

## SERVICE

### 630DA, 630DAM, 631DA, AND 631DAM TELEPHONE SETS

#### 1. GENERAL

**1.01** This section contains connection information for 630DA, or 630DAM (18 button) and 631DA or 631DAM (30 button) telephone sets. These sets may be equipped with different modular key arrangements. The telephone sets will accommodate 635-type keys, 658A keys, 76A lamp sockets, and/or a 679A transmitter.

**1.02** This section is reissued to add:

- Add information on 630DAM and 631DAM (modular) telephone sets, Fig. 2
- Show 630DA and 631DA telephone sets rated MD.

#### 2. CONNECTIONS

**2.01** The 630- and 631-type sets are equipped with a 635A5C (5-line pickup and hold) or 635AD5C (4-line pickup, cutoff, and hold) in the first module position. Contact strip assemblies [required with sets equipped with a D120K (MD) or D200S (MD) mounting cords] differ between the two keys. If ordered for field replacement, the 635AD5C is furnished with a piggy-back adapter in the cut off key position for storing the slate mounting cord plug associated with the fifth line. The necessary contact strip assemblies (840151039 and 840151047) will be shipped with the 635AD5C and will replace the 840151120 and 840151138 assemblies supplied with the 635A5C key.

**Note:** Contact strips are not required with sets equipped with D120M or D200AA mounting cord or sets equipped with a modified D120K or modified D200S mounting cord.

**2.02** Termination of the mounting cord conductors on a per line basis in individual plugs permits rearrangement of line appearances either in the set or at the key equipment distribution point. Current

production sets are equipped with a satin-silver (-87) mounting cord.

**2.03** Contact strips are not extended to the chaining circuit. This requires a second tip and ring conductor to each module (except last). See Fig. 3, sheets 1 through 5.

**2.04** Telephone sets may be equipped for 3-type speakerphone by adding associated apparatus to the telephone set as follows:

- (a) Replace 8R or 8RA dial with 8C or 8CA dial
- (b) A 760A loudspeaker and 679A transmitter are used but one key position must be sacrificed. The 679A transmitter is installed in the last key position of the set. Refer to Fig. 4 and Table E for connections.

- (c) When maximum key features and speakerphone are required, a 760A loudspeaker and 666A (MD) or 666B transmitter are connected to the telephone set. Refer to Table F or G for connections.

**2.05** For connections to the 55-type control unit and between the control unit and the telephone set refer to Section 512-620-440.

**2.06** When the 55-type control unit used with 3-type speakerphone is located near the telephone set and an external transmitter is used, an auxiliary mounting cord must be used to connect the speakerphone features to the telephone set (Table G).

**2.07** When the 3-type speakerphone control unit is located near the telephone set and an internal transmitter (679A) is used, an A25B connector cable should be plugged into the last mounting cord plug and terminated on the control unit terminal board.

#### NOTICE

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**2.08** These telephone sets may be equipped for 4A speakerphone by adding associated apparatus as follows:

- (a) Replace 8R or 8RA dial with 8C or 8CA dial.
- (b) The 680-type transmitter, 108-type loudspeaker set, and 223A adapter are required.
- (c) Refer to Section 512-730-400 for necessary wiring changes and connections.

**2.09** All line pickup buttons are convertible from locking to nonlocking when used for signaling or common signaling arrangements. Remove the 812857738 or P-28E773 locking pin from button to be converted and make wiring changes per Table D.

**2.10** The 630- and 631-type telephone sets are factory equipped with a KS-20419L1 (10 volt ac only) buzzer.

**2.11** The Hold key in first module is used as regular hold or if required, **I Hold**. A

second hold key is used for **Priority Hold**. When priority hold is to be furnished, a D-180411 Kit of Parts is required. Install as follows:

- (1) Assemble kit of parts by inserting contact strips into 635A5C key. Plug pink plug into hold position on key.

**Note:** Contact strips are not required with sets equipped with a D120M or D200AA mounting cord or sets equipped with a modified D120K or modified D200S mounting cord.

- (2) Disconnect all mounting cord plugs and the two contact strips leads [sets equipped with D120K (MD) or D200S (MD) mounting cord] from the second module, remove key and replace with 635A5C key.
- (3) Reterminate contact strip leads, if necessary, and connect mounting cord plugs with exception of white plug which is insulated and stored.

- (4) Rearranged wiring per Fig. 5.

