

RCA Victor
TELEVISION
CONSOLE MODEL TRK 5



RCA MANUFACTURING COMPANY, INC.
CAMDEN, N. J., U. S. A.

Information for the Owner

RCA Victor

TELEVISION RECEIVER

FOR

Pictures, Accompanying Sound, and All Wave Radio

MODEL TRK 5

CONGRATULATIONS: An RCA Victor Television Receiver in your home is a cause for feeling justly proud as you go "all the way with RCA" into the new enchantment of seeing as well as hearing by the turn of a knob.

The RCA Victor Model TRK 5 produces a picture with good detail on a five-inch Kinescope screen.

The dealer who sold you the instrument will be pleased to arrange for its unpacking and installing by a competent television technician who will instruct you in its use and explain the controls and best method of operation. However, we advise the careful reading of this booklet so that you may be able to understand the important points wherein Television differs from Radio Broadcast reception, and how to always obtain the best pictures.

GUARANTEE AND REGISTRATION

In the envelope together with this instruction book are four cards:

1. A card for your own record, which should be properly filled in by your television technician at the time of installation and should be kept by you in case of change of location or need for adjustments or repairs.
2. The guarantee registration card, addressed to the RCA Manufacturing Co., Inc., Camden, New Jersey. *This card must be filled in and returned to RCA Manufacturing Co. in order to validate the guarantee which is printed on the instrument label located inside the cabinet.*
3. A registration card for the dealer, which will be retained by him for his records.
4. A card similar to No. 3, to be filled in and mailed to the RCA distributor by the dealer who serves you.

WARNING

The Manufacturer's guarantee is valid only in the event that the Guarantee Registration card is filled in and mailed to the RCA Manufacturing Co. Also the unpacking and installation must be carried out by a competent television technician, and no unauthorized person, at any time, may tamper with the assembly, wiring, adjustments or circuits.

This Television Receiver is a precision instrument and its installation with an effective antenna for best picture reception is a matter of involved detailed knowledge and experience. When your authorized

television technician has made the installation and demonstrated the receiver to your satisfaction in your home, it is a perfectly safe and reliable instrument for your entertainment, easy to operate and should only require very occasional servicing or readjustment.

However, if you have any trouble or difficulty with the operation, immediately turn off the power, call in your dealer and do not attempt to make any adjustments which you were not definitely advised to do at the time of installation. Also, if you wish the instrument to be moved, call your dealer, as readjustments may be necessary.

This Television Receiver contains apparatus producing high voltages. No one but a trained television technician should make repairs or adjustments to the television apparatus.

A good ground connection from the terminal "G" on the antenna terminal board to a cold water pipe or equivalent "good ground" is absolutely necessary to avoid possible danger from electric shock.

The receiver is equipped with two safety lock-in switch devices and when the back is removed power is cut off from all the high voltage television apparatus. The two switches are on the inside of the two side panels. No danger is possible from the high voltage television apparatus unless these two switches are simultaneously pushed in. Under no circumstances should these switches be tampered with.

HOW YOU RECEIVE TELEVISION PICTURES

Television reception follows the laws governing high frequency wave transmission and reception. Television waves act in many respects like light waves. This means that there are problems of reflection, diffusion, intensity and interference, all of which affect the reproduction of the picture.

The receiver antenna should preferably be at a good height, without interruption in direct "line of sight" of the transmitter antenna, of the correct type, and correctly installed. Buildings and other structures may obstruct and reflect the television waves, automobile ignition systems, diathermy apparatus in hospitals and airplanes flying low may all have an adverse effect.

The scanning device and associated apparatus of the Television Transmitter transform the original scene into a myriad of electric impulses and radiate these in succession, as formed, through the air. The receiver takes the myriad electric impulses and rebuilds the original picture with sufficient rapidity and synchronization to appear smooth and complete to the human eye.

Television pictures may be compared in certain ways with motion pictures. The illumination in the room should be dimmed—no light close to or falling on the screen. During the day it will usually suffice to draw the curtains. In motion pictures approximately 24 successive still pictures are flashed on the screen per second and the eye sees these as a continuous picture. In television, the pictures are reproduced at 30 per second by reassembling the whole sequence of elements for each picture in one-thirtieth of a second.

FEATURES AND ACCESSORIES

The RCA Model TRK 5 Television and All Wave Sound Receiver is designed for operation on the present Television Broadcast Bands between 44 and 90 megacycles to reproduce both picture and sound transmissions, and to receive Radio Broadcasts on the three standard major radio bands between 550 and 22,000 kilocycles.

The RCA Victor TRK 5 reproduces television pictures of good brightness and detail with the accompanying television sound. In addition, the TRK 5 incorporates a Radio Receiver with reception on Standard Broadcast and Medium and Short Waves, Push Button Electric Tuning for your six favorite Standard Broadcast Stations, Magic Eye Tuning indicator, Electric Tuning indicator, and other modern RCA sound developments. The cabinet is a specially styled console with the operating controls on the front panel.

