

HEAD TELEPHONE SETS 52, 53, AND F TYPES

1. GENERAL

1.01 This section covers description, use, maintenance, supplies, and replacement part data of the F-50721, F-51106, 52-, and 53-type head telephone sets.

1.02 To avoid damage to the transmitter case, carry the head telephone set by some part other than by the transmitter case.

1.03 The term "headtelset," as used in this practice, is an abbreviation of the term head telephone set.

2. DESCRIPTION AND USE

2.01 The 52 type, as shown in Fig. 1, is designed to be used only as a headtelset. It is fully adjustable to facilitate the positioning of the transmitter and receiver.

2.02 The 53 type, as shown in Fig. 2, is designed for locations having fluctuating traffic conditions. During heavy traffic periods, the set can be worn as a headtelset thus freeing both hands. During light traffic periods, the headband can be removed and the set used as a lightweight handset. It is partially adjustable with a fixed distance between the transmitter and receiver.

2.03 The F-50721 headtelset is a modified 53-type headtelset and is used with the F-50682 telephone set as specified in Section C56.121, F-50682 Telephone Set, Ground Observer's Telephone. The modification incorporates a 5-conductor retractile handset cord with a 1AH4 nonlocking Micro Switch wired push-to-talk.

2.04 The F-51106 headtelset is a modified 53D headtelset. The modification consists of wiring the 225A cord switch for push-to-listen, which short-circuits the transmitter when the switch is operated.

2.05 To select a headtelset for a specific use or feature, see Table A.

3. MAINTENANCE

Cleaning

3.01 To clean transmitter caps, receiver caps, and the exterior portion of their respective cases, use a cloth slightly dampened with water. To clean the interior portion of the transmitter or receiver case, remove the units and use a brush to remove any accumulated dust or dirt.

Caution: Do not use alcohol or a chloride base cleaner as these will attack the case and cap material and may render the set flammable.

3.02 Headband pads with objectionable appearance, due to soiling from hair oils, etc., shall be replaced or cleaned with a damp cloth.

3.03 To clean the plug, proceed as follows: Cut a piece of 5/32-inch cotton sleeving approximately 3 feet long and at its middle secure it to a substantial support.

3.04 Apply a small amount of metal polish evenly, for an approximate distance of 1 foot, to one of the free ends of the cotton sleeving.

3.05 Wrap the sleeving one complete turn around one shaft. Hold the sleeving taut with one hand and hold the plug on a bias with the other hand. Move the plug back and forth until the sleeve and tip of the shaft are clean. Repeat the procedure for the other shaft.

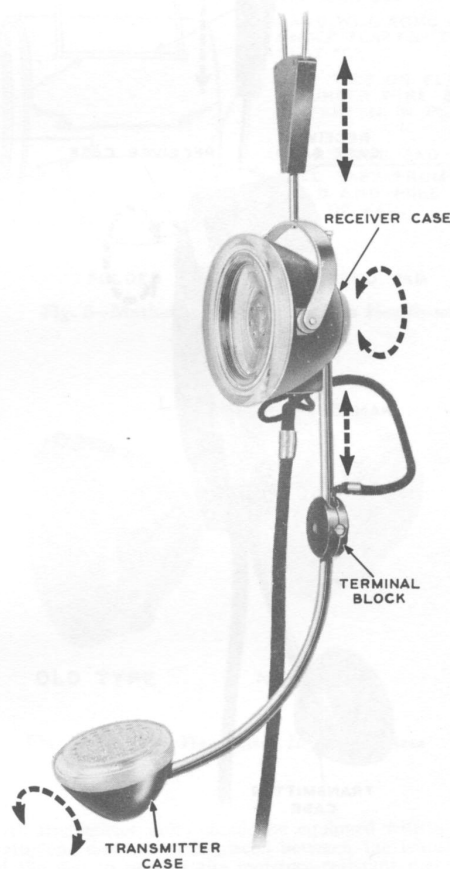
3.06 To remove excess metal polish from the plug, use the clean end of the sleeving and repeat the procedure in 3.05.

Cords

3.07 Inspect for a badly soiled, worn, or frayed cord and replace if required. Inspect the cord adjacent to the headtelset closely for exposed conductors due to worn braid or

damage to the free conductors. A retractile cord shall be replaced when it has lost its retractile qualities and will not resume its approximate original length.

3.08 Inspect for a broken or defective "S" hook assembly (plug end), stay cord assembly, or wing band (receiver end); replace the cord when found broken or defective beyond repair.



Note: Arrows indicate direction of movement for adjustment.

Fig. 1—52-Type Head Telephone Set

3.09 Check that the 1AAH, 1ABE, or F-50722 cord is fastened securely to the KS-8010, 225A, or 1AH4 switch, respectively, by holding the switch and gently pulling on the cord. A slight movement of the cord is permissible in the KS-8010 switch.

(a) The 1AAH cord has a built-up section to prevent excessive movement of the cord within the KS-8010 switch.

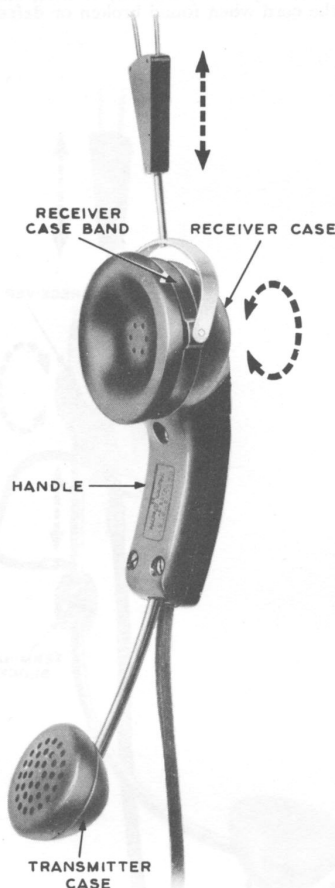
SECTION C32.650

Tighten the clamping screws of the switch if the cord is insecure.

(b) The L4BE or F-50722 cord is equipped with a stay hook which fastens the cord within the 225A or 1AH4 switch, respectively. If the cord is insecure, disassemble the switch and check that the stay hook is fastened properly.

3.10 To check for a noisy cord, insert plug in jack, energize the headset with talking battery, close the switch, if present, and shake or twist the cord while listening in the receiver for an objectionable click or scraping sound to indicate a defective cord.

Note: A loose cord connection at the plug, switch, or headset will also produce a click or scraping sound. Check these connections for tightness before replacing the cord.



Note: Arrows indicate direction of movement for adjustment.

Fig. 2—53-Type Head Telephone Set

- 3.11 Replace a torn, worn, or otherwise defective or missing No. 77 cord tip (rubber sleeve) or cord fastener
- 3.12 If the cord fastener is fastened around the cord, relocate it around the "S" hook of the cord at the plug end.
- 3.13 To place a cord fastener around the "S" hook, proceed as follows: Form the fastener by slipping the "E" end of the fastener through slot 3 as shown in Fig. 3(B), and the "F" end through slots 1 and 2 as shown in Fig. 3(C).

3.14 Loosen the clamping screws of the plug to free the clamp. Remove the old cord fastener or the No. 126 cord tip (rubber sleeve). Slip the new cord fastener over the clamp and "S" hook so that it is positioned as shown in Fig. 3(D). Mount the clamp on the plug and tighten the clamping screws.

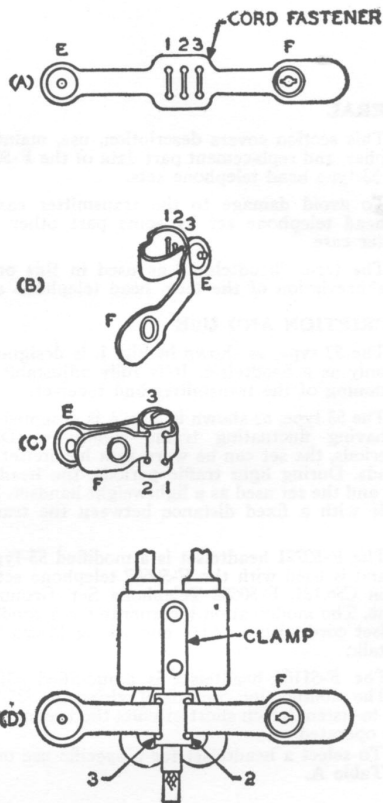


Fig. 3—Method of Mounting Cord Fastener

Connecting Block

3.15 Check the terminal screws for tightness and observe that the 29A connecting block is not cracked, chipped, or otherwise defective. Replace when required. (See Fig. 8.)

Headbands

3.16 In the following paragraphs, requirements pertaining to adjustments and lubrication do not apply to the 18A headband which is nonadjustable and requires no lubrication. The 18A headband originally supplied with the 53-type headset has been superseded by the 15A and 15C headbands.

3.17 Adjust badly bent wires. Any adjustments of the wires should not prevent them from sliding in the cradle with sufficient friction to maintain their adjusted position. Inspect the wires for nicks or cuts by running the fingernail along the wires. If the nicks or cuts are deep enough to snag the fingernail, replace the headband. Rub marks or flattened areas of minor nature should be disregarded.

3.18 Check the movement of the yoke pin in the cradle. If any binding is felt, pull the yoke pin out as far as possible from the cradle, and apply a thin film of KS-8496 No. 3 lubricating compound to the shaft of the yoke pin for a distance of 1/2 inch from the cradle.

3.19 Check for play between the yoke and yoke pin. This condition is more likely to occur with the old method

of riveting, i.e., rivet heads having a thin edge (see Fig. 4). If this play is excessive and there is a possibility of the yoke breaking away from the yoke pin, replace the headband.

3.20 Replace 15A headbands of 2-piece cradle construction if the lower rivet holding the two halves of the cradle together is not painted red on the inner end.

3.21 Manually adjust the yoke to fit firmly on the headset.

Headband Pad

3.22 Replace pads that are worn, torn, or have a rough surface which might catch in the hair. Attach the folded leather or synthetic rubber pad to the 15A headband. (See Fig. 5.)

3.23 The pad is an integral part of the 15C headband and cannot be ordered separately or detached.

Plug

3.24 To detect poor contacts between the tips of the plug and the springs of the jack, insert the plug in the jack, apply talking battery, and tap the plug while listening for clicks. If it appears that a cutout is caused on one side of the tips by wearing, rotate each shaft a quarter turn in the shell so as to present a new surface to the jack springs. Replace otherwise defective plugs.

Transmitter and Receiver Caps, Cases, and Units

3.25 There are two models of 52-type receiver cases. The old type can be identified by a flat surface adjacent to the receiver cap, the new type by a raised lip adjacent to the receiver cap which provides space for additional threads (see Fig. 6).

3.26 When replacing receiver caps or units of the 52-type headset, use the combinations of receiver cases, caps, and units specified in Fig. 7.

3.27 When positioning an HC1 or HC2 receiver unit in the receiver case of a 52-type headset, mount it so that the receiver terminals are in the position nearest to the ends of the contact springs. When positioning an HC3 or HC4 receiver unit in any receiver case, mount it so that the code marking is on the opposite side of the case from the binding post.

3.28 Replace a broken, chipped, or cracked cap or case and one having threads damaged sufficiently to prevent screwing the cap tightly on the case. Weld lines on the caps are not to be confused with cracks.

3.29 Screw the transmitter and the receiver cap on their respective cases finger tight, allowing a slight gap to remain between the cap and case or receiver-case band (see Fig. 2). If difficulty is encountered, apply clear petrolatum very sparingly to the threads of the case.

3.30 Replace the headset when the receiver case of the 52 type or the receiver-case band of the 53 type is not capable of holding the transmitter arm in an adjusted position.

3.31 Replace the headset when the contact springs in the transmitter or receiver case are broken, loose, defective, or missing.

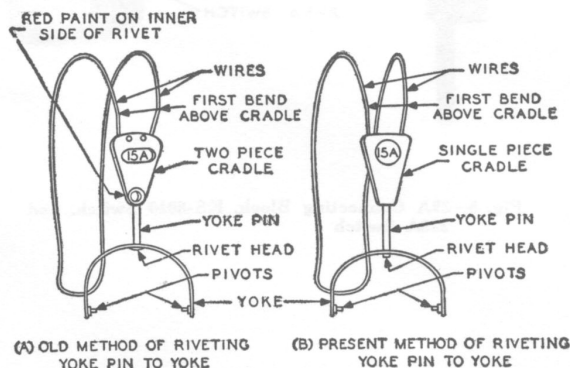
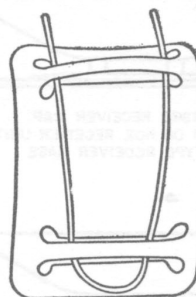
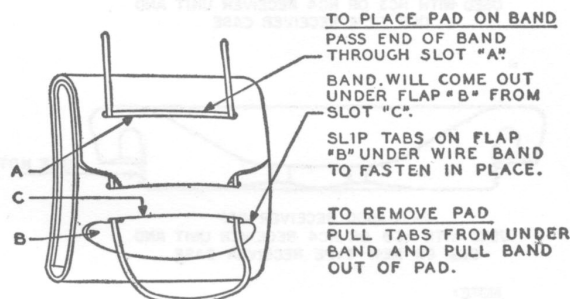


Fig. 4—15A Headbands



SYNTHETIC RUBBER HEADBAND PAD



FOLDED LEATHER HEADBAND PAD

Fig. 5—Method of Placing Pad on Headband

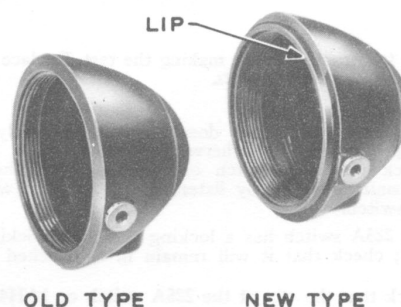


Fig. 6—52-Type Headset Receiver Cases

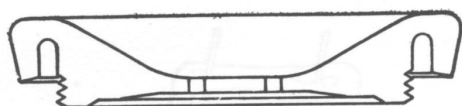
3.32 All transmitter units should be equipped with a polyethylene disc which is placed between the transmitter unit and the cap to protect the moisture-resistant membrane of the unit. This disc should be replaced when found dirty.

Caution: When placing the polyethylene disc, take care to avoid distortion of the disc and do not touch or press on the moisture-resistant membrane of the transmitter unit.

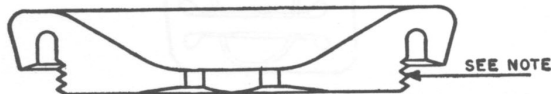
3.33 Where a 52-type headset is being used most often as a handset, replace it (when authorized) with a 53-type headset. If the 52-type headset is not replaced with a 53-type headset, proceed as follows: Apply **ceresin** over the terminal screws flush with the surface of the terminal block. (See Fig. 1.) To facilitate applying the **ceresin**, work it with the hands to make it pliable. The **ceresin** will insulate the terminal screws and avoid the possibility of an electrical shock.

3.34 When testing the transmitter or receiver for continuity, noise, or sidetone, position the switch if present to

SECTION C32.650



P-458982 RECEIVER CAP
USED WITH HC1 OR HC2 RECEIVER UNIT AND
OLD TYPE RECEIVER CASE



P-461464 RECEIVER CAP
USED WITH HC3 OR HC4 RECEIVER UNIT AND
OLD TYPE RECEIVER CASE



P-16A600 RECEIVER CAP
USED WITH HC3 OR HC4 RECEIVER UNIT AND
OLD OR NEW TYPE RECEIVER CASE

NOTE:
DISTINCTIVE DIFFERENCE IS ADDITIONAL
THREADS ON THE P-16A600 RECEIVER CAP

Fig. 7—52-Type Headtelset Receiver Caps

energize the transmitter before making the test. Replace defective transmitter or receiver units.

Switch

- 3.35 Replace a switch that does not operate freely or is chipped, cracked, or otherwise defective.
- 3.36 Check that the switch opens, closes, or shorts the transmitter circuit by listening for sidetone while operating the switch.
- 3.37 The 225A switch has a locking and a nonlocking position; check that it will remain in the locked position (see Fig. 8).
- 3.38 Check that the clip of the 225A switch or 1AH4 Micro Switch is securely fastened and is free of burrs or nicks which might catch or tear wearing apparel.
- 3.39 The nonlocking 1AH4 Micro Switch is similar to the 225A switch, except that the metal slide over the plunger of the switch which provides the locking feature has been omitted.
- 3.40 Place a KS-8010 switch on the cord with the ON end toward the plug (see Fig. 8).

4. SUPPLIES

- 4.01 To order a complete headtelset, select type desired from Table A and order per the following example:
SET, TELEPHONE, HEAD, 53D

Note: Specify either a L4BB cord (nonretractile) or an L4BG cord (retractile) when ordering a 53A headtelset.

- 4.02 Maintenance Supplies ordinarily required for maintenance purpose follow:

INDEX

ORDERING INFORMATION AND DESCRIPTION

Ceresin	CERESIN, BLACK, EIMER AND AMEND, C-244.
Cloth	CLOTH, KS-2423.
Compound	COMPOUND, LUBRICATING, NO. 3, KS-8496.
Petrolatum	PETROLATUM, CLEAR.
Polish	POLISH, METAL, PASTE, BELL SYSTEM.
Sleeving	SLEEVING, COTTON, 5/32 INCH.

5. REPLACEMENT PART DATA

- 5.01 Order replacement parts in accordance with Table B.

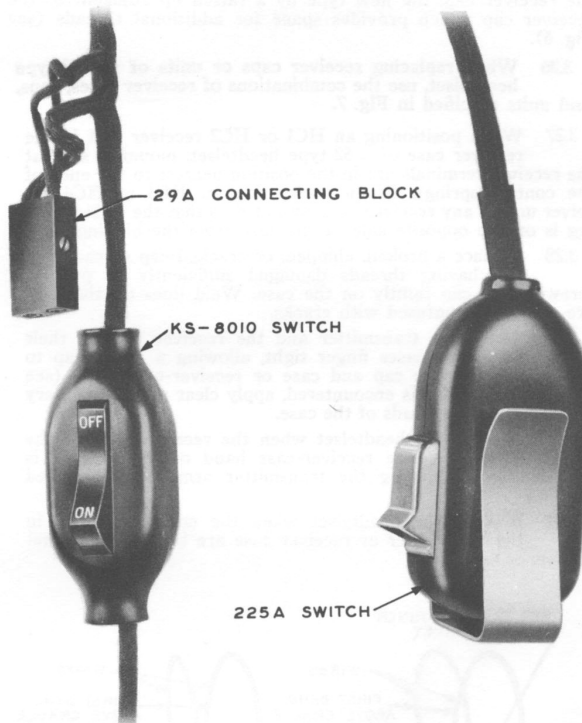


Fig. 8—29A Connecting Block, KS-8010 Switch, and 225A Switch

TABLE A

Headset	Primarily Used With	Features
52A	Switchboard. 101-Type Key Equipment.	5-foot nonretractile cord. Low-impedance receiver unit.
52B	Switchboard. No. 4 Order Turret. 331-Type Telephone Set.	10-foot retractile cord. Push-to-talk locking switch. Low-impedance receiver unit.
52C	102A, 109A, or 111A Key Equipment.	7-foot nonretractile cord. High-impedance receiver unit.
52D	Switchboard.	15-foot retractile cord for night-operator use. Low-impedance receiver unit.
53A 53AR	Switchboard. 4A Key Equipment.	5-foot nonretractile or 5-foot retractile cord. Low-impedance receiver unit.
53C	1A, 3A, or 3C Tele-type Switchboard.	5-foot nonretractile cord arranged for connection to switchboard terminals. Low-impedance receiver unit.
53D 53DR	102A, 109A, or 111A Key Equipment. Anti-aircraft Operation Control System.	12-foot retractile cord. Push-to-talk locking and nonlocking switch. High-impedance receiver unit.
53E 53ER	Air Defense Direction Center Installations.	9-foot retractile cord. Low-impedance receiver unit.
F-50721	Ground Observation Post Installation. F-50682 Telephone Set.	15-foot retractile cord arranged for connection to terminal posts of F-50682 telephone set. Push-to-talk nonlocking switch. High-impedance receiver unit.
F-51106	Air Defense Filter Center Installations.	12-foot retractile cord. Push-to-listen locking or nonlocking switch. Low-impedance receiver unit.

TABLE B

Replacement Part Data	Head Telephone Set											
	52A	52B	52C	52D	53A	53AR	53C	53R	53DR	53E 53ER	F-50721	F-51106
Band—P-348093					X	X	X	X	X	X	X	X
Block, Connecting 29A		X										
Cord *L4AG L4AH L4AK	X	X	X	X								
L4BJ L4BD L4BE					X		X	X	X			X
L4BG L4BH F-50722					X					X	X	
Cord Fastener P-478356	X	X	X	X								
Headband 15A 15C	X	X	X	X	X	X	X	X	X	X	X	X
Headband Pad P-240166 (Leather) P-240421 (Rubber)	X X	X X	X X	X X	X X	X X	X X					
Plug—289B	X	X	X	X	X	X		X	X	X		X
Polyethylene Disc P-12A320	X	X	X	X	X	X	X	X	X	X	X	X
Receiver Cap P-16A544 P-16A545 **P-16A600 **P-458982	X X	X X	X X	X X	X	X	X	X	X	X	X	X
Switch KS-8010 225A 1AH4 Micro		X						X	X		X	X
Tip, Cord, No. 77 No. 140	X	X	X	X	X	X		X	X	X		X
Transmitter Cap P-16A541 P-16A542 P-458981	X	X	X	X	X	X	X	X	X	X	X	X
Unit, Receiver HC3 HC4	X	X	X	X	X	X	X	X	X	X	X	X
Unit, Transmitter N1	X	X	X	X	X	X	X	X	X	X	X	X

* When ordering an L4AG cord for the 52C headset, specify length as 7 feet.

** See Fig. 7.