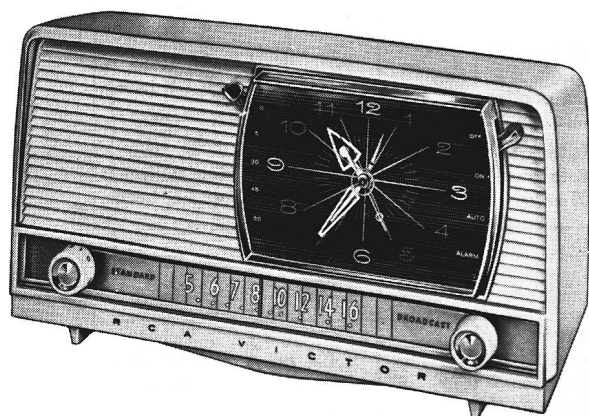




RCA VICTOR



Model C-321

A-C Operated Clock-Radio

MODEL C-321

SERVICE DATA

— 1958 No. 4 —

ISSUED BY
SERVICE DIVISION
RCA VICTOR COMPANY, LTD.
MONTREAL, CANADA

SPECIFICATIONS

TUNING RANGE540-1,600 kc

INTERMEDIATE FREQUENCY455 kc

TUBE COMPLEMENT

- (1) RCA 12BE6Converter
- (2) RCA 12BA6I.F. Amplifier
- (3) RCA 12AV6Det.-AVC-A.F. Amp.
- (4) RCA 50C5Output
- (5) RCA 35W4Rectifier

POWER SUPPLY RATING

115 volts, 60 cycles, a. c.35 watts

Caution: Do not connect to a d. c. power supply.

LOUD SPEAKER

Size and type4 in. P.M.
Voice coil impedance3.2 ohms at 400 cycles

POWER OUTPUT

Undistorted1.0 watts
Maximum1.3 watts

TUNING DRIVE RATIO9½:1 (4¾ turns of knob)

WEIGHT6 lbs. net

CABINET DIMENSIONS

	Height	Width	Depth
Model C-321	6¼"	12¾"	6"

DESCRIPTION

The Model C-321 is a five-tube (including rectifier) table model clock-radios designed for operation on a 115 volt 60 cycle power supply. The cabinet completely encloses the radio chassis and clock, using a molded hood instead of a conventional back cover. The chassis and clock are mounted in a plastic "cradle" which comprises the cabinet bottom and front. The plastic slide rule dial is heat-sealed to the cradle.

The chassis is of the "printed wiring" type in which all electrical components except loop antenna and speaker are mounted on an insulation plate. A conventional superheterodyne circuit is employed using 150-milliamperere series—string miniature tubes. All wiring, except for external leads, is "printed" on the underside of the insulation plate. The switching type phono input jack is accessible at the left side of the cabinet.

The clock-timer features not only the commonly accepted self-starting type of clock with sweep-second hand but also a clock-controlled switch which will: (1) turn the radio (and appliance if desired) off after a period of operation of up to 60 minutes; (2) turn the radio (and appliance if desired) on at a

time predetermined up to 11 hours in advance, and (3) sound an alarm (if desired) at the predetermined time. Lever type function knobs are used for maximum ease of operation.

An appliance outlet having a rated capacity of 1100 watts is wired in parallel with the radio, allowing an appliance to be connected and the clock-timer set to turn the appliance on at a predetermined time.

SUPPLEMENTARY INFORMATION

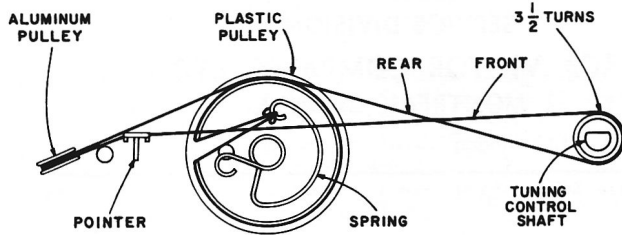
Issue	Subject
List related Service Letters above.	

