

## REFERENCE

### 211-TYPE HAND TELEPHONE SETS

#### 1. GENERAL

**1.01** This section provides identification, installation, maintenance, and connection information for the 211JR, 211LR, 211MR, 211NR, and 211PR hand telephone sets. This information was formerly found in Sections, 502-120-201, 502-200-404, 502-200-406, 502-300-100, 502-300-300, 502-302-403, and 502-303-404. Sections 502-302-403 and 502-302-404 are hereby canceled.

#### 2. IDENTIFICATION

##### Ordering Guide

##### 2.01 *Basic Hang-up Type Hand Telephone Sets:*

- Set, Telephone, Hand, 211JR-3
- Set, Telephone, Hand, 211LR-3
- Set, Telephone, Hand, 211MR-3
- Set, Telephone, Hand, 211NR-3
- Set, Telephone, Hand, 211PR-3

**Note:** These sets are available in black (-3) only.

**2.02** Replaceable components are listed in Table A.

##### 2.03 *Associated Apparatus:*

- Set, Subscriber, 685A—Refer to Table B
- Set, Subscriber, 686A—Refer to Table B

**2.04** These sets are primarily designed for wall or desk mounting and can be used on CO and PBX lines, and with 1A1, 1A2 KTS and 3-type speakerphone systems.

**2.05** Refer to Table B for class of service.

#### 3. INSTALLATION

##### Fastening Station Sets

**3.01** Telephone sets, subscriber sets, and associated station apparatus should be fastened securely to a substantial mounting surface. Refer to Table C for recommended fasteners.

**3.02** Where wire is not concealed at subscriber set or wall set, a fastener should be placed approximately 2 inches from the set.

**TABLE A**  
**COMBINATION OF APPARATUS**

HAND TEL SET CODE	REPLACEABLE COMPONENTS				
	HANDSET	HANDSET MTG	DIAL OR APPARATUS BLANK	DIAL MTG	HANDSET CORD
211JR-3	G3AR-3	G6-3	No. Card Holder	43A-3	H4CJ-3
211LR-3			6A-3		
211MR-3			6D-3		
211NR-3		G8-3	No. Card Holder	43A-3	
211PR-3			6J-3		

**TABLE B**  
**ASSOCIATED APPARATUS**

CLASS OF SERVICE	SUBSCRIBER SET
Individual Lines 2-Party Flat Rate 2-Party Message Rate (Ring Party Only) 4-Party Semiselective Multiparty Divided Code Regular PBX Stations 750A and 755A Keyless Stations 1A1 and 1A2 Key Telephone Systems 3-Type Speakerphone System	685A
4-Party Full Selective 8-Party Semiselective	686A

**Note:** No message rate or tip-party identification can be provided for tip-party station.

#### Subscriber Sets

**3.03** In cases where subscriber set and hangup-type hand telephone set are separated, the following should be observed:

- (a) Signal must be heard satisfactorily in area served by talking set.
- (b) To provide adequate transmission and to prevent crosstalk, maximum distance between subscriber set and handup-hand telephone is 250 feet.

#### Hangup-Type Hand Telephone Set

**3.04** Whenever possible, hangup-type hand telephone sets should be mounted on walls with line switch to right or left of mounting. Dial should be mounted parallel to wall. This arrangement will reduce the possibility of handset's being knocked from cradle and will prevent cutoffs while dialing (Fig. 1).

**3.05** When installing hangup-type set on desks or tables, handset should normally line up with front of desk or table. This will reduce the chance of accidentally knocking handset off the cradle. A 33A auxiliary bracket is used when a

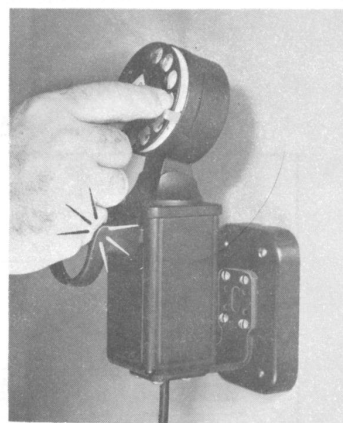
G-type mounting is attached to a desk or table where the top overhangs more than 1-1/2 inches (Fig. 2).

**3.06** When required, use a 164-type backboard for mounting hangup-type hand telephone sets. Fasten backboard to mounting surface as shown in appropriate section in Division 463. Where no backboard is used, fasten mounting bracket to mounting surface with four screws of the type specified in Table C.

