

BELL SYSTEM PRACTICES
Station Installation and Maintenance

SECTION C32.561
Issue 1, August, 1954
AT&T Co Provisional

TELEPHONE SETS

540 AND 560 TYPES

MAINTENANCE AND SUPPLIES

1. GENERAL

1.01 This section covers maintenance requirements for those features which are peculiar to 540- and 560-type telephone sets and includes a list of supply parts which might be required for maintenance.

1.02 The maintenance of handsets, dials, ringers, and other components common to 500 series telephone sets will be the same as for 500- and 501-type sets. See Section C32.539, 500 Series Telephone Sets (500 and 501 Type) Maintenance.

2. MAINTENANCE

2.01 To avoid damage to or binding of parts, 540- and 560-type sets should be handled with care when set housings are removed or replaced.

2.02 Sets without exclusion:

(a) To remove housing, loosen two lock screws located in front and rear portion of base. Lift housing up and toward front end of set.

(b) To replace housing, guide lower front portion of housing over push buttons, align housing with base of set, and gently press housing into place. Secure two lock screws in base of set.

2.03 Sets with exclusion:

(a) To remove housing, pull exclusion plunger up to its operated position, loosen two lock screws located in front and rear portion of base, and lift housing up and toward front end of set.

(b) To replace housing, hold exclusion plunger in its uppermost position, guide lower front portion of housing over push buttons, align housing with base of set, and gently press housing into place. Depress exclusion plunger. This plunger should snap downward into its unoperated position when very slight pressure is placed upon it. Operate exclusion plunger several times to insure that it is functioning properly. Secure two lock screws in base of set.

2.04 Fig. 1 illustrates items that are peculiar to 540-type sets. (560-type sets have similar parts.)

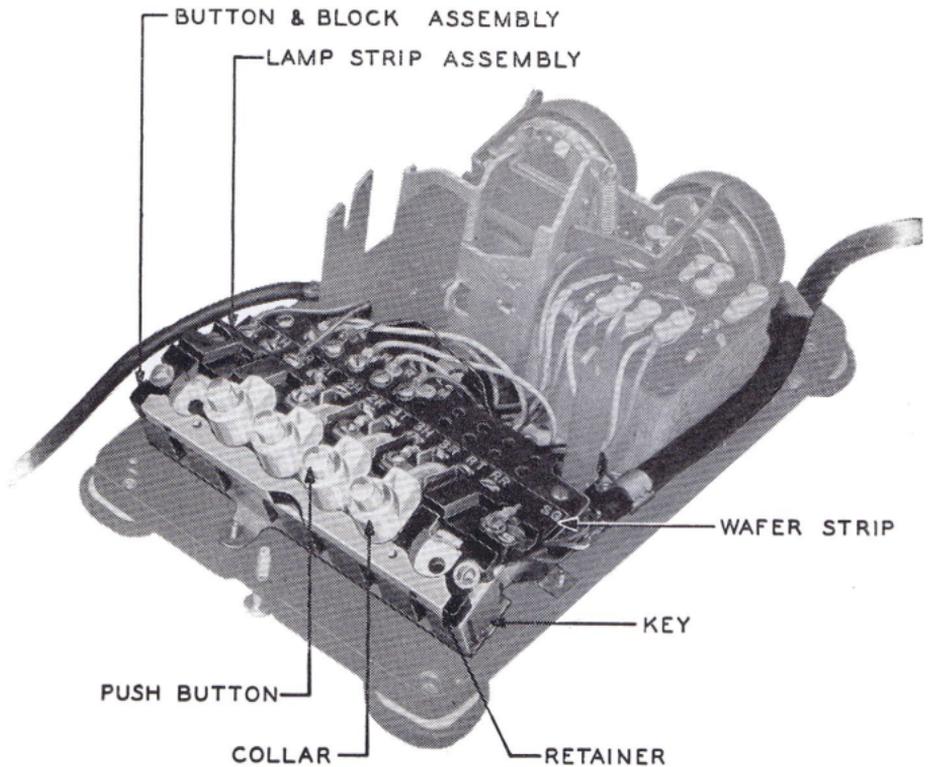


Fig. 1—540-type Set (Interior View)

2.05 Table A lists certain apparatus components which are peculiar to the 540- and 560-type telephone sets. It is included for reference purposes.

