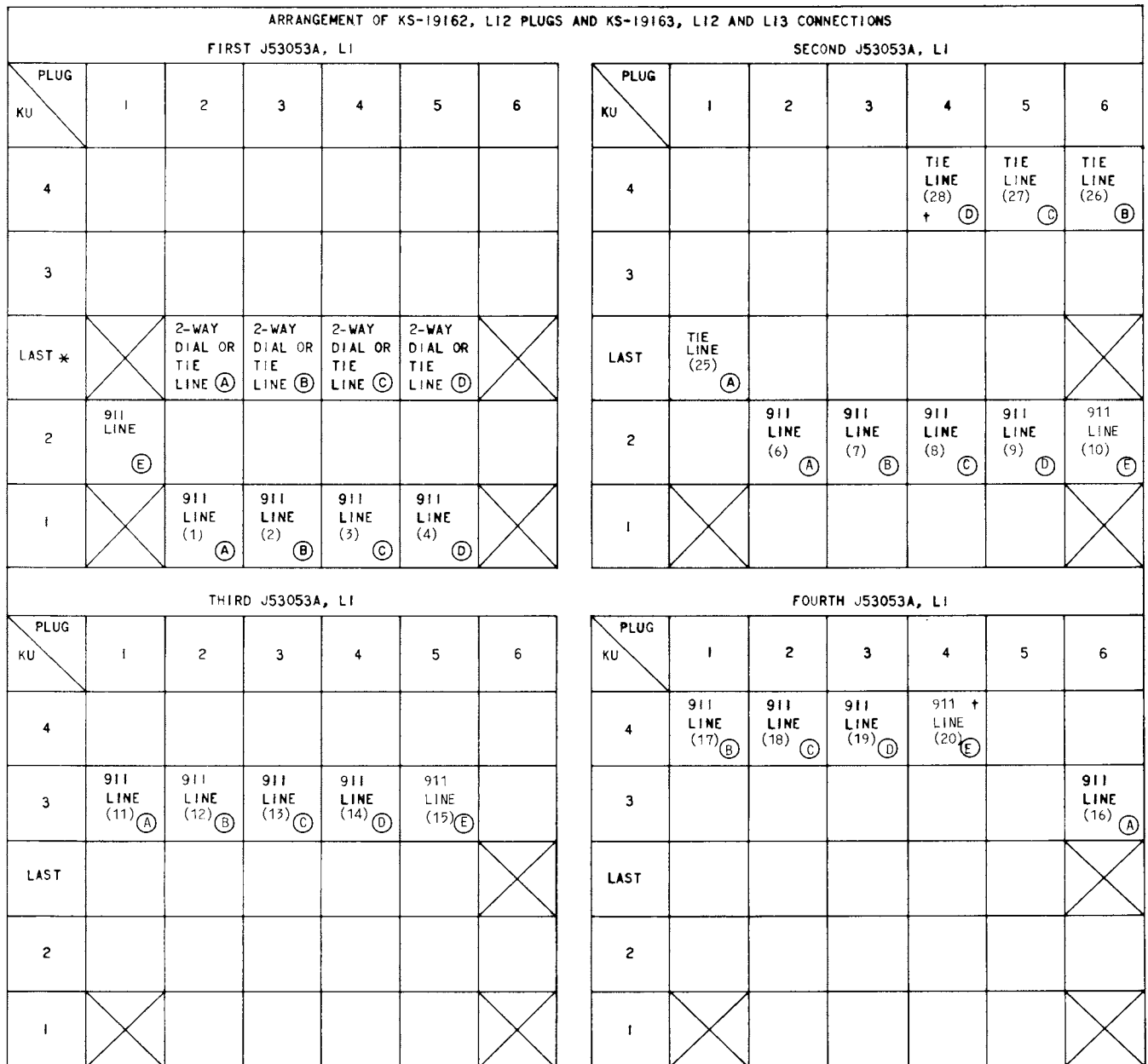


Fig. 11—Illustration of Straps That Must be Cut on Wire Side of 914A Connectors J1A-J4A of Carrier 1 When J53053A,L1 Equipment Units are Connected



