



# RCA VICTOR



A-C Operated Clock Radio Receivers

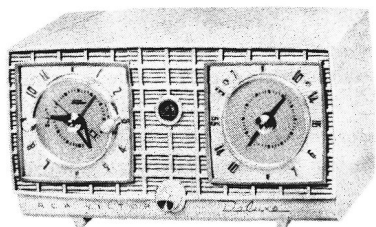
## MODELS C-120 C-121

### SERVICE DATA

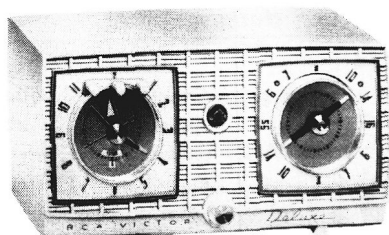
— 1956 No. 5 —

ISSUED BY

GENERAL SERVICE DEPARTMENT  
RCA VICTOR COMPANY, LTD.  
MONTREAL, CANADA



Model C-120



Model C-121

#### ELECTRICAL AND MECHANICAL SPECIFICATIONS

TUNING RANGE .....540-1600 kc

INTERMEDIATE FREQUENCY .....455 kc

#### TUBE COMPLEMENT:

- (1) RCA 12BE6 ..... Converter
- (2) RCA 12BA6 ..... I.F. Amplifier
- (3) RCA 12AV6 ..... Det.-AVC-A.F. Amp.
- (4) RCA 50C5 ..... Output
- (5) RCA 35W4 ..... Rectifier

#### POWER SUPPLY RATING:

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

CAUTION:—DO NOT OPERATE ON D.C.

#### LOUDSPEAKER:

Size and type .....4 in P.M.  
Voice Coil impedance .....3.2 ohms at 400 cycles

#### POWER OUTPUT:

Undistorted .....1.0 watts  
Maximum .....1.5 watts

TUNING DRIVE RATIO .....1:1 (direct drive)

WEIGHT .....6 lbs. net

#### CABINET DIMENSIONS:

Height...6¾" Width...12½" Depth...6½"

#### GENERAL DESCRIPTION

The "C-120" is a deluxe table model clock-radio designed to operate on 105-125 volts, 60 cycle power supply.

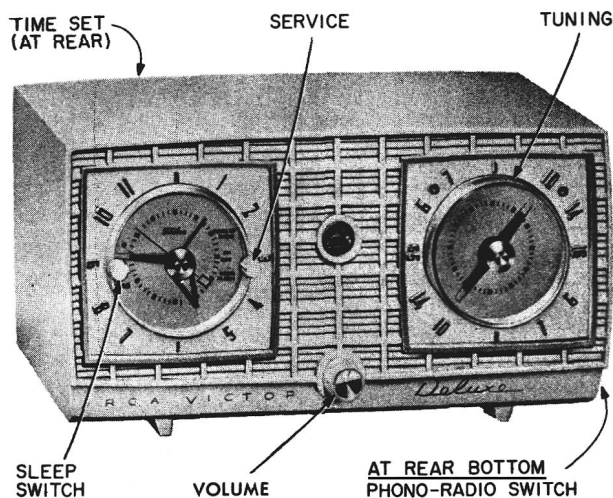
The "C-121" is a deluxe table model calendar-clock-radio designed to operate on 105-125 volts, 60 cycle power supply. An appliance outlet having a rated capacity of 1100 watts is wired in parallel with the radio, allowing an appliance to be connected and the clock-timer set to turn the appliance on at a predetermined time.

The radio provides reception over the standard broadcast band (540-1600 KC.) It uses a superheterodyne circuit, incorporating a converter stage, one stage of i-f amplification, a combined detector — AVC — 1st audio amplifier, a power output stage and a half-wave rectifier. All tubes are of the miniature type and have their heaters connected in series. The i-f transformers and oscillator coil are permeability tuned.

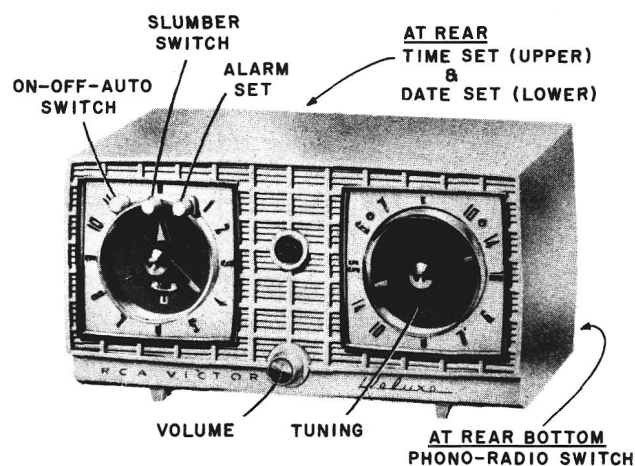
A ceramic-plate printed circuit is utilized in the audio circuit of the receiver. The phono-jack and the phono-radio selector switch are located on the rear chassis apron.

