Cc BAND
BASE
SANTA YNEZ
PEAK

COMMUNICATIONS

MASTR

Progress Line

MAINTENANCE MANUAL

DESK MATE STATION

TWO-WAY FM
DESK-MATE
STATION
COMBINATION

LOCAL/REMOTE
LBI-3601C

DESK MICROPHONE

TABLE OF CONTENTS

WARNING

No one should be permitted to handle any portion of the equipment that is supplied with high voltage; or to connect any external apparatus to the units while the units are supplies with power.

KEEP AWAY FROM LIVE CIRCUITS

MAINTENANCE MANUAL INDEX
FOR
INDIVIDUAL UNITS

DESCRIPTION	MODEL NO.	LBI- NO.
Transmitters		
25-50 MC 100-Watt Transmitter (Narrow and Wide Band)	4ET55A10-27, B10-18	LBI-3580
66-88 MC 30-Watt Transmitter (Narrow and Wide Band)	4ET56A10-21, B10-15	LBI-3616
132-174 MC 80-Watt Transmitter (Narrow and Wide Band)	4ET58A10-21, B10-15	LBI-3547
406-470 MC 35-Watt Transmitter 60-Watt Transmitter	4ET59D10-21 & 4ET60D10-21	LBI-3778
Receivers (Narrow Band)		
25-50 MC Standard Receiver Receiver with Channel Guard Receiver with Noise Blanker Receiver with Noise Blanker & Channel Guard	 4ER39A10-18 4ER39A19-27 & 4ER39A46-54 4ER39A28-36 4ER39A37-45 & 4ER39A55-63	 LBI-3590 LBI-3591 LBI-3592 LBI-3593
26-50 MC (Wide Band) Standard Receiver	4ER39B10-18	LBI-3784
66-88 MC Standard Receiver Receiver with Channel Guard	 4ER40A10-15 4ER40A16-27	 LBI-3619 LBI-3620
66-88 MC (Wide Band) Standard Receiver	4ER39B10-18	LBI-3785
132-174 MC (Narrow Band) Standard Receiver Receiver with Channel Guard Receiver with Noise Blanker Receiver with Noise Blanker & Channel Guard	 4ER41A10-15 4ER41A16-21 & 4ER41A34-39 4ER41A22-27 4ER41A28-33 & 4ER41A40-45	 LBI-3502 LBI-3594 LBI-3595 LBI-3596
132-174 MC (Wide Band) Standard Receiver	4ER41B10-15	LBI-3706
406-470 MC Standard Receiver Receiver with Channel Guard	 4ER42B10-15 & 4ER42B22-27 4ER42B16-21 & 4ER42B28-45	 LBI-3621 LBI-3622
Station Power Supply Includes: Antenna Relay	4EP38A10 19A121260-G1	LBI-3529
Remote Control Panel	4KC16A10	LBI-3726
OPTIONS (Not Listed Above)		
2nd Receiver Power Supply Includes: Antenna Relay Two-Frequency Monitoring	4EP39A10 19A121260-G2 19A121629-G7 & -G8	LBI-3567
Search Lock Monitor	19A121647-G1	LBI-3614

EQUIPMENT INDEX

EQUIPMENT	TYPE OR MODEL NUMBER
Transmitter	ET-55-A & B, ET-56-A & B, ET-58-A & B, ET-59-D & ET-60-D
Receiver	ER-39-A through ER-42-B
Desk Mate Cabinet	7354211-G4
Station Power Supply	4EP38A10
Antenna Relay	19A121260-G1
Local Control Panel	19D402460-G4
Multi-Frequency Switches	19A121629-G1 through -G5
Remote Control Panel	4KC16A10
Remote Channel Guard Control	19A122231-G8
Microphone (with Channel Guard) (without Channel Guard)	4EM28B10 4EM28A10
117-VAC Power Cable	7491206-P1
Two-Prong Plug Adapter	7160486-P1
Alignment Tools (hex slug type) (slotted screw type)	4038831-P2 4033530-G2
Keys	LL201

OPTIONAL EQUIPMENT

EQUIPMENT	OPTION NO.	TYPE OR MODEL NUMBER
Search Lock Monitor Switch	7601	19A121629-G6
Search Lock Monitor Kit		19A121647-G1
Handset Hookswitch	7701 & 7703	4EM26A10 19B204867-G2
Control Panel (with Channel Guard Switch)	7703 & 7707	19D402460-G3
Application Kit for Type 90 and Type 99 Tone Decoders	7711	19B204996-G1
Receiver Power Supply Antenna Relay	7721 & 7722	4EP39A10 19A121260-G2
Two-Frequency Monitoring Two Receivers - single frequency transmitter Two Receivers - two frequency transmitter	 7721 7722	 19A121629-G7 19A121629-G8
Station Test Metering Panel: Meter Panel Assembly Meter Switching Panel Assembly	7609	 19A121953-G1 19A121460-G1
Transmitter Metering Cover	7648	19C303676-G3
Receiver Metering Cover	7649	19C303676-G2
220/110-volt Stepdown Transformer Kit	7608	19A121971-G1
Military Microphone	7705 & 7707	19B209102-P1

SPECIFICATIONS*

DIMENSIONS (H x W x D)	30-3/8" x 14" x 25-1/2"
WEIGHT	Approximately 112 pounds
DUTY CYCLE (Transmit & Receive)	Continuous
INPUT VOLTAGE	117 VAC, ±10%, 50/60 cps
INPUT POWER	Transmit: 2.9 amps max, 340 watts Receive: 0.8 amps max, 95 watts
OPERABLE TEMPERATURE RANGE	-30°C(-22°F) to +60°C (+140°F)

* These specifications are intended primarily for use by the serviceman. Refer to the appropriate Specification Sheet for complete specifications.

DESCRIPTION

General Electric MASTR Progress Line Desk Mate Stations are attractively styled base stations that are designed to meet the most stringent requirements in the field of Two-Way FM Radio.

The Desk Mate cabinet can be located on either side of a desk to provide additional working space. All operating controls are conveniently located on the control panel on the front of the cabinet. Both the transmitter exciter and the receiver are fully transistorized. Silicon transistors are used throughout for added reliability.

SERVICING

Both side panels on the station cabinet can be easily removed to gain access to the transmitter, receiver and power supply. The transmitter and receiver modules are equipped with centralized metering jacks, and are mounted on swingout chassis for simplified alignment and troubleshooting.

The transmitter and receiver modules may be used interchangeably in mobile and station installations. No modifications are required when transferring the units from one type of operation to another.

The station may also be equipped with an optional built-in Station Test Metering Panel facilitate servicing.