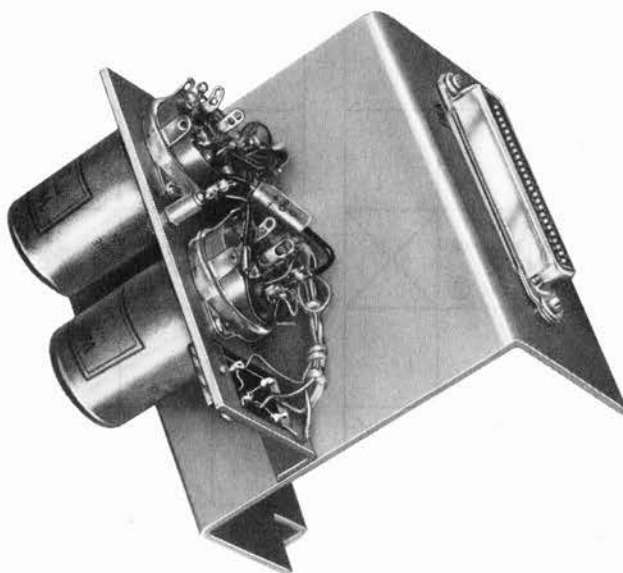
\* LAST WILL APPEAR AS THE THIRD 635-TYPE KEY ON 682AA AND 2682AA TEL SETS AND AS THE FIFTH 635-TYPE ON 683AA AND 2683AA TEL SETS

† KU4 - PLUG 4 MAY BE THE 20TH 911 LINE IN THE FOURTH J53053A, L1 EQUIPMENT UNIT OR THE FIFTH 2-WAY LINE OF THE SECOND J53053A, L1 UNIT, BUT NOT BOTH.

**NOTES:**

1. THE 8A KTS IS LIMITED TO A MAXIMUM OF 4-TWO WAY DIAL LINES. IF PROVIDED, THEY MUST BE TERMINATED IN THE ORDER SHOWN ON THE FIRST J53053A, L1 EQUIPMENT UNIT.
2. THE SQUARES REPRESENT THE KS-19162, L12 PLUGS AND THE CIRCLE WITH THE LETTER REPRESENTS THE KS-19163, L12 (BLACK) AND THE KS-19163, L13 (RED) CONNECTOR THAT FITS THE PLUG. THE BLACK CONNECTORS ARE 911 LINES AND THE RED CONNECTORS ARE THE TWO-WAY LINES.
3. ALL J53053A, L1 EQUIPMENT UNITS WILL BE SHIPPED WITH THE KS-19163, L12 AND L13 CONNECTORS PLUGGED INTO THE KS-19162, L12 PLUGS FOR THE FIRST UNIT OF A SYSTEM. IF UNIT IS TO BE USED AS 2ND, 3RD OR 4TH UNIT THE PLUG AND CONNECTORS MUST BE REARRANGED AS SHOWN.

