

Air Equipment

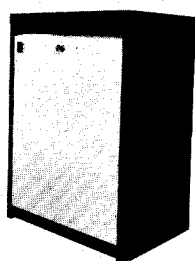
 **MOBILE RADIO**

T.J.

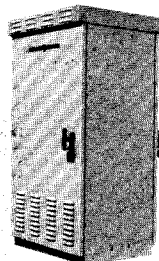
MASTR II[®]

**REMOTE CONTROL
STATION COMBINATIONS
MAINTENANCE MANUAL LBI4788 E**

DATAFILE FOLDER — DF 9033



**DESK MATE
STATION**



**POLE MOUNT
STATION**

**TONE REMOTE
DC REMOTE**

VHF



**FLOOR MOUNT
STATION**

GENERAL  ELECTRIC

TABLE OF CONTENTS

	Page
SYSTEM SPECIFICATIONS	iii
FCC FILING NUMBERS	iv
COMBINATION NOMENCLATURE	v
DESCRIPTION	1
INITIAL ADJUSTMENTS	1
MAINTENANCE	3
SYSTEM DESCRIPTION	3
Receiver	3
Transmitter	3
System Board A901	3
DC Remote Control	3
Tone Remote Control	3
Channel Guard	3
OUTLINE DIAGRAMS	
System Board A901	5
Service Speaker 19C320728G1	6
Harness 19C320811	12
SCHEMATIC DIAGRAMS (Includes Parts List & Production Changes)	
Radio Panel Front Door	7
Service Speaker 19C320728G1	9
STATION INTERCONNECTIONS DIAGRAM	
Continuous Duty Station Harness Without Metering Options	11
Continuous Duty Station Harness With Metering Options	13
Intermittent Duty Station Harness Without Metering Options	15
Intermittent Duty Station Harness With Metering Options	17
MECHANICAL PARTS BREAKDOWN	
Radio Panel Front Door Assembly	19
Transmitter Power Amplifier	20
Station Cabinets	21-23
ILLUSTRATIONS	
Figure 1 - Radio Panel Front Door	vi
Figure 2 - Station Assemblies	1

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.

Hi-level RF energy in the transmitter Power Amplifier assembly can cause RF burns. KEEP AWAY FROM THESE CIRCUITS WHEN THE TRANSMITTER IS ENERGIZED!

SPECIFICATIONS*

LBI4788

EIA DIMENSIONS (H X W X D)

DESK MATE (30-Inch)
DESK MATE (40-Inch)

30-1/4" X 21-1/2" X 15"
44-1/4" X 21-1/2" X 15"
(Adding louvered door for Continuous Duty
PA adds 1/2-inch to depth dimension)

POLE MOUNT
FLOOR MOUNT

45" X 21-1/2" X 21"
69" X 23" X 21"

WEIGHT

DESK MATE (30-Inch)
DESK MATE (40-Inch)
POLE MOUNT
FLOOR MOUNT

160 lbs.
180 lbs.
225 lbs.
290 lbs.

INPUT VOLTAGE

121/242 VAC, 60 Hertz Only (50 Hertz Optional)

AC INPUT POWER

RF OUTPUT POWER

LOW BAND

50 Watts
100 Watts

TRANSMIT

270 Watts
560 Watts

RECEIVE

75 Watts
105 Watts

STANDBY

40 Watts
65 Watts

HIGH BAND

35 Watts
65 Watts
110 Watts

270 Watts
270 Watts
560 Watts

75 Watts
75 Watts
105 Watts

40 Watts
40 Watts
65 Watts

UHF BAND

20 Watts
40 Watts

270 Watts
270 Watts

75 Watts
75 Watts

40 Watts
40 Watts

TEMPERATURE RANGE

-30° to +60°C (-22°F to +140°F)

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

(DF-9033)

FCC FILING NUMBERS

25-50 MHz

MODEL SERIES	DUTY CYCLE (EIA)	POWER OUTPUT (Internally Adjustable)	FCC FILING NUMBER	
			5 ppm Freq. Stab.	2 ppm Freq. Stab.
(●)I64E...	Intermittent	15 to 50 W	KT-56-A	KT-56-C
(●)I74E...	Intermittent	50 to 100 W	KT-59-A	KT-59-C
(●)I64 (K, J, R or T)...	Intermittent	15 to 50 W	KT-57-A	KT-57-C
(●)I74 (K, J, R or T)...	Intermittent	50 to 100 W	KT-60-A	KT-60-C
(●)C64...	Continuous	15 to 50 W	KT-58-A	KT-58-C
(●)C74...	Continuous	50 to 100 W	KT-61-A	KT-61-C

72-76 MHz

MODEL SERIES	DUTY CYCLE (EIA)	POWER OUTPUT (Internally Adjustable)	FCC FILING NUMBER
(●)I54 (Local)	Intermittent	8-25 W	KT-155A
(●)I54 (Remote)	Intermittent	8-25 W	KT-156-A
(●)C54...	Continuous	8-25 W	KT-157-A

138-174 MHz

MODEL SERIES	DUTY CYCLE (EIA)	POWER OUTPUT (Internally Adjustable)	FCC FILING NUMBER	
			5 ppm Freq. Stab.	2 ppm Freq. Stab.
(●)I56E...	Intermittent	10 to 35 W	KT-41-A	KT-41-C
(●)I66E...	Intermittent	10 to 65 W	KT-42-A	KT-42-C
(●)I76E...	Intermittent	20 to 110 W	KT-43-A	KT-43-C
(●)I56 (K, J, R or T)...	Intermittent	10 to 35 W	KT-44-A	KT-44-C
(●)I66 (K, J, R or T)...	Intermittent	10 to 65 W	KT-45-A	KT-45-C
(●)I76 (K, J, R or T)...	Intermittent	20 to 110 W	KT-46-A	KT-46-C
(●)C56...	Continuous	10 to 35 W	KT-47-A	KT-47-C
(●)C66...	Continuous	10 to 65 W	KT-48-A	KT-48-C
(●)C76...	Continuous	20 to 100 W	KT-49-A	KT-49-C

406-512 MHz

MODEL SERIES	DUTY CYCLE (EIA)	POWER OUTPUT (Internally Adjustable)	FCC FILING NUMBER
(●)I45E...	Intermittent	1 to 20 W	KT-50-D
(●)I55E...	Intermittent	1 to 40 W	KT-53-D
(●)I65E...	Intermittent	10 to 75 W	KT-117-C
(●)I75E...	Intermittent	30 to 100 W	KT-118-C
(●)I45 (L, J, R or T)...	Intermittent	1 to 20 W	KT-51-D
(●)I55 (K, J, R or T)...	Intermittent	1 to 40 W	KT-54-D
(●)I65 (K, J, R or T)...	Intermittent	10 to 75 W	KT-115-C
(●)I75 (K, J, R or T)...	Intermittent	30 to 100 W	KT-116-C
(●)C45	Continuous	1 to 20 W	KT-52-D
(●)C55...	Continuous	1 to 40 W	KT-55-D
(●)C65...	Continuous	10 to 75 W	KT-113-C
(●)C75...	Continuous	30 to 100 W	KT-114-C

(●)Cabinet Style 1st Digit "D", "S", "P" or "V"
Applicable to FCC Rules Part Numbers 21, 89, 91 & 93

NOTE: FCC Filing Number not
relevant to equipment
operating in 406 to 420
MHz frequency range.

COMBINATION NOMENCLATURE

1 st Digit	2nd Digit	3rd Digit	4th Digit	5th Digit	6th Digit	7th Digit	8th & 9th Digit	10th Digit
Mechanical Package	Duty Cycle	RF Power Output	Channel Spacing	Control	Number of Freq.	Options	Frequency Range MHz	Oscillator Stability
D 30 - inch Desk Mate	I Intermittent Duty	4 8 - 16 Watts	4 20 kHz	D Duplex	A 1 TX 1 RX	G CG & UHS	12 25-30	A 5 PPM
S 44 - inch Desk Mate	C Continuous Duty	5 16 - 38 Watts	5 25 kHz	L CG/Duplex	B 2 TX 1 RX	N Noise Blanker	23 36-42	B 2 PPM
P Pole Mount		6 38 - 66 Watts	6 30 kHz	R DC Remote	C 2 TX 2 RX	P UHS	44 66-78	C PLL* ±5 PPM
V Floor Mount		7 66 - 128 Watts		T Tone Remote	D 1 TX 2 RX	S Standard	56 138-150.5	D PLL* ±2 PPM
						U Channel Guard	77 406 - 420	
						W CG & NB	89 470 - 494	
							91 494 - 512	

* Phase-Lock-Loop

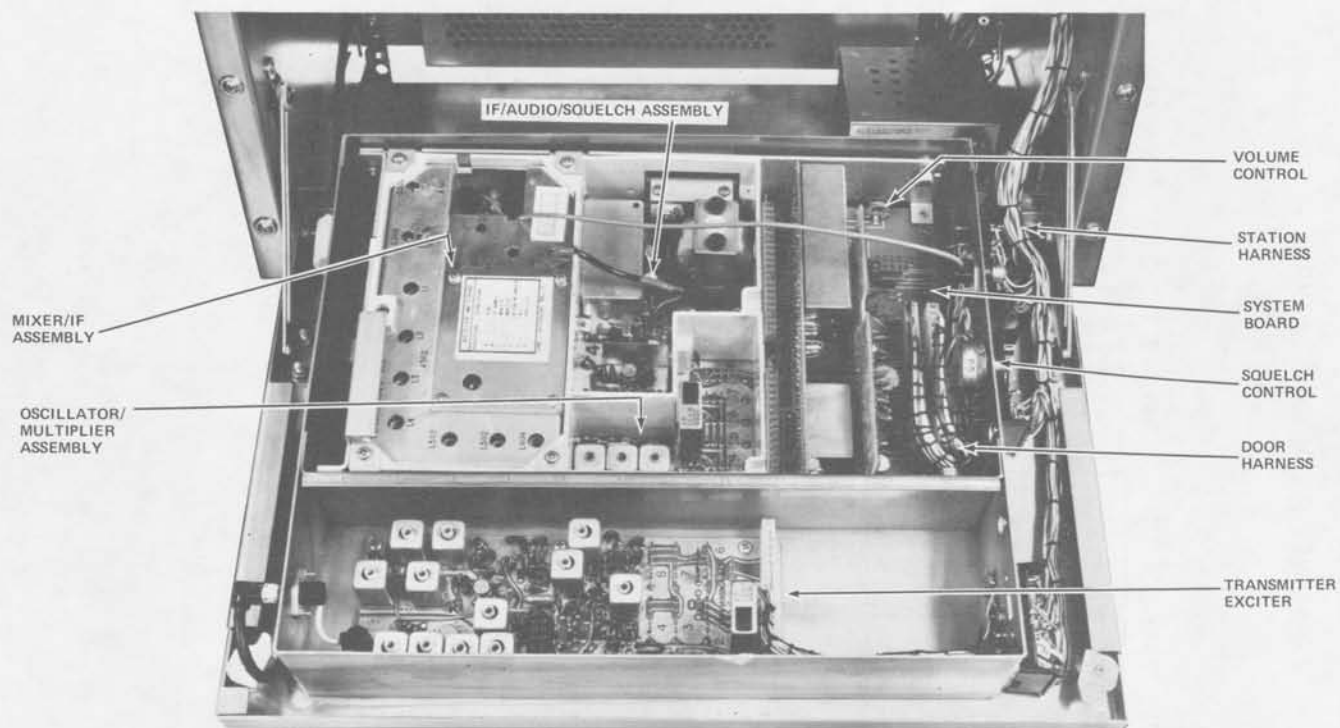


Figure 1 - Radio Panel Front Door

DESCRIPTION

The General Electric MASTR® II Remote Control Radio Combinations are designed for either DC or tone remote control. The station receiver is mounted in a shielded enclosure on the radio panel front door, along with a receiver system board which accommodates Channel Guard and other option boards. Jacks are provided on the system board for plug-in interface with the options and control functions. The transmitter exciter is located in a separate shielded compartment on the radio panel front door. See Figure 1.

The continuous-duty transmitter power amplifier hinges from the bottom of the radio housing. The PA assembly consists of a frame mounted to a heat sink. A cover snaps over the frame to form an RF-tight enclosure for the PA board assembly. The intermittent-duty transmitter power amplifier and heat-sink assembly is hinged to the radio panel at the rear.

Directly above the PA assembly is the station control shelf. A mother board is mounted to this shelf which accommodates the 10-Volt Regulator/Control and DC or Tone Control Modules. The 10-Volt Regulator/Control Module supplies the regulated 10 Volts DC for station operation. The module contains the transmit/receive switching controls and a station microphone pre-amplifier. Front panel controls include the REM PTT and INTERCOM switches along with the TX LIGHT Light Emitting Diode (LED). External control connections are made to TB1201, located on the back of the mother board. See Figure 2.

The station power supply is connected to a 121 VAC power source. Conversion from 121 VAC to 242 VAC is made by jumper changes on the back of the power supply front panel. The input voltage is stepped down to 12 Volts by a ferro-resonant transformer which provides line regulation of $\pm 2\%$ for a $\pm 20\%$ primary change. A power switch, primary and secondary fuses and two AC outlets are located on the front panel. A high-current fuse is located on the back panel.

INITIAL ADJUSTMENT

After the MASTR II Remote Control Station has been installed, the transmitter and receiver must be adjusted by an electronics technician who holds a First or Second Class FCC Radiotelephone or Radiotelegraph license before the station can be placed in operation.

Make sure that a RADIO TRANSMITTER IDENTIFICATION Form (FCC FORM 452-C or General Electric Form NP270303) has been filled out and attached to the transmitter.

TRANSMITTER ADJUSTMENT

The adjustment for the transmitter includes measuring the forward and reflected power and adjusting the antenna length for optimum ratio, then setting the transmitter to rated power output (or to the specific power output which may be required by the FCC station authorization). Next, measuring the frequency and modulation

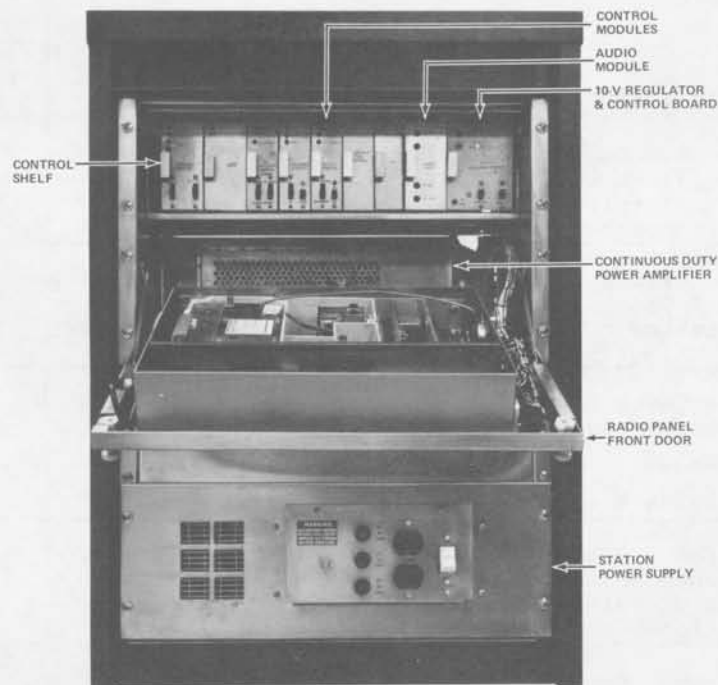


Figure 2 - Station Assemblies

and centering these measurements on the FCC-required station records.

For the complete transmitter adjustment, refer to the ALIGNMENT PROCEDURE in the MAINTENANCE MANUAL for the transmitter.

RECEIVER ADJUSTMENT

The initial adjustment for the receiver includes tuning the input circuit to match the antenna. Refer to the FRONT END ALIGNMENT PROCEDURE in the MAINTENANCE MANUAL for the receiver.

To set the station VOLUME control (R3 on the System Board) use the following procedure:

1. Apply a 1000 microvolt on-frequency test signal modulated by 1000 Hertz with ± 3 kHz deviation to the receiver antenna jack J937.
2. Turn service speaker switch to RCVR position.
3. Connect an AC VTVM across J905 terminals 1 & 2 and adjust R3 for a reading of 2.7 Volts RMS on the meter.

CAUTION

Adjustment of VOLUME control to settings higher than instructed in the INITIAL ADJUSTMENT may result in damage to the station service speaker or Local Controller speaker.

To set the station SQUELCH control (R901 on the Receiver/Exciter door) use the following procedure:

1. Turn the SQUELCH control clockwise (to the right) as far as possible.
2. Adjust VOLUME control R3 on the 19C320728 Service Speaker until the noise is easily heard in the speaker, but is not annoyingly loud.
3. Turn the SQUELCH control counter-clockwise (to the left) until the noise just disappears, then advance control another 20 degrees.

REMOTE CONTROL ADJUSTMENTS

The transmitter modulation gain, the remote audio input and line output must be adjusted before placing the station in operation. Refer to the MASTR II DC Remote Control MAINTENANCE MANUAL (LBI-4792) or the Tone Remote Control MAINTENANCE MANUAL (LBI-4793) for these adjustments.

LOCAL MICROPHONE LEVEL ADJUSTMENTS

After the remote control adjustments have been completed, the local MIC GAIN control (R14) on the 10-Volt Regulator Board should be adjusted. When the MASTR II mobile microphone is used with the station, the MIC GAIN control should be adjusted for minimum gain (close to full counterclockwise). Adjust for a deviation of 4.5 kHz. Increasing the MIC GAIN control too far clockwise will over-drive the microphone pre-amplifier and this should be avoided.

MAINTENANCE CHECK	INTERVAL BETWEEN CHECKS	
	Every 6 Months	As Required
<u>Transmitter Alignment</u> - Compare meter readings at transmitter multiplier metering jacks with voltages read during initial tune up. Touch up multiplier tuning. Check power output. (See Alignment Procedure for Transmitter).		X
<u>Receiver</u> - While receiving an unmodulated signal on the station frequency(s), adjust OSC-1 trimmer for each operating frequency for a zero discriminator reading. (See the Receiver Alignment Procedure MAINTENANCE Section).		X
<u>Transmission Line</u> - Check for positive indication of pressure on transmission line pressure guage (if pressurized line is used).	X	
<u>Antenna</u> - Check antenna & mast for mechanical stability.	X	
<u>Mechanical Inspection</u> - Visually check cables, plugs, sockets, terminal boards & components for good electrical connections. Check for tightness of nuts, bolts & screws to make sure that nothing is working loose from its mounting.	X	
<u>Cleaning</u> - Use a vacuum cleaner to remove dust which has accumulated inside the cabinet.	X	
<u>Frequency Check</u> - Check transmitter frequency & deviation as required by FCC.		X

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 at regular intervals. This preventive maintenance should include the checks as listed in the table of Maintenance Checks.

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 and receiver.

REMOVING IC's (and all other soldered-in components) can be easily accomplished by using a de-soldering tool such as a SOLDA-PULLT® or equivalent. To remove an IC, heat each lead separately on the solder side and remove the old solder with the de-soldering tool.

An alternate method is to use a special soldering tip that heats all of the pins simultaneously.

SYSTEM DESCRIPTION

Receiver

The station receiver consists of an oscillator/multiplier assembly (OSC/MULT), RF Assembly, Mixer/IF Assembly (MIF) and IF-Audio-Squelch Assembly (IFAS). In receivers with noise blankers, the noise blanker circuit replaces the standard MIF board. Refer to the Receiver MAINTENANCE MANUAL for a complete description of the station receiver.

Transmitter

The station transmitter consists of an exciter board assembly and a power amplifier assembly. In continuous duty transmitters, the PA assembly consists of a printed wiring board mounted on a heat sink at the rear of the radio housing. In intermittent duty stations, the heat sink assembly is fastened to two sheet metal adaptor plates which hinge at the radio panel. Refer to the Transmitter MAINTENANCE MANUAL for a complete description of the station transmitters.

System Board A901

The station System Board is located on the Radio Panel Front Door and the receiver modules plug directly into the board. Along

the edge of the System Board are two connectors which interconnect with the Remote Control Shelf and Power Supply. Plug-in Channel Guard and Carrier Control Timer option jacks are provided. A metering jack is provided for accommodating the General Electric Model 4EX3A11 Test Set. VOLUME Control R3 is located on the System Board. SQUELCH Control R901 is located on the Radio Panel Front Door.

A jumper is normally present between J933-4 and J933-8 in single-frequency transmit stations. A jumper is also present between H47 and H48 on A901 in single-frequency receive stations. In multiple-frequency receive stations, selecting a particular receive frequency at the remote control unit applies a ground to the particular pin at J931 corresponding to the frequency selected. The ground is then connected via the System Board printed wiring to the receiver OSC/MULT to select the desired oscillator.

VOLUME/SQUELCH from the receiver Audio Pre-Amp is connected via J904-12 to the VOLUME (R3) and SQUELCH (R901) controls. The VOLUME arm is returned to the receiver IFAS board where the audio is amplified by the receiver audio power amplifier circuit. The audio output of the PA is then connected to the speaker leads at J904-18 & 19. The station VOLUME control (R3) is normally adjusted for 1 Watt output and the station speaker level is controlled by the service speaker VOLUME control.

DC Remote Control

In DC Remote Control systems, the control modules on the control shelf utilize DC currents selectively applied to a telephone pair at a remote control console. These DC currents activate circuits in the control modules to perform the desired functions. Refer to the MASTR II DC Remote Station Control Shelf MAINTENANCE MANUAL (LBI4792) for a complete description of this system.

Tone Remote Control

A maximum of twelve different functions can be performed in the Tone Remote Control system. This is accomplished by applying two or three tones in sequence at the prescribed level to the transmission medium at a remote control console for detection at the control modules on the control shelf. Refer to the MASTR II Tone Remote Station Control Shelf MAINTENANCE MANUAL (LBI4793) for a complete description of this system.

Channel Guard

In stations equipped with Channel Guard, Channel Guard Board 19D417261G1 is plugged into the System Board at P908 and P909. Each MASTR II receiver is equipped with a tone reject filter to prevent the CG tone from being heard in the speaker. In addition, all

SYSTEM DESCRIPTION

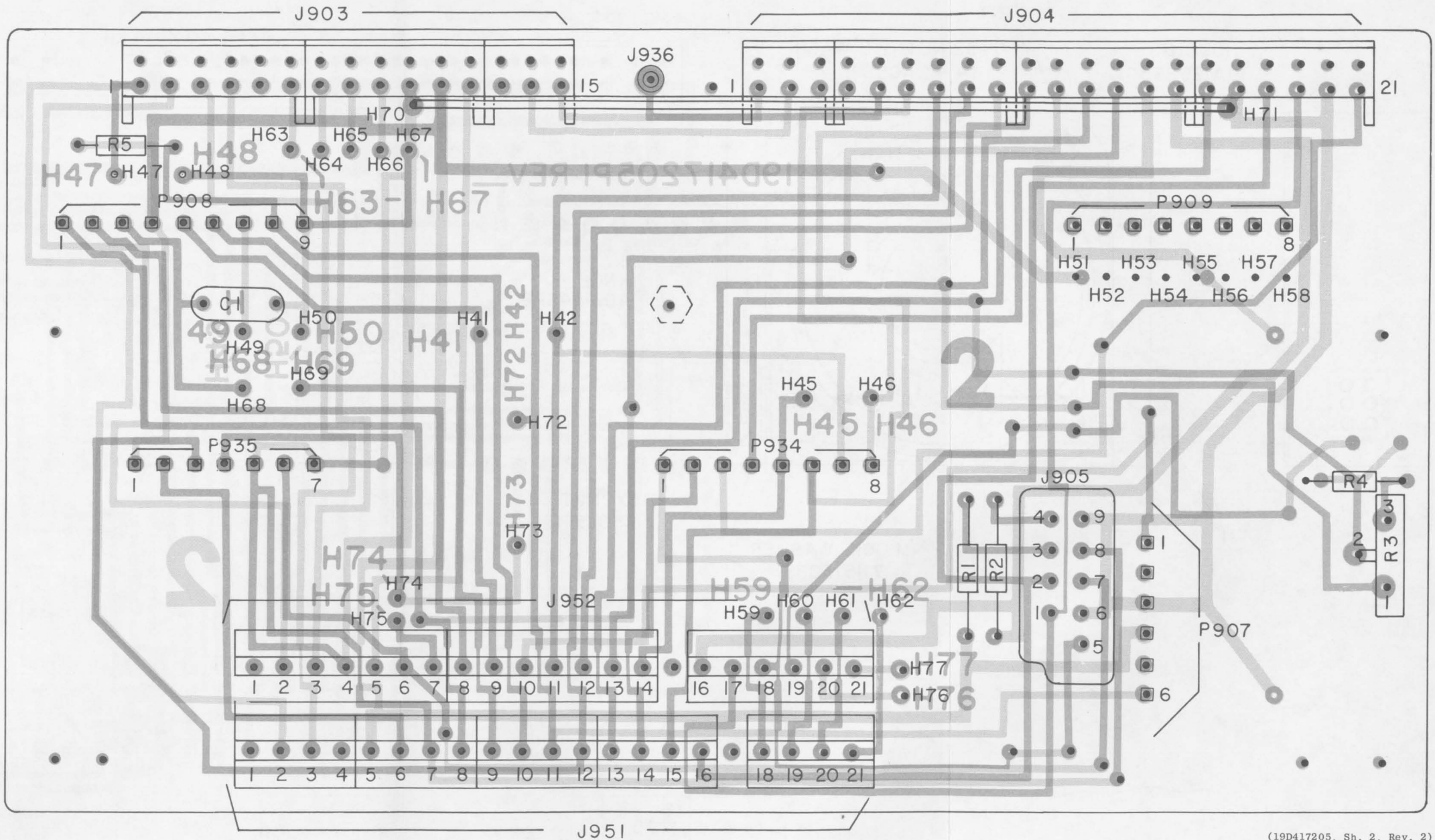
transmitters have a Channel Guard Modulation control to adjust for proper deviation.