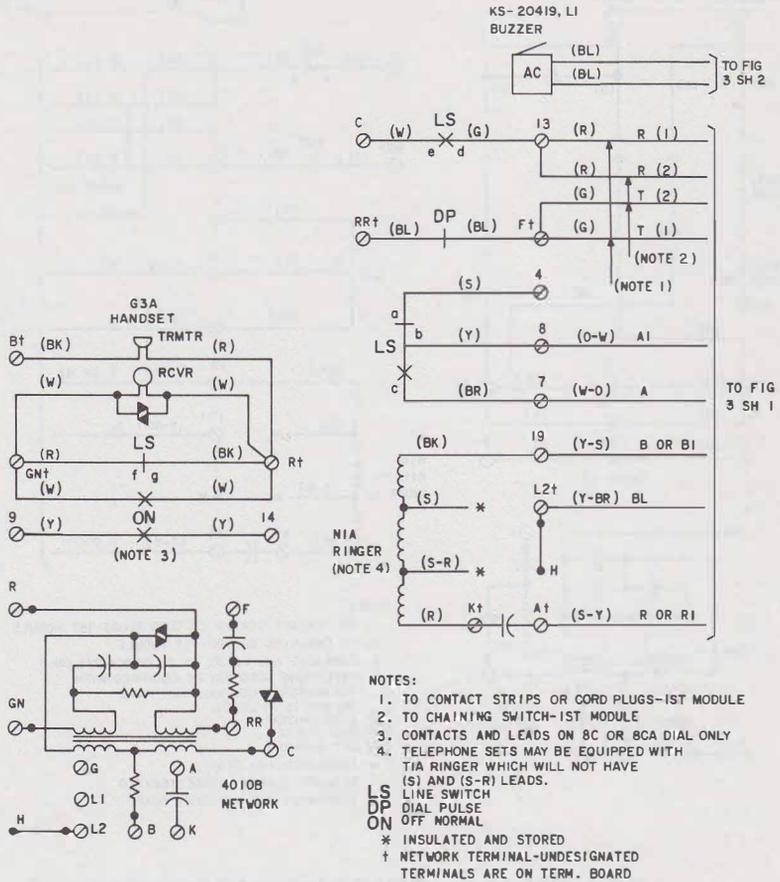


Fig. 1—630DA and 631DA Telephone Set Connections

