MOBILE RADIO

MASTR® Progress Line

MOBILE CONTROL UNIT MODELS 4EC59A58-61 & 4EC59A74-77

SPECIFICATIONS *

MODEL NUMBERS	4EC59A58 through 4EC59A61, and 4EC59A74 through 4EC59A77
USED WITH	MASTR Royal Professional Mobile Combinations
CONTROLS	VOLUME Control
	OFF-ON-STBY Switch
	SQUELCH Control
	Three or Four-Frequency Selector Switch
	Optional Controls
	Dimmer Control for Frequency Indicator Lights
INDICATORS	Transmit light: red
	F1 Frequency Indicator Light: green
	F2 Frequency Indicator Light: yellow
	F3 Frequency Indicator Light: blue
	F4 Frequency Indicator Light: white

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

GENERAL ELECTRIC

Maintenance Manual LBI-3946C
DATAFILE FOLDER - DF-4080 **********
EC-59-A

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ILLUSTRATIONS

WARNING

No one should be permitted to handle any portion of the equipment that is supplied with voltage of RF power; or to connect any external apparatus to the units while the units are supplied with power. KEEP AWAY FROM LIVE CIRCUITS.

DESCRIPTION

MASTR® Progress Line Control Units are compact, highly functional control units that are designed for either Trunk-Mount or Front-Mount MASTR mobile combinations.

In Trunk-Mount installations, a plate is installed on the back of the Control Unit to hold the connectors. A mounting bracket is provided for mounting the Control Unit within convenient reach of the operator. In Front-Mount installations, the Control Unit is attached to the front of the MASTR Two-Way Radio.

Cable connections are secured to the Control Unit by means of captive locking screws.

CIRCUIT ANALYSIS

The OFF-ON-STBY (standby) switch determines whether or not the transmitter and receiver are operative. With the switch in the OFF position, all power is removed from the Two-Way Radio. Turning the switch to STBY applies power to the receiver only, and the green light does not light.

Turning the switch to the ON position enables the push-to-talk (PTT) circuit, lights the green pilot light, and applies +12 volts to the receiver and power regulator. The position of the Frequency Indicator switch determines which light will glow when the OFF-ON-STBY switch is turned to ON. The multi-frequency indicator light colors are: F1-GREEN, F2-YELLOW, F3-BLUE, F4-WHITE.

Pushing the PTT button on the microphone lights the red pilot light, energizes the antenna changeover relay, and applies a keyed voltage to the transmitter and power regulator. The keyed voltage also mutes the receiver audio stages.

CONTROLS

All models of the Control Unit have VOLUME and SQUELCH controls, and an OFF-ON-STBY switch. Depending on the model number, some of the Control Units may have one or more of the controls described in the following paragraphs. A chart showing which controls are present on each Control Unit Model is provided on the Control Unit Wiring Diagram.

Instructions for adjusting the controls are in the Operator's Manual for the Two-Way Radio.

Three and Four-Frequency Switch (S706)

For three or four-frequency operation, a frequency selector switch selects the channel desired (F1 thru F4) for both transmitting and receiving. For three-frequency operation, the F3 and F4 channels on S706 are jumpered together. The switch connects +10 volts to the selected receiver oscillator switching diode, and connects the transmitter oscillator switching diode to ground, so that the unit will operate on the frequency determined by each of the crystal-controlled oscillators.

The transmitter and receiver Channel Guard operates only when the frequency selector switch is in the F1 position.

CHANNEL GUARD-OFF Switch (S703)

Placing this switch in the OFF position disables the receiver Channel Guard so that the receiver operates on noise squelch only.

Dimmer Control (R705 - Optional)

The dimmer control is a rheostat in series with the green pilot light. Turning the control adjusts the amount of light given off by the green pilot light.

VEHICLE IGNITION SWITCH CONNECTIONS

The Control Unit may be connected for three different modes of operation, depending on the way the three ignition switch cables are connected in the vehicle system. The black ignition switch cable provides the receiver ground connection. The yellow fused lead provides the receiver hot connections, and the red fused lead provides the +12 volts for the power regulator. The three types of operation are:

1. Ignition Switch Standby

   For this type of operation, the red fused lead (power regulator voltage) is connected to the ACCESSORY or ON terminal of the ignition switch. The yellow fused lead (receiver hot) is connected to the hot side of the ignition switch, and the black lead connects to vehicle ground.

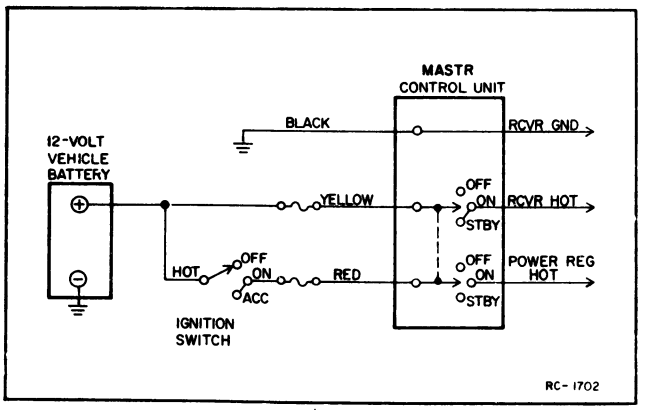


Figure 1 — 12-VDC Connections for Ignition Switch Standby

With the ignition switch OFF, the receiver automatically reverts to STBY, ready to receive messages. Turning the ignition switch to the ON or ACCESSORY position turns on the green pilot light and supplies power regulator voltage. Turning the OFF-ON-STBY switch to OFF removes all power to the Two-Way Radio.

2. Ignition Switch Control

For ignition switch control, the yellow and red fused leads are connected to the ACCESSORY or ON terminal of the ignition switch. The transmitter and receiver will operate only when the ignition switch is in the ACCESSORY or ON position. Turning the ignition switch OFF removes all power to the radio.

3. Ignition Switch Bypass

For ignition switch bypass, the yellow and red fused leads connect to the "hot" side of the ignition switch or the vehicle fuse block assembly. Both the transmitter and receiver operate independently of the ignition switch and can be turned on the off only by the OFF-ON-STBY switch on the MASTR Control Unit.

MAINTENANCE

DISASSEMBLY

In Trunk-Mount installations, access to the inside of the Control Unit is obtained by removing the two Phillips-head screws in the back of the unit and pulling the back panel away from the housing.

In Front-Mount installations, remove the two Phillips-head screws holding the front casting to the frame and move the casting. Then remove the two flat-head screws holding the Control Unit to the front casting.

PILOT LIGHT REPLACEMENT

The pilot lights can be easily replaced without disassembling the Control Unit. First, unscrew the colored lens. Then wrap a small piece of masking tape around the bulb, to give the fingers a firm grip, and unscrew the bulb.

REINSTALLATION

The Royal Professional mobile combination operates in 12-volt, negative ground vehicle systems only! If the radio is ever moved to a different vehicle, always check the battery polarity and voltage of the new system before using the radio.

CAUTION

Do not install the Royal Professional in a vehicle system using a circuit breaker. The radio must be operated in a system protected by a 15-amp quick blow fuse (similar to GE Fuse Assembly 19B216021 G4 and fuse 1R11-P4).

If it becomes necessary to move the the Two-Way Radio and Control Unit to another vehicle, the 25-pin control cable plug may need to be disassembled. Refer to Figure 2 for disassembly of the plug.

NOTE

The plug is assembled to that the cable comes out of the top of the plug when connected to the Control Unit. To have the cable come out of the bottom of the plug, remove the remaining two screws and rotate the metal frame 180 degrees.

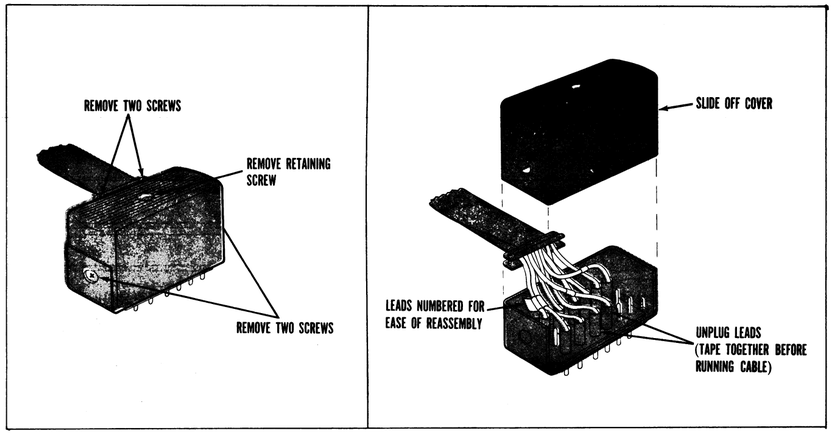
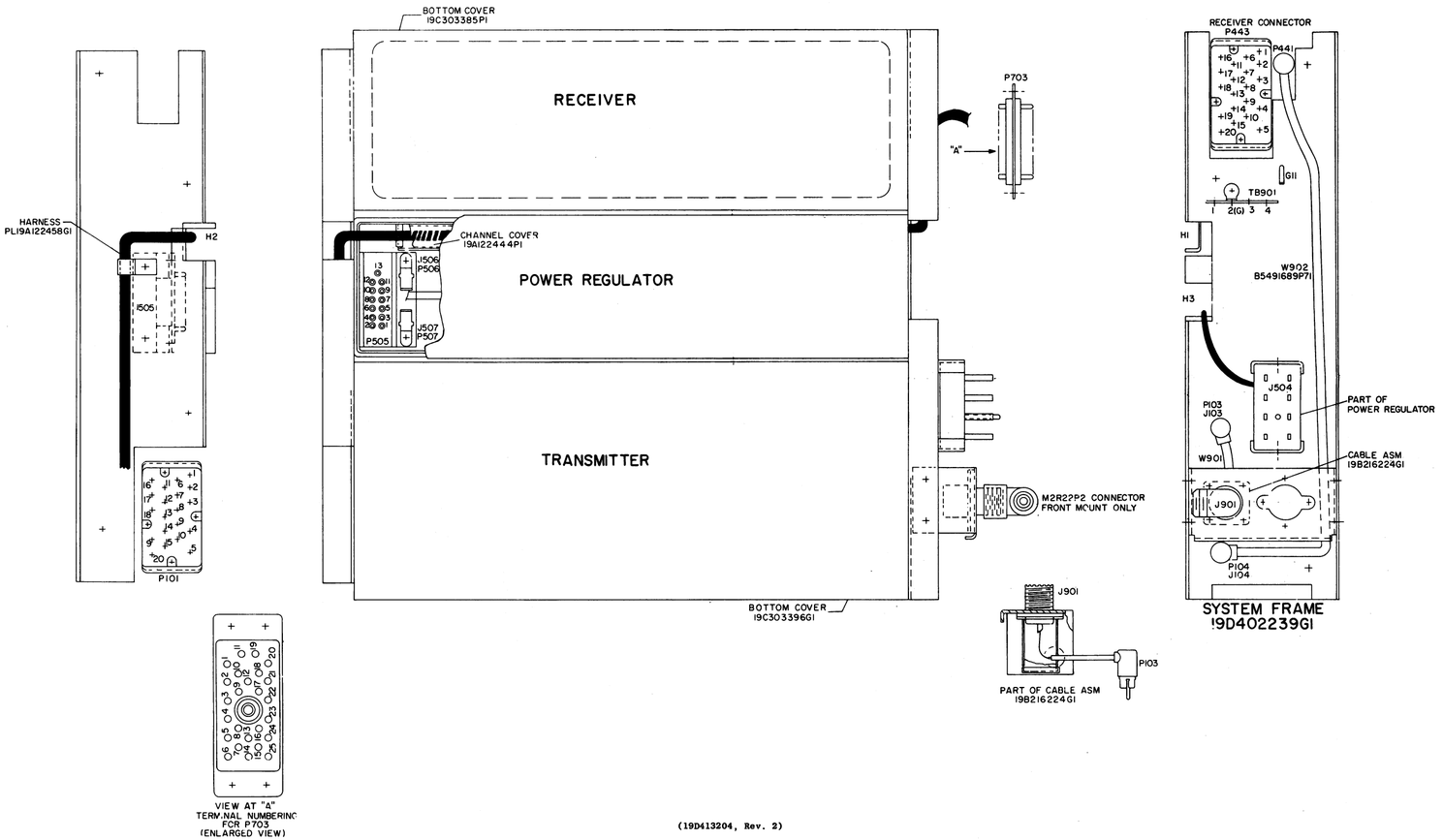


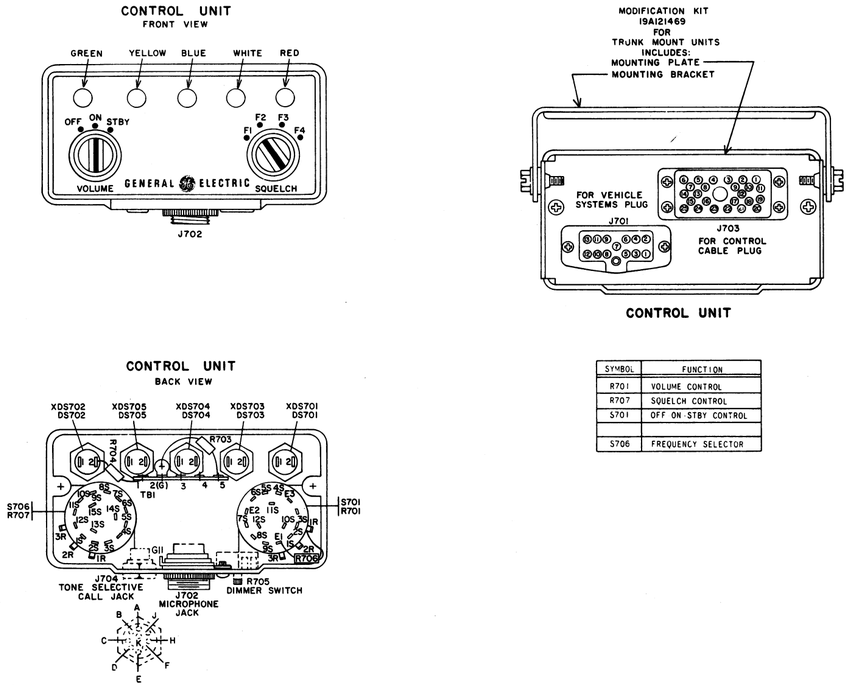
Figure 2 - Disassembly of Control Cable Plug

SYSTEM FRAME AND HARNESS



(19D413204, Rev. 2)

CONTROL UNIT



SYMBOL	FUNCTION
R701	VOLUME CONTROL
R707	SQUELCH CONTROL
S701	OFF-ON-STBY CONTROL
S706	FREQUENCY SELECTOR

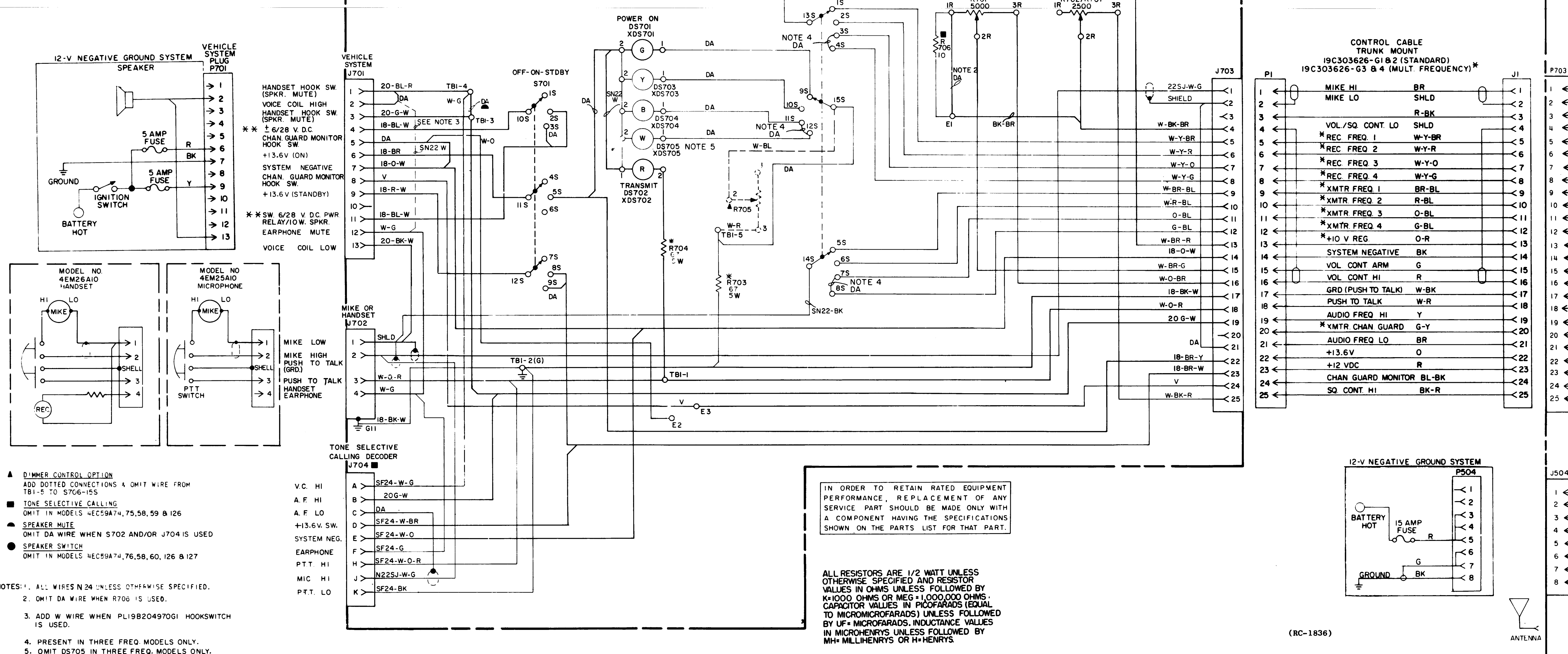
(19C303820, Rev. 3)

OUTLINE DIAGRAM

MASTR CONTROL UNIT
MODELS 4EC59A58-61 & 4EC59A74-77

CONTROL UNIT

* * TERMINALS 4 & 11 ARE USED ON 12 VOLT SYSTEMS FOR CONTROL OF 10-WATT SPEAKER.



MODEL NUMBER	REV. LETTER	NO. OF FREQ.	FREQ. INDICATOR LIGHTS	CHANNEL GUARD MONITOR SWITCH		TONE OPTION JACK
4EC59A74	E	4	X			
4EC59A75	E	4	X			
4EC59A76	J	4	X			
4EC59A77	J	4	X			
4EC59A58	F	3	X			
4EC59A59	F	3	X			
4EC59A60	K	3	X			X
4EC59A61	K	3	X			X
4EC59A126	A	4	X			
4EC59A127	B	4	X			X
4EC59A120	A	3	X			
4EC59A121	B	3	X			X

▲ DIMMER CONTROL OPTION
ADD DOTTED CONNECTIONS & OMIT WIRE FROM TB1-5 TO S706-15S

■ TONE SELECTIVE CALLING
OMIT IN MODELS 4EC59A74, 75, 58, 59 & 126

SPEAKER MUTE
OMIT DA WIRE WHEN S702 AND/OR J704 IS USED

● SPEAKER SWITCH
OMIT IN MODELS 4EC59A74, 76, 58, 60, 126 & 127

NOTES:
1. ALL WIRES N 24 UNLESS OTHERWISE SPECIFIED.
2. OMIT DA WIRE WHEN R706 IS USED.
3. ADD W WIRE WHEN PL19B204970G1 HOOKSWITCH IS USED.
4. PRESENT IN THREE FREQ. MODELS ONLY.
5. OMIT DS705 IN THREE FREQ. MODELS ONLY.

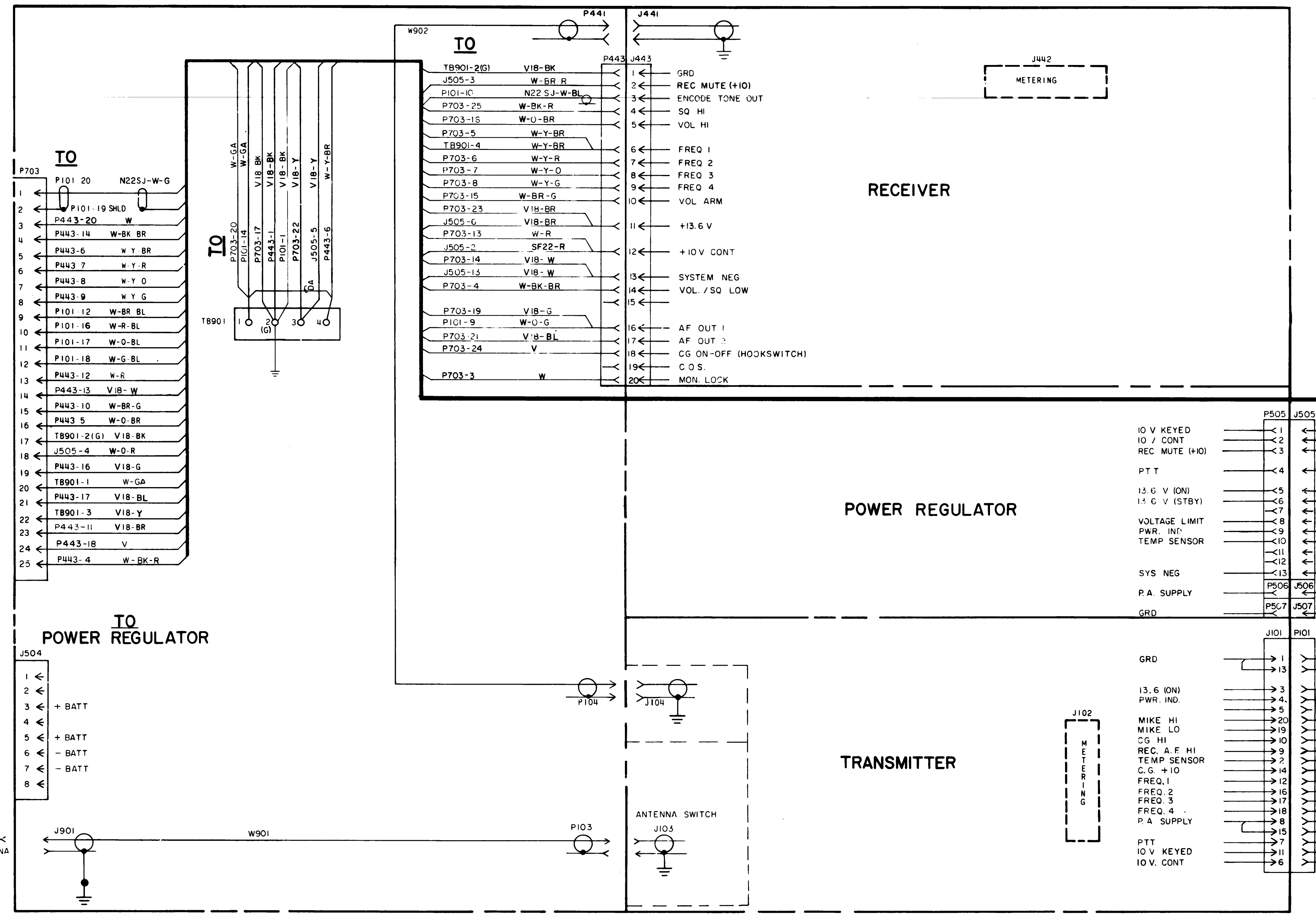
IN ORDER TO RETAIN RATED EQUIPMENT PERFORMANCE, REPLACEMENT OF ANY SERVICE PART SHOULD BE MADE ONLY WITH A COMPONENT HAVING THE SPECIFICATIONS SHOWN ON THE PARTS LIST FOR THAT PART.

ALL RESISTORS ARE 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.

(19D402418, Rev. 20)

(RC-1836)

SYSTEM FRAME & HARNESS



SIMILAR TO 19D402338

NOTES:
1. ALL WIRES ARE SF24 EXCEPT AS OTHERWISE SHOWN.
2. SEE 19D402763 FOR ORIENTATION AND LOCATION OF COMPONENTS AND ROUTING OF CABLE.
3. N22SJ-W-G WIRE IS A7134854P4
N22SJ-W-BL WIRE IS A7134854P5
V18-BL WIRE IS 19A116889P6
V18-Y WIRE IS 19A116889P4
4. TERMINATE WIRES AT J506 & J507 WITH A7117269P1.

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	
PL NO	REV LETTER

(19D402766, Rev. 10)

SCHEMATIC & INTERCONNECTION DIAGRAM

MASTR CONTROL UNIT
MODELS 4EC59A58-61 & 4EC59A74-77

Issue 4

PARTS LIST

LBI-3959C

CONTROL UNIT
MODELS 4EC59A58 - 4EC59A61
MODELS 4EC59A74 - 4EC59A77
AND
ASSOCIATED ASSEMBLIES

SYMBOL	GE PART NO.	DESCRIPTION
		CONTROL UNIT 19D413093G7
		- - - - - - - - INDICATING DEVICES - - - - - - - -
DS701 thru DS705	19B201122P1	Light, indicator: miniature, 6 v; sim to GE Type 1768.
		- - - - - - - - JACKS AND RECEPTACLES - - - - - - - -
J701	19C303576P1	Socket, phen: 13 contacts rated at 5 amps max.
J702		Connector, Includes:
	19A116061P2	Receptacle: 4 female contacts; sim to Amphenol Type 91-PS47-1000.
	19A116061P4	Lockwasher.
	19A116061P5	Nut, knurled.
J703	19D402408P1	Connector, phen: 25 contacts rated at 5 amps max.
J704	19B216279G1	Jack assembly: 8 female contacts rated at 5 amps at 500 VRMS; sim to Winchester RSS-LSN.
		- - - - - - - - - - RESISTORS - - - - - - - - -
R701		(Part of S701).
R703 and R704	5493035P19	Wirewound, ceramic: 67 ohms ±5%, 5 w; sim to Hamilton Mat Type HM.
R706*	3B77P100K	Composition: 10 ohms ±10%, 1/2 w.
		In Models 4EC59A50 and 61 of REV B thru G; In Models 4EC59A76 and 77 of REV B thru F:
	3B77P560K	Composition: 56 ohms ±10%, 1/2 w.
		In Models of REV A:
	3B77P271K	Composition: 270 ohms ±10%, 1/2 w.
		In Models earlier than REV A:
	3B77P220K	Composition: 22 ohms ±10%, 1/2 w.
R707		(Part of S706).
		- - - - - - - - - - SWITCHES - - - - - - - - - -
S701*	19C307089P19	Switch/Resistor: includes Switch, rotary, 3 poles, 3 positions, momentary shorting contacts, 250 ma at 500 VRMS; Resistor (R701), variable, 5000 ohms ±20%, 2 w max, mod log taper; sim to Mallory LC5K-3293.
		In Models 4EC59A58, 59, 74, 75 REV A and earlier; In Models 4EC59A60, 61, 76, 77 REV C and earlier:
	19C307089P1	Switch/Resistor: includes Switch, rotary, 3 poles, 3 positions, non-shorting contacts, 250 ma at 500 VRMS; Resistor (R701), variable, 5000 ohms ±20%, 1/3 w max; sim to Mallory LC.
S702	549189P95	Toggle: DPDT, 3 amps at 250 VAC or 250 VDC; sim to Cutler-Hammer E28OE13.
S706	19C307089P21	Switch/Resistor: includes Switch, rotary, 3 pole, 4 positions, momentary shorting contacts, 250 ma at 500 VRMS; Resistor (R707), variable, 2500 ohms ±10%, 1 w max; sim to Mallory LC.
		- - - - - - - - TERMINAL BOARDS - - - - - - - -
TB1	7775500P12	Phen: 5 terminals.
		- - - - - - - - - - SOCKETS - - - - - - - - - -
XDS701 thru XDS705	19B201122P2	Lamp, miniature: sim to Drake Series 121.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

SYMBOL	GE PART NO.	DESCRIPTION
		MECHANICAL PARTS (SEE RC-1185)
1	8529919C13	Plug button: approx 21/32 inches dia. (Used in Models 4EC59A74 and 76).
2	8529959C13	Plug button: approx 13/32 inches dia.
3	19A131521G1	Mounting bracket.
4	19B201122P3	Lens cap: green translucent nylon, approx 3/8 inch dia.
5	19B201122P6	Lens cap: yellow translucent nylon, approx 3/8 inch dia.
6	19B201122P5	Lens cap: blue translucent nylon, approx 3/8 inch dia.
7	NP257845	Nameplate: etched aluminum.
8		(Not Used).
9	19B201122P7	Lens cap: white translucent nylon, approx 3/8 inch dia.
10	19B201122P4	Lens cap: red translucent nylon, approx 3/8 inch dia.
11	19B204443G1	Knob: gray.
12	19C303413P1	Knob: VOLUME/SQUELCH.
13	19D413101P1	Housing.
14	19B204522P1	Mounting plate approx 3-7/16 x 2-1/2 x 1/16 inches thick.
	19A116773P106	Tag screw, Phillips Pozidriv®: No. 7-19 x 3/8. (Secures housing to mounting surface).
		ASSOCIATED ASSEMBLIES
	19A121469G1	Control unit modification kit (trunk mount).
	19D402239G1	12 volt vehicles frame.
	19A123444P1	Cover, wire channel (on systems frame).
	19C303453G1	Front casting (Front mount).
	19C303453G2	Front casting (Trunk mount).
	549168P2	Lock: Yale and Towne. (Part of Front casting).
	549168P7	Cam. (Used with lock).
		POWER CABLE ASSEMBLY 19C303601G1 (12 VOLT FRONT MOUNT) 19C303601G2 (12 VOLT TRUNK MOUNT)
	19B209189P1	Connector, phen: 8 contacts rated at 15 amps at 1100 VRMS; sim to Beauchaine and Sons S-5401-76.
	19D402438P1	Cap, connector.
	19A115313P1	Cable: 3 conductor, approx 9 feet long. (Used in 19C303601G1).
	19A116884P1	Cable: 3 conductor, approx 20 feet long. (Used in 19C303601G2).
		CONTROL CABLE ASSEMBLY 19C303629G1, G2 (SINGLE FREQ) 19C303629G3, G4 (MULTI-FREQ)
		- - - - - - - - - - PLUGS - - - - - - - - - -
P1	19C303629G5	Plug, male, includes: connector 19D402408P3, cap 19C303290P2.
		- - - - - - - - JACKS AND RECEPTACLES - - - - - - - -
J1	19C303629G6	Plug, female, includes: connector 19D402408P1, cap 19C303290P1.
		- - - - - - - - - - MISCELLANEOUS - - - - - - - - - -
	19D402408P1	Connector, female phen: 25 contacts rated at 5 amps max.
	19D402408P3	Connector, male phen: 25 contacts rated at 5 amps max.
	19C303290P1	Cap, connector. (Used with 19D402408P1 connector).
	19C303290P2	Cap, connector. (Used with 19D402408P3 connector).

SYMBOL	GE PART NO.	DESCRIPTION
	7139880P8	Cable, single freq: 13 conductors, approx 18 feet long. (Specify length when ordering).
	7139880P8	Cable, single freq: 13 conductors, approx 23 feet long. (Specify length when ordering).
	7139880P11	Cable, multi freq: 23 conductors, approx 18 feet long. (Specify length when ordering).
	7139880P11	Cable, multi freq: 23 conductors, approx 23 feet long. (Specify length when ordering).
		VEHICLE SYSTEM CABLE KIT 19A121454G1 (12 VOLT VEHICLES)
	19A121429P1	Pin: 1/2 inch long.
	19A121441G1	Plug: 13 contacts.
	19C303574P1	Cover.
		FUSED LEAD ASSEMBLY 19A121321G1 (19A121454G1)
	1B16P8	Fuse, cartridge, quick blowing: 5 amps at 250 v; sim to Littelfuse 312005 or Bussmann MTH-5.
	19A115776P2	Fuseholder: sim to Bussmann Type HXU-D.
		INTERCONNECTION HARNESS ASSEMBLY 19A123454G1
		- - - - - - - - JACKS AND RECEPTACLES - - - - - - - -
J505	19A122683G1	Plug, male: 13 pin contacts.
		- - - - - - - - - - PLUGS - - - - - - - - - -
P101	19C303506P1	Connector, phen: 20 contacts rated at 5 amps max at 600 VDC.
P443	19C303506P1	Connector, phen: 20 contacts rated at 5 amps max at 600 VDC.
P703	19D402404P2	Connector, phen: 25 contacts rated at 5 amps max.
		- - - - - - - - TERMINAL BOARDS - - - - - - - -
TB901	7775500P10	Phen: 4 terminals.
		ANTENNA CABLE ASSEMBLY 19B216224G1
		- - - - - - - - JACKS AND RECEPTACLES - - - - - - - -
J901	6029493P1	Receptacle, coaxial: sim to Amphenol 83-78S or Equiv, Military 5O-239A.
		- - - - - - - - - - PLUGS - - - - - - - - - -
P103		(Part of W901).
		- - - - - - - - - - CABLES - - - - - - - - - -
W901	5491689P56	Cable, RF: coaxial, approx 12 inches long. Includes: phono type plug (PJ903).
	2B22P2	Adapter, right angle, coaxial: polystyrene, UHF contact. Signal Corps M-359; sim to Amphenol 83-1AP. (Front mount only) (Connect to J901).
		RECEIVER RF CABLE ASSEMBLY
		- - - - - - - - - - PLUGS - - - - - - - - - -
P104		(Part of W902).
P441		(Part of W902).
		- - - - - - - - - - CABLES - - - - - - - - - -
W902	5491689P71	Cable, Receiver, RF: includes two phono type plugs (P104 and P441), 350 VRMS max, approx 12 inches long.
		12 VOLT FUSE ASSEMBLY 19B216023G4 (Fuses must be ordered separately)
		- - - - - - - - - - FUSES - - - - - - - - - -
F2	1B11P6	Quick blowing: 25 amps, 250 v; sim to Bussman MDB25. (Used with medium power transmitters).
F3	1B11P7	Quick blowing: 30 amps, 250 v; sim to Bussman MDB30. (Used with high power transmitters).

SYMBOL	GE PART NO.	DESCRIPTION
		25 - 50 MHz ANTENNA
	7491074P1	Antenna: includes stainless steel rod approx 96-1/2 inches long; ball tip; lockwasher; No. 10-32 hex socket set screw; sim to Antenna Specialists ASP43SX6.
	7102930P3	Adapter, antenna: approx 2-5/16 inches long. (Used with GE Dwg 7491074P1).
	4K99A1	Loading coil: 25-33 MHz; sim to Antenna Specialists ASP4ST.
	19A121577G1	Antenna hook kit.
	7134724P1	Antenna hook.
	19C307172P1	Antenna Package: Includes base and ball assembly, adapter spring assembly, cable assembly, horseshoe plate, and rubber gasket.
		Base and ball assembly: Newtronics 5495.
		Adapter spring assembly. Newtronics 3327.
		Cable assembly. Newtronics 183-RAG.
		Horseshoe plate. Newtronics 3323-3.
		Rubber gasket. Newtronics 3320.
		132-512 MHz ANTENNA 19B209568P1
		Whip assembly. 068110-001.
		Whip nut assembly. 068047-001.
		Base nut assembly. 068048-001.
		"O" Ring (LARGE). 007059-122.
		Stud assembly. 068046-001.
		RJ58/U Cable, 15 feet. 068115-001.
		HANDSET MODEL 4EM30A10 MODEL 4EM30C10 19B209100G1 (SEE RC-1394)
1		Self tap screw, bind head: No. 4 x 5/16. Shure Brothers 30C604C.
2		Cable clamp. Shure Brothers 53A532.
3		Shield. Shure Brothers RP19.
4		Switch. Shure Brothers RP81.
5		Case. Shure Brothers RP49. (Used in 4EM26A10).
		Case. Shure Brothers 21RP899F. (Used in 4EM29C10).
6		Adapter. Shure Brothers 65A230.
7		Magnetic controlled cartridge. Shure Brothers RP41.
8	3B77P222K	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 RP82.
15		Flat head screw, socket cap: No. 4-40 x 1/4. Shure Brothers 30C537B.
16		Transmitter cap. (Part of RP49).
17		Washer. Shure Brothers 34A309.
18		Magnetic controlled cartridge. Shure Brothers RP33.
19		Cable and plug. Shure Brothers RP48. (Used in 4EM26A10).
		Cable and plug. Shure Brothers 21RP738F. (Used in 4EM29C10).

SYMBOL	GE PART NO.	DESCRIPTION
		HOOKSWITCH ASSEMBLY 19D204807G1
		- - - - - - - - - - MISCELLANEOUS - - - - - - - - - -
20	4029485P4	Cable clamp; sim to WEC Kenser 3/16-4.
21	19A121612P1	Holder and switch: thermoplastic case, contact rating 1 amp at 125 v.
22	19A121581G1	Cable: approx 8-1/2 feet long.
23	5493035P10	Resistor, wirewound, ceramic: 3.5 ohms ±5%, 5 w; sim to Hamilton Mat Type HM.
24	7775500P55	Terminal board, phen: 5 terminals.
		MILITARY MICROPHONE MODEL 4EM35A10 19B209102G1 (SEE RC-1163)
1		Cable clamp. Shure Brothers 53A532.
2		Switch. Shure Brothers RP26.
3		Case (back) and mounting button: plastic. Shure Brothers RP67.
4		Switch button: red plastic. Shure Brothers RP23.
5		Spring. Shure Brothers 7a
6		Shield. Shure Brothers RP23.
7		Magnetic controlled cartridge. Shure Brothers RP33.
8		Case (front): plastic. Shure Brothers RP67.
9		Cable and plug: approx 6 feet long. Shure Brothers RP14.
		5 WATT SPEAKER 19C320036G3 4EE20A10
LS2	19A116910P1	Permanent magnet: 5 inch, 3.2 ohms ±15% imp, 5 w max operating; sim to Pioneer 002009.
W1	19A121546G1	Cable assembly: approx 48 inches long, includes (2) 19A121429P1 pins.
	19D416396P3	Speaker housing.
	19C320016P2	Mounting support.
	5190407P3	Neoprene grommet, (Upper)
	19A115470P1	Rubber grommet, (Lower)
	19B219693G3	Grille.
	19A116985P1	Screw, hex head-slotted: double lead thread, with internal tooth washer, No. 13-16 x 3/4. (Secures housing to mounting bracket).

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 - Models 4EC59A60, 61, 76, 77
To make units compatible with tone decoders. Changed R706.

REV. B - Models 4EC59A60, 61, 76, 77
To reduce speaker minimum audio level when using decoders. Changed R706.

REV. A - Models 4EC59A58, 59, 74, 75
REV C - Models 4EC59A60, 61, 76, 77
To replace power supply SWITching noise from modulating transmitter. Removed black wire from ground lug TB1-2 (other end connected to S706-1&5) and connected it to J702-1.

REV. B - Models 4EC59A58, 59, 74, 75
REV. D - Models 4EC59A60, 61, 76, 77
To incorporate switch with improved reliability. Changed S701.

REV. C - Models 4EC59A58, 59
REV. E - Models 4EC59A60, 61
To facilitate manufacturing. Changed Multi-frequency switch.

REV. C - Models 4EC59A74, 75
REV. D - Models 4EC59A58, 59
REV. E - Models 4EC59A76, 77
REV. F - Models 4EC59A60, 61
To ground microphone jack. Added BK-W wire from TB1-2 (G) to G11.

REV. D - Models 4EC59A74, 75
REV. E - Models 4EC59A58, 59
REV. F - Models 4EC59A76, 77
REV. G - Models 4EC59A60, 61
To incorporate new control unit housing. Changed housing from metal to Lexan.

REV. G - Models 4EC59A76, 77
REV. H - Models 4EC59A60, 61
To reduce audio output level at minimum volume setting. Changed R706.

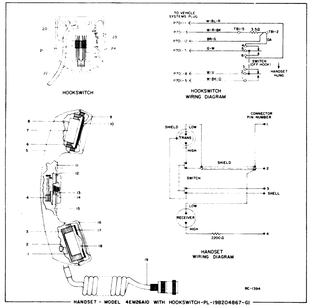
REV. H - Models 4EC59A76, 77
REV. J - Models 4EC59A60, 61
To add Mike Hi, PTT, earphone, and ground to Tone Option Jack J704.

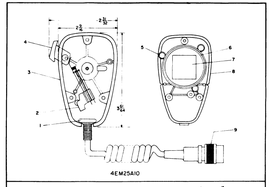
REV. F - Models 4EC59A58, 59

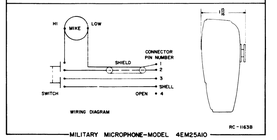
REV. X - Models 4EC59A60, 61

REV. K - Models 4EC59A74, 75

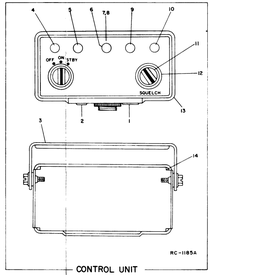
REV. J - Models 4EC59A76, 77
To incorporate new housing, changed housing from 19B216273G1 to 19D413010P1. Changed backplate retaining screws to 19A116773P106.







MILITARY MICROPHONE-MODEL 4EM25A10



CONTROL UNIT

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.

MOBILE RADIO DEPARTMENT
GENERAL ELECTRIC COMPANY • LYNCHBURG, VIRGINIA 24502

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