Channel Guard is a continuous-tone controlled squelch system that provides communications control in accordance with EIA standard RS-220. The system utilizes standard tone frequencies from 71.9 to 203.5 Hertz with both the encoder and decoder operating on the same frequency. The STE circuit (Squelch Tail Eliminator) employs a phase shift of approximately 180° in the encode function to eliminate undesirable noise burst after each transmission.

The decoder operates in conjunction with the receiver to inhibit all calls that are not tone coded with the proper Channel

Guard tone frequency. The VOLUME/SQUELCH output of the receiver is applied to the Channel Guard decoder at P908-1. As long as no signal is received properly coded with the CG tone, a ground is supplied through P908-5 to mute the receiver. When a properly coded signal is received, the receiver unsquelches and the desired signal is heard. In duplex combinations, a separate encoder is used in the exciter and a separate decoder is used in the receiver.

A Channel Guard Filter (19C320627G1) is used in the Remote Audio Board to attenuate frequencies below 203.5 Hertz to prevent the Channel Guard tone from being applied to the remote audio pair.



(19D417205, Sh. 2, Rev. 2)
(19D417205, Sh. 3, Rev. 2)

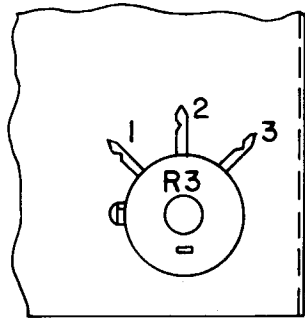
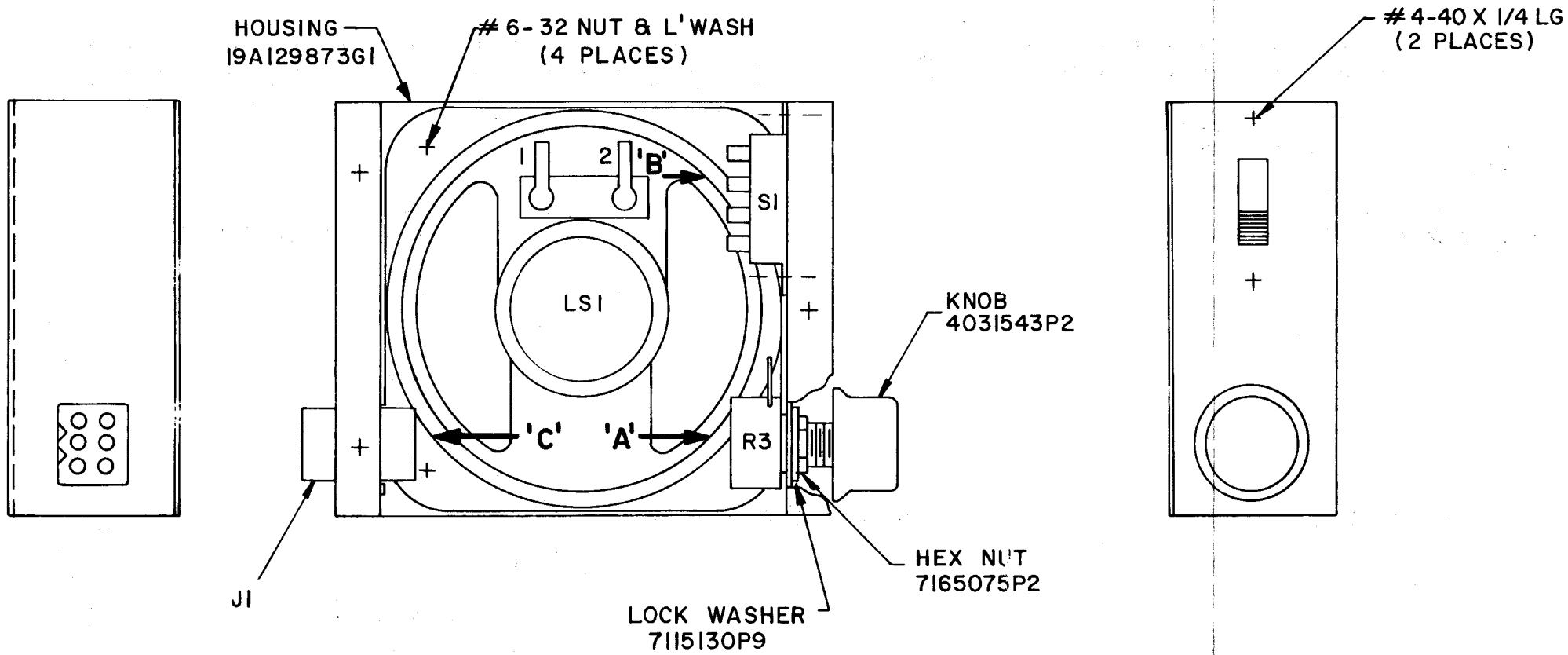
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REFER TO WIRING DIAGRAM FOR THE FOLLING CONNECTIONS	
FROM	TO
H41	H42
H50	H77
H45	H46
H47	H48
H68	H69
H49	H76

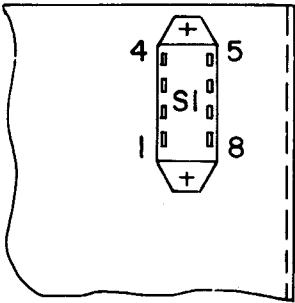
OUTLINE DIAGRAM

SYSTEM BOARD A901

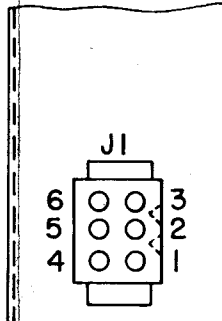
Issue 2



VIEW 'A'



VIEW 'B'

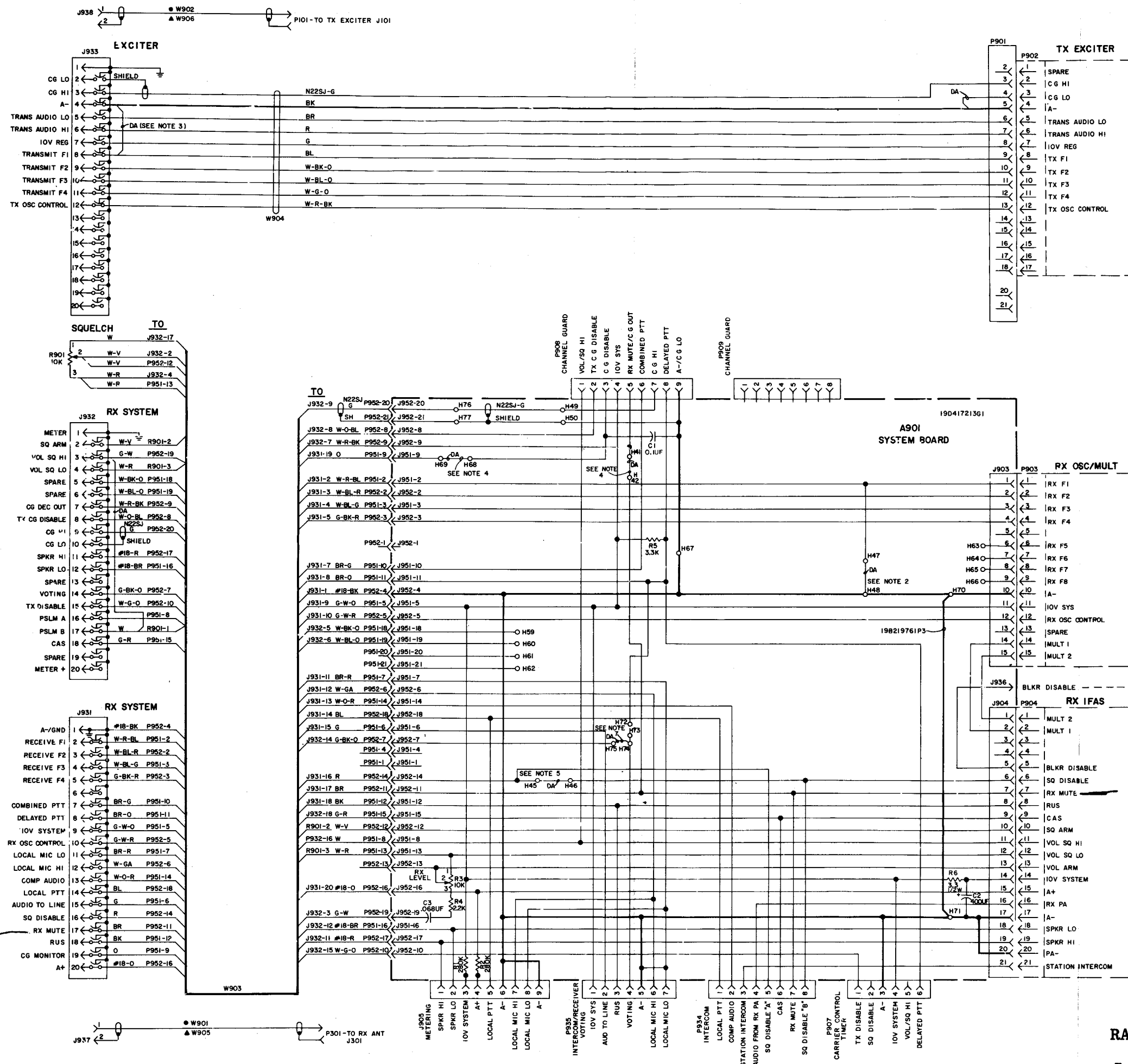


VIEW 'C'

(19D423159, Rev. 0)

