TELEPHONE SETS

500, 501, 554, 556 TYPES

MAINTENANCE

1.00 INTRODUCTION

1.01 This section covers specific maintenance procedures for the following sets: 500, 501, 554, and 556 types. Maintenance of handsets, dials, and ringers is outlined in the C Section covering those components.

1.02 Due to extensive changes marginal arrows have been omitted.

2.00 GENERAL

2.01 Make a visual inspection of the exterior and interior of the sets for obvious defects such as loose, displaced, or broken parts; obstruction of moving parts; or the presence of foreign matter that may interfere with the proper operation of the set.

2.02 When replacement parts are available, replace parts; if not, replace set.

2.03 Line and ground terminations should be checked before proceeding with probable troubles listed in Table A.

TABLE A

Trouble	Probable Cause	Corrective Measure
Bell Does Not Ring	Ringer disconnected or incorrectly wired in set.	Connect correctly.
	Volume control wheel in cut-off position.	Move control wheel to ring position.
	Open winding.	Replace ringer.
	Metal particles in armature gap.	Remove with Scotch tape or approved equivalent.
	Open tube.	Short-circuit yellow and black tube leads and if ringer operates when ringing voltage of correct polarity is applied, replace tube.
	Open capacitor.	Bridge A and K terminals of 425-type network with 548A capacitor.
Bell Too Loud	Volume control wheel in wrong position.	Move control wheel to most favorable position and advise customer on proper use.
Bell Not Loud Enough	Volume control wheel in wrong position.	Move control wheel to louder position and advise customer on proper use.
	Set on sound-absorbent material.	Place set on hard surface.
	Cord touching gong.	Dress cord properly.

TABLE A (Cont)

Trouble	Probable Cause	Corrective Measure
Bell Taps While Dialing or Operating Switch	Incorrect wiring.	Check mounting cord and ringer connections.
	Gong loose.	Tighten screw as required.
Bell Rings When Other Party Is Called: Cross Ring or False Ring	Incorrect wiring.	Check mounting cord and ringer connections.
	Biasing tension too low.	Place biasing spring in high-tension notch. If ringer still cross-rings, replace ringer.
Bell Keeps Ringing When Handset Is Removed	Opening in handset cord or at dial pulse contacts.	Replace handset cord or dial.
	Open induction coil, equalizer filament, or set wiring.	Replace set.
	Line contacts on switch do not close.	Check switch cover and ears. Ears should fit into notches.
No Dial Tone or Set Dead	Open mounting cord or handset cord.	Replace cord.
	Defective receiver unit or varistor shorted.	Replace receiver unit.
	Dial pulse contacts open or off-normal shunt contacts closed.	Replace dial.
	Open induction coil.	Replace telephone set.
	Switch contacts do not operate.	Check switch cover.
Cannot Break Dial Tone	The dial pulse contacts do not open.	Replace dial.
	The dial filter capacitor shorted.	Replace telephone set.
Loud Clicks While Dialing	The dial off-normal shunt contacts do not close.	Replace dial.
Cannot Hear	Open or shorted receiver unit or handset cord.	Replace receiver unit or handset cord.
	The dial off-normal shunt contacts closed.	Replace dial.
	Opening in induction coil or in network.	Replace telephone set.

TABLE A (Cont)

Trouble	Probable Cause	Corrective Measure
Cannot Hear	Switch receiver contacts do not open.	Check switch cover for interference.
Distant Party Cannot Hear	Defective transmitter or handset cord open.	Replace transmitter or handset cord.
High Sidetone	Defective sidetone balancing network.	Replace telephone set.

3.00 500 AND 501 TYPES

Plungers

3.01 Plungers shall move freely throughout their entire travel without binding or squeaking. They are accessible when the hand-hole cover-mounting screw and hand-hole cover are removed (see Fig. 1).

3.02 Clean plungers with KS-2423 cloth moistened with KS-7860 petroleum spirits and lubricate with a No. 2 or softer graphite pencil.

3.03 Replace housing if plungers do not move freely after cleaning.

Switch Cover and Contact Springs

3.04 No field maintenance other than replacing switch cover and cleaning contacts shall be performed.

3.05 To remove cover, depress sides between thumb and index finger, then tilt cover up and away from mounting (see Fig. 2).

