Customer_____

G. E. Req. No._____

Customer Order No._____

INSTRUCTIONS

FOR

GENERAL ELECTRIC TONE DISPATCHERS

MODELS 4EC51A11 & A12

LBI-10450

DF-5015

TABLE OF CONTENTS

3273

GENERAL ELECTRIC

COMMUNICATION PRODUCTS DEPARTMENT
LYNCHBURG, VIRGINIA

Printed in U.S.A.

GENERAL ELECTRIC TONE DISPATCHERS

MODELS 4EC51A11 & 4EC51A12

Tone Dispatcher Models 4EC51A11 and 4EC51A12 are selective-signalling units providing a means for alerting any one, one or more groups, or all mobile units in a system by transmitting audio tones at various frequencies corresponding to codes assigned to the mobiles.

The 4EC51A10 Dispatcher is a tone generating and switching device permitting the selection of 100 combinations of two sequential tones with provision for keying the station radio transmitter for a pre-determined period. Power is provided by a self-contained AC power supply. Provision for connecting a 12-volt battery is included for use in case of emergency. The 4EC51A12 is similar to the 4EC51A11 with provisions for selecting up to 900 combinations of tones.

INSTALLATION

Position the dispatcher in a location convenient for the operator. Connect the line cord to the nearest 117-volt, 50/60 cps outlet. The 10-foot output cable connects to J1221 and to the station audio input circuit. The microphone cable connects to J1222. The microphone and output jacks on the dispatchers are compatible with General Electric Progress Line Station Combinations.

Both dispatchers are normally used with a desk microphone. Option 5781 adds a 19B209031-P1 gooseneck microphone and a PL-19B204202-G1 footswitch. Installation instructions for this option are included on Application Diagrams RC-1039 (for Model 4EC51A11) and RC-1040 (for Model 4EC51A12).

The emergency battery may be connected permanently to TB1201. Accidental reversal of the battery leads will cause no damage or blown fuses. No provision is made for charging the battery; thus periodic checks of battery condition are necessary and separate facilities for battery charging should be available.

Both dispatchers are supplied with an "L" pad (R1246 and R2147) in the tone output circuit. This pad limits the tone to approximately 25 millivolts. R1246 may be clipped out of the circuit if more output is required.

ADJUSTMENT

Tone Level

Each tone generator must be adjusted individually to the level necessary to properly modulate the transmitter. These adjustments are made on the basis of each tone adjusted to equal voltage levels.

This voltage is measured at the radio transmitter audio input and equals that voltage required to produce a 3 KC swing in narrow band transmitters or a 6 KC swing in wide band transmitters when the highest tone frequency in the system is selected.

1. The transmitter must be adjusted for full limiting at 5.0 KC (narrow band) or 13 KC (wide band). Refer to the transmitter instructions.

2. Release all pushbuttons on the dispatcher.

3. Select the highest tone frequency in the system by following the steps outlined on the Application Diagrams.

4. TEST switch S1203 by-passes the timing circuits and permits transmission of the first tone group continuously for these adjustments. TEST switch S1207 permits transmission of the second tone group continuously. The test switch should be released periodically while making these adjustments in keeping with the rated duty cycle of the transmitter.

5. Adjust the level potentiometer (R7) on the top of the tone generator selected to a position 10° of rotation from its minimum position.

6. Place the TEST switch (S1207) in the TEST position. Adjust the master level potentiometer (R1201) on the dispatcher to produce a deviation of 3-KC (narrow band) or 6-KC (wide band) as measured with a modulation monitor at the transmitter. Do not exceed this deviation. Measure the rms tone voltage at the radio transmitter audio input. Note the reading.

7. Release the selected tone. Select another tone in the second tone group and adjust the level potentiometer (R7) on this generator to produce the same amount of tone voltage at the radio transmitter as noted in Step 6.

8. Selecting one tone at a time in the second tone group, set R7 on each generator to obtain the same tone voltage as obtained in Step 6.

9. Release S1207.

10. Operate the TEST switch (S1203) for the first tone group and adjust each tone generator in the first tone group for the same voltage as obtained in Step 6.

NOTE: The procedure for adjusting the dispatcher for use with the EC-28 Remote Control unit is the same as outlined above. The EC-28 should be properly adjusted according to instructions in the RC-4 Instruction Book. Once this unit has been adjusted, and the tone levels set as outlined above, the MIKE level control in the EC-28 should not be changed.

Timing

1. Adjust R1202 for approximately 1 second. This is the tone "ON" time for the first tone.

2. Adjust R1211 for approximately 1-1/2 seconds. This is the tone "ON" time for the second tone.

OPERATION

The dispatcher has vertical rows of pushbuttons on the front panel. One button in each row must be used for each call, as each function is composed of two sequential tones. To signal the unit he is calling, the operator selects the proper combination of buttons indicated by the assigned tone frequencies.

After selecting the proper combination, the operator presses the SEND switch which automatically transmits the selected tones. Once the SEND switch has been depressed, the timing circuit takes over the transmission and the duration of holding down the SEND switch has no effect on the timing of the tone transmission.

CIRCUIT DESCRIPTION

Tone Generator

The tone generator (PL-19B200236) consists of a transistorized oscillator circuit utilizing a vibrating-reed tone governing device that provides the frequency selective component of the oscillator circuit, and also provides feedback for proper oscillator operation.

Energy is coupled from the collector of Q1 to terminals 1 and 2 of the tone governing device, where transformer action between the two coils takes place, returning the energy to the base of Q1. The vibrating reed responds only to the specific frequency to which it is resonant; therefore, only the desired frequency appears at the output jack P1. R7 provides an adjustment of the output level.

The tone generators, each resonant to a specific audio frequency, are operated continuously when power is applied to the dispatcher. The Selector switches are interlocked so that only one tone generator may be selected in each bank at one time.

Tone Amplifier

The selected tones are fed from the selector switches, through the timing relays, to the input of the tone amplifier, Q1201. The output of Q1201 is coupled through a filter consisting of C1205-C1210, L1201 and L1202. This filter suppresses harmonics. The tone signals are fed from the filter, through master level control R1210, to the transmitter jack J1221.

Timing Circuit

Once the tone transmission is initiated by closing the momentary contacts of SEND switch S1202, a timing circuit controls the duration of the transmission regardless of how long S1202 is held down.

Timing capacitor C1211 is normally charged through contacts 11 and 12 of K1203, through the normally closed contacts of S1202, and through R1208 to the regulated 11 volts positive from the power supply. When the SEND switch, S1202, is operated, C1211 discharges through R1202 into the base of Q1202. Q1202 conducts. K1201 is then operated by Q1202. K1201 remains operated until C1211 is discharged. R1202 provides adjustment of the time constant of this circuit.

When K1201 operates, the following events take place:

(a) The regulated positive 11 volts is connected through K1201 contacts 5 and 6 to R1251 and R1250. This voltage is applied to the base of Q1204, causing the transistor to turn on and operate K1203.

(b) The first tone is connected through K1201 contacts 7 and 8 to the tone amplifier.

(c) C1212 is charged through K1201 contacts 13 and 14, through R1212, to the positive voltage. The return circuit is completed through contacts 1 and 2 of S1202.

When K1201 releases, C1212 is connected through K1201-12 and 13, through R1249, thus charging C1247. In approximately 150 milliseconds, C1247 has sufficient charge to turn on Q1203. This in turn operates K1202.

When K1202 operates, the following events take place:

(a) The second tone is connected through K1202 contacts 7 and 8 to the tone amplifier.

(b) The positive voltage is connected to the base of Q1204 through K1202-5 and 6. The transistor holds K1203 operated.

(c) Charged capacitor C1248 is connected through K1202-13 and 14, through R1211 (the timing adjustment potentiometer) to the base of Q1203. This provides additional ON time for K1202.

Because of the presence of C1246 in the base circuit of Q1204, K1203 does not drop out during the 150 millisecond interval between the drop out of K1201 and the operation of K1202.

When K1203 is operated, the following events take place:

(a) A ground is provided through K1203 contacts 6 and 7 to key the radio transmitter.

(b) K1203 contacts 9 and 10 switch the panel lights from white to red. This indicates that tone is being transmitted.

(c) The transmitter input is switched from the microphone to the tone output of the dispatcher through contacts 14, 15 and 16.

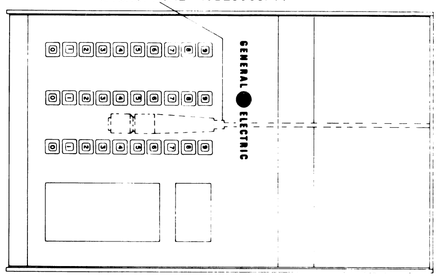
(d) The timing cycle is "locked-in" and the SEND switch (S1202) is disconnected through contacts 11, 12 and 13, so that the timing of the transmission will not be effected by the manual operation of the SEND switch.

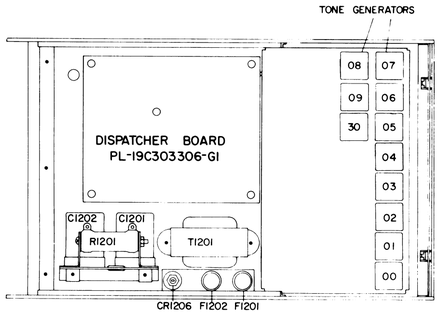
TO DETERMINE ACTUAL FREQUENCIES OF TONE 1 & 2

INSTRUCTIONS:

1. "TENS" BUTTONS
   THESE BUTTONS SELECT THE FIRST TONE TO BE TRANSMITTED. THE BUTTON NUMBER CORRESPONDS TO THE "TONE NO." IN CHART I EXCEPT IN 3 BELOW.
2. "UNITS" BUTTONS
   THESE BUTTONS SELECT THE SECOND TONE TO BE TRANSMITTED. THE BUTTON NUMBER CORRESPONDS TO THE "TONE NO." IN CHART I.
3. EXCEPTION:
   IF THE SAME NUMBER IS DEPRESSED IN BOTH "TENS" AND "UNITS" ROWS, THE FIRST TONE WILL BE THE DIAGONAL TONE, AND THE SECOND TONE WILL BE DETERMINED AS BEFORE IN 2 ABOVE.

MICROPHONE 19B209031-P1





TOP VIEW WITH COVER REMOVED

(1) NOTES:

1. INSERT TONE GENERATORS INTO TEST JACKS IN BASEPLATE WHERE INDICATED BY TONE GENERATOR LOCATION CHART AND MARKING ON BASEPLATE.

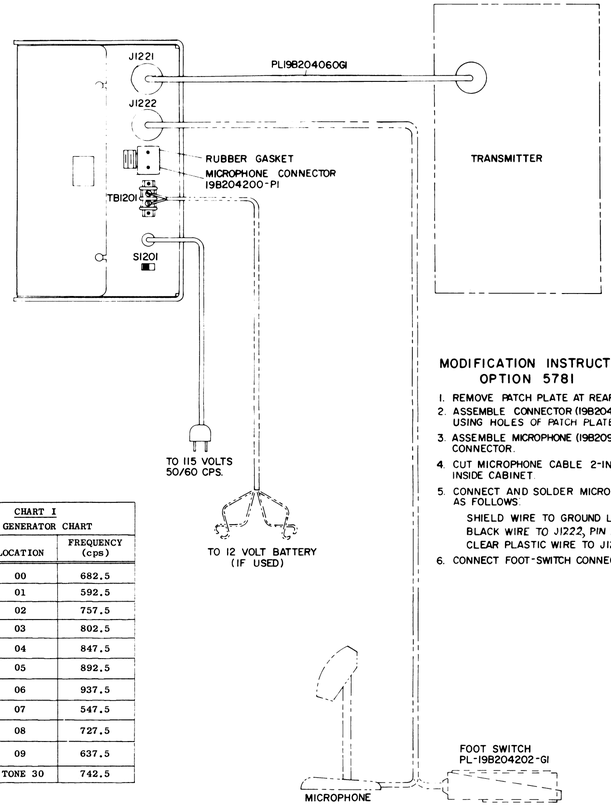


CHART I

TONE GENERATOR CHART

TONE NO.	LOCATION	FREQUENCY (cps)
A0	00	682.5
A1	01	592.5
A2	02	757.5
A3	03	802.5
A4	04	847.5
A5	05	892.5
A6	06	937.5
A7	07	547.5
A8	08	727.5
A9	09	637.5
DIAGONAL TONE 30		742.5

MODIFICATION INSTRUCTIONS FOR OPTION 5781

1. REMOVE PATCH PLATE AT REAR OF UNIT.
2. ASSEMBLE CONNECTOR (19B204200-P1) USING HOLES OF PATCH PLATE.
3. ASSEMBLE MICROPHONE (19B209031-P1) TO CONNECTOR.
4. CUT MICROPHONE CABLE 2-INCHES LONG INSIDE CABINET.
5. CONNECT AND SOLDER MICROPHONE WIRES AS FOLLOWS:
   SHIELD WIRE TO GROUND LUG AT J1222.
   BLACK WIRE TO J1222, PIN 1.
   CLEAR PLASTIC WIRE TO J1222, PIN 2.
6. CONNECT FOOT-SWITCH CONNECTOR TO J1222.

Application Diagram

TONE DISPATCHER
MODEL 4EC51A11

(RC-1039A)

3154

CHART I
TO DETERMINE ACTUAL FREQUENCIES OF TONE 1 & TONE 2

INSTRUCTIONS

1. "HUNDREDS" BUTTONS (TONE GROUP SELECTION)
   THE FIRST AND SECOND TONES ARE SELECTED FROM TONE GROUPS AS SHOWN BELOW, DEPENDING UPON WHICH HUNDREDS BUTTON IS DEPRESSED. (SEE TABLE A).

2. "TENS" BUTTONS (FIRST TONE SELECTION)
   THE TONE NUMBER, WITHIN THE FIRST TONE GROUP SELECTED, CORRESPONDS TO THE NUMBER OF THE BUTTON DEPRESSED IN THE "TENS" ROW.

3. "UNITS" BUTTONS (SECOND TONE SELECTION)
   THE TONE NUMBER, WITHIN THE SECOND TONE GROUP, CORRESPONDS TO THE NUMBER OF THE BUTTON DEPRESSED IN THE "UNITS" ROW.

4. EXCEPTION
   WHEN 0, 2, OR 4 IS DEPRESSED IN THE HUNDREDS ROW AND THE TENS AND UNITS DIGITS ARE THE SAME, THE FOLLOWING APPLIES:
   TONE 1 WILL ALWAYS BE 742.5 CPS.
   TONE 2 WILL BE DETERMINED AS ABOVE.

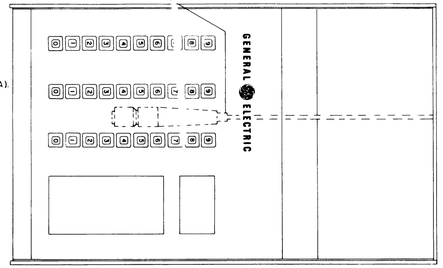
TABLE A

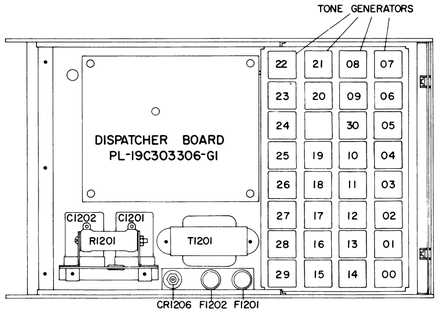
HUNDREDS BUTTON DEPRESSED	TONE 1 SELECTED FROM TONE GP*	TONE 2 SELECTED FROM TONE GP*
0	A	A
1	B	A
2	B	B
3	A	B
4	C	C
5	C	A
6	C	B
7	A	C
8	B	C
9 (NOT USED)	-	-

* TONE GROUP BREAKDOWN SHOWN IN CHART II

(1) NOTES:
1. INSERT TONE GENERATORS INTO TEST JACKS IN BASEPLATE WHERE INDICATED BY TONE GENERATOR LOCATION CHART AND MARKING ON BASEPLATE.

MICROPHONE 19B209031-P1

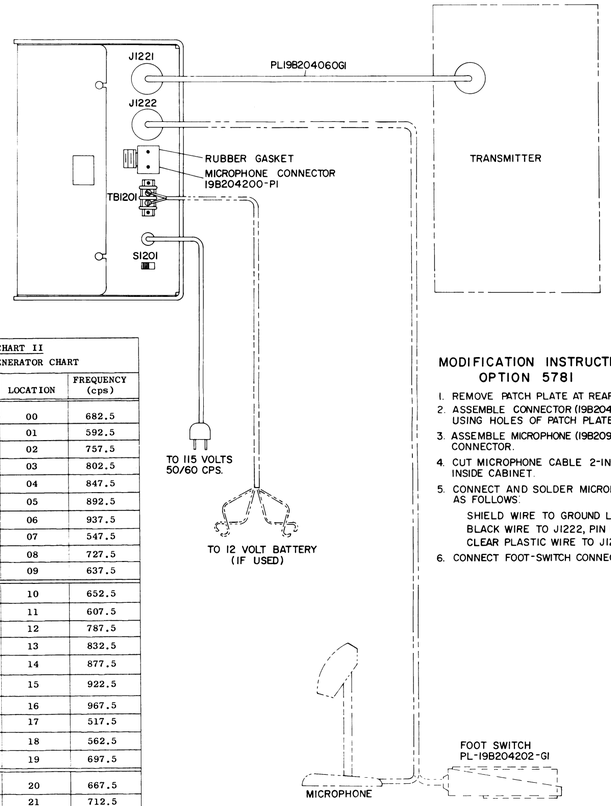




TOP VIEW WITH COVER REMOVED

CHART II
TONE GENERATOR CHART

TONE GROUP	TONE NO.	LOCATION	FREQUENCY (cps)
A	A0	00	682.5
	A1	01	592.5
	A2	02	757.5
	A3	03	802.5
	A4	04	847.5
	A5	05	892.5
	A6	06	937.5
	A7	07	547.5
	A8	08	727.5
	A9	09	637.5
B	B0	10	652.5
	B1	11	607.5
	B2	12	787.5
	B3	13	832.5
	B4	14	877.5
	B5	15	922.5
	B6	16	967.5
	B7	17	517.5
	B8	18	562.5
	B9	19	697.5
C	C0	20	667.5
	C1	21	712.5
	C2	22	772.5
	C3	23	817.5
	C4	24	862.5
	C5	25	907.5
	C6	26	952.5
	C7	27	532.5
	C8	28	577.5
	C9	29	622.5
DIAGONAL TONE		30	742.5



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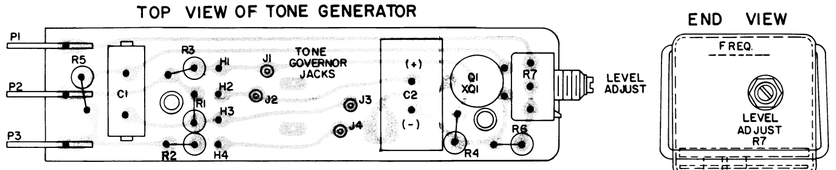
4. CUT MICROPHONE CABLE 2-INCHES LONG INSIDE CABINET.
5. CONNECT AND SOLDER MICROPHONE WIRES AS FOLLOWS:
   SHIELD WIRE TO GROUND LUG AT J1222.
   BLACK WIRE TO J1222, PIN 1.
   CLEAR PLASTIC WIRE TO J1222, PIN 2.
6. CONNECT FOOT-SWITCH CONNECTOR TO J1222.