**3.07** Dial should be adjusted to the most suitable position for the customer.

**3.08** The 43A dial mounting used with G-type handset mounting are arranged so dial may be rotated. Dial is locked in one of 12 positions, at 30-degree intervals, by means of notches in base of dial mounting. Notches engage two studs at the top of handset mounting. Dial may be rotated as follows (Fig. 3).

- (1) Loosen dial positioning screw.
- (2) Lift dial slightly and revolve to the desired position.
- (3) Lower dial into place.
- (4) Retighten dial positioning screw.



**Fig. 1—Handset in Front**

**TABLE C**  
**FASTENERS USED FOR MOUNTING STATION APPARATUS**

MOUNTING SURFACE	NUMBER OF FASTENERS (NOTE 1)		
	200 SERIES HANG-UP TYPE TEL SETS	SUBSETS	SIZE AND TYPE OF FASTENERS
	P-80G603 OR 33A BRACKETS	685A OR 686A	
Hardwood (including Wooden Backboards)	4	2	1-1/4 in., No. 8 RH blued wood screws
Softwood	4	4	1-1/2 in., No. 8 RH blued wood screws
Plaster on Wood Lath	4	4	2-in., No. 8 RH hand wood screws (Note 3)
Side of Wood-paneled Desk (place fastener in framing around panel when possible)	4	3	See type of wood sur- face above.
Metal Desks	4	2	1-in., No. 8 RH self- tapping screws
Plaster on Masonry or Plaster Block	4	4	2-1/2 in., No. 8 RH blued wood screws No. 10 plastic anchor
Masonry	4	4	1-1/2 in., No. 8 RH blued wood screws No. 10 plastic anchor
Sheetrock, Beaver, or Similar Composition Board	4	4	Wall screw anchor
Solid Metal	4	2	10-24 x 1 in., FH bright machine screws
Plaster on Metal Lath; Plaster on Plaster Board	4	2 (Note 2)	Wall screw anchor or 2-in., No. 8 RH blued wood screw (Note 3)
Metal Sheath on Solid Wood	4	4	1-1/2 in., No. 8 RH blued wood screws
Metal Sheath over Furring on Brick	4	4	1-1/4 in., No. 8 RH blued wood screws
Metal Sheath over Furring or Plaster on Lath	4	4	1-1/2 or 2-in., No. 8 RH blued wood screws

**Notes:**

1. Where two fasteners are specified, place fasteners diagonally opposite each other, locate one fastener near the handset cord.
2. Additional fasteners may be required for secure mounting.
3. When mounting on plasterboard, plaster on lath, etc. fasteners must be embedded in stud at least 1 inch.

TABLE D  
61M FILTER (CONNECTIONS)

HAND TEL SET	FILTER LEADS	FILTER LEAD TERM.
611LR*	BK	BK of Dial
611MR*	Y	Y of Dial
	R	BK of Line Switch
611PR†	BK	BL of Dial
	Y	G of Dial
	R	1 of Line Switch

\* Remove the dial cord between Y of the dial and BK of the line switch.

† Remove lead from G of dial and terminal 1 of dial mounting.

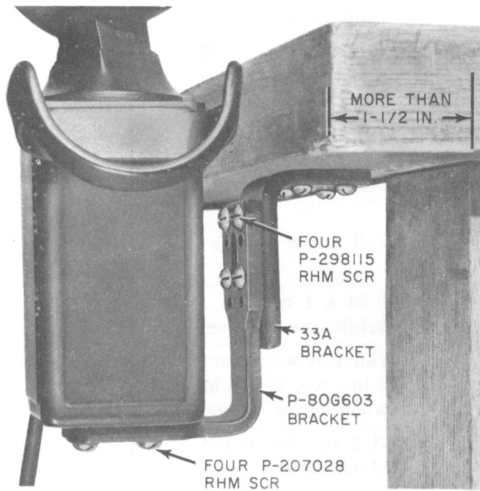


Fig. 2—Installed with 33A Auxiliary Bracket

**3.09** The 43A dial mounting may also be tilted as much as 45 degrees backward in 15 degree intervals. Dial is tilted as follows (Fig. 3):

- (1) Loosen dial positioning screw.
- (2) Raise dial and tilt to desired angle.
- (3) Lower dial into place.
- (4) Retighten dial positioning screw.