Alignment Procedure

Test Oscillator—For all alignment operations, connect the low side of the test oscillator to the "common negative wiring." If a power supply isolation transformer is not available for use during service, an isolating capacitor should be used between the low side of the test oscillator and the "common negative wiring."

If an audio output meter is used for alignment indication, keep the oscillator output as low as possible to avoid a-v-c action.

Dial Indicator—With tuning condenser plates fully meshed, set left hand edge of dial indicator to the calibration mark on the dial backplate.



DCA-119

ASSEMBLY SHOWN WITH TUNING CONDENSER PLATES FULLY MESHED.

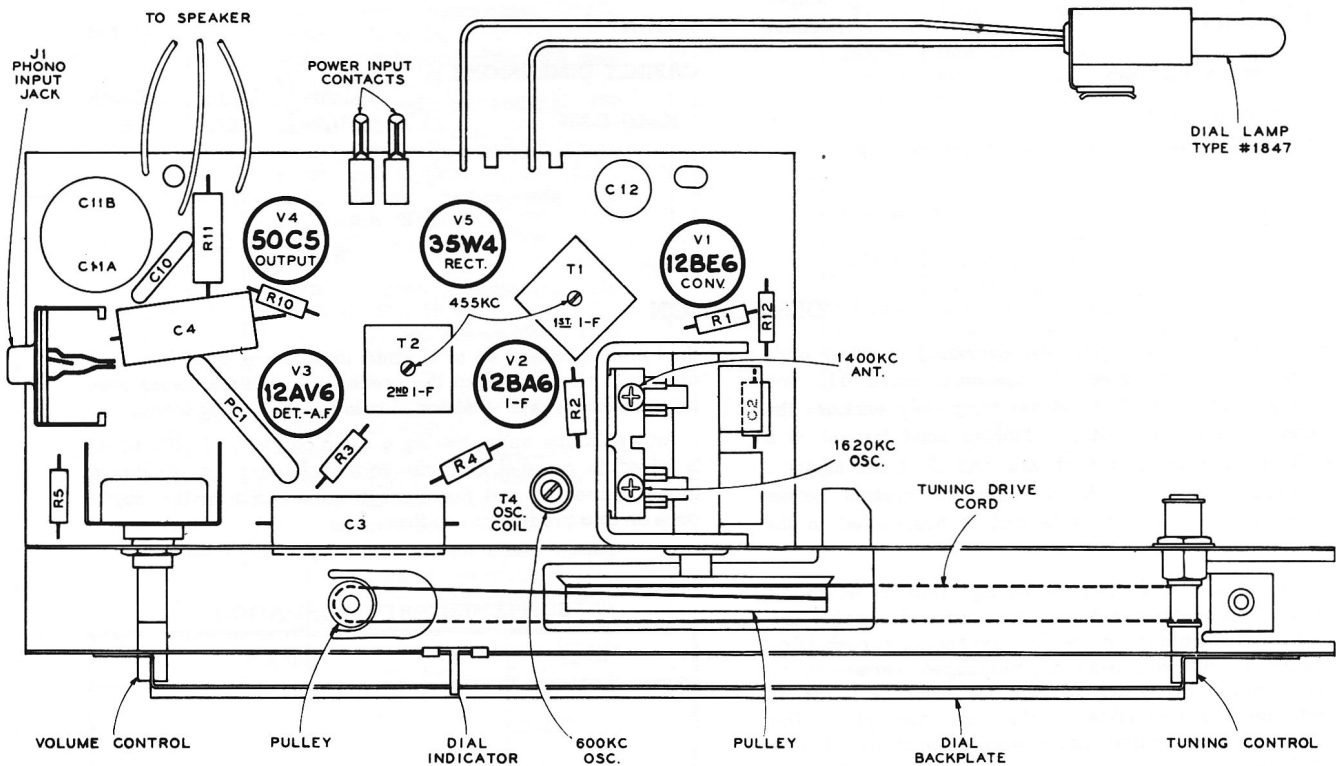
Tuning Drive Cord Assembly

Step	Connect the high side of test-oscillator to—	Tune test-osc. to—	Turn radio dial to—	Adjust the following for max. output
1	12BA6 I-F grid through .01 mfd. capacitor	455 kc	Quiet-point 1,600 kc end of dial	T2 (top) 2nd I-F trans.
2	Stator of C1-B through .01 mfd.			T1 (top and bottom) 1st I-F trans.
3		1,620 kc	Gang fully open	osc. trimmer C1-A
4	Short wire placed near loop to radiate signal	1,400 kc	1,400 kc signal	ant. trimmer C1-B
5		600 kc	600 kc signal	osc. coil T-4 (rock gang)
6	Repeat steps 3, 4, and 5			