Antenna

A television receiving antenna and its installation must conform to much higher standards than an antenna for reception of international Short Wave and Standard Broadcast signals because:

(1) At the short wave lengths employed, intervening obstacles have a pronounced shielding effect, causing low intensity signals, and often severe trouble with multi-path transmissions; these produce blurring and multi-images.

(2) The picture signal is comprised of a very wide band or range of frequencies, all of which must be received with good efficiency.

(3) The discernment of the eye is much more critical than that of the ear.

Three RCA Television picture and sound antennas are available, the Double "V" Type, the Double Dipole, and the Double Dipole with Reflector. For best results, it is essential that the installation be made by a competent television technician. See Appendix C for instructions on Antennas.

RCA Furniture Polish

The fine finish of your TRK 5 cabinet may best be preserved by the application of a little RCA Furniture Polish at regular intervals, by means of a soft cloth. Buy a bottle from your dealer. It also gives excellent results on other furniture.

INSTALLATION

The correct installation of both receiver and antenna is most important for the reception of satisfactory pictures. A trained television technician representing your dealer should be employed. High frequency electric discharges reaching the antenna or receiver will spoil the picture. Such discharges are caused by ignition systems on gasoline and oil engines and by high frequency electrical apparatus such as X-ray generators and similar devices used for medical and other purposes. The effect of aircraft passing overhead is to slightly reduce the brightness according to their proximity. Automobiles near at hand may produce slashes of light and in certain cases destroy synchronization in the picture. Medical electrical equipment is apt to cause speckled and herringbone bands across the picture.

The necessity of the best possible installation *with good permanent ground connection* of both receiver and antenna, with full consideration of all local conditions, thus becomes apparent and we therefore emphasize the advisability of having a trained television technician make the installation.

Additional notes on installing are given under Appendix "B," page 11.

TELEVISION

Once your TRK 5 is installed and giving good reception, the controls on the front panel are all that are necessary for satisfactory pictures and sound. If the instrument is moved to another location in the home, the screwdriver-operated controls in the back may have to be reset by a competent technician. *The ground connection to the antenna terminal board must always be connected before plugging the power cord into an electric outlet.*

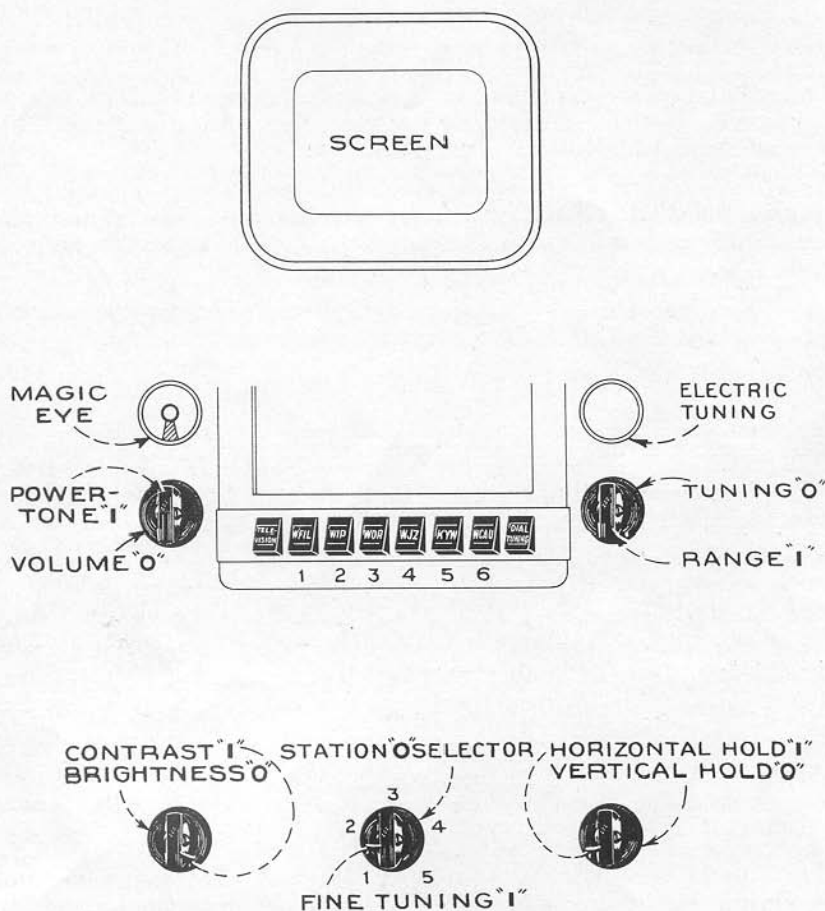


Figure 1—Operating Controls
Controls

Immediately beneath the Television picture screen is the Radio dial with Magic Eye Electric Tuning Indicator, a row of push buttons and two dual Control Knobs. Below these is a row of three more dual Control Knobs. The dual knob at the left of the push buttons is an all purpose control being used for Television and Radio reproductions.