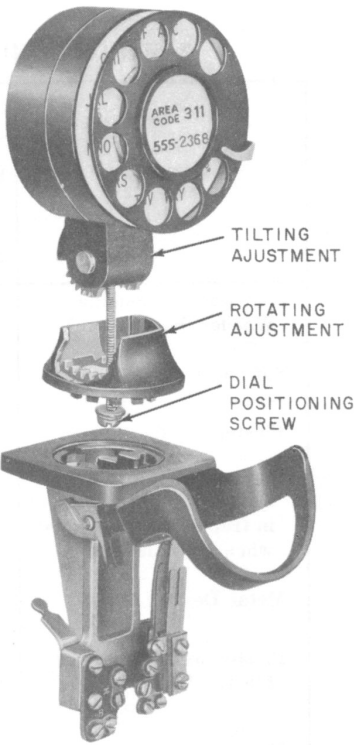


Fig. 3—Positioning Adjustments of 43A Dial Mounting

**Station Wire and Mounting Cords**

**3.10** When terminating wire inside a hangup-type hand telephone set, leave sufficient slack to enable line switch assembly to be reassembled in housing.

**4. MAINTENANCE**

**4.01** Maintenance should be limited to the replacement of items listed in Table A, and to cleaning and adjusting contacts.

**4.02** On G-type mountings, the operating stud shall not touch the operating springs when the line switch is in its extreme upward position.

**4.03** All contact springs shall have a perceptible follow. In case of mounting having twin contacts, both contacts on the same spring shall make at approximately the same time.

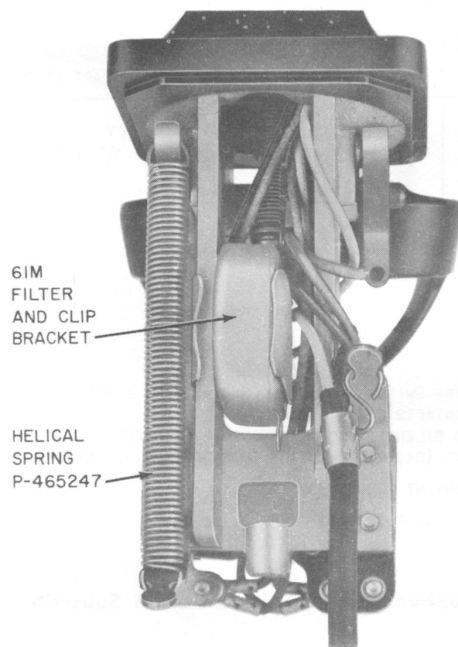
**4.04** To clean contacts, burnish with the 265C tool having a clean blade.

**4.05** Binding of line switch may be caused by either a bent line switch or bent pin. If this trouble is encountered, replace the set.

**4.06** Refer to the Division 501 for maintenance of dials, ringers, and handsets and to Division 502 for maintenance of subscriber sets.

## 5. CONNECTIONS

**5.01** The 211-type handset is arranged for, but not equipped with, a 61M filter for radio frequency suppression. Connections are shown in Table D.