**Fig. 12—Arrangement of KS-19162,L11 Plugs and KS-19163,L12/L13 Connectors in J53053A,L1 Equipment Unit**



**Fig. 13—J53053AB Auxiliary Relay Circuit**



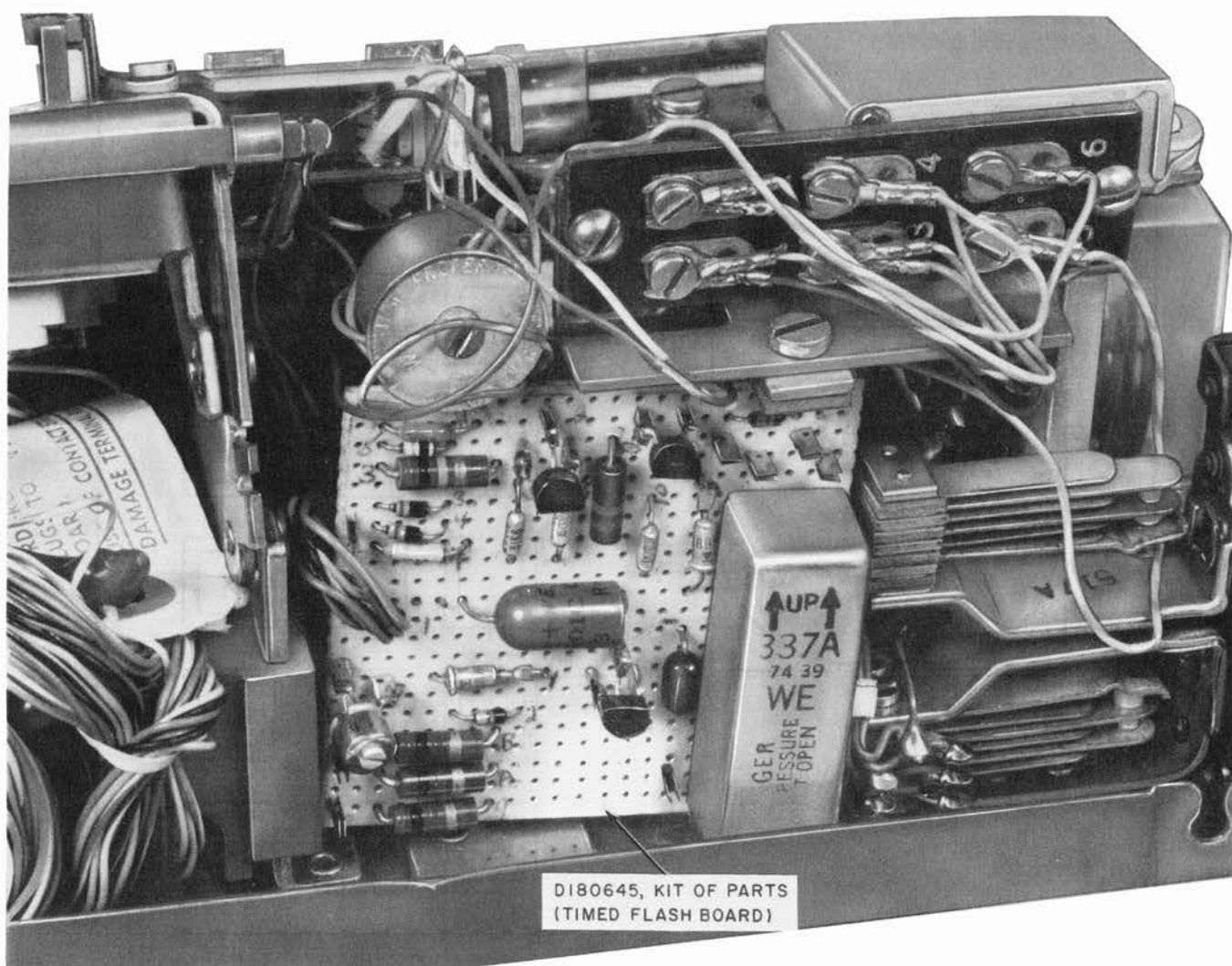
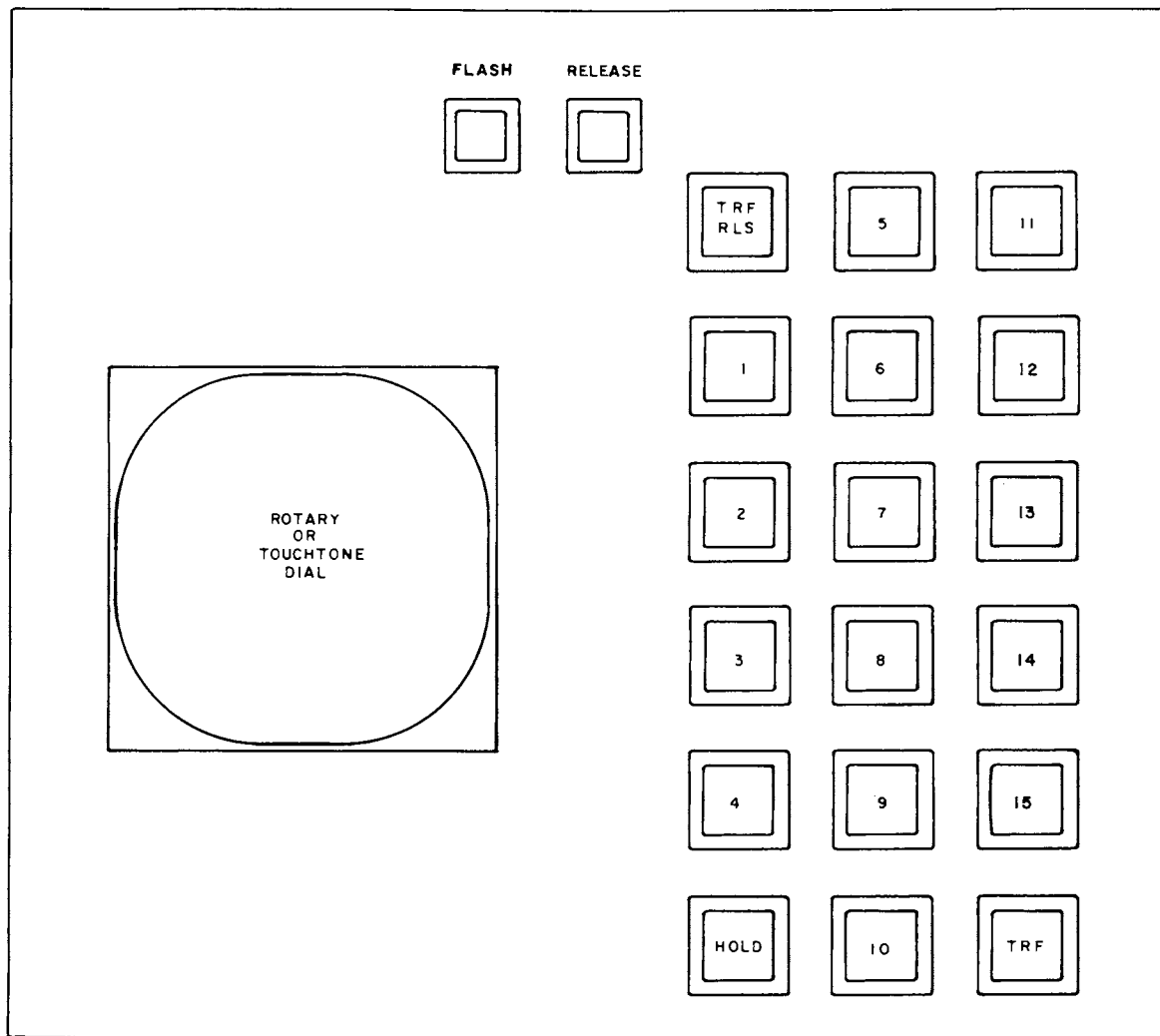