Power-Tone-Volume Control.—This is the dual knob to the left of the radio panel. A twist to the right (clockwise) of the inner "I" section switches on the power to the receiver. Turning it further in the same direction varies the tone for all sound reproduction, full tone range being obtained with the knob fully clockwise. The outer "O" ring regulates the volume of all sound reproduction. Turning it to the right (clockwise) increases the volume.

Television Push Button.—The push button at the extreme left of the row when pressed sets the receiver for Television operation and the accompanying sound. It is released when any one of the other push buttons is pressed.

Contrast and Brightness Controls.—The dual knob at the left of the row of three is the one most frequently used during picture reception. The inner "I" Contrast section regulates the sensitivity of the receiver, varying the black and white tones of the picture being received. Too much contrast gives blurred details and a lack of half-tones, while too little contrast makes it all half-tones or grays. Turning clockwise increases contrast from grays, to black and white. See Figures 2, 4 and 5.

The outer ring "O" is the Brightness Control and affects the average illumination of the picture. Turning clockwise increases the brightness. See Figures 2, 4 and 5.

Station Selector and Fine Tuning.—The outer ring "O" section of the central dual control knob selects the station from which it is desired to receive television transmissions. The range covers five television channels:

- (1) 84 to 90 M.C.
- (2) 78 to 84 M.C.
- (3) 66 to 72 M.C.
- (4) 50 to 56 M.C.
- (5) 44 to 50 M.C.

Set your selector to the number corresponding to the station from which you wish to receive Television Broadcasts.

The inner "I" section of this knob is used to obtain best picture reception by elimination of distortion resulting from interfering radio signals. These interfering signals show as a moving ripple in the picture. Adjustment of this knob will often eliminate the interference. A slight pressure must be exerted on the knob while turning.

Horizontal and Vertical Hold Controls.—The dual knob on the right of the row controls the picture stability. The inner section designated by a "I" is the Horizontal Hold Control and when being set should be turned slowly to the point at which the picture "locks in" horizontally. Figure 6 shows the effect of incorrect setting of the control.

The outer ring section designated by "O" is the Vertical Hold Control and when being set should be turned to the point where the picture "locks in" vertically. See Figure 7.

These two controls on this dual knob should not ordinarily require re-adjustment after good picture reception has once been obtained. An occasional resetting will be necessary due to changing to a different station, and to the gradual ageing of the tubes.

Focusing Control.—This control is a knob located on the back of the cabinet and is used for adjustment of the picture focus. It is in the center of a row of five controls and affects the sharpness (detail observable) of the picture. It must be carefully adjusted when the receiver is first placed in operation. It may be checked occasionally to insure continuous best focusing. See Figure 3.

Pilot Light.—A little jewel pilot light at the bottom of the front of the cabinet tells when current is on to your Television Receiver.

Other Controls.—There are four other controls on the television chassis. All of these will be permanently adjusted by your television technician at the time the TRK 5 is installed, but may require occasional resetting. Call on your dealer when you think resetting is advisable. These controls are accessible from the back of the cabinet. See Figure 13. They are adjustable by means of a screwdriver through two openings in the back of the cabinet. They should be adjusted only by a trained television technician. See Appendix F.

Receiving the Picture

To obtain picture reception:

1. Press the "Television" push button.
2. Turn Power-Tone Control "on" (clockwise) and advance all the way.
3. Advance Volume Control about half way.
4. Set the Station Selector on the Television panel to the desired television station 1-2-3-4- or 5.

5. Turn the Contrast Control fully counterclockwise and then turn Brightness Control slowly until illumination of the screen almost disappears. Advance the Contrast Control until the picture appears at its best. Make final adjustment for best picture by adjusting both the Contrast and Brightness Controls. A little practice at operating these controls will soon enable you to obtain the best picture. The illustrations shown in Figures 2, 4 and 5 give an idea of the effect of the Brightness and Contrast Controls. Incorrect setting has effects somewhat similar to under and over exposure on photographic prints.

6. If the picture is not steady, the "Hold" controls will require slight readjustment. If the picture is moving sideways the Horizontal Hold (inner "I" section of the knob) requires readjustment. If the picture is moving up or down or is off position, then the outer ring "O" of the knob, Vertical Hold Control, requires readjustment. See Figures 6 and 7.

7. Adjust the Volume and Tone Controls for best sound reception.

8. If an interfering ripple is observed in the picture, adjustment of the Fine Tuning knob may reduce or eliminate the distortion. If it does not, call on your dealer.

9. If the picture appears out of focus, carefully turning the Focusing Control knob on the back of the cabinet will remedy the condition. If not call on your dealer.

As long as the Television Receiver is not moved in any way, only an occasional setting of the other controls will be required. Their functions and operation are explained in Appendix F. Call on your dealer at any time resetting of these controls becomes necessary.

A spot in the center and also a slight discoloration of the television screen may gradually appear as the Kinescope ages. This is normal and in no way affects good picture reproduction.

The installation technician, when installing the TRK 5, will be pleased to demonstrate and explain fully the use of all the different controls.

**PICTURE
CORRECTIONS**

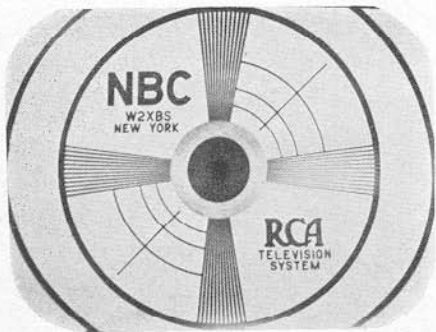


Figure 2—CORRECT PICTURE

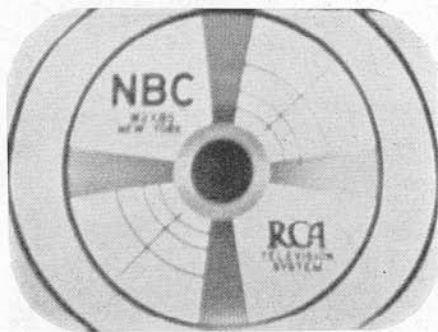


Figure 3—INCORRECT FOCUS
To correct—Adjust Focusing Control for sharpest image

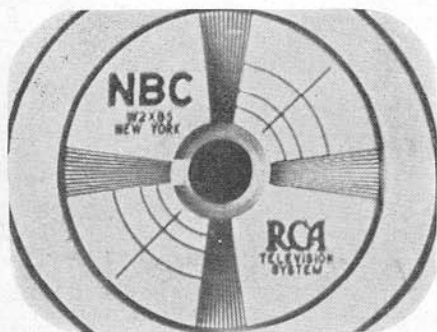


Figure 4—TOO MUCH CONTRAST
To correct—Turn Contrast Control counterclockwise and Brightness Control clockwise

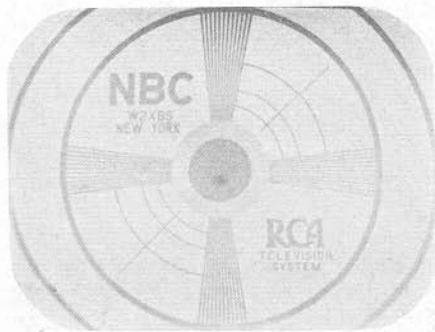


Figure 5—TOO LITTLE CONTRAST
To correct—Turn Contrast Control clockwise and Brightness Control counterclockwise

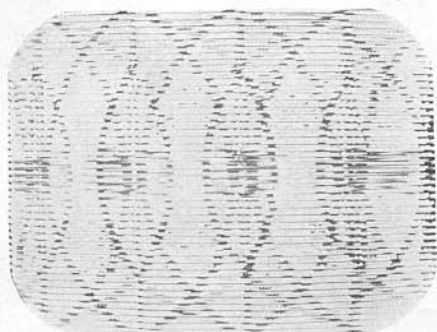


Figure 6—INCORRECT HORIZONTAL HOLD
To correct—Adjust Horizontal Hold Control until picture "locks in"



Figure 7—INCORRECT VERTICAL HOLD
To correct—Adjust Vertical Hold Control until picture "locks in"

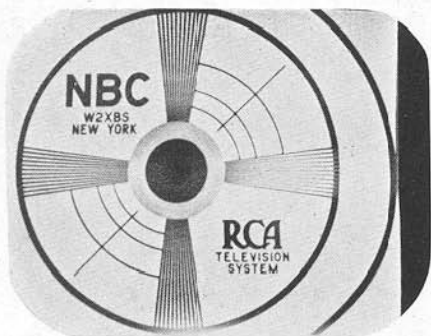


Figure 8—INCORRECT HORIZONTAL CENTERING

To correct—Adjust Horizontal Centering Control (screwdriver adjustment) to center picture horizontally

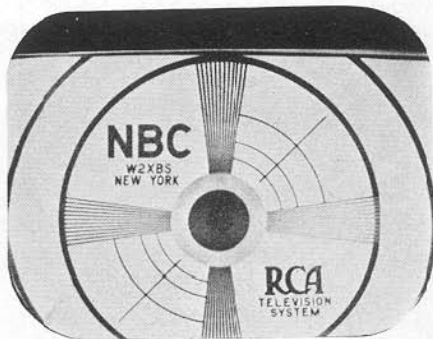


Figure 9—INCORRECT VERTICAL CENTERING

To correct—Adjust Vertical Centering Control (screwdriver adjustment) to center picture vertically

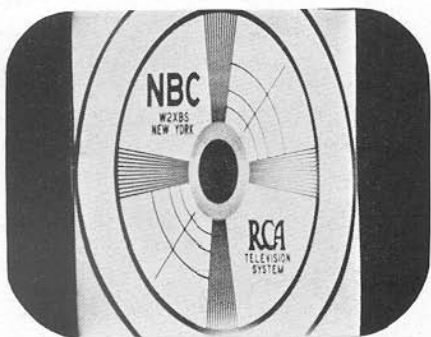


Figure 10—INCORRECT WIDTH

To correct—Adjust Width Control (screwdriver adjustment) for correct width of picture

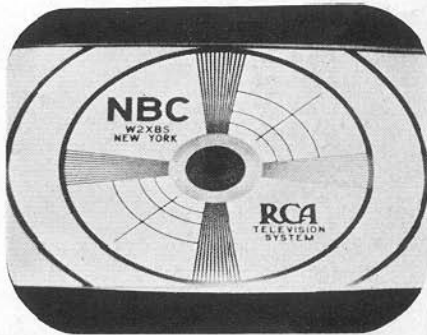


Figure 11—INCORRECT HEIGHT

To correct—Adjust Height Control (screwdriver adjustment) for correct height of picture

The adjustments shown above should be made at time of installation by television technician—see page 15.

RADIO

The Range

A wide variety of radio programs is available on your new instrument, as shown by the following table.

TYPE OF PROGRAM	KILOCYCLES
On Broadcast Scale— “A” Band	
Standard American Broadcast.	540 to 1,600
Police Calls	1,600 to 1,720
On Medium Scale— “B” Band	
Police Calls	2,300 to 2,500
Aircraft Calls	2,700 to 3,300
Tropical Broadcasts—	
120-Meter Band	2,300 to 2,500
90-Meter Band	3,300 to 3,500
Amateur Communications	3,900 to 4,000
Short-Wave Broadcasts	4,000 to 5,400
60-Meter Band (Tropical) .	4,770 to 4,970
Aircraft Calls	5,400 to 5,900
Short-Wave Broadcasts	5,700 to 7,000
49-Meter Band	6,000 to 6,200
On Short-Wave Scale “C” Band	
Short-Wave Broadcasts	7,000 to 22,000
40-Meter Band (Eastern Hemisphere)	7,200 to 7,300
31-Meter Band	9,500 to 9,700
25-Meter Band	11,700 to 11,900
Amateur Band	14,000 to 14,400
19-Meter Band	15,100 to 15,350
16-Meter Band	17,750 to 17,850
13-Meter Band	21,450 to 21,750

When to Tune for Foreign Stations

All the thrills of foreign reception can be had with this RCA Victor Model. Experience is the best guide as to the most likely time to tune for foreign short wave stations. Radio magazines and daily newspapers also publish helpful information.

The great majority of short-wave broadcasts of an entertaining type will be found in the 49, 40, 31, 25, 19, 16 and 13-meter bands, which are indicated on the dial. Stations in the 49 and 40-meter bands are best heard after nightfall; those in the 19, 16, and 13-meter bands are best heard during the day. Stations in the 31, and 25-meter bands can be heard equally well day or night. Between the short-wave broadcast bands will be found code, ship, amateur communications and telephone signals.

The Dial

There are three scales on the Straight Line Dial. They are marked A, B, C. Each scale covers one of the three major bands included within the range of the receiver. The "A" scale is for Standard Broadcasts and Police Calls, the "B" scale for Medium Wave and the "C" scale for Short-Wave programs. The important short-wave bands are indicated and short-wave stations named in their positions on the "B" and "C" scales.

Magic Eye

At the left of the dial is the Magic Eye. When the receiver is turned on, the Magic Eye becomes a green light on a circular screen with a sector of the circle darker than the rest. Stations are tuned in most accurately when this sector is at its narrowest possible width for the station being tuned in. The Magic Eye is used for Dial Tuning.

Reading the Scales

The dial scales are marked off in frequencies, the broadcast "A" scale in kilocycles (kc) and the medium "B" and short-wave "C" scales in megacycles (mc). Multiply megacycle readings by 1,000 to get kilocycles. Thus, 9.58 mc = 9,580 kc.

Controls

The two dual control knobs and the eight push buttons are shown in Figure 1.

The Power-Tone-Volume Control.—See "Television" "Controls."

The Range-Tuning Control.—This is the dual knob to the right of the radio panel. The inner "I" section of the knob selects the major frequency range—"Broadcast" ("A" band), "Medium" ("B" band), or "Short-Wave" ("C" band) on Manual Dial Tuning as indicated in the control diagram (Figure 1). The large outer ring section "O" of this knob selects the stations and operates the tuning pointer on the dial scales.

Push Button Controls

Electric Tuning.—The six central push buttons are for Electric Tuning of the instrument and, after adjustments are made in accordance with the information given later in Appendix "E," each will be labeled. Then "Push a button—there's your station." The indicator at the right of the dial is illuminated when the receiver is being used for Electric Tuning.

Television.—See "Television" "Controls."

Dial Tuning.—The push button on the extreme right, when pressed down, sets the receiver for Manual Dial Tuning by means of the Range and Tuning Controls.

Turning the Range Tuning Control during "Push-Button" operation, or pressing more than one button at a time will not in any way injure the receiver. Pressing one button will always release all others and give you the one receiving condition for which it is pressed.

Tuning

To bring in stations, first turn Power-Tone Control on, advance Volume Control and allow a warm-up period.

For Electric Push-Button Operation.—Turn Range Control to "A," press the button on which are the call letters of the desired station, and regulate Volume and Tone Controls to suit. The Electric Tuning indicator lights up.

For Dial Operation.—Press the push button on the extreme right labeled “Dial Tuning.” Then select the desired scale by means of the inner section of the Range-Tuning Control.

Tune for the station, or frequency desired with the outer ring of the Range-Tuning Control. Make slow and careful adjustment of this control until the Magic Eye shows the darker sector at exactly its narrowest width.

Regulate the Volume Control.

Set Tone-Control (Power-Tone) to suit.

Tune very slowly for short-wave stations; otherwise, stations will be passed over without being heard. To bring in foreign stations, first turn to the station’s “band.” Bands are indicated on the scale as 49M, 31M, 25M, etc. Then tune slowly through the band. For silent tuning the Volume may be turned low and the Magic Eye followed, turning Volume up when the Magic Eye indicates that a station has been brought in.

Example.—It is desired to tune in London during the early evening hours. Experience will indicate on which band London broadcasts will be heard best in your location at the particular period of the year. In general, the 31-meter band stations will be found to give satisfactory reception in the early evening.

With power turned on, advance Volume Control and then turn Range Selector to right (clockwise) for the Short-Wave “C” band. Press Dial Tuning push button and rotate outer section of Range-Tuning Control to bring tuning pointer to “31-M” mark on short-wave “C” scale; then make adjustment slowly and carefully, regulating Volume Control at the same time, until a London station is heard. Finally, obtain the ideal tuning point by observing the Magic Eye and tune till the darkened sector is at its narrowest for that station. Set the Volume and Tone Controls for best reception.

SERVICE

Tubes age so gradually that unless your instrument is checked over at least once a year you may not obtain the best performance that it is capable of giving, without your knowing exactly why. Have your dealer give this instrument a “check-up” at least once every year, and call him if any difficulty is encountered. In the event that the picture tube should fail to give you satisfactory service in this receiver notify immediately the dealer from whom the tube or the receiver was purchased.

APPENDIX

A. Power Rating

If your new Television Receiver is plugged into an incorrect current supply, it will not operate properly and it may be seriously damaged.

Your dealer or power company can tell you what type of current you have and its source.

The TRK 5 will only operate on 105 to 125 volts, 60 cycle current. Make sure your current supply is correct for the instrument before you plug it into the house outlet socket.

B. Unpacking and Installing

The unpacking and installing of your TRK 5 together with the correct antenna for same should only be attempted by a trained television technician. Your dealer will be pleased to handle all details of unpacking and installation.

The Kinescope is packed in a separate carton and all labels on the carton should be read and observed. It is a high vacuum device and is **hazardous for handling by anyone not familiar with such apparatus.** Moreover the Kinescope is the most expensive and easily damaged part of the Television Receiver. So if you receive your instrument and Kinescope before the technician arrives to make the installation, keep them both in their cases in a location where they will be safe and no one will be likely to open or attempt to examine or tamper with them.

A location should be carefully planned for the TRK 5 where it can be installed by your technician in a level position, convenient to an electrical outlet, and where no light will shine on the screen in daytime or night time, and the illumination can always be conveniently dimmed for picture reception.

Provision should also be made for locating the antenna at a good height above the roof with as direct a path as possible for the transmission line and easy access to the receiver.

A good ground connection to a cold water pipe or the equivalent is indispensable and should be made before plugging the power cord into an electric outlet.

At the time of installation your dealer or technician will make Adjustments for Electric Tuning on the Radio chassis for your six favorite Standard Broadcast Stations. There are three chassis in the back of the receiver which your dealer will indicate to you if you wish. Looking in the back the Kinescope or picture tube is at the top with the plug and socket end projecting; the Radio chassis is on the top shelf with the push button adjustments visible (see Figure 12); the Television chassis is on the second shelf with the four screwdriver controls and Focusing Control knob on the apron and the antenna terminal board on a bracket; the Radio power chassis is at the bottom right corner with the power cord extending. The two interlock safety switches on the side panels, making contact when the back is correctly secured in place, will also be pointed out by your dealer.

When the installation is complete the knobs will be attached on their shafts, the push buttons all labeled with station markers, the antenna leads attached to the terminals on the back, the back properly secured in place and the instrument plugged into your house outlet socket and operating for your first demonstration.

Your dealer or television technician will demonstrate the use and effect of all controls on the front panel, and on the back if you so desire.

The High Voltage power for the Kinescope is on, only when the back is "locked-in" and properly attached, the Power-Tone Control turned on, and the push button pressed for "Television."

C. Antenna

Only an RCA Television Antenna which has been designed for your particular instrument should be used with the TRK 5 to insure best results. Three types are available.

1. The Double "V" Type, Stock No. 9870.
2. The Double Dipole, Stock No. 9871.
3. The Double Dipole, Stock No. 9871, with Reflector, Stock No. 9872.

Under favorable conditions, good pictures may be obtained with the Double "V" Wire Type. In areas of weak signals or where interference or double images mar the picture a Double Dipole or Double Dipole and Reflector become necessary.

Full instructions accompany all RCA Television antennas and these instructions must be followed implicitly. The correct antenna installed in the best possible location and position for your particular installation is an essential requirement for satisfactory television reception.

The two leads from the antenna transmission line are for connection to the terminals A1 and A2 showing at the back of the cabinet of your television receiver. *Terminal G must be connected to a good ground such as a cold water pipe.* Terminals A3 and G are connected to the Radio chassis and the circuit is designed so that the Television Antenna is also used for Standard Broadcast and Short-Wave Radio Reception.

An RCA Radio Antenna such as the RCA Magic Wave or RCA Spiderweb may be installed if you wish. The connection from "A" on the terminal board on the radio chassis to "A3" on the terminal board on the Television chassis must then be removed and the leads from the radio antenna connected to the radio chassis in accordance with the instructions accompanying the antenna. The connection from "G" on the Radio chassis to "G" on the Television chassis must not be removed.

Good television and radio reception depend upon a correctly designed antenna, properly installed. **Your television technician should make the installation.** Read carefully the instructions that accompany the antenna.

D. Electrical Specifications

CIRCUIT.—Television.—High frequency superheterodyne with separate Video and Sound I. F. channels, separate detectors, automatic volume control on sound channel, station selector with fine tuning, double purpose antenna coupling. Video circuit with automatic background, interlaced scanning, electrostatic deflection circuit, and electrostatic focusing.

Radio.—Superheterodyne with automatic volume control, Magic Eye indicator, Electric Push Button tuning and Class A pentode output system.

TUBES.—Television Chassis.—RCA-6J5 (1), RCA-1852 (3), RCA-1853 (2), RCA-879 (1), RCA-6H6 (1), RCA-6F8G (1), RCA-6N7 (4), RCA-6B8 (1), RCA-6V6 (1), RCA-5U4G (1).

Kinescope.—RCA-1802 P4.

Radio Chassis.—RCA-6K7 (1), RCA-6A8G (1), RCA-6J5 (1), RCA-6K6G (2), RCA-6Q7 (1), and Magic Eye RCA-6U5 (1).

Radio Power Chassis.—RCA-5Y3G (1).

See diagrams on labels inside cabinet for locations of tubes and grid cap wires.

Loudspeaker.—Electrodynamic 12 inch.

E. Adjustments for Electric Tuning of All-Wave Radio Receiver

Any six stations in the standard broadcast range may be chosen for Electric Tuning. A sheet with the call letters of stations on tabs for pressing out and inserting on the push buttons accompanies the set. Also a small sheet of celluloid tab covers.

The approximate range of frequencies covered by each button, counting from the left looking at the front, is as follows, and only stations in the given range can be obtained on the particular button.

1. 550 to 950 kc	4. 690 to 1,225 kc
2. 550 to 950 kc	5. 890 to 1,500 kc
3. 690 to 1,225 kc	6. 890 to 1,500 kc

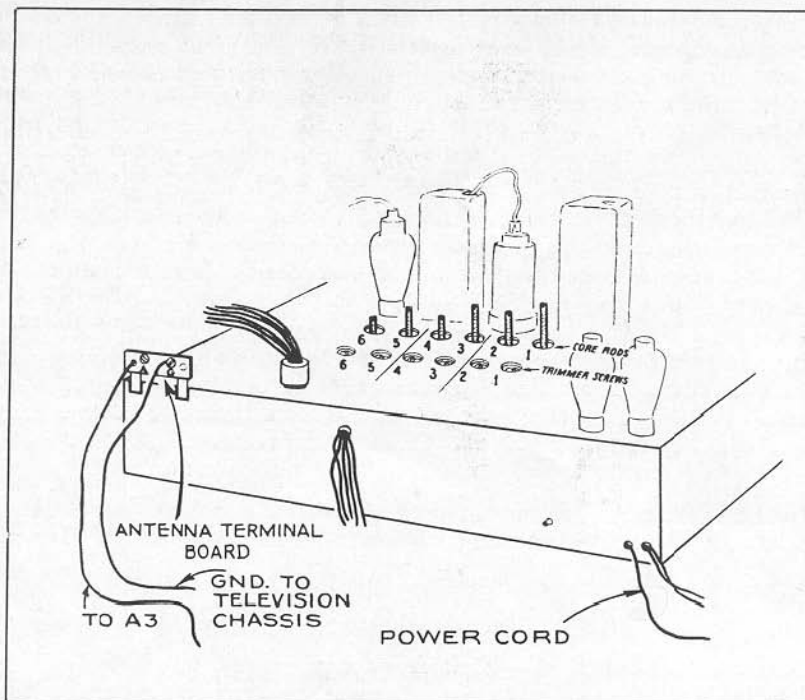


Figure 12—Electric Tuning Device

It is best to adjust the stations in order of frequency. Choose your six stations, one for each button. Press out the six tabs and celluloid covers and insert in the buttons. The simplest way of doing this is to curve the tab ends downwards, place in recess, and press into position. Check by above table, and be sure pushbutton markers are properly assembled in place.

With power turned off, disconnect the antenna transmission line and ground connection, remove the back from the cabinet and reconnect antenna transmission line and ground connection. The two interlock switches on the side panels should not be touched and care should be taken not to press on them when making the push button set up. Then insert plug in outlet, turn on power and advance volume control. Allow at least five minutes' warm-up period and then make the following adjustments. As an example, take the first station as 560 kc on No. 1 button.

1. Turn the Range Selector knob on the control panel to the "Broadcast" "A" position, press "Dial Tuning" button, and by manual operation tune in station No. 1, having the lowest frequency (560 kc in example).

2. Press push button No. 1.

3. On the chassis inside the receiver are 12 holes, two rows of 6 each (see Figure 12). Projecting through one row of holes are six threaded brass rods, with screwdriver slots, numbered 1 to 6 in the sketch. They are for adjusting magnetite cores. A special screwdriver should be used, one that does not make metal contact with your hand to impair accurate tuning, and which prevents breakage of the core rods at the slotted ends. Such a tool, RCA Stock No. 31031, may be procured from your dealer. Slide the hollow end of the tool over the rod so that the screwdriver bit engages in the slot in the rod marked "1." Turn slowly until the same station is heard (560 kc in example), and the Magic Eye shows the dark sector at its narrowest width.

Note.—Station identification may require switching back and forth from Dial Tuning to the selected push button until the same program is heard for both. If the same program is heard on more than one station find the stations on Dial Tuning and then select the proper one on the push button by means of the magnetite core rod adjustment. Turning screwdriver in a clockwise direction selects the station of lower kc frequency. Check back and forth between Dial Tuning and push button Electric Tuning until you are assured that you have made the adjustment for the correct station.

4. The six holes in the second row give access to six trimmer screws numbered 1 to 6 in Figure 12. Insert the screwdriver (RCA Stock No. 31031) in hole marked "1" and turn the trimmer screw until the darker sector of the Magic Eye is at its narrowest width for the station.

5. Proceed in order of frequency to adjust for the other five stations, making the set-ups for Nos. 2, 3, 4, 5 and 6 in sequence by the same method as that described above for No. 1.

6. After the set-up is made for all six stations make a final careful adjustment of all magnetite core rods, from 1 to 6 in sequence, at back of chassis until the best reception is obtained, as indicated by the Magic Eye.

A station may also be changed at any time by following the above instructions.

F. Television Fixed Controls

Information for Television Technician

1. **Horizontal Centering.**—This is a screwdriver adjustment at the left of the row. It serves to center the picture horizontally on the Kinescope screen and is made at the time of installation of the receiver. It may require resetting, due primarily to the earth's magnetic field, if the receiver location is changed, the cabinet turned around, or the Kinescope replaced. Figure 8 shows the effect of incorrect setting of this control.

2. **Vertical Centering.**—The second screwdriver adjustment from the left of the row serves to center the picture vertically on the Kinescope screen and is made at the time of installation. It will require resetting whenever the receiver location is changed, the cabinet turned around, or the Kinescope replaced. See Figure 9.

3. **Focusing Control.**—See "Television" "Controls," page 7.

4. **Height.**—The fourth control determines the height of the picture and is adjusted when the receiver is installed. Further adjustment will occasionally be necessary in order to compensate for the gradual reduction in vertical deflection with tube life. See Figure 11.

5. **Width.**—This is the screwdriver adjustment at the extreme right. It determines the width of the picture and is adjusted when the receiver is installed. Further adjustment may occasionally be necessary in order to compensate for the gradual reduction in horizontal deflection with tube life. See Figure 10.

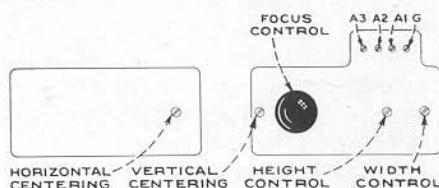


Figure 13—Fixed Television Controls