**Fig. 4—Assembly of Filter on G-Type Handset Mounting**

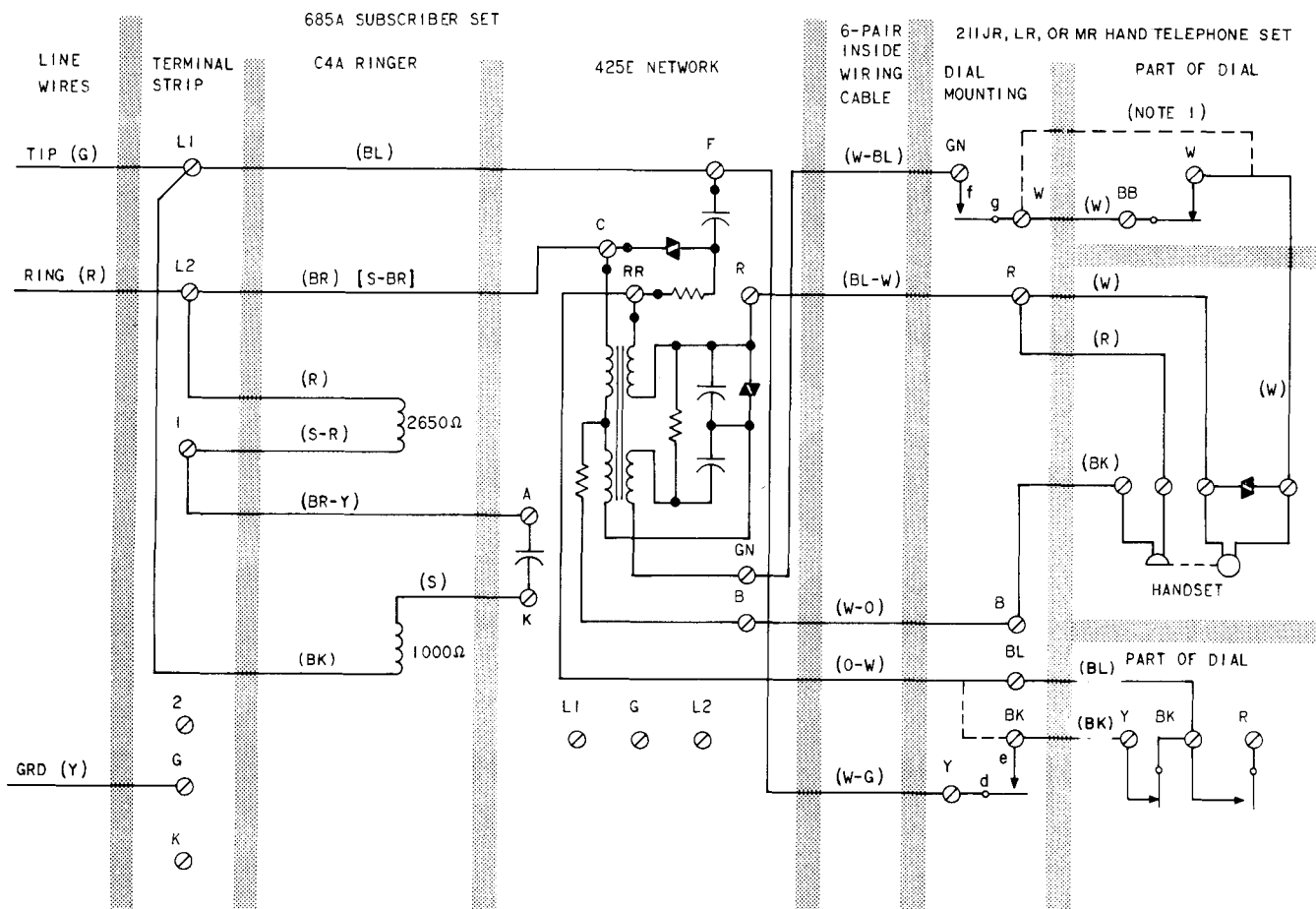
**TABLE E**  
**CONNECTIONS USING 685A SUBSCRIBER SET**

WIRE OR LEAD	COLOR	BRIDGED	RING PARTY	TIP PARTY NO IDENT GROUND
Local Wiring (Note)	W-BL	GN*	GN*	GN*
	BL-W	R*	R*	R*
	W-O	B*	B*	B*
	O-W	RR*	RR*	RR*
	W-G	F*	F*	F*
Ringer Leads	R	L2	L2	L2
	BK	L1	G	G
	S	K*	K*	K*
	S-R	1	1	1
Straps Net to Term. Strip	BR†	L2-C*	L2-C*	L2-C*
	BL	L1-F*	L1-F*	L1-F*
	BR-Y	1-A*	1-A*	1-A*
Line Wires	Ring	R	L2	L1
	Tip	G	L1	L2
	Grd	Y	G	G

\* Network terminal.

† S-BR strap used on earlier sets.

**Note:** For local wiring connections to hand telephone set refer to Fig. 5.

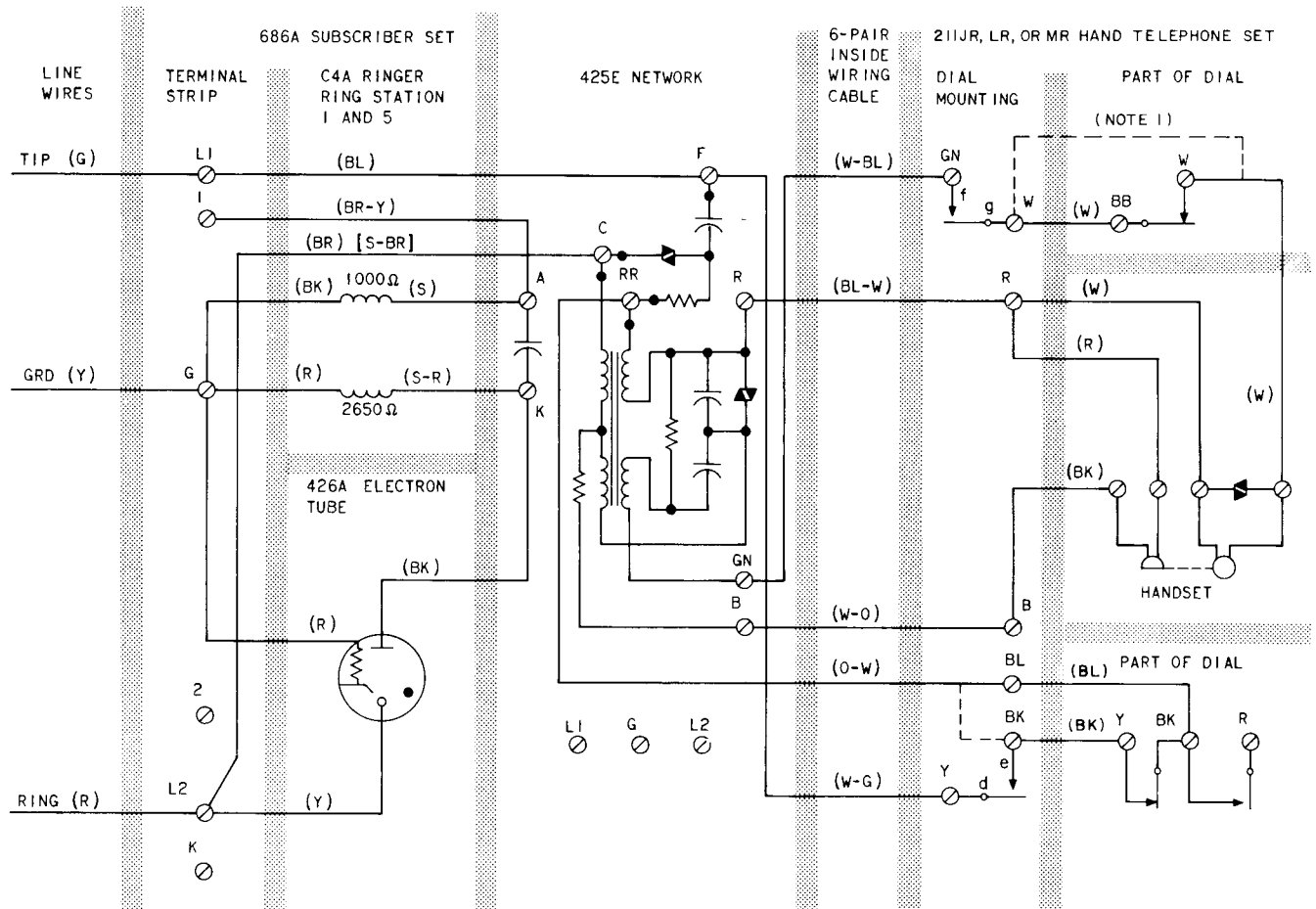


## NOTES:

1. DOTTED LINES SHOW MANUAL SET CONNECTIONS, (211JR).
2. ON EARLIER SETS (BL) STRAP MUST BE MOVED FROM RR TO F OF NETWORK.
3. ON EARLIER SETS (BR) [S-BR] MUST BE MOVED FROM 2 TO L2 OF TERMINAL STRIP.
4. CONNECTIONS SHOWN ARE FOR BRIDGED RINGING, REFER TO TABLE E FOR ALL SERVICES PROVIDED.