The "Telechron" clock-timer used on the C-120 features the commonly accepted self-starting type of clock.

The "Telechron" clock mechanism used in the "C-121" incorporates a calendar feature in which the day-of-the-week and day-of-the-month indications are automatically changed every night. This is in addition to the commonly accepted self-starting feature with sweep-second hand. The clock-controlled switch will: (1) turn the radio (and appliance if desired) off after a period of operation of up to 60 minutes, (2) sound an alarm at a predetermined time (with or without radio operation) and (3) turn the radio (and appliance if desired) on at a time predetermined up to 11 hours in advance.



Model C-120



Model C-121

### LEAD DRESS

1. Dress all heater leads down to chassis.
2. Dress R12 (33 ohm resistor) away from all leads.
3. Dress C11 in such manner as to prevent shorts to chassis.
4. Dress audio leads to volume control down to chassis.
5. Dress PC-1 (printed circuit) away from I.F. circuits.
6. Dress 50C5 plate lead down to chassis and along back apron.
7. Dress black lead to clock switch terminal away from mechanism of clock switch.

### RADIO CHASSIS AND CLOCK SERVICE

**Tube Service**—To make tubes accessible for testing, remove the hex head screw at the center of the back panel. The loop antenna is located on this back panel.

**Radio Chassis Service**—Proceed as above, removing the volume and tuning control knobs by pulling off, and also removing the three hex head screws and washers on the underside of the cabinet. Do Not remove the clock from the cabinet unless this is necessary for service. Lift off the shield on the underside of the chassis.

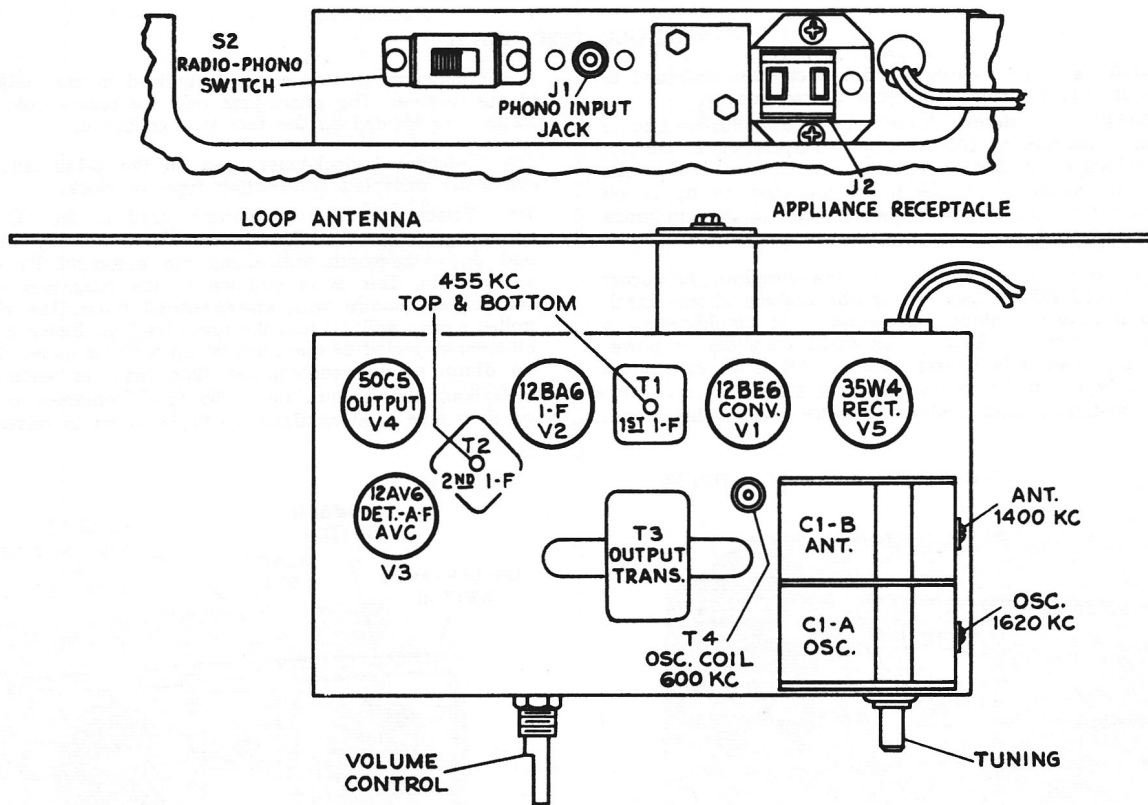
**Clock Service**—Proceed as above. Remove the clock control knobs from the front of the cabinet by pulling off, taking care not to damage the clock control shafts. Remove the four metal clips holding the clock to the cabinet. To prevent scratching the plastic dial faces of the radio and clock, place the instrument face down on a thick soft cloth. When removing the clock, take care not to damage the molded-in plastic rim for mounting the clock.

### Alignment Procedure

**Test-Oscillator**—For all alignment operations, connect the low side of the test-oscillator to the receiver chassis, and keep the oscillator output as low as possible to avoid a-v-c action.

An isolation transformer (115 v./115 v.) may be necessary for the receiver if the test oscillator is also a.c. operated.

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 1600 kc end of dial	T2 (top and bottom) 2nd I-F trans.
2	Stator of C1-B through .01 mfd.			T1 (top and bottom) 1st I-F trans.
3	Short wire placed near loop to radiate signal	1620 kc	Max. clockwise	osc. trimmer C1-A
4		1400 kc	1400 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.		



Tube and Trimmer Locations

**Model C-120, C-121**

**To Set Clock Time**—Turn TIME SET knob (at back of cabinet).

**To Set Alarm Time**—Pull out and turn alarm knob (at front of cabinet).

**Model C-121**

**To Set Calendar Day and Date**—Turn DATE SET knob counterclockwise until correct day of the week (Saturday, Sunday, etc.) appears in CALENDAR window. Then turn knob clockwise until correct date (28, 29, etc.) appears in window.

The calendar changes between 1:30 A.M. and 4:30 A.M. every 24 hours. To make sure the change occurs shortly after MIDNIGHT, turn TIME SET knob CLOCKWISE until CALENDAR changes date. Then, if setting time BEFORE NOON, turn TIME SET knob until the clock hands are at correct time; if setting AFTERNOON OR EVENING TIME, continue turning hour hand BEYOND THE TWELVE O'CLOCK marking to the correct time.

Calendar will require resetting after any month which has less than 31 days.

**RADIO OPERATION**

**To Play the Radio** — With PHONO-RADIO switch in "RADIO" position, turn SERVICE knob to "ON." Turn TUNING knob to select desired station and adjust VOLUME as desired. Turn SERVICE knob to "OFF" when through listening.

Always keep PHONO-RADIO switch in "RADIO" position when radio operation is desired.

**To Set Radio for "SLEEP" Operation**—Turn SLEEP knob 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 or in conjunction with "Wake-up" operation.

**For "Wake-up" Operation**—With SERVICE knob turned to "ON," tune in the desired station and adjust volume level. Turn SERVICE knob to "AUTO" for "wake-up" operation

only. For "Wake-up" operation in conjunction with alarm buzzer, pull out on ALARM knob. The alarm buzzer will start a few minutes after radio starts to play. To turn alarm buzzer off, push in on ALARM knob.

**APPLIANCE OPERATION**

**Model C-120 To Turn Appliance on Automatically** — Turn TIME-SET knob to desired starting time. Turn SERVICE knob to "WAKE-UP RADIO" or "RADIO-ALARM." Plug appliance into APPLIANCE outlet. With this setting, the appliance will operate continuously after starting time unless disconnected or SERVICE knob is turned to "OFF."

**Model C-121 To Turn Appliance on Automatically** — Turn TIME-SET knob to desired starting time. Turn SERVICE knob to "AUTO." Plug appliance into APPLIANCE outlet. With this setting, the appliance will operate continuously after starting time unless disconnected or SERVICE knob is turned to "OFF."

**To Time Appliance Operation** — With SERVICE knob turned to "OFF," plug appliance to be timed into APPLIANCE outlet. Turn SLEEP switch for desired operating time (up to 60 minutes).

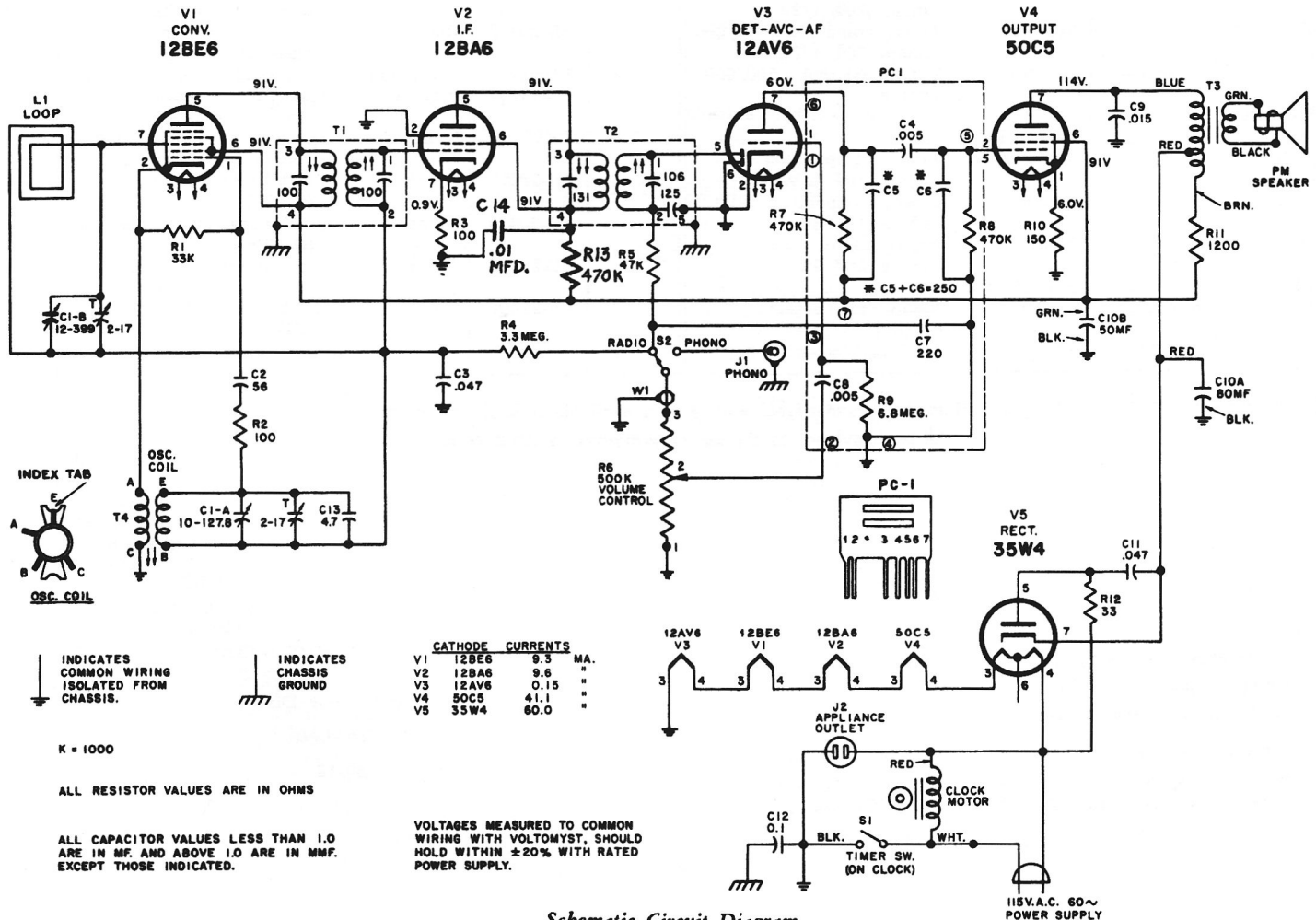
**PHONOGRAPH OPERATION**

**To Play Records** — With PHONO-RADIO switch in "PHONO" position and SERVICE knob turned to "ON," turn VOLUME knob clockwise about one-half turn and adjust later as desired. Connect phonograph attachment power cord into APPLIANCE outlet and output cord to PHONO socket. Play records according to phonograph attachment instructions.

Always keep PHONO-RADIO switch in "PHONO" position when playing records.

**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. Turn SERVICE knob to "AUTO" just as needle lands on first record.

**IMPORTANT—Keep SERVICE knob "OFF" when instrument is not in use.**



*Schematic Circuit Diagram*

## REPLACEMENT PARTS

Insist on Genuine Factory Tested Parts, which are readily identified and may be purchased from Authorized Dealers.

SYMBOL	STOCK NO.	DESCRIPTION	SYMBOL	STOCK NO.	DESCRIPTION
<b>CHASSIS ASSEMBLY.</b>			T2	S-5721	Transformer 2nd I. F. transformer
C1A C1B	*S-20978	Capacitor Variable tuning capacitor	T3	*S-20979	Transformer Audio output transformer
C2		Capacitor Fixed, ceramic, 56 mmf, 20% 500v DC	T4	*S-20988	Coil Oscillator coil
C3	73553	Capacitor Fixed, paper, 0.047 mf, 20% 400v DC		73935	Clip I. F. transformer mounting clip
C4 to 68 Incl.		Part of PC 1		79304	Cord Power cord and plug
C9		Capacitor Fixed, paper - 0.015 mf, 10% 400v DC		79263	Shield Tube shield for V3
C10A, B	*S-21231	Capacitor Electrolytic, 80/50 mf, 150v DC		73117	Socket Tube socket for V1, V2 & V3
C11	75071	Capacitor Fixed, paper 0.047 mf, 20% 400v DC		101375	Socket Tube socket for V4 & V5
C12	73551	Capacitor Fixed, paper - 0.1 mf, 10% 400v DC	<b>SPEAKER ASSEMBLY</b>		
C13		Capacitor Fixed, ceramic 4.7 mmf, 10% 500v	*S-21229	Speaker - 4" PM speaker complete with cone and voice coil (3.2 ohms)	
J1	35787	Connector Phono input connector	<b>MISCELLANEOUS ASSEMBLY</b>		
J2	*S-20977	Connector Appliance outlet connector	*S-20997	Cabinet Polystyrene cabinet assembly (black) (C121)	
L1	S-20975	Antenna Loop antenna and back cover assembly (C-120)	*S-20967	Cabinet Polystyrene cabinet assembly (green) (C120)	
L1	S-20976	Antenna Loop antenna and back cover assembly (C-121)	*S-20968	Cabinet Polystyrene cabinet assembly (ivory) (C120)	
PC1	*S-21017	Circuit Printed circuit assembly (includes C4, C5, C6, C7, C8, R7, R8, R9)	*S-20966	Cabinet Polystyrene cabinet assembly (maroon) (C120)	
R1		Resistor Fixed, composition 33,000 ohms 20% 1/2w	*S-20998	Cabinet Polystyrene cabinet assembly (white) (C121)	
R2, R3		Resistor Fixed, composition 100 ohms 20% 1/2w	37831	Fastener Cabinet back push-on fastener (2 req'd)	
R4		Resistor Fixed, composition 3.3 meg. 20% 1/2w	*S-20972	Knob Radio-clock timer control knob	
R5		Resistor Fixed, composition 47,000 ohms 20% 1/2w	*S-20971	Knob Tuning knob ass'y with pointer and spring	
R6	*S-20980	Control Volume control - 500,000 ohms	*S-20973	Knob Volume control knob - clean polystyrene	
R7, to R9 Incl.		Part of PC 1	101668	Monogram RCA Trademark monogram	
R10		Resistor Fixed, composition 150 ohms 10% 1/2w	*S-21003	Retainer Spring clip - retainer for clock timer (4 req'd)	
R11		Resistor Fixed, composition 1200 ohms 10% 1w	70425	Spring Spring clip for tuning and volume control knobs	
R12		Resistor Fixed, composition 33 ohms 20% 1w	*S-20969	Timer Clock timer - 60 cycle - (C-120)	
S1		Part of timer unit	*S-20970	Timer Clock timer - 25 cycle - (C-120)	
S2	*S-20455	Switch Radio-phono selector switch	*S-20999	Timer Clock timer - 60 cycle - (C121)	
T1	S-5720	Transformer 1st I. F. transformer	*S-21000	Timer Clock timer - 25 cycle - (C121)	

\* Indicates New Stock Items. Only items listed under stock numbers are available as Replacement Parts.  
All parts subject to change or withdrawal without notice.

## Clock Mechanism Service

All clock mechanisms which are defective or require general repair, should be sent to the Service Depots listed with the following information:

"If the clock is within the warranty period, the dealer is to state the date of purchase by the customer, and the letter or purchase order should be marked "In Warranty"."

## SERVICE DEPOTS

For Service Depots nearest your District, please refer to Service Letter

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