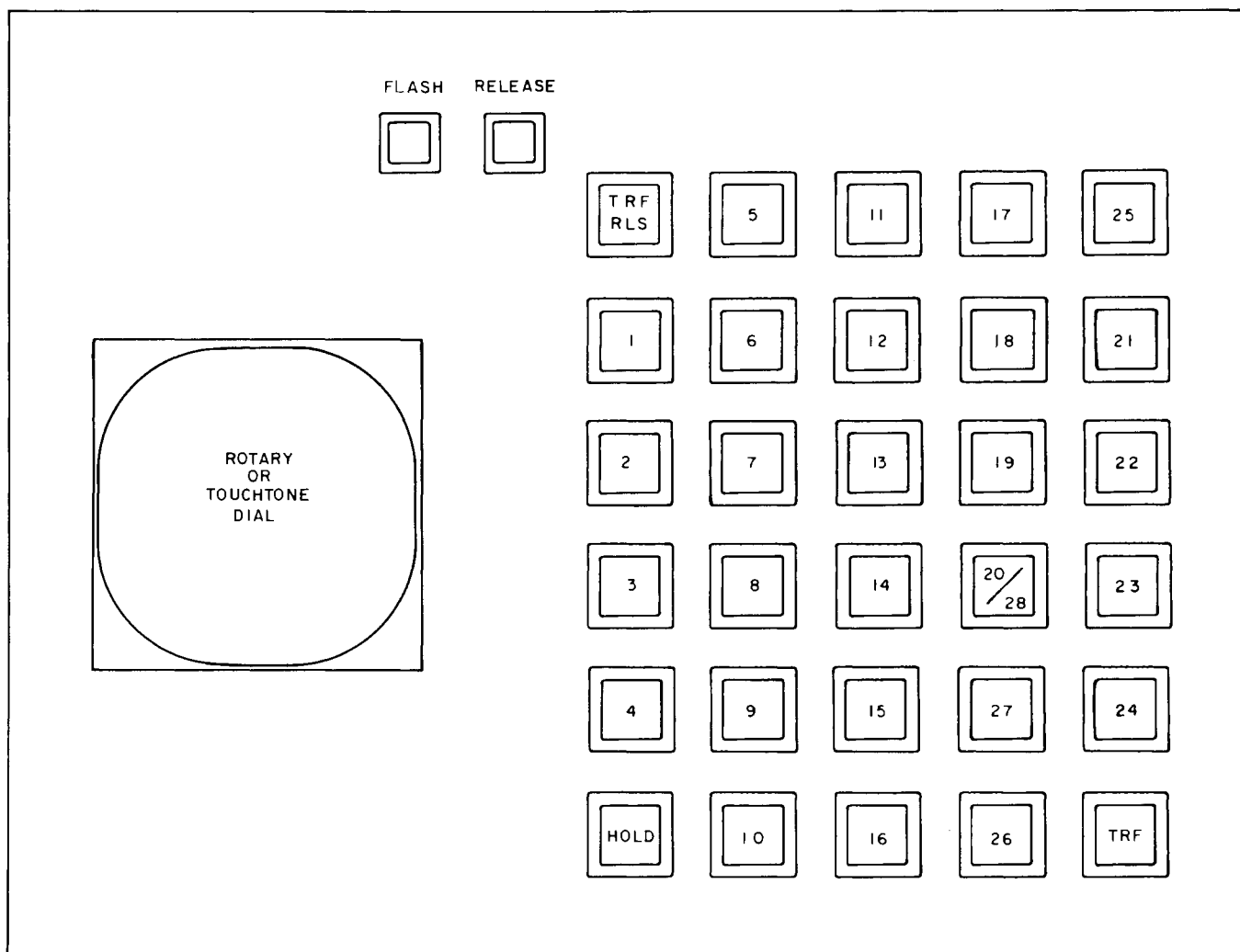
Fig. 14—D-180645 Kit of Parts Mounted in CALL DIRECTOR Telephone Set



NOTES:

1. BUTTON NUMBERS 12 THRU 15 ARE FOR TERMINATING 2W DIAL LINES OR PRIVATE LINES (4-2W DIAL LINES IS MAXIMUM PER SYSTEM).
2. NUMBERS 1 THRU 11 DENOTE 911 LINES.

Fig. 15—Faceplate Layout of 682AA2 or 2682AA2 CALL DIRECTOR Telephone Set Used With 8A Key Telephone System



## NOTES:

1. BUTTONS NUMBERED 21 THRU 28 ARE FOR TERMINATING 2W DIAL LINES AND PRIVATE LINES. THE 2-WAY DIAL LINES MUST BE TERMINATED ON BUTTONS 21 THRU 24 (4-2W DIAL LINES IS MAXIMUM PER SYSTEM).
2. NUMBERS 1 THRU 20 DENOTE 911 LINES.

**Fig. 16—Faceplace Layout of 683AA3 or 2683AA3 CALL DIRECTOR Telephone Set Used With 8A Key Telephone System**

TABLE G

MODIFICATION OF 18- AND 30-BUTTON CALL DIRECTOR  
TELEPHONE SETS FOR TIMED FLASH\*

INSULATE AND STORE		CONNECT PWB		MOVE		
LEAD	FROM	LEAD	TO	LEAD	FROM	TO
W-BL (FLASH KEY)	TB1-13	BL-Y (PWB-1)	TB1-9	BK-BR (FLASH KEY)	NET-L1	TB1-1
BL-W (FLASH KEY)	TB1-9	BL-R (PWB-2)	TB1-13	BR-R (FLASH KEY)	241B	TB1-18
BL-Y	TB1-1					
R-GR	PWB-6	R-BR (PWB-4)	TB1-2 (-24)		AMP-5	
R-O	PWB-9	W-BL (PWB-7)	TB1-17 (GRD)			
R	PWB-5	O-BK (PWB-8)	TB1-1			
BL	PWB-3					

\* Install D-180645 kit of parts before connection of Call Director sets to J53053A,L1 equipment unit.

TABLE H

## CONVERSION OF TRANSFER (TRF) KEY

TYPE SET	MOVE LEAD	FROM	TO
682AA and 683AA	O-Y (TRANSFER KEY)	TB1-30	TB1-38
	O-Y (Cord, GR serving 18-button set) (Cord, SL serving 30-button set)	Insulated and stored	TB1-38
2682AA and 2683AA	G-W	NET-C	TB2-5
	O-Y (Cord, BL serving)	Insulated and stored	TB2-4 (Note)
	Y-O (Cord, BL serving)	Insulated and stored	TB2-5 (Note)
	O-Y (TRANSFER KEY)	TB1-30	TB1-38
	O-Y (Cord, GR serving 18-button set) (Cord, SL serving 30-button set)	Insulated and stored	TB1-38

*Note:* Brings dial-off-normal (DON) contacts out to proper CALL DIRECTOR cable connector.

TABLE I

CONVERSION OF TRANSFER RELEASE  
(TRF RLS) KEY

TYPE SET	MOVE LEAD	FROM	TO
682AA, 683AA, 2682AA, and 2683AA	O-W	TB1-5	TB1-18