5. LINE SWITCH CONTACTS d AND e MAKE FIRST, CONTACTS f AND g MAKE LAST.
  6. TO SILENCE RINGER PERMANENTLY CONNECT (R) AND (BK) RINGER LEADS TO K OF TERMINAL STRIP.
- ( ) CURRENT COLOR CODE  
[ ] MD COLOR CODE

**Fig. 5—Connections for 211JR, 211LR, and 211MR Hand Telephone Sets used with 685A Subscriber Set, Bridged Ringing**



## NOTES:

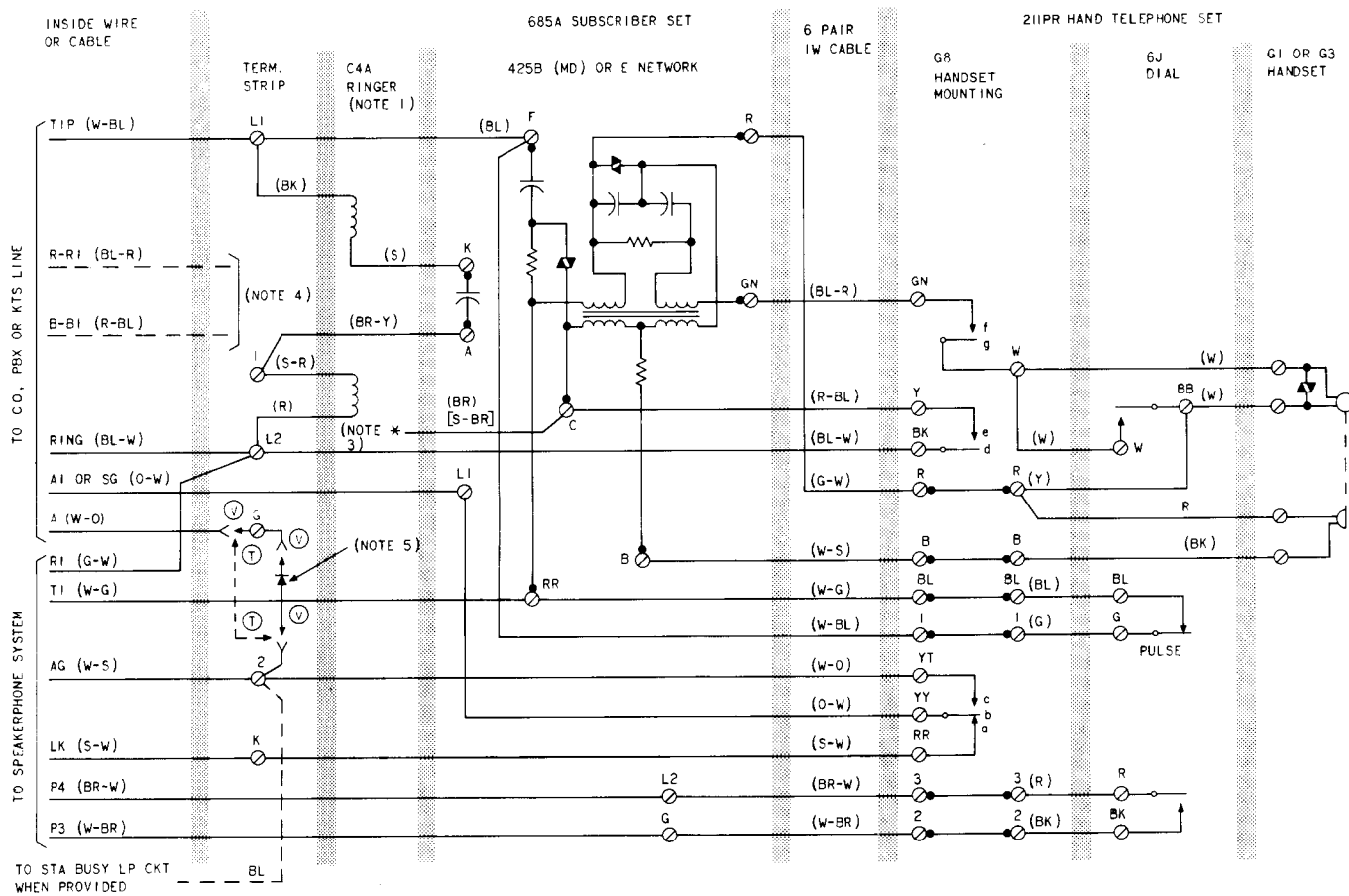
1. DOTTED LINES SHOW MANUAL CONNECTIONS, (211JR).
2. ON EARLIER SETS (BL) STRAP MUST BE MOVED FROM RR TO F OF NETWORK.
3. ON EARLIER SETS (BR) [S-BR] STRAP MUST BE MOVED FROM 2 TO L2 OF TERMINAL STRIP.
4. CONNECTIONS SHOWN ARE FOR (-) RING PARTY REFER TO TABLE F FOR ALL SERVICES PROVIDED.

5. LINE SWITCH CONTACTS d AND e MAKE FIRST, CONTACTS f AND g MAKE LAST.
6. TO SILENCE RINGER PERMANENTLY CONNECT (R) AND (BK) RINGER LEADS TO K OF TERMINAL STRIP.

( ) CURRENT COLOR CODE

[ ] MD COLOR CODE

**Fig. 6—Connections for 211JR, 211LR, and 211MR Hand Telephone Sets used with 686A Subscriber Set, (-) Ring Party**



## NOTES:

1. CONNECTIONS SHOWN ARE FOR BRIDGED RINGING, REFER TO TABLE G FOR ALL SERVICES PROVIDED.
2. ON EARLIER SETS (BL) STRAP MUST BE MOVED FROM RR TO F OF NETWORK.
3. REMOVE (BR) [S-BR] STRAP FROM L2 (2 ON EARLIER SETS) OF TERMINAL STRIP, INSULATE AND STORE.
4. WHEN NECESSARY, (BL-R) / (R-BL) LEADS MAY BE CONNECTED FOR COMMON AUDIBLE SIGNAL (USE D-161488 CONNECTORS IF REQUIRED.)
5. WHEN BOTH STATION BUSY LAMP AND "A" LEAD CONTROL IS REQUIRED FOR KTS OPERATION CONNECT KS-15724, L1 DIODE BETWEEN TERMINALS 2 AND G OF TERM STRIP AS SHOWN. CONNECT "A" LEAD TO KTS AS REQUIRED.
6. TO SILENCE RINGER PERMANENTLY INSULATE AND STORE (R) AND (BK) RINGER LEADS.
7. LINE SWITCH CONTACTS b AND c MAKE FIRST, CONTACTS f AND g MAKE LAST.