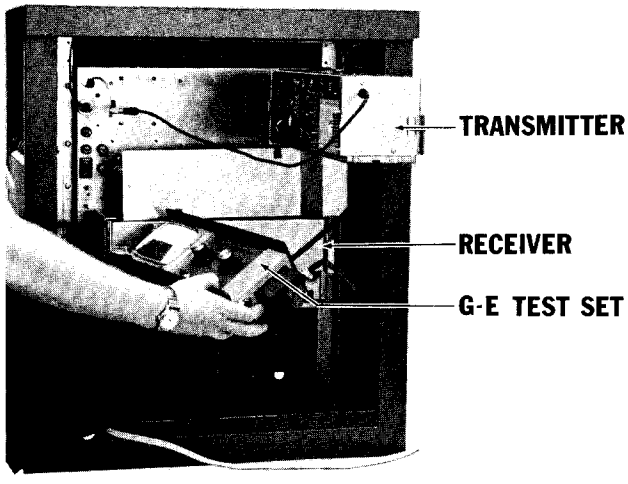


Figure 1 - Transmitter-Receiver Test

TRANSMITTER

The transmitter assembly consists of the transistorized exciter board and the power amplifier section. The standard transmitter may be equipped with:

- One through four frequencies
- Channel Guard (to eliminate nuisance calls)

RECEIVER

The fully transistorized receiver is completely contained in an aluminum casting, which provides excellent electrical shielding and reduces the effects of vibration. The standard receiver may be equipped with:

- One through four frequencies
- Channel Guard (to eliminate nuisance calls)
- Noise blanker

POWER SUPPLIES

Station Power Supply Model 4EP38A10 provides operating voltages for both the transmitter and receiver. In addition to plate, screen and bias voltages for the transmitter, the power supply provides:

- Regulated -20 volts for the transistorized transmitter exciter-board
- Regulated +10 volts for the receiver and for transmitter Channel Guard
- Regulated +13.4 volts for transmitter filaments, receiver audio, relays, and pilot lights

Antenna Switching Relay

The antenna switching relay (K502) is mounted on the power supply. Keying the transmitter energizes the relay, which connects the transmitter output to the antenna. When the transmitter is unkeyed, K502 is de-energized and the receiver is connected to the antenna.

Receiver Power Supply (Optional)

Receiver power supply Model 4EP39A10 is provided when the Desk Mate Station is equipped with a second receiver.

LOCAL CONTROL PANEL

The Local Control Panel is conveniently located on the front of the Desk Mate Station and contains all operating controls for the station.

The VOLUME control (R901), SQUELCH control (R902), ON-OFF switch (S901), INTERCOM-SUPV switch (S903) and indicator lights are located on the front of the Control Panel below the speaker grille. Two additional mounting holes are provided for option switches. The loudspeaker, microphone pre-amplifier stage and AC connection terminal board are mounted on the rear of the Control Panel.

Multi-Frequency Switch (S902)

In two-, three- or four-frequency units, a multi-frequency switch is located on the Control Panel for selecting the desired frequency. The switch connects +10 volts to the selected receiver oscillator switching diode, and connects the transmitter switching diode to ground. The unit will then operate on the frequency determined by each of the crystal-controlled oscillators.

Intercom-Supervisory Switch (S903)

Intercom-Supervisory Switch S903 is a two-position toggle switch located in the station transmitter keying circuit. When S903 is in the INTERCOM-SUPV position, transmitter keying is disabled. This prevents station operation by associated Transistorized Control Consoles (giving the station supervisory control), and permits intercom operation between the station and the consoles. The normal (down) position of S903 permits normal remote control station operation.

Optional Handset and Hookswitch

Handset Model 4EM26A10 and Hoodswitch 19B204867-G2 are optional equipment for MASTR Desk Mate Local/Remote Control Stations. With the handset on the hookswitch, audio can be heard through speaker LS901. When the handset is lifted off the hookswitch, the normally closed contacts of S1 in the hookswitch open, muting the speaker. The call can be heard in the handset earpiece. The push-to-talk button on the handset is pressed to transmit a message.

The handset plug connects to J901 located on the rear grille of the station cabinet.

REMOTE CONTROL PANEL

The Remote Control Panel contains the AC input circuit, remote channel guard control, Intercom-Compressor and telephone line connections. The panel is mounted on the chassis mounting frame below the Transmitter-Receiver Power Supply.

AC Input

The 117-VAC input is connected directly to TB706-1 and -2 on the Remote Control Panel. Power switch S702 is wired in series with the Local Control Panel power switch S901. To operate the station, S702 must always be in the ON position as both S702 and S901 are in series. Turning off either switch will cut off the power to the station. When both switches are in the ON position the green pilot light will be illuminated.

An optional 220/110 volt AC Stepdown Transformer Kit is available for use when the input line voltage is 220 volts AC.

WARNING

117-VAC is always present at terminals 1 and 2 of TB706, even when S901 is in the OFF position. Always use care when servicing the Remote Control Panel.

Intercom-Compressor

A 19A122231-G9 Intercom-Compressor is used in Local/Remote Station applications to equalize audio output levels over a wide range of microphone or line input levels. The circuit operates as a mike-to-line Compression Amplifier in the transmit or intercom mode, and as a line-to-speaker or receiver-to-speaker Compression Amplifier in the receive mode. The Intercom-Compressor is described in the Remote Control Panel Maintenance Manual.

Telephone Lines

Instructions for connecting the Remote Station to the telephone line(s) are included in the Maintenance Manual for Remote Control Panel.

INITIAL ADJUSTMENT

After the MASTR Desk Mate Station has been installed as described in the Installation Manual, the transmitter, receiver, power supply and Remote Control Panel must be adjusted by an electronics technician who holds a 1st or 2nd Class FCC Radiotelephone or Radiotelegraph license before the station can be placed in operation.

TEST EQUIPMENT REQUIRED

The following test equipment is required for the adjustment of both transmitter and receiver:

1. A tuning tool and a screwdriver.

2. G-E Test Meter Type EX-3-A, Station Test Metering Panel (Optional), or a 20,000 ohms-per-volt multimeter.

3. A signal source operating at the system frequency (preferably the transmitter which will normally be monitored by the receiver).

TRANSMITTER PROCEDURE

The initial adjustment for the transmitter includes:

- Loading the power amplifier into the antenna.
- Checking the frequency and modulation.

For the Initial Adjustment procedure, refer to the ALIGNMENT PROCEDURE in the MAINTENANCE MANUAL for the transmitter.

RECEIVER ADJUSTMENT

The initial adjustment for the receiver includes:

- Zeroing the receiver to the system operating frequency.
- Matching the antenna transformer to the antenna.

For the Receiver Initial Adjustment Procedure, refer to the FRONT END ALIGNMENT PROCEDURE in the MAINTENANCE MANUAL for the receiver.

POWER SUPPLY ADJUSTMENT

The initial adjustment for the power supply includes:

- Turning the power switch (S501) ON.
- Adjusting the VOLUME (R511) and SQUELCH (R512) as follows:

Connect signal generator to receiver with maximum systems deviation at 1000 cps. Adjust VOLUME Control R511 for approximately 6.0 VRMS across the 600-ohm telephone line terminals TB701-1 and -2. (Do not reset R511 after making this adjustment). Turn the SQUELCH Control R512 fully clockwise. By making these adjustments, the front panel VOLUME and SQUELCH controls can be adjusted approximately in mid-range.

REMOTE CONTROL PANEL ADJUSTMENT

The initial adjustment for the remote control panel includes:

- Turning the power switch (S702) ON.
- Adjusting the TRANSMIT INPUT LEVEL CONTROL R709.

For the Remote Control Panel Initial Adjustment Procedure, refer to the Maintenance Manual for the remote control panel.

OPERATION

The basic procedures for receiving and transmitting messages are as follows:

TO RECEIVE A MESSAGE

1. Turn the radio on by pressing the ON button to the ON position. The green power-on light will glow, indicating that power is applied to the unit.

2. Turn the SQUELCH control clockwise (to the right) as far as possible.

3. Adjust the VOLUME control until the "hissing" sound is easily heard but not annoyingly loud.

4. Now, slowly turn the SQUELCH control counterclockwise (to the left) until the "hissing" sound disappears.

The radio is now ready to receive messages from other radios in the system.

TO TRANSMIT A MESSAGE

1. Apply power to the transmitter by pressing the ON button to the ON position. Let the unit warm up for 30 seconds.

2. Press the push-to-talk button on the microphone and speak in a normal (or softer) voice six inches away from the front of the mike. Release the button as soon as the message has been given. The red signal light on the Control Panel will glow each time the microphone button is pressed, indicating that the transmitter is on the air. The receiver is muted whenever the transmitter is keyed.

MAINTENANCE

TEST AND TROUBLESHOOTING PROCEDURES

The individual Maintenance Manual for the transmitter and receiver describe standard test procedures which the serviceman can use to compare the actual performance of the transmitter or receiver against the specifications of the unit when shipped from the factory.

In addition, specific troubleshooting procedures are available to assist the serviceman in troubleshooting the transmitter, receiver and power supply.

For best results in servicing the station, the TEST PROCEDURES should be used in conjunction with the TROUBLESHOOTING PROCEDURES. Both sheets are listed in the Table of Contents of the applicable Maintenance Manual.

PREVENTIVE MAINTENANCE

To insure high operating efficiency and to prevent mechanical and electrical failures from interrupting system operations, routine checks should be made of all mechanical and electrical parts. This preventive maintenance should include the maintenance checks listed below or on the following page:

PREVENTIVE MAINTENANCE PROGRAM

CHECK THE FOLLOWING ONCE A YEAR:

1. Transmitter frequency and deviation (FCC requires this check-up ONCE a year). ☐
2. Measure and record the antenna system V.S.W.R. ☐
3. Check input voltage at TB706-1-2 on control panel. Reading should be within 10% of 117 VAC. (Also check during routine service calls). ☐
4. Compare and record transmitter meter readings with voltages taken during initial tune-up. Retune, if necessary. ☐
5. Compare and record receiver meter readings with voltages taken during initial tune-up. Retune, if necessary. ☐
6. Check for positive indication of pressure on transmission line pressure gauge (if pressurized line is used). ☐
7. Clean dust from fan blades and lubricate bearings. ☐
8. Burnish pitted or coated relay contacts to smooth out metallic deposits or remove the coating. ☐

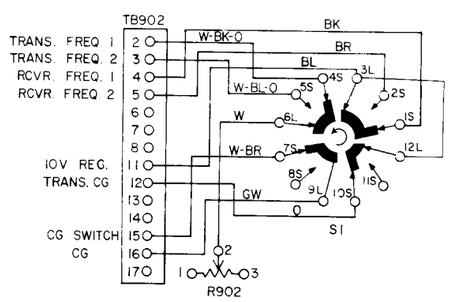
MAKE THE FOLLOWING MAINTENANCE CHECKS DURING ROUTINE SERVICE CALLS:

1. Check antenna lines and mast for mechanical stability. ☐
2. Visually check:
   - External cables ☐
   - Internal cables ☐
   - Plugs ☐
   - Sockets ☐
   - Terminal boards ☐
3. Check for tightness of nuts, bolts, and screws to make sure nothing is working loose from its mounting. ☐
4. Replace tubes as necessary. (It may be convenient to replace all station tubes during the yearly check-up). ☐

FREQUENCY SELECTOR SWITCHES

PLI9AI21629G1-G6

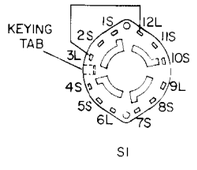
ALL SWITCHES ARE SHOWN IN THE F1 POSITION. ARROW INDICATES CLOCKWISE ROTATION, VIEWED FROM KNOB END (CCW ROTATION FROM TERMINAL END.)

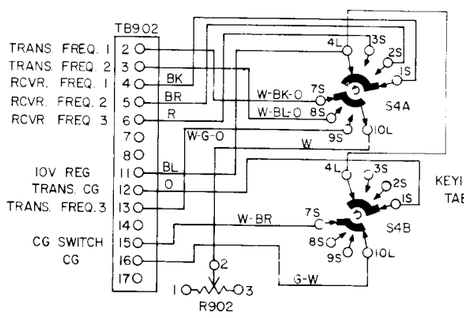


PLI9AI21629G1

TWO-FREQUENCY TRANSMITTER
TWO-FREQUENCY RECEIVER

IN CHANNEL GUARD SYSTEMS, REMOVE JUMPER BETWEEN TB902-11 & 12 AND TB902-15 & 16

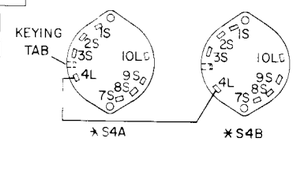


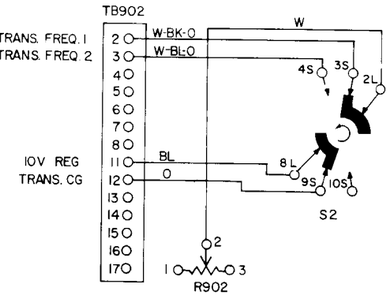


PLI9AI21629G4

THREE-FREQUENCY TRANSMITTER
THREE-FREQUENCY RECEIVER

IN CHANNEL GUARD SYSTEMS, REMOVE JUMPER BETWEEN TB902-11 & 12 AND TB902-15 & 16

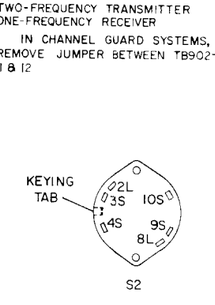


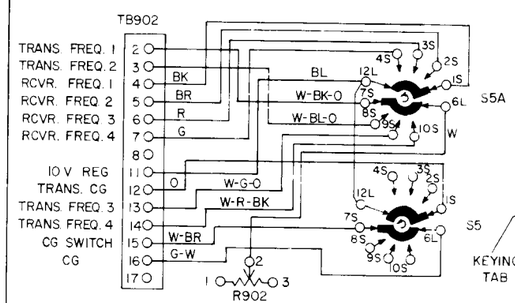


PLI9AI21629G2

TWO-FREQUENCY TRANSMITTER
ONE-FREQUENCY RECEIVER

IN CHANNEL GUARD SYSTEMS, REMOVE JUMPER BETWEEN TB902-11 & 12

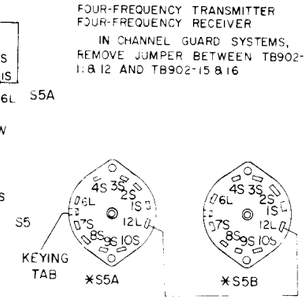


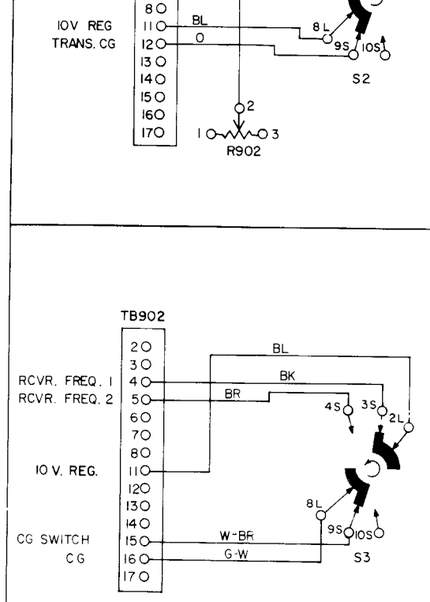


PLI9AI21629G5

FOUR-FREQUENCY TRANSMITTER
FOUR-FREQUENCY RECEIVER

IN CHANNEL GUARD SYSTEMS, REMOVE JUMPER BETWEEN TB902-1 & 12 AND TB902-15 & 16

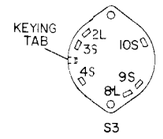


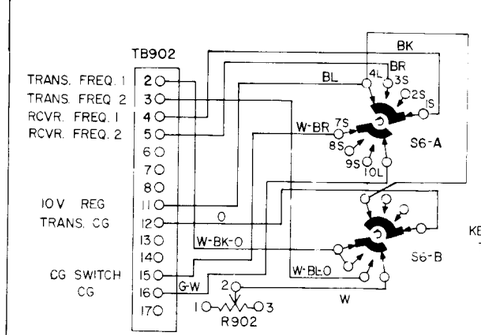


PLI9AI21629G3

ONE-FREQUENCY TRANSMITTER
TWO-FREQUENCY RECEIVER

IN CHANNEL GUARD SYSTEMS, REMOVE JUMPER BETWEEN TB902-15 & 16

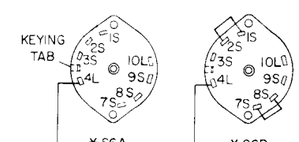


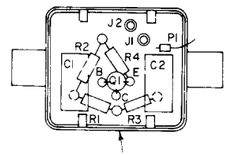


SEARCH LOCK MONITOR CONTROL
PLI9AI21629G6

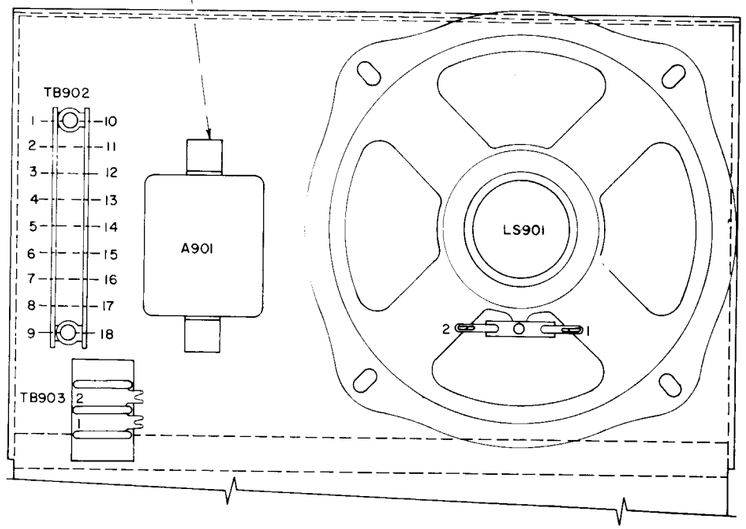
TWO-FREQUENCY TRANSMITTER
TWO-FREQUENCY RECEIVER

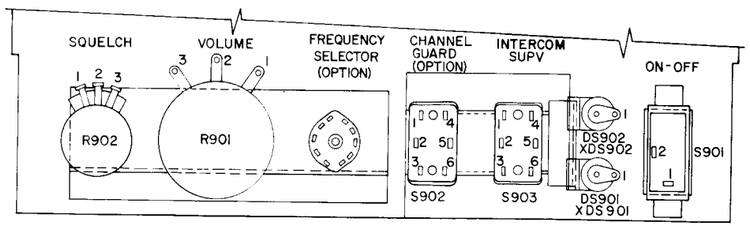
IN CHANNEL GUARD SYSTEMS, REMOVE JUMPER BETWEEN TB902-11 & 12 AND TB902-15 & 16

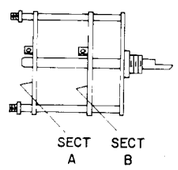




MICROPHONE PREAMPLIFIER A901



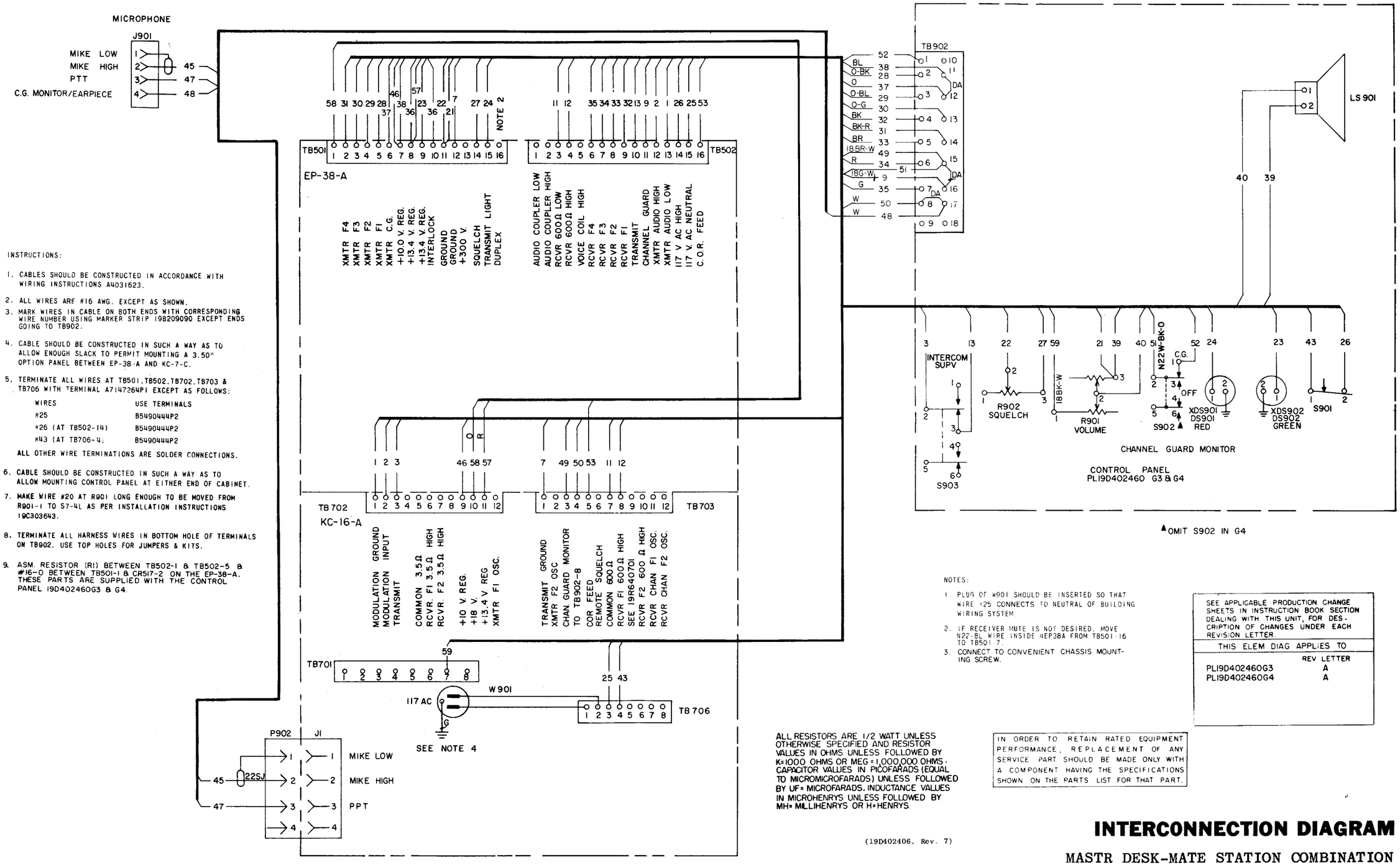




* MOUNT SWITCH WAFERS SECTION A AND SECTION B AS SHOWN ABOVE

OUTLINE DIAGRAM

MASTR DESK-MATE STATION COMBINATION
LOCAL/REMOTE CONTROL PANEL



INSTRUCTIONS:

1. CABLES SHOULD BE CONSTRUCTED IN ACCORDANCE WITH WIRING INSTRUCTIONS A4031623.
2. ALL WIRES ARE #16 AWG. EXCEPT AS SHOWN.
3. MARK WIRES IN CABLE ON BOTH ENDS WITH CORRESPONDING WIRE NUMBER USING MARKER STRIP 19B209090 EXCEPT ENDS GOING TO TB902.
4. CABLE SHOULD BE CONSTRUCTED IN SUCH A WAY AS TO ALLOW ENOUGH SLACK TO PERMIT MOUNTING A 3.50" OPTION PANEL BETWEEN EP-38-A AND KC-7-C.
5. TERMINATE ALL WIRES AT TB501, TB502, TB702, TB703 & TB706 WITH TERMINAL A7147264P1 EXCEPT AS FOLLOWS:

WIRES	USE TERMINALS
#25	8549044P2
#26 (AT TB502-14)	8549044P2
#43 (AT TB706-4)	8549044P2

ALL OTHER WIRE TERMINATIONS ARE SOLDER CONNECTIONS.

6. CABLE SHOULD BE CONSTRUCTED IN SUCH A WAY AS TO ALLOW MOUNTING CONTROL PANEL AT EITHER END OF CABINET.
7. MAKE WIRE #20 AT R901 LONG ENOUGH TO BE MOVED FROM R901-1 TO S7-4L AS PER INSTALLATION INSTRUCTIONS 19C303643.
8. TERMINATE ALL HARNESS WIRES IN BOTTOM HOLE OF TERMINALS ON TB902. USE TOP HOLES FOR JUMPERS & KITS.
9. ASM. RESISTOR (R1) BETWEEN TB502-1 & TB502-5 & #16-0 BETWEEN TB501-1 & CR517-2 ON THE EP-38-A. THESE PARTS ARE SUPPLIED WITH THE CONTROL PANEL 19D402460G3 & G4.

▲OMIT S902 IN G4

NOTES:

1. PLUG OF W901 SHOULD BE INSERTED SO THAT WIRE #25 CONNECTS TO NEUTRAL OF BUILDING WIRING SYSTEM.
2. IF RECEIVER MUTE IS NOT DESIRED, MOVE N22-BL WIRE INSIDE MEP38A FROM TB501-16 TO TB501-7.
3. CONNECT TO CONVENIENT CHASSIS MOUNTING SCREW.

SEE APPLICABLE PRODUCTION CHANGE SHEETS IN INSTRUCTION BOOK SECTION DEALING WITH THIS UNIT, FOR DESCRIPTION OF CHANGES UNDER EACH REVISION LETTER.

THIS ELEM DIAG APPLIES TO	REV LETTER
PLI9D402460G3	A
PLI9D402460G4	A

ALL RESISTORS ARE 1/2 WATT UNLESS OTHERWISE SPECIFIED AND RESISTOR VALUES IN OHMS UNLESS FOLLOWED BY K=1000 OHMS OR MEG=1,000,000 OHMS. CAPACITOR VALUES IN PICOFARADS (EQUAL TO MICROMICROFARADS) UNLESS FOLLOWED BY UF= MICROFARADS. INDUCTANCE VALUES IN MICROHENRYS UNLESS FOLLOWED BY MH= MILLIHENRYS OR H=HENRYS.

IN ORDER TO RETAIN RATED EQUIPMENT PERFORMANCE, REPLACEMENT OF ANY SERVICE PART SHOULD BE MADE ONLY WITH A COMPONENT HAVING THE SPECIFICATIONS SHOWN ON THE PARTS LIST FOR THAT PART.

(19D402406, Rev. 7)

INTERCONNECTION DIAGRAM

MASTR DESK-MATE STATION COMBINATION LOCAL/REMOTE CONTROL PANEL

PARTS LIST

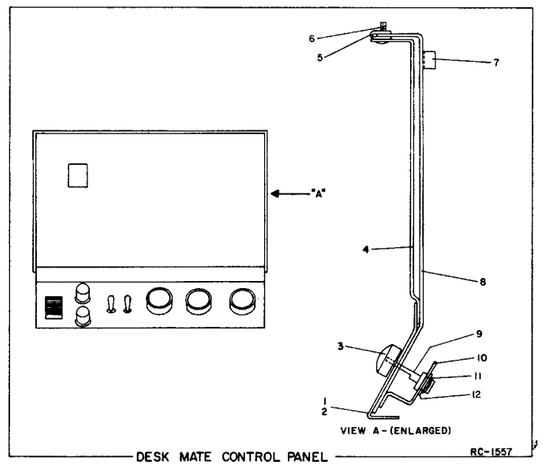
LBI-3557A

DESK-MATE STATION
FRONT END CONTROL PANEL
PL-19D402460-G3 and G4
REV A

SYMBOL	G-E PART NO.	DESCRIPTION
A901*		PRE-AMPLIFIER MICROPHONE ASSEMBLY PL-19B204663-G1 Deleted by Rev A
		- - - - - - - - - - CAPACITORS - - - - - - - - - -
C1 and C2	19A115028-P114	Polyester: 0.1 µf ±20%, 200 VDCW.
		- - - - - - - - JACKS AND RECEPTACLES - - - - - - - -
J1 and J2	4033513-P4	Contact, electrical: sim to Bead Chain L93-3.
		- - - - - - - - - - - - PLUGS - - - - - - - - - - - -
P1	4029840-P2	Contact, electrical; sim to Amp 42827-2.
		- - - - - - - - - - TRANSISTORS - - - - - - - - - -
Q1	19A115123-P1	Silicon, NPN; sim to Type 2N2712.
		- - - - - - - - - - RESISTORS - - - - - - - - - -
R1	3R77-P434J	Composition: 0.43 megohm ±5%, 1/2 w.
R2	3R77-P823K	Composition: 82,000 ohms ±10%, 1/2 w.
R3	3R77-P103J	Composition: 10,000 ohms ±5%, 1/2 w.
R4	3R77-P202J	Composition: 2000 ohms ±5%, 1/2 w.
		- - - - - - - - INDICATING DEVICES - - - - - - - -
DS901 and DS902	19C307037-P19	Lamp, incandescent: miniature, 14 v ±0.1 v; sim to G-E 756.
		- - - - - - - - JACKS AND RECEPTACLES - - - - - - - -
J901	7117934-P2	Connector, chassis: 4 female contacts; sim to Amphenol Type 91-PC4F.
		- - - - - - - - - - LOUDSPEAKERS - - - - - - - - - -
LS901	19C307123-P1	Permanent magnet, 6-inch: 3.2 ohms ±10% voice coil imp, 3 w max operating, 150-300 cps resonance, paper dust cap; sim to Russell Speaker S-3406.
		- - - - - - - - - - - - PLUGS - - - - - - - - - - - -
P902	7478726-P6	Connector, cable: 4 male contacts; sim to Amphenol Type 91-MC4M.
		- - - - - - - - - - RESISTORS - - - - - - - - - -
R901	7478301-P48	Attenuator, variable, audio, L pad: 3.5 ohms, 4 w, 40 db max attenuation min.
R902	5493662-P5	Variable, carbon film: 2500 ohms ±20%, 0.5 w; sim to CTS Series 45.
		- - - - - - - - - - SWITCHES - - - - - - - - - -
S901	19B209147-P1	Push: SPST, 3 amps at 250 VAC or 6 amps at 125 VAC; sim to Cutler-Hammer 8134K6.
S902	5491899-P4	Toggle: DPDT, 3 amps at 250 VAC or 6 amps at 125 VDC; sim to Cutler-Hammer 8373K8. (Used in PL-19D402460-G3).
S903*	5491899-P4	Toggle: DPDT, 3 amps at 250 VAC or 6 amps at 125 VDC; sim to Cutler-Hammer 8373K8. Added by Rev A.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES.

SYMBOL	G-E PART NO	DESCRIPTION
		- - - - - - - - TERMINAL BOARDS - - - - - - - -
TB902	7775500-P19	Phen: 9 terminals.
		- - - - - - - - - - - CABLES - - - - - - - - - - -
W901	7491206-P1	Cord and plug: 3 conductor, 10 amps at 125 VRMS max, approx 15 feet long.
		- - - - - - - - - - SOCKETS - - - - - - - - - -
XDS901 and XDS902	19B209342-P2	Lamp: sim to Leecraft 7-04-1.
		MECHANICAL PARTS (SEE RC-1557)
1	NP257587	Nameplate: etched aluminum. (Used in PL-19D402460-G4).
2	NP249235	Nameplate: etched aluminum. (Used in PL-19D402460-G3).
3	19A115679-P1	Knob. (Used with R901, R902 and Dummy).
4	19B204642-P1	Grille.
5	7160861-P4	Nut: sheet spring; sim to Tinnerman C6452-82-157.
6	N111P1508C13	Phillips screw: No. 8-18 x 1/2 inch.
7	7763541-P8	Cable clamp.
8	PL-19B204803-G1	Support.
9	4032256-P1	Shaft: nylon, dummy.
10	19B204800-P1	Support. (Used with R901 and R902).
11	4032230-P1	Retaining ring: sim to Waldes Kohinoor 5131-37.
12	N402P13C13	Plain washer.



DESK MATE CONTROL PANEL — RC-1557

PARTS LIST

LBI-3561

DESK-MATE STATION CABINET
PL-7354211-G4

SYMBOL	G-E PART NO.	DESCRIPTION
	7354211-P4	Cabinet Assembly
	7354211-P8	Door (fits either side)
	4035449-P5	Bumper, door: rubber, sim to Atlantic India Ruber Co. 1165.
	4033979-P1	Lock and Key: sim to Yale & Towne 6678DX1.
		Key: Yale & Towne LL201.
	N529P38C	Plug (for cable knockouts at bottom of assembly)
	7354211-P7	Mounting rack (2 drilled angles)

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES.

PARTS LIST

LBI-3624A
FREQUENCY - SELECTOR SWITCHES
PL-19A121629-G1 - G6

SYMBOL	G-E PART NO.	DESCRIPTION
		- - - - - - - - - - SWITCHES - - - - - - - - - -
S1	5495454-P18	Rotary: 4 poles, 2 positions, non-shorting contacts, 2 amps at 25 VDC or 1 amp at 110 VAC; sim to Oak Type "A" or Centralab Series 100.
S2 & S3	5495454-P1	Rotary: 2 poles, 2 positions, non-shorting contacts, 2 amps at 25 VDC or 1 amp at 110 VAC; sim to Oak Type "A" or Centralab Series 100.
S4 & S6	5495454-P20	Rotary: 2 sections, 4 poles, 3 positions, non-shorting contacts, 2 amps at 25 VDC or 1 amp at 110 VAC; sim to Oak Type "A" or Centralab Series 100.
S5	5495227-P25	Rotary: 2 sections, 4 poles, 4 positions, non-shorting contacts, 2 amps at 28 VDC or 1 amp at 110 VAC; sim to Oak Type "F".

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES.

PRODUCTION CHANGES

Changes in the equipment to improve performance or to simplify circuits are identified by a "Revision Letter", which is stamped after the model number of the unit. The revision stamped on the unit includes all previous revisions. Refer to the Parts List for descriptions of parts affected by these revisions.

REV. A - PL-19D402460-G3 & 4

To provide intercom and supervisory control with Local/Remote Control Stations. Deleted A901, changed XDS 901 & XDS 902, and added S903.

PARTS LIST

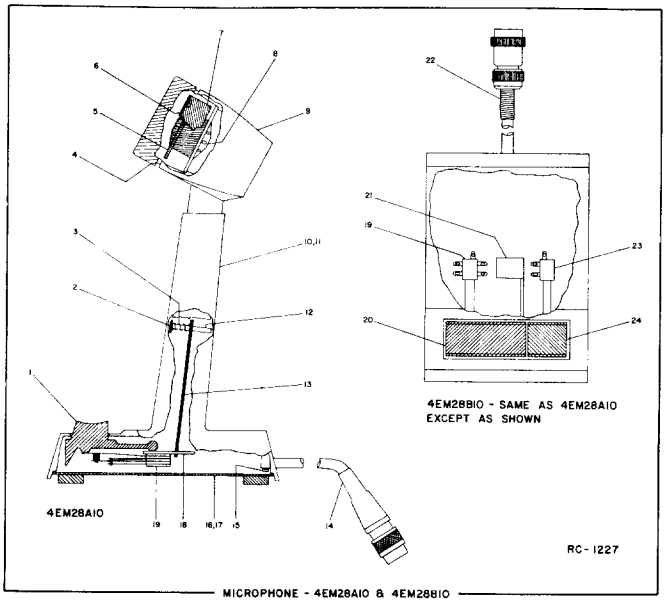
LBI-3623B

MAGNETIC CONTROLLED DESK MICROPHONE

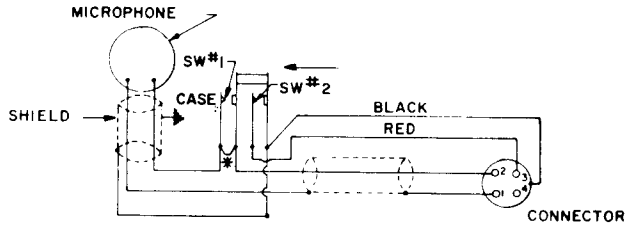
MODEL 4EM28A10 (19C307105-P1)
MODEL 4EM28B10 (19C307106-P1)
(SEE RC-1227)

SYMBOL	G-E PART NO.	DESCRIPTION
		MECHANICAL PARTS
		MODEL 4EM28A10
1		Pushbutton. Shure Brothers RP-68.
2		Washer. Shure Brothers 30A697.
3		Spring. Shure Brothers 44A149.
4		Cap and grille. Shure Brothers RP-72.
5		Magnetic controlled cartridge. Shure Brothers RP-13.
6		Washer. Shure Brothers 34A223.
7		Shield. Shure Brothers 53A528.
8		Damping pad. Shure Brothers 20B33.
9		Housing. (Part of item 4).
10		Base. (Part of item 4).
11		(Not used).
12		Pin. Shure Brothers 31A848.
13		Bracket. Shure Brothers 53A637.
14		Cable and plug. Shure Brothers RP-65.
15		Cable clamp. Shure Brothers 53A532.
16		Bottom plate. Shure Brothers 90A1015.
17		(Not used).
18		Mounting bracket. Shure Brothers 53A633.
19		Switch. Shure Brothers RP-70.
		MODEL 4EM28B10
1		(Not used).
2		Washer. Shure Brothers 30A697.
3		Spring. Shure Brothers 44A149.
4		Cap and grille. Shure Brothers RP-72.
5		Magnetic controlled cartridge. Shure Brothers RP-13.
6		Washer. Shure Brothers 34A223.
7		Shield. Shure Brothers 53A528.
8		Damping pad. Shure Brothers 20B33.
9		Housing. (Part of item 4).
10		(Not used).
11		Base. (Part of item 4).
12		Pin. Shure Brothers 31A848.
13		Bracket. Shure Brothers 53A637.
14		(Not used).
15		Cable clamp. Shure Brothers 53A532.
16		(Not used).
17		Bottom plate. Shure Brothers 90B1015.
18		Mounting bracket. Shure Brothers 53A633.
19		Switch. Shure Brothers RP-71.
20		Pushbutton (Transmit). Shure Brothers RP-69.
21		Locking arm. Shure Brothers 53A667.
22		Cable and plug. Shure Brothers RP-66.
23		Switch. (Part of item 19).
24		Pushbutton (Monitor). (Part of item 20).

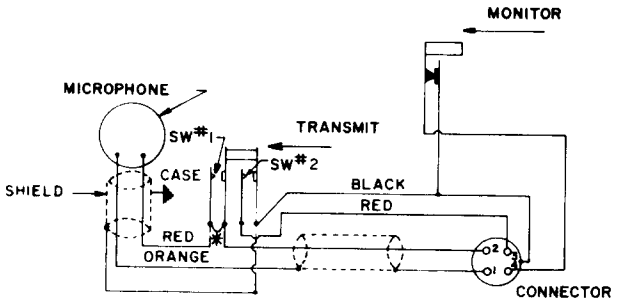
*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES.



MICROPHONE - 4EM28A10 & 4EM28B10



CIRCUIT DIAGRAM
4EM28A10



CIRCUIT DIAGRAM
4EM28B10

* JUMPER MAY BE REMOVED FOR PARALLEL OR SPECIAL OPERATION

NOTES:

1. SWITCH #1 OF THE MICROPHONE CIRCUIT MUST CLOSE FIRST AND OPEN LAST.

2. MONITOR AND TRANSMIT BUTTONS ARE MECHANICALLY INTERLOCKED, MAKING IT NECESSARY TO PRESS MONITOR BUTTON BEFORE TRANSMITTING. TO MONITOR CONTINUOUSLY, PRESS MONITOR BUTTON DOWN AND SLIDE FORWARD TO "LOCK" POSITION. PRESS AND PUSH BACK BUTTON TO RELEASE. TO OPERATE MONITOR AND TRANSMIT FUNCTIONS INDEPENDENTLY, REMOVE LOCKING ARM BRACKET (PART 21 SHOWN ABOVE AND IN PARTS LIST).

(RC-302A, Sh. 2)

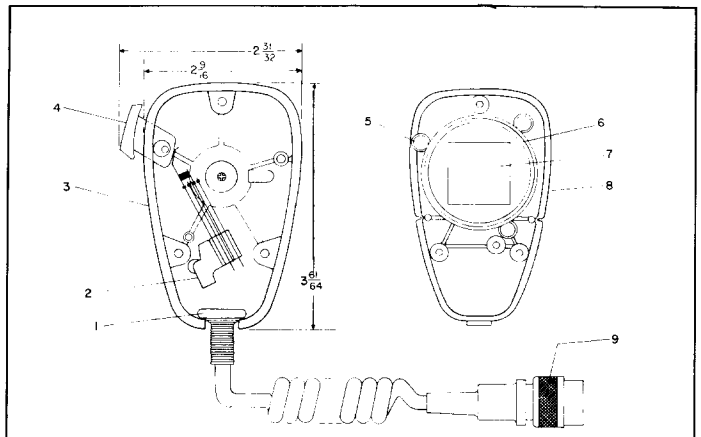
PARTS LIST

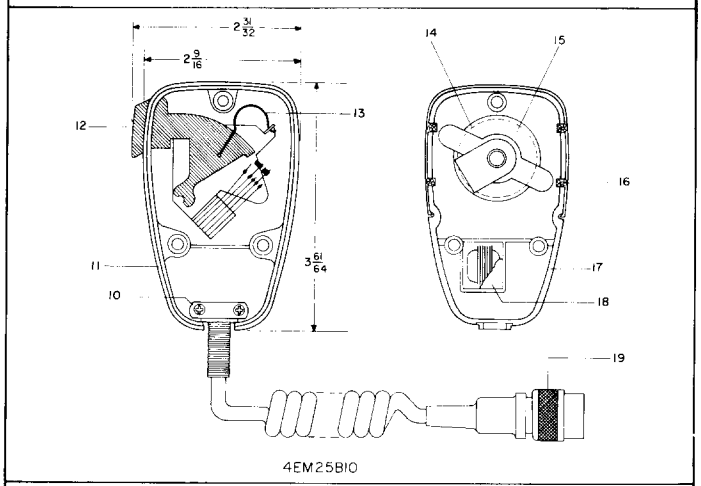
LBI-3558A

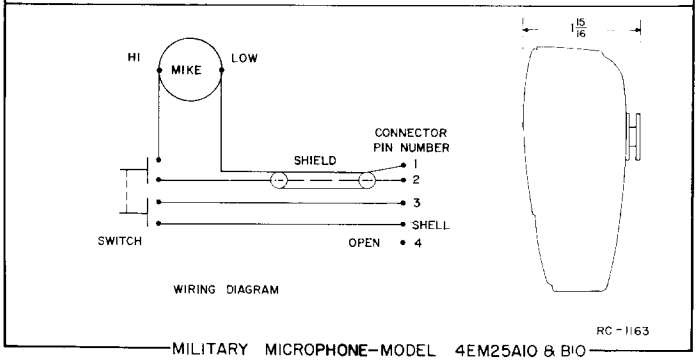
MILITARY MICROPHONE
MODELS 4EM25A10 and 4EM25B10
(PL-19B209102-G1)
(SEE RC-1163)

SYMBOL	G-E PART NO.	DESCRIPTION
		MECHANICAL PARTS
		MODEL 4EM25A10
1		Cable clamp. Shure Brothers RP-16.
2		Switch. Shure Brothers RP26.
3		Case (back) and mounting button: plastic. Shure Brothers RP-67.
4		Switch button: red plastic. Shure Brothers RP-25.
5		Spring. Shure Brothers RP-1.
6		Shield. Shure Brothers RP-23.
7		Magnetic controlled cartridge. Shure Brothers RP-13.
8		Case (front) plastic. (Part of item 3).
9		Cable and plug: approx 6 feet long. Shure Brothers RP-14.
		MODEL 4EM25B10
10		Cable clamp. Electro Voice 75881.
11		Case (back): includes switch and mounting button. Electro Voice 83610.
12		Switch button: red plastic. Electro Voice 75815.
13		Spring. Electro Voice 19006.
14		Gasket. Electro Voice 38277.
15		Magnetic controlled cartridge. Electro Voice 83444.
16		Grille screen. Electro Voice 75814.
17		Case (front): plastic. Electro Voice 75816.
18		Transformer shield. Electro Voice 75873.
19		Cable and plug: approx 6 feet long. Electro Voice 83445.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES.



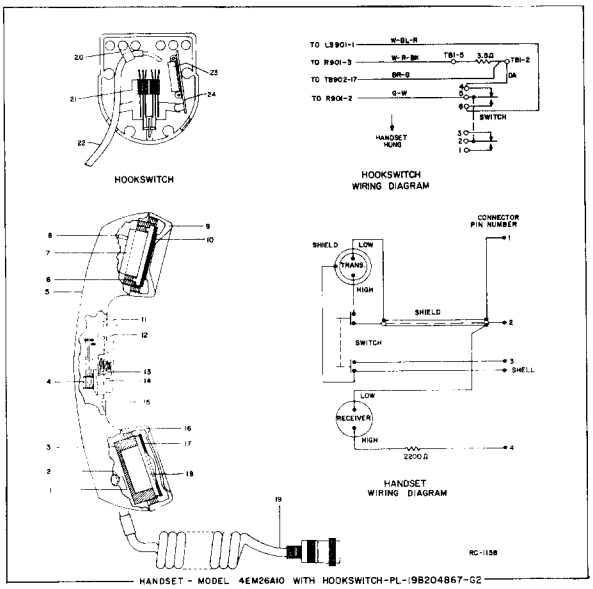




MILITARY MICROPHONE—MODEL 4EM25A10 & B10

HANDSET
MODEL 4EM26A10
(PL-19B209100-G1)

SYMBOL	G-E PART NO.	DESCRIPTION
		- - - - - - - - - MISCELLANEOUS - - - - - - - - -
		(REFER TO RC-1158)
1		Self tap screw, bind head: No. 4 x 5/16. Shure Brothers 30C640C.
2		Cable clamp. Shure Brothers 53A532.
3		Shield. Shure Brothers RP-19.
4		Switch. Shure Brothers RP-81.
5		Handle. Shure Brothers RP-49.
6		Adapter. Shure Brothers 65A230.
7		Magnetic controlled cartridge. Shure Brothers RP-41.
8	3R77-P222K	Resistor, composition: 2200 ohms ±10%, 1/2 w.
9		Receiver cap. (Part of item 5).
10		Washer. Shure Brothers 34A321.
11		Escutcheon. Shure Brothers 53A536A.
12		Actuator. Shure Brothers 53A556.
13		Spring. Shure Brothers 44A140.
14		Plunger bar. Shure Brothers RP-82.
15		Flat head screw, socket cap: No. 4-40 x 1/4. Shure Brothers 30C557B.
16		Transmitter cap. (Part of item 5).
17		Washer. Shure Brothers 34A309.
18		Magnetic controlled cartridge. Shure Brothers RP-13.
19		Cable and plug. Shure Brothers RP-48.
		HOOKSWITCH ASSEMBLY PL-19B204867-G2
		- - - - - - - - - MISCELLANEOUS - - - - - - - - -
20	4029851-P5	Cable clamp; sim to WEC Kesser 3/16-4.
21	19A121612-P1	Holder and switch: thermoplastic case, contact rating 1 amp at 125 v.
22	PL-19A121720-G1	Cable: approx 8-1/2 feet long.
23	5493035-P10	Resistor, wirewound, ceramic: 3.5 ohms ±5%, 5 w; sim to Tru-Ohm Type X-60.
24	7775500-P55	Terminal board, phen: 5 terminals.



HANDSET - MODEL 4EM26A10 WITH HOOKSWITCH-PL-19B204867-G2

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES.