

SERVICE

636A, B, C AND 637A, B, C, D TELEPHONE SETS

1. GENERAL

1.01 This section contains connection and maintenance information for 18- and 30-button general purpose CALL DIRECTOR® telephone sets equipped with headset jacks.

1.02 This section is reissued to:

- Change title of section from 636- and 637-type telephone sets
- Show that all codes of these telephone sets are now MD
- Show 599H and 657H keys MD, replaced by 657L key
- Add modification table, Fig. 6
- Add information on T1A ringer, Fig. 1 and change 241A amplifier to 241-type
- Remove common maintenance information which is now covered in Section 502-600-100.

1.03 These sets are not intended for use with 3-type speakerphone systems.

2. CONNECTIONS

2.01 These sets are factory-wired for use with 1A1, 1A2, or 6A KTS line circuits. They may also be used with 1A KTS line circuits by modifying the set as shown in Table A. Line circuits for 1A, 1A1, or 1A2 KTS may be connected to the same set under the following conditions:

- (a) 1A1 or 1A2 KTS lines must be connected to the first key units with 1A lines connected to supplementary key modules.
- (b) 1A, 1A1, or 1A2 KTS lines should not be connected to the same 6 line key module.
- (c) 1A, 1A1, or 1A2 KTS lines appearing behind a manual switchboard should not be

intermixed at a CALL DIRECTOR telephone set due to the different time out intervals provided by the associated KTU's.

2.02 These 636- and 637-type (MD) rotary dial telephone sets are equipped with 517A jacks for the plugs of a G3L handset or a head telephone set. The internal wiring is arranged to electrically connect either the line switch or the headset jacks to the line.

2.03 Replacement or substitution of the key in the first module may require wiring changes as shown in the notes for Fig. 3 and 4.



Some spade-tipped conductors or mounting cord leads are insulated with tubing which should be cut off with electrician scissors or diagonal pliers. Other conductors are insulated with stiff plastic pockets. Pinch open the pocket to release the spade tips.

2.04 When station busy lamp feature is required with these sets having 1A1 or 1A2 KTS line circuits, a P-90D033 Printed Wiring Board Assembly must be ordered separately and installed in the 636- or 637-type telephone set. With this option, the busy lamp will light whenever a line pickup button is depressed and the handset is off-hook or the headset is plugged into the jack. See Fig. 6 for connections and Section 502-600-100 for installation procedures.

2.05 Sets equipped with a D120C mounting cord manufactured prior to III-68 must use circuit per Fig. 6 to provide station busy lamp feature.

2.06 ♦The tip and ring leads of lines wired for supplementary hold feature must be run directly between the key telephone equipment and key telephone set. The A and lamp leads can be routed per SD-69530-01 and Division 518.♦

Supplementary hold can be furnished in either of the following arrangements:

- ◆(a) **Priority Hold:** Replace the 599- or 657-type key in the first module with a 599H (MD) or 657L key which is equipped with a second hold button and wire per Fig. 8 or 9 to transfer the A lead from ground to -24 volts.◆
- (b) **I Hold:** Wire present Hold key to transfer A lead from ground to -24 volt; connect stored (BR-V) [S-Y] Hold lead from first module plug to any spare mounting cord lead using spare terminal or D-161488 connector. Mounting cord lead becomes SP lead at key equipment.

2.07 To convert a key position from pickup (locking) to signal (nonlocking) remove the

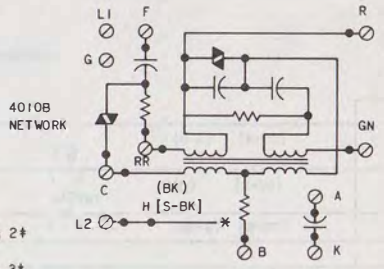
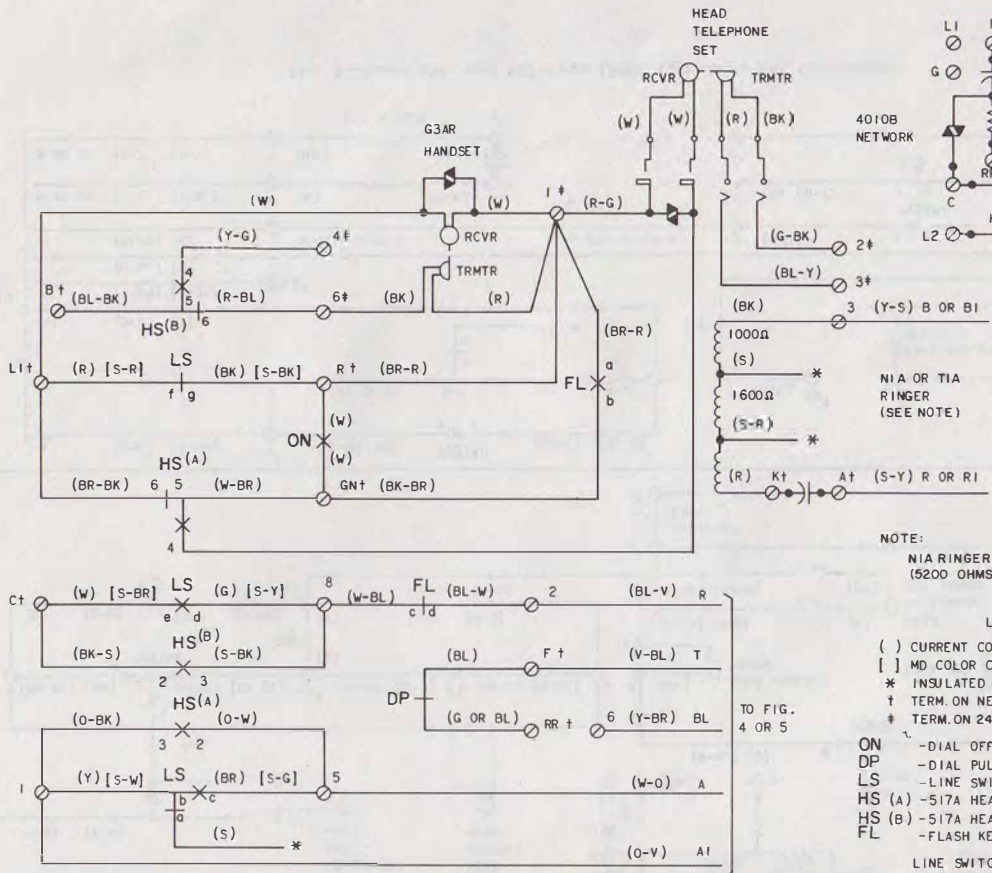
screw detail P-10E837 entirely from plunger at the key position to be converted. Make the necessary wiring changes as shown in Table B.

