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## TELEPHONE SETS 662 AND 664 TYPES

### IDENTIFICATION, INSTALLATION, AND MAINTENANCE

#### 1. GENERAL

1.01 The 662- and 664-type telephone sets are desk-type, card dialer, 6-button key 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 (662-type)
- Operation with 3-type speakerphone (662-type).
- Handset or headset operation (664-type).

1.02 This section replaces the identification, installation, and maintenance information formerly found in Section 502-662-120, Issue 5 which is canceled.

1.03 These sets are designed for use in 1A, 1A1, 1A2, and 6A key telephone systems. They are furnished wired for 1A1 and 1A2 systems and are equipped for 5-line pickup and holding on central office, PBX, and private or intercommunicating lines.

1.04 These sets have electrical and transmission characteristics equivalent to 500-type sets



Fig. 1—662-Type Telephone Set



Fig. 2—664-Type Telephone Set

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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-\*)
- Key (599A; 598A or 599B optional)
- Mounting cord (D50K-\*)
- Network (4010-type)
- Ringer (N1A)
- Switch hook assembly (P-24E277)

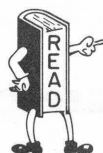
\*Add appropriate color suffix.

**2.02** These sets can be converted to provide other key features by replacing the 599A key. Table A lists the set codes, key options and features provided.

**2.03** Exclusion feature can be provided on the 662-type sets by installing a kit of parts. The addition of exclusion converts set codes 662A1, 662A2, and 662A3 to 662A4, 662A5, and 662A6 respectively. Table B lists the conversion kit part information.

**2.04** Exclusion, if provided, is actuated by pulling up on the plastic button at the top left of the faceplate. The exclusion switch is connected to the switch hook assembly by a wire link so that exclusion is canceled when the handset is restored.

**2.05** The 664-type telephone sets are equipped with an amplifier and headset jacks to permit either handset or headset operation (Fig. 3). 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 headset should be determined by customer requirements.*

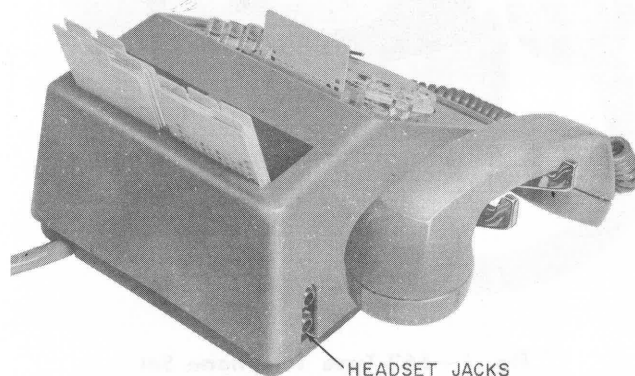
**2.06** Table C lists piece part information for these sets.

**TABLE A**

**KEY FEATURE OPTIONS**

TEL SET*	KEY	FEATURES
662A1 664A1	599A	5-line pickup, hold, all pickup keys convertible for signaling.
662A2 664A2	598A	6-line pickup, no hold, all pickup keys convertible for signaling.
662A3 664A3	599B	4-line pickup, hold, cutoff by turn key, all pickup keys convertible for signaling.

\* The sets are factory wired as A1 code only; for other codes replace the 599A key with the required key.



**Fig. 3—664-Type Telephone Set, Rear View**

**TABLE B**  
**ORDERING GUIDE**  
**TO PROVIDE EXCLUSION FEATURE**  
**(CONVERTING 662A1 TO 662A4; 662A2 TO 662A5; 662A3 TO 662A6)**

SET COLOR*	KIT NUMBER†	COORDINATED COLOR FACEPLATE‡	
		COLOR	PART NUMBER
Black (-03)	D-180178	Charcoal (-70)	P-89F770
Green (-51)	D-180179	Light Green (-71)	P-89F771
Red (-53)	D-180297	Muted Red (-69)	P-89F769
Yellow (-56)	D-180180	Light Yellow (-72)	P-89F772
White (-58)	D-180181	Light Gray (-73)	P-89F773
Rose Pink (-59)	D-180182	Muted Pink (-74)	P-89F774
Light Beige (-60)	D-180183	Muted Beige (-75)	P-89F775
Light Gray (-61)	D-180178	Charcoal (-70)	P-89F770
Aqua Blue (-62)	D-180184	Muted Blue (-76)	P-89F776
Turquoise (-64)	D-180185	Muted Turquoise (-77)	P-89F777

\* Refer to Section 500-112-100 for promoted and nonpromoted colors.

† The listed kits replace the D-179887 Kit of Parts which is rated MD.

‡ Coordinated color faceplates are furnished with the conversion kits.

**TABLE C**  
**PIECE PART ORDERING GUIDE**

SET CODE*		KEY	HOUSING*	EXCLUSION SWITCH ASSEMBLY	HEADSET KEY ASSEMBLY	AMPLIFIER	FACEPLATE
662	A1 A2 A3	599A 598A 599B	P-82B0-				P-13E059 (MD) or P-89F6-*
	A4 A5 A6	599A 598A 599B		P-24E671			P-24E672 (MD) or P-89F7-*
664	A1 A2 A3	599A 598A 599B	P-87C0-		P-26E785	242A (MD) or 242B	P-26E801 (MD) or P-89F8-*

\* Add appropriate color suffix.

**2.07** The 662- and 664-type sets are equipped with both an 8C and a 41-type dial (Fig. 4 and 5). The 41-type dial is an electromechanical, automatic card 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 date of 6-66 or later are equipped with the 41B dial. These dials have different power requirements.

**2.08** 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.

**2.09** 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 telephone set.

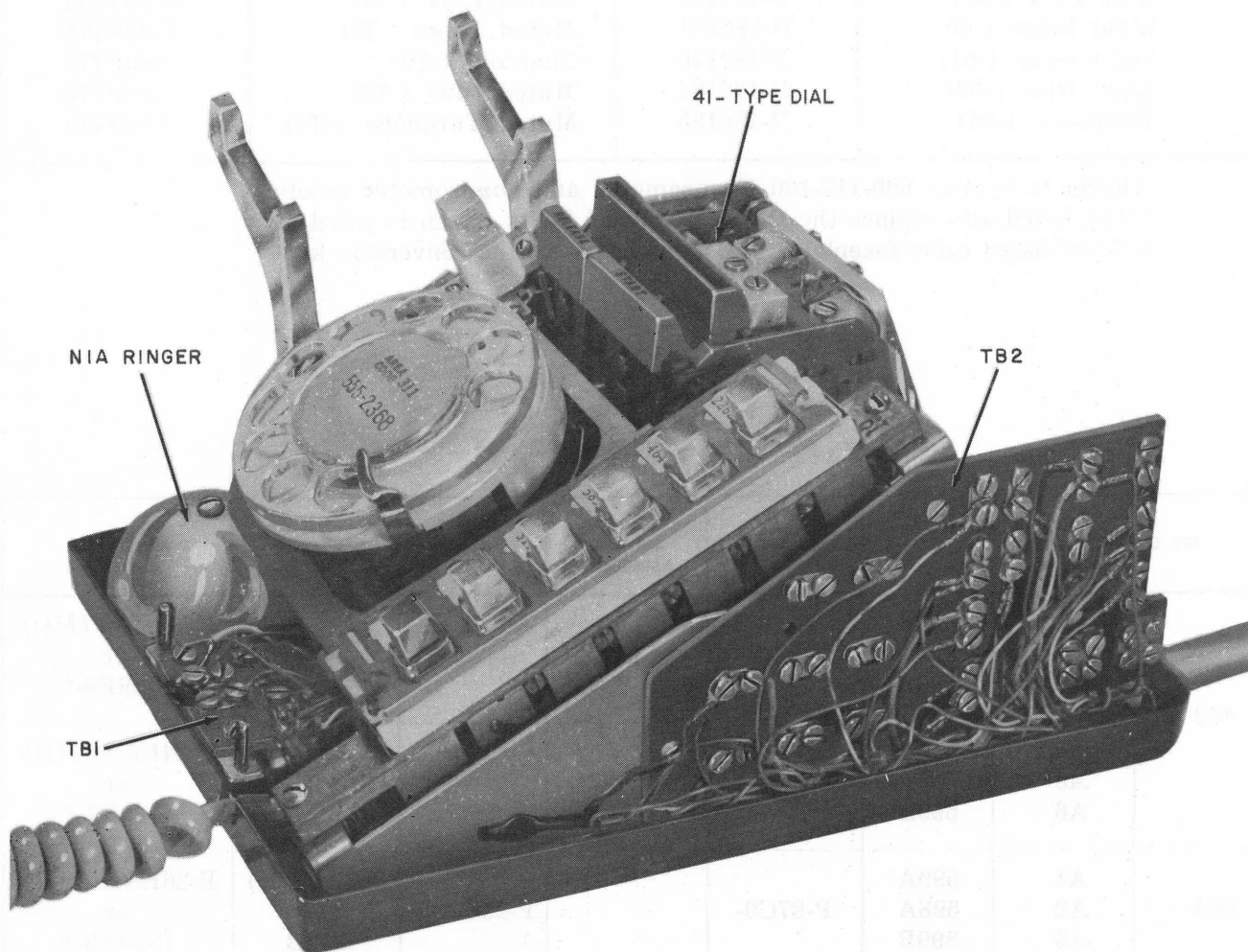
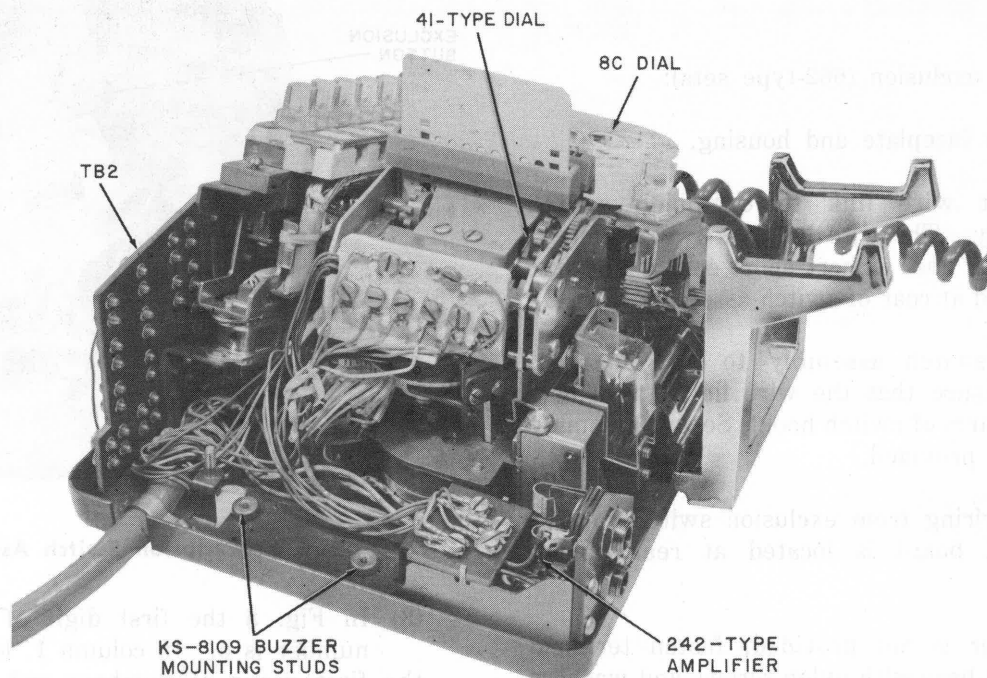


Fig. 4—662-Type Telephone Set, Housing Removed



**Fig. 5—664-Type Telephone Set, Housing Removed**

### OPTIONAL FEATURES

**2.10** the NIA ringer can be used as a common audible signal or an individual line ringer. Ringer volume is adjustable by use of the volume control accessible from the bottom of the set. Ringer cutoff can be provided by removal of the volume control stop screw through an access hole in the base of the set.

**2.11** A KS-8100 type buzzer can be added to these sets for use as a second audible signal. The insulating mounting screws and washers are furnished as part of the telephone set.

### 3. INSTALLATION

**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.
- Convenience to the user.
- General appearance of installation

**3.02** The 662- and 664-type telephone sets are installed in accordance with standard practice for desk-type 6-button key telephone sets. Refer to appropriate connection section for specific connections and wiring options.

**3.03** One sheet of perforated blank designation strips (P-44E129) is supplied with each set.

#### KS-8109 TYPE BUZZER

**3.04** To add a KS-8100 type buzzer:

- (1) Remove faceplate and housing.
- (2) Remove nylon screws and fiber washers from base at rear of set.
- (3) Secure buzzer to base of set with nylon screws, placing insulating spacer and fiber washers between buzzer and base. If exclusion is provided see 3.05(6).
- (4) Make necessary buzzer connections (refer to appropriate connection section).
- (5) Reinstall housing and faceplate.



## EXCLUSION

## 3.05 To add exclusion (662-type sets):

- (1) Remove faceplate and housing.
- (2) Connect wire link to exclusion switch assembly. The wire link has two 90 degree bends at each end. Insert short end of link into hole provided at rear of switch assembly (Fig. 6).
- (3) Mount switch assembly to dial adapter, making sure that the wire link enters hole provided in arm of switch hook. Secure assembly with screws provided.
- (4) Dress wiring from exclusion switch so that terminal board is located at rear of set (Fig. 7).
- (5) If buzzer is not provided, fasten terminal board to base with nylon screws and washers furnished with set. Place one washer between terminal board and base.
- (6) If buzzer is provided, make connections to exclusion terminal board before fastening to base. Mount buzzer above terminal board with insulating spacers between buzzer and terminal board to prevent electrical interference (Fig. 7).
- (7) Make connections to exclusion terminal board as shown in Section 502-660-402.
- (8) Reinstall housing and replace faceplate with one supplied in kit of parts.
- (9) Check for proper operation of set and exclusion feature.

## CODING CARDS

## 3.06 Code cards as follows:

- (1) Write name and telephone number in spaces provided as shown in Fig. 8 and 9.
- (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 (Fig. 8).

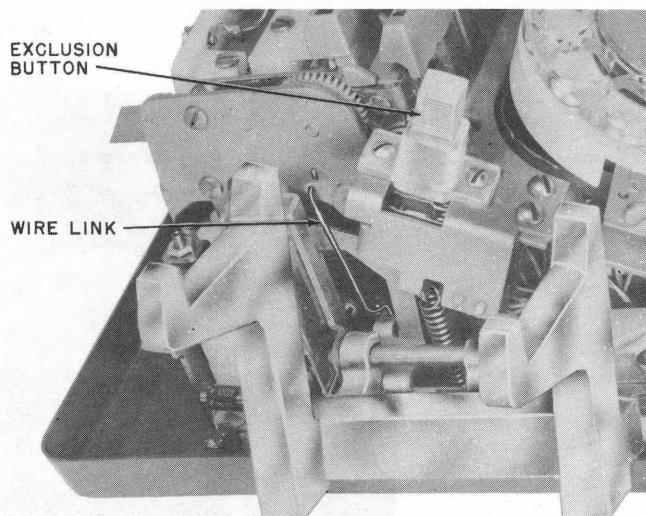


Fig. 6—Exclusion Switch Assembly

- (3) In Fig. 8 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.



**Do not punch STOP following the last digit. (A stop is only used for certain operations requiring an interruption in the automatic dialing process.)**

**3.07** In certain PBX systems, it may be necessary to dial an access code to obtain central office dial tone. To prepare a card (Fig. 9) proceed 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 the telephone number.

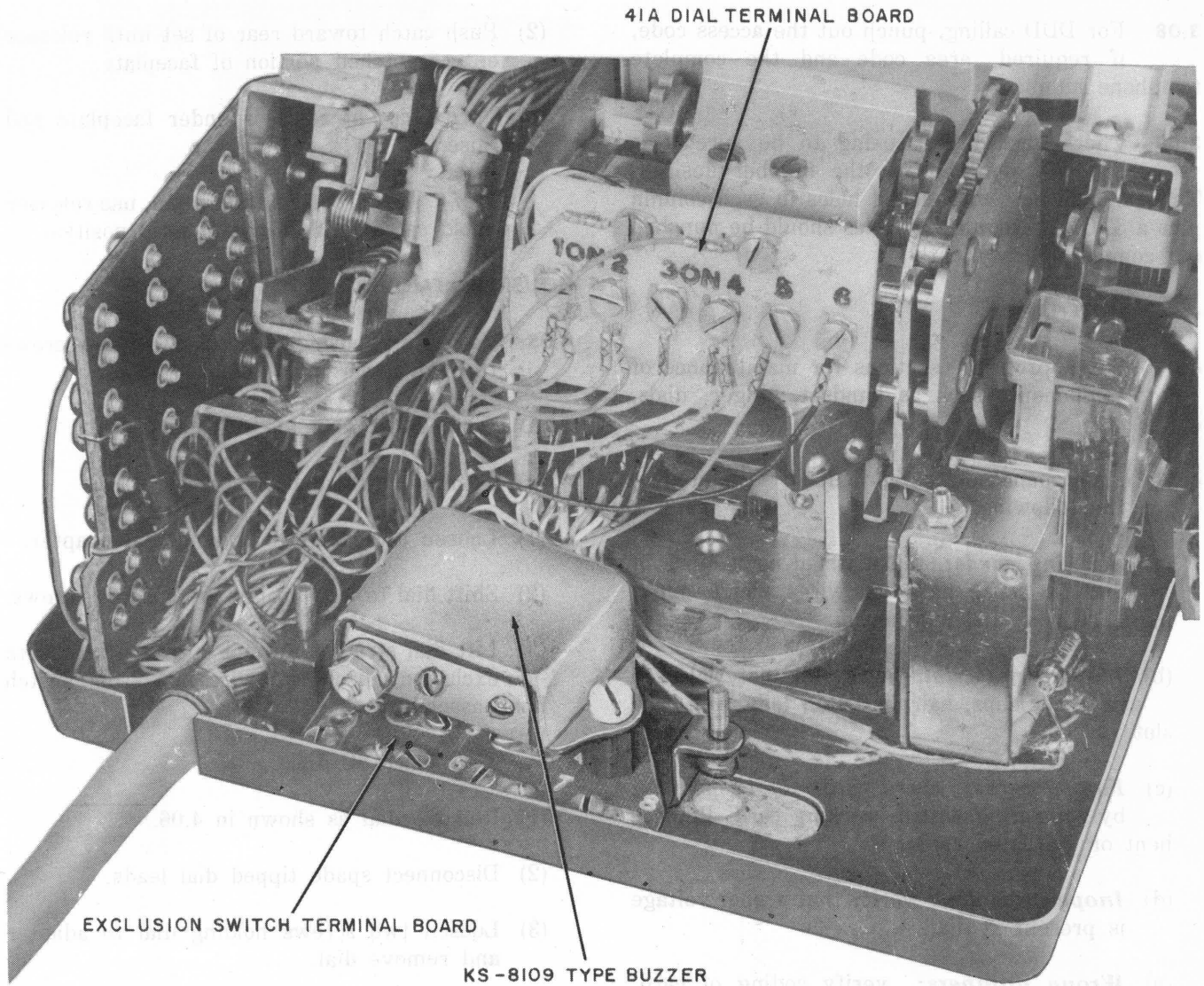


Fig. 7—Location of Buzzer and Exclusion Terminal Board in 662-Type Telephone Set

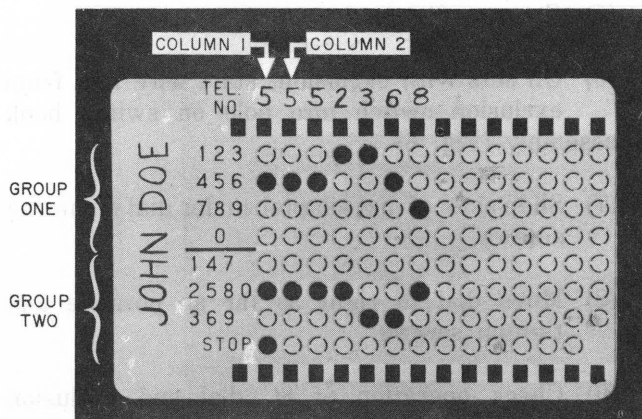


Fig. 8—Card Coded for 7-Digit Telephone Number

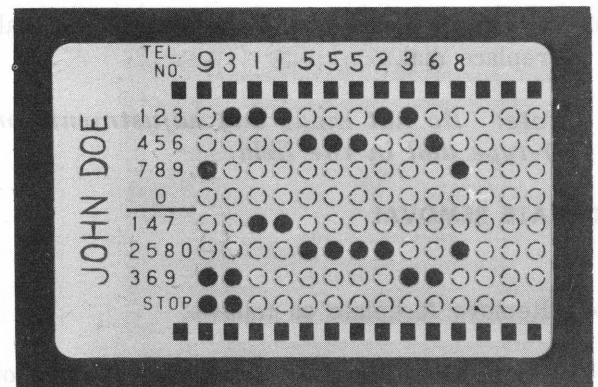


Fig. 9—Card Coded for Access Code (9), Stop, Area Code (311), and 7-Digit Telephone Number

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**3.08** For DDD calling, punch out the access code, if required, area code and the complete telephone number.

**3.09** Check card before using to be sure it is properly punched for the number desired. There should be two punched holes in each column plus a STOP, if required. Holes should be punched out completely and neatly.

### 4. MAINTENANCE

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

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

- (a) **Sticking cards:** make visual inspections 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.

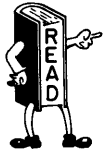
**4.07** To replace 8C dial:

- (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. 6).
- (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. 7).
- (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.

**RINGER REPLACEMENT****4.09** To remove N1A 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.