Ⓣ WITHOUT BUSY LAMP

Ⓥ WITH BUSY LAMP

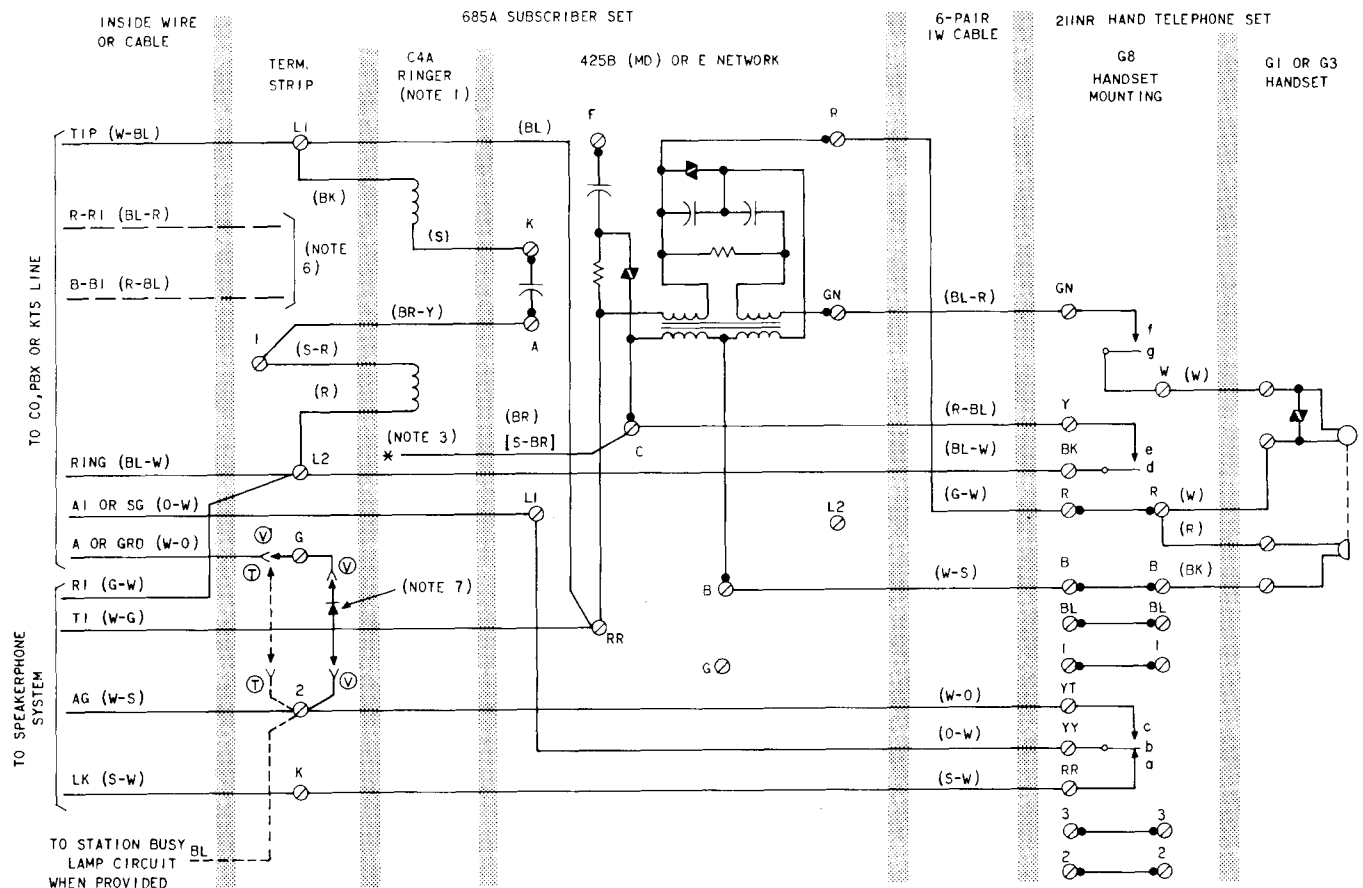
\* INSULATE AND STORE

( ) CURRENT COLOR CODE

[ ] MD COLOR CODE

**Fig. 7—Connections for 211PR Hand Telephone Set used with Modified 685A Subscriber Set, Bridged Ringing with Speakerphone**





**Fig. 8—Connections for 211NR Hand Telephone Set used with Modified 685A Subscriber Set, Bridged Ringing with Speakerphone**

**TABLE F**  
**CONNECTIONS USING 686A SUBSCRIBER SET**

WIRE OR LEAD	COLOR	NEGATIVE (−) PARTIES		POSITIVE (+) PARTIES	
		RING 1 AND 5	TIP 2 AND 6	RING 3 AND 7	TIP 4 AND 8
Local Wiring (Note)	W-BL	GN*	GN*	GN*	GN*
	BL-W	R*	R*	R*	R*
	W-O	B*	B*	B*	B*
	O-W	RR*	RR*	RR*	RR*
	W-G	F*	F*	F*	F*
Straps — Net. to Term. Strip	BL	L1-F*	L1-F*	L1-F*	L1-F*
	BR-Y	1-A*	1-A*	1-A*	1-A*
	BR†	L2-C*	L2-C*	L2-C*	L2-C*
Ringer Leads	S	A*	A*	A*	A*
	BK	G	G	L2	L2
	R	G	G	L2	L2
	S-R	K*	K*	K*	K*
426A Tube Leads (3-Element)	BK	K*	K*	K*	K*
	Y	L2	L2	G	G
	R	G	G	L2	L2
Inside Wire from Protector or Line	R	L2	L1	L2	L1
	G	L1	L2	L1	L2
	Y	G	G	G	G

\* Network terminal.

† S-BR strap on earlier sets.

**Note:** For local wiring connections to hand telephone sets, refer to Fig. 6.

**TABLE G**  
**CONNECTIONS USING 685A SUBSCRIBER SET,**  
**WITH SPEAKERPHONE**

WIRE OR LEAD		COLOR		685A SUBSET
Local Wiring (Note)		BL-R		GN*
		G-W		R*
		W-S		B*
		BL-W		L2
		W-G	211P	RR*
		R-BL		C*
		W-BL	211P	F*
		W-O		2
		O-W		L1*
		S-W		K
		W-BR	211P	G*
		BR-W		L2*
Ringer Leads		R		L2
		BK		L1
		S		K*
		S-R		1
Straps Net. to Term. Strip		BR†		‡-C*
		BL	211N	L1-RR*
			211P	L1-F*
		BR-Y		1-A*
Line Wires	Tip	W-BL		L1
	Ring	BL-W		L2

\* Network terminal.

† S-BR strap used on earlier sets.

‡ Insulate and store.

**Note:** For local wiring connections to hand telephone set, refer to Fig. 7 and 8.