TABLE A

Tel Set Code	Key Features	Button and Block Assembly	Housing Assembly	Lamp Strip Assembly	Exclusion Switch Assembly	Window Strip Assembly	Mounting Cord	Term. Strip and Key
540BA/BB	HPPP	P-19B676	P-19B535			P-17A101	D14D-3	588A
544AA/AB	PPPP ^S	P-19B676	P-19B535	P-19B674		P-17A101	D25A-3	588C
544BA/BB	HPPP ^S	P-19B676	P-19B535	P-19B673		P-17A101	D19A-3	588B
545BA/BB	HPPP ^S	P-19B676	P-19B597	P-19B673	P-19B600	P-17A101	D24B-3	588B
564BA/BB	HPPPPP	P-19B677	P-19B536	P-19B675		P-17A102	D28A-3	589A
564CA/CB	HPPPPS	P-19B677	P-19B536	P-19B674		P-17A102	D25A-3	589D
564DA/DB	HPPSS	P-19B677	P-19B536	P-19B674		P-17A102	D25A-3	589E
565AA/AB	PPPP ^S PP ^S	P-19B677	P-19B598	P-19B532	P-19B600	P-17A102	D34A-3	589C
565BA/BB	HPPP ^S PP ^S	P-19B677	P-19B598	P-19B675	P-19B600	P-17A102	D34A-3	589B
565EA/EB	HPPPP ^S C	P-19B678	P-19B598	P-19B674	P-19B600	P-17A102	D31A-3	589F

H = Hold
P = Pickup
S = Signal
C = Cutoff
P^S = Pickup Convertible to Signal

Cords

2.06 To change a mounting cord on 540- and 560-type telephone sets, first remove the dial from its mounting bracket. **Remove** the screws which pass through the holes in the wafer strip. (Guard against loss of these screws.) Remove spade-tipped conductors in the usual manner. Then disengage the cord from the right-hand leg of the dial mounting bracket.

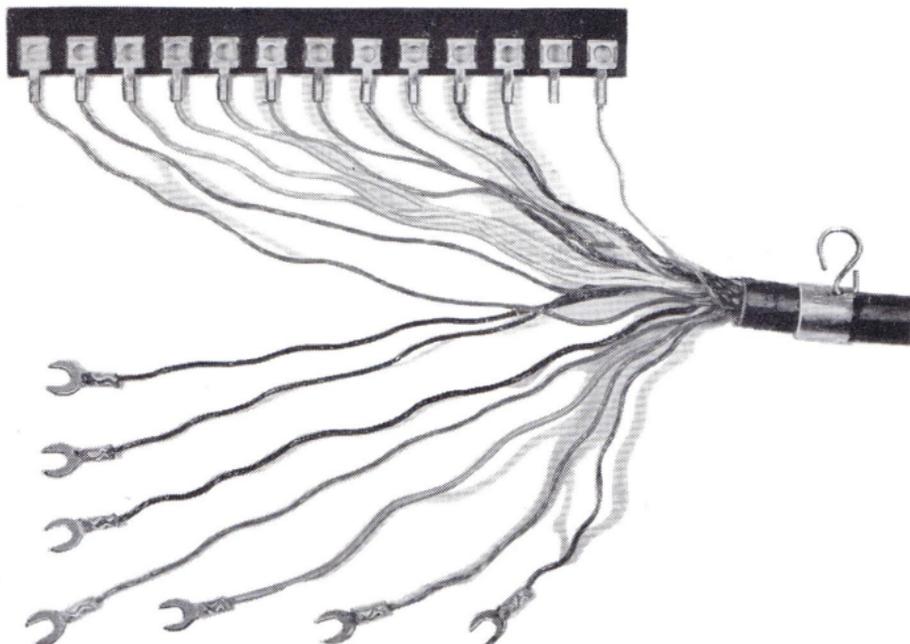


Fig. 2—Wafer Strip End of Mounting Cord

Exclusion Switch Assembly

2.07 The exclusion switch plunger shall remain in the operated position when pulled up to the full extent of its stroke. When the handset is restored, the exclusion switch plunger shall return to its normal, fully depressed position.