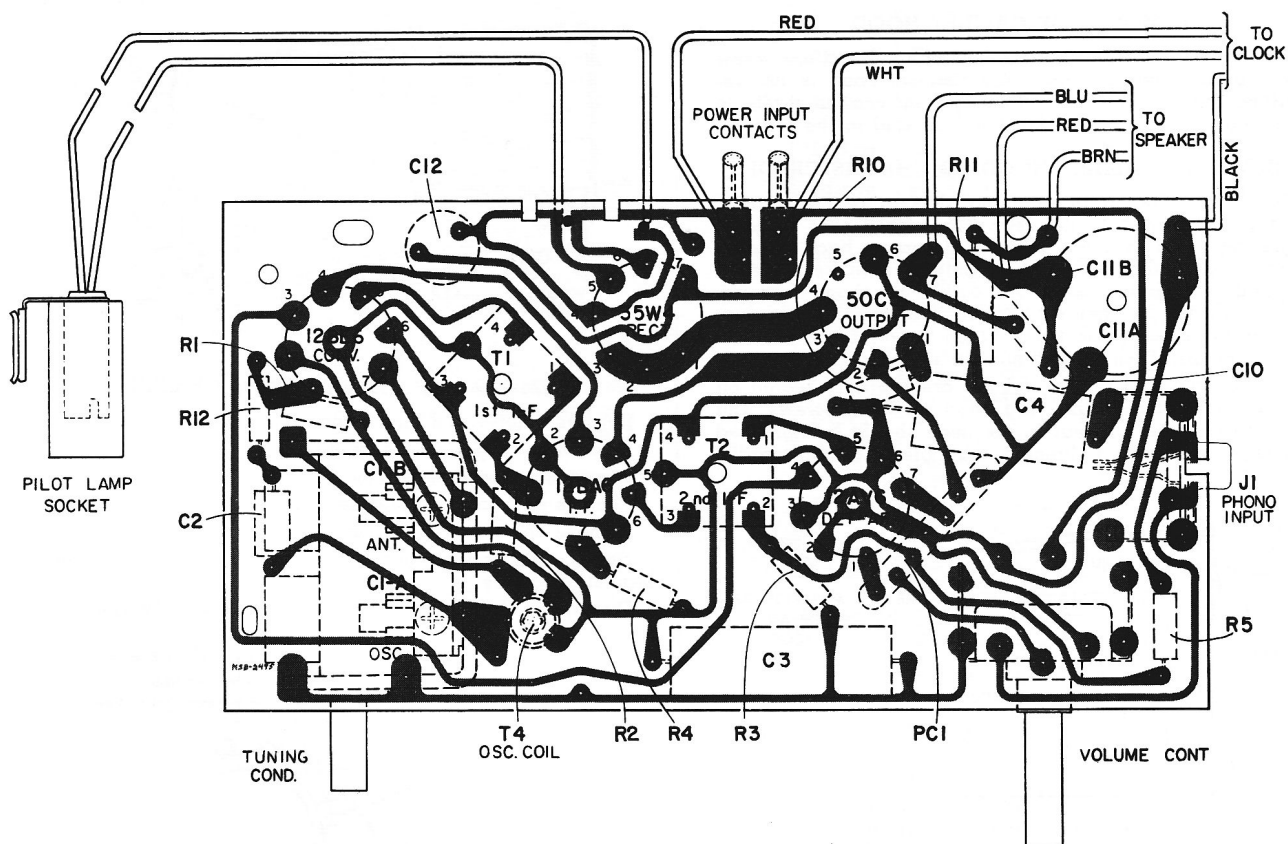
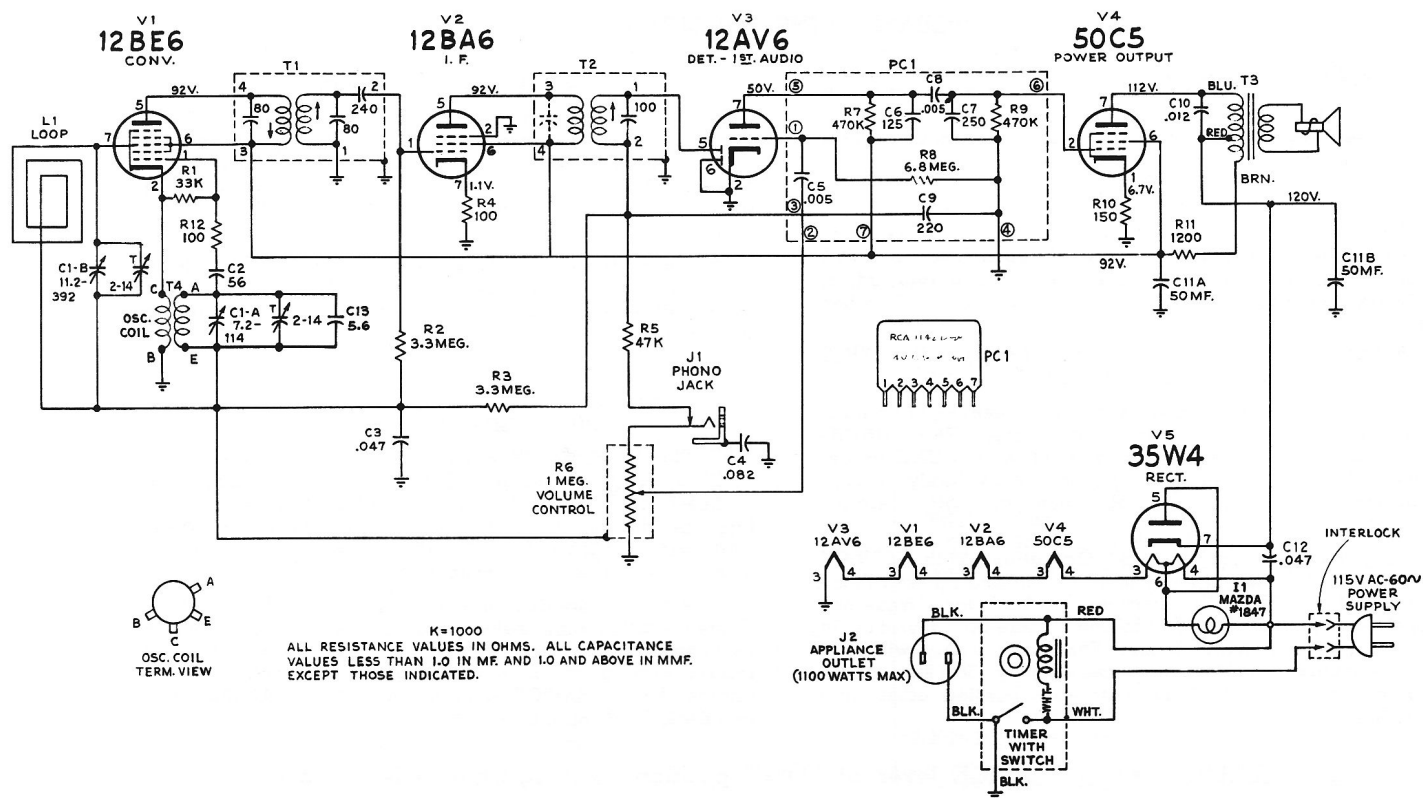
Servicing Precaution

The "common negative wiring" of these receivers is connected directly to one side of the AC power supply. Service should not be attempted by anyone not thoroughly familiar with the precautions necessary when working on this type of circuit.

An isolation transformer (115 v./115 v.) should be connected between the AC power line and the power attachment cord of the radio before performing any service on the radio.



Complete Chassis Assembly —
View from Component Side



Chassis Wiring and Components—View from Wiring Side

The assembly represented above is viewed from the wiring side of the board.

The printed wiring, on the near side of the board, is presented in "phantom" view superimposed on the component layout of the reverse side.

OPERATING INSTRUCTIONS

To Set Clock Time—Push in and turn TIME SET knob (at back of cabinet).

To Set Alarm Time—Turn TIME SET knob counterclockwise (at back of cabinet).

RADIO OPERATION

To Play the Radio—With phono input cable removed from PHONO INPUT socket, move SERVICE lever to "ON." Turn TUNING knob to select desired station and adjust VOLUME as desired. Move SERVICE lever to "OFF" when through listening.

Always remove phono input cable from PHONO INPUT socket when radio operation is desired.

To Set Radio for "SLEEP" Operation—Move SLEEP lever for desired playing time (up to 60 minutes). Turn TUNING knob to select desired station and adjust VOLUME as desired. "SLEEP" operation can be used individually, in conjunction with "Wake-up" operation or with "Alarm" operation.

For "Wake-up" or "Alarm" Operation—With SERVICE lever at "ON," tune in the desired station and adjust volume level. Move SERVICE lever to "AUTO" for "Wake-up" operation only or to "ALARM" for "Wake-up" operation in conjunction with alarm buzzer. The alarm buzzer will start a few minutes after radio starts to play. To stop alarm buzzer, move SERVICE lever to any position other than "ALARM."

IMPORTANT—Keep SERVICE lever at "OFF" position when instrument is not in use.

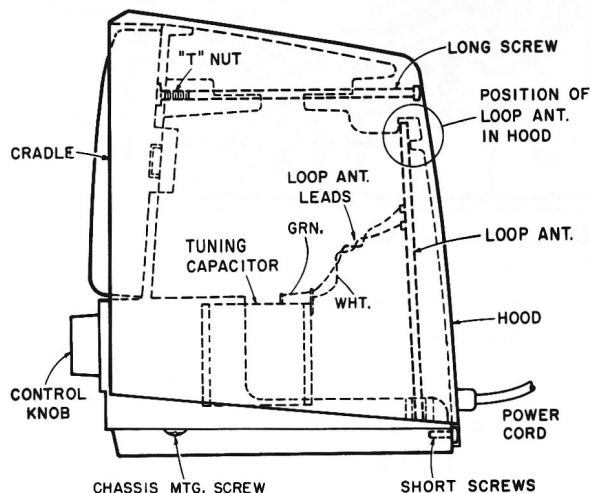
REMOVAL OF CABINET HOOD

Remove two screws at bottom rear of hood and one screw (long) at top rear of hood. The time-set knob is not removable. Pull bottom of hood away from chassis cradle to disengage power interlock. Lift hood up and to the rear.

ASSEMBLING CABINET HOOD TO CHASSIS CRADLE

Place loop antenna in retaining slots at rear of cradle, pull top of antenna to the rear. Place hood over antenna so that top edge of antenna will first contact back of hood. Lower hood so that top edge of antenna will be engaged by positioning boss inside of hood. Push hood forward. Refer to illustration below. Position the power cord plug, which is attached to the hood, to the power input contacts on the chassis. Push plug firmly on to the contacts.

Make certain that edges of hood are properly seated on chassis cradle before tightening hood retaining screws. The long screw at the top rear of the hood should be tightened with care; excessive tightening may break chassis cradle.



Cabinet Assembly

APPLIANCE OPERATION

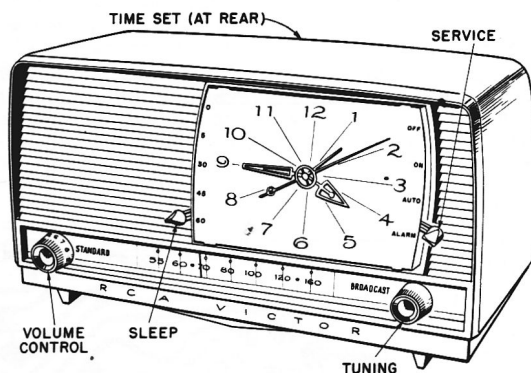
To Turn Appliance on Automatically—Turn TIME-SET knob to desired starting time. Move SERVICE lever to "AUTO" or "ALARM." Plug appliance into APPLIANCE outlet. With this setting, the appliance will operate continuously after starting time unless disconnected or SERVICE lever is moved to "OFF."

To Time Appliance Operation—With SERVICE lever at "OFF," plug appliance to be timed into APPLIANCE outlet. Move SLEEP lever for desired operating time (up to 60 minutes).

PHONOGRAPH OPERATION

To Play Records—With phono input cable inserted into PHONO INPUT socket and SERVICE lever at "ON," turn VOLUME knob clockwise about one-half turn and adjust later as desired. Connect phonograph attachment power cord into APPLIANCE outlet. Play records according to phonograph attachment instructions.

To Wake-Up to Record Music—Turn TIME-SET knob to desired starting time. Before retiring, operate record player as described above to adjust volume level. Select and load records desired and start record player into automatic operation. Move SERVICE lever to "AUTO" or "ALARM" just as needle lands on first record.



REMOVAL OF CHASSIS FROM CRADLE

Remove volume and tuning control knobs.

Disconnect clock leads at chassis.

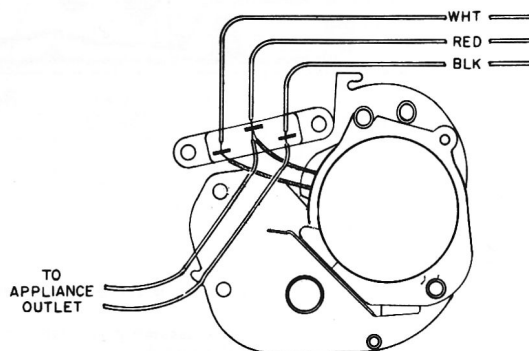
Disconnect three speaker leads.

Remove one screw at outside of cradle (close to speaker).

Remove one screw at bottom of cradle (right end).

Swing right end of chassis (as viewed from rear) to the rear of the cradle.

Disengage chassis from cradle by moving endways.



Clock Connections

REPLACEMENT PARTS

SYMBOL NO.	STOCK NO.	DESCRIPTION	SYMBOL NO.	STOCK NO.	DESCRIPTION
CHASSIS ASSEMBLY RC-1166B					
C1A, C1B	S-21912	Capacitor—Variable tuning capacitor		103216	Plate—Dial backplate with gray decorative lines
C2		Capacitor — Fixed, ceramic, 56 mmf., $\pm 10\%$, 500 v.		103213	Pointer—Dial pointer
C3		Capacitor — Fixed, paper, 0.047 mf., $\pm 20\%$, 400 v.		103198	Pulley—2.69" O.D. phenolic dial cord pulley
C4		Capacitor — Fixed, paper, 0.082 mf., $\pm 10\%$, 400 v.		103212	Shaft—Tuning control drive shaft
C5 to C9 Incl. }	103205	Part of PC1		100643	Socket—Pilot lamp socket with leads
C10	103195	Capacitor — Fixed, paper, 0.012 mf., $\pm 10\%$, 400 v.		103201	Socket—Tube socket, 7 pin miniature for V1, V2, and V3
C11A }	103197	Capacitor — Electrolytic, 50/50 mf., 150/150 v.		103200	Socket—Tube socket, 7 pin miniature for V4 and V5
C11B }		Capacitor — Fixed, paper, 0.047 mf., $\pm 20\%$, 400 v.		76332	Spring—Dial cord tension spring
C12		Capacitor — Fixed, ceramic, 5.6 mmf., ± 0.5 mmf., 500 v., coeff. N-3300		77585	Washer — "C" type retaining washer for tuning control drive shaft
C13		Connector—2-contact closed circuit female phono connector	T3	79283	SPEAKER ASSEMBLY
J1	103199A	Connector — 2 contact female		*S-22281	Transformer—Output transformer
J2	103376	Antenna—Antenna loop and mounting board			Speaker — 4" P.M. speaker complete with cone — LESS output transformer
L1	*S-22284	Circuit—Printed circuit consisting of R7, R8, R9, C5, C6, C7, C8 and C9	J2	103376	MISCELLANEOUS
PC1	103205	Resistor — Fixed, composition, 33,000 ohms, $\pm 20\%$, $\frac{1}{2}$ w.		103186	Connector—2-contact female appliance outlet — LESS mounting bracket
R1		Resistor—Fixed, composition, 3.3 meg-ohms, $\pm 20\%$, $\frac{1}{2}$ w.		*S-22288	Cable—AC power cable and plug
R2, R3		Resistor—Fixed, composition, 100 ohms, $\pm 20\%$, $\frac{1}{2}$ w.		*S-22290	Case—Plastic case back — antique white
R4		Resistor — Fixed, composition, 47,000 ohms, $\pm 20\%$, $\frac{1}{2}$ w.		*S-22289	Case—Plastic case back — pink
R5		Control—Volume control		*S-22289	Case—Plastic case back — turquoise
R6	S-22241	Part of PC1		*S-22291	Case—Plastic case front — antique white
R7 to R9 Incl. }	103205	Resistor—Fixed, composition, 150 ohms, $\pm 10\%$, $\frac{1}{2}$ w.		*S-22285	Clock—Radio clock-timer 100/125 v. 60 cycle
R10		Resistor — Fixed, composition, 1200 ohms, $\pm 10\%$, 1 w.		103227	Dial—Plastic tuning control dial with AM calibration
R11		Same as R4		*S-22286	Knob—Time-set control knob for clock-timer
R12		Transformer — 1st I.F. transformer		103228	Knob—Tuning control knob—antique white — with spring
T1	103206	Transformer — 2nd I.F. transformer		103229	Knob—Volume control knob—antique white — with spring
T2	S-21914	Part of "Speaker Assembly"		103218	Plate—R.H. or L.H. aluminum satin finish cover plate for case front (2 req'd)
T3	79283	Coil — Oscillator coil		103908	Nut—Special brass tee nut for case front and back mounting screw
T4	103204	Board—Printed circuit board chassis assembly including I. F. transformers, oscillator coil, printed audio circuit, interlock contacts, tube sockets, fixed resistors & capacitors — less tubes, tuning capacitor, phono connector, pilot light assembly, volume control, capacitors C4 & C13		S-22237	Nut—Speednut, retainer for speaker (2 req'd)
	103503	Bracket—Dial plate mounting bracket with pulley		105968	Retainer—Clock-timer window retainer (2 req'd)
	103215	Bushing—Tuning control shaft bushing		103219	Screw—#8-32 x 3.94" round head screw for case front and back mounting
	103192	Contact—Single contact male — for AC power input (2 req'd)		S-21603	Spring—Retaining spring for volume control or tuning control knobs
	103236	Cord—Dial drive cord, (approx. 34 inches req'd)		*S-22287	Window—Plastic window for clock-timer
	S-4313	Lamp — Miniature bayonet type 1847		*S-22282	Instruction manual

APPLY TO YOUR RCA DISTRIBUTOR FOR PRICES OF REPLACEMENT PARTS