SERVICE INSTRUCTIONS

MANTEL CLOCK RADIO

MODEL C-51

ANTIQUE WALNUT, WALNUT OR MAHOGANY

Fig. 1. MODEL C-51
ANTIQUE WALNUT, WALNUT OR MAHOGANY

TO REMOVE CHASSIS FROM CABINET

1. Remove all knobs by pulling in the outward direction.
2. Remove the cabinet back.
3. Remove the three self tapping screws from the cabinet bottom that secure the chassis.

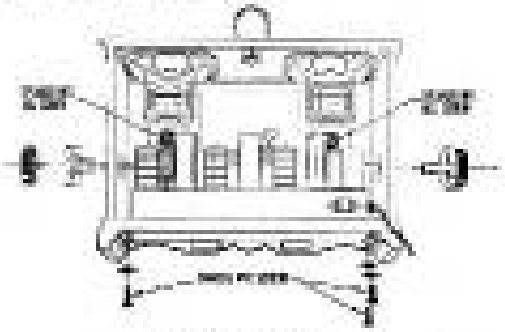

Fig. 2. Chassis Removal

4. Loosen the two screws that secure the speaker brackets and lower both speakers about one-half inch and lift out the chassis.

NOTE

When replacing the chassis be sure to fit the face of both speakers tightly against the bottom of the cabinet top. If any of the speaker wiring was removed be sure the connections are restored exactly as the original wiring.

SPECIFICATIONS

Antenna ..... Built-in loop
Appliance Outlet Rating ..... 660 watts max.
Circuit ..... Superheterodyne (IF frequency 455 KC)
Dials ..... Translucent roll starting type
Frequency Coverage ..... 535-1650 KC
Overall Dimensions ..... Approximately 12" wd. x 9" h. x 4¼" d.
Power Rating ..... 105-125 volts, 50/60 cycle AC only
Speaker ..... Two 3" speakers series connected, voice coil impedance 2.2 ohms (check speakers)
Tubes ..... 5 including 1 rectifier

* Check the cycle consequents with cycle indicated on back cover of manual, for more specific.

OPERATION OF RADIO & CLOCK

A. TO OPERATE THE RADIO AND OUTLET MANUALLY

1. Press the small left-hand knob in and set at "ON." Allow about one minute for the tubes to warm up.
2. Turn the VOLUME control (large knob at left side of cabinet) forward you to maximum volume and then turn to the desired station with the TUNING control (large dark brown knob at right side of cabinet).
3. After the station has been accurately tuned in, reset the VOLUME control as desired. To turn the radio and outlet off, simply set the small left hand knob at "OFF."

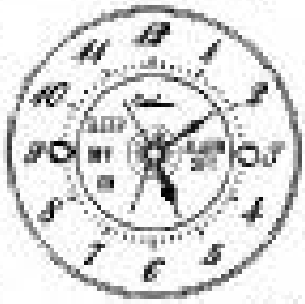

Fig. 3. Clock Face Showing Controls

B. TO HAVE THE RADIO AND OUTLET TURN ON AUTOMATICALLY AT A LATER TIME

1. Pull out the small left-hand knob and set at "OFF."
2. Allow about one minute for the tubes to warm up and then adjust the VOLUME and TUNING controls as outlined in Step 2 of Section A.
3. Pull out the small right-hand knob and turn until the RED hand is opposite the time you wish the radio and outlet to turn on automatically. If alarm "buzzer" feature is desired, leave knob out. If not desired, press knob in. (See Step 5.)
4. Set small left-hand knob at "OFF." The radio and outlet are now set to turn on automatically at the time to which the RED hand is set.
5. If small right-hand knob was left in out position, the alarm will start to "buzz" at minutes after the radio and outlet have on. To turn off the alarm, press small right-hand knob in.
6. To turn off the radio and outlet, simply press the small left-hand knob in.

THE hallicrafters
CHICAGO 16, ILLINOIS
P.O. BOX 19 - FEDERAL STATION A

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NRPS
CANADA LIMITED
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C. TO HAVE THE RADIO AND OUTLET TURN ON AUTOMATICALLY AT A LATER TIME OF TO ONE HOUR

1. Press the small left-hand knob in and set at "SLEEP" for out knobs operation (knob pointer facing directly upward). If you wish to have the radio and outlet turn off sooner than one hour set the knob at some point between the "OFF" and "SLEEP" positions rather than all the way. For example for 15 minutes operation rotate the knob to the one-quarter position. For 30 minutes operation rotate the knob to the half-way position, etc.

2. Allow about one minute for the tubes to warm up and then adjust the VOLUME and TUNING controls as outlined in Step 2 at Section A on Page 1.

3. The radio and outlet will remain on for the desired length of time and then turn off automatically.

D. TO HAVE THE RADIO AND OUTLET TURN OFF AUTOMATICALLY AFTER ONE HOUR AND THEN TURN ON AUTOMATICALLY AT A LATER TIME

1. Pull out the small left-hand knob and set at "SLEEP" (knob pointer facing directly upward).

2. Allow about one minute for the tubes to warm up and then adjust the VOLUME and TUNING controls as outlined in Step 2 at Section A on Page 1.

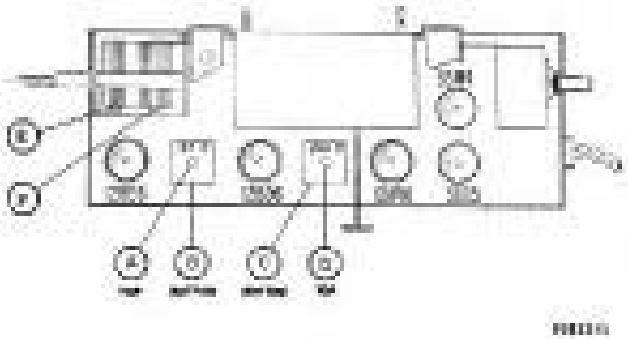

Fig. 4. Alignment Points & Tube Location

3. Pull out the small right-hand knob and turn until the RED hand is opposite the time you wish the radio and outlet to turn on automatically. If alarm "buzzer" feature is desired, leave knob out, if not desired, press knob in. (See Step 5.)

4. The radio and outlet will remain on for one hour and turn off automatically. They will then turn on again automatically at the time to which the RED hand is set.

5. If small right-hand knob was left in out position, the alarm will start to "buzz" about 15 minutes after the radio and outlet turn on. To turn off the alarm, press the small right-hand knob in.

6. To turn off the radio and outlet, simply press the small left-hand knob in.

ALIGNMENT PROCEDURE

TO AVOID SHOCK HAZARD, CONNECT POWER THROUGH AN ISOLATION TRANSFORMER

- Connect output meter across voice coil.
- Set volume control at maximum.
- Use a non-metallic alignment tool.
- Refer to Fig. 4 for location of alignment adjustments.
- Generator output should be reduced as necessary to prevent overload reading on output meter.
- To avoid AFC action, use lowest output setting of generator that gives a satisfactory reading on meter.

Step	Signal Generator Connection	Generator Frequency	Receiver Dial Setting	Adjust
1	High side (thru .1 mfd. capacitor to stator plates of oscillator section of tuning gang. Low side to chassis (point A).	455 KC	1606 KC	A-M (IFT) and C-D (2nd IFT)
2	Construct a loop of a few turns of wire and connect it to the signal generator. Loosely couple this loop to the loop antenna of the receiver.	1620 KC	Tuning gang fully open.	B (osc. trimmer)
3	Same as Step 2.	1400 KC	1400 KC	F (ant. trimmer)

SERVICE PARTS LISTS

CAPACITORS

Schematic Symbol	Description	Hallicrafters Part Number
C-1	Tuning Capacitor, two sections; includes trimmers	[illegible]
C-2	[illegible] mmf. 500 V. ceramic	[illegible]
C-3	[illegible] mmf. 500 V. ceramic	[illegible]
C-4, C-5 & C-14	.01 mfd. 500 V. ceramic	[illegible]
C-6, C-7, C-9, C-10 & C-11	Part of Audio Coupler; see miscellaneous parts	
C-8	[illegible] mfd. 150 V. [illegible] 20 mfd. 150 V. electrolytic	[illegible]
C-12, C-13	.001 mfd. 500 V. ceramic	[illegible]
C-15	.005 mfd. 600 V. tubular paper	[illegible]

RESISTORS

Schematic Symbol	Description	Hallicrafters Part Number
R-1	[illegible] ohms, 10% ½ watt; carbon	[illegible]
R-2	1,000,000 ohms, 10% ½ watt; carbon	[illegible]
R-3	[illegible] ohms, 10% ½ watt; carbon	[illegible]
R-4	1,200 ohms, 10% ½ watt; carbon	[illegible]
R-5	2,200,000 ohms, 10% ½ watt; carbon	[illegible]
R-6	120 ohms, 10% ½ watt; carbon	[illegible]
R-7	1,000,000 ohms variable; VOLUME CONTROL	[illegible]
R-8, R-9 & R-10	Part of Audio Coupler; see miscellaneous parts	
R-11	150 ohms, 10% ½ watt; carbon	[illegible]
R-12	22 ohms, 10% ½ watt; carbon	[illegible]
R-13	[illegible] ohms, 10% ½ watt; carbon	[illegible]
R-14	[illegible] ohms, 10% ½ watt; carbon	[illegible]

COILS AND TRANSFORMERS

Schematic Symbol	Description	Hallicrafters Part Number
L-1	Loop antenna and cabinet back assembly	[illegible]
L-2	Coil, oscillator	[illegible]
T-1	Transformer, 1st I-F	[illegible]
T-2	Transformer, 2nd I-F	[illegible]
T-3	Transformer, audio output	[illegible]

TUBE COMPLEMENT

Schematic Symbol	Description	Hallicrafters Part Number
V-1	12BE6, converter	[illegible]
V-2	12BA6, I-F amplifier	[illegible]
V-3	12AV6, detector, AVC, and audio amplifier	[illegible]
V-4	50C5, audio output	[illegible]
V-5	35W4, rectifier	[illegible]

MISCELLANEOUS PARTS

Schematic Symbol	Description	Hallicrafters Part Number
AO-1	Appliance Receptacle	[illegible]
	[illegible] & Clock Assembly	[illegible]
	Bracket, cabinet back mtg.	[illegible]
	Bracket, chassis mtg.	[illegible]
	Bracket, clock; left	[illegible]
	Bracket, Clock; right	[illegible]
	Bracket, volume control mtg.	[illegible]
	Cabinet, for model [illegible]; [illegible]	[illegible]
	Cabinet, for model [illegible]; [illegible]	[illegible]
	Cabinet, for model [illegible]; walnut	[illegible]
	Clip, I-F mounting	[illegible]
M-1	Clock Unit, [illegible], [illegible] cycles AC only; includes S-1 & S-2	[illegible]
M-1	Clock Unit, [illegible], [illegible] cycles AC only; includes S-1 & S-2	[illegible]
	Clock Disc	[illegible]
	Coupler, Audio; includes C-6, C-7, C-9, C-10, C-11, R-8, R-9, & R-10	[illegible]
	Glass, face	[illegible]
	Grille, speaker	[illegible]
	Handle, [illegible]	[illegible]
	Insulator, volume control	[illegible]
	Knob assembly, volume control	[illegible]
	Knob, clock	[illegible]
	Knob, tuning; front	[illegible]
	Knob, tuning; rear	[illegible]
PL-1	Line cord & plug assembly	[illegible]
	Lock, line cord; male	[illegible]
	Lock, line cord; female	[illegible]
	[illegible], clock support; [illegible]	[illegible]
	Plate, dial	[illegible]
	Plate, spacer; [illegible]	[illegible]
	Pointer, dial	[illegible]
	Retainer, spring	[illegible]
	Shield, clock; [illegible]	[illegible]
	Shield, clock; rear	[illegible]
	Shield, [illegible] tube	[illegible]
	Socket, miniature tube; 7 pin	[illegible]
LS-1 & LS-2	Speaker; [illegible] inch, PM	[illegible]
	String, [illegible]; [illegible]	[illegible]
S-1 & S-2	Switches; part of M-1	

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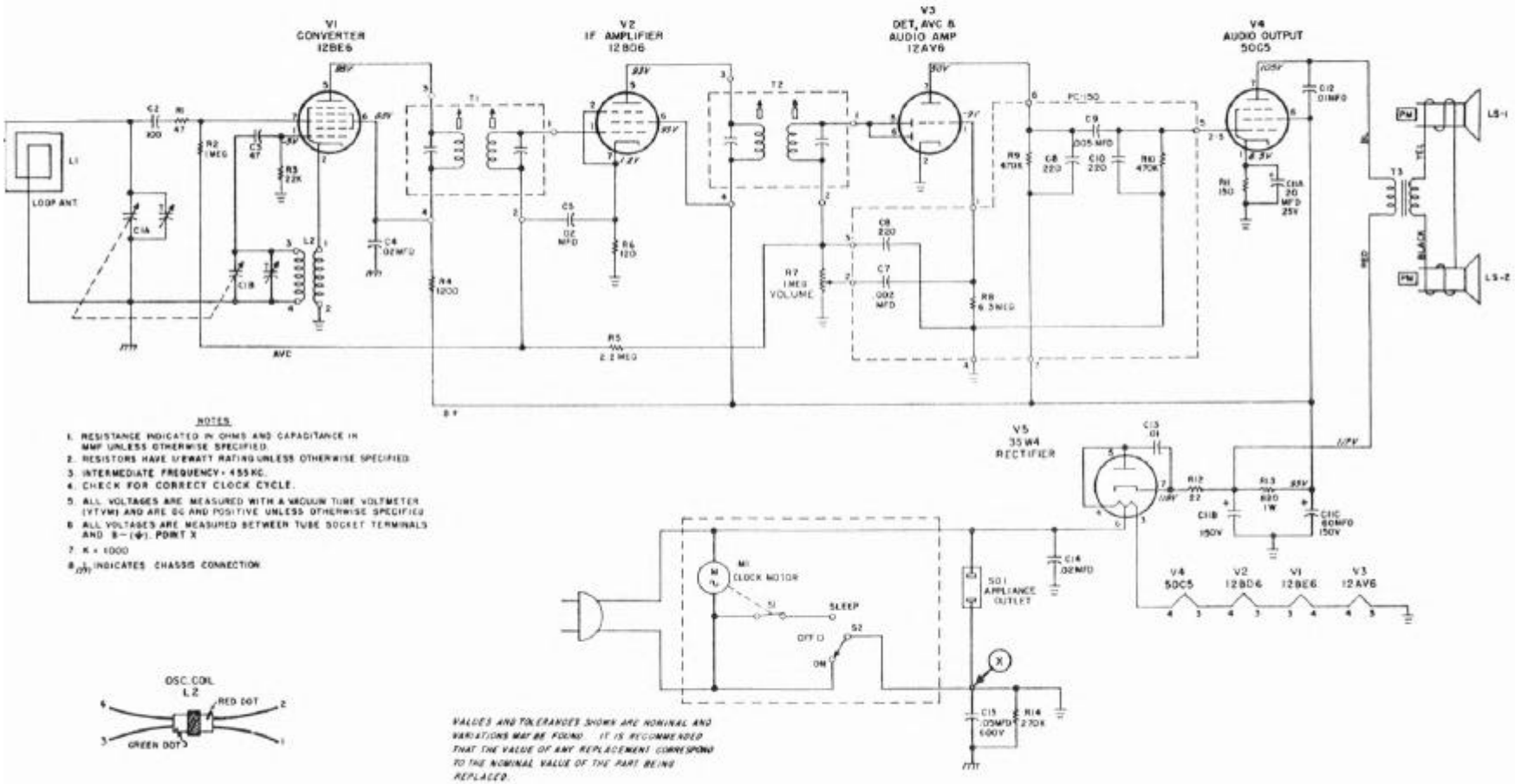

NOTES

1. RESISTANCE INDICATED IN OHMS AND CAPACITANCE IN MMF UNLESS OTHERWISE SPECIFIED.
2. RESISTORS HAVE ½ WATT RATING UNLESS OTHERWISE SPECIFIED.
3. INTERMEDIATE FREQUENCY = 455 KC.
4. CHECK FOR CORRECT CLOCK CYCLE.
5. ALL VOLTAGES ARE MEASURED WITH A VACUUM TUBE VOLTMETER (VTVM) AND ARE DC AND POSITIVE UNLESS OTHERWISE SPECIFIED.
6. ALL VOLTAGES ARE MEASURED BETWEEN TUBE SOCKET TERMINALS AND B− (⏚), POINT X.
7. K = 1000.
8. ⏚ INDICATES CHASSIS CONNECTION.

VALUES AND TOLERANCES SHOWN ARE NOMINAL AND VARIATIONS MAY BE FOUND. IT IS RECOMMENDED THAT THE VALUE OF ANY REPLACEMENT CORRESPOND TO THE NOMINAL VALUE OF THE PART BEING REPLACED.

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Fig. 5. Schematic Diagram