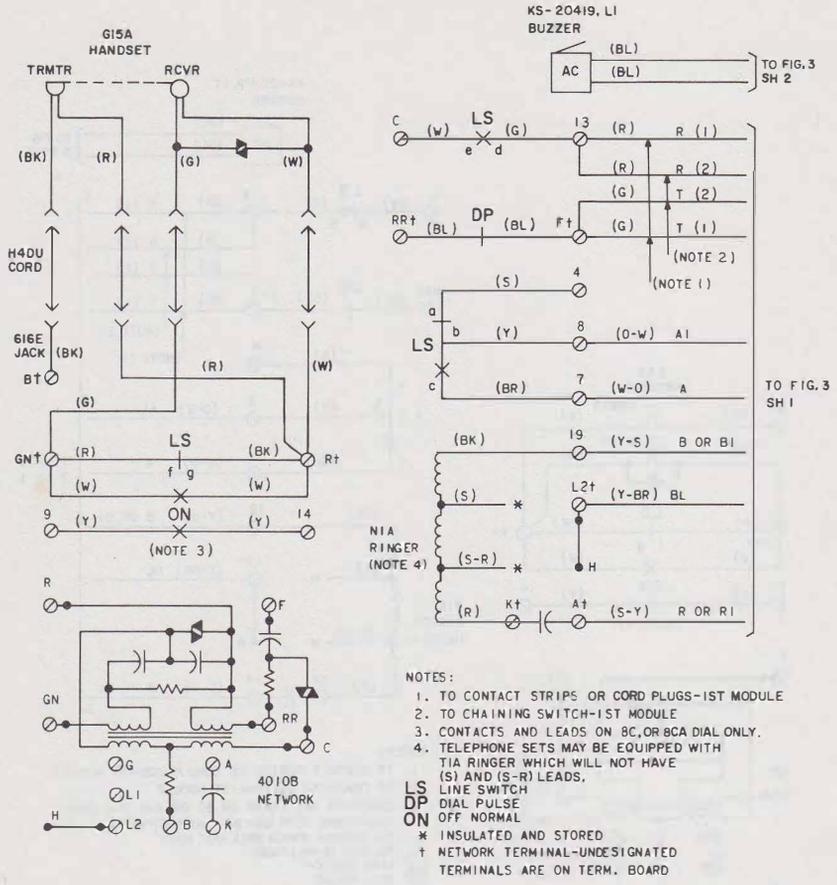
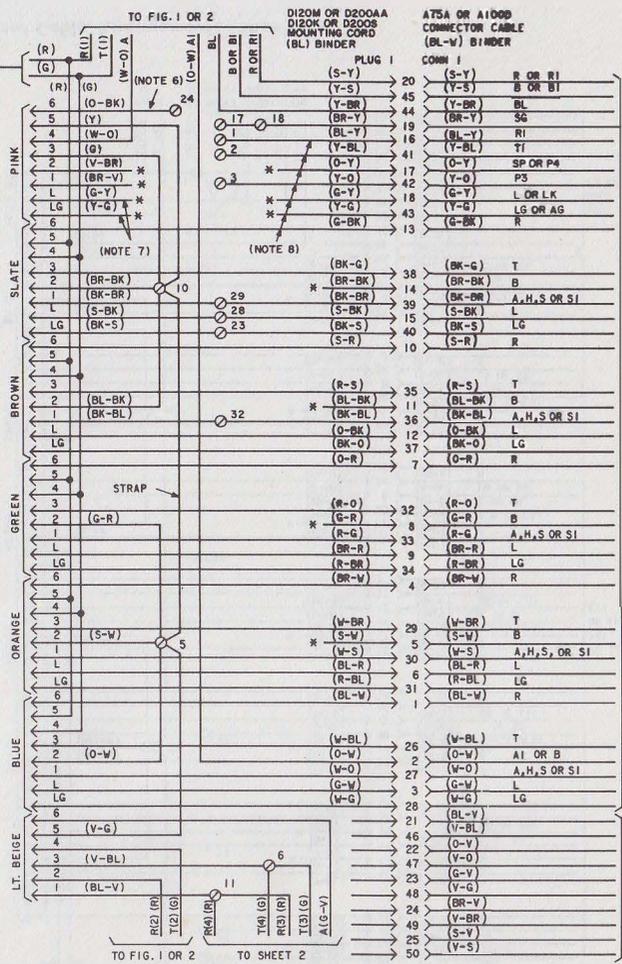
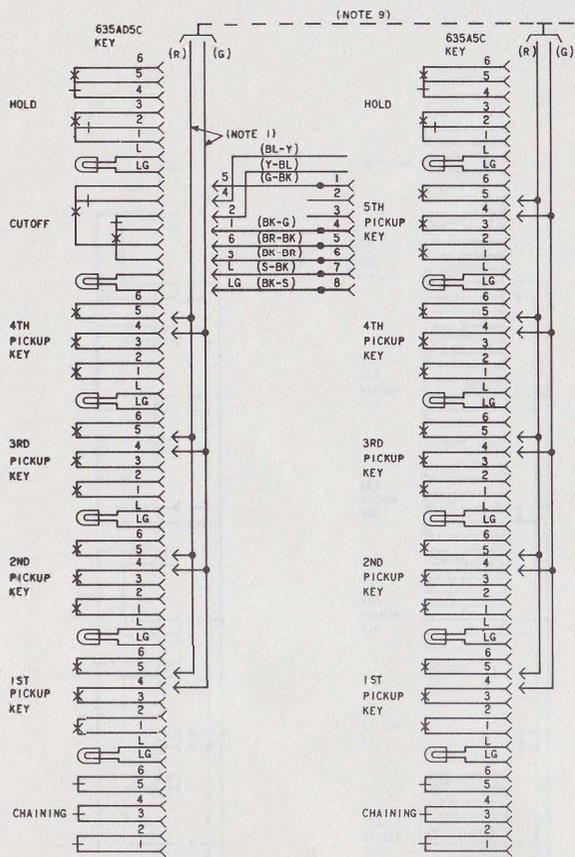


Fig. 2—630DAM and 631DAM Telephone Set Connections

1ST MODULE 630 - OR 631- TYPE



TO 1A  
1A1, 1A2  
OR 6A  
KTS

A75A  
ONLY  
VACANT  
IN  
A100D

Fig. 3—Module and Connector Cable Arrangments (Sheet 1 of 5)

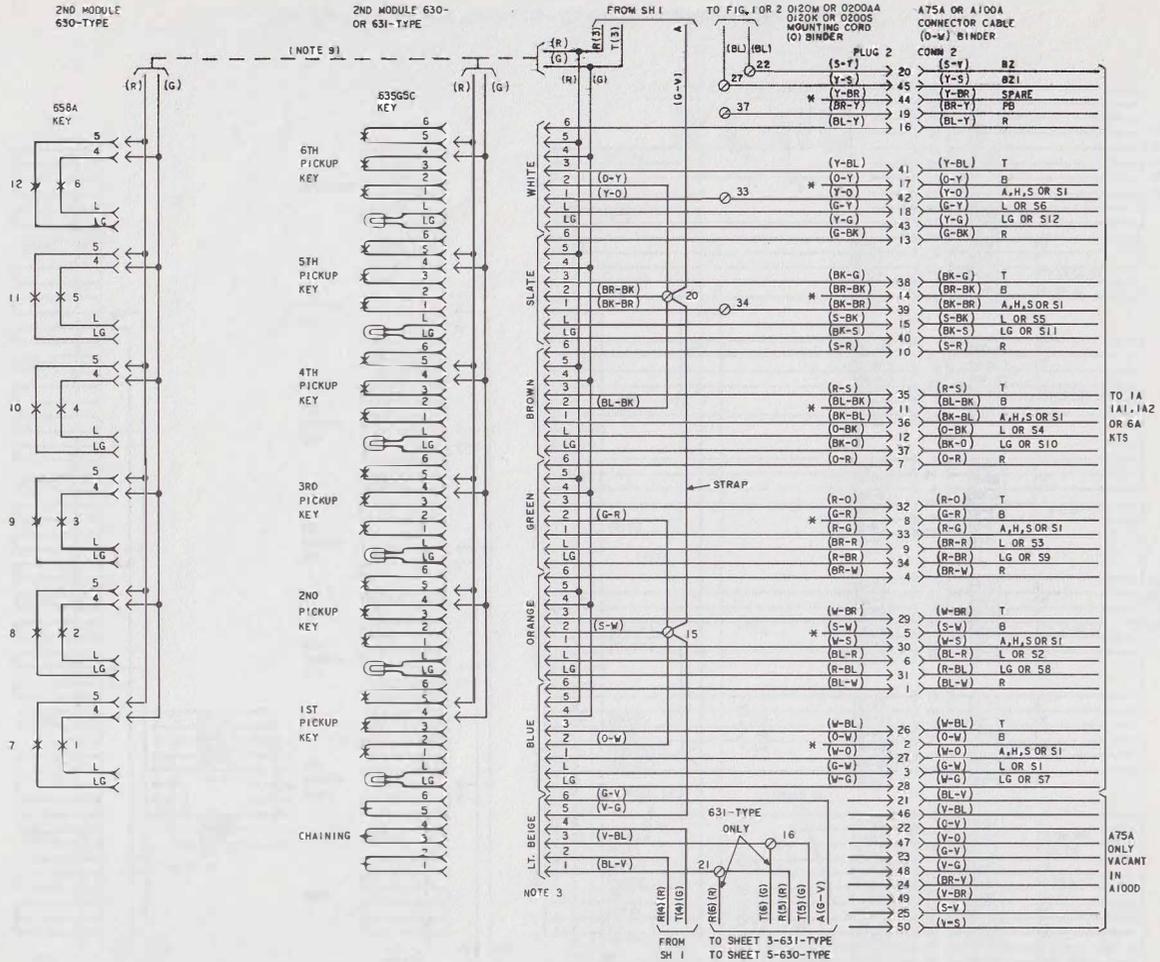


Fig. 3—Module and Connector Cable Arrangements (Sheet 2 of 5)

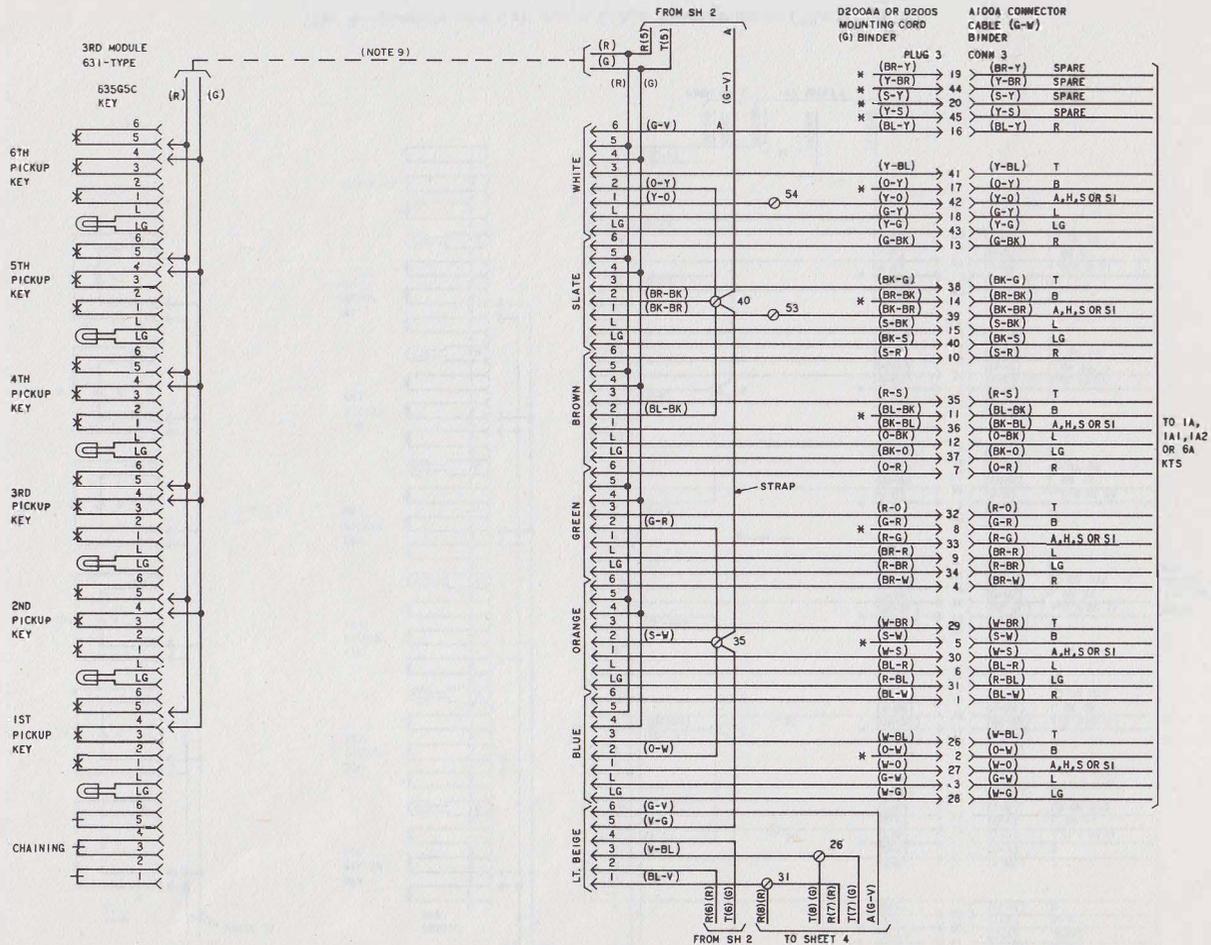


Fig. 3—Module and Connector Cable Arrangements (Sheet 3 of 5)

4TH MODULE 631-TYPE

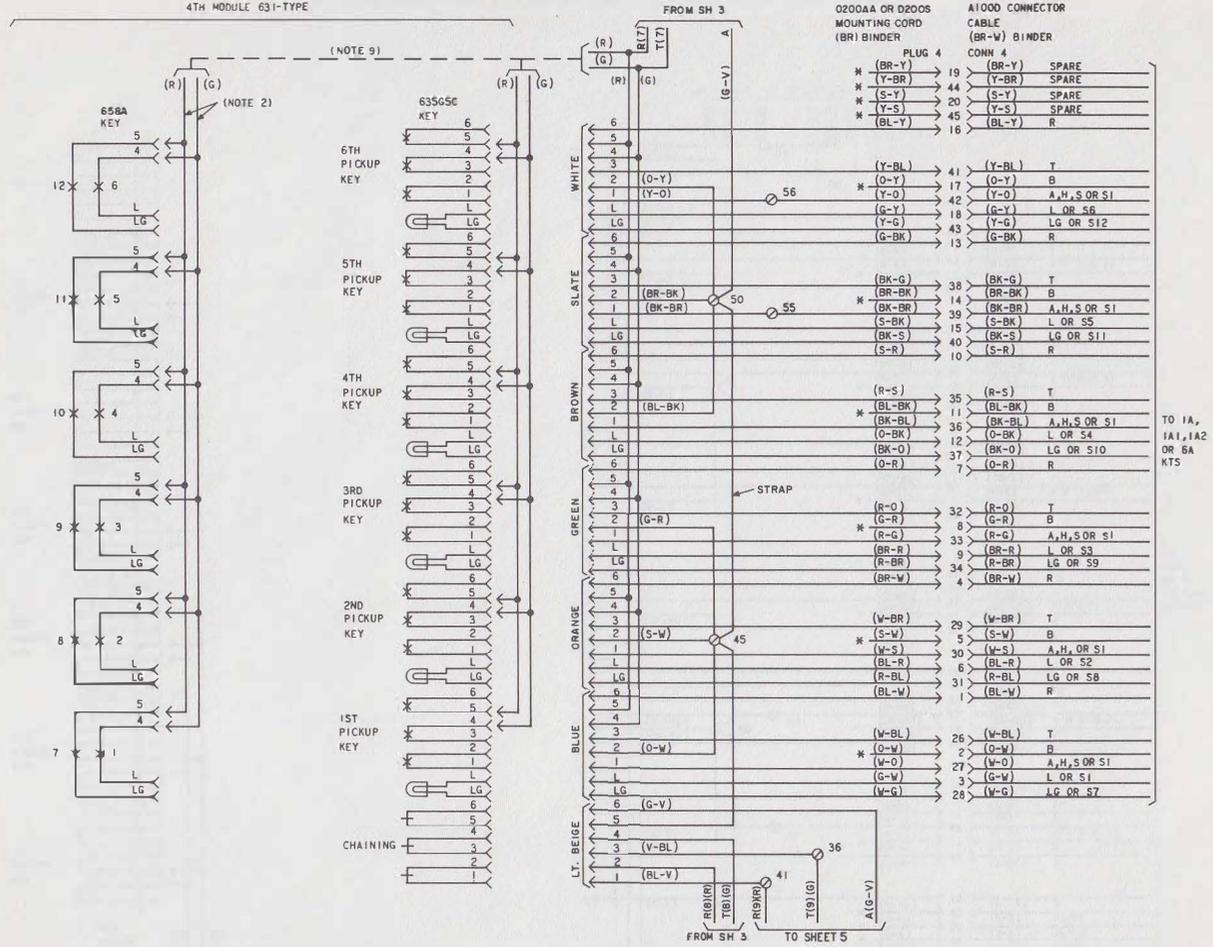


Fig. 3—Module and Connector Cable Arrangements (Sheet 4 of 5)



NOTES FOR FIG. 3:

1. THE 635AD5C KEY IS SUPPLIED WITH AN ADAPTER IN THE CUTOFF KEY POSITION. THE SLATE MOUNTING CORD PLUG CONNECTS TO THE ADAPTER. BALANCE OF PLUGS CONNECT DIRECTLY TO KEY.
  2. IN SETS EQUIPPED WITH A 658A KEY, THE (G) CONTACT STRIP LEAD IS TERMINATED ON 17 AND (R) ON 18. IF A 658A KEY IS ADDED IN THE FIELD, LEADS MUST BE MOVED FROM PRECEDING MODULE CHAINING CIRCUIT TO TERMINALS 17 AND 18.
  3. PROVISIONS ARE MADE FOR MECHANICALLY STORING THE LIGHT BEIGE CHAINING PLUG ON THE 658A KEY. NO ELECTRICAL CONNECTION IS MADE.
  4. WHEN THE 658A KEY IS REQUIRED AS A DUAL PURPOSE KEY, REMOVE STRAP BETWEEN TERMINALS 17 AND 18. USE M1W CORD OR EQUIVALENT TO CONNECT TERMINAL 17 TO A DISSIMILAR GROUND OR NONGROUNDED CIRCUIT.
  5. MODULE MAY ALSO BE EQUIPPED WITH A 679A TRANSMITTER FOR 3-TYPE SPEAKERPHONE. SEE FIG. 4 AND TABLE E.
  6. TO SUPPLY "I" HOLD FEATURE, TERMINATE (O-Y) MOUNTING CORD LEAD FROM FIRST MODULE ON TERMINAL 24. LEAD BECOMES SP LEAD AT EQUIPMENT.
  7. IF HOLD POSITION LAMP IS REQUIRED CONNECT (G-Y) AND (Y-G) LAMP LEADS TO SPARE PAIR USING SPARE TERMINALS OR D-161488 CONNECTORS. LAMP MUST BE SEPARATELY ORDERED AND INSTALLED. HOLD POSITION LAMP CANNOT BE ILLUMINATED WHEN EXTERNAL TRANSMITTER IS WIRED PER TABLE F.
  8. 3-TYPE SPEAKERPHONE LEADS WHEN ASSOCIATED WITH EXTERNAL TRANSMITTER.
  9. THESE CONTACT STRIPS ARE REQUIRED WHEN TELEPHONE SET IS EQUIPPED WITH THE D120K (MD) OR THE D200S (MD) MOUNTING CORD. THESE CONTACT STRIPS SHOULD NOT BE USED WHEN TELEPHONE SET IS EQUIPPED WITH THE D120M OR D200AA MOUNTING CORD OR WHEN TELEPHONE SET IS EQUIPPED WITH A MODIFIED D120K OR D200S MOUNTING CORD.
- \* INSULATED AND STORED.

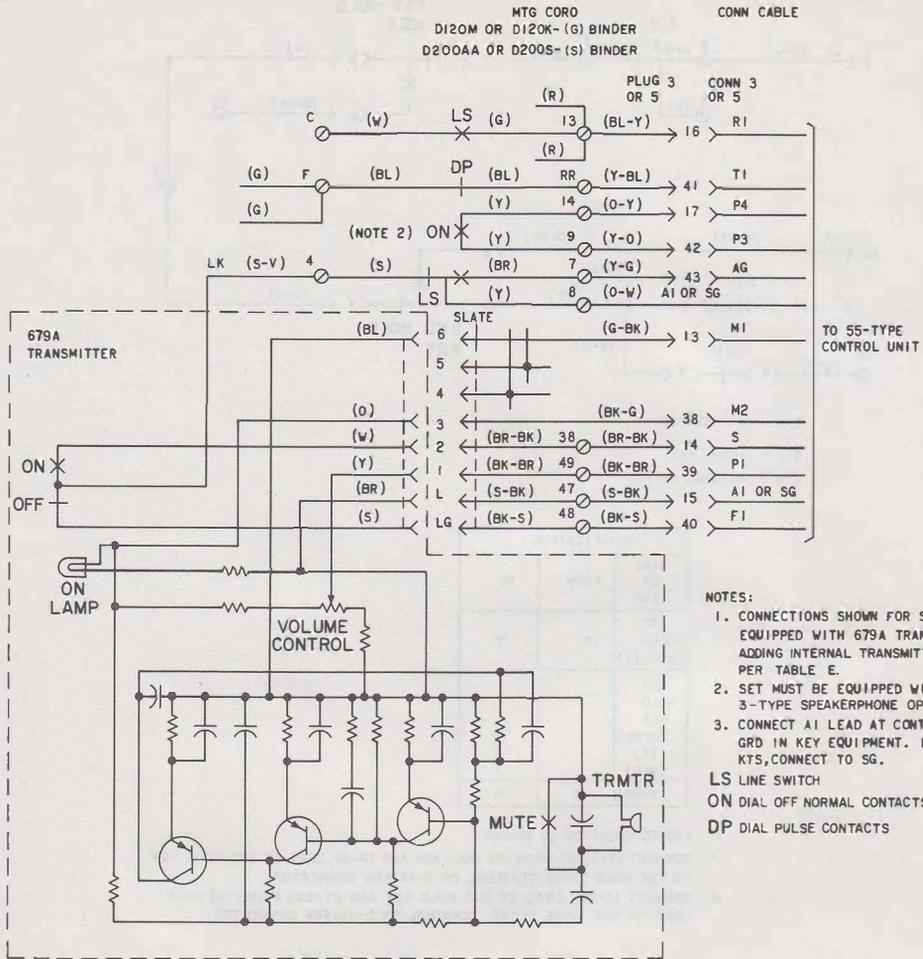
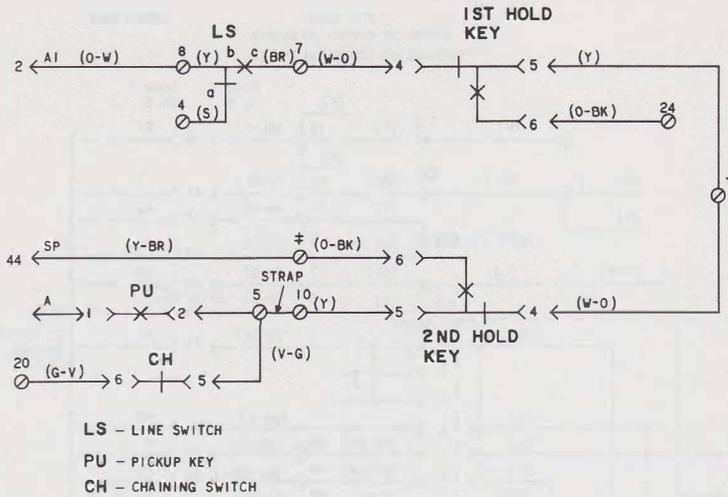


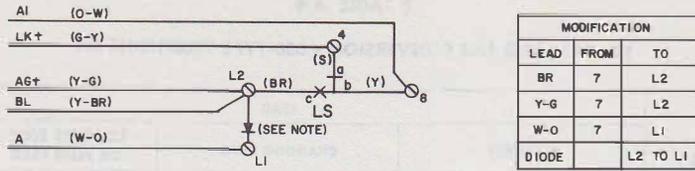
Fig. 4—3-Type Speakerphone Connections Using Internal 679A Transmitter



MODIFICATION		
WIRE OR LEAD	FROM	TO
1ST HOLD KEY (Y)	10	†
2ND HOLD KEY (O-BK) (Y) (W-O)		‡
		10
		†
(Y-BR)	*	‡

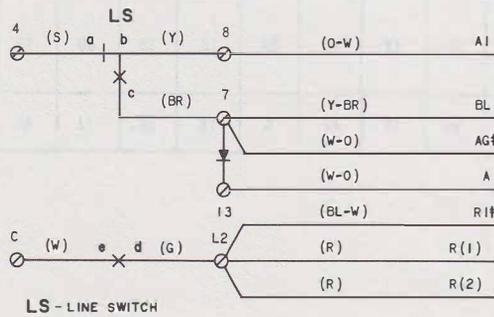
- \* STORED LOCATION (O BINDER).
- † CONNECT (Y) LEAD FROM 1ST HOLD KEY AND (W-O) LEAD OF 2ND HOLD KEY TO THE SAME SPARE TERMINAL OR D-161488 CONNECTOR.
- ‡ CONNECT (O-BK) LEAD OF 2ND HOLD KEY AND (Y-BR) MOUNTING CORD LEAD TO THE SAME SPARE TERMINAL OR D-161488 CONNECTOR.

Fig. 5—Modifications for Priority Hold



NOTE:  
 ORDER AND INSTALL KS-15724, L1 DIODE SEPARATELY.  
 † SPEAKERPHONE LEADS

Fig. 6—Station Busy Lamp Circuit With 3-Type Speakerphone System



MODIFICATION		
LEAD	FROM	TO
Y-BR	L2 *	7
W-O †	7	13
KS-15724L1 DIODE		7-13
G	13	L2 *
R †	13	L2 *
BL-W ‡	13	L2 *

NOTE:  
 FOR BUSY LAMP CONTROLLED BY SPEAKERPHONE ONLY, MOVE (BR) LINE SWITCH LEAD FROM TERMINAL 7 TO 13.

\* -NETWORK TERMINAL, UNDESIGNATED TERMINALS ARE ON TERMINAL BOARD

† -MOVE BOTH (R) LEADS FROM TERMINAL 13 TO L2

‡ -LEAD IN M16C CORD

Fig. 7—Station Busy Lamp Circuit With 4A Speakerphone System

◆ TABLE A ◆

## 1A, 1A1, AND 1A2 CONVERSION - 630-TYPE TELEPHONE SET

KEY MODULE ARRANGE- MENT	LEAD											
	HOLD KEY				CHAINING PLUG				CONTACT STRIP OR PLUG LEAD			LINE SW.
	Y	G	BR-V	V-BR	V-G 1ST MOD	V-G 2ND MOD	R 1ST MOD	R 2ND MOD	R 1ST MOD	R 2ND MOD	R 3RD MOD	Y
1A1/1A2 Only	10	10	*	*	5	15	13	11	13	11	21	8
1A1/1A2- 1st, 2nd Mod 1A-3rd Mod	10	35	21	40	5	35	13	11	13	11	40	8
1A1/1A2- 1st Mod 1A-2nd, 3rd Mod	10	35	11	40	35	15	13	40	13	40	21	8
1A Only	*	10	13	40	5	15	40	11	40	11	21	18

\* Insulated and stored.

♦ TABLE B ♦

## 1A, 1A1, AND 1A2 CONVERSION - 631-TYPE TELEPHONE SET

KEY MODULE ARRANGE- MENT	LEAD																	
	HOLD KEY				CHAINING PLUG								CONTACT STRIP OR PLUG LEAD					LINE SW.
	Y	G	BR-V	V-BR	V-G 1ST MOD	V-G 2ND MOD	V-G 3RD MOD	V-G 4TH MOD	R 1ST MOD	R 2ND MOD	R 3RD MOD	R 4TH MOD	R 1ST MOD	R 2ND MOD	R 3RD MOD	R 4TH MOD	R 5TH MOD	Y
1A1/1A2 Only	10	10	*	*	5	15	35	45	13	11	21	31	13	11	21	31	41	8
1A1/1A2- 1st, 2nd, 3rd, 4th Mod	10	12	41	3†	5	15	35	12	13	11	21	31	13	11	21	31	3	8
1A-5th Mod																		
1A1/1A2- 1st, 2nd, 3rd Mod	10	12	31	3†	5	15	12	45	13	11	21	3	13	11	21	3	41	8
1A-4th, 5th Mod																		
1A1/1A2-1st, 2nd, Mod	10	12	21	3†	5	12	35	45	13	11	3	31	13	11	3	31	41	8
1A-3rd, 4th, 5th Mod																		
1A1/1A2- 1st Mod	10	12	11	3†	12	15	35	45	13	3	21	31	13	3	21	31	41	8
1A-2nd, 3rd 4th, 5th Mod																		
1A Only	*	10	13	37†	5	15	35	45	37	11	21	31	37	11	21	31	41	18

\* Insulated and stored.

† Remove (BR-Y) mounting cord lead. Insulate and store.

‡ Remove (Y-O) mounting cord lead from terminal 3. Insulate and store.

**TABLE C**  
**CUT OFF KEY (635AD5C) CONNECTIONS**

FEATURE	635AD5C KEY ADAPTER		MOUNTING CORD (BL) BINDER		CONNECTOR CABLE (BL-W) BINDER			RINGER	PLACE STRAP
	BL-Y	Y-BL	BL-Y	Y-BL	G-BK	BK-G	BK-BR	BK	
Cutoff Ringer in Set (Note 1)	TB1-1	TB1-2	*	*	Note 2			TB1-1	A (Net.) to TB1-2
Cutoff Ext Ringer or Buzzer (Note 1)	TB1-1	TB1-2	TB1-1	TB1-2	Note 3				
Cutoff Ext Station (Note 4)	*	*	TB1-1	TB1-2		To Aux. Relay	To Relay Grd		

\* Insulate and store.

**Notes:**

1. Remove (BR-BK) and (BK-BR) slate plug leads from terminals 10 and 29, insulate and store.
2. To individual line or common ringer circuit at equipment.
3. To external ringer or buzzer. Connect ringer or buzzer circuit to (BL-Y) (Y-BL) connector cable leads at equipment.
4. Connect T, R, and A leads from equipment and station to be cut off through contacts of auxiliary relay. Connect battery to relay winding. Use 227B or 421A KTU.

**TABLE D**  
**PICKUP-SIGNAL KEY CONVERSION**  
**3RD (630-TYPE) OR 5TH (631-TYPE) MODULE**

NO. OF SIGNAL KEYS (Note 2)	NO. OF PVT OR INTER-COM LINES (COM. SIG) NOTE 1	KEY PLUG LEADS AND TERMINALS						
		O-W	S-W	G-R	BL-BK	BR-BK	O-Y	Y-O
1		25	25	25	30	30	18	39
2		25	25	25	30	18	18	39
3		25	25	25	18	18	18	39
4		25	25	18	18	18	18	39
5		25	18	18	18	18	18	39
6		18	18	18	18	18	18	39
	2	25	25	25	39	39	30	39
	3	25	25	39	39	39	30	39
	4	25	39	39	39	39	30	39
	5	39	39	39	39	39	30	39

**Notes:**

- 1 When using converted 6th pickup button as common signaling key, remove, insulate and store (Y-O) mounting cord lead from terminal 39.
- 2 If more than six signal keys are required, replace 635G5C key with a 658A key. If more than five private or intercom lines are required, convert keys in 2nd (630-type) or 4th (631-type) module in same order. Connect plug leads to terminal 39 to utilize common signal key. If additional terminals are required, use any spare terminal and strap to 39.

TABLE E

**3-TYPE SPEAKERPHONE CONNECTIONS USING  
INTERNAL TRANSMITTER (Notes 1, 2, and 4)**

WIRE OR LEAD	COLOR	LEAD DESIG	FROM	TO
Mtg Cord (Note 3)	Y-BL	T1	46	RR†
	BL-Y	R1	44	13
	Y-O	P3	39	9 (Note 5)
	O-Y	P4	*	14
	Y-G	AG	43	7 (Note 6)
	BR-BK	S	*	38
Slate Key Plug	BR-BK		30	
679A TRMTR	S-V	LK		4

\* Insulated and stored location.

† Terminal on network.

Notes: 1—Connections shown are used when transmitter is part of telephone set and speakerphone leads are connected through the mounting cord.

2—When control unit is located near the telephone set a A25B connector cable may be plugged into the 3rd mounting cord plug (630-type) or 5th plug (631-type) and terminate on the control unit.

3—Mounting cord conductors from G (630-type) or S (631-type) binder.

4—Connect the slate plug from the 3rd or 5th module to the 679A transmitter (Fig. 4). All other plugs in the module are insulated and stored.

5—Set intended for speakerphone use must be equipped with an 8C or 8CA dial for the second set of off-normal contacts (P3 and P4 leads).

6—Connect to L2 † if busy lamp is also furnished (Fig. 6).

TABLE F

**EXTERNAL 3-TYPE SPEAKERPHONE CONNECTIONS  
USING MOUNTING CORD LEADS (NOTE 1)**

COLOR	LEAD DESIG	FROM	TO
Y-BL	T1	2	RR†
BL-Y	R1	1	13
Y-O	P3	3	9
O-Y	P4	*	14
Y-G	AG	*	7 (Note 2)
G-Y	LK	*	4

\* Insulated and stored.

† Network terminal.

Notes: 1- Connections shown are used when control unit and apparatus unit are at same location. Leads are in (BL) binder.

2- Connect to L2 on network if busy lamp is also furnished (Fig. 6).

TABLE G

**EXTERNAL 3-TYPE SPEAKERPHONE CONNECTIONS  
USING AUXILIARY CORD (NOTE 1)**

D10R CORD	LEAD DESIG	TO
W-BL	T1	RR†
BL-W	R1	13
W-O	AG	7 (Note 2)
O-W	LK	4
W-G	P3	9
G-W	P4	14
W-BR	A1	8

† Network terminal.

Notes: 1- Connections shown are used when control unit and telephone set are at same location.

2- Connect to L2 on network if busy lamp is also furnished.