3.06 Clean contacts with a 265C tool having a clean blade.

3.07 Replace set if any other trouble is encountered in contact spring assembly.

Fig. 1 — Plunger Assembly, 500 Type

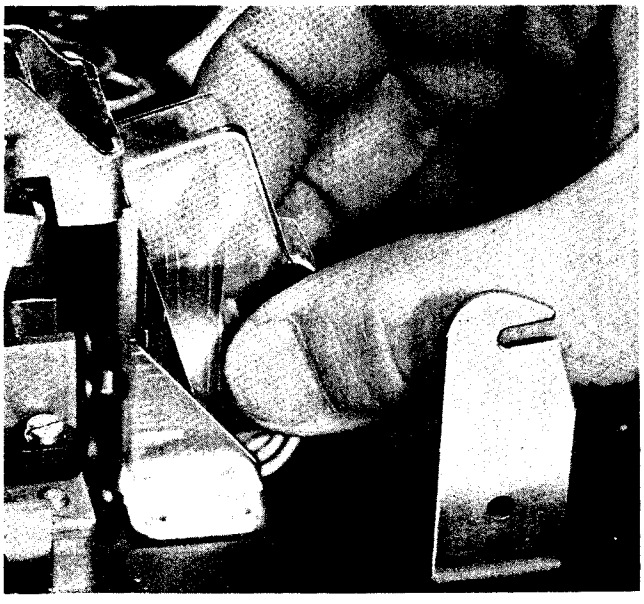

Fig. 2 — Removing Switch Cover

Tube Assembly

3.08 To remove the 426A tube assembly, disconnect the leads from their terminals on the network and remove the assembly mounting screw.

4.00 OPERATING BRACKET SWITCH ASSEMBLY

4.01 The operating bracket shall function without binding or squeaking throughout its entire travel.

4.02 To eliminate binding or squeaking, clean the bosses on operating bracket arms, spring anchor points, operating bracket, and shaft bearing points with a KS-2423 cloth moistened with KS-7860 petroleum spirits. Lubricate the bearing surfaces with a No. 2 or softer graphite pencil. (See Fig. 3.)

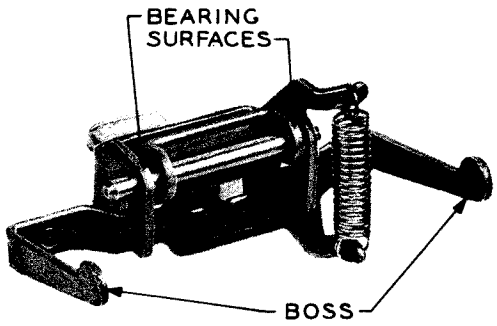

Fig. 3 — Operating Bracket Switch Assembly

5.00 500E/F AND 501F

Plunger Switch Assembly

5.01 If left-hand plunger fails to lock when pulled upward to extreme position, replace set.

5.02 No field maintenance shall be performed other than cleaning of contacts.

6.00 500H AND P

6.01 When the receiver is lifted, the dial lamp should light. If not, refer to Table B.

6.02 To remove lamp, turn lamp cap and lamp counterclockwise (see Fig. 4).

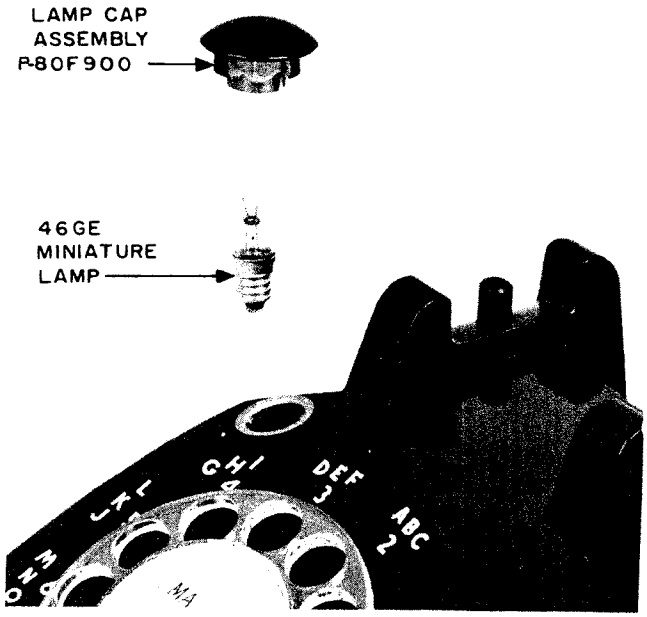

Fig. 4 — Lamp Assembly, 500H, P Sets

7.00 500U

The maintenance features are similar to the 500H and P with an added feature of a 584C key (see Fig. 5) to control the dial lamp. If lamp still does not light after checking maintenance operations listed in Table B, check contacts of the 584C key.

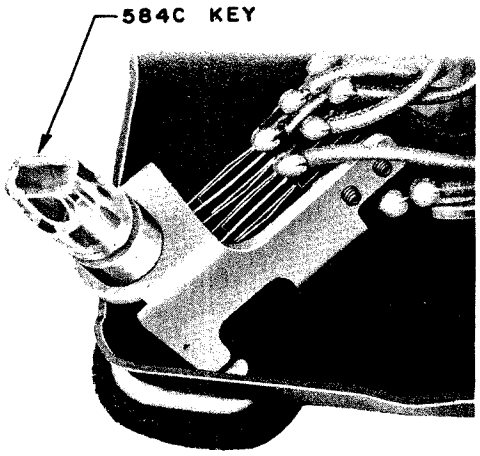

Fig. 5 — 584C Key

TABLE B

Trouble	Probable Cause	Corrective Measure
Dial Lamp Does Not Light	Lamp burned out.	Replace lamp (No. 46 GE miniature).
	Transformer plug is out of receptacle.	Replace plug in receptacle.
	Defective transformer.	Replace transformer (KS-15675, Lists 1 and 2; KS-16184, List 3).
	No power at ac receptacle.	Check with customer for possible blown fuse or for a power-control switch.

8.00 554 AND 556 TYPES

8.01 These sets are similar to other 500-type sets except for the switchhook assembly.

8.02 Switchhook shall move freely without binding or squeaking, and come to a positive stop when handset is removed from the hook.

8.03 To remove housing on wall-type telephone sets, push inward on tab of snap fastener located in the card slot and, while the tab is depressed, lift the lower part of the housing outward and upward, releasing fastener catch and disengaging latch spring assembly (see Fig. 6, 7, and 8). To replace, slip housing over switchhook and dial, engage the latch spring assembly, then press firmly on lower part of housing to engage snap fastener and catch (see Fig. 8).

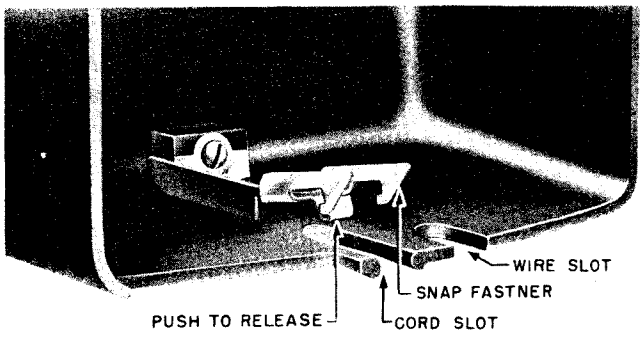

Fig. 7 — Removing Plastic Housing

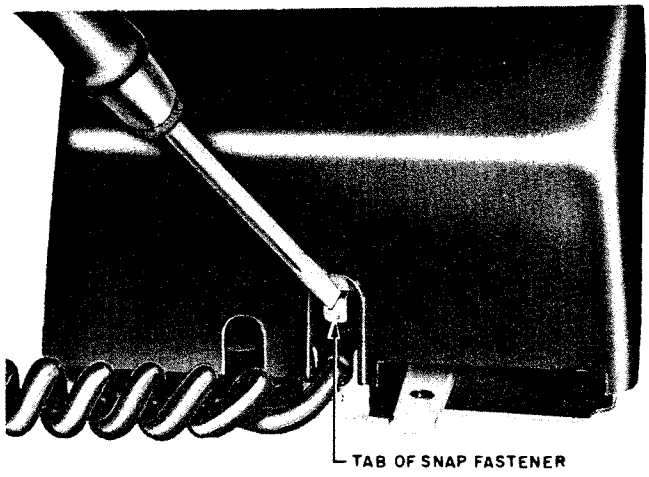

Fig. 6 — Wall-type Telephone Set, Method of Removing Housing

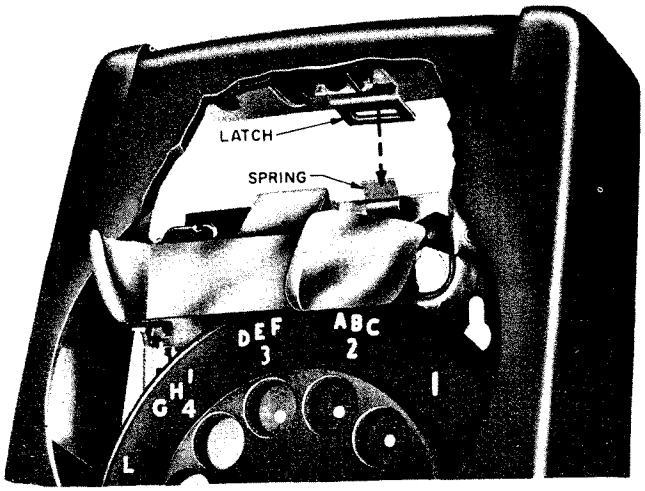

Fig. 8 — Wall-type Telephone Set, Replacement of Housing

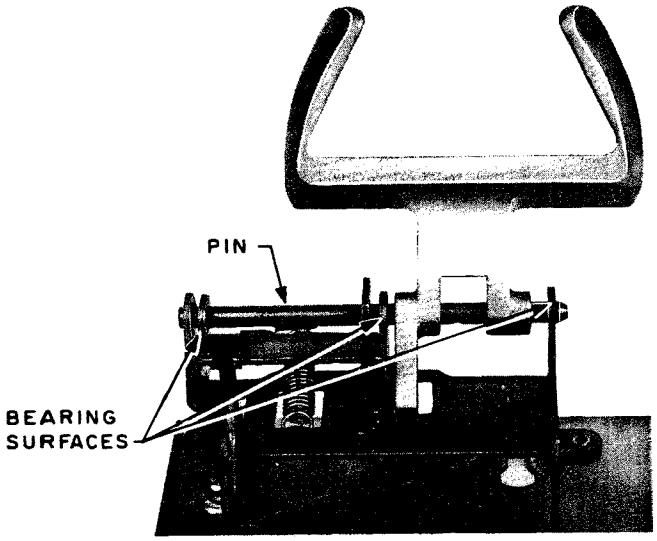

Fig. 9 — Switchhook Assembly

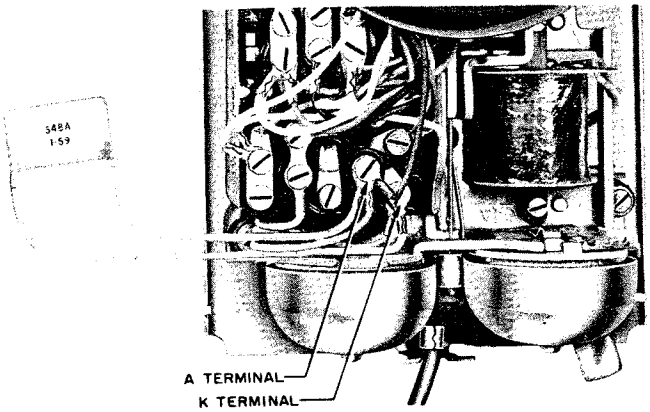

Fig. 10 — Connection for Open Capacitor

Switchhook Assembly

8.04 When switchhook binds or squeaks, clean pin and bearing surfaces with KS-2423 cloth moistened with KS-7860 petroleum spirits.

8.05 Lubricate bearing surfaces with No. 2 or softer graphite pencil. (See Fig. 9.)

9.00 RINGING CAPACITOR

9.01 An externally mounted 548A capacitor may be used to replace an open or shorted capacitor in 425-type network.

9.02 Ringing capacitor is located between A and K terminals of the 425-type network.

9.03 If ringing capacitor is open, a 548A capacitor can be bridged across A and K terminals of the network (see Fig. 10).

9.04 When ringing capacitor is shorted, it is necessary to use a D-161488 connector in conjunction with 548A capacitor. This connector consists of a terminal, a special head machine screw, and a sleeve insulator.

9.05 Connect one side of 548A capacitor to terminal A of the 425-type network.

9.06 Remove ringer leads from terminal K of 425-type network and bridge to other side of 548A capacitor, using D-161488 connector (see Fig. 11).

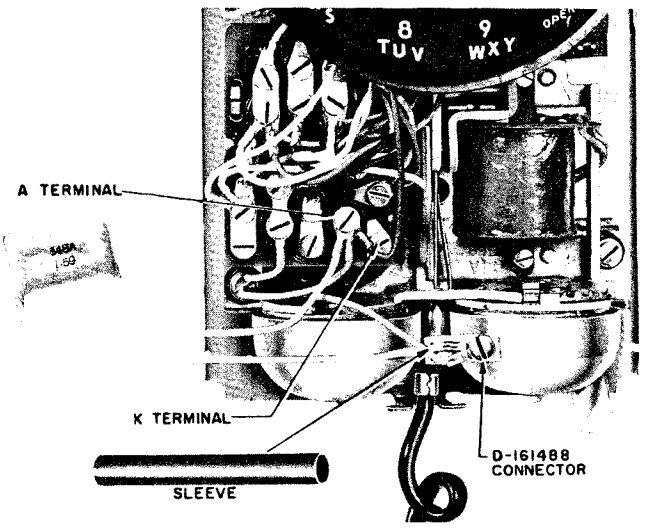

Fig. 11 — Connection for Shorted Capacitor

9.07 Dress and store capacitor and all leads in a convenient and trouble-free position (see Fig. 12).

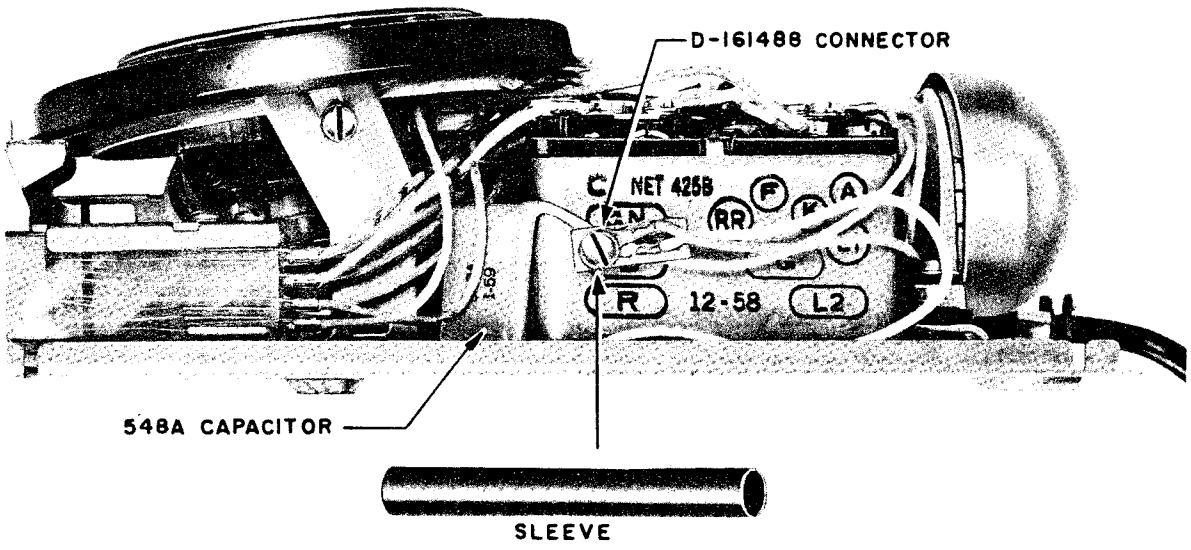

Fig. 12 — Capacitor and Leads