

PLEASE NOTE AND RETURN:
BARNETT, R. G. 9
COLLINS, A. W. 9
GRAY, J. E. 9
MILLER, R. W. 11
MOORE, H. T. 10
KLAUS, M. J. 10
SCHMIDT, W. F. 0

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TELEPHONE SETS
660 AND 663 TYPES

IDENTIFICATION, INSTALLATION, AND MAINTENANCE

1. GENERAL

1.01 The 660- and 663-type telephone sets are desk-type, card dialer sets which provide for automatic and manual dialing (Fig. 1 and 2). They are similar in appearance and operation and provide for the following optional features:

- Exclusion (660-type).
- Operation with 3-type speakerphone (660-type).
- Handset or headset operation (663-type).

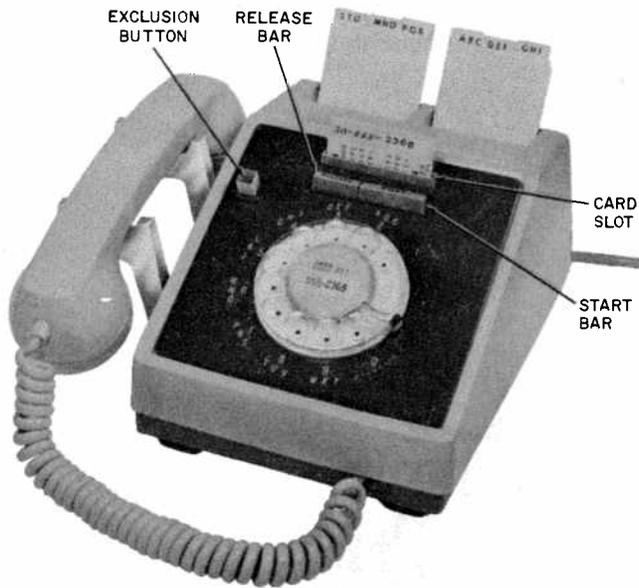


Fig. 1—660-Type Telephone Set

1.02 This section replaces the identification, installation, and maintenance information formerly found in Section 502-660-120, Issue 4 which is canceled.

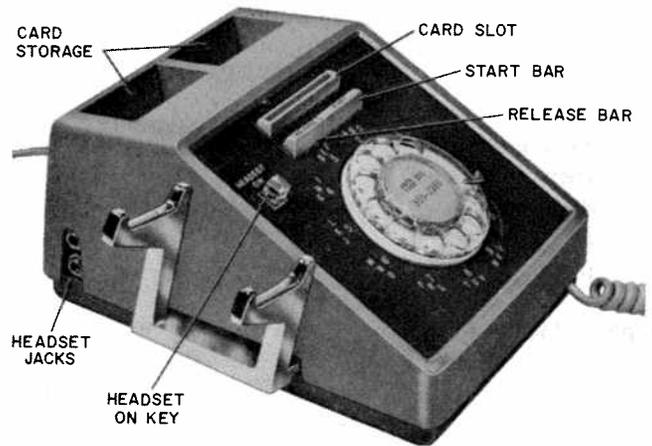


Fig. 2—663-Type Telephone Set

1.03 These sets are furnished wired for individual or bridged, and ring and tip party service. With wiring changes they may be used for tip party identification or with 1A1 or 1A2 key telephone systems.

1.04 These sets have electrical and transmission characteristics equivalent to 500-type sets and are available in all standard colors. Refer to Section 500-120-100 for promoted and nonpromoted colors.

1.05 For connection information refer to the appropriate connection section for the particular set.

2. IDENTIFICATION

2.01 Common major components of these sets are:

- Dials (8C-58 and 41-type)
- Handset (G3AR-*)
- Network (4010B)

SECTION 502-660-101

- Ringer (C4A)
 - Switch hook assembly (P-24E277)
- * Add two-digit color suffix.

2.02 The 660- and 663-type telephone sets are equipped with both an 8C and a 41-type dial (Fig. 3 and 4). The 41-type dial is an electromechanical dial driven by an ac synchronous motor. Refer to Section 501-163-101 for detailed description and power supply selection for the 41-type dial.

Note: Sets manufactured before June, 1966 were equipped with the 41A dial. Sets marked with an asterisk following the set code or a manufacture data of 6-66 or later are equipped with the 41B dial. These dials have different power requirements.

2.03 The 41-type dial is operated by inserting a coded card in the card slot and depressing the START bar. The card is fed past the reader mechanism, and the coded portion of the card controls the output of the dial. If the user wishes to stop the call during the automatic dialing process,

depressing the RELEASE bar will eject the card without further pulsing.

2.04 Two P-24E238 packages, each containing twenty code cards, and one P-13E363 card index set consisting of nine alphabetical spacer cards are furnished with each set.

2.05 The volume of the C4A ringer is adjustable in four steps by use of the volume control wheel (accessible from the bottom of the set). Ringer cutoff can be provided by bending the stop tab and moving the volume control wheel to a fifth step.

2.06 The exclusion feature, if provided, is actuated by pulling up on the plastic button at the top left of the faceplate (Fig. 1). The exclusion switch is connected to the switch hook assembly by a wire link so that exclusion is canceled when the handset is restored.

2.07 The 660A1 set can be converted to provide exclusion by installing a kit of parts (Table A). A D10R mounting cord, of the proper color, must also be ordered separately.

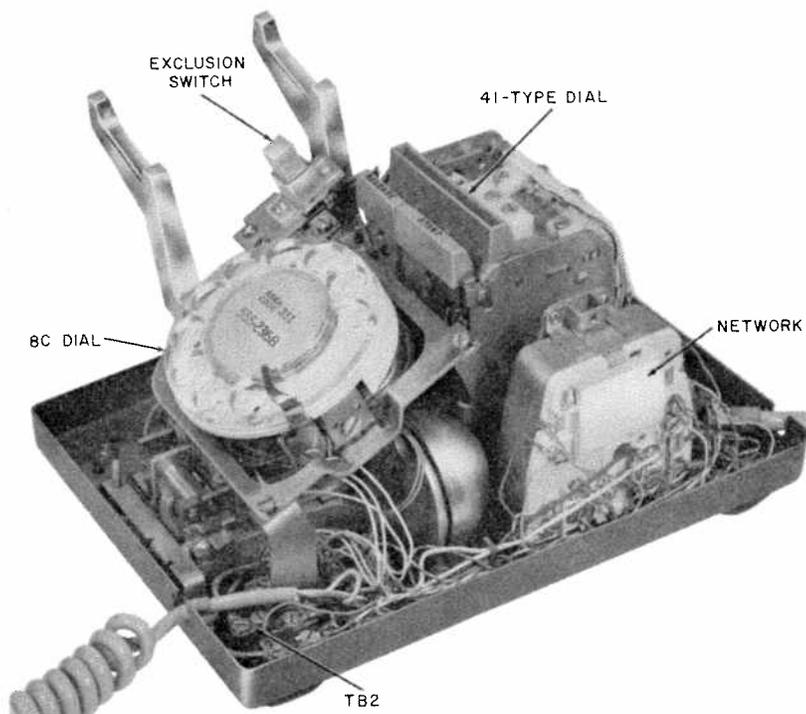


Fig. 3—660-Type Telephone Set, Housing Removed

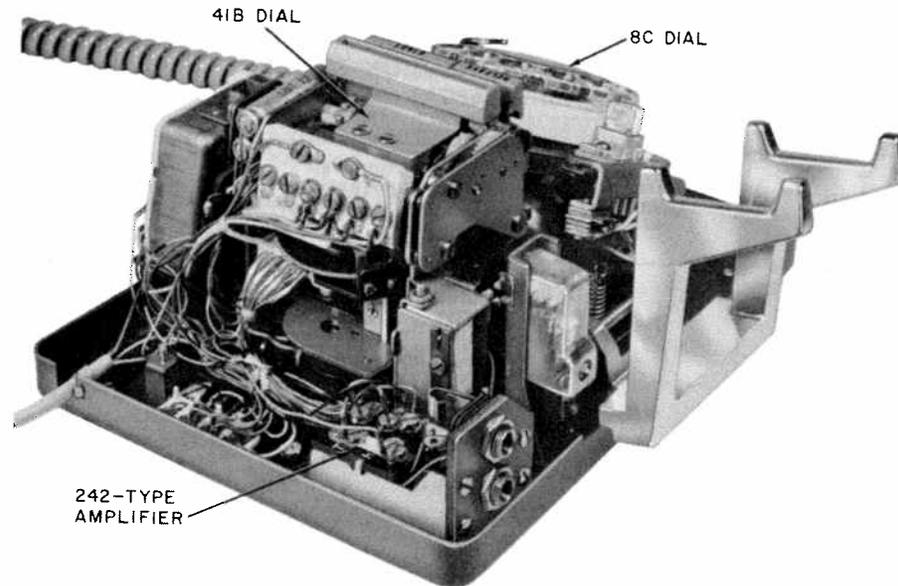


Fig. 4—663-Type Telephone Set, Housing Removed

2.08 The 663A1 set is equipped with an amplifier and headset jacks to permit either handset or headset operation (Fig. 4). The HEADSET ON key is located at the top left of the faceplate (Fig. 2). No provision is made for exclusion in these sets.



A 52- or 53-type headset must be ordered separately. The type of headset should be determined by customer requirements.

2.09 Table B contains piece part information for the 660- and 663-type telephone sets.

3. INSTALLATION

Caution: *Never connect 48-volt test battery across tip and ring of set without placing a current limiting resistor in series with the battery. Use a KS-13490, List 1 (1000 ohm 1/2 watt) resistor or equivalent. Failure to do so will result in damage to the pulsing switch or the start switch of the 41-type dial.*

3.01 Insofar as possible, be guided by the customer's wishes when placing apparatus. Consider the following:

- Safety for yourself, customer, and maintenance personnel.
- Availability of power outlet for 41-type dial power supply.
- Convenience to the user.
- General appearance of installation.

EXCLUSION

3.02 To add exclusion to 660A1 telephone sets:

- (1) Remove housing and 8C dial.
- (2) Attach exclusion switch assembly to dial adapter with two screws provided (Fig. 5).
- (3) Dress exclusion switch leads along left side of 41-type dial and between control relay and switch hook assembly so that terminal board is in position at rear of set.
- (4) Connect wire link to exclusion switch assembly by placing end of wire link having two 90 degree bends into hole provided in switch assembly (Fig. 5). Start wire link from left side of assembly.

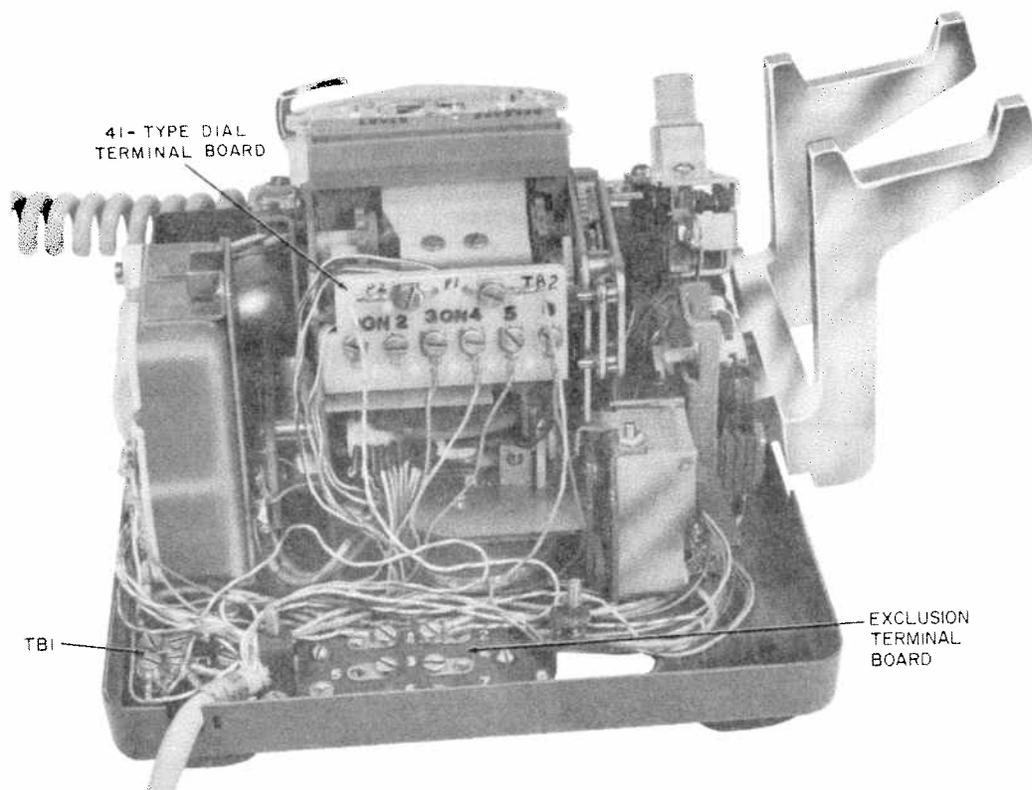


Fig. 6—660-Type Telephone Set, Terminal Boards

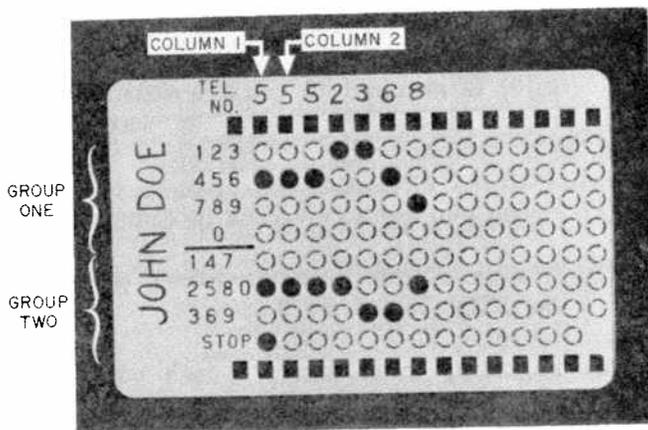


Fig. 7—Card Coded for 7-Digit Telephone Number

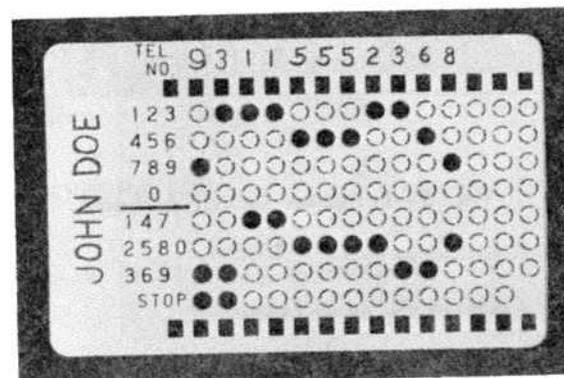


Fig. 8—Card Coded for Access Code (9), Stop, Area Code (311), and 7-Digit Telephone Number

4.02 Maintenance of the card dialer is limited to the following:

(a) **Sticking cards:** make visual inspection of dial for loose parts or wires which might interfere with dial mechanism.

(b) **Foreign material:** check for material such as paper clips, hairpins, etc., lodged in card slot.

(c) **Faulty cards:** check cards for proper size by comparing with a working card. Replace bent or mutilated cards.

TABLE B

PIECE PART ORDERING GUIDE

SET CODE*	HOUSING*	MOUNTING CORD*	EXCLUSION SWITCH ASSY	HEADSET KEY ASSY	AMPLIFIER	FACEPLATE†	SUPERSEDED FACEPLATE
660A1	P-82B0__	D6AF__				P-89F3__	P24E979 P25E605
660A2		D1OR__	P-24E671			P-89F4__	P24E978 P25E604
663A1	P-87C2__	D6AF__		P-26E785	242B or 242A (MD)	P-89F5__	P26E820 P27E707

* Add color suffix.

† Refer to Table A for appropriate color suffix for coordinated or matching color faceplate.

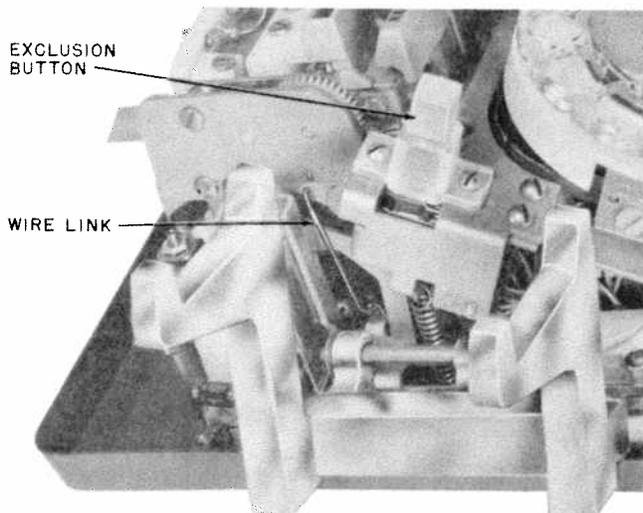


Fig. 5—Exclusion Switch Assembly

3.05 Code cards as follows:

- (1) Write name and telephone number in spaces provided as shown in Fig. 7 and 8.
- (2) Convert exchange letters to numbers. For example: use 2 for A, B, or C; 7 for P, R, or S; etc.

Note: There are two groups of numbers 1 through 0 on the card. (See Fig. 7).

- (3) In Fig. 7 the first digit of the telephone number is 5. In column 1, locate digit 5 in the first group of numbers and punch out the perforation with a pencil or ballpoint pen. In

the same column, locate digit 5 in the second group of numbers and again punch out the perforation.

Note: The STOP in column 1 is already punched.

- (4) Repeat this procedure for each digit in the telephone number. The digit 0 must be punched out in each group of numbers just as any other digit.

- (5) For DDD calls, punch out the access code.

3.06 On a PBX extension where a code (such as 9) is required to reach a central office line, prepare a card for dialing an access code (Fig. 8) as follows:

- (1) Punch out the access code in column 1.
- (2) If a second dial tone is required, punch out the STOP in column 2.
- (3) Beginning in column 2, punch out in the regular manner the directing or area code, if any, and telephone number.

3.07 Check card before using to be sure it is properly punched for the number desired. There should be at least two holes in each column, three if stop is needed. Punch holes out completely.

4. MAINTENANCE

- 4.01** See appropriate sections for maintenance of components such as handset, ringer, dials, etc.

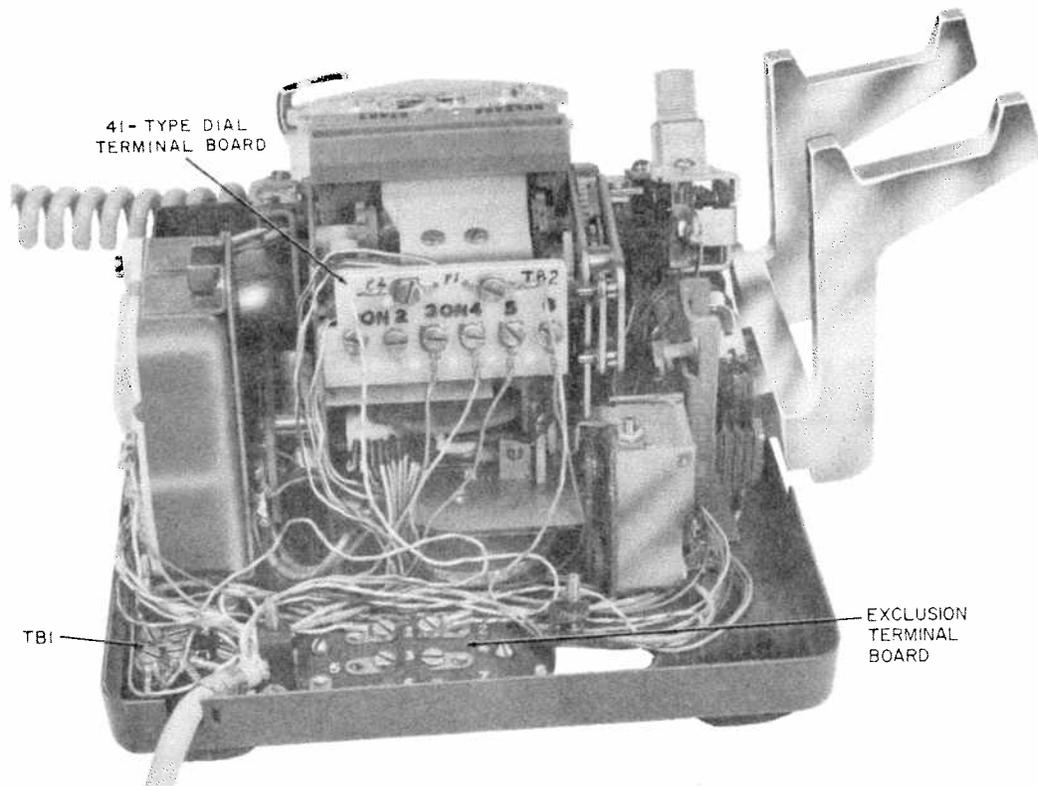


Fig. 6—660-Type Telephone Set, Terminal Boards

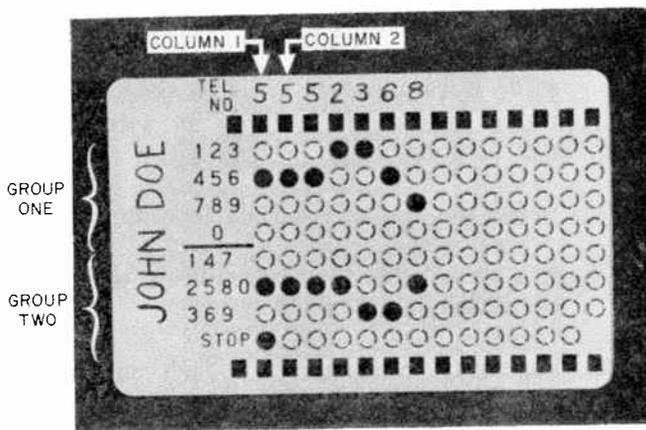


Fig. 7—Card Coded for 7-Digit Telephone Number

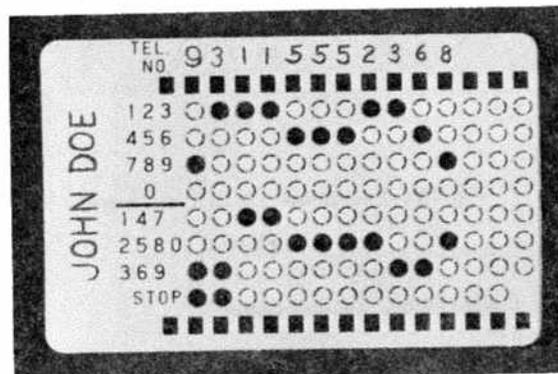


Fig. 8—Card Coded for Access Code (9), Stop, Area Code (311), and 7-Digit Telephone Number

4.02 Maintenance of the card dialer is limited to the following:

(a) **Sticking cards:** make visual inspection of dial for loose parts or wires which might interfere with dial mechanism.

(b) **Foreign material:** check for material such as paper clips, hairpins, etc., lodged in card slot.

(c) **Faulty cards:** check cards for proper size by comparing with a working card. Replace bent or mutilated cards.

(d) **Inoperative dial:** verify that proper voltage is present at dial.

(e) **Wrong numbers:** verify coding of card. Check at least twice on line with a test code card. Check operation of rotary dial in the normal manner.

4.03 If tests indicate trouble in the 41-type dial, replace dial.

Note: Do not make any adjustments on 41-type dial in the field.

FACEPLATE REMOVAL

4.04 Remove faceplate as follows:

- (1) Place KS-16750, List 2 releaser at edge of faceplate catch.
- (2) Push catch toward rear of set until releaser enters notched portion of faceplate.
- (3) Turn point of releaser under faceplate and raise.

Note: When replacing faceplate, use releaser to hold catch until faceplate is in position.

HOUSING REMOVAL

4.05 To remove housing, loosen four captive screws through access holes in base of set.

8C DIAL REMOVAL AND REPLACEMENT

4.06 To remove 8C dial:

- (1) Loosen three screws holding dial adapter.
- (2) Shift dial to left until adapter clears screws.
- (3) Lift dial straight up and out. On sets with exclusion, disengage wire link from switch hook assembly.

4.07 To replace 8C dial:

- (1) Remove dial as shown in 4.06.
- (2) Disconnect spade-tipped dial leads.

(3) Loosen two screws holding dial to adapter and remove dial.

(4) Secure replacement dial on adapter making sure that dial is properly positioned.

(5) Connect dial leads.

(6) On sets with exclusion, start wire link from exclusion switch into hole on switch hook assembly (Fig. 5).

(7) Slide slots of dial adapter under dial mounting screws.

(8) Move dial to right as far as possible and tighten screws.

(9) Check operation of 8C dial and exclusion switch, if provided.

41-TYPE DIAL REPLACEMENT

4.08 To replace 41-type dial:

- (1) Temporarily disconnect 18-volt ac power supply to dial.



If dial receives its power from a common source such as 101G power supply, take care that other services are not affected.

(2) Disconnect wiring from terminal strip on rear of dial (Fig. 6).

(3) Turn set on side and remove three screws holding dial to baseplate. Dial can now be removed.

(4) Place new dial in position taking care not to pinch any wiring between dial and baseplate.

(5) Fasten dial to baseplate with three mounting screws.

(6) Reterminate leads to dial on terminal strip.

(7) Reconnect power supply.

(8) Using properly coded card, check operation of the dial.

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RINGER REPLACEMENT

4.09 To remove C4A ringer:

- (1) Remove set housing as shown in 4.05.
- (2) Remove 8C dial as shown in 4.06.

(3) Disconnect ringer leads from TB1.

(4) Remove two screws holding ringer to base and remove ringer.

4.10 To replace ringer, reverse procedure shown in 4.09.