OUTLINE DIAGRAM

SERVICE SPEAKER 19C320728G1



SCHEMATIC DIAGRAM

RADIO PANEL FRONT DOOR 19D417262G1

Issue 5

7

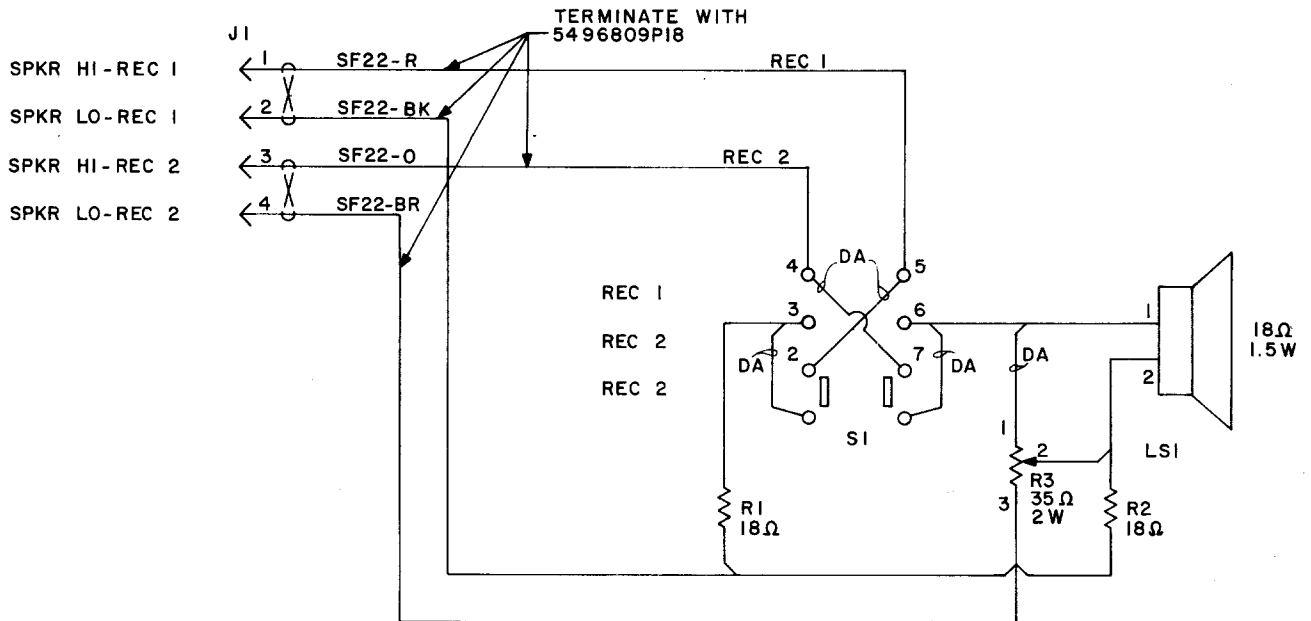
PARTS LIST

LBI-4801A
MASTR II STATION RADIO PANEL
FRONT DOOR ASSEMBLY
19D417262G1

SYMBOL	GE PART NO.	DESCRIPTION
A901		DOOR ASSEMBLY 19D417262G1 COMPONENT BOARD 19D417213G1 ----- CAPACITORS ----- C1 19A116080P7 Polyester: 0.1 μ f $\pm$ 20%, 50 VDCW. C2 19A115680P24 Electrolytic: 400 μ f $\pm$ 150% -10%, 18 VDCW; sim to Mallory Type TTX. C3 19A116080P106 Polyester: 0.068 μ f $\pm$ 10%, 50 VDCW. ----- JACKS AND RECEPTACLES ----- J903 Connector. Includes: 19A116659P1 Connector: 3 contacts; sim to Molex 09-52-32. (Quantity 1). 19A116659P4 Connector: 6 contacts; sim to Molex 09-52-3062. (Quantity 2). J904 Connector. Includes: 19A116659P1 Connector: 3 contacts; sim to Molex 09-52-3032. (Quantity 1). 19A116659P4 Connector: 6 contacts; sim to Molex 09-52-3062. (Quantity 3). J905 19B219374G2 Connector: 9 contacts. J936 4033513P4 Contact, electrical: sim to Bead Chain L93-3. J951 Connector. Includes: 19A116659P13 Connector: 4 contacts; sim to Molex 09-56-1041. (Quantity 5). J952 Connector. Includes: 19A116659P11 Connector: 7 contacts; sim to Molex 09-56-1071. (Quantity 2). 19A116659P12 Connector: 6 contacts; sim to Molex 09-56-1061. (Quantity 1). ----- PLUGS ----- P907 19A116779P1 Contact, electrical: sim to Molex 08-54-0404. (Quantity 6). P908 19A116779P1 Contact, electrical: sim to Molex 08-54-0404. (Quantity 9). P909 19A116779P1 Contact, electrical: sim to Molex 08-54-0404. (Quantity 8). P934 19A116779P1 Contact, electrical: sim to Molex 08-54-0404. (Quantity 8). P935 19A116779P1 Contact, electrical: sim to Molex 08-54-0404. (Quantity 7). ----- RESISTORS ----- R1 and R2 19C314256P22803 Metal film: 280,000 ohms $\pm$ 1%, 1/4 w. R3 19B209358P106 Variable, carbon film: approx 75 to 10,000 ohms $\pm$ 10%, 0.25 w; sim to CTS Type X-201. R4 3R152P222J Composition: 2200 ohms $\pm$ 5%, 1/4 w. R5 3R152P332J Composition: 3300 ohms $\pm$ 5%, 1/4 w. R6 7147161P15 Composition: 3.3 ohms $\pm$ 5%, 1/2 w. ----- CABLES ----- W901 5491689P105 Cable, RF: approx 12 inches long, 350 VRMS, 500 VDC operating voltage. Includes J937, P301. W902 5491689P104 Cable, RF: approx 3-5/8 inches long, 350 VRMS, 500 VDC operating voltage. Includes J938, P101.

SYMBOL	GE PART NO.	DESCRIPTION
W903		CABLE ASSEMBLY 19D417262G2 ----- JACKS AND RECEPTACLES ----- J931 and J932 19C303426G1 Connector: 20 pin contacts. ----- PLUGS ----- P951 and P952 Connector. Includes: 19A116659P25 Shell. 19A116781P5 Contact, electrical: wire No. 16-20 AWG; sim to Molex 08-50-0106. 19A116781P6 Contact, electrical: wire No. 22-26 AWG; sim to Molex 08-50-0108. ----- RESISTORS ----- R901 5496870P31 Variable, carbon film: 10,000 ohms $\pm$ 20%; sim to Mallory LC(10K). W904 EXCITER CABLE 19D417262G3 ----- JACKS AND RECEPTACLES ----- J933 19C303426G1 Connector: 20 pin contacts. ----- PLUGS ----- P901 Connector. Includes: 19A116659P25 Shell. 19A116781P5 Contact, electrical: wire No. 16-20 AWG; sim to Molex 08-50-0106. 19A116781P6 Contact, electrical: wire No. 22-26 AWG; sim to Molex 08-50-0108. ----- MISCELLANEOUS ----- 19C320679G1 Door. 19B218178P1 Pawl. (Part of door latch). 19C318151P1 Knob. (Part of door latch). N193P1208C6 Tap screw: No. 6 x 1/2. (Part of door latch). 5493361P8 Washer, spring tension. (Part of door latch). 19A121676P1 Guide pin. (Used with J931-J933). 19B209519P1 Polarizing tab. (Used with P901, P951, P952). 7115130P9 Lockwasher: sim to Shakeproof 1220-2. (Used with R901 mounting). 7165075P2 Hex nut, brass: No. 3/8-32. (Used with R901 mounting). 19A115874P1 Catch, friction. (Latches A901).

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES.



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
PL19C320728G1	A

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.

ALL RESISTORS ARE .5 WATT UNLESS OTHERWISE SPECIFIED AND RESISTOR VALUES IN OHMS UNLESS FOLLOWED BY K=1,000 OHMS OR MEG=1,000,000 OHMS. CAPACITOR VALUES IN PICO FARADS (EQUAL TO MICROMICROFARADS) UNLESS FOLLOWED BY UF= MICROFARADS. INDUCTANCE VALUES IN MICROHENRYS UNLESS FOLLOWED BY MH= MILLIHENRYS OR H= HENRYS

(19C320734, Rev. 3)

SCHEMATIC DIAGRAM

SERVICE SPEAKER 19C320728G1

Issue 2

LBI4788

PARTS LIST

LBI-4820B

SERVICE SPEAKER
19C320728G1 REMOTE
19C320728G2 LOCAL

SYMBOL	GE PART NO.	DESCRIPTION
J1		----- JACKS AND RECEPTACLES -----
		Connector. Includes:
	19B209288P22	Shell.
	5496809P18	Contact, electrical: male; sim to Molex 1380-T.
LS1		----- LOUDSPEAKERS -----
	19A115964P1	Permanent magnet: 3.5 inch, 18 ohms $\pm 10\%$ imp, 15 to 19 ohms $\pm 20\%$ DC res, resonant frequency 290 Hz; sim to Oaktron S-9847.
R1 and R2		----- RESISTORS -----
	5493035P53	Wirewound: 18 ohms $\pm 5\%$, 5 w; sim to Hamilton Hall Type HR.
	19B209490P1	Variable, wirewound: 35 ohms $\pm 20\%$, 2.25 w; sim to CTS Type 118.
	5493035P52	Wirewound: 8.2 ohms $\pm 10\%$, 5 w; sim to Hamilton Hall Type HR.
	5493035P53	Wirewound: 18 ohms $\pm 5\%$, 5 w; sim to Hamilton Hall Type HR.
S1		----- SWITCHES -----
	19B209261P5	Slide: DPTT, 2 poles, 3 positions, .5 amp VDC or 3 amps VAC at 125 v; sim to Switchcraft 11D1033B.
		----- MISCELLANEOUS -----
	4031543P2	Knob. (Used with R3).
	7115130P9	Lockwasher: sim to Shakeproof 1220-2. (Used with R3).
	7165075P2	Hex nut, brass: No. 3/8-32. (Used with R3).

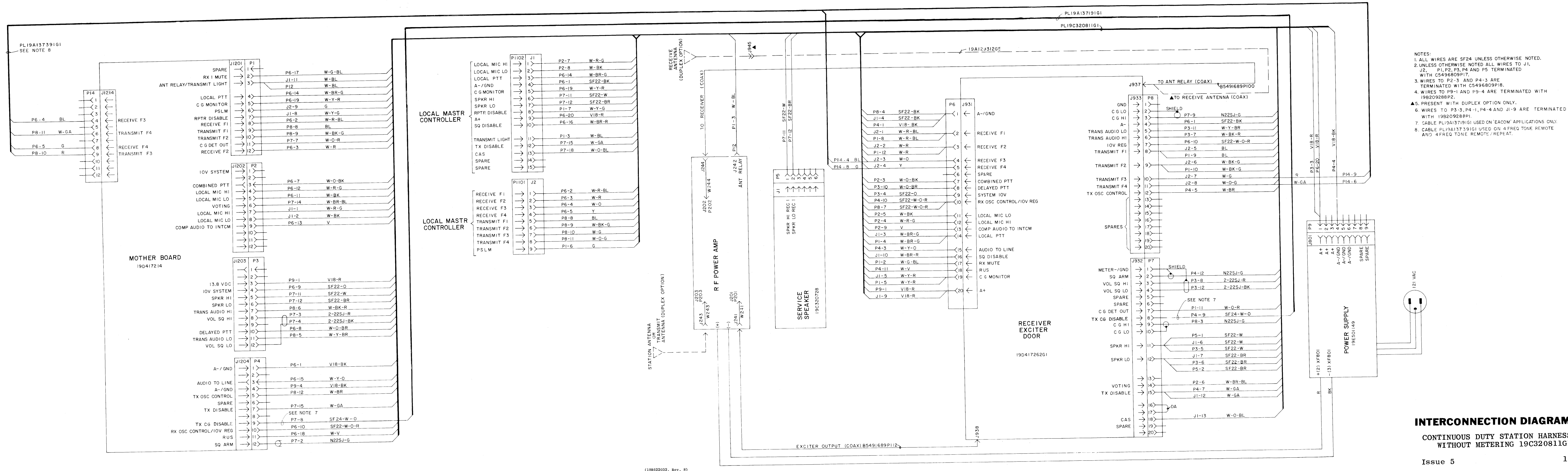
PRODUCTION CHANGES

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 factory wiring errors caused by duplication of wire colors.

Change wire connection on:
J1-1 from SF22-O to SF22-R
J1-2 from SF22-BR to SF22-BK
(No Parts List changes)

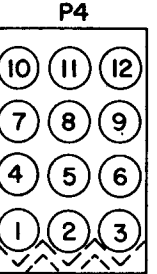
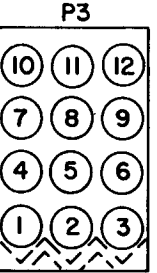
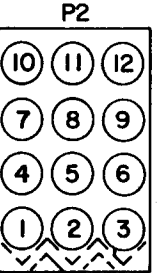
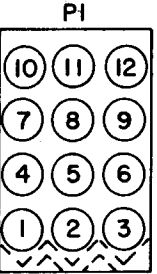
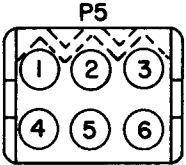
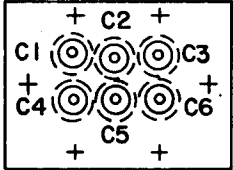
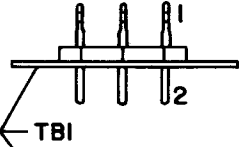
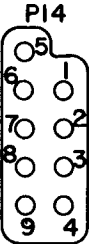
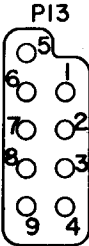
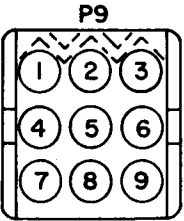
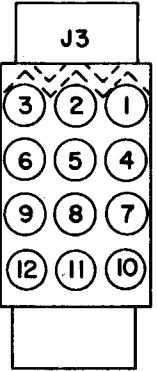
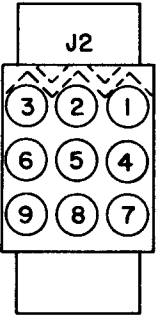
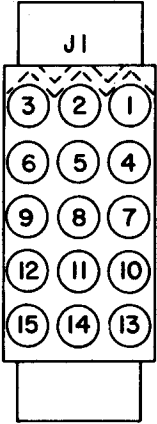
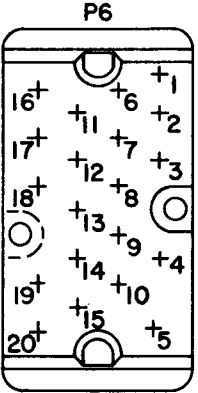
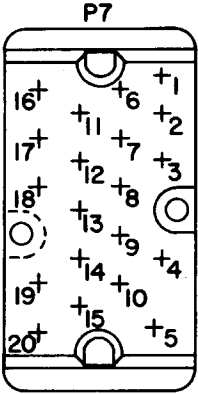
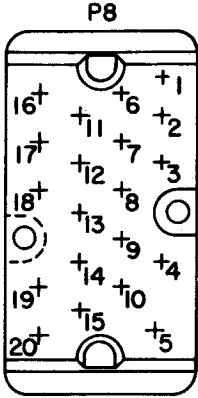
*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES



PARTS LIST

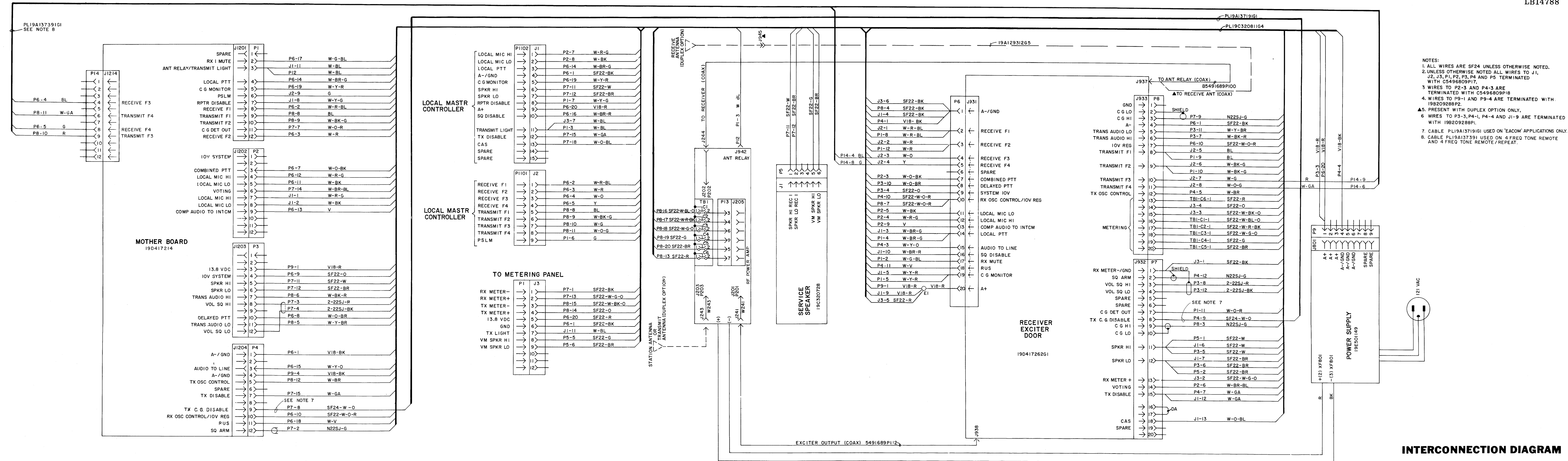
LBI-4796
MASTER II CONTINUOUS DUTY
STATION HARNESS
19C320811G1

SYMBOL	GE PART NO.	DESCRIPTION
J1	19B209288P5	----- JACKS AND RECEPTACLES -----
	5496809P17	Connector. Includes: Shell.
J2	19B209288P3	Contact, electrical: female; sim to Molex 1381-T. (Quantity 13).
	5496809P17	Connector. Includes: Shell.
P1	19B209288P20	----- PLUGS -----
	5496809P17	Connector. Includes: Shell.
P2	19B209288P20	Contact, electrical: female; sim to Molex 1381-T. (Quantity 6).
	5496809P18	Contact, electrical: male; sim to Molex 1380-T. (Quantity 1).
P3	19B209288P20	Connector. Includes: Shell.
	5496809P17	Contact, electrical: female; sim to Molex 1381-T. (Quantity 9).
P4	19B209288P20	Connector. Includes: Shell.
	5496809P17	Contact, electrical: female; sim to Molex 1381-T. (Quantity 7).
P5	5496809P18	Contact, electrical: male; sim to Molex 1380-T. (Quantity 1).
	19B209288P23	Connector. Includes: Shell.
P6 thru P8	5496809P17	Contact, electrical: female; sim to Molex 1381-T. (Quantity 2).
	19C303506P1	Connector, phen: 20 contacts.
P9	19B209288P4	Connector. Includes: Shell.
	5496809P18	Contact, electrical: male; sim to Molex 1380-T. (Quantity 1).
P12	19B209288P2	Contact, electrical: male; sim to Molex 1190-T. (Quantity 1).
	19A115793P1	Contact, electrical: sim to Malco 2700.



NOTE:
I. CONNECTORS SHOWN FROM WIRING SIDE.

OUTLINE DIAGRAM
HARNESS 19C320811



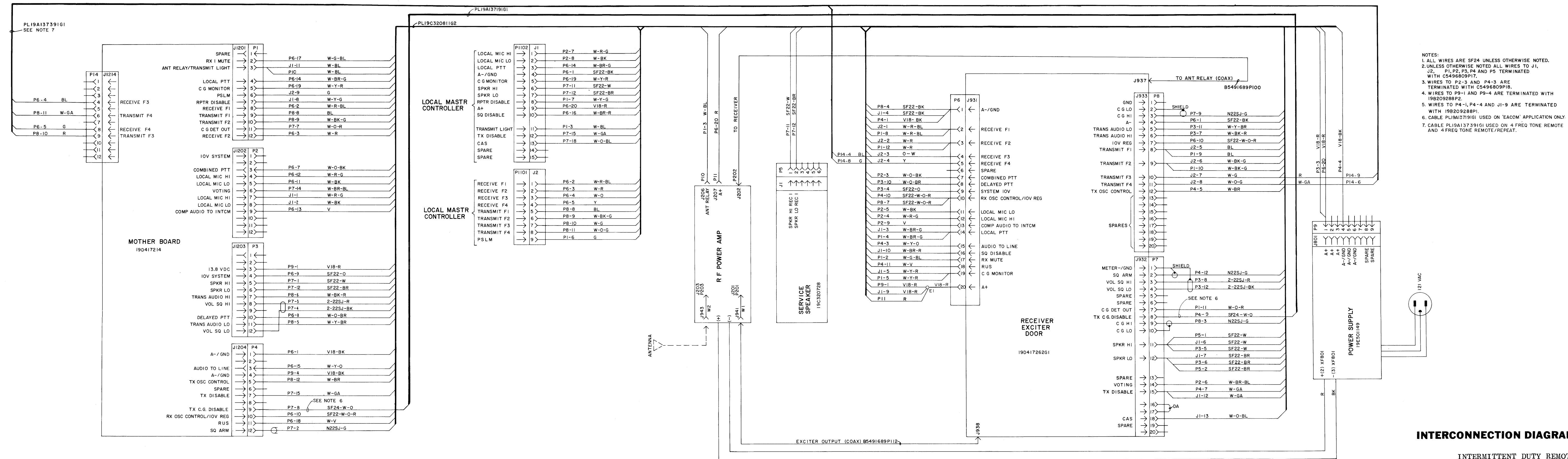
CONTINUOUS DUTY STATION HARNESS
WITH METERING 19C320811G4

PARTS LIST

LBI-4799

MASTR II CONTINUOUS DUTY
STATION HARNESS WITH METERING
19C320811G4

SYMBOL	GE PART NO.	DESCRIPTION
		----- JACKS AND RECEPTACLES -----
J1	19B209288P5	Connector. Includes:
	5496809P17	Shell.
		Contact, electrical: female; sim to Molex 1381-T. (Quantity 13).
J2	19B209288P3	Connector. Includes:
	5496809P17	Shell.
		Contact, electrical: female; sim to Molex 1381-T. (Quantity 9).
J3	19B209288P25	Connector. Includes:
	5496809P17	Shell.
		Contact, electrical: female; sim to Molex 1381-T. (Quantity 9).
		----- PLUGS -----
P1	19B209288P20	Connector. Includes:
	5496809P17	Shell.
		Contact, electrical: female; sim to Molex 1381-T. (Quantity 11).
P2	19B209288P20	Connector. Includes:
	5496809P17	Shell.
		Contact, electrical: female; sim to Molex 1381-T. (Quantity 6).
	5496809P18	Contact, electrical: male; sim to Molex 1380-T. (Quantity 1).
P3	19B209288P20	Connector. Includes:
	5496809P17	Shell.
		Contact, electrical: female; sim to Molex 1381-T. (Quantity 9).
P4	19B209288P20	Connector. Includes:
	5496809P17	Shell.
		Contact, electrical: female; sim to Molex 1381-T. (Quantity 7).
	5496809P18	Contact, electrical: male; sim to Molex 1380-T. (Quantity 1).
P5	19B209288P23	Connector. Includes:
	5496809P17	Shell.
		Contact, electrical: female; sim to Molex 1381-T. (Quantity 4).
P6 thru P8	19C303506P1	Connector, phen: 20 contacts.
P9	19B209288P4	Connector. Includes:
	5496809P18	Shell.
		Contact, electrical: male; sim to Molex 1380-T. (Quantity 1).
	19B209288P2	Contact, electrical: male; sim to Molex 1190-T. (Quantity 1).
P12	19A115793P1	Contact, electrical: sim to Malco 2700.
P13	19B219534P1	Plug: 9 pins.
		----- TERMINAL BOARDS -----
TB1	19A130051G1	Plate.



PARTS LIST

LBI-4797

MASTR II INTERMITTENT DUTY
REMOTE CONTROL STATION HARNESS
19C320811G2

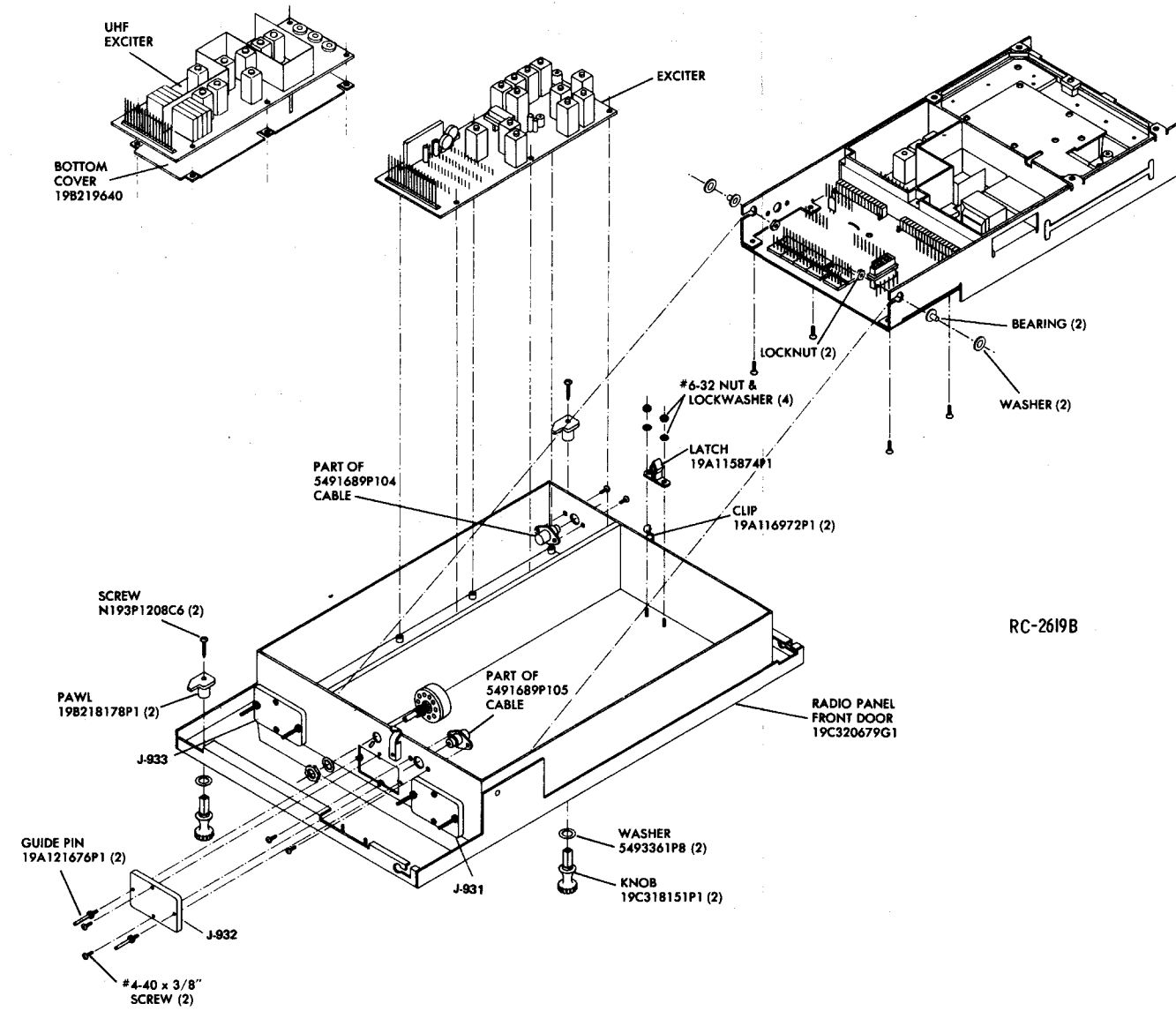
SYMBOL	GE PART NO.	DESCRIPTION
J1	19B209288P5	----- JACKS AND RECEPTACLES ----- Connector. Includes:
	5496809P17	Shell. Contact, electrical: female; sim to Molex 1381-T. (Quantity 13).
J2	19B209288P3	Connector. Includes:
	5496809P17	Shell. Contact, electrical: female; sim to Molex 1381-T. (Quantity 9).
P1	19B209288P20	----- PLUGS ----- Connector. Includes:
	5496809P17	Shell. Contact, electrical: female; sim to Molex 1381-T. (Quantity 11).
P2	19B209288P20	Connector. Includes:
	5496809P17	Shell. Contact, electrical: female; sim to Molex 1381-T. (Quantity 6).
	5496809P18	Contact, electrical: male; sim to Molex 1380-T. (Quantity 1).
P3	19B209288P20	Connector. Includes:
	5496809P17	Shell. Contact, electrical: female; sim to Molex 1381-T. (Quantity 9).
P4	19B209288P20	Connector. Includes:
	5496809P17	Shell. Contact, electrical: female; sim to Molex 1381-T. (Quantity 7).
	5496809P18	Contact, electrical: male; sim to Molex 1380-T. (Quantity 1).
P5	19B209288P23	Connector. Includes:
	5496809P17	Shell. Contact, electrical: female; sim to Molex 1381-T. (Quantity 2).
P6 thru P8	19C303506P1	Connector, phen: 20 contacts.
P9	19B209288P4	Connector. Includes:
	5496809P18	Shell. Contact, electrical: male; sim to Molex 1380-T. (Quantity 1).
	19B209288P2	Contact, electrical: male; sim to Molex 1190-T. (Quantity 1).
P10 and P11	4036634P1	Contact, electrical; sim to AMP 42428-2.

PARTS LIST

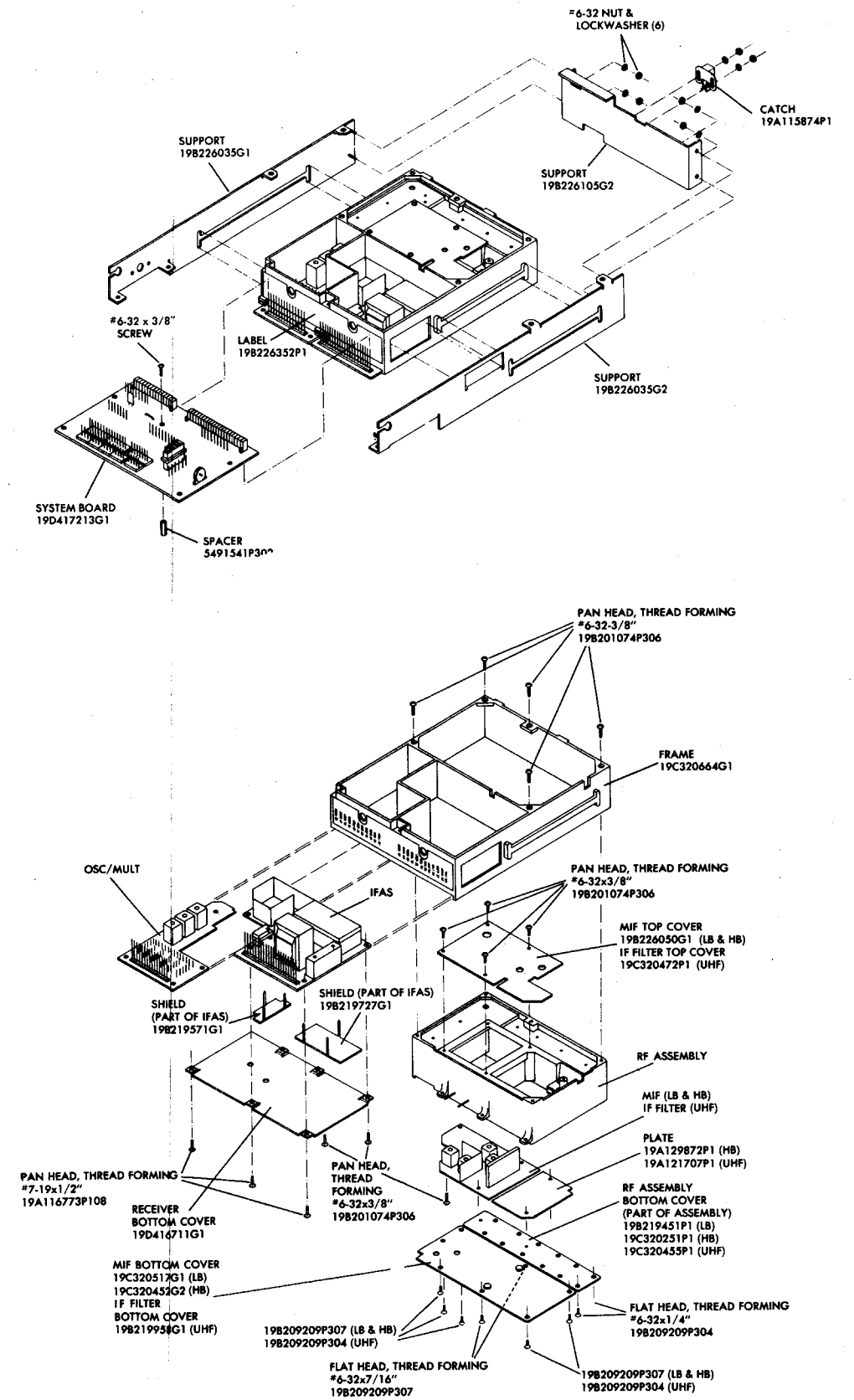
LBI-30073

MASTR II INTERMITTENT DUTY
STATION HARNESS WITH METERING
19C320811G5

SYMBOL	GE PART NO.	DESCRIPTION
----- JACKS AND RECEPTACLES -----		
J1	19B209288P5	Connector. Includes:
	5496809P17	Shell.
J2	19B209288P3	Contact, electrical: female; sim to Molex 1381-T. (Quantity 13).
	5496809P17	Connector. Includes:
J3	19B209288P25	Shell.
	5496809P17	Contact, electrical: female; sim to Molex 1381-T. (Quantity 9).
----- PLUGS -----		
P1	19B209288P20	Connector. Includes:
	5496809P17	Shell.
P2	19B209288P20	Contact, electrical: female; sim to Molex 1381-T. (Quantity 11).
	5496809P17	Connector. Includes:
P3	19B209288P20	Shell.
	5496809P17	Contact, electrical: female; sim to Molex 1381-T. (Quantity 9).
P4	19B209288P20	Connector. Includes:
	5496809P17	Shell.
	5496809P18	Contact, electrical: male; sim to Molex 1380-T. (Quantity 1).
P5	19B209288P23	Connector. Includes:
	5496809P17	Shell.
P6 thru P8	19C303506P1	Contact, electrical: female; sim to Molex 1381-T. (Quantity 2).
P9	19B209288P4	Connector, phen: 20 contacts.
	5496809P18	Connector. Includes:
	19B209288P2	Shell.
P10 and P11	4036634P1	Contact, electrical: male; sim to Molex 1380-T. (Quantity 1).
P13	19B219534P1	Contact, electrical: male; sim to Molex 1190-T. (Quantity 1).
		Contact, electrical; sim to AMP 42428-2.
----- TERMINAL BOARDS -----		
TB1	19A130051G1	Connector, plug: 9 male contacts.
		Plate.



RC-2619B

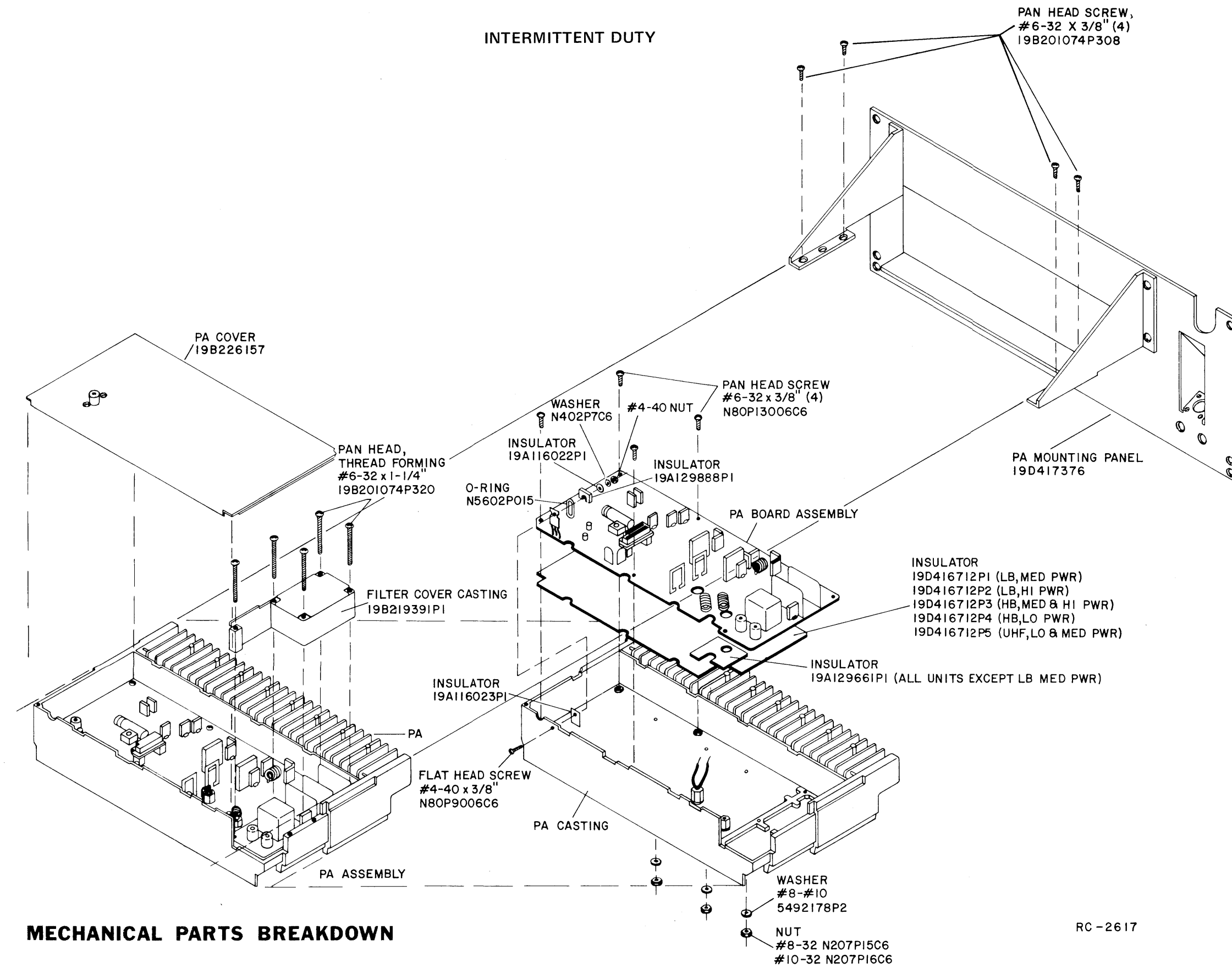


RC-2762A

MECHANICAL PARTS BREAKDOWN

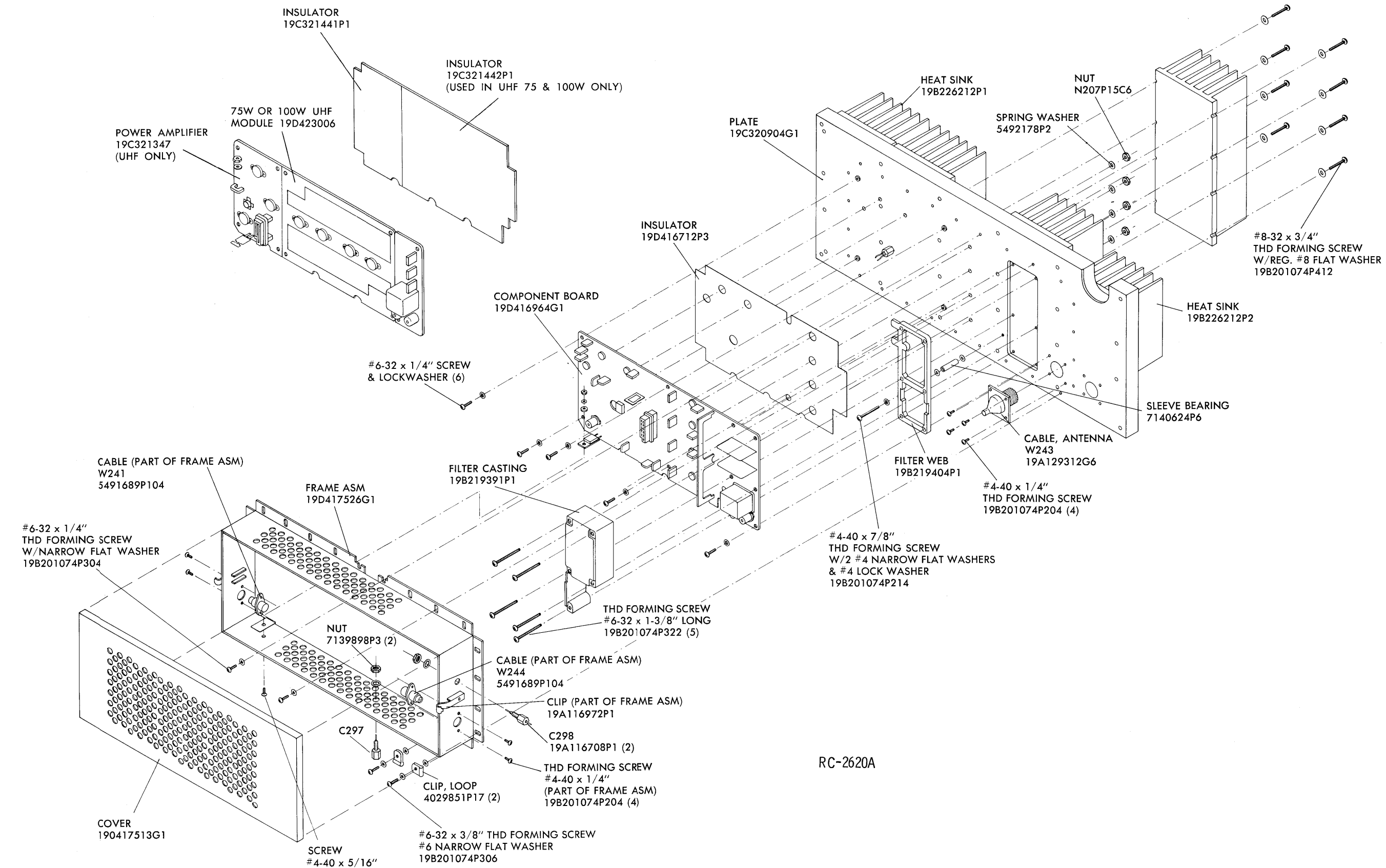
RADIO PANEL FRONT DOOR

INTERMITTENT DUTY



MECHANICAL PARTS BREAKDOWN

TRANSMITTER POWER AMPLIFIER



RC-2620A

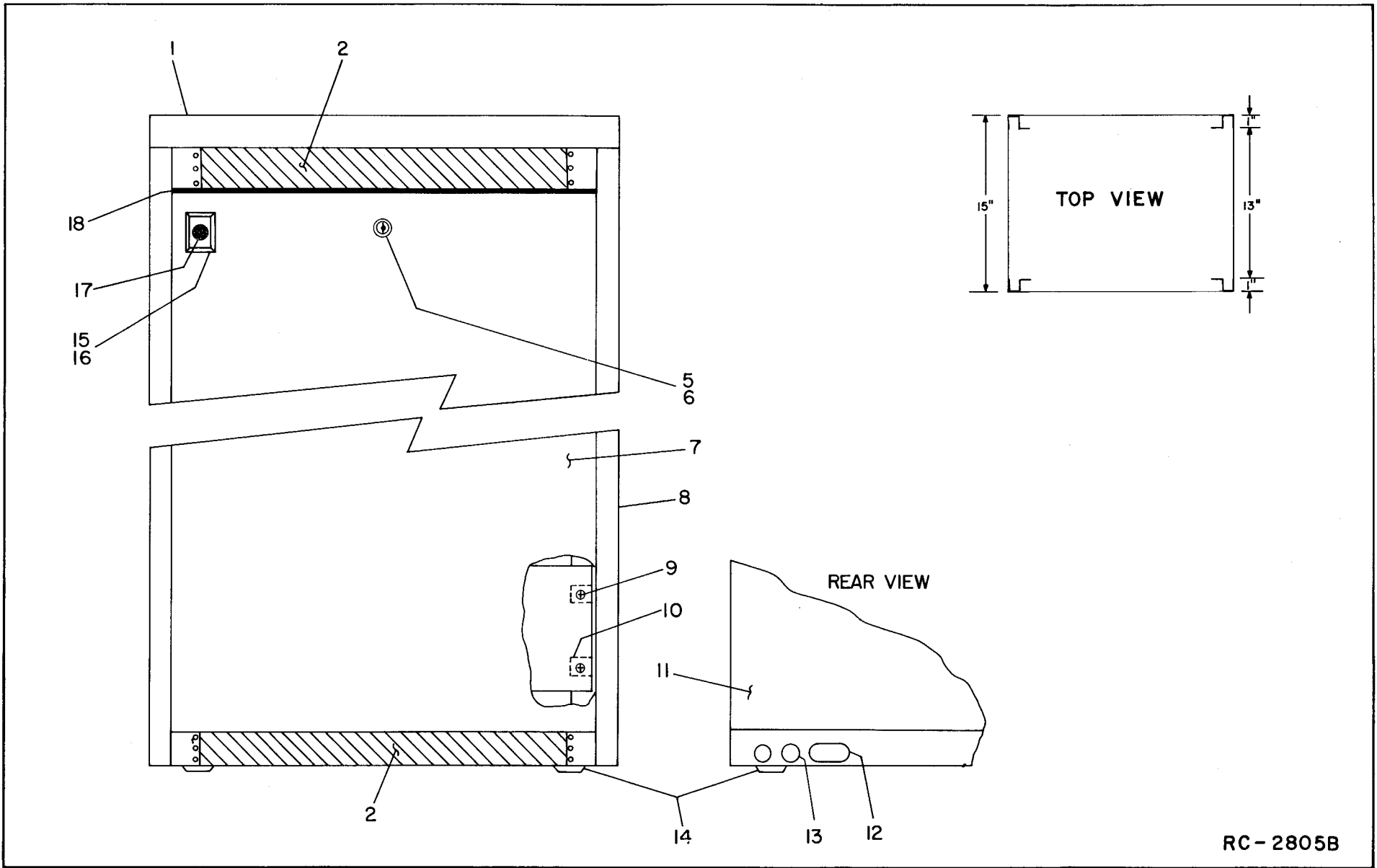
RC-2617

PARTS LIST

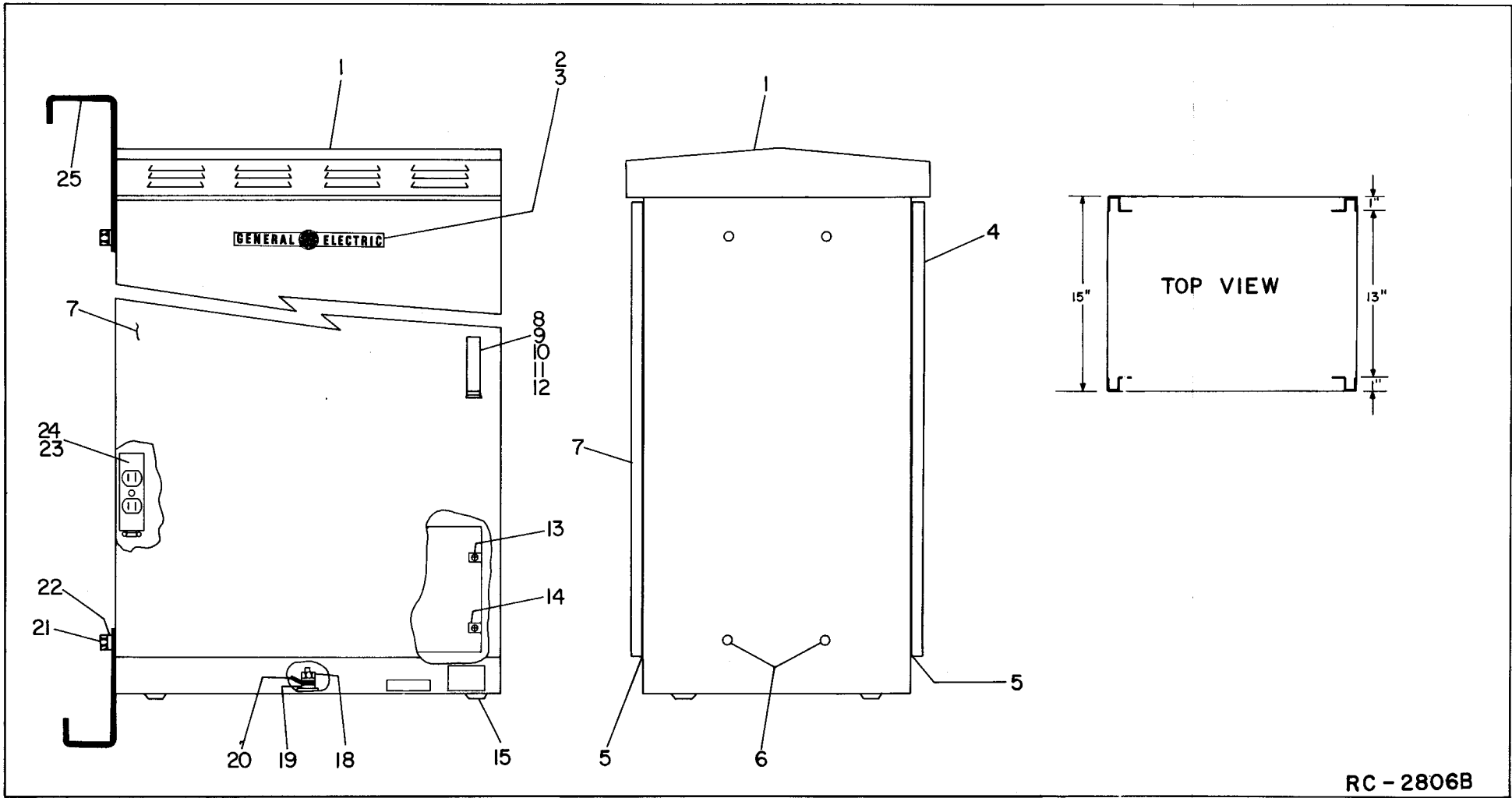
LBI-4975C

DESK MATE STATION CABINET
CONTINUOUS AND INTERMITTANT DUTY
(SEE RC-2805)

SYMBOL	GE PART NO.	DESCRIPTION
30 INCH CABINET		
1	19C320655P1	Top.
2	19C320654P1	Screen.
3		(Not Used).
4		(Not Used).
5	5491682P23	Lock. Yale and Towne F6557DX1.
6	5491682P4	Key. Yale and Towne BF-10A.
7	19C320744G7	Front door.
8	19D417231G3	Cabinet. (LESS DOORS). (Includes items 1 and 2).
9	19A134011P1	Tap screw: No. 10-16 x 3/4. (Quantity 52).
10	7160861P32	Nut, sheet spring; sim to Tinnerman C1794-10Z-24. (Quantity 52).
11	19C320744G8	Rear door.
12	19A134032P1	Protective plug. (Quantity 1).
13	19A134014P6	Bushing, strain relief: sim to Heyco UB-1093.
14	19A134015P1	Protective plug: sim to Caplug BPF-1/2. (Quantity 4).
15	19C311298P1	Frame. (Used with monogram).
16	4031053P7	Nut, sheet spring; sim to Tinnerman C12046-012-67. (Quantity 1).
17	NP257660	Nameplate.
18	NP276429	Nameplate. (GENERAL ELECTRIC).
44 INCH CABINET		
1	19C320655P1	Top.
2	19C320654P1	Screen.
3		(Not Used).
4		(Not Used).
5	5491682P23	Lock. Yale and Towne F6557DX1.
6	5491682P4	Key. Yale and Towne BF-10A.
7	19C320744G9	Front door.
8	19D417231G4	Cabinet. (LESS DOORS). (Includes items 1 and 2).
9	19A134011P1	Tap screw: No. 10-16 x 3/4. (Quantity 52).
10	7160861P33	Nut, sheet spring; sim to Tinnerman C19640-10AB-3B. (Quantity 52).
11	19C320744G10	Rear door.
12	19A134032P1	Protective plug. (Quantity 1).
13	19A134014P6	Bushing, strain relief: sim to Heyco UB-1093.
14	19A134015P1	Protective plug: sim to Caplug BPF-1/2. (Quantity 4).
15	19C311298P1	Frame. (Used with monogram).
16	4031053P7	Nut, sheet spring; sim to Tinnerman C12046-012-67. (Quantity 1).
17	NP257660	Nameplate.
18	NP276429	Nameplate. (GENERAL ELECTRIC).



RC-2805B



PARTS LIST

LBI-4976C

POLE MOUNT STATION CABINET
CONTINUOUS AND INTERMITTANT DUTY
19D417550G1
(SEE RC-2806)

SYMBOL	GE PART NO.	DESCRIPTION
1	19D417550G1	Cabinet.
2	19B209531P1	Nameplate. (GENERAL ELECTRIC).
3	4031310P7	Nut, push on: sim to Tinnerman C610-012-24.
4	19D417543G2	Door, left hand.
5	19A134128P1	Door seal. (Front and rear).
6	19A134059P1	Protective plug.
7	19D417543G1	Door, right hand.
8	19A134049P1	Door handle.
9	19A130554P1	Strike catch.
10	N84P15008C6	Machine screw: No. 8-32 x 1/2.
11	N403P16C6	Lockwasher, external tooth: No. 8.
12	N210P15C6	Hex nut: No. 8-32.
13	19A134011P1	Tap screw: No. 10-16 x 3/4. (Quantity 52).
14	7180861P33	Nut, sheet spring; sim to Tinnerman C19640-10AB-3B. (Quantity 52).
15	19A134015P2	Protective plug.
16		(Not Used).
17		(Not Used).
18	N210P21C6	Hex nut: No. 1/4-20.
19	N403P25C6	Lockwasher, external tooth: 1/4 inch.
20	19A115141P2	Solderless terminal: sim to ILSCO SLU70.
21	N22P25016C6	Cap screw: No. 3/8-16 x 1.
22	N405P43C6	Lockwasher, spring type: 3/8 inch.
23	19B226350G1	Outlet strip.
24	19B209103P506	Tap screw: No. 10-32 x 3/8. (Secures outlet strip).
25	19C320942P1	Mounting bracket.

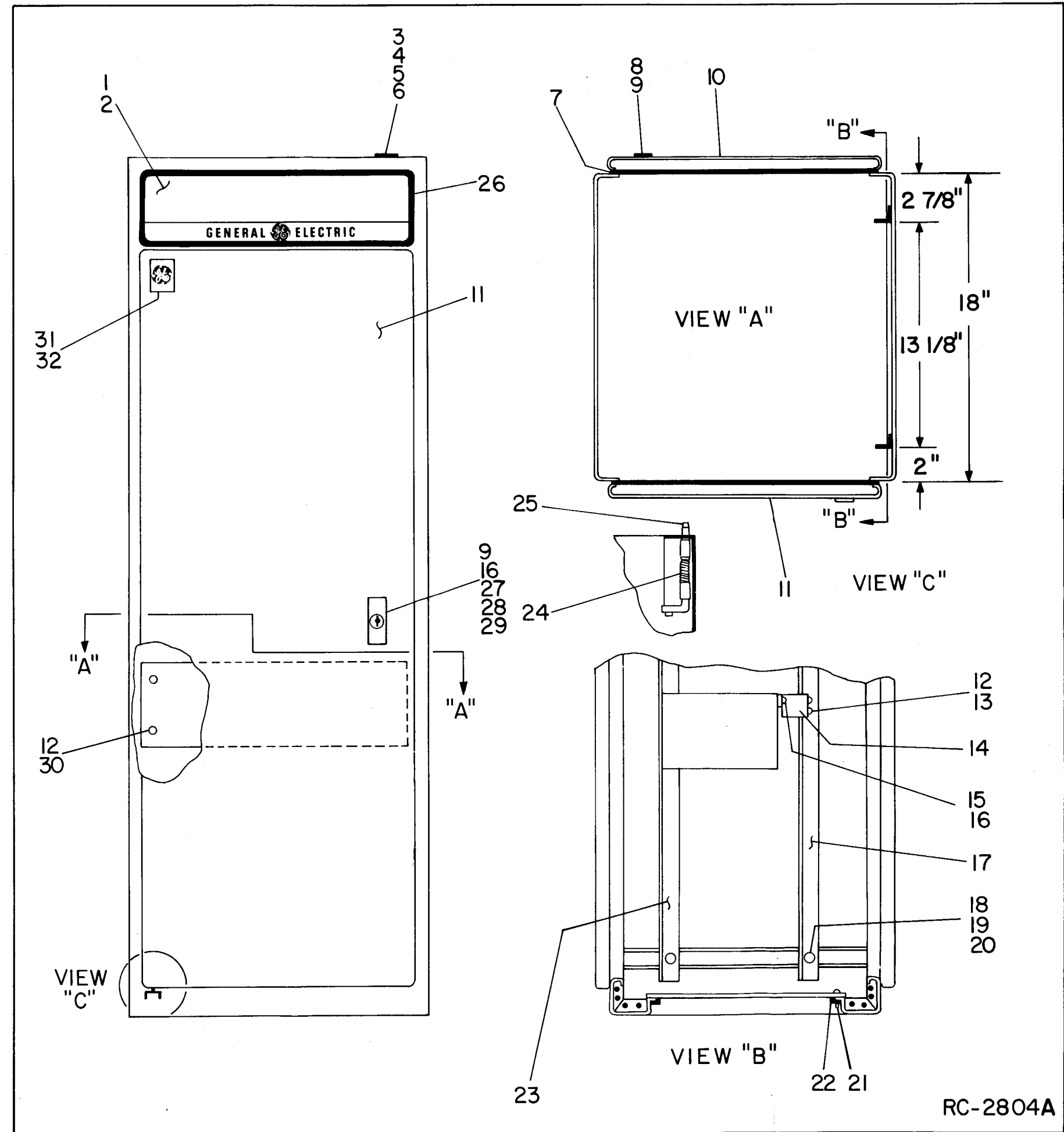
*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES.

PARTS LIST

LBI-4977B

FLOOR MOUNT STATION CABINET
CONTINUOUS AND INTERMITTANT DUTY
19D417358G1
(SEE RC-2804)

SYMBOL	GE PART NO.	DESCRIPTION
1	19D417623G1	Grille.
2	19B226318P1	Grille plate. (Located under grille).
3	19B219744G2	Strain relief.
4	N80P15008C6	Machine screw: No. 8-32 x 1/2.
5	N210P15C6	Hexnut: No. 8-32.
6	N403P16C6	Lockwasher, external tooth: No. 8.
7	19A126220P1	Gasket, door.
8	19B209539P2	Lock, rear door: sim to Chicago Lock Co. 1703-6T.
9	19B209539P3	Key. Sim to Chicago Lock Co. 1000 GE.
10	19C320756G2	Door, rear. 64 inch.
11	19C320756G1	Door, front. 59 inch.
12	19A134011P1	Tap screw: No. 10-16 x 3/4. (Quantity 52).
13	7160861P33	Nut, sheet spring; sim to Tinnerman C19640-10AB-3B. (Quantity 16).
14	19B226160P2	Support.
15	N80P16008C6	Machine screw: No. 10-32 x 1/2.
16	N403P19C6	Lockwasher: No. 10.
17	19B226094P2	Support.
18	N80P21012C6	Machine screw: No. 1/4-20 x 3/4.
19	N403P25C6	Lockwasher, external tooth: 1/4 inch.
20	N402P41C6	Flatwasher: No. 1/4.
21	N80P15006C6	Machine screw: No. 8-32 x 3/8.
22	7160861P5	Nut, sheet spring; sim to Tinnerman C1505-1032-157.
23	19B226094P1	Support.
24	19A129902P1	Spring.
25	19B226088P1	Pin hinge.
26	19B226092G1	Frame.
27	19B209539P1	Lock, front. Sim to Chicago Lock Co. 4260-1.
28	N80P16007C6	Machine screw: No. 10-32 x 7/16.
29	N210P16C6	Hexnut: No. 10-32.
30	7160861P31	Nut, sheet spring; sim to Tinnerman C18610-031.
31	NP257660	Nameplate. (GE).
32	4031053P7	Nut, sheet spring; sim to Tinnerman C12046-012-67.



RC-2804A

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES.