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INSTRUCTION BOOK  
FOR  
HEAD AND CHEST SET HS-19-T3

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FOR  
HEAD AND CHEST SET HS-19-T3

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Prepared at  
SIGNAL CORPS LABORATORIES  
FORT MONMOUTH, NEW JERSEY

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# INSTRUCTION BOOK

FOR

## HEAD AND CHEST SET HS-19-T3

### SECTION I

#### GENERAL DESCRIPTION

1. Head and Chest Set HS-19-T3 consists of a light and very efficient chest-type transmitter and single earpiece receiver connected to a 6-foot rubber-jacketed cord. The transmitter housing is equipped with a push-button switch and a horn-type mouthpiece. The receiver is equipped with a wire headband and leather headband pad.

2. The Head and Chest Set HS-19-T3 weighs 1.38 pounds. It is designed for use with telephones, telephone boxes or switchboards where the chest-type transmitter and single earpiece receiver are desired.

### SECTION II

#### DETAILED DESCRIPTION

3. Receiver. The Western Electric #528 receiver is a standard watchcase-type receiver with a hard-rubber cap 2-3/8" in diameter. The d-c resistance is approximately 56 ohms and the impedance 260 ohms at 800 cycles. The receiver is furnished with a wire headband and a black leather headband pad. A metal clip is fastened to the receiver case by two screws and clamps the end of the cord to prevent breaking the two conductors.

4. Transmitter. The Western Electric #396A transmitter is of the barrier-button type and is contained in a molded bakelite housing pivoted on a triangular chest plate and fitted with a curved horn-type mouthpiece. The carbon chamber is a separate unit (W.E.#A1 transmitter unit) connected in the housing by means of springs. A thin rubber membrane is cemented to the front of the carbon chamber to prevent moisture from entering. The two portions of the transmitter housing are held together by three screws and connections are made to the cord terminals by means of two set screws. The resistance of the transmitter in operation is approximately 175 ohms and it will operate satisfactorily on 15 milliamperes. The mouthpiece is made of hard rubber and is held in a metal socket on the transmitter housing by means of a pin and spring. A metal clip is riveted to one upper corner of the chest plate for accommodating the strap and a flat-head rivet is provided on the other corner for fastening the strap clip.

5. Strap. Strap ST-24 is a cotton-web strap 3/4" wide and 36" long, fitted with two slides and a spring clip. The strap may be permanently fastened to the metal clip on the chest plate. The slides provide means for adjusting the strap and, after placing around the operator's neck, the strap may be fastened by the spring clip.



6. Switch. The switch is of special design and consists of a metal frame and bakelite block fastened to a metal ring. The ring is clamped between the two portions of the transmitter housing to support the switch below the transmitter when in the operating position. A push button operates to close a spring contact when pressed, or to continuously close the contact when the button is pushed to the left. One contact of the switch is connected to the transmitter and the other contact to one cord conductor through the switch frame. The transmitter end of the cord is firmly fastened to the switch housing so the cord terminals are in position for connection to the switch and the transmitter.

7. Cord. The cord is 0.3" in diameter and 6' long, with a 6" and a 20" length connected by a molded Y-splice at one end for the transmitter and receiver respectively. Each of the ends of the black rubber jacket has a molded flange to aid in clamping the cord end and protecting the leads brought out. The leads are composed of #18 A.W.G. stranded copper and covered with red, black and yellow rubber respectively. The red and black leads are connected to the transmitter, the black lead also being connected to the receiver, and the yellow lead is connected to the receiver. A brown stay cord is provided at the Y-splice and the equipment end of the cord, the conductors being wrapped around the stay cord in a close spiral to form a very flexible cord. The conductors brought out at the receiver end are 1" long and equipped with Terminals TM-51. The conductors brought out at the transmitter end are 1" long and equipped with one Terminal TM-47 and one Terminal TM-51. The conductors brought out at the equipment end are 3" long and equipped with Terminals TM-29. A metal band around the cord is marked "T-RED, C-BLK, R-YEL" for designating the leads. The stay cord at the Y-splice is tied to a ring provided on the lower edge of the chest plate.

### SECTION III

#### INSTALLATION

8. Connections may be made to telephone equipment by connecting the cord terminals to the usual binding screws or binding posts, or to a Plug PL-58 for connection to Telephone EE-8, Telephone Box EE-91, or Switchboard BD-70. The stay cord should be secured to a suitable eyelet to prevent strain on the conductors.

9. The color designations are indicated on the metal band for the transmitter, common, and receiver leads, respectively, but these may differ from color designations on certain equipment so that care must be used in making all connections.

## SECTION IV

### OPERATION

10. The strap should be fastened about the operator's neck and the mouthpiece adjusted close to the lips. The swivel at the base of the transmitter housing provides for easy adjustment. The receiver may be adjusted to position on either ear.

11. During operation, if it is desired to speak other than into the mouthpiece, the mouthpiece may be pressed into the socket and turned to the left to remove it from the lip position.

12. The push button should be in the right-hand position at all times when the transmitter is not in use. To talk for short intervals the button should be depressed while talking. For longer conversations, the button may be pushed to the left into the locking position, but ALWAYS RETURN THE BUTTON TO THE RIGHT-HAND POSITION WHEN CONVERSATION IS FINISHED.

## SECTION V

### MAINTENANCE

13. The receiver cap and the transmitter mouthpiece and switch should be kept clean.

14. The following replacement parts are available and may be ordered for repairs:

Cord: Terminal TM-29

Terminal TM-47

Terminal TM-51

Receiver: W.E. #11A headband

W.E. #1409 diaphragm

W.E. #1466 headband pad

W.E. #1469 earpiece cap

Transmitter: W.E. #A1 transmitter unit

W.E. mouthpiece for #396A transmitter





HEAD AND CHEST SET  
HS-19-T3

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