Application Diagram

TONE DISPATCHER
MODEL 4EC51A12

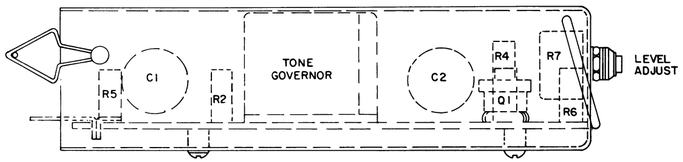
(RC-1040A)

3154

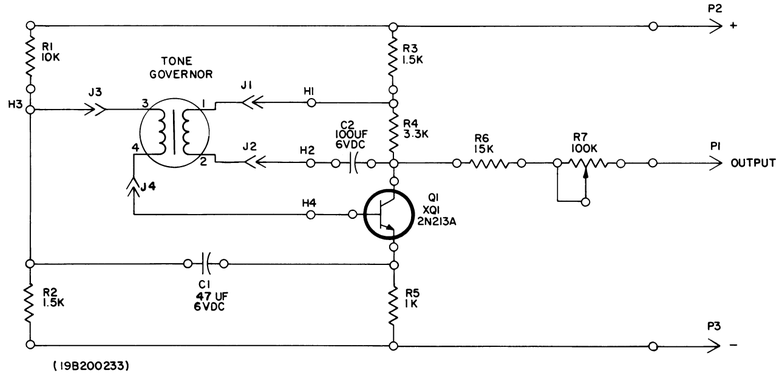


(19B200134)
(19B200118)

DENOTES SOLDER CIRCUIT



SIDE VIEW OF TONE GENERATOR



(19B200233)

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.

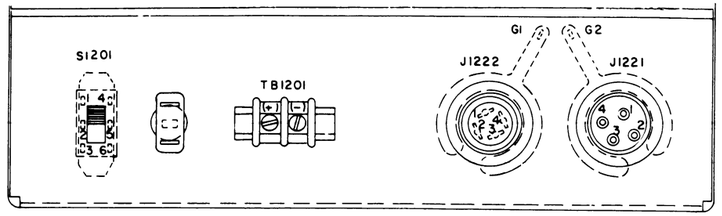
CPD 310A

15183

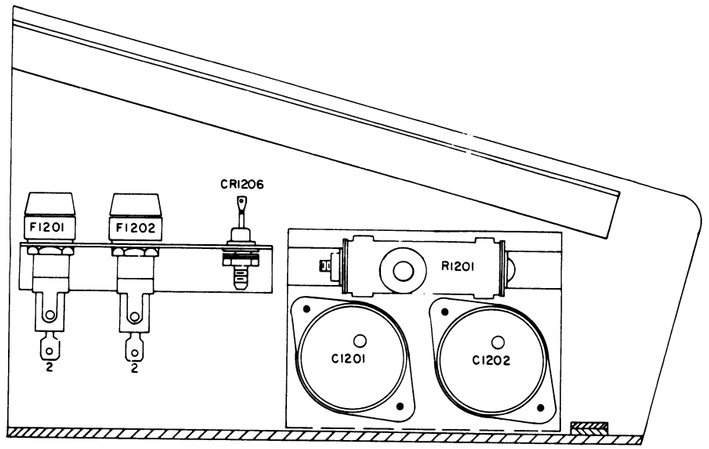
Service Outline

TONE GENERATOR
PL-19B200236

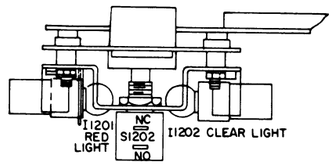
(RC-835C)



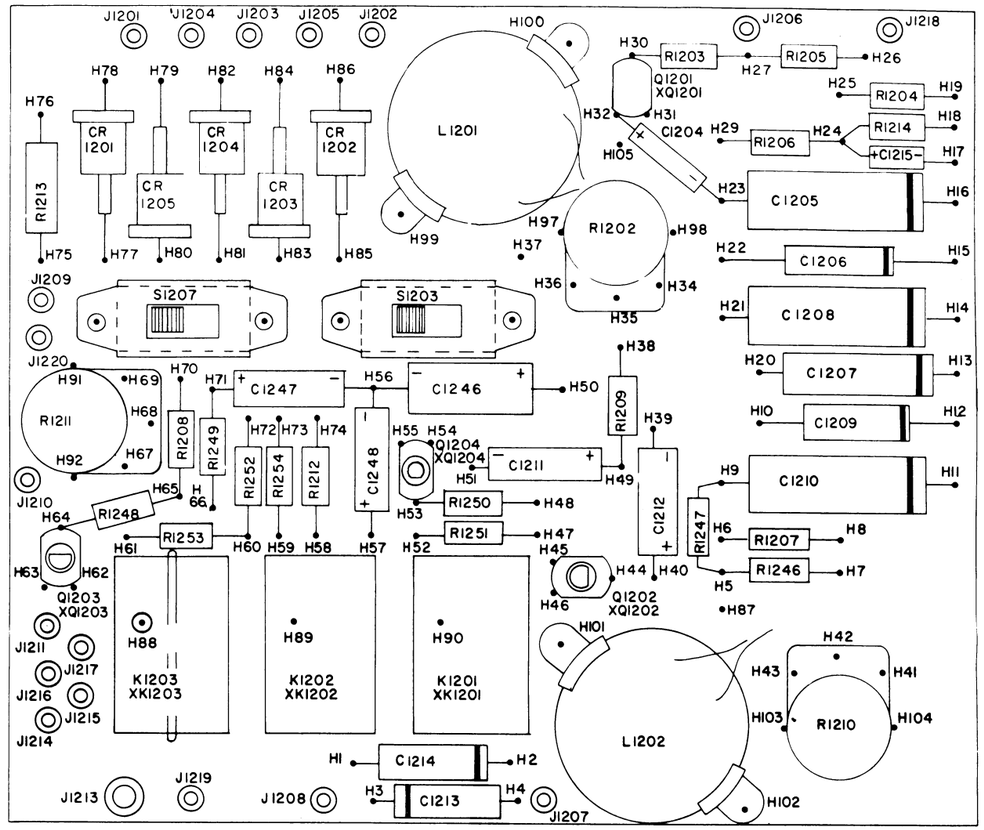
REAR PANEL OF DISPATCHER



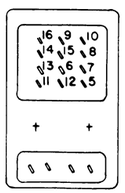
SIDE VIEW OF DISPATCHER COMPONENT



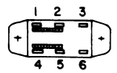
SIDE VIEW OF SEND SWITCH ASSEMBLY



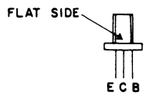
TONE DISPATCHER BOARD PL-19C303306-G1



BOTTOM VIEW OF XK1201-2-3



BOTTOM VIEW OF S1203 & 7



LEAD FORMING FOR Q1202, Q1203, Q1204

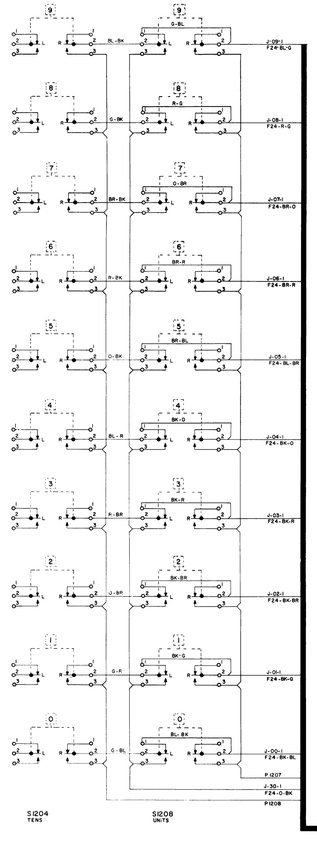
TYP SOCKET FOR XQ1202, XQ1203, XQ1204

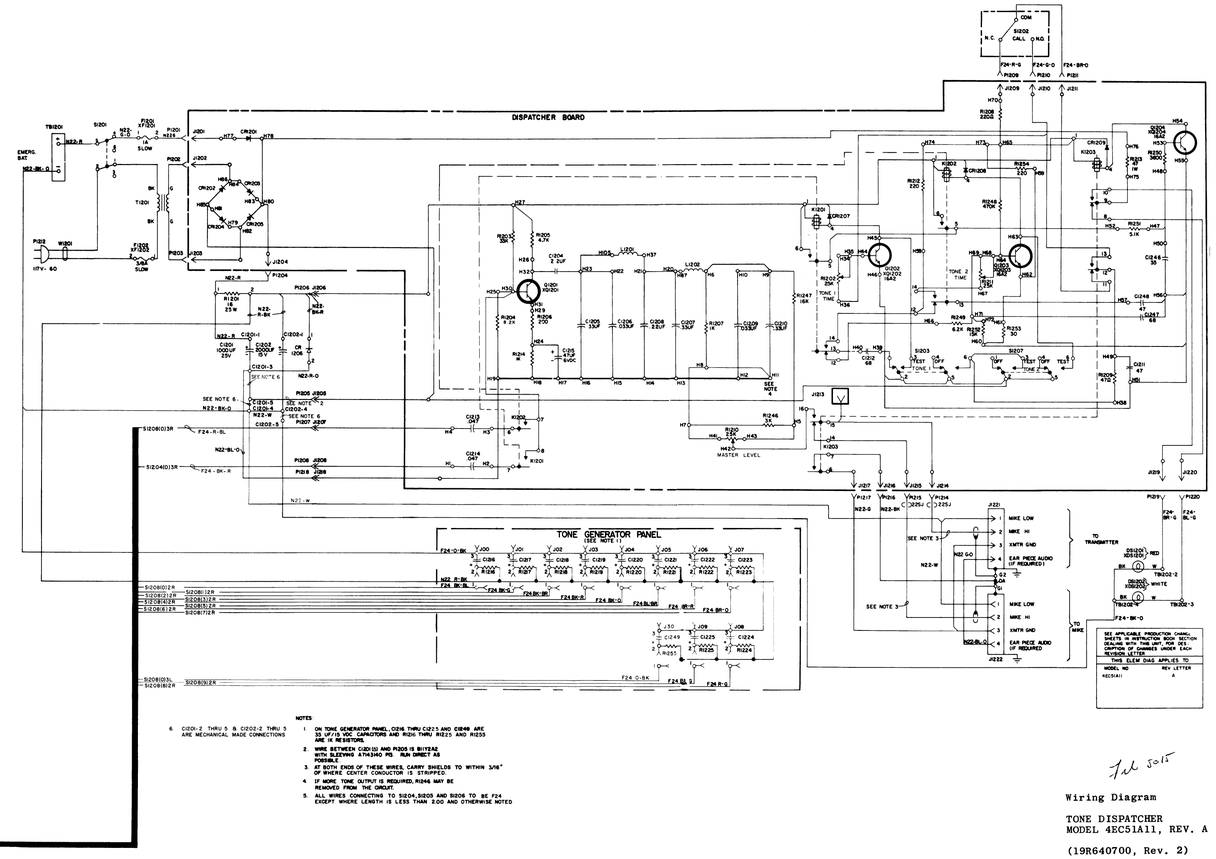
3273

Service Outline

DISPATCHER BOARD
PL-19C303306-G1

(RC-1043)





NOTES

1. ON TONE GENERATOR PANEL, C246 THRU C251 AND C8248 ARE 35 V.F IS VDC CAPACITORS AND R126 THRU R131 AND R255 ARE 1K RESISTORS.
2. WIRE BETWEEN CI201(3) AND P1205 IS BI1Y2A2 WITH SLEEVING AT46340 PS RUN DIRECT AS POSSIBLE.
3. AT BOTH ENDS OF THESE WIRES, CARRY SHIELDS TO WITHIN 3/16" OF WHERE CENTER CONDUCTOR IS STRIPPED.
4. IF MORE TONE OUTPUT IS REQUIRED, R1246 MAY BE REMOVED FROM THE CIRCUIT.
5. ALL WIRES CONNECTING TO S1204,S1203 AND S1206 TO BE F24 EXCEPT WHERE LENGTH IS LESS THAN 2.00 AND OTHERWISE NOTED
6. CI201-2 THRU 5 & CI202-2 THRU 5 ARE MECHANICAL MADE CONNECTIONS

Wiring Diagram

TONE DISPATCHER
MODEL 4EC51A11, REV. A

(19R640700, Rev. 2)

PARTS LIST

100 CALL DISPATCHER
MODEL 4EC51A11
(PL-5499318-G1)
REV A

SYMBOL	G-E PART NO.	DESCRIPTION
		- - - - - - - - - - - CAPACITORS - - - - - - - - - -
C1201	7476442-P12	Electrolytic, twist-prong: 1000 µf +250% -10%, 25 VDCW; sim to Mallory WP059.
C1202	7770994-P11	Electrolytic, twist-prong: 2000 µf +250% -10%, 15 VDCW; sim to Mallory WP.
		- - - - - - - DIODES AND RECTIFIERS - - - - - - -
CR1206	5495912-P1	Silicon, Zener®.
		- - - - - - - - INDICATING DEVICES - - - - - - -
DS1201	PL-4036294-G1	Indicator light: Includes red miniature incandescent lamp, 14.5 v ±.01 v; sim to G-E 53 (modified).
DS1202	19C307037-P3	Lamp, incandescent: miniature, 14.5 v ±.01 v; sim to G-E 53.
		- - - - - - - - - - - FUSES - - - - - - - - - - -
F1201	7487942-P5	Slow blowing: 1 amp at 250 v; sim to Bussmann MDL-1.
F1202	7487942-P2	Slow blowing: 3/8 amp at 250 v; sim to Bussmann MDL-3/8.
		- - - - - - - JACKS AND RECEPTACLES - - - - - - -
J1221	7117934-P4	Connector, chassis: 4 male contacts; sim to Amphenol 91-PC4M.
J1222	7117934-P2	Connector, chassis: 4 female contacts; sim to Amphenol 91-PC4F.
		- - - - - - - - - - - PLUGS - - - - - - - - - -
P1201	4029840-P2	Contact, electrical: sim to Amp 42827-2.
P1202 and P1203	4029840-P1	Contact, electrical: sim to Amp 41854.
P1204	4029840-P2	Contact, electrical: sim to Amp 42827-2.
P1205	4029840-P1	Contact, electrical: sim to Amp 41854.
P1206 thru P1211	4029840-P2	Contact, electrical: sim to Amp 42827-2.
P1212		(Part of W1201).
P1213 thru P1220	4029840-P2	Contact, electrical: sim to Amp 42827-2.
		- - - - - - - - - - - RESISTORS - - - - - - - - - - -
R1201	2R14-P113	Wirewound: 16 ohms ±5%, 25 w; sim to Ward Leonard K41383-3.
		- - - - - - - - - - - SWITCHES - - - - - - - - - -
S1201	7145098-P1	Slide: DPDT, 0.5 amp at 125 VDC; sim to Stackpole SS-150.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES.

SYMBOL	G-E PART NO	DESCRIPTION
		- - - - - - - - - - - SWITCHES(Cont'd) - - - - - - -
S1202	19B200007-P1	Pushbutton, snap action: 15 amps at 0.125 to 250 VAC; sim to Cherry Electric Series E13-23J.
S1204	19C300108-P5	Pushbutton: 10 button frame, double side, 2 form C contacts each button (non-shorting); sim to Oak 80.
S1208	19C300108-P5	Pushbutton: 10 button frame, double side, 2 form C contacts each button (non-shorting); sim to Oak 80.
		- - - - - - - - - - TRANSFORMERS - - - - - - - - - -
T1201	5493743-P1	Power, filament, single phase: Pri: 117 v, 50/60 cycles, Sec 1: 12.6 v ±3%, 2 amps.
		- - - - - - - - - TERMINAL BOARDS - - - - - - - - -
TB1201	4035303-P2	Phen: 2 terminals; sim to Curtis Development EFT-2.
TB1202	7775500-P3	Phen: 4 terminals.
		- - - - - - - - - - - CABLES - - - - - - - - - - -
W1201	4036441-P3	Power: Includes molded plastic plug (P1212), approx 9 feet; sim to G-E 2073-1.
		- - - - - - - - - - - SOCKETS - - - - - - - - - - -
XDS1201 and XDS1202	4032220-P1	Lampholder, miniature: sim to Drake N517.
XF1201 and XF1202	19B209005-P1	Fuseholder, post, phen: 15 amps at 250 v; sim to Littelfuse 342012.
		- - - - - - - - - - SUBASSEMBLIES - - - - - - - - - -
		DISPATCHER BOARD PL-19C303306-G1
		- - - - - - - - - - CAPACITORS - - - - - - - - -
C1204	5496267-P13	Tantalum, dry solid: 2.2 µf ±20%, 20 VDCW; sim to Sprague 150D.
C1205	7491930-P11	Mylar®, tubular: 0.33 µf ±20%, 100 VDCW; sim to G-E 61F.
C1206	7491930-P7	Mylar®, tubular: .033 µf ±20%, 100 VDCW; sim to G-E 61F.
C1207	7491930-P11	Mylar®, tubular: 0.33 µf ±20%, 100 VDCW; sim to G-E 61F.
C1208	7491930-P10	Mylar®, tubular: 0.22 µf ±20%, 100 VDCW; sim to G-E 61F.
C1209	7491930-P7	Mylar®, tubular: .033 µf ±20%, 100 VDCW; sim to G-E 61F.
C1210	7491930-P11	Mylar®, tubular: 0.33 µf ±20%, 100 VDCW; sim to G-E 61F.
C1211	5496267-P15	Tantalum, dry solid: 47 µf ±20%, 20 VDCW; sim to Sprague 150D.
C1212	5496267-P11	Tantalum, dry solid: 68 µf ±20%, 15 VDCW; sim to Sprague 150D.
C1213 and C1214	7491930-P8	Mylar®, tubular: .047 µf ±20%, 100 VDCW; sim to G-E 61F.

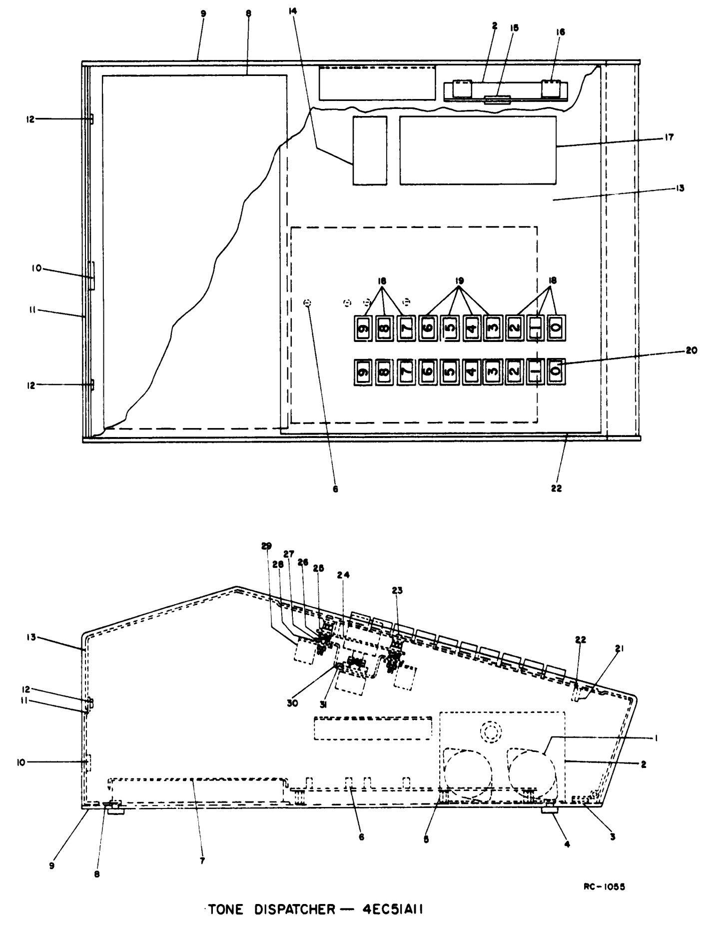
SYMBOL	G-E PART NO	DESCRIPTION
		- - - - - - - - - - - CAPACITORS(Cont'd) - - - - - -
C1215	5496267-P2	Tantalum, dry solid: 47 µf ±20%, 6 VDCW; sim to Sprague 150D.
C1246	7489483-P10	Electrolytic tubular: 35 µf +75% -10%, 15 VDCW; sim to Sprague 30D169A1.
C1247	5496267-P11	Tantalum, dry solid: 68 µf ±20%, 15 VDCW; sim to Sprague 150D.
C1248	5496267-P15	Tantalum, dry solid: 47 µf ±20%, 20 VDCW; sim to Sprague 150D.
		- - - - - - - DIODES AND RECTIFIERS - - - - - - -
CR1201 thru CR1205	4037822-P1	Silicon.
CR1207 thru CR1209	4037822-P1	Silicon.
		- - - - - - - JACKS AND RECEPTACLES - - - - - - -
J1201 thru J1211	4033513-P4	Contact, electrical: sim to Bead Chain L93-3.
J1213	4037265-P1	Jack, tip, stake-in: black phen body; sim to Component Mfg Service A-1128.
J1214 thru J1220	4033513-P4	Contact, electrical: sim to Bead Chain L93-3.
		- - - - - - - - - - - RELAYS - - - - - - - - - -
K1201 and K1202	19C307010-P4	Armature: 12 VDC, 185 ohms ±10%, 2 form A, 1 form C contacts; sim to Allied Control T154X-410.
K1203	19C300957-P2	Miniature, plug-in: 12 VDC, 1.5 w, 185 ohms ±10%, 4 form C contacts; sim to Allied Control T154X-316.
		- - - - - - - - - - - INDUCTORS - - - - - - - - - -
L1201 and L1202	PL-19C300501-G356	Ferrite coil.
		- - - - - - - - - - TRANSISTORS - - - - - - - - - -
Q1201*	19A115123-P1	Silicon, NPN; sim to 2N2712. In Models earlier than Rev A:
	5492639-P1	Germanium, NPN; sim to 2N213A.
Q1202 thru Q1204	5492639-P1	Germanium, NPN; sim to 2N213A.
		- - - - - - - - - - - RESISTORS - - - - - - - - - -
R1202	7491365-P103	Variable, carbon film: 25,000 ohms ±20%, .05 w, mod log taper; sim to CTS UPE-70.
R1203	3R77-P333J	Fixed composition: 33,000 ohms ±5%, 1/2 w.
R1204*	3R77-P822J	Fixed composition: 8200 ohms ±5%, 1/2 w. In Models earlier than Rev A:
	3R77-P512J	Fixed composition: 5100 ohms ±5%, 1/2 w.
R1205	3R77-P472J	Fixed composition: 4700 ohms ±5%, 1/2 w.
R1206	3R77-P201J	Fixed composition: 200 ohms ±5%, 1/2 w.
R1207	3R77-P102J	Fixed composition: 1000 ohms ±5%, 1/2 w.
R1208	3R77-P221J	Fixed composition: 220 ohms ±5%, 1/2 w.
R1209	3R77-P470J	Fixed composition: 47 ohms ±5%, 1/2 w.

SYMBOL	G-E PART NO	DESCRIPTION
		- - - - - - - - - - - RESISTORS(Cont'd) - - - - - -
R1210 and R1211	7491365-P103	Variable, carbon film: 25,000 ohms ±20%, .05 w, mod log taper; sim to CTS UPE-70.
R1212	3R77-P221J	Fixed composition: 220 ohms ±5%, 1/2 w.
R1213	3R78-P470J	Fixed composition: 47 ohms ±5%, 1 w.
R1214	3R77-P102J	Fixed composition: 1000 ohms ±5%, 1/2 w.
R1246	3R77-P302J	Fixed composition: 3000 ohms ±5%, 1/2 w.
R1247	3R77-P163J	Fixed composition: 16,000 ohms ±5%, 1/2 w.
R1248	3R77-P474J	Fixed composition: 0.47 megohm ±5%, 1/2 w.
R1249	3R77-P622J	Fixed composition: 6200 ohms ±5%, 1/2 w.
R1250	3R77-P362J	Fixed composition: 3600 ohms ±5%, 1/2 w.
R1251	3R77-P512J	Fixed composition: 5100 ohms ±5%, 1/2 w.
R1252	3R77-P153J	Fixed composition: 15,000 ohms ±5%, 1/2 w.
R1253	3R77-P300J	Fixed composition: 30 ohms ±5%, 1/2 w.
R1254	3R77-P221J	Fixed composition: 220 ohms ±5%, 1/2 w.
		- - - - - - - - - - - SWITCHES - - - - - - - - - - -
S1203	7145098-P1	Slide: DPDT, 0.5 amp at 125 VDC; sim to Stackpole SS-150.
S1207	7145098-P1	Slide: DPDT, 0.5 amp at 125 VDC; sim to Stackpole SS-150.
		- - - - - - - - - - - SOCKETS - - - - - - - - - - -
XK1201 thru XK1203	5491595-P5	Relay: 16 contacts; sim to Allied Control 30054-2.
XQ1201 thru XQ1204	5490277-P2	Transistor, phen: 4 contacts; sim to Elco 3305.
		TONE GENERATOR MOUNTING PANEL PL-19B201358-G3
		- - - - - - - - - - - CAPACITORS - - - - - - - - -
C1216 thru C1225	7489483-P10	Electrolytic tubular: 35 µf +75% -10%, 15 VDCW; sim to Sprague 30D169A1.
C1249	7489483-P10	Electrolytic tubular: 35 µf +75% -10%, 15 VDCW; sim to Sprague 30D169A1.
		- - - - - - - JACKS AND RECEPTACLES - - - - - - -
J00 thru J9	4033429-P4	Jack, tip: Teflon®; sim to SKT-4.
J30	4033429-P4	Jack, tip: Teflon®; sim to SKT-4.
		- - - - - - - - - - - RESISTORS - - - - - - - - - - -
R1216 thru R1225	3R77-P102K	Fixed composition: 1000 ohms ±10%, 1/2 w.
R1255	3R77-P102K	Fixed composition: 1000 ohms ±10%, 1/2 w.

SYMBOL	G-E PART NO	DESCRIPTION
		TONE GENERATOR PL-19B200236
		- - - - - - - - - - SUBASSEMBLIES - - - - - - - - - -
		TONE GENERATOR BOARD PL-19B200134-G2
		- - - - - - - - - - - CAPACITORS - - - - - - - - - -
C1	5496267-P2	Tantalum, dry solid: 47 µf ±20%, 6 VDCW; sim to Sprague 150D.
C2	7489483-P9	Electrolytic tubular: 100 µf +75% -10%, 6 VDCW; sim to Sprague 30D135A1.
		- - - - - - - JACKS AND RECEPTACLES - - - - - - -
J1 thru J4	4036040-P1	Pin, contact: sim to American Brass 724.
		- - - - - - - - - - - - PLUGS - - - - - - - - - - -
P1 thru P3	4036046-P1	Pin, contact.
		- - - - - - - - - - TRANSISTORS - - - - - - - - - - -
Q1	19A115123-P1	Silicon, NPN; sim to 2N2712.
		- - - - - - - - - - - RESISTORS - - - - - - - - - - -
R1	3R77-P682J	Fixed composition: 6800 ohms ±5%, 1/2 w.
R2 and R3	3R77-P152J	Fixed composition: 1500 ohms ±5%, 1/2 w.
R4	3R77-P332J	Fixed composition: 3300 ohms ±5%, 1/2 w.
R5	3R77-P102J	Fixed composition: 1000 ohms ±5%, 1/2 w.
R6	3R77-P153J	Fixed composition: 15,000 ohms ±5%, 1/2 w.
R7	19C300124-P2	Variable, carbon film: 100,000 ohms ±20%, 1/8 w, linear taper; sim to Mallory MLC.
		- - - - - - - - - - - SOCKETS - - - - - - - - - - -
XQ1	5490277-P2	Transistor, phen: 4 contacts; sim to Elco 3305.
		TONE DETECTOR PL-19C300590
	PL-19C300590-G1	517.5 cps
	PL-19C300590-G2	532.5 cps
	PL-19C300590-G3	547.5 cps
	PL-19C300590-G4	562.5 cps
	PL-19C300590-G5	577.5 cps
	PL-19C300590-G6	592.5 cps
	PL-19C300590-G7	607.5 cps
	PL-19C300590-G8	622.5 cps
	PL-19C300590-G9	637.5 cps
	PL-19C300590-G10	652.5 cps

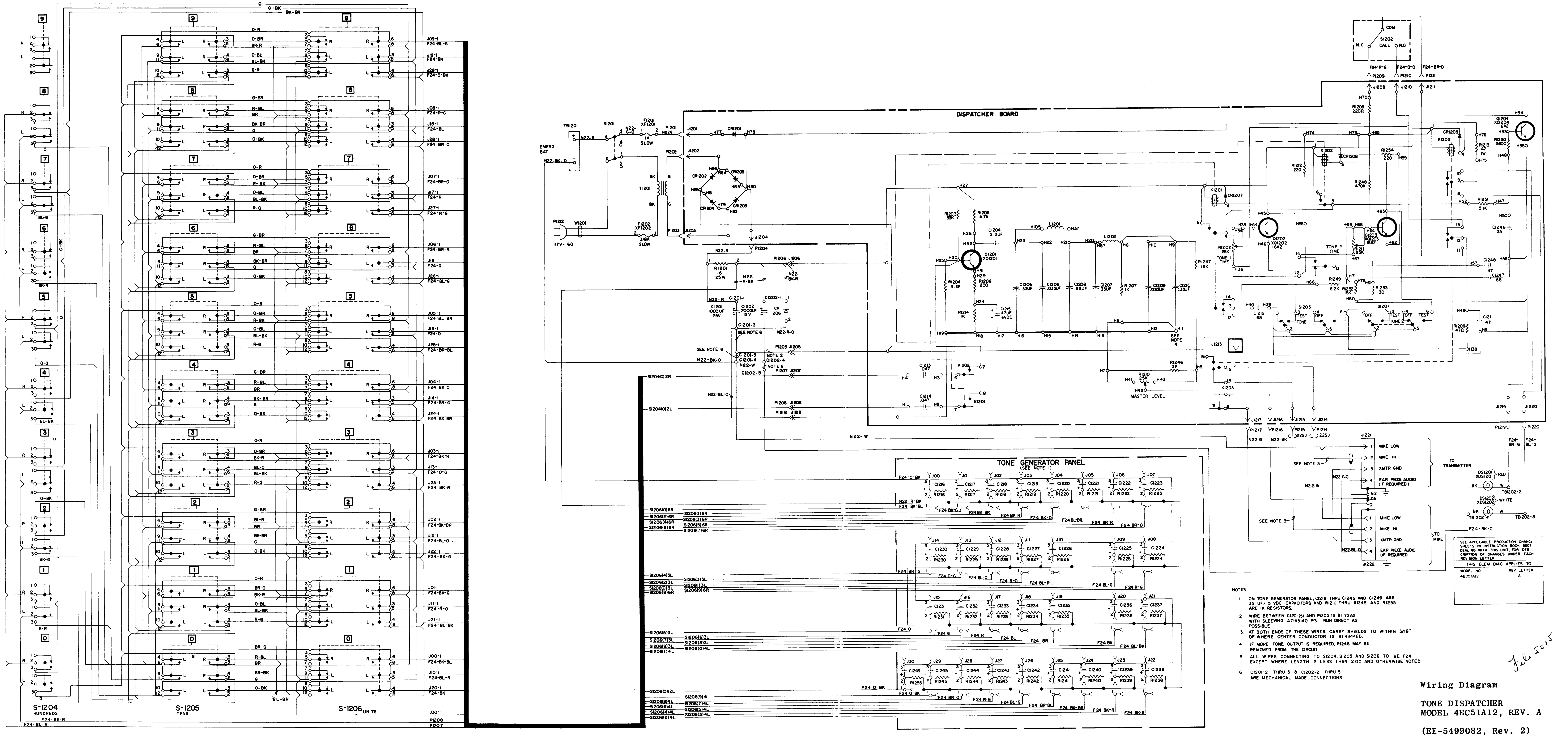
SYMBOL	G-E PART NO	DESCRIPTION
		TONE DETECTOR(Cont'd)
	PL-19C300590-G11	667.5 cps
	PL-19C300590-G12	682.5 cps
	PL-19C300590-G13	697.5 cps
	PL-19C300590-G14	712.5 cps
	PL-19C300590-G15	727.5 cps
	PL-19C300590-G16	742.5 cps
	PL-19C300590-G17	757.5 cps
	PL-19C300590-G18	772.5 cps
	PL-19C300590-G19	787.5 cps
	PL-19C300590-G20	802.5 cps
	PL-19C300590-G21	817.5 cps
	PL-19C300590-G22	832.5 cps
	PL-19C300590-G23	847.5 cps
	PL-19C300590-G24	862.5 cps
	PL-19C300590-G25	877.5 cps
	PL-19C300590-G26	892.5 cps
	PL-19C300590-G27	907.5 cps
	PL-19C300590-G28	922.5 cps
	PL-19C300590-G29	937.5 cps
	PL-19C300590-G30	952.5 cps
	PL-19C300590-G31	967.5 cps
	PL-19C300590-G32	982.5 cps
	PL-19C300590-G33	997.5 cps
		GOOSENECK MICROPHONE ASSEMBLY PL-4039055-G1
		- - - - - - - - - - MISCELLANEOUS - - - - - - - - - -
	19B209031-P1	Microphone, gooseneck: 60 to 10,000 cps freq response, 100,000 ohm load imp., includes 12 inch gooseneck; sim to Shure Brothers 425-G12.
	PL-19B204202-G1	Footswitch. Includes switch, SPDT, momentary contact, 5 amps at 220 VAC; 8 feet cable, 4 pin cable connector.
	19B204200-P1	Connector, adapter: 5/8-27. (Mates with Gooseneck microphone).
		MECHANICAL PARTS
		(SEE RC-1055)
1	7121396-P6	Mounting, transistor: phen; sim to Mallory BP-6.
2	4039244-P1	Bracket, mounting: approx 3-11/16 x 2-3/4 x 1/2 inches.
3	4035713-P1	Strip: approx 9-1/4 x 1/16 inches.
4	4035449-P2	Plug: rubber; sim to Atlantic Rubber 721.
5	5491541-P201	Spacer, hex: 6-32.
6	4035452-P1	Spacer: approx 1/4 inch dia.
7	PL-19B201358-G3	Plate: approx 9-3/16 x 5-7/16 x 1/16 inches thick.
8	19A121063-P1	Insulator: approx 9-5/16 x 5-7/16 inches.
9	PL-19B201338-G1	Chassis.
10	4039065-P1	Plate: approx 1-1/4 x 5/8 x 1/32 inches thick.
11	19B201337-P1	Panel: approx 9-1/2 x 3-1/8 x 1/16 inches thick.
12	4032559-P1	Retainer, nut: 6-32: sim to Tinnerman C30395-632-315.
13	PL-19C300958-G3	Cover.
14	4037542-P2	Pushbutton: plastic, approx 2 x 1-1/4 inches; sim to Bradley Industries 2.
15	5490407-P4	Grommet: approx 1/16 inch dia.
16	7160861-P16	Speednut: sim to Tinnerman C8091-632-157.
17	4039253-P1	Plate: approx 4-3/4 x 2 x 3/16 inches thick.

SYMBOL	G-E PART NO	DESCRIPTION
		MECHANICAL PARTS(Cont'd)
18	4039234-P2	Button: approx 3/4 inch dia.
19	4039234-P1	Button: approx 3/4 inch dia.
20	NP243322	Nameplate.
21	19A121123-P1	Spacer: 4-40.
22	NP243300	Nameplate: approx 9-7/16 x 9 inches.
23	N83P13016C13	Screw: 6-32.
24	4035039-P1	Plate: approx 2-11/16 x 2-1/2 inches.
25	4035442-P1	Shaft: approx 1/4 inch dia.
26	4035459-P1	Spring.
27	4035040-P1	Bracket: approx 2-11/16 x 2-1/2 inches.
28	N402P37C13	Washer: No. 6.
29	PL-4038128-G1	Clip: approx 2-1/2 x 13/16 x 1/16 inches thick.
30	7165075-P2	Nut: 3/8-32.
31	7115130-P9	Lockwasher: 3/8; sim to Shakeproof 1220-2.



TONE DISPATCHER — 4EC51A11

RC-1055



NOTES

1. ON TONE GENERATOR PANEL, C1216 THRU C1245 AND C1249 ARE 35 UF/15 VDC CAPACITORS AND R1216 THRU R1245 AND R1255 ARE 1K RESISTORS.
2. WIRE BETWEEN C1201(5) AND P1205 IS B11Y2A2 WITH SLEEVING A7143140 P13 RUN DIRECT AS POSSIBLE
3. AT BOTH ENDS OF THESE WIRES, CARRY SHIELDS TO WITHIN 3/16" OF WHERE CENTER CONDUCTOR IS STRIPPED.
4. IF MORE TONE OUTPUT IS REQUIRED, R1246 MAY BE REMOVED FROM THE CIRCUIT.
5. ALL WIRES CONNECTING TO S1204, S1205 AND S1206 TO BE F24 EXCEPT WHERE LENGTH IS LESS THAN 2.00 AND OTHERWISE NOTED
6. C1201-2 THRU 5 & C1202-2 THRU 5 ARE MECHANICAL MADE CONNECTIONS

Wiring Diagram

TONE DISPATCHER
MODEL 4EC51A12, REV. A

(EE-5499082, Rev. 2)

PARTS LIST

900 CALL DISPATCHER
MODEL 4EC51A12
(PL-5499318-G2)
REV A

SYMBOL	G-E PART NO.	DESCRIPTION
		- - - - - - - - - - CAPACITORS - - - - - - - - - -
C1201	7476442-P12	Electrolytic, twist-prong: 1000 µf +250% -10%, 25 VDCW; sim to Mallory WP059.
C1202	7770994-P11	Electrolytic, twist-prong: 2000 µf +250% -10%, 15 VDCW; sim to Mallory WP.
		- - - - - - - - DIODES AND RECTIFIERS - - - - - - - -
CR1206	5499912-P1	Silicon, Zeners.
		- - - - - - - - INDICATING DEVICES - - - - - - - -
DS1201	PL-4036294-G1	Indicator light: Includes red miniature incandescent lamp, 14.5 v ±.01 v; sim to G-E 53 (modified).
DS1202	19C307037-P3	Lamp, incandescent: miniature, 14.5 v ±.01 v; sim to G-E 53.
		- - - - - - - - - - FUSES - - - - - - - - - -
F1201	7487942-P5	Slow blowing: 1 amp at 250 v; sim to Bussmann MDL-1.
F1202	7487942-P2	Slow blowing: 3/8 amp at 250 v; sim to Bussmann MDL-3/8.
		- - - - - - - JACKS AND RECEPTACLES - - - - - - -
J1221	7117934-P4	Connector, chassis: 4 male contacts; sim to Amphenol 91-PC4M.
J1222	7117934-P2	Connector, chassis: 4 female contacts; sim to Amphenol 91-PC4F.
		- - - - - - - - - - PLUGS - - - - - - - - - -
P1201	4029840-P2	Contact, electrical: sim to Amp 42827-2.
P1202 and P1203	4029840-P1	Contact, electrical: sim to Amp 41854.
P1204	4029840-P2	Contact, electrical: sim to Amp 42827-2.
P1205	4029840-P1	Contact, electrical: sim to Amp 41854.
P1206 thru P1211	4029840-P2	Contact, electrical: sim to Amp 42827-2.
P1212		(Part of W1201).
P1213 thru P1220	4029840-P2	Contact, electrical: sim to Amp 42827-2.
		- - - - - - - - - - RESISTORS - - - - - - - - - -
R1201	2R14-P113	Wirewound: 16 ohms ±5%, 25 w; sim to Ward Leonard R41183-3.
		- - - - - - - - - - SWITCHES - - - - - - - - - -
S1201	7145098-P1	Slide: DPDT, 0.5 amp at 125 VDC; sim to Stackpole SS-150.

SYMBOL	G-E PART NO	DESCRIPTION
		- - - - - - - - - - SWITCHES(Cont'd) - - - - - - -
S1202	19B200007-P1	Pushbutton, snap action: 15 amps at 0.125 to 250 VAC; sim to Cherry Electric Series E19-23J.
S1204	19C300108-P5	Pushbutton: 10 button frame, double side, 2 form C contacts each button (non-shorting); sim to Oak 80.
S1205	7775759-P4	Pushbutton: 10 button frame, double side, 6 form A contacts on each button (non-shorting); sim to Oak 232187-130.
S1206	7775759-P5	Pushbutton: 10 button frame, double side, 3 form C contacts on each button (non-shorting); sim to Oak 232188-130.
		- - - - - - - - - TRANSFORMERS - - - - - - - - -
T1201	5493743-P1	Power, filament, single phase: Pri: 117 v, 50/60 cycles, Sec 1: 12.6 v ±5%, 2 amps.
		- - - - - - - - TERMINAL BOARDS - - - - - - - -
TB1201	4035303-P2	Phen: 2 terminals; sim to Curtis Development EFT-2.
TB1202	7775500-P3	Phen: 4 terminals.
		- - - - - - - - - - CABLES - - - - - - - - - -
W1201	4036441-P3	Power: Includes molded plastic plug (P1212), approx 8 feet; sim to G-E 2073-1.
		- - - - - - - - - - SOCKETS - - - - - - - - - -
XDS1201 and XDS1202	4032220-P1	Lampholder, miniature: sim to Drake N517.
XF1201 and XF1202	19B209005-P1	Fuseholder, post, phen: 15 amps at 250 v; sim to Littelfuse 342012.
		- - - - - - - - - SUBASSEMBLIES - - - - - - - - -
		DISPATCHER BOARD PL-19C303306-G1
		- - - - - - - - - CAPACITORS - - - - - - - - -
C1204	5496267-P13	Tantalum, dry solid: 2.2 µf ±20%, 20 VDCW; sim to Sprague 150D.
C1205	7491930-P11	Mylar†, tubular: 0.33 µf ±20%, 100 VDCW; sim to G-E 61F.
C1206	7491930-P7	Mylar†, tubular: .033 µf ±20%, 100 VDCW; sim to G-E 61F.
C1207	7491930-P11	Mylar†, tubular: 0.33 µf ±20%, 100 VDCW; sim to G-E 61F.
C1208	7491930-P10	Mylar†, tubular: 0.22 µf ±20%, 100 VDCW; sim to G-E 61F.
C1209	7491930-P7	Mylar†, tubular: .033 µf ±20%, 100 VDCW; sim to G-E 61F.
C1210	7491930-P11	Mylar†, tubular: 0.33 µf ±20%, 100 VDCW; sim to G-E 61F.
C1211	5496267-P15	Tantalum, dry solid: 47 µf ±20%, 20 VDCW; sim to Sprague 150D.
C1212	5496267-P11	Tantalum, dry solid: 68 µf ±20%, 15 VDCW; sim to Sprague 150D.

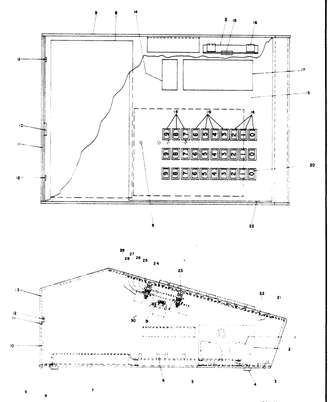
SYMBOL	G-E PART NO	DESCRIPTION
		- - - - - - - - - - CAPACITORS(Cont'd) - - - - - - -
C1213 and C1214	7491930-P8	Mylar†, tubular: .047 µf ±20%, 100 VDCW; sim to G-E 61F.
C1215	5496267-P2	Tantalum, dry solid: 47 µf ±20%, 6 VDCW; sim to Sprague 150D.
C1246	7489483-P10	Electrolytic tubular: 35 µf +75% -10%, 15 VDCW; sim to Sprague 30D169Al.
C1247	5496267-P11	Tantalum, dry solid: 68 µf ±20%, 15 VDCW; sim to Sprague 150D.
C1248	5496267-P15	Tantalum, dry solid: 47 µf ±20%, 20 VDCW; sim to Sprague 150D.
		- - - - - - - - DIODES AND RECTIFIERS - - - - - - - -
CR1201 thru CR1205	4037822-P1	Silicon.
CR1207 thru CR1209	4037822-P1	Silicon.
		- - - - - - - - JACKS AND RECEPTACLES - - - - - - - -
J1201 thru J1211	4033513-P4	Contact, electrical: sim to Bead Chain L83-3.
J1213	4037265-P1	Jack, tip, stake-in: black phen body; sim to Component Mfg Service A-1126.
J1214 thru J1220	4033513-P4	Contact, electrical: sim to Bead Chain L83-3.
		- - - - - - - - - - RELAYS - - - - - - - - - -
K1201 and K1202	19C307010-P4	Armature: 12 VDC, 185 ohms ±10%, 2 form A, 1 form C contacts; sim to Allied Control T154X-410.
K1203	19C300957-P2	Miniature, plug-in: 12 VDC, 1.5 w, 185 ohms ±10%, 4 form C contacts; sim to Allied Control T154X-316.
		- - - - - - - - - - INDUCTORS - - - - - - - - - -
L1201 and L1202	PL-19C300501-G356	Ferrite coil.
		- - - - - - - - - - TRANSISTORS - - - - - - - - - -
Q1201*	19A115123-P1	Silicon, NPN; sim to 2N2712. In Models earlier than Rev A:
	5492639-P1	Germanium, NPN; sim to 2N213A.
Q1202 thru Q1204	5492639-P1	Germanium, NPN; sim to 2N213A.
		- - - - - - - - - - RESISTORS - - - - - - - - - -
R1202	7491365-P103	Variable, carbon film: 25,000 ohms ±20%, .05 w, mod log taper; sim to CTS UPE-70.
R1203	3R77-P333J	Fixed composition: 33,000 ohms ±5%, 1/2 w.
R1204*	3R77-P822J	Fixed composition: 8200 ohms ±5%, 1/2 w. In Models earlier than Rev A:
	3R77-P512J	Fixed composition: 5100 ohms ±5%, 1/2 w.
R1205	3R77-P472J	Fixed composition: 4700 ohms ±5%, 1/2 w.
R1206	3R77-P201J	Fixed composition: 200 ohms ±5%, 1/2 w.
R1207	3R77-P102J	Fixed composition: 1000 ohms ±5%, 1/2 w.

SYMBOL	G-E PART NO	DESCRIPTION
		- - - - - - - - - - RESISTORS(Cont'd) - - - - - - -
R1208	3R77-P221J	Fixed composition: 220 ohms ±5%, 1/2 w.
R1209	3R77-P470J	Fixed composition: 47 ohms ±5%, 1/2 w.
R1210 and R1211	7491365-P103	Variable, carbon film: 25,000 ohms ±20%, .05 w, mod log taper; sim to CTS UPE-70.
R1212	3R77-P221J	Fixed composition: 220 ohms ±5%, 1/2 w.
R1213	3R78-P470J	Fixed composition: 47 ohms ±5%, 1 w.
R1214	3R77-P102J	Fixed composition: 1000 ohms ±5%, 1/2 w.
R1246	3R77-P302J	Fixed composition: 3000 ohms ±5%, 1/2 w.
R1247	3R77-P163J	Fixed composition: 16,000 ohms ±5%, 1/2 w.
R1248	3R77-P474J	Fixed composition: 0.47 megohm ±5%, 1/2 w.
R1249	3R77-P622J	Fixed composition: 6200 ohms ±5%, 1/2 w.
R1250	3R77-P362J	Fixed composition: 3600 ohms ±5%, 1/2 w.
R1251	3R77-P512J	Fixed composition: 5100 ohms ±5%, 1/2 w.
R1252	3R77-P153J	Fixed composition: 15,000 ohms ±5%, 1/2 w.
R1253	3R77-P300J	Fixed composition: 30 ohms ±5%, 1/2 w.
R1254	3R77-P221J	Fixed composition: 220 ohms ±5%, 1/2 w.
		- - - - - - - - - - SWITCHES - - - - - - - - - -
S1203	7145098-P1	Slide: DPDT, 0.5 amp at 125 VDC; sim to Stackpole SS-150.
S1207	7145098-P1	Slide: DPDT, 0.5 amp at 125 VDC; sim to Stackpole SS-150.
		- - - - - - - - - - SOCKETS - - - - - - - - - -
XK1201 thru XK1203	5491595-P5	Relay: 16 contacts; sim to Allied Control 30054-2.
XQ1201 thru XQ1204	5490277-P2	Transistor, phen: 4 contacts; sim to Elco 3305.
		TONE GENERATOR MOUNTING PANEL PL-19B201358-G2
		- - - - - - - - - - CAPACITORS - - - - - - - - - -
C1216 thru C1245	7489483-P10	Electrolytic tubular: 35 µf +75% -10%, 15 VDCW; sim to Sprague 30D169Al.
C1249	7489483-P10	Electrolytic tubular: 35 µf +75% -10%, 15 VDCW; sim to Sprague 30D169Al.
		- - - - - - - JACKS AND RECEPTACLES - - - - - - -
J00 thru J30	4033429-P4	Jack, tip: Teflon†; sim to SKT-4.
		- - - - - - - - - - RESISTORS - - - - - - - - - -
R1216 thru R1245	3R77-P102K	Fixed composition: 1000 ohms ±10%, 1/2 w.
R1255	3R77-P102K	Fixed composition: 1000 ohms ±10%, 1/2 w.

SYMBOL	G-E PART NO	DESCRIPTION
		TONE GENERATOR PL-19B200236
		- - - - - - - - - - SUBASSEMBLIES - - - - - - - - - -
		TONE GENERATOR BOARD PL-19B200134-G2
		- - - - - - - - - - CAPACITORS - - - - - - - - - -
C1	5496267-P2	Tantalum, dry solid: 47 µf ±20%, 6 VDCW; sim to Sprague 150D.
C2	7489483-P9	Electrolytic tubular: 100 µf +75% -10%, 6 VDCW; sim to Sprague 30D135Al.
		- - - - - - - - JACKS AND RECEPTACLES - - - - - - - -
J1 thru J4	4036040-P1	Pin, contact: sim to American Brass 724.
		- - - - - - - - - - PLUGS - - - - - - - - - -
P1 thru P9	4036046-P1	Pin, contact.
		- - - - - - - - - - SOCKETS - - - - - - - - - -
XQ1	19A115123-P1	Silicon, NPN; sim to 2N2712.
		- - - - - - - - - - RESISTORS - - - - - - - - - -
R1	3R77-P682J	Fixed composition: 6800 ohms ±5%, 1/2 w.
R2 and R3	3R77-P152J	Fixed composition: 1500 ohms ±5%, 1/2 w.
R4	3R77-P332J	Fixed composition: 3300 ohms ±5%, 1/2 w.
R5	3R77-P102J	Fixed composition: 1000 ohms ±5%, 1/2 w.
R6	3R77-P153J	Fixed composition: 15,000 ohms ±5%, 1/2 w.
R7	19C300124-P2	Variable, carbon film: 100,000 ohms ±20%, 1/8 w, linear taper; sim to Mallory MLC.
		- - - - - - - - - - SOCKETS - - - - - - - - - -
XQ1	5490277-P2	Transistor, phen: 4 contacts; sim to Elco 3305.
		TONE DETECTOR PL-19C300590
	PL-19C300590-G1	517.5 cps
	PL-19C300590-G2	532.5 cps
	PL-19C300590-G3	547.5 cps
	PL-19C300590-G4	562.5 cps
	PL-19C300590-G5	577.5 cps
	PL-19C300590-G6	592.5 cps
	PL-19C300590-G7	607.5 cps
	PL-19C300590-G8	622.5 cps
	PL-19C300590-G9	637.5 cps
	PL-19C300590-G10	652.5 cps

SYMBOL	G-E PART NO	DESCRIPTION
		TONE DETECTOR(Cont'd)
	PL-19C300590-G11	667.5 cps
	PL-19C300590-G12	682.5 cps
	PL-19C300590-G13	697.5 cps
	PL-19C300590-G14	712.5 cps
	PL-19C300590-G15	727.5 cps
	PL-19C300590-G16	742.5 cps
	PL-19C300590-G17	757.5 cps
	PL-19C300590-G18	772.5 cps
	PL-19C300590-G19	787.5 cps
	PL-19C300590-G20	802.5 cps
	PL-19C300590-G21	817.5 cps
	PL-19C300590-G22	832.5 cps
	PL-19C300590-G23	847.5 cps
	PL-19C300590-G24	862.5 cps
	PL-19C300590-G25	877.5 cps
	PL-19C300590-G26	892.5 cps
	PL-19C300590-G27	907.5 cps
	PL-19C300590-G28	922.5 cps
	PL-19C300590-G29	937.5 cps
	PL-19C300590-G30	952.5 cps
	PL-19C300590-G31	967.5 cps
	PL-19C300590-G32	982.5 cps
	PL-19C300590-G33	997.5 cps
		GOOSENECK MICROPHONE ASSEMBLY PL-4039035-G1
		- - - - - - - - - MISCELLANEOUS - - - - - - - - -
	19B209031-P1	Microphone, gooseneck: 60 to 10,000 cps freq response, 100,000 ohm load imp., includes 12 inch gooseneck; sim to Shure Brothers 425-G12.
	PL-19B204202-G1	Footswitch. Includes switch, SPDT, momentary contact, 5 amps at 220 VAC; 8 feet cable, 4 pin cable connector.
	19B204200-P1	Connector, adapter: 3/8-27. (Mates with Gooseneck microphone).
		MECHANICAL PARTS (SEE RC-1036)
1	7121396-P6	Mounting, transistor: phen; sim to Mallory BP-6.
2	4039244-P1	Bracket, mounting: approx 3-11/16 x 2-3/4 x 1/2 inches.
3	4035713-P1	Strip: approx 9-1/4 x 1/16 inches.
4	4035449-P2	Plug: rubber; sim to Atlantic Rubber 721.
5	5491541-P201	Spacer, hex: 6-32.
6	4035452-P1	Spacer: approx 1/4 inch dia.
7	PL-19B201358-G2	Plate: approx 9-3/16 x 5-7/16 x 1/16 inches thick.
8	19A121063-P1	Insulator: approx 9-5/16 x 5-7/16 inches.
9	PL-19B201338-G1	Chassis.
10	4038065-P1	Plate: approx 1-1/4 x 5/8 x 1/32 inches thick.
11	19B201337-P1	Panel: approx 9-1/2 x 3-1/8 x 1/16 inches thick.
12	4032559-P1	Retainer, nut: 6-32: sim to Tinnerman C3039S-632-S13.
13	PL-19C300958-G2	Cover.
14	4037342-P2	Pushbutton: plastic, approx 2 x 1-1/4 inches; sim to Bradley Industries 2.
15	5490407-P4	Grommet: approx 1/16 inch dia.

SYMBOL	G-E PART NO	DESCRIPTION
		MECHANICAL PARTS(Cont'd)
16	7160861-P16	Speednut: sim to Tinnerman C8091-632-157.
17	4039253-P1	Plate: approx 4-3/4 x 2 x 3/16 inches thick.
18	4039234-P2	Button: approx 3/4 inch dia.
19	4039234-P1	Button: approx 3/4 inch dia.
20	NP243322	Nameplate.
21	19A121123-P1	Spacer: 4-40.
22	NP243299	Nameplate: approx 9-7/16 x 9 inches.
23	N83P13016C13	Screw: 6-32.
24	4035039-P1	Plate: approx 2-11/16 x 2-1/2 inches.
25	4035442-P1	Shaft: approx 1/4 inch dia.
26	4035439-P1	Spring.
27	4035040-P1	Bracket: approx 2-11/16 x 2-1/2 inches.
28	9402P37C13	Washer: No. 6.
29	PL-4038128-G1	Clip: approx 2-1/2 x 13/16 x 1/16 inches thick.
30	7165075-P2	Nut: 3/8-32.
31	7115130-P9	Lockwasher: 3/8; sim to Shakeproof 1220-2.



RC-1036

TONE DISPATCHER — 4EC51A12

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES.