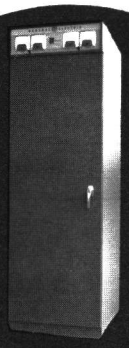
MOBILE RADIO

MASTR
PROGRESS LINE

MAINTENANCE MANUAL



FLOOR MOUNT
STATION

TWO-WAY FM
FLOOR MOUNT
STATION
COMBINATION

HIGH POWER
DC REMOTE CONTROL
TONE REMOTE CONTROL
LBI-4524A

MICROPHONE

DF-9032

GENERAL ELECTRIC

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 supplied with power. KEEP AWAY FROM LIVE CIRCUITS.

EQUIPMENT INDEX

EQUIPMENT	TYPE OR MODEL NUMBER
Transmitter Exciters	ET-54-A, through ET-59-C
Power Amplifier (25-50 MHz)	4EF4A1, 2, 3
Power Amplifier (144-174 MHz)	4EF5A1
Power Amplifier (450-470 MHz)	4EF6A1
Power Amplifier Power Supply	4EP6A1 or 4EP6B1
Receiver	ER-39-A through ER-42-H
Cabinet	7668242G14
Station Power Supply	EP-38-A
Antenna Relay (mounts on EP-38-A)	19A121260G1
Control Shelf	19D416725G1
Tone Control Control Shelf System Board (Back Plane) Secur-it Tone Board Transmitter Control Board Receiver Control Board Audio Board	 19D416721G1 19D416728G1 19D416660G1-G4 19D416658G2 19D416667G3, G4
DC Control Control Shelf System Board (Back Plane) Control Shelf Blank Panel DC Remote Control Board Audio Board	 19D416721G1 19C320228P1 19D416661G1-G4 19D416667G3, G4
Extender Board	19D416760G1
Microphone Microphone Mounting Kit	4EM25A10 7141414G2
Speaker Assembly	19B219618G1
117-VAC Power Cable	7491206P1
Alignment Tools (hex slug type) (slotted screw type)	4038831P2 4033530G2
Meter Switching Circuit	19A121460G1
Meter Panel	19C303518G4

SPECIFICATIONS *

DIMENSIONS (H x W x D)	69" x 22" x 23"
WEIGHT	Approximately 395 pounds
DUTY CYCLE	Continuous
INPUT VOLTAGE	117 VAC, ±20%, 50/60 Hz
INPUT POWER	Transmit: 1100 Watts Receive: 176 Watts
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 Specifications Sheet for complete specifications.

COMBINATION NOMENCLATURE

1st Digit	2nd Digit	3rd Digit	4th Digit	5th Digit	6th Digit	7th Digit	8th & 9th Digits
Mechanical Package	Operating Voltage	RF Power Output Range	Channel Spacing	Control	Number of Freq.	Options	Frequency Range
V Floor-Mount Station	**T** 117 VAC	**8** 128-256 Watts	**4** 20 kHz	**R** DC Remote Control Station	**A** 1-Freq. T 1-Freq. R	**S** Standard	**11** 25-33 MHz
		9 Over 256 Watts	**5** 25 kHz	**T** Tone Remote Control Station	**B** 2-Freq. T 1-Freq. R	**N** Noise Blanker	**22** 33-42 MHz
			6 30 kHz		**C** 2-Freq. T 2-Freq. R	**U** Channel Guard	**33** 42-50 MHz
			7 40 kHz		**D** 1-Freq. T 2-Freq. R	**W** Noise Blanker & Channel Guard (71.9-156.7 Hz)	**55** 132-150.8 MHz
			8 50 kHz			**P** UHS Receiver	**66** 150.8-174 MHz
			9 60 kHz			**G** UHS Receiver & Channel Guard	**77** 406-420 MHz
							88 450-470 MHz

DESCRIPTION

The General Electric MASTR Progress Line Floor Mount Station is a complete two-way High Power Remote Control Station. The station can be placed in a building adjacent to the antenna installation or it may be located in another location suitable to your communication requirements. The transmitter exciter board and the receiver are fully transistorized. Silicon transistors are used throughout for added reliability.

A muffin fan is used to air-cool the transmitter and 12.6 Volt regulator transistors. The fan is mounted on the front of the Transmitter-Receiver Power Supply. A blower is also used to cool the PA tubes in the Power Amplifier and is mounted on the front of the PA Power Supply. An optional cabinet blower is available for continuous duty and high temperature operation. This blower mounts in the bottom of the cabinet.

Both front and back doors on the station cabinet can be opened to gain access to the transmitter, receiver and power supply. The transmitter and receiver modules are equipped with centralized

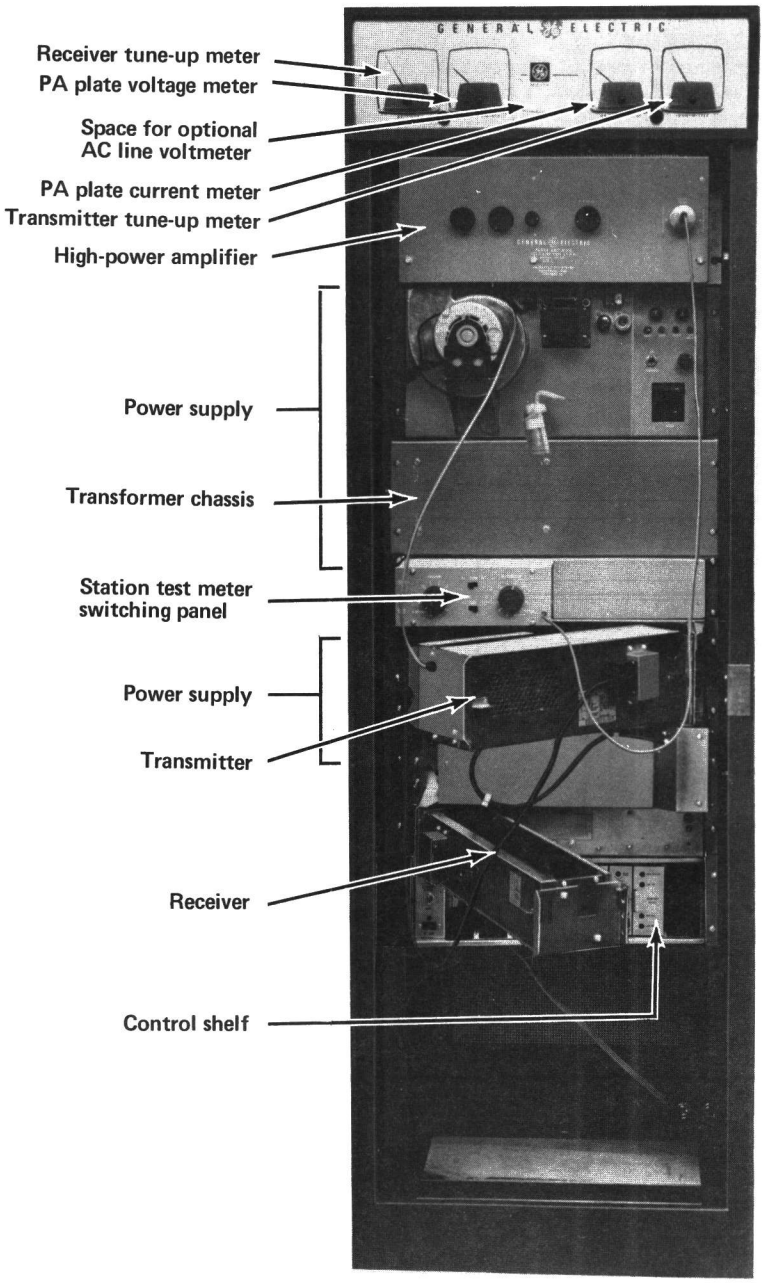


Figure 1 - Typical Station Equipment Arrangement

metering jacks, and are mounted on swing-out 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 rear door is interlocked to protect personnel from voltages when the door is opened. A 117 VAC receptacle mounted in the cabinet provides AC for service equipment.

TRANSMITTER ASSEMBLY

The transmitter assembly consists of the transmitter exciter and power amplifier. The PA is air-cooled by a blower mounted on the PA power supply chassis. The standard transmitter may be equipped with:

- One through two frequencies
- Channel Guard (tone squelch)

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 two frequencies
- Channel Guard (tone squelch)
- Noise Blanker (25-50 MHz and 144-174 MHz)
- RF Preamplifier (144-174 MHz and 450-470 MHz)

POWER SUPPLIES

Transmitter Exciter Receiver Power Supply EP-38-A

Station Power Supply Type EP-38-A provides operating voltage for the transmitter exciter, receiver and Control Shelf. The power supply provides:

- Regulated -20 Volts for the transistorized transmitter exciter-board.
- Regulated +10 Volts for the receiver, transmitter, Channel Guard, and Control Shelf.
- Regulated +12.6 Volts for transmitter filaments, receiver audio, relays, and pilot lights.

PA Power Supply (4EP6B1)

The power supply provides the B-plus plate and screen grid voltages for the PA (types EF-4-A, EF-5-A and EF-6-A). In addition, the following voltages are provided for the PA:

- 6 Volts regulated filament supply
- 140 Volts DC antenna relay supply

Antenna Circuits

The transmission line from the antenna tower is coupled to the top connector on the antenna relay located on the Power Amplifier chassis. The antenna is coupled from the front connector on the relay directly to the high power amplifier. A coax cable connects the high power amplifier plug P482 to the exciter jack J103 (Transmitter Exciter on Transmitter-Receiver Power Supply chassis). The receive transmission line connects directly to the left socket on the antenna mounting bracket located on the Transmitter-Receiver Power Supply chassis.

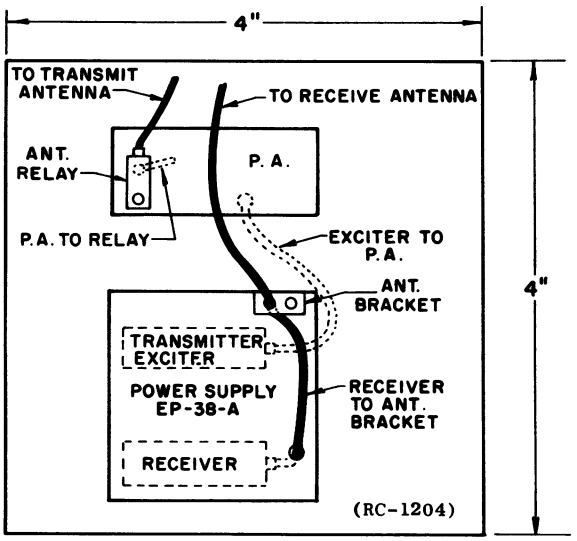


Figure 2 - Antenna Connections - Rear View

CONTROL SHELF ASSEMBLY

Control Shelf 19D416725G1 contains the System Board, the AC input circuit and plug-in printed wire modules with solid state circuitry for up to six DC Remote Control functions and up to twelve Tone Remote Control functions.

AC Input

The 117 VAC input is connected directly to TB1202-1 and -2. All power to the station is controlled by switch S1201 on

the control shelf. When S1201 is turned ON, the green Power-On light on the meter panel will become illuminated.

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

WARNING

117-Volts AC is always present at TB1202-1 and -2, even when S1201 is in the OFF position. Always use care when servicing the cabinet power module on the Control Shelf

Surge Protection

Surge Protection Thyrector 19A129370G1 is connected across the 117 Volt Line in high power station combinations for light-night protection and to eliminate voltage surges on the input power leads. The thyrector is connected between terminals 1 and 2 of TB1202 located on Control Shelf 19D416725G1.

Telephone Lines

The key link in a Remote Control installation is the telephone line from the Dispatcher Unit to the Remote Control Station. The telephone line is connected directly from the dispatcher's console to the Remote Station wherever it may be located.

There are three methods of telephone line control:

1. Two telephone pair--one for audio and one for DC control. Tone Remote units send control tones over the audio pair.

2. One metallic pair for both audio and DC control, simplexing the DC control current from the center-tap of the output transformer to ground.

3. One metallic pair for both audio and DC control, simplexing the DC control current from one line to the other by splitting the output transformer with a capacitor.

Refer to Control Shelf Maintenance Manual LBI-4490 for complete information on Remote Control Telephone lines.

MICROPHONE

A microphone is mounted inside the station for use during service and maintenance work by the serviceman. The microphone is connected to jack J902 located on the front side of the power supply.

SPEAKER ASSEMBLY

Speaker Assembly 19B219618G1 is designed for an audio input of 1.5 Watts when used in MASTR Progress Line Remote Control Stations. The Speaker Assembly mounts on the chassis of transmitter-receiver power supply Type EP-38-A, as an aid to the serviceman.

NOTE

When a speaker is not used, a 3.5 ohm, 10-Watt resistor must be connected from TB501-11 to TB502-5 as a substitute for the speaker load impedance.

METERING CIRCUITS

Meter Panel (19C303518G4)

The Meter Panel is located above the front door on the station cabinet. The panel contains the following meters:

- Meter M901 - measures test voltages in transmitter circuits.
- Meter M902 - measures test voltages in receiver circuits.
- Meter M903 - measures PA Plate current in Transmitter power amplifier.
- Meter M904 - measures PA Plate voltage of the power amplifier.
- Line Voltmeter 19A120042G5 (option) - continuously monitors line voltage. The meter is a 0-150 VAC voltmeter connected across the 117 VAC line.

Meter Switching Panel Assembly (19A121460G1)

The Meter Switching Panel Assembly is mounted on the front of the accessory panel and contains the switches and circuitry for switching from stage to stage in the receiver and transmitter. The voltage readings for each stage is indicated on the meters located in the Meter Panel. The Meter Switching Panel Assembly includes:

- Plug P1001 - plugs into transmitter centralized metering jack J102 (or J1001 if optional transmitter top cover is used).
- Plug P1002 - plugs into receiver centralized metering jack J442 (or J1002 if optional receiver top cover is used).

The Meter voltage check points are:

Tx (S1001) & Rx (S1002) Switch Position Number	Transmitter Function	Meter Range Full Scale	Receiver Function	Meter Range Full Scale
A	MULT 1	1 V	DISC	1 V*
B	MULT 2	1 V	2nd IF	1 V*
C**	AMPL 3	1 V	1st LIM	1 V*
D	MULT 3	1 V	MULT 1	1 V*
E***	AMPL/MULT 4	1 V	MULT 2	1 V*
F	PA GRID	1 V	-----	
G	PA PLATE CURRENT	1 V	AUDIO PA	1 V*
H***	POWER OUTPUT	1 V	BLANKER	1 V*
I	20 VOLTS	30 V	-----	
J	PA PLATE VOLTAGE	1,000 V	10-VOLTS	15 V
K	EXTERNAL PROBE	3 V	-----	
L/VM	RECEIVER 2nd IF	1 V	-----	

* can be increased by 3 V by switch S1003.
** not used in ET-54-A.
*** used only in ET-59-D.

- Test Probe P1003 - to measure high power amplifier grid voltage.
- Switch S1001 - to switch transmitter voltage test points into the test meter circuit.
- Switch S1002 - to switch receiver voltage test points into the test meter circuit.
- Switch S1004 - Test probe polarity reversing switch.

Test probe P1003 is used to measure the high power amplifier grid current/voltage and plugs into the PA grid jack on the high power supply.

Refer to the transmitter and/or receiver maintenance manual for the proper voltage readings for each stage tested.

Transmitter voltage readings will be indicated on transmitter "tune up" meter (M901) and receiver readings will be indicated on the receiver "tune up" meter (M902). Both meters are located on the Meter Panel.

CIRCUIT ANALYSIS

The voltage test points in the receiver and transmitter are connected through the connecting cables to lug terminals on the receiver and transmitter voltage wafer switches. With the receiver switch in the "A" meter switch position for example, the discriminator output voltage is connected by the switch to TB901-11 and 12 through wire numbers 22 and 23 to receiver meter (M902) in the Meter Panel. If the transmitter switch is in the "F" position, for example, the PA grid voltage is connected by the switch to TB901-9 and 10, through wire numbers 20 and 22 to meter (M901) in the Meter Panel.

Switch S1003 is used to connect the 3-Volt multiplying resistor into the receiver meter circuit. Test probe P1003 is used to measure the high power amplifier grid drive. When using the test probe, turn the transmitter switch S1001 to the "External" position. R1002 is a multiplier resistor in series with the test probe to make the meter 3-Volts full scale when using the external probe.

Resistor R1007 is a multiplier resistor in series with the receiver meter when switch S1003 is in the 3-Volt position. Silicon rectifiers CR1001, CR1002, resistors R1003 and R1004 in the transmitter meter circuit and CR1003, CR1004, R1005 and R1006 in the receiver meter circuit protect the meters from overload and voltage spikes.

NOTE

For continuous monitoring of test voltages, optional transmitter and receiver top covers, (19C303676G3 and G2, respectively) are available. The covers contain external sockets to attach the transmitter and receiver cables from the Meter Switching Panel Assembly.

INITIAL ADJUSTMENT

After the Station has been installed as described in the Installation Manual, the transmitter exciter, PA receiver, power supply and 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. Built-in metering circuits are provided with this station.

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

TRANSMITTER ADJUSTMENT

The initial adjustment for the transmitter assembly includes:

- Tuning grid & Plate controls on PA.
- Loading the power amplifier into the antenna.
- Checking the frequency and modulation.

For the Initial Adjustment procedure, refer to the transmitter exciter and power amplifier MAINTENANCE MANUAL.

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 switch S501 ON.
- Adjusting VOLUME (R511) and SQUELCH (R512) as follows:
  Set SQUELCH to the point at which the noise disappears; then set VOLUME to optimum listening level.

CONTROL SHELF ADJUSTMENT

The initial adjustment for the control panel includes:

- Turning switch S1201 ON.
- Adjusting Repeater, DC Remote or Tone Remote Controls.

For Control Shelf Adjustment procedures, refer to the MAINTENANCE MANUAL LBI-4490.

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 on the following page.

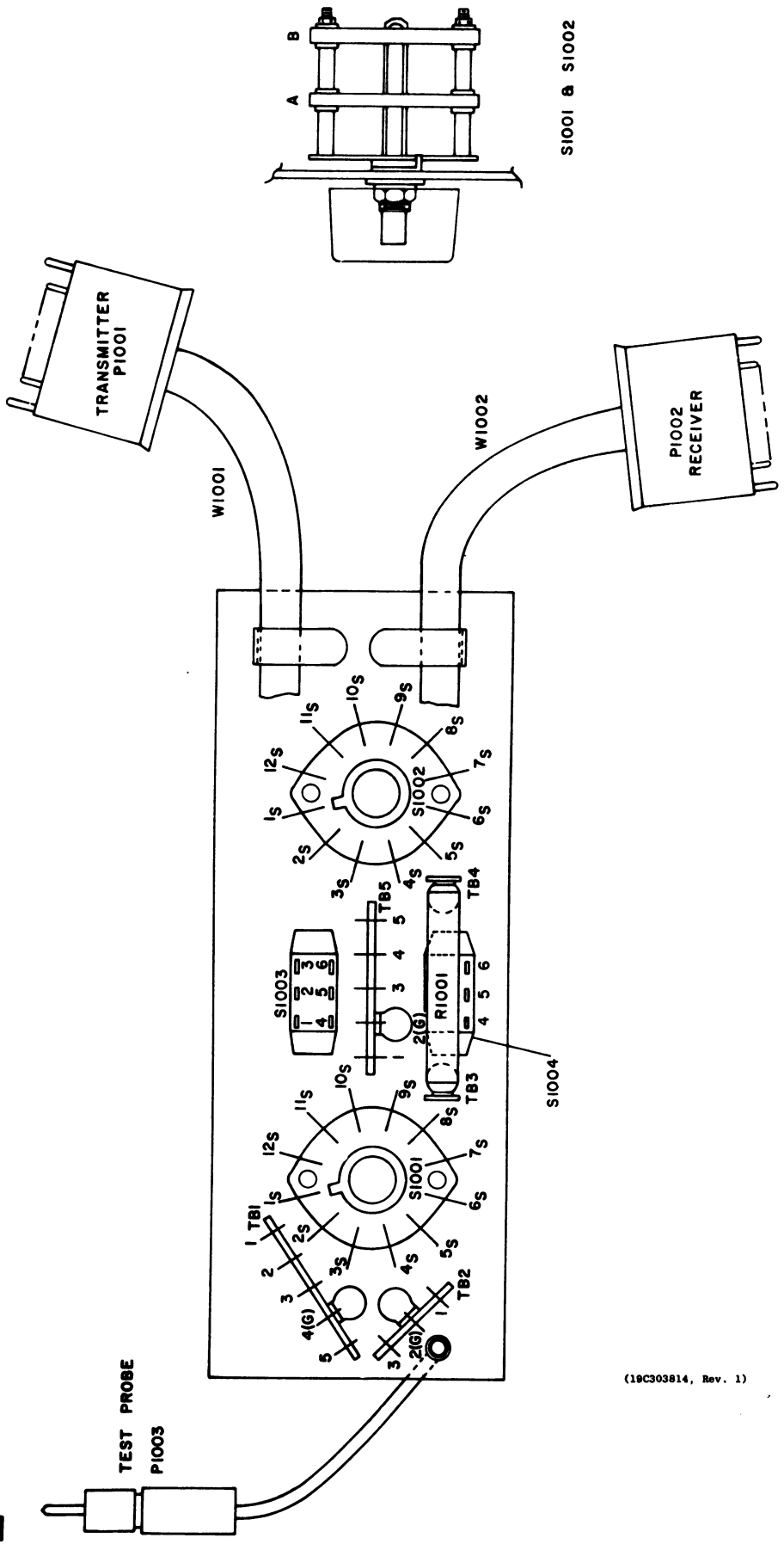
PREVENTIVE MAINTENANCE PROGRAM

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 VSWR..... ☐
3. Check input voltage at TB1202-1 and -2 on control shelf. Reading should be within 20% of 117-VAC. (Also check during routine service calls.)..... ☐
4. Compare and record transmitter meter readings with voltage taken during initial tune-up. Retune, if necessary..... ☐
5. Compare and record receiver meter readings with voltage 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.)..... ☐

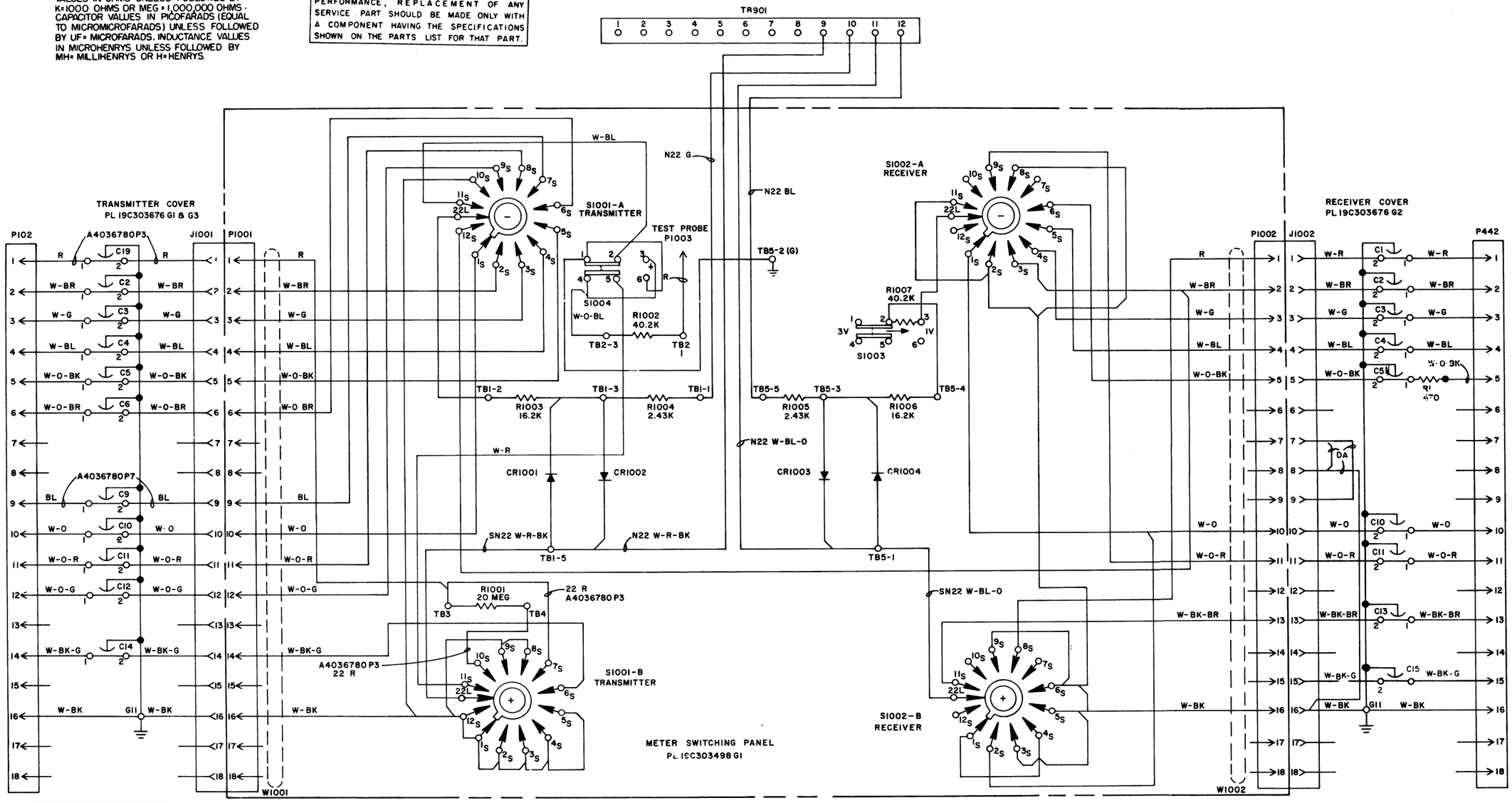


OUTLINE DIAGRAM

MASTR FLOOR-MOUNT STATION COMBINATION
METER SWITCHING PANEL ASSEMBLY 19A121460G1

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.



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	
MODEL NO	REV LETTER
19C303498G1	A
19C303676G2	B

NOTES:

1. ALL WIRES ARE DA UNLESS OTHERWISE SHOWN IN METER SWITCHING PANEL
2. ALL WIRES ARE SF24 UNLESS OTHERWISE SHOWN IN RECEIVER & TRANSMITTER COVER.
3. TERMINATE ALL WIRES NOT USED IN W1001 & W1002 BY CUTTING OFF FLUSH WITH CABLE JACKET

(19D402334, Rev. 9)

SCHEMATIC DIAGRAM

MASTR FLOOR-MOUNT STATION COMBINATION METER SWITCHING

PARTS LIST

LBI-3565C

METER SWITCHING PANEL ASSEMBLY
19A121460-G1

SYMBOL	G-E PART NO.	DESCRIPTION
		METER SWITCHING PANEL 19C303498-G1
		- - - - - - - - DIODES AND RECTIFIERS - - - - - -
CR1001 thru CR1004	5494922-P1	Silicon; sim to Type 1N456.
		- - - - - - - - - - - - PLUGS - - - - - - - - - -
P1001		(Part of W1001).
P1002		(Part of W1002).
P1003	4032797-P1	Probe, test; sim to Birnbach Type 415 (red).
		- - - - - - - - - - RESISTORS - - - - - - - - - -
R1001	5496955-P576	Deposited carbon: 20 megohms ±2%, 2 w; sim to Texas Instruments Type CD2R.
R1002	5495948-P359	Deposited carbon: 40,200 ohms ±1%, 1/2 w; sim to Texas Instruments Type CD1/2MR.
R1003	5495948-P321	Deposited carbon: 16,200 ohms ±1%, 1/2 w; sim to Texas Instruments Type CD1/2MR.
R1004 and R1005	5495948-P238	Deposited carbon: 2430 ohms ±1%, 1/2 w; sim to Texas Instruments Type CD1/2MR.
R1006	5495948-P321	Deposited carbon: 16,200 ohms ±1%, 1/2 w; sim to Texas Instruments Type CD1/2MR.
R1007	5495948-P359	Deposited carbon: 40,200 ohms ±1%, 1/2 w; sim to Texas Instruments Type CD1/2MR.
		- - - - - - - - - - SWITCHES - - - - - - - - - -
S1001 and S1002	19C307113-P2	Rotary: 2 sections, 2 poles, 12 positions, non-shorting contacts, 2 amps at 28 VDC or 1 amp at 110 VDC; sim to Oak 235585-K2.
S1003 and S1004	7145098-P1	Slide: DPDT, 3/4 amp at 125 VAC or 1/2 amp at 125 VDC; sim to Stackpole SS-150.
		- - - - - - - - - TERMINAL BOARDS - - - - - - - - -
TB1	7775500-P9	Phen: 5 terminals.
TB2	7775500-P7	Phen: 3 terminals.
TB3 and TB4	7775500-P46	Phen: 1 terminal.
TB5	7775500-P9	Phen: 5 terminals.
		- - - - - - - - - - - - CABLES - - - - - - - - - -
W1001	19C303568-P2	Metering: includes 18 pin plug (P1001) rated at 1000 VDC max, approx 38 inches long.
W1002	19C303568-P2	Metering: includes 18 pin plug (P1002) rated at 1000 VDC max, approx 38 inches long.
		- - - - - - - - - - MISCELLANEOUS - - - - - - - - -
	19B204861-G1	Chassis. (Used in 19C303498-G1).
	7763541-P5	Cable, clamp. (Used with W1001 and W1002 in 19C303498-G1).
	7487773-P6	Knob: red; sim to Eastman Chemical 28739. (Used with S1001 and S1002 in 19C303498-G1).
	19B204590-G1	Box. (Used in 19A121460-G1).
	4029030-P11	Rubber channel seal: approx 2-1/2 inches long. (Used in 19A121460-G1).

SYMBOL	G-E PART NO	DESCRIPTION
		COVER ASSEMBLY 19C303676-G1 (TRANSMITTER STATION METERING) 19C303676-G2 (RECEIVER STATION METERING) 19C303676-G3 (TRANSMITTER STATION METERING, VENTILATED)
		- - - - - - - - - - CAPACITORS - - - - - - - -
C1 thru C6	5493392-P7	Ceramic, feed-thru: .001 µf +100% -0%, 500 VDCW; sim to Allen-Bradley Type FA5C.
C9	19B209282-P1	Ceramic, feed-thru: 680 pf ±20%, 1000 VDCW; sim to Sprague Type 544C.
C10 thru C14	5493392-P7	Ceramic, feed-thru: .001 µf +100% -0% 500 VDCW; sim to Allen-Bradley Type FA5C.
C15*	5493392-P7	Ceramic, feed-thru: .001 µf +100% -0%, 500 VDCW; sim to Allen-Bradley Type FA5C. Added by Rev B.
C19	19B209282-P1	Ceramic, feed-thru: 680 pf ±20%, 1000 VDCW; sim to Sprague Type 544C.
		- - - - - - - - JACKS AND RECEPTACLES - - - - - -
J1001 and J1002	19B205689-G2	Connector: 18 contacts.
		- - - - - - - - - - - - PLUGS - - - - - - - - - -
P102	19B204727-P1	Connector: 18 contacts rated at 1000 VDC max.
P442	19B204727-P1	Connector: 18 contacts rated at 1000 VDC max.
		- - - - - - - - - - - - RESISTORS - - - - - - - - -
R1*	3R77-P471K	Composition: 470 ohms ±10%, 1/2 w. Added by Rev A.

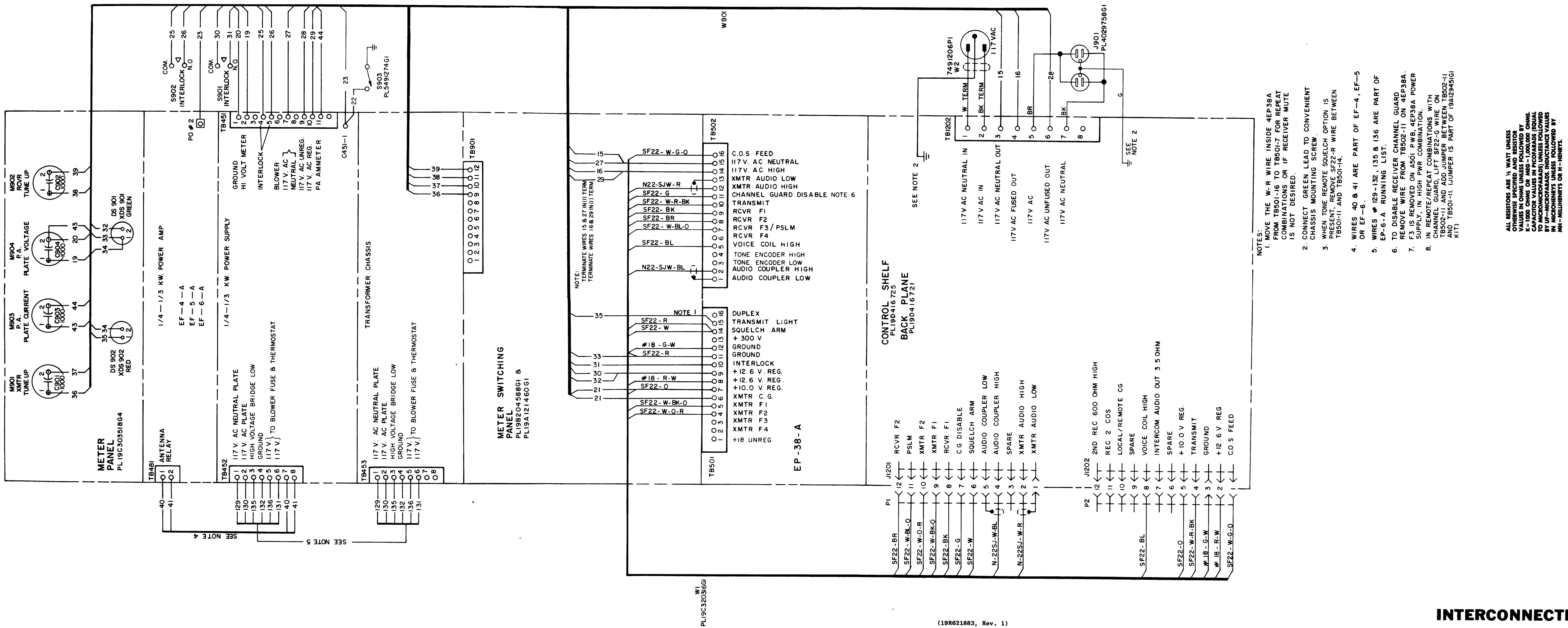
*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES.

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 — To eliminate 3 db loss in receiver sensitivity with cover on. Added R1 to receiver metering cover.

REV. B — To allow audio metering with cover. Added C15.


METER PANEL PL19C303518G4
METER SWITCHING PANEL PL19B204588G1 & PL19A121460G1
CONTROL SHELF PL19D416725
BACK PLANE PL19D416721
EP-38-A
1/4—1/3 KW. POWER AMP
1/4—1/3 KW. POWER SUPPLY
TRANSFORMER CHASSIS
W1 PL19C320366G1
W901
NOTES:
1. MOVE THE W-R WIRE INSIDE 4EP38A FROM TB501-16 TO TB501-7 FOR REPEAT COMBINATIONS OR IF RECEIVER MUTE IS NOT DESIRED.
2. CONNECT GREEN LEAD TO CONVENIENT CHASSIS MOUNTING SCREW.
3. WHEN TONE REMOTE SQUELCH OPTION IS PRESENT, REMOVE SF22-R WIRE BETWEEN TB501-11 AND TB501-14.
4. WIRES 40 & 41 ARE PART OF EF-4, EF-5 OR EF-6.
5. WIRES # 129-132, 135 & 136 ARE PART OF EP-6-A RUNNING LIST.
6. TO DISABLE RECEIVER CHANNEL GUARD REMOVE WIRE FROM TB502-11 ON 4EP38A.
7. F3 IS REMOVED ON A601 PWB, 4EP38A POWER SUPPLY, IN HIGH PWR COMBINATION.
8. IN REMOTE/REPEAT COMBINATIONS WITH CHANNEL GUARD, LIFT SF22-G WIRE ON TB502-11 AND ADD JUMPER BETWEEN TB502-11 AND TB501-11. (JUMPER IS PART OF 19A121945G1 KIT)

(DF-9032)

(19R621883, Rev. 1)

INTERCONNECTION DIAGRAM

MASTR FLOOR-MOUNT DC REMOTE CONTROL
TONE REMOTE CONTROL STATION COMBINATION
HIGH POWER

PARTS LIST

LBI-4572A

HIGH POWER FLOOR MODEL STATION CABINET
7068242G14

SYMBOL	GE PART NO.	DESCRIPTION
	7488490P4	Door handle: includes key LL-802; sim to Yale and Towne S1410S.
	5491682P19	Rim lock. (Used with door handle).
	19A115141P2	Ground lug.
	5493646G1	Instruction book holder.
		CABINET ASSEMBLY 19D402873G1
	5498454G1	Cabinet shell: approx 69 x 22 x 5/8 inches.
	5495572G1	Rear door.
	7774537P1	Angle, mounting.
	5495571G6	Front door.
	4031566P1	Rear door grille.
		ASSOCIATED ASSEMBLIES
		- - - - - - - JACKS AND RECEPTACLES - - - - - -
J901	4029758G1	Duplex outlet, phen: polarized, 15 amps at 125 v.
		METER PANEL ASSEMBLY 19C303518G4
		- - - - - - - - - - CAPACITORS - - - - - - - - -
C901 thru C904	5494481P11	Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap.
		- - - - - - - - INDICATING DEVICES - - - - - - -
DS901 and DS902	19C307037P19	Lamp, incandescent: 14 v; sim to GE 756.
		- - - - - - - - - - METERS - - - - - - - - - -
M901 and M902	5491869P11	Microammeter: -10/0/+50 μa, 3-1/2 inch; sim to GE Type DO-91.
M903	5491869P4	Milliammeter, DC: 0-500 MADC, 500 ma movement, 3-1/2 inches; sim to GE Type DO-91.
M904	5491869P5	Voltmeter, DC: 0-3000 VDC, 1 ma movement, 3-1/2 inches; sim to GE Type DO-91.
		- - - - - - - - - CABLES - - - - - - - - - - -
W901		CABLE ASSEMBLY 19A129447G2
		- - - - - - - - - SWITCHES - - - - - - - - -
S901	19A115887P1	Push: 10 amps at 125/250 VAC; sim to Micro-switch 2AC1.
S902	5490346P1	Push, door interlock: SPDT, 10 amps at 125 or 240 VAC, 0.5 amp at 125 VDC or 0.25 amp at 250 VDC; sim to Micro Switch Type 2AC5.
		- - - - - - - - - TERMINALS - - - - - - - - - -
	19B209260P102	Terminal, solderless: stud hole No. 6, wire range size 20-16; sim to AMP 40763.
	19B209260P101	Terminal, solderless: stud hole No. 6, wire range size 18-14; sim to AMP 60456-1.
	19B209260P26	Terminal, solderless: stud hole No. 1/4, wire range size 22-16; sim to AMP 31251-LOOSE PC.
	19B209268P106	Terminal, solderless: stud hole No. 10, wire range size 22-16; sim to AMP 41184.
	19B209268P109	Terminal, solderless: stud hole No. 6, wire range size 16-14; sim to AMP 33735.
	19B209268P111	Terminal, solderless: stud hole No. 4, wire range size 16-14; sim to AMP 33734.
	19B209268P110	Terminal, solderless: stud hole No. 4, wire range size 22-16; sim to AMP 41549.
		- - - - - - - - - - SOCKETS - - - - - - - - -
XDS901	7141855P13	Lamp: cylindrical green plastic lens; sim to Dialight 135-410-1432.
XDS902	7141855P12	Light, indicator: incandescent (for low voltage lamps), miniature bayonet base, transparent red plastic lens, without lamp; sim to Dialight Corp 135-0410-1431-102.
		- - - - - - - - - - MISCELLANEOUS - - - - - - -
	NP24346	Meter Panel, nameplate: etched aluminum.
	NP243528	Nameplate (GE).
		LINE VOLTMETER 19A120042G5
		- - - - - - - - - CAPACITORS - - - - - - - - -
C1	3B81P102M	Ceramic disc: 1000 μf ±20%, 500 VDCW.
		- - - - - - - - - - METERS - - - - - - - - - -
M1	5491869P7	Voltmeter, AC: 0-150 VAC, 15,000 ohms ±10%, 100 ohms per volt movement, 3-1/2 inch; sim to GE Type DO-91.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

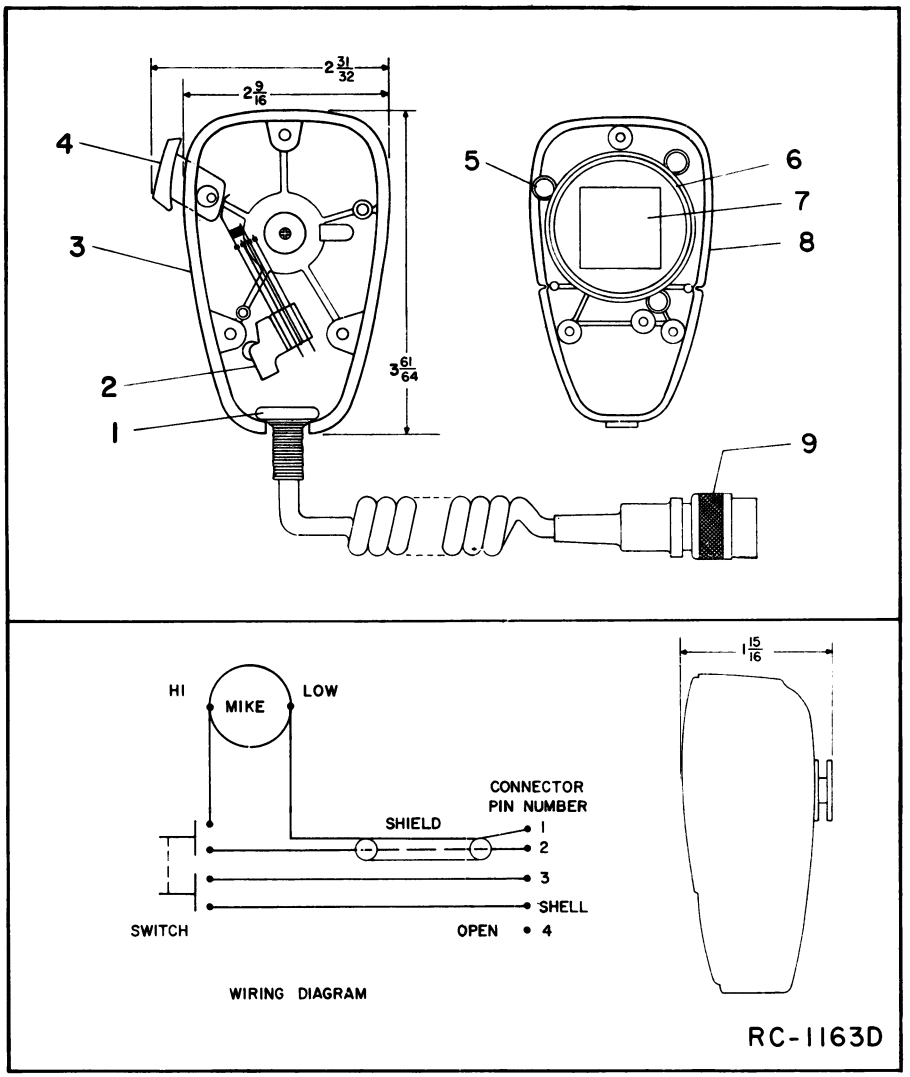
PARTS LIST

LBI-3558B

MILITARY MICROPHONE
MODEL 4EM25A10
(PL-19B209102-P1)
(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.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES.



PARTS LIST

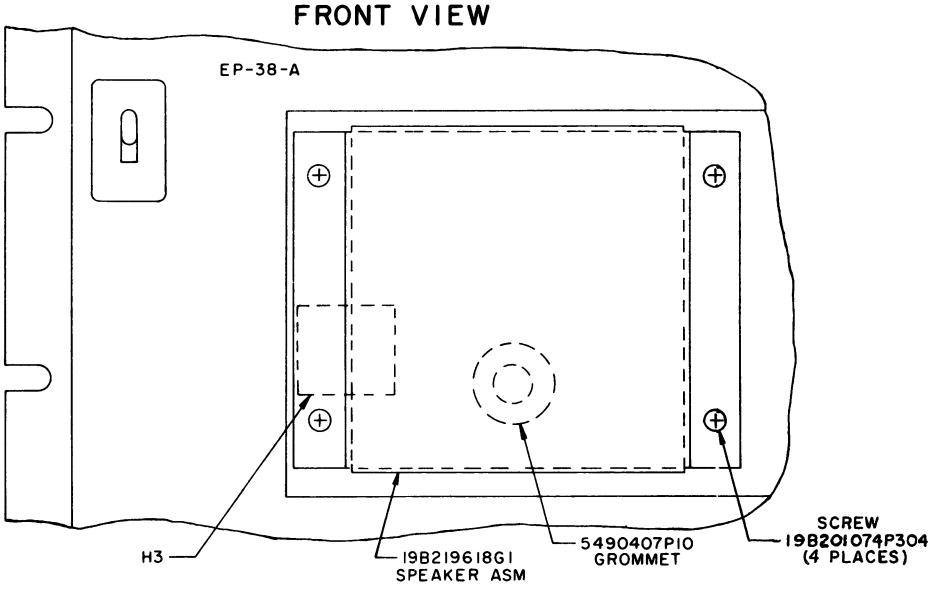
LBI-4427

STATION SPEAKER
19B219618G1

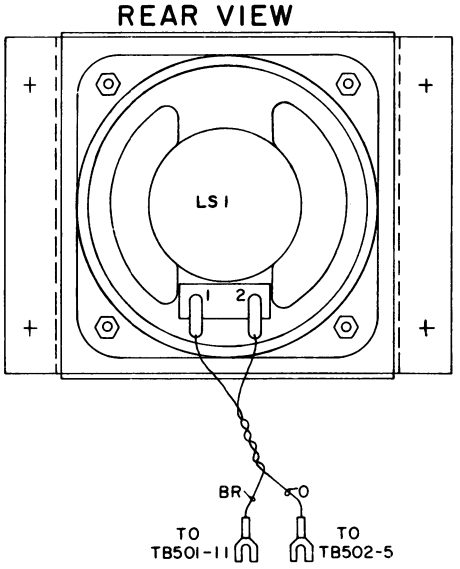
SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - - - LOUDSPEAKERS - - - - - - - - -
LS1	19A115964P1	Weatherproof, Permanent Magnet: 3-1/2 inch, 18 ohm ±10% imp at 1000 Hz, 15-19 ohms DC; sim to Oaktron S-9847.
		- - - - - - - - - - MISCELLANEOUS - - - - - - -
	19B219615P1	Cover.
	19B209260P103	Terminal, solderless: sim to AMP 60495-1.
	5490407P10	Grommet.
	19B201074P304	Tap screw: No. 6-32 x 1/4.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES.

FRONT VIEW



REAR VIEW



(19C320601, Rev. 1)

ORDERING SERVICE PARTS

Each component appearing on the schematic diagram is identified by a symbol number, to simplify locating it in the parts list. Each component is listed by symbol number, followed by its description and GE Part Number.

Service parts may be obtained from Authorized GE Communication Equipment Service Stations or through any GE Radio Communication Equipment Sales Office. When ordering a part, be sure to give:

1. GE Part Number for component
2. Description of part
3. Model number of equipment
4. Revision letter stamped on unit

These instructions do not purport to cover all details or variations in equipment nor to provide for every possible contingency to be met in connection with installation, operation or maintenance.

Should further information be desired, or should particular problems arise which are not covered sufficiently for the purchaser's purposes, contact the nearest Radio Communication Equipment Sales Office of the General Electric Company.

MAINTENANCE MANUAL

LBI-4524

MOBILE RADIO DEPARTMENT
GENERAL ELECTRIC COMPANY ● LYNCHBURG, VIRGINIA 24502

GENERAL ELECTRIC

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