2.08 ◆A 657B or 599B key (turnbutton) may be used in the first module for cutoff control of ringer or line. Refer to Note 1 (Fig. 4 and 5) and Table C for necessary wiring changes.◆

3. MAINTENANCE

3.01 Maintenance of handset, dials, ringers, and modular keys is outlined in sections covering these components located in Division 501.

3.02 ◆Refer to Section 502-600-100 for common installation and maintenance information for these CALL DIRECTOR telephone set.◆



NOTE:
NIA RINGER SHOWN, TIA RINGER HAS SINGLE COIL (5200 OHMS) AND ONLY (R) AND (BK) LEADS.

- LEGEND:
- () CURRENT COLOR CODE
 - [] MD COLOR CODE
 - * INSULATED AND STORED
 - † TERM. ON NETWORK
 - ‡ TERM. ON 241-TYPE AMPL
- UNDESIGNATED TERM. ARE ON TERM. BOARD
- ON - DIAL OFF NORMAL CONTACTS
 - DP - DIAL PULSE CONTACTS
 - LS - LINE SWITCH
 - HS (A) - 517A HEADSET JACK A
 - HS (B) - 517A HEADSET JACK B
 - FL - FLASH KEY

LINE SWITCH OFF HOOK SEQUENCE:
de CLOSES
cb CLOSES
fg OPENS

◆ Fig. 1—Current 636- and 637-Type (MD) Telephone Set, Connections ◆

TPA 505022

ISS 2, SECTION 502-610-410

NOTE:

LINE SWITCH OFF-HOOK SEQUENCE:

- de - CLOSSES
- cb - CLOSSES
- fg - OPENS

() CURRENT COLOR CODE

[] MD COLOR CODE

- * INSULATED AND STORED
- † TERM.ON NETWORK
- ‡ TERM.ON TERM.BOARD 2

UNDESIGNATED TERMS ARE ON TERM.BOARD 1

LEGEND:

- ON - DIAL OFF NORMAL CONTACTS
- DP - DIAL PULSE CONTACTS
- LS - LINE SWITCH
- HS (A) - 517A JACK A
- HS (B) - 517A JACK B
- FL - FLASH KEY

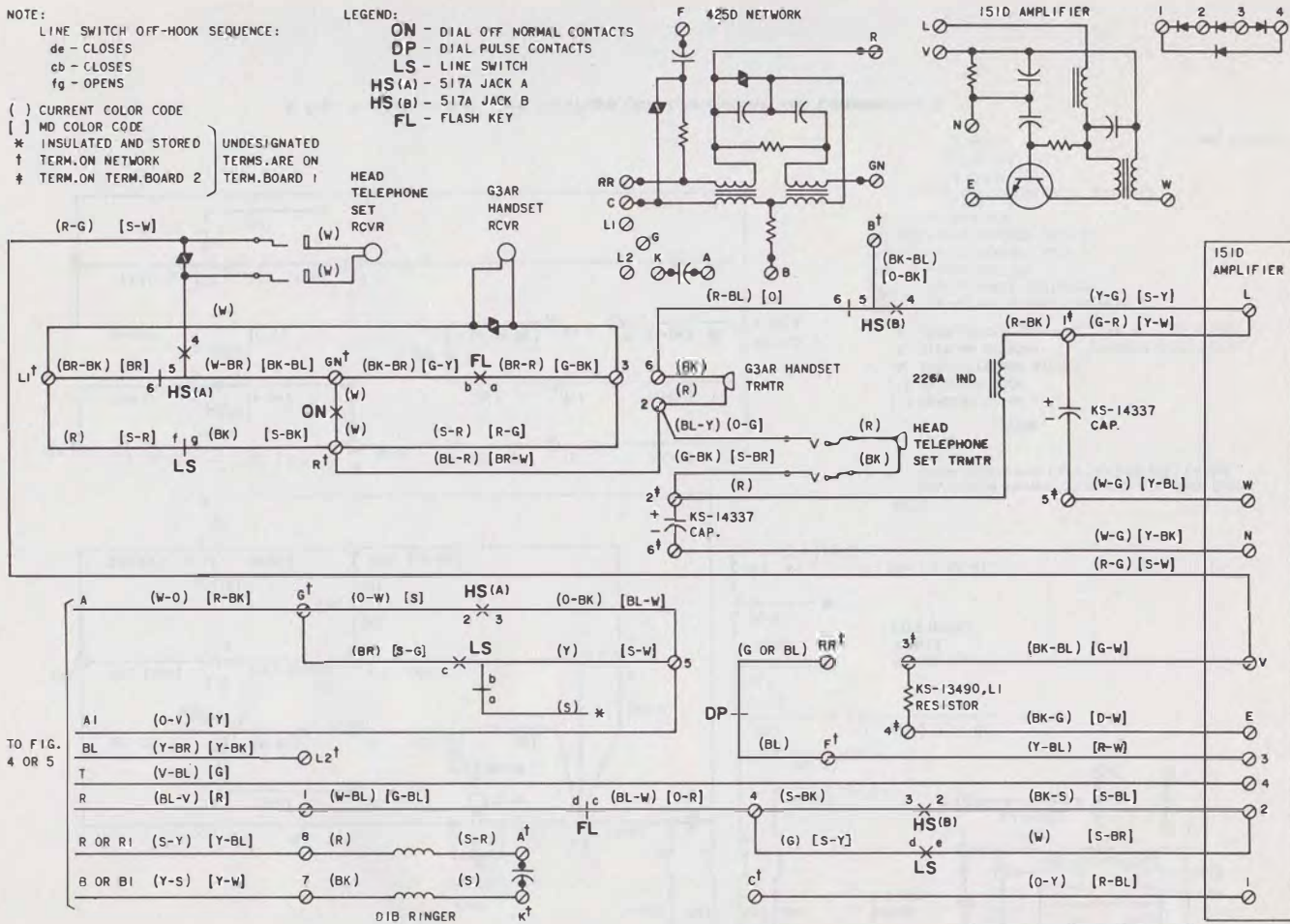


Fig. 2—Early 636- and 637-Type (MD) Telephone Set, Connections

TO FIG. 4 OR 5

NOTE:

LINE SWITCH OFF-HOOK SEQUENCE:

- de CLOSES
- cb CLOSES
- fg OPENS

() CURRENT COLOR CODE

[] MD COLOR CODE

* INSULATED AND STORED UNDESIGNATED

† TERM.ON NETWORK TERMS ARE ON

‡ TERM.ON TERM.BOARD 2 TERM.BOARD 1

LEGEND:

- ON DIAL OFF NORMAL CONTACTS
- DP DIAL PULSE CONTACTS
- LS LINE SWITCH
- HS (A) 517A JACK A
- HS (B) 517A JACK B
- FL FLASH KEY

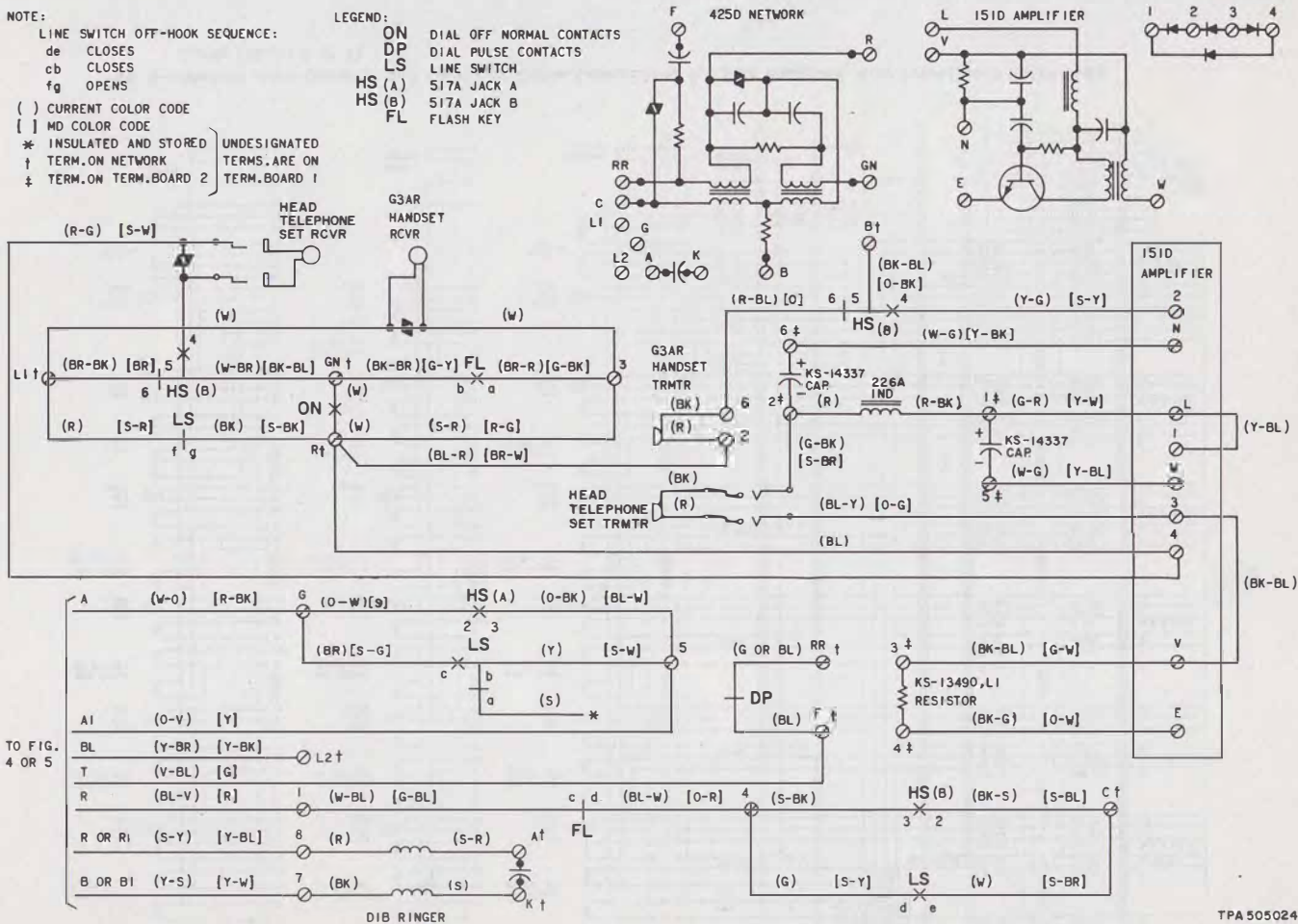


Fig. 3—Early 636- and 637-Type (MD) Telephone Set, Connections (Amplifier Wired for Polarity Guard Diode Protection)

TPA 505024

ISS 2, SECTION 502-610-410

- NOTES:**
- WITH 598A OR 607A KEY IN FIRST MODULE, STRIKE TIPPED LEADS FROM KEY PLUG 1 AND MOUNTING CORD BINDER GROUP (BL-W) ARE INSULATED AND STORED AS SHOWN. WITH 598B OR 657B KEY IN FIRST MODULE, (BR-BL) LEAD MUST BE REMOVED FROM A-H OF TB1, INSULATED AND STORED. WITH 598A OR 656A KEY IN FIRST MODULE, STRAP A-H OF TB1 TO TERMINAL G ON NETWORK. CONNECT (Y-O) AND (BR-BK) LEADS FROM KEY PLUG 2 TO A-H OF TB1. TO EXTEND HOLD LAMP LEADS CONNECT (S-V) AND (V-S) KEY PLUG LEADS TO (G-Y) AND (Y-G) MOUNTING CORDS LEADS RESPECTIVELY USING SPARE TERMINALS OR D-161489 CONNECTORS.
 - FOR USE WITH IA KEY SYSTEM ONLY, MOVE AI (O-V) STRAP FROM IB TO SG ON TB2X AND MAKE CONVERSION SHOWN IN TABLE A.
 - FOR ADD-ON CONFERENCE CONTROL IN THE IA KEY TELEPHONE SYSTEM, CONNECT (BR-Y) MOUNTING CORD LEAD (O-W BINDER GROUP) TO TB2X - PB. ALSO REMOVE COMMON LEAD OF ADD-ON CONFERENCE BUTTON (CONVERTED TO SIGNALING) FROM A-H TERMINAL AND CONNECT TO PB. THE 617A KEY MAY ALSO BE USED IN A SIMILAR MANNER. ALSO SEE NOTE 4.
 - WHEN THE 617A KEY IS REQUIRED AS A DUAL-PURPOSE KEY, THE BRASS STRAP BETWEEN THE B1 AND S6 TERMINALS OF THE KEY MAY BE REMOVED. USE MIW CORD OR EQUIVALENT TO CONNECT S1 TERMINAL OF 617A KEY TO A DISIMILAR GROUND OR A HONOROUNDED CIRCUIT.
 - UPON INSTALLING P-90033 PRINTED WIRING BOARD ASSEMBLY TO PROVIDE STATION BUSY LAMP FEATURE IN IA1 OR IA2 KTS CONNECT A OR H LEAD (G-V) FROM LAST MODULE TO TERMINAL X OF TB2X.
 - INSULATED AND STORED
 - SHOWN SHED

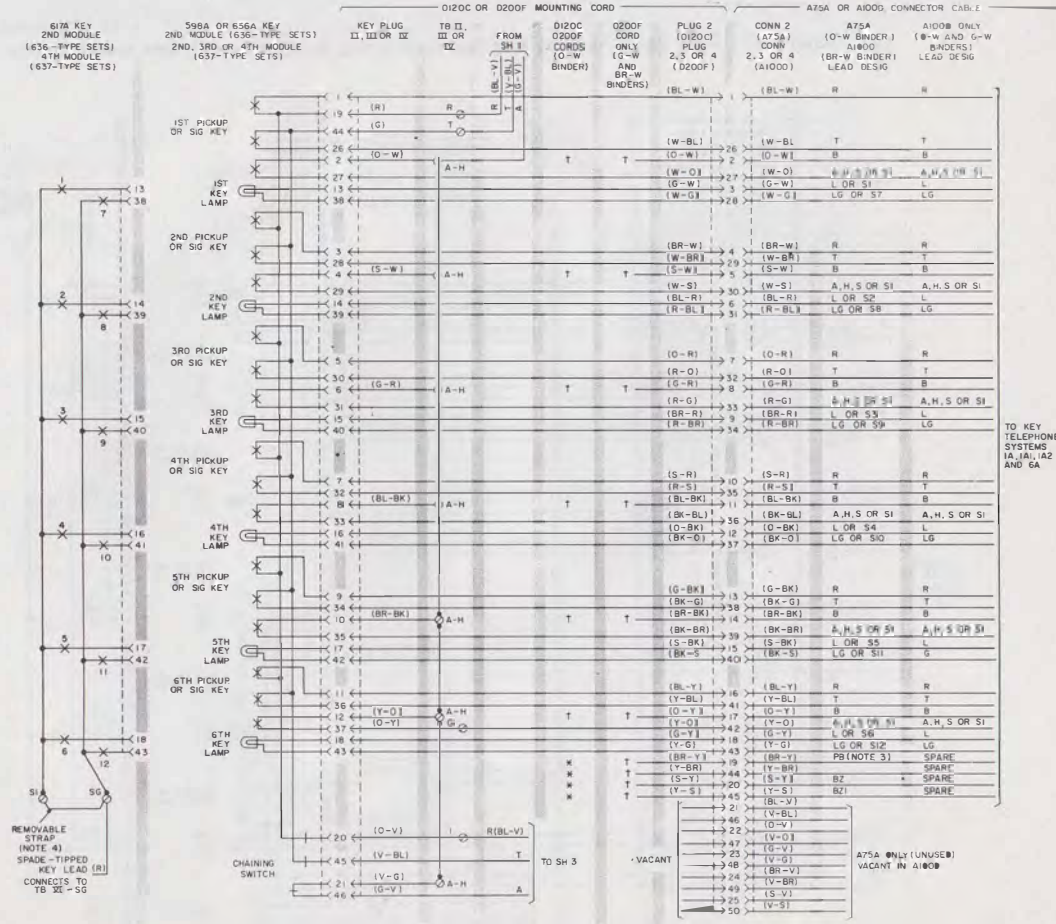


Fig. 4—Module Arrangements and Cord and Cable Connections for Sets Equipped with Even-Count Color-Code Cords (Sheet 2 of 3)

ISS 2, SECTION 502-610-410

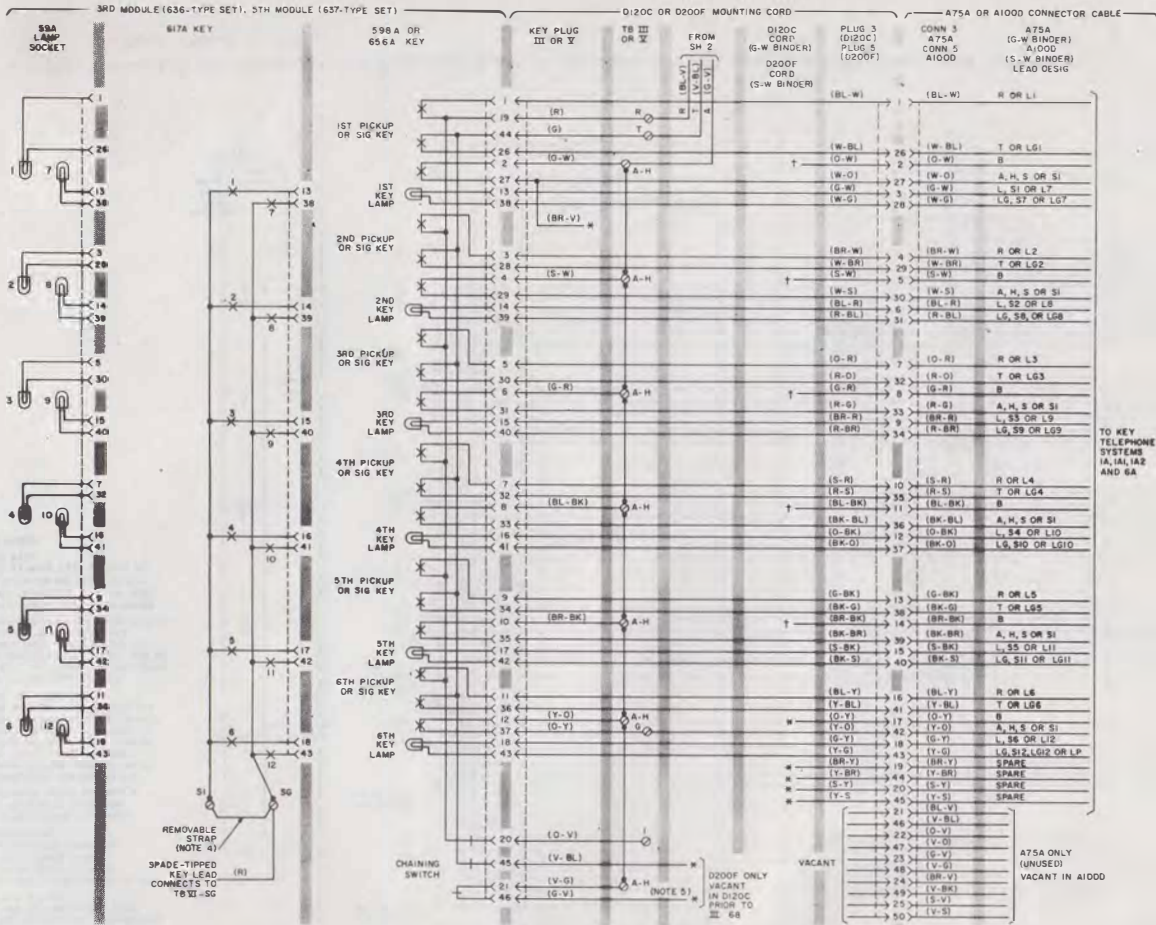


Fig. 4—Module Arrangements and Cord and Cable Connections for Sets Equipped with Even-Count Color-Code Cords (Sheet 3 of 3)

TABLE A — WIRING MODIFICATIONS FOR COMBINING 1A AND 1A1 OR 1A2 KTS LINES

| KEY TELEPHONE SYSTEM | MOUNTING CORD LEADS (NOTE 1) | | | | | | | | | | | | SET LINE SWITCH |
|---|------------------------------|-------------|--------------|---------------|--------------|------------------------|--------------|--------------|---------------------|------------|--------------------------|-------------|-----------------|
| | HOLD KEY | | | | | CHAINING SWITCH | | | | | TEL SET CONTROL (NOTE 2) | | |
| | | | | | | 18- AND 30-BUTTON SETS | | | 30-BUTTON SETS ONLY | | | | |
| | 1ST KEY | 2ND KEY | 3RD KEY | 4TH KEY | 5TH KEY | RING | A1 | | | | | | |
| (Y-G) [BK-BL] | (G-Y) [BK-W] | (V-O) [S-W] | (BR-V) [S-Y] | (V-BR) [S-BK] | (V-G) [BL-W] | (V-G) [BL-W] | (V-G) [BL-W] | (V-G) [BL-W] | (V-G) [BL-W] | (BL-V) [R] | (O-Y) [Y] | (BR) [S-G] | |
| 1A1 or 1A2 (shop wiring) | A-H (I) | A-H (I) | * | * | * | A-H (I) | A-H (II) | A-H (III) | A-H (IV) | A-H (V) | R (I) | 1B (Note 4) | † |
| 1A1 or 1A2 on first key unit; 1A on remaining key units | A-H (I) | Y (Note 4) | * | 1† (I) | R (II) | (Y) (Note 4) | A-H (II) | A-H (III) | A-H (IV) | A-H (V) | R (I) | 1B (Note 4) | † |
| 1A1 or 1A2 on first and second key units; 1A on remaining key units | A-H (I) | Y (Note 4) | * | 1† (II) | R (III) | A-H (I) | Y (Note 4) | A-H (III) | A-H (IV) | A-H (V) | R (I) | 1B (Note 4) | † |
| 1A1 or 1A2 on 1st, 2nd, and 3rd key units; 1A on remaining key units (30-button sets) | A-H (I) | Y (Note 4) | * | 1† (III) | R IV | A-H (I) | A-H (II) | (Y) (Note 4) | A-H (IV) | A-H (V) | R (I) | 1B (Note 4) | † |
| 1A1 or 1A2 on 1st through 4th key units; 1A on fifth key unit (30-button sets) | A-H (I) | Y (Note 4) | * | 1† (IV) | R (V) | A-H (I) | A-H (II) | A-H (III) | Y (Note 4) | A-H (V) | R (I) | 1B (Note 4) | † |
| 1A only (See Note 2, Fig. 4 or 5) | Y (Note 4) | A-H (I) | * | R1 (VI) | R (I) | A-H (I) | A-H (II) | A-H (III) | A-H (IV) | A-H (V) | R1 (Note 4) | SG (Note 4) | 6 (Note 5) |

* Indicates lead is spade-tipped; insulate and store.

† (BR) [S-G] line switch lead connects to terminal 5 of telephone set terminal board (terminal G of network for MD color code) when station busy circuit is not provided and to terminal 9 of telephone set terminal board when station busy lamp circuit (P-90D033 printed wiring board assembly) is provided (1A1 or 1A2 KTS only).

‡ Disconnect, insulate, and store (BL-V) chaining switch lead at this terminal.

() Current color code.

[] MD color code.

Notes:

1. Mounting cord lead colors in parentheses are in D120C or D200F even count cord; mounting cord lead colors in brackets are in D120B (MD) or D200B (MD) cord.
2. Ring (BL-V) [R] lead connects to (G) [S-Y] line switch lead through flash key contacts and terminals 2 and 8 of telephone set terminal board (even count color code) or terminals 1 and 4 of telephone set terminal board (MD color code). A1 (O-V) [Y] lead connects to (Y) [S-W] line switch lead at terminal 1 (even count color code) or terminal 5 (MD color code) of telephone set terminal board.
3. Roman numerals in parentheses indicate terminal board designations.
4. Terminal on terminal board VI.
5. Terminal on telephone set terminal board (VII).

NOTES: ASSOCIATED WITH FIG. 5

1. WITH 599A OR 657A KEY IN FIRST MODULE; SPADE TIPPED LEADS FROM KEY PLUG I AND MOUNTING CORD BINDER GROUP [w] ARE INSULATED AND STORED AS SHOWN.
WITH 599B OR 657B KEY IN FIRST MODULE; [G-BL] LEAD MUST BE REMOVED FROM A-H OF TBI, INSULATED AND STORED.
WITH 598A OR 656A KEY IN FIRST MODULE; STRAP A-H OF TBI TO TERMINAL G ON NETWORK.
CONNECT [S-BR] AND [G-BL] LEADS FROM KEY PLUG I TO A-H OF TBI.
TO EXTEND HOLD LAMP LEADS CONNECT [BR-Y] AND [BR-BK] KEY PLUGS LEADS TO [O-BL] AND [O-W] MOUNTING CORDS LEADS RESPECTIVELY USING SPARE TERMINALS OR D-161488 CONNECTORS.
2. FOR USE WITH 1A KEY SYSTEM ONLY, MOVE AI [Y] STRAP FROM IB TO SG ON TBVI AND MAKE CONVERSION SHOWN IN TABLE A.
3. FOR ADD-ON CONFERENCE CONTROL IN THE 6A KEY TELEPHONE SYSTEM, CONNECT [G-W] MOUNTING CORD LEAD (RED BINDER GROUP) TO TBVI-PB. ALSO REMOVE COMMON LEAD OF ADD-ON CONFERENCE BUTTON (CONVERTED TO SIGNALING) FROM A-H TERMINAL AND CONNECT TO PB. THE 617A KEY MAY ALSO BE USED IN A SIMILAR MANNER. ALSO SEE NOTE 4.
4. WHEN THE 617A KEY IS REQUIRED AS A DUAL-PURPOSE KEY, THE BRASS STRAP BETWEEN THE S1 AND SG TERMINALS OF THE KEY MAY BE REMOVED. USE MIW CORD OR EQUIVALENT TO CONNECT S1 TERMINAL OF 617A KEY TO A DISSIMILAR GROUND OR A NONGROUNDED CIRCUIT.
5. WHEN INSTALLING P-90D033 PRINTED WIRING BOARD ASSEMBLY TO PROVIDE STATION BUSY LAMP FEATURE IN 1A1 OR 1A2 KTS CONNECT A OR H LEAD [S-BL] FROM LAST KEY MODULE TO TERMINAL X OF TBVI. SEE FIG. 6.

* INSULATED AND STORED

DEAD ENDED

() CURRENT COLOR CODE

[] MD COLOR CODE

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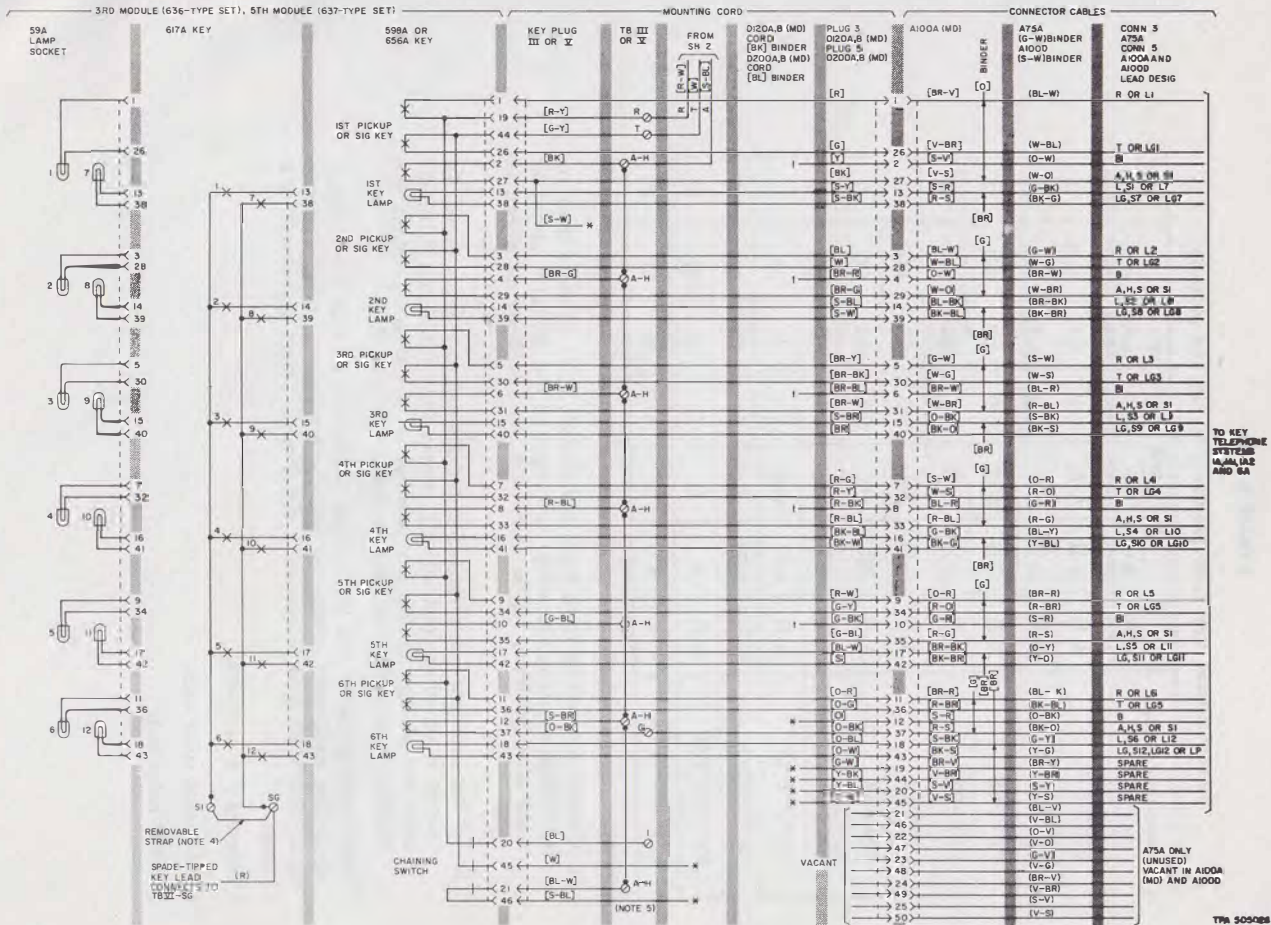


Fig. 5—Module Arrangement and Cord and Cable Connections for Sets Equipped with (MD) Mounting Cords (Sheet 3 of 3)

◆ TABLE B ◆

PICKUP-SIGNAL KEY CONVERSION (3RD OR 5TH MODULE)

| CONVERSION OPTIONS (NOTES) | 598A OR 656A KEY | | | | | | |
|-------------------------------|------------------|-----------------|-----------------|-------------------|-------------------|-----------------|-----------------|
| | (O-W) [BK] | (S-W) [BR-G] | (G-R) [BR-W] | (BL-BK) [R-BL] | (BR-BK) [G-BL] | (Y-O) [S-BR] | (O-Y) [O-BK] |
| PPPPPP | A-H | A-H | A-H | A-H | A-H | A-H | G |
| PPPPPS | A-H | A-H | A-H | A-H | A-H | SG | G |
| PPPPSS | A-H | A-H | A-H | A-H | SG | SG | G |
| PPSSSS | A-H | A-H | A-H | SG | SG | SG | G |
| PPSSSS | A-H | A-H | SG | SG | SG | SG | G |
| PSSSSS | A-H | SG | SG | SG | SG | SG | G |
| SSSSSS | SG | SG | SG | SG | SG | SG | G |
| PPPP*P*S | A-H | A-H | A-H | C | C | 5† | C |
| PPP*P*P*S | A-H | A-H | C | C | C | 5† | C |
| PP*P*P*P*S | A-H | C | C | C | C | 5† | C |
| P*P*P*P*P*S | C | C | C | C | C | 5† | C |

Notes:

1. Convert buttons on right hand key module first. If more than six (five with common signaling) are required use module preceding right hand position, repeat connection modifications as shown in table.
2. All key positions are arranged in the shop as pickup positions. To convert to signaling (nonlocking), remove the screw detail P-10E837 from the plunger at the key position to be converted. Make the necessary connection changes as shown in Table B.

* These arrangements use line switch controlled ground for common signal key used with private or intercommunicating lines. Common signal should be used to operate a signal relay. Do no wire directly to a buzzer.

† Terminal G in early sets.

() Current color code.

[] MD color code.

TABLE C

5998 (TURNKEY) KEY CONNECTIONS

| FEATURE | FIRST MODULE KEY LEADS | | | | | | SPADE-TIPPED LEADS OF MOUNTING CORD | | | | | |
|---|---|-----------------|----------------------------|-------------------------|-----------------|-----------------|-------------------------------------|-----------------|--------------------|-----------------|--------------------|--|
| | 5TH | | | 6TH | | | | | | | | |
| | R | T | A | R | T | A | (BL-Y) [O-R] | (Y-BL) [O-G] | (O-Y) [O-BK] | (Y-O) [S-BR] | (BR-BK) [G-BL] | |
| | (G-BK) [R-W] | (BK-G) [G-Y] | (BK-BR) [G-BL] | (BL-Y) [O-R] | (Y-BL) [O-G] | (Y-O) [O-BK] | | | | | | |
| Cutoff sta on 1A1 or 1A2 sys | To KTS Equip | | | To Ext Sta | | | Insulate and store | | | | | |
| Cutoff sta on 1A sys without hold feature | To KTS Equip | | | To Ext Sta | | | Insulate and store | | | | | |
| Cutoff station on 1A system with hold feature | To Aux Relay used to cut off T, R, B, and H | | | | | | Insulate and Store | | | SG* | SG* | |
| Cutoff external ringer or buzzer | To KTS Equip | | | To Ext Ringer or Buzzer | | | Insulate and Store | | | | | |
| Cutoff ringer in set (Note 1) | To KTS Equip | | | | | | 3† (Note 2) | A‡ (Note 2) | Insulate and Store | | | |
| Cutoff Buzzer in Set (Note 1 and 2) | AC Buzzer | | To BZ and BZ1 at KTS Equip | | | | | | A | C | Insulate and Store | |
| | DC Buzzer | | | | | | | | D | C | | |
| | Com. Audible | | | | | | | | Cap. | C | | |
| Monitoring | To MON Equip | | | | | | R TBI | T TBI | | | | |

* Terminal on TBVI.

† Terminal on telephone set terminal board.

‡ Terminal on set network.

() Current color code.

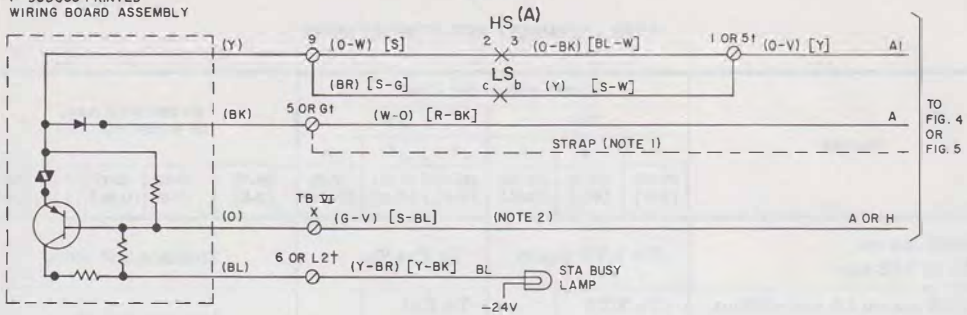
[] MD color code.

Notes:

1. Insulate and store BZ and BZ1 leads at buzzer or telephone set terminal board.
2. The (BL-Y) [O-R] and (Y-BL) [O-G] mounting cord leads should be insulated and stored at the equipment end when the bridged spade-tipped leads are used in the set.

SECTION 502-610-410

P-90D033 PRINTED
WIRING BOARD ASSEMBLY



NOTES:

1. WITH 598A OR 656A KEY IN FIRST MODULE EXTEND "A" LEAD FROM TBI TERM 5 ON CURRENT SETS OR NETWORK TERM. G ON EARLY SETS.
 2. FROM LAST MODULE.
- () CURRENT COLOR CODE
[] MD COLOR CODE

* STORED LOCATION

† NETWORK TERMINAL, EARLY PRODUCTION SETS ONLY.

LEGEND

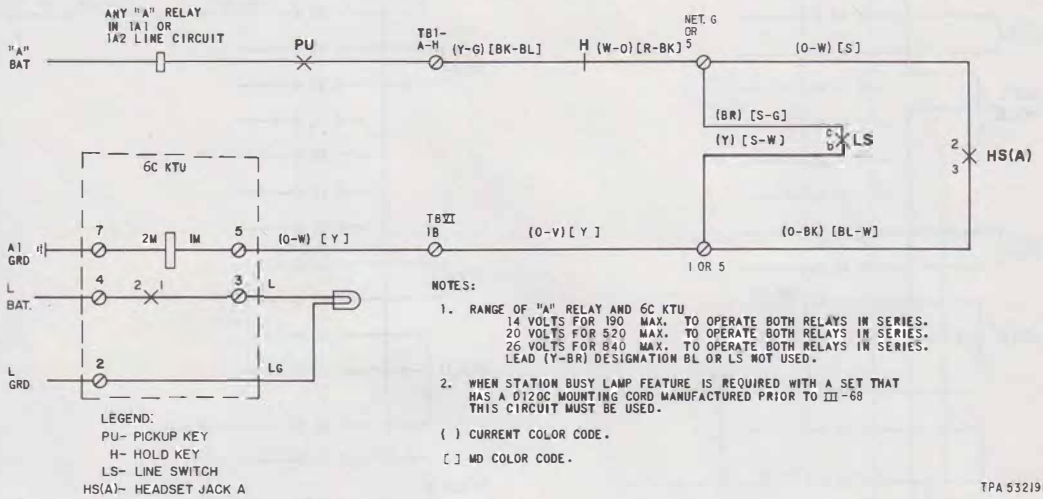
HS (A) - HEADSET JACK A

LS - LINE SWITCH

| MODIFICATION | | | |
|-------------------------------|----------------------------|-------------|---|
| WIRE OR LEAD | COLOR | REMOVE FROM | CONNECT TO |
| P-90D033 PRINTED WIRING BOARD | (Y) (BK) (O) (BL) | | TB VII - 9 5 OR G† TB VII - X 6 OR L2† |
| HEADSET JACK (A) | (O-W) [S] | 5 OR G† | TB VII - 9 |
| LINE SWITCH | (BR) [S-G] | 5 OR G† | TB VII - 9 |
| CHANNING SWITCH (LAST MODULE) | (G-V) [S-BL] | * | TB VII - X |

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◆ Fig. 6—Station Busy Lamp Circuit Using Printed Wiring Board Assembly ◆



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Fig. 7—Busy Lamp Control Circuit with 6C KTU