2.08 If the plunger fails to remain in its fully raised, operated position, check for a broken plunger or a damaged exclusion switch. If either is defective, replace the set.

2.09 If the plunger does not drop from the weight of the restored handset, or if it fails to release from its fully depressed position when the handset is raised, carefully remove the set housing and replace it per 2.03 (b) of this practice, to correct possible misalignment of parts.

2.10 The contacts on the exclusion switch assembly which are nearest the front of the set shall have a minimum separation of approximately 0.015 inch (1/64 inch) when the exclusion switch is unoperated.

2.11 If the exclusion switch does not meet the above requirements, replace the set.

Button and Block Assembly

2.12 The button and block assembly is mounted on the 588- or 589-type key. It is intended that this assembly have free yet restricted movement to facilitate the removal and the replacement of the set housing.

2.13 If push buttons seem to bind, see if dirt or other foreign matter has accumulated on bearing surface of push buttons or collars. If so, slip metal retainer away from collar block (about 1/8 inch) so that buttons and collars may be lifted out. Clean push buttons and collars. Use water-damp cloth **only**. If cleaning does not correct condition, replace the set. **Do not use lubricants or solvents.**

Keys, 588 and 589 Types

2.14 Maintenance of 588- and 589-type keys should ordinarily be limited to the procedures set forth in the paragraphs which follow. If the trouble is such that it cannot be cleared by these means, replace the set. **Do not lubricate the key.**

2.15 If a pickup key plunger fails to remain in its locked position when fully depressed, proceed as follows:

- (1) Operate other pickup keys.
- (2) If other pickup key plungers also fail to lock, replace the set.
- (3) If pickup key is convertible, check to see that special screw in plunger is fully seated.

2.16 Normally open spring contacts shall have a minimum separation of approximately 0.015 inch (1/64 inch). Normally closed contacts shall have perceptible follow. If these requirements cannot be met, replace the set.

Note: In order to inspect contact side of key, remove: the set housing, the 3 hex head screws from bottom of set mounting using 129B tool, and the dial from dial mounting bracket; then tilt front end of key upward and back until key is in near vertical position.

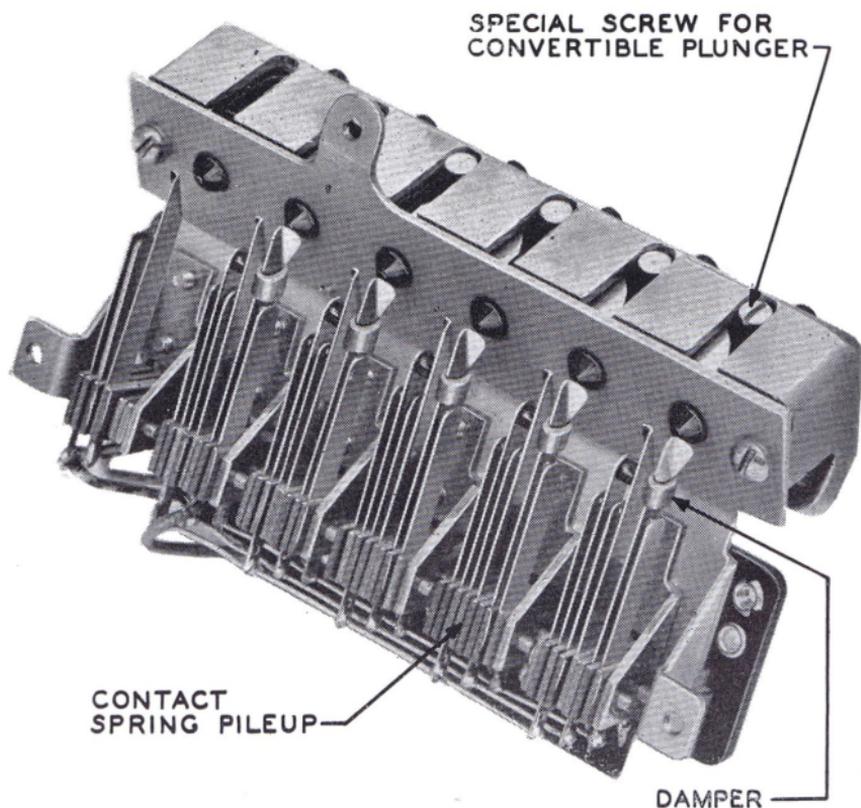


Fig. 3—589-type Key (Bottom View)

Note: Dampers shown in Fig. 3 reduce spring vibration which might otherwise cause noise in receiver circuit.

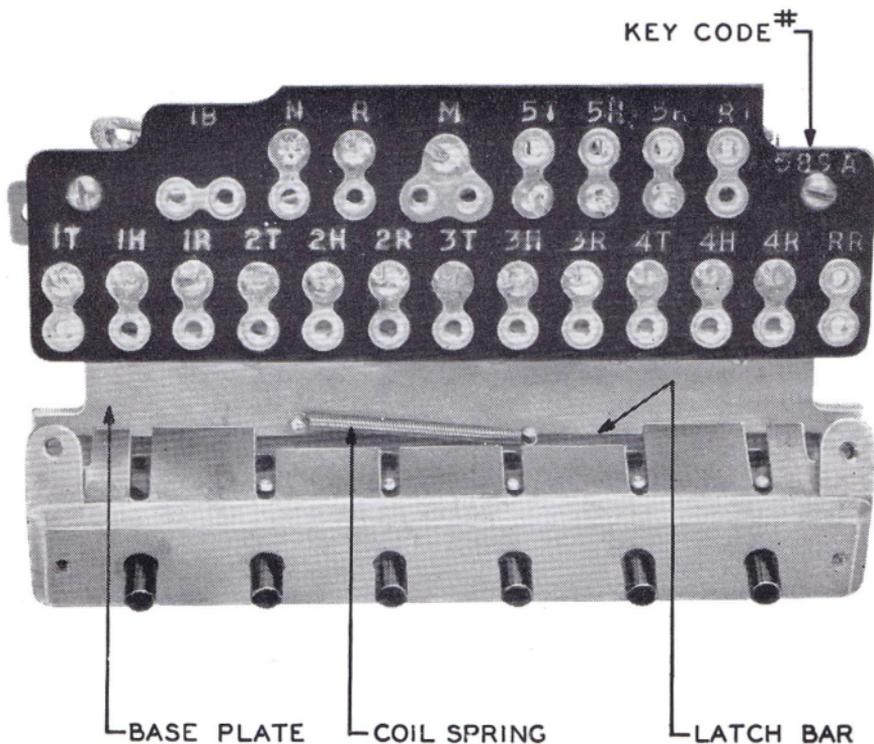


Fig. 4—589-type Key (Top View)

Lamps

2.17 To insure maximum illumination from 51A lamps, replace cracked push buttons or collars, and remove any accumulated dirt or film from lamps, collars, and push buttons with slightly **water-moistened** cloth. No tools are required.

2.18 Position each lamp near its associated button to obtain maximum and uniform illumination. Lamp contacting surfaces should be clean; and spring tension should be adequate to hold lamp in desired position.

3. SUPPLIES

3.01 Listed below are supplies which might be required for field maintenance.

<u>Index</u>	<u>Ordering Information and Description.</u>
Assemblies* (Window Strip)	P-17A101, Window Strip Assembly. For 540-type sets
	P-17A102, Window Strip Assembly. For 560-type sets
*Clear plastic window strip which is held in place on set housing by two spring clips. These clips also hold the designation card in place.	
Button (Push)	P-12A856, Push Button. Clear Plastic Push Button
Button (Turn)	P-16A841, Turn Button. Clear Plastic Turn Button
Collar	P-19B533, Collar. Plastic collar which extends over 51A lamps
Cords (Mounting)	Cord, D14D-3. For 540BA/BB sets
	Cord, D19A-3. For 544BA/BB sets
	Cord, D24B-3. For 545BA/BB sets
	Cord, D25A-3. For 544AA/AB, 564CA/CB, and 564DA/DB sets
	Cord, D28A-3. For 564BA/BB sets
	Cord, D31A-3. For 565EA/EB sets
	Cord, D34A-3. For 565AA/AB and 565BA/BB sets

- Lamp **Lamp, 51A.**
10-volt lamp used to illuminate buttons and collars
- Ring (Blocking) **P-12A858, Blocking Ring.**
Used to make a hold, pickup, or signal key inoperative
- Screws **P-12A892, Screw.**
Slot head screw for convertible plunger
- P-293978, Screw.**
Used to fasten cord conductors on lamp strip and key terminal strip
- Sets (Telephone)
For Dial Area **Telephone Set, 540BB.**
Hold and three line pickup
- Telephone Set, 544AB.**
Four line pickup (one convertible)—Arranged for illumination of push buttons
- Telephone Set, 544BB.**
Hold and three line pickup (one convertible)—Arranged for illumination of push buttons
- Telephone Set, 545BB.**
Hold, three line pickup (one convertible), and exclusion—Arranged for illumination of push buttons and station busy lamp control
- Telephone Set, 564BB.**
Hold and five line pickup—Arranged for illumination of push buttons
- Telephone Set, 564CB.**
Hold, four line pickup, and one signaling—Arranged for illumination of push buttons
- Telephone Set, 564DB.**
Hold, three line pickup, and two signaling—Arranged for illumination of push buttons

Index

Sets (Telephone)
For Dial Area
(contd.)

Ordering Information and Description**Telephone Set, 565AB.**

Six line pickup (three convertible) and exclusion—Arranged for illumination of push buttons and station busy lamp control

Telephone Set, 565BB.

Hold, five line pickup (three convertible), and exclusion—Arranged for illumination of push buttons and station busy lamp control

Telephone Set, 565EB.

Hold, four line pickup (one convertible), exclusion, and cut-off (turn button)—Arranged for illumination of push buttons and station busy lamp control

Note: When “convertible” is mentioned with above sets, the number of keys designated can be converted in the field from pickup (locking) to signaling (nonlocking). Also, lamps are not regularly furnished as part of the coded set.

Sets (Telephone)
For Manual Area

Telephone Set, 540BA.

Hold and three line pickup

Telephone Set, 544AA.

Four line pickup (one convertible)—Arranged for illumination of push buttons

Telephone Set, 544BA.

Hold and three line pickup (one convertible)—Arranged for illumination of push buttons

Telephone Set, 545BA.

Hold, three line pickup (one convertible), and exclusion—Arranged for illumination of push buttons and station busy lamp control

Telephone Set, 564BA.

Hold and five line pickup—Arranged for illumination of push buttons

Telephone Set, 564CA.

Hold, four line pickup, and one signaling—Arranged for illumination of push buttons

Telephone Set, 564DA.

Hold, three line pickup, and two signaling—Arranged for illumination of push buttons

Telephone Set, 565AA.

Six line pickup (three convertible) and exclusion—Arranged for illumination of push buttons and station busy lamp control

Telephone Set, 565BA.

Hold, five line pickup (three convertible), and exclusion—Arranged for illumination of push buttons and station busy lamp control

Telephone Set, 565EA.

Hold, four line pickup (one convertible), exclusion, and cut-off (turn button)—Arranged for illumination of push buttons and station busy lamp control

Note: When “convertible” is mentioned with above sets, the number of keys designated can be converted in the field from pickup (locking) to signaling (nonlocking). Also, lamps are not regularly furnished as part of the coded set.