Customer_____

G. E. Req. No._____

Customer Order No._____

INSTRUCTIONS

for

GENERAL ELECTRIC 300 CALL DISPATCHER

MODEL 4EC51A10

LBI-10203A
DF-5015

TABLE OF CONTENTS

1212

COMMUNICATION PRODUCTS DEPARTMENT

GENERAL ELECTRIC

LYNCHBURG, VIRGINIA

GENERAL ELECTRIC 300 CALL DISPATCHER

Tone Dispatcher, Model 4EC51A10, is a selective signaling unit that provides a means of alerting any one or all of the mobile units in a system by transmitting audio tones at various frequencies corresponding to coded tones assigned to the mobile units. The 4EC51A10 is a self-contained tone dispatch console capable of signaling up to 300 individual units, one or more groups of units, or all units in a system.

The Tone Dispatcher is a tone generating and switching device permitting the selection of 300 combinations of two simultaneous audio frequency tones, with provisions for keying the station radio transmitter which, in turn, transmits the tones for a predetermined 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. A diode switch in the Power Supply circuit allows the battery to take over automatically in the event of power line failure.

INSTALLATION

Position the Dispatcher in a convenient location 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 dispatcher are compatible with General Electric Progress Line Station Combinations.

The emergency battery may be connected permanently to TB1201. Accidental reversing 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.

The Dispatcher is supplied with an "L" pad (R1246 and R1247) in the tone output circuit. This pad limits the tone to the level necessary for driving the EC-28 Remote Control unit or other high gain amplifier. When the tone is fed directly into a transmitter, R1246 should be clipped out of the circuit.

ADJUSTMENT

A. Tone Level

Each tone generator must be adjusted individually in the Dispatcher to the level necessary to properly modulate the transmitter. These adjustments are made on the basis of applying equal amplitudes for each tone to the input terminals of a tone selector (decoder) in the system. The following chart shows the proper point in the receiver circuit for connecting an audio VTVM for measuring this level.

RECEIVER	VTVM HIGH	VTVM COM
TPL	J305 on Audio Board	J304
Voice Director	DISC Jack	+ BATT
Other Type	Decoder Input	Audio Common

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

2. Release all push-buttons on the Dispatcher.

3. Depress push-button 1 in row A and push-button 9 in row C. This selects the highest frequency (967.5 cps) in the system. Refer to Application Diagram, RC-834.

4. Test Switch, S1203, by-passes the timing circuits and permits transmission of the selected tones continuously for these adjustments. The Test Switch should be released periodically while making the adjustments in keeping with the reated duty cycle of the transmitter.

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

6. Place the Test Switch in the TEST position. Adjust the Master Level potentiometer (R1202) 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.

7. Note the tone level (in millivolts) at the selector input terminals.

8. Release push-buttons.

9. Using the following chart, select each tone generator (one at a time) and adjust R7 to produce the same tone amplitude as measured at the selector input terminals in Step 7. Refer to Application Diagram RC-834 to locate the Tone Generator. The No. in the chart indicates the push-button to be depressed in that particular row. A dash (-) indicates no push-button depressed in that particular row.

TONE GEN	PUSHBUTTON:	ROW A	ROW B	ROW C
00		1	-	0
01		1	-	1
02		1	-	2
03		1	-	3
04		1	-	4
05		1	-	5
06		1	-	6
07		1	-	7
08		1	-	8
09		1	-	9
10		1	0	-
11		1	1	-
12		1	2	-
13		1	3	-
14		1	4	-
15		1	5	-
16		1	6	-
17		1	7	-
18		1	8	-
19		1	9	-
20		2	0	-
21		2	1	-
22		2	2	-
23		2	3	-
24		2	4	-
25		2	5	-
26		2	6	-
27		2	7	-
28		2	8	-
29		2	9	-

10. Release S1203. The Dispatcher is now ready for use.

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 (without tone), none of the level controls in the unit should be changed.

If, at any time, the MIKE GAIN potentiometer in the EC-28 is changed, the Master Level potentiometer in the Dispatcher must be readjusted.

B. TIMING ADJUSTMENT

The Timing Potentiometer, R1210, is set at the factory and should need no further adjustment; however, replacement of timing transistor, Q1202, or component aging may necessitate resetting the timing. A stop watch may be used or an automatic timer may be connected between J1216 and J1217 to provide a more accurate check.

OPERATION

The Dispatcher has three vertical rows of push-buttons on the front panel. One button in the left-hand row must be pushed to select the proper group for the code desired. The actual frequencies are then selected by pressing one button in each of the remaining two rows as each code is composed of two simultaneous tones. To signal the unit he is calling, the operator selects the proper combination of buttons indicated by the assigned code for that particular unit.

After selecting the proper combination, the operator presses the SEND Switch which automatically transmits the selected tones for the pre-determined time. 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 transmission.

CIRCUIT DESCRIPTION

TONE GENERATOR

The Tone Generator, PL-19B200236, consists of a transistorized oscillator circuit utilizing a vibrating-reed tone governing device, FL1-FL66, 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 governor, where transformer action between the two coils takes place, returning the energy to the base of Q1. The vibrating reed of the tone governor responds only to the frequency to

which it is resonant; therefore, only the desired frequency appears at the output jack. R7 provides an adjustment of the output level.

Thirty tone generators, each resonant to a specific audio frequency, are operated continuously when power is applied to the Dispatcher. Selector Switches S1205 and S1206 are interlocked so that only one tone generator may be selected in each bank at one time.

TONE AMPLIFIER

The input level of the selected audio tones to the tone amplifier is determined by the setting of the tone generator Output Level Control (R7) and the Master Level Control (R1202). R1202 is connected to the base of tone amplifier Q1201. The output of Q1201 is coupled through a filter (consisting of C1205-C1210, L1201 and L1202) which suppresses harmonics. The tone signals are fed from the filter 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 capacitors C1211 and C1212 are charged through the normally-closed contacts 14 and 15 of Relay K1202 and normally-closed contacts of S1202. Closing contact NO of S1202 provides a discharge path for C1211 and C1212 through Timing Control R1210, permitting timing transistor Q1202 to conduct.

Conduction of Q1202 operates K1201, closing contacts 5 and 7. This operates K1202 and K1203. Contacts 9 and 10 of K1202 close, shorting S1202 and permitting its contacts to revert to NC. Contacts 14 and 15 of K1202 open, removing the charging path to C1211 and C1212. Contacts 11 and 12 of K1202 open, removing the mike from the transmitter circuit. Contacts 12 and 13 of K1202 close, connecting the tone to the transmitter. Contacts 6 and 7 of K1202 close, restoring ground to the transmitter and thus keying the transmitter.

Contacts 6-7 and 9-10 of K1203 close, providing a path for the tone signals from the selected tone generators to the tone amplifier. Contacts 15 and 16 of K1203 close, extinguishing the White Standby lamp (DS1202) and turning on the Red Keying lamp (DS1201). Both of these lamps illuminate the push-button of S1202.

At the end of the timing interval, Q1202 ceases conduction and all relays return to normal.

POWER SUPPLY

The 117 volt, 50/60 cps line is applied across the primary of T1201, stepped down to a nominal 12 volts across the bridge rectifier (CR1202-CR1205), filtered by C1201, C1202 and R1201, and regulated by CR1206.

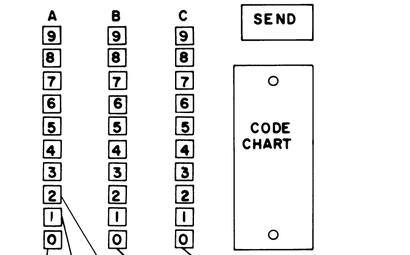
If an emergency Battery is connected to TB1201, it will supply current to the circuit only if the rectifier voltage drops below the battery voltage. If rectifier voltage drops due to line failure or poor regulation, the battery will automatically supply the necessary current. Accidental reversal of the battery leads will cause no damage due to the protection offered by CR1201.

MAINTENANCE

Reference should be made to the Service Outline and Elementary Diagram when servicing the Dispatcher.

PUSH-BUTTON ASSIGNMENT: SELECTING ONE OF THREE BUTTONS IN ROW 'A' SELECTS THE PROPER GROUP OF FREQUENCIES FOR THE ASSIGNED CODE. THE ACTUAL FREQUENCIES ARE SELECTED BY PRESSING THE CORRECT BUTTONS IN ROW 'B' AND ROW 'C'.

DISPATCHER FRONT PANEL

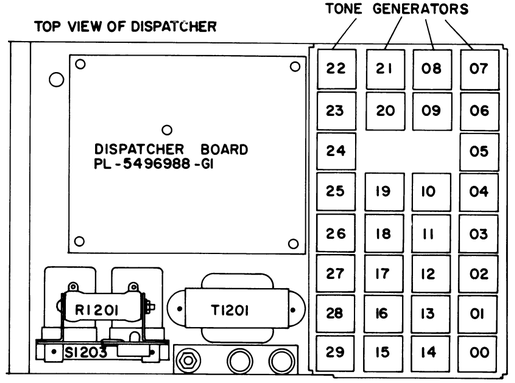


TONE FREQUENCY CHART

A0	A1	A2	PUSHBUTTON NUMBER
532.5	562.5	532.5	B0
547.5	607.5	547.5	B1
577.5	622.5	577.5	B2
592.5	652.5	592.5	B3
637.5	667.5	637.5	B4
682.5	697.5	682.5	B5
727.5	742.5	727.5	B6
772.5	787.5	772.5	B7
817.5	832.5	817.5	B8
862.5	877.5	862.5	B9
562.5	712.5	712.5	C0
607.5	757.5	757.5	C1
622.5	802.5	802.5	C2
652.5	847.5	847.5	C3
667.5	892.5	892.5	C4
697.5	907.5	907.5	C5
742.5	922.5	922.5	C6
787.5	937.5	937.5	C7
832.5	952.5	952.5	C8
877.5	967.5	967.5	C9

TONE GENERATOR LOCATION

INSERT TONE GENERATOR INTO APPROPRIATE JACK ACCORDING TO CHART BELOW. FREQUENCY IS MARKED ON TONE GENERATOR COVER.



TONE GENERATOR LOCATION CHART

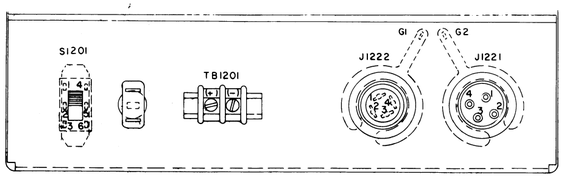
LOCATION	FREQUENCY (CPS)
00	712.5
01	757.5
02	802.5
03	847.5
04	892.5
05	907.5
06	922.5
07	937.5
08	952.5
09	967.5
10	562.5
11	607.5
12	622.5
13	652.5
14	667.5
15	697.5
16	742.5
17	787.5
18	832.5
19	877.5
20	532.5
21	547.5
22	577.5
23	592.5
24	637.5
25	682.5
26	727.5
27	772.5
28	817.5
29	862.5

TONE GENERATOR APPLICATION

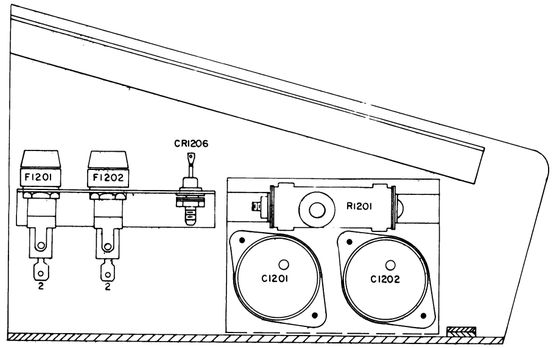
Application Diagram

MODEL 4EC51A10
300 CALL DISPATCHER

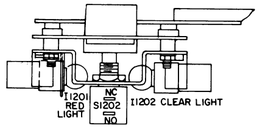
(RC-834)



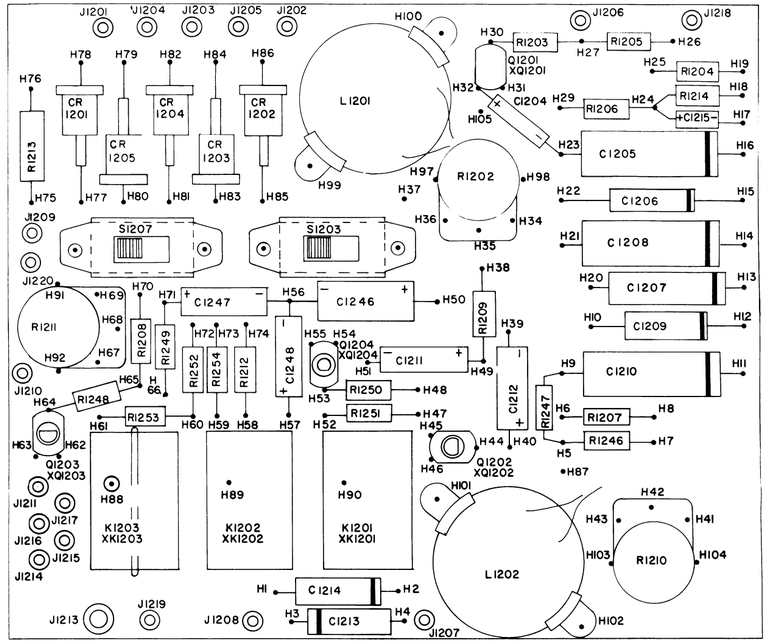
REAR PANEL OF DISPATCHER



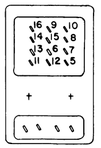
SIDE VIEW OF DISPATCHER COMPONENT



SIDE VIEW OF SEND SWITCH ASSEMBLY

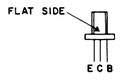


TONE DISPATCHER BOARD PL-19C303306-G1



BOTTOM VIEW OF XK1201-2-3

BOTTOM VIEW OF S1203 & 7



LEAD FORMING FOR Q1202, Q1203, Q1204

TYP SOCKET FOR XQ1202, XQ1203, XQ1204

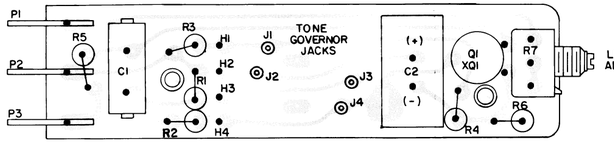
9153

Service Outline

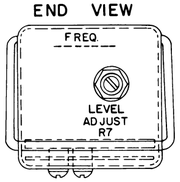
DISPATCHER BOARD
PL-5496988-G1

(RC-698C)

TOP VIEW OF TONE GENERATOR

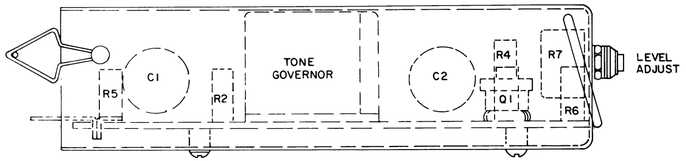


END VIEW

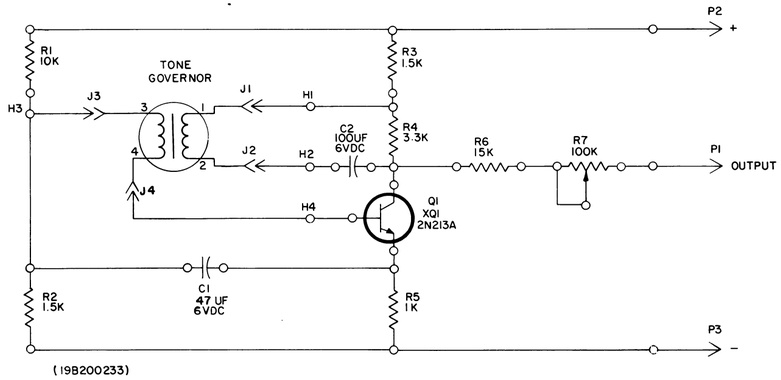


(19B200134)
(19B200118)

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.

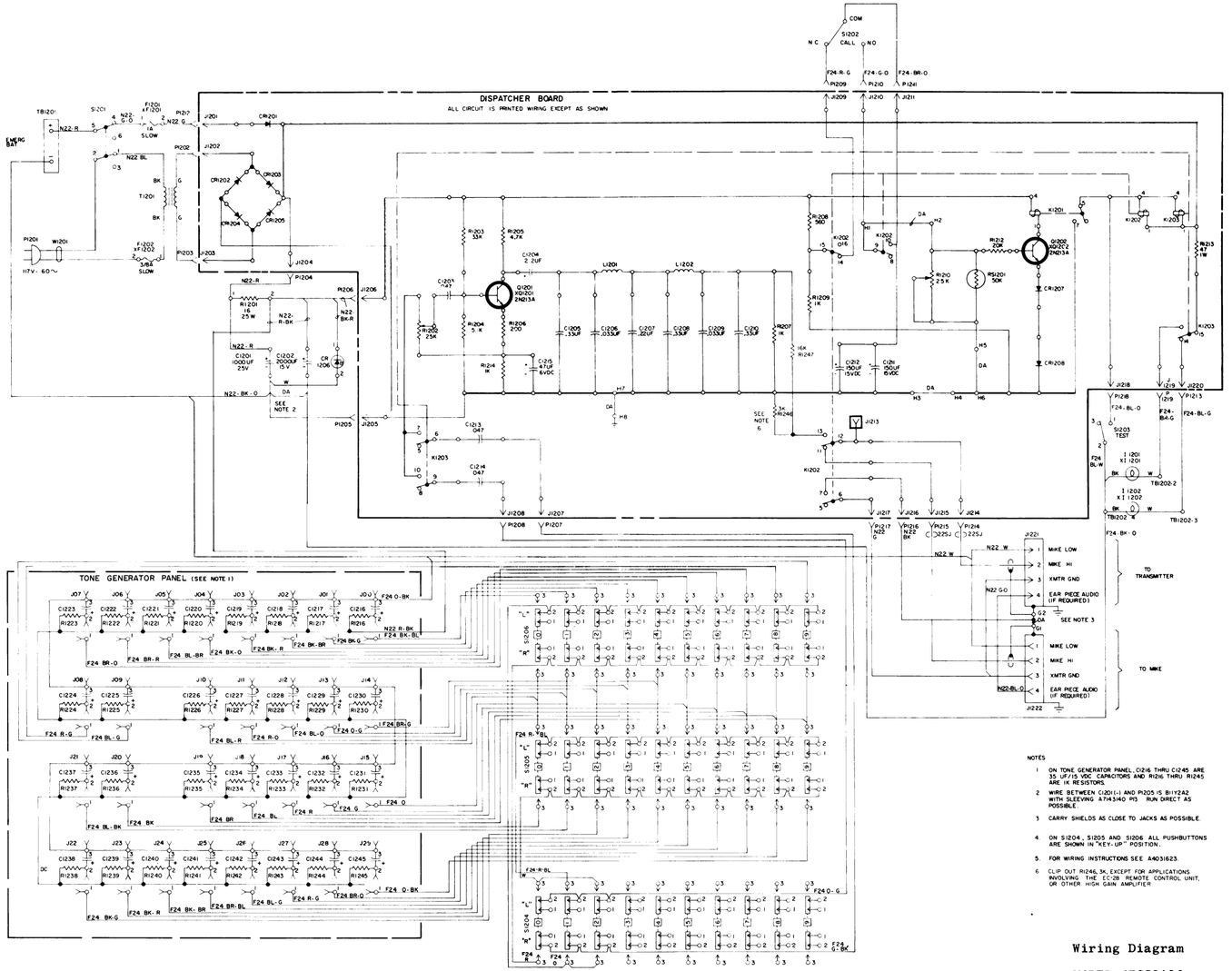
CPD 310A

15183

Service Outline

TONE GENERATOR
PL-19B200236

(RC-835C)



NOTES

1. ON TONE GENERATOR PANEL, C1216 THRU C1245 ARE 35 UF/15 VDC CAPACITORS AND R1216 THRU R1245 ARE 1K RESISTORS.
2. WIRE BETWEEN CI201(-) AND PI205 IS BI1Y2A2 WITH SLEEVING A7143140 P/S RUN DIRECT AS POSSIBLE.
3. CARRY SHIELDS AS CLOSE TO JACKS AS POSSIBLE.
4. ON S1204, S1205 AND S1206 ALL PUSHBUTTONS ARE SHOWN IN "KEY-UP" POSITION.
5. FOR WIRING INSTRUCTIONS SEE A4031623.
6. CLIP OUT RI246, 3K, EXCEPT FOR APPLICATIONS INVOLVING THE EC-28 REMOTE CONTROL UNIT, OR OTHER HIGH GAIN AMPLIFIER.

Wiring Diagram

MODEL 4EC51A10
300 CALL DISPATCHER

(E-5499304, Rev. 4)

PARTS LIST

300 CALL DISPATCHER

MODEL 4EC51A10

PL-5499303-G1

SYMBOL	G-E PART NO.	DESCRIPTION
		- - - - - - - - - - CAPACITORS - - - - - - - - - -
C1201	7476442-P12	Dry electrolytic, twist-prong: 1000 µf +250% -10%, 25 VDCW; sim to PR Mallory WP059.
C1202	7770994-P11	Dry electrolytic, twist-prong: 2000 µf +250% -10%, 15 VDCW; sim to Mallory WP.
C1203 thru C1215		(Included in Dispatcher Board, PL-5496988-G1).
C1216 thru C1245		(Included in Tone Generator Mounting Panel, PL-19B201358-G1).
		- - - - - - - - - - RECTIFIERS - - - - - - - - - -
CR1201 thru CR1205		(Included in Dispatcher Board, PL-5496988-G1).
CR1206	5495912-P1	Zener*.
CR1207 and CR1208		(Included in Dispatcher Board, PL-5496988-G1).
		- - - - - - - - INDICATING DEVICES - - - - - - - -
DS1201	4036294-G1	Indicator light asm: Includes an incandescent lamp with min. bay. base, 14.5 v, 0.12 amps. G-E Type 53, colored red.
DS1202		Incandescent: Min. bay. base, 14.5 v, 0.12 amps. G-E Type 53, clear.
		- - - - - - - - - - FUSES - - - - - - - - - -
F1201	7487942-P5	Slow blowing: 1-1/4 x 1/4 (3AG), 1 amp at 250 v; sim to Bussmann MDL-1.
F1202	7487942-P2	Slow blowing: 1-1/4 x 1/4 (3AG), 3/8 amp at 250 v; sim to Bussmann MDL-3/8.
		- - - - - - - JACKS AND RECEPTACLES - - - - - - -
J1201 thru J1220		(Included in Dispatcher Board, PL-5496988-G1).
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.
		- - - - - - - - - - RELAYS - - - - - - - - - -
K1201 thru K1203		(Included in Dispatcher Board, PL-5496988-G1).
		- - - - - - - - - - INDUCTORS - - - - - - - - - -
L1201 and L1202		(Included in Dispatcher Board, PL-5496988-G1).
		- - - - - - - - - - PLUGS - - - - - - - - - -
P1201		(Part of W1201).
P1202 and P1203	4029840-P1	Terminal: Taper pin connector; sim to Amp 41854 or Kent 123946.
P1204	4029840-P2	Terminal: Taper pin connector; sim to Amp 428272.
P1205	4029840-P1	Terminal: Taper pin connector; sim to Amp 41854 or Kent 123946.
P1206 thru P1220	4029840-P2	Terminal: Taper pin connector; sim to Amp 428272.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES.

SYMBOL	G-E PART NO	DESCRIPTION
		- - - - - - - - - - TRANSISTORS - - - - - - - - - -
Q1201 and Q1202		(Included in Dispatcher Board, PL-5496988-G1).
		- - - - - - - - - - RESISTORS - - - - - - - - - -
R1201	2R14-P113	Wirewound: 16 ohms ±5%, 25 w, includes bracket; sim to Ward Leonard K41383-3.
R1202 thru R1210		(Included in Dispatcher Board, PL-5496988-G1).
R1212 thru R1214		(Included in Dispatcher Board, PL-5496988-G1).
R1216 thru R1245		(Included in Tone Generator Mounting Panel, PL-19B201358-G1).
R1246 and R1247		(Included in Dispatcher Board, PL-5496988-G1).
		- - - - - - - - - - THERMISTORS - - - - - - - - - -
RS1201		(Included in Dispatcher Board, PL-5496988-G1).
		- - - - - - - - - - SWITCHES - - - - - - - - - -
S1201	7145098-P1	Slide: DPDT, 0.5 amps at 125 v; sim to Stackpole SS-150.
S1202	19B200007-P1	Push button: Snap action, 15 amps at 0.125-250 vac; sim to Cherry Elec Series E13-23J.
S1203	7145098-P1	Slide: DPDT, 0.5 amps at 125 v; sim to Stackpole SS-150.
S1204 thru S1206	19C300108-P5	Push button: 10 button frame, double side, 2 form C contacts (non shorting each button); sim to Oak 80.
		- - - - - - - - - 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	Phenolic: 2 terminals; sim to Curtis Devel. EFT-2.
TB1202	7775500-P3	Phenolic: 4 terminals.
		- - - - - - - - - - CABLES - - - - - - - - - -
W1201	4036441-P3	Flamenol® cord set: Includes 9 ft cable, molded plastic plug (P1201) on one end; sim to G-E 2073-1.
		- - - - - - - - - - SOCKETS - - - - - - - - - -
XDS1201 and XDS1202	4032220-P1	Lamp: Min. bay. base, 6-in. leads; sim to Drake N517.
XF1201 and XF1202	7115179-P1	Holder, Fuse: (3AG), 15 amps, 250 v; sim to Bussmann HKP.
XK1201 thru XK1203		(Included in Dispatcher Board, PL-5496988-G1).
XQ1201 and XQ1202		(Included in Dispatcher Board, PL-5496988-G1).
		- - - - - - - - - SUBASSEMBLIES - - - - - - - - -
		TONE GENERATOR MOUNTING PANEL PL-19B201358-G1
		- - - - - - - - - - CAPACITORS - - - - - - - - - -
C1216 thru C1245	7489483-P10	Electrolytic tubular: 35 µf +100% -10%, 15 VDCW; sim to Sprague 30D169A1.
		- - - - - - - JACKS AND RECEPTACLES - - - - - - -
J00 thru J29	4033429-P4	Jack, test: Teflon®, copper contact; sim to SKT-4.

SYMBOL	G-E PART NO	DESCRIPTION
		- - - - - - - - - - SUBASSEMBLIES(Cont'd) - - - - -
		TONE GENERATOR MTG PANEL, PL-19B201358-G1 (Cont'd)
		- - - - - - - - - - RESISTORS - - - - - - - - - -
R1216 thru R1245	3R77-P102K	Fixed composition: 1,000 ohms ±10%, 1/2 w.
		DISPATCHER BOARD PL-5496988-G1
		- - - - - - - - - - CAPACITORS - - - - - - - - - -
C1203	7491930-P108	Mylar®, tubular: .047 µf ±20%, 100 VDCW; sim to Good-All 663-UW.
C1204	5496267-P13	Tantalum: 2.2 µf ±20%, 20 VDCW; sim to Sprague 150D225X0020A2.
C1205	7491930-P11	Mylar®, tubular: 0.33 µf ±20%, 100 VDCW; sim to Good-All 663-UW.
C1206	7491930-P7	Mylar®, tubular: .033 µf ±20%, 100 VDCW; sim to Good-All 663-UW.
C1207	7491930-P10	Mylar®, tubular: 0.22 µf ±20%, 100 VDCW; sim to Good-All 663-UW.
C1208	7491930-P11	Mylar®, tubular: 0.33 µf ±20%, 100 VDCW; sim to Good-All 663-UW.
C1209	7491930-P7	Mylar®, tubular: .033 µf ±20%, 100 VDCW; sim to Good-All 663-UW.
C1210	7491930-P11	Mylar®, tubular: 0.33 µf ±20%, 100 VDCW; sim to Good-All 663-UW.
C1211 and C1212	5496267-P12	Tantalum: 150 µf ±20%, 15 VDCW; sim to Sprague 150D157X0015S2.
C1213 and C1214	7491930-P108	Mylar®, tubular: .047 µf ±20%, 100 VDCW; sim to Good-All 663-UW.
C1215	5496267-P2	Tantalum: 47 µf ±20%, 6 VDCW; sim to Sprague 150D476X0006B2.
		- - - - - - - - - - RECTIFIERS - - - - - - - - - -
CR1201 thru CR1205	5490415-P2	Silicon.
CR1207 and CR1208	5491705-P2	Silicon.
		- - - - - - - JACKS AND RECEPTACLES - - - - - - -
J1201 thru J1211	4033513-P4	Pin, contact: Brass, cad. plated; sim to Bead Chain L93-3.
J1213	4029830-P4	Jack, test: Printed Wiring, nylon; sim to Raytheon B8436401-166-G2-yellow.
J1214 thru J1220	4033513-P4	Pin, contact: Brass, cad. plated; sim to Bead Chain L93-3.
		- - - - - - - - - - RELAYS - - - - - - - - - -
K1201	5491595-P22	1.5 w, 90 ohms ±15% at 25°C, 1 form A contact; sim to Allied T154-0-A.
K1202 and K1203	5491595-P23	1.5 w, 430 ohms ±15% at 25°C, 4 form C contacts; sim to Allied T154-CC-CC.
		- - - - - - - - - - INDUCTORS - - - - - - - - - -
L1201 and L1202	PL-5493572-G50	Ferrite coil asm. Turns 155/156/156/155.
		- - - - - - - - - - TRANSISTORS - - - - - - - - - -
Q1201 and Q1202	5492639-P1	Germanium, NPN.
		- - - - - - - - - - RESISTORS - - - - - - - - - -
R1202	7491365-P103	Potentiometer, carbon film: 25,000 ohms ±20%, 0.05 w, mod log taper, slotted shaft; sim to CTS UPE-70.
R1203	3R77-P333J	Fixed composition: 33,000 ohms ±5%, 1/2 w.

SYMBOL	G-E PART NO	DESCRIPTION
		- - - - - - - - - - SUBASSEMBLIES(Cont'd) - - - - -
		DISPATCHER BOARD, PL-5496988-G1 (Cont'd).
		- - - - - - - - - - RESISTORS(Cont'd) - - - - - -
R1204	3R77-P512J	Fixed composition: 5,100 ohms ±5%, 1/2 w.
R1205	3R77-P472J	Fixed composition: 4,700 ohms ±5%, 1/2 w.
R1206	3R77-P201J	Fixed composition: 200 ohms ±5%, 1/2 w.
R1207	3R77-P102J	Fixed composition: 1,000 ohms ±5%, 1/2 w.
R1208	3R77-P561J	Fixed composition: 560 ohms ±5%, 1/2 w.
R1209	3R77-P102J	Fixed composition: 1,000 ohms ±5%, 1/2 w.
R1210	7491365-P103	Potentiometer, carbon film: 25,000 ohms ±20%, 0.05 w, mod log taper, slotted shaft; sim to CTS UPE-70.
R1212	3R77-P203J	Fixed composition: 20,000 ohms ±5%, 1/2 w.
R1213	3R78-P470J	Fixed composition: 47 ohms ±5%, 1 w.
R1214	3R77-P102J	Fixed composition: 1,000 ohms ±5%, 1/2 w.
R1246	3R77-P302J	Fixed composition: 3,000 ohms ±5%, 1/2 w.
R1247	3R77-P163J	Fixed composition: 16,000 ohms ±5%, 1/2 w.
		- - - - - - - - - - THERMISTORS - - - - - - - - - -
RS1201	5490828-P11	Rod: 50,000 ohms ±10% at 25°C, temp coef 4000 ±5%; sim to Globar 781F.
		- - - - - - - - - - SOCKETS - - - - - - - - - -
XK1201	5491595-P6	Relay: Nylon, 10 contacts, for printed wiring board; sim to Allied 30054-3.
XK1202 and XK1203	5491595-P7	Relay: Nylon, 10 contacts, for printed wiring board; sim to Allied 30054-4.
XQ1201 and XQ1202	5490277-P2	Transistor: 4-contacts, low-loss mica-filled phenolic; sim to Elco 3305.
		TONE GENERATOR PL-19B200236
		- - - - - - - - - SUBASSEMBLIES - - - - - - - - -
		TONE GENERATOR BOARD PL-19B200134-G2
		- - - - - - - - - - CAPACITORS - - - - - - - - - -
C1	5496267-P2	Tantalum: 47 µf ±20%, 6 VDCW; sim to Sprague 150D476X0006B2.
C2	7489483-P9	Electrolytic tubular: 100 µf +100% -10%, 6 VDCW; sim to Sprague 30D135A1.
		- - - - - - - JACKS AND RECEPTACLES - - - - - - -
J1 thru J4	4036040-P1	Pin, contact: Nickel, silver plate; sim to American Brass 724.
		- - - - - - - - - - PLUGS - - - - - - - - - -
P1 thru P3	4036046-P1	Pin, contact: Brass, .04 dia.
		- - - - - - - - - - TRANSISTORS - - - - - - - - - -
Q1	5492639-P2	Germanium, NPN.
		- - - - - - - - - - RESISTORS - - - - - - - - - -
R1	3R77-P103J	Fixed composition: 10,000 ohms ±5%, 1/2 w.
R2 and R3	3R77-P152J	Fixed composition: 1,500 ohms ±5%, 1/2 w.
R4	3R77-P332J	Fixed composition: 3,300 ohms ±5%, 1/2 w.
R5	3R77-P102J	Fixed composition: 1,000 ohms ±5%, 1/2 w.
R6	3R77-P153J	Fixed composition: 15,000 ohms ±5%, 1/2 w.
R7	19C300124-P2	Potentiometer, carbon film: 100,000 ohms ±20%, 1/8 w, linear taper, slotted shaft; sim to Mallory MLC.

SYMBOL	G-E PART NO	DESCRIPTION
		- - - - - - - - - - SUBASSEMBLIES(Cont'd) - - - - -
		TONE GENERATOR BOARD, PL-19B200134-G2 (Cont'd).
		- - - - - - - - - - SOCKETS - - - - - - - - - -
XQ1	5490277-P2	Transistor: 4-contacts, low-loss mica-filled phenolic; sim to Elco 3305.
		TONE DETECTOR PL-19C300590
		Electromechanical resonant subassembly. Group No. determined by multiplying the frequency marked on the can x 10. Example: 532.5 x 10 equals Group No. 5325.
		532.5 cps PL-19C300590-G5325 547.5 cps PL-19C300590-G5475 562.5 cps PL-19C300590-G5625 577.5 cps PL-19C300590-G5775 592.5 cps PL-19C300590-G5925 607.5 cps PL-19C300590-G6075 622.5 cps PL-19C300590-G6225 637.5 cps PL-19C300590-G6375 652.5 cps PL-19C300590-G6525 667.5 cps PL-19C300590-G6675 682.5 cps PL-19C300590-G6825 697.5 cps PL-19C300590-G6975 712.5 cps PL-19C300590-G7125 727.5 cps PL-19C300590-G7275 742.5 cps PL-19C300590-G7425 757.5 cps PL-19C300590-G7575 772.5 cps PL-19C300590-G7725 787.5 cps PL-19C300590-G7875 802.5 cps PL-19C300590-G8025 817.5 cps PL-19C300590-G8175 832.5 cps PL-19C300590-G8325 847.5 cps PL-19C300590-G8475 862.5 cps PL-19C300590-G8625 877.5 cps PL-19C300590-G8775 892.5 cps PL-19C300590-G8925 907.5 cps PL-19C300590-G9075 922.5 cps PL-19C300590-G9225 937.5 cps PL-19C300590-G9375 952.5 cps PL-19C300590-G9525 967.5 cps PL-19C300590-G9675