

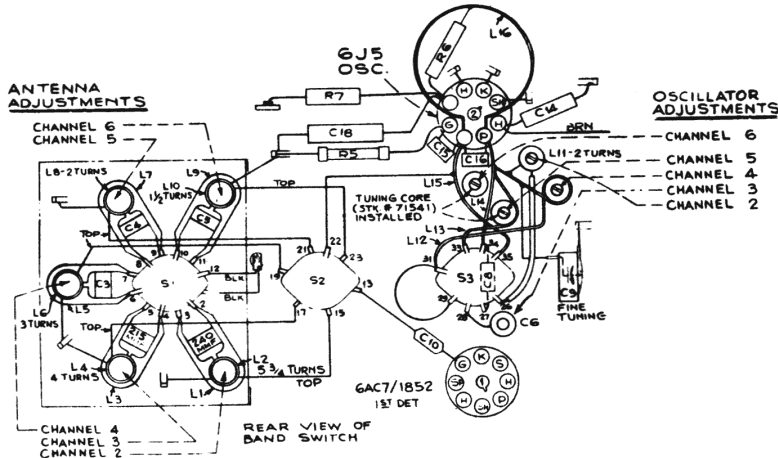
**RADIO CORP. OF AMERICA**  
**REVISION OF SERVICE DATA**  
**MODELS TT-5, TRK-5, 9, 12, 90 AND 120**

**MODELS TRK-5, TRK-9,**  
**TRK-12, TRK-90,**  
**TRK-120, TT-5**

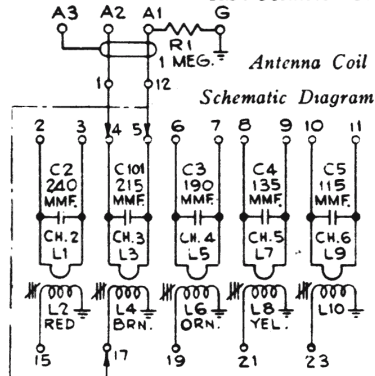
Modifications were made to subject receivers to provide operation on 1946 Television Channels #2 through #6.

1941 Channel	1941 Channel Frequency	Old Osc. Frequency	Switch Position	1946 Channel	1946 Channel Frequency	New Osc. Frequency
#1	50-56 Mc.	64 Mc.	First	#2	54-60 Mc.	68 Mc.
#2	60-66 Mc.	74 Mc.	Second	#3	60-66 Mc.	74 Mc.
#3	66-72 Mc.	80 Mc.	Third	#4	66-72 Mc.	80 Mc.
#4	78-84 Mc.	92 Mc.	Fourth	#5	76-82 Mc.	90 Mc.
#5	84-90 Mc.	98 Mc.	Fifth	#6	82-88 Mc.	96 Mc.

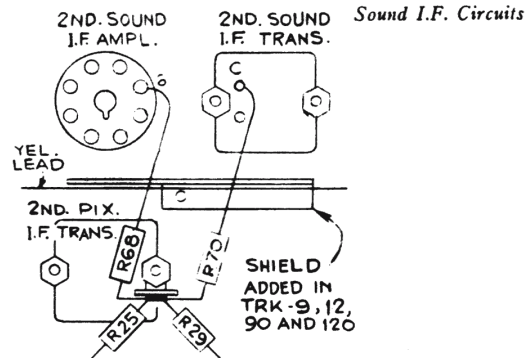
A new Decalcomania was placed on the cabinet to indicate the new channels.  
 A shield was placed between the 2nd Pix I.F. and the 2nd Sound I.F. in Models TRK-9, 12, 90 and 120.  
 The modified antenna and oscillator circuits are shown in the diagrams below.



R.F.-Oscillator Unit Wiring and Adjustments



Shield between Pix and

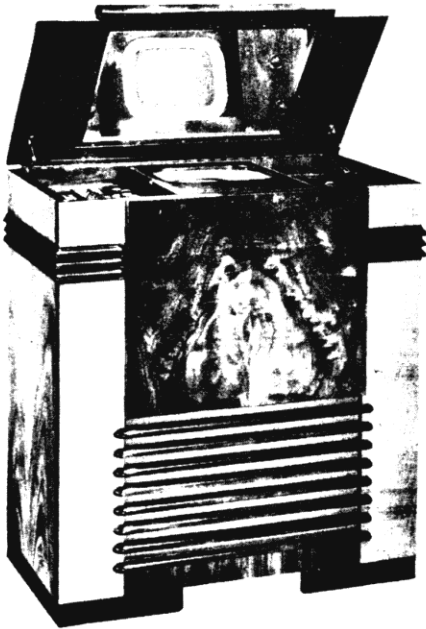


SLOPE DETECTION

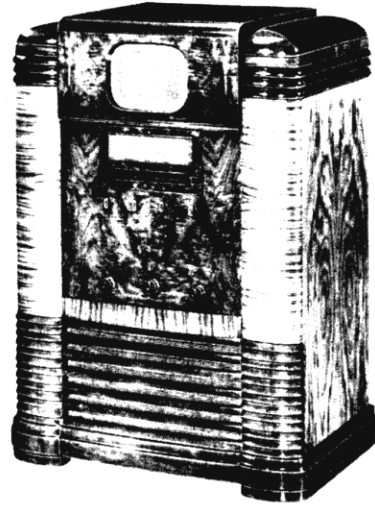
In all of the old RCA television receivers where the sound channel was a-m, the i-f transformers were detuned so that detection of f-m signal could be attained. Due to the detuning a new response curve resulted with a fairly linear slope on the lower frequency end of the curve. The frequency at the center of this slope was the center frequency of the produced f-m i-f signal. Consequently, the incoming f-m i-f signal would be sweeping an equal amount on either side of the center of this linear slope. The sloping characteristic of this linear section of the i-f response was such that the f-m i-f signal would not deviate or sweep into the non-linear portion of the curve. By this arrangement, detection of an f-m signal is possible. This process is known as slope detection and is discussed in greater detail in the television "How it Works" book.

MODELS TRK-9, TRK-12,  
TRK-90, TRK-120

RADIO CORP. OF AMERICA



Models TRK-12, TRK-120



Models TRK-9, TRK-90

### Chassis Numbers and Power Supply Ratings

**Model TRK-12:**

Chassis KC-4, KK-7, RC-427, RS-83E,  
105-125 volts, 60 cycles..... 420 watts (total)  
Chassis KC-4B, KK-7D, RC-427, RS-  
83E, 105-125 volts, 50-60 cycles.... 420 watts (total)

**Model TRK-120:**

Chassis KC-4F, KK-7F, RC-427F, RS-  
83E, 105-125 volts, 60 cycles..... 420 watts (total)  
Chassis KC-4J, KK-7J, RC-427F, RS-  
83E, 105-125 volts, 50-60 cycles.... 420 watts (total)

**Model TRK-9:**

Chassis KC-4A, KK-7A, RC-427A, RS-  
83E, 105-125 volts, 60 cycles..... 420 watts (total)  
Chassis KC-4C, KK-7E, RC-427A, RS-  
83E, 105-125 volts, 50-60 cycles.... 420 watts (total)

**Model TRK-90:**

Chassis KC-4H, KK-7H, RC-427G, RS-  
83E, 105-125 volts, 60 cycles..... 420 watts (total)

### General Description

Models TRK-12 and TRK-120 are console-type, high-picture-definition, mirror-viewing, five channel, Television Receivers and three-band broadcast radio receivers enclosed in handsomely styled modern cabinets. Features of the Television receiver include: Twelve-inch Kinescope; Styrol (humidity-resisting) r-f and i-f transformer forms; black and white pictures; single station selector switch; temperature compensated condensers; iron core i-f and r-f tuning; double

safety switch protection; safety-glass viewing shield; and extra large viewing mirror for wide angle viewing.

Models TRK-9 and TRK-90 are direct viewing, high-picture-definition, console-type, five channel, Television Receivers and three-band broadcast radio receivers in deluxe upright modern cabinets. Television features of these receivers are the same as for the TRK-12 and TRK-120, except that a nine-inch Kinescope is used.

### Electrical Specifications

**RCA TUBE COMPLEMENT**

In KC-4, KC-4B (TRK-12) and KC-4A, KC-4C (TRK-9) Video Chassis:

- |   |  |
|---|--|
| ( 1) RCA-6AC7/1852..... 1st Det.  | (13) RCA-6SK7..... 1st Sound I.F.                                      |
| ( 2) RCA-6J5..... Oscillator  | (14) RCA-6AB7/1853..... 2nd Sound I.F.                                 |
| ( 3) RCA-6AB7/1853..... 1st Pix. I.F.   | (15) RCA-6H6..... Sound 2nd Det. AVC                                   |
| ( 4) RCA-6AB7/1853..... 2nd Pix. I.F.   | (16) RCA-6N7..... 1st Sync. Sep. Amp.                                  |
| ( 5) RCA-6AB7/1853..... 3rd Pix. I.F.   | (17) RCA-6Y6-G..... 2nd Sync. Sep.                                     |
| ( 6) RCA-6AB7/1853..... 4th Pix. I.F.   | (18) RCA-6N7..... Sync. Amp.   |
| ( 7) RCA-6AC7/1852..... 5th Pix. I.F.   | (19) RCA-6N7..... Hor. Osc. Discharge                                  |
| ( 8) RCA-6H6..... Pix. 2nd Det.   | (20) RCA-6L6..... Hor. Output  |
| ( 9) RCA-6F8-G..... AVC or Limiter  | (21) RCA-5V4G (60 cycles) or<br>RCA-25Z6 (50 cycles)..... Hor. Damping |
| (10) RCA-6AC7/1852..... Video Amp.  | (22) RCA-6N7..... Vert. Osc. Discharge                                 |
| (11) RCA-6H6..... D.C. Restorer   | (23) RCA-6J5..... Vert. Output   |
| (12) RCA-12AP4/1803-P4 (TRK-12) or<br>RCA-9AP4/1804-P4 (TRK-9)..... Kinescope |  |

**RADIO CORP. OF AMERICA**

**MODELS TRK-9, TRK-12, TRK-90, TRK-120**

**ELECTRICAL SPECIFICATIONS (CONTINUED)**

In KK-7, KK-7D (TRK-12) and KK-7A, KK-7E (TRK-9) Television Socket Power Units:

- (24) RCA-5T4..... Low Voltage Rectifier
- (25) RCA-2V3-G..... High Voltage Rectifier

In KC-4F, KC-4J (TRK-120) and KC-4H (TRK-90) Video Chassis:

- (1) RCA-6AC7/1852..... 1st Det.
- (2) RCA-6J5..... Oscillator
- (3) RCA-6AB7/1853..... 1st Pix. I.F.
- (4) RCA-6AB7/1853..... 2nd Pix. I.F.
- (5) RCA-6AB7/1853..... 3rd Pix. I.F.
- (6) RCA-6AB7/1853..... 4th Pix. I.F.
- (7) RCA-6AC7/1852..... 5th Pix. I.F.
- (8) RCA-6H6..... Pix. 2nd Det.
- (9) RCA-6SQ7..... Limiter
- (10) RCA-6AC7/1852..... Video Amp.
- (11) RCA-12AP4/1803-P4 (TRK-120) or RCA-9AP4/1804-P4 (TRK-90)..... Kinescope
- (12) RCA-6SK7..... 1st Sound I.F.
- (13) RCA-6AB7/1853..... 2nd Sound I.F.
- (14) RCA-6H6..... Sound 2nd Det.-AVC
- (15) RCA-6N7..... 1st Sync. Sep.-Amp.
- (16) RCA-6Y6-G..... 2nd Sync. Sep.
- (17) RCA-6N7..... Sync. Amp.
- (18) RCA-6N7..... Hor. Osc.-Discharge
- (19) RCA-6L6..... Hor. Output
- (20) RCA-5V4-G (60 cycles) or RCA-25Z6 (50 cycles)..... Hor. Damping
- (21) RCA-6N7..... Vert. Osc.-Discharge
- (22) RCA-6J5..... Vert. Output

Note: An RCA-6H6 D.C. Restorer is added in some TRK-120, TRK-90.

In KK-7F, KK-7J (TRK-120) and KK-7H (TRK-90) Television Socket Power Units:

- (23) RCA-5U4G (60 cycles, without D.C. Restorer), RCA-5T4 (60 cycles, with D.C. Restorer), or RCA-5T4 (50 cycles)..... Low Voltage Rectifier
- (24) RCA-2V3-G..... High Voltage Rectifier

**TELEVISION CHANNELS (Selector Switch Positions)**

- 1..... 50 to 56 mc.    3..... 66 to 72 mc.
- 2..... 60 to 66 mc.    4..... 78 to 84 mc.
- 5..... 84 to 90 mc.

**PICTURE SIZE (Approximate Mask Dimensions)**

- TRK-9, TRK-90..... 5 1/2 x 7 1/4 in.
- TRK-12, TRK-120..... 7 3/8 x 9 3/4 in.

Note: This service note includes all changes that have been incorporated since initial production, including deletion of the 44-50 m.c. channel and addition of the 60-66 m.c. channel.

- Overall Video Band Width..... 4 mc.
- Scanning..... Interlaced, 525 line
- Horizontal (Line) Scanning Frequency (Sawtooth Wave)..... 15,750 cps
- Vertical (Field) Scanning Frequency (Sawtooth Wave)..... 60 cps
- Frame Frequency (Picture Repetition Rate)..... 30 cps

**Operation**

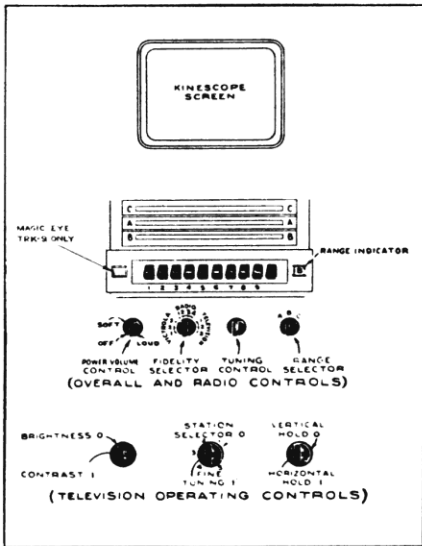


Figure 1—Operating Controls, TRK-9, TRK-90

The "Power-Volume" control on the radio receiver turns on the power for the complete receiver. The "Victrola, Radio, Television" control selects the type of operation desired. There are three Victrola fidelity positions, four radio fidelity positions and three Television sound fidelity positions on this switch. The furthest clockwise position being the highest fidelity position for Television sound.

**Television Operation:**

**Station Selector and Fine Tuning.**—The outer ring "O" section of the central dual control knob on the Television

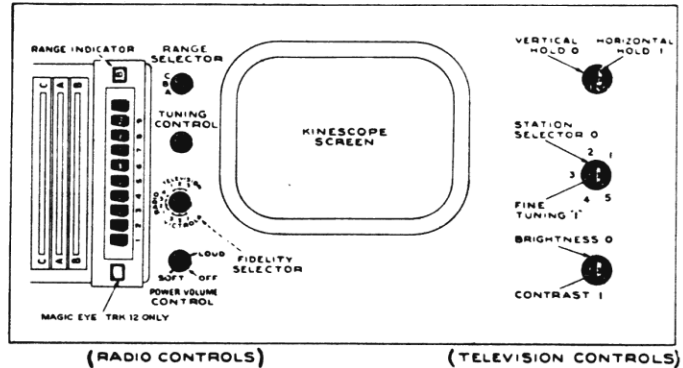


Figure 2—Operating Controls, TRK-12, TRK-120  
panel selects the station from which it is desired to receive Television transmissions.

Five Television channels are covered as follows:

- (1) 50 to 56 mc.
- (2) 60 to 66 mc.
- (3) 66 to 72 mc.
- (4) 78 to 84 mc.
- (5) 84 to 90 mc.

Set the station selector to the number corresponding to the frequency of the station from which it is desired to receive Television broadcasts.

The inner section "I" of this knob is used for fine tuning and may eliminate moving ripples or distortion if due to interfering radio signals.

Before the Television portion of the receiver is turned "ON" it is advisable to turn the Brightness and Contrast controls completely counter-clockwise to reduce the illumination of the spot which appears on the Kinescope before the sweep circuits have started functioning.

MODELS TRK-9, TRK-12,  
TRK-90, TRK-120

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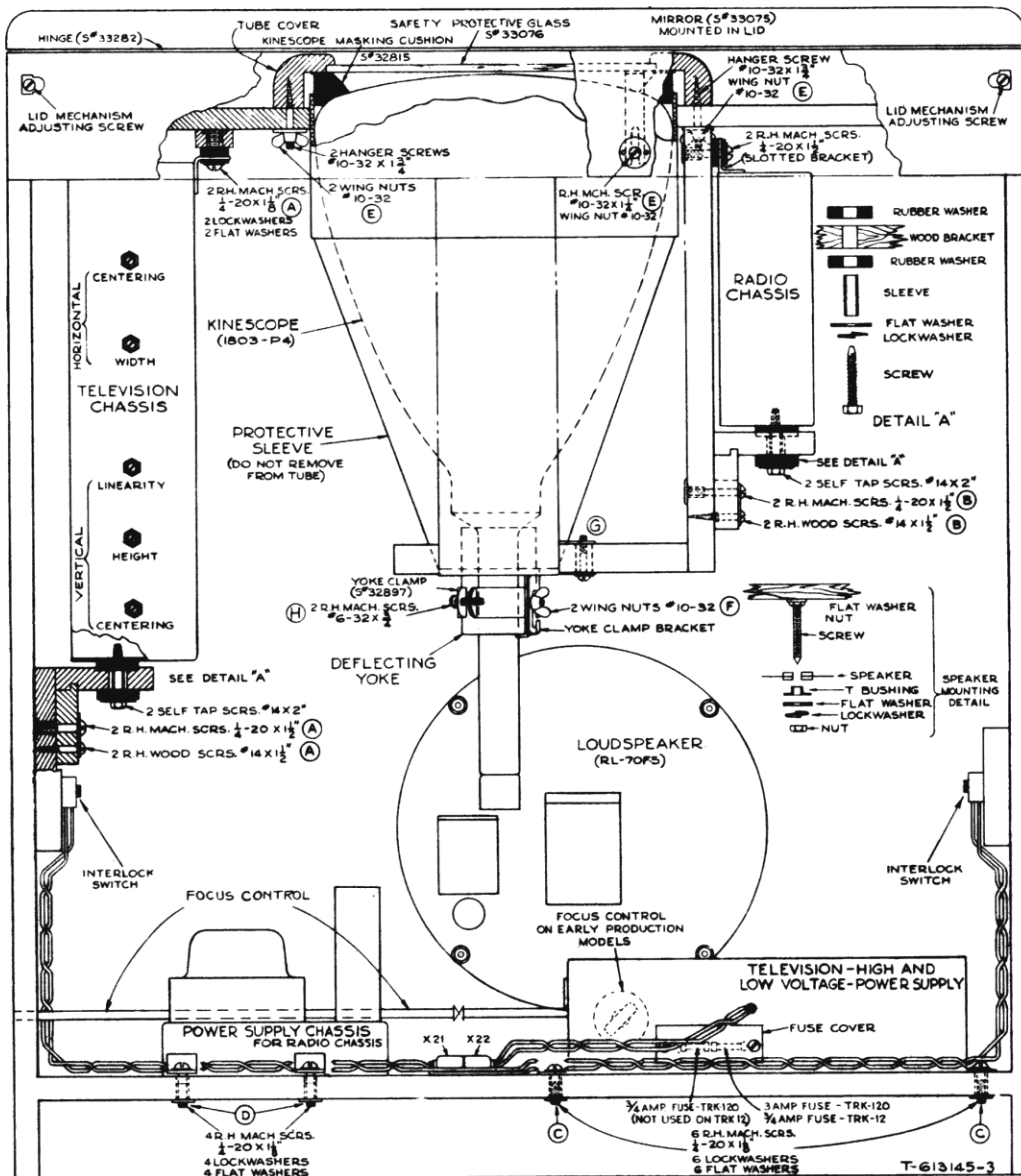


Figure 4—TRK-12, TRK-120 Assembly

**Contrast and Brightness Controls.**—The inner "I" section of the "Contrast"-"Brightness" controls is the "Contrast" control and varies 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 Operating Instructions for this receiver.

The outer ring "O" is the Brightness Control and affects the average illumination of the picture. Turning clockwise increases the brightness. See Operating Instructions for this receiver.

An approximate adjustment for proper contrast is to turn the "Contrast" control fully counter-clockwise, then turn the "Brightness" control until the screen is slightly illuminated. Then reduce the Brightness control just sufficient to make the screen dark, then bring up the Contrast Control until the picture appears. A slight further adjustment of the Bright-

ness or Contrast control may be necessary in some cases. A slight readjustment of the contrast control may aid synchronization of the picture.

**Hold Controls.**—The dual knobs on the Television panel marked "Horizontal" and "Vertical" Hold, control 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. See Operating Instructions for this receiver.

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.

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



RADIO CORP. OF AMERICA

MODELS TRK-9, TRK-12,  
TRK-90, TRK-120

SERVICE DATA

Kinescope Installation (TRK-9, TRK-90).

1. Remove back cover of cabinet.
2. Remove the two screws which secure the wooden block, on which the yoke is mounted, to the upper shelf, and drop this block and yoke away from the shelf.
3. Loosen the thumb screw in the center of the slotted block of wood on the top shelf, pull this block of wood towards the rear of the cabinet and turn it so that the "V" slot on the front end of the block is to your right.
4. Wearing gloves and goggles, carefully slide the Kinescope on the "V" in the block, and turn both the block and the Kinescope so that the Kinescope faces the viewing window. Slide the Kinescope up to the mask in the window and fasten loosely in place by sliding the "V" block up to the bottom of the Kinescope face, and fastening it with the thumb screw.
5. Place the yoke and the wooden block on which it is mounted, on the Kinescope neck, rotate the block 90° from its original mounting position in order to have it clear the top of the cabinet and slide it into position on the Kinescope neck. **DO NOT FORCE YOKE.** In some cases where the yoke lead is too short it may be necessary to loosen the "V" block and swing the Kinescope neck to the left in order to be able to place the yoke on the Kinescope neck without forcing.
6. Fit the upper part of the wooden yoke mounting block into the slot on the underside of the cabinet top and fasten the lower end of the block securely by means of the two screws. The Kinescope should be mounted loosely in place, so that the yoke is not forced on the Kinescope neck at any time.
7. Loosen the wing nuts on the yoke mounting bracket, and move the yoke forward on the neck of the Kinescope so that it pushes the Kinescope against the mask. Tighten the wing nuts to hold the Kinescope and yoke securely in this position.
8. It may be necessary to rotate the Kinescope, within the limits allowed by the high voltage second anode lead, with respect to the mask in order to obtain proper masking of the

edges on the Kinescope screen. Before rotating the Kinescope, the screws holding the yoke mounting block should be loosened, so that the Kinescope neck will not be forced.

9. Move the "V" block forward so that it holds the bottom of the Kinescope in place. Tighten the thumb screw.

10. Place the second anode lead on the second anode cap at the side of the Kinescope.

11. After the receiver is operating, and if the picture is not squared with the mask, using a screw driver loosen the clamping screws on the band around the yoke and rotate the yoke until the picture is squared with the mask, then tighten these clamping screws securely.

**CAUTION:** When removing the back cover of the cabinet, after the screws have been removed do not allow the cover to slide down on the neck of the Kinescope, or the neck of the Kinescope may be snapped off.

Kinescope Installation (TRK-12, TRK-120).—Refer to figure 4.

1. Remove back cabinet cover.
2. Remove the top safety glass cover by removing the three wing nuts "E" at the two front corners and right rear corner of the cover and loosening the wing nut "E" at the left rear corner of the cover.
3. Lift the cover straight upwards, taking care not to scratch the cabinet finish with the protruding screws or the cover itself.
4. Loosen the two wing nuts "F" on the yoke holding frame, and allow the yoke to drop down as far as possible.
5. Using gloves and goggles, open the Kinescope shipping carton and remove the top cover on the Kinescope.
6. Remove the Kinescope from the shipping carton (do not remove the close fitting cardboard shield from the Kinescope), and insert the Kinescope into the cabinet, guiding the neck of the Kinescope into the yoke. Do not force the neck of the Kinescope into the yoke, or the tube may break. Let the Kinescope down slowly so that it finally rests on the yoke.

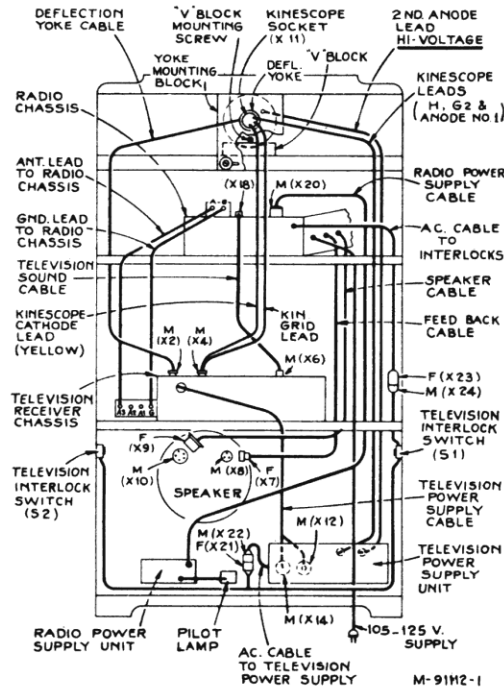


Figure 3A—Cabinet Wiring—Model TRK-9, TRK-90

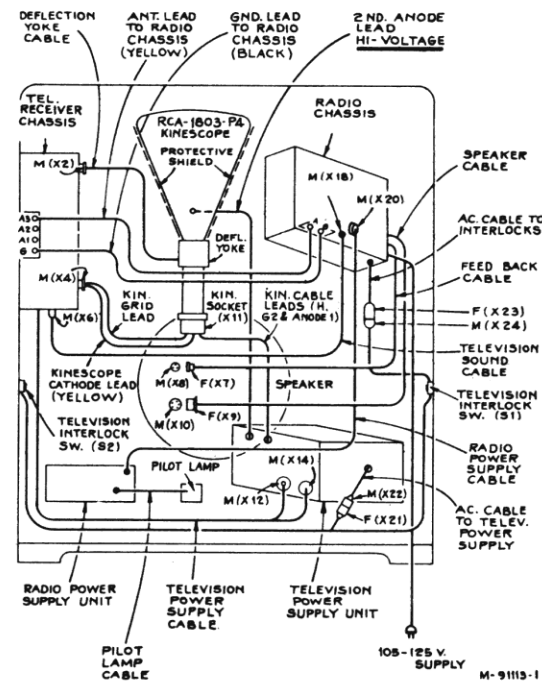


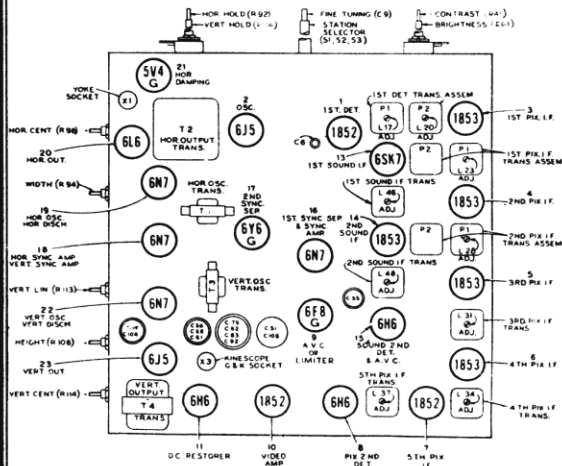
Figure 3B—Cabinet Wiring—Model TRK-12, TRK-120

MODELS TRK-9, TRK-12, RADIO CORP. OF AMERICA  
TRK-90, TRK-120

SERVICE DATA (CONTINUED)

7. Rotate the Kinescope and cardboard container (but not the yoke), so that the second anode cap at the side of the tube is towards the front of the cabinet.
8. Place the white rubber mask on the face of the Kinescope, with the ribs on the mask facing upwards toward the mirror. Line up the mask so that it masks the edges on the Kinescope face. Then, if necessary, lift the Kinescope and rotate it so the mask is approximately squared up with the cover opening. The second anode cap should be kept towards the front of the cabinet.
9. Replace the safety glass cover and wing nuts. Tighten wing nuts to hold the cover securely.
10. Loosen the wing nuts "F" on the yoke mounting bracket and push the two metal brackets, on which the bottom of the yoke rests, upward, until the rubber mask rests against the top cover. If the mask and the cover opening do not line up, rotate the cone-shaped Kinescope shield until they do. Tighten the wing nuts to hold the yoke and tube in this position. In some cases it may be necessary to loosen the four screws holding the yoke support to the wooden frame and shift the yoke support to make the mask and Kinescope

- line up symmetrically with the cover opening.
  11. Place the second anode lead on the second anode cap at the side of the Kinescope.
  12. After the receiver is operating, and if the picture is not squared up with the cover opening, the two screws "H" on the band around the yoke should be loosened, and the yoke rotated to square up the picture, then these screws should be tightened with a screw driver.
- Focusing Control.**—This is a screw driver adjustment located on the right side of the cabinet near the base. On early production receivers, a knob located at the bottom, rear of the cabinet is the focus control.
- Adjustments.**—There are a series of screw driver slot adjustments at the rear of the TRK-12 and TRK-120 (at the side of the TRK-9 and TRK-90), used to obtain the proper picture size, centering, and vertical distribution. These adjustments are explained fully in the receiver operating instructions, and also in the booklet: "Practical Television by RCA."
- When the receiver is moved from one location to another some readjustment of these controls may be necessary.



RADIO CORP. OF AMERICA

MODELS TRK-9, TRK-12,  
TRK-90, TRK-120

VIDEO CHASSIS (CONTINUED)

2. If the picture "tears out" when the receiver is jarred it may be due to microphonic 6AB7/1853, 6AC7/1852 or 6J5 tubes.
3. The 6J5 oscillator tube should be removed without rocking it in its socket to loosen it, as the rocking motion may cause the 80.5 mmf capacitor to break off.
4. The coils in oscillator circuit should not be touched or moved or the alignment of the receiver will be disturbed.

5. The insulator on the filter capacitors may become dirty and break down to short out the high voltage.
6. The Video coupling capacitors C50, 53, 59 should be kept clear of chassis.
7. A gassy 2V3-G tube may cause resistor R-137 to burn. Replace 2V3-G tube, and resistor, if necessary.
8. Changing the position of the oscillator shield plate will disturb the alignment.

Television Socket Power Units

The following precautions should be observed when any work is being done on the SPU:

1. Remove power supply cord from the power supply socket.
2. No attempt should ever be made to measure the high (7,500 volts) voltage because of the difficulties and dangers involved. Servicing should be done with an ohm meter.
3. If, at any time it becomes necessary to service the SPU, the suspected parts should be replaced by parts known to be in good operating condition.

4. Use only one hand at a time. It is advisable to keep the other hand in one's pocket.
5. Connect a shorting lead between ground (first) and the high voltage side of C-113 and C-114 (C-121 and C-122 in 50 cycle models).
6. Whenever working with the oil-filled capacitors, keep a constant short across the capacitor, as these capacitors do not completely lose their charge after being discharged a single or several subsequent times.
7. Only one person at a time should work on the unit to prevent any misunderstanding which may result in an accident.

Antenna Installation

The finest television receiver built may be said to be only as good as the antenna design and installation. It is therefore important to use a correctly designed antenna, and use care in its installation.

In most cases, the antenna should not be installed permanently on the apartment or residence roof until the quality of the picture reception has been observed on a Television receiver. A temporary transmission line can be run between receiver and the antenna allowing sufficient slack to permit moving the antenna. Then, with a telephone system connecting an observer at the receiver and an assistant on the roof to find an antenna location, the antenna can be positioned to give the most satisfactory results on the received signal. A shift of only a few feet in antenna position or direction may effect a tremendous difference in picture reception.

Whenever possible, the antenna location should be chosen or erected so the antenna is not only broadside to the transmitter but removed as far as possible from highways, hospitals and doctors' offices and similar sources of interference. Auto ignition and diathermy apparatus may cause noise interference spoiling the picture.

In mounting any antenna, care must be taken to keep the antenna rods or pickup wires proper at least 1/4 wave length (at least 6 feet) away from other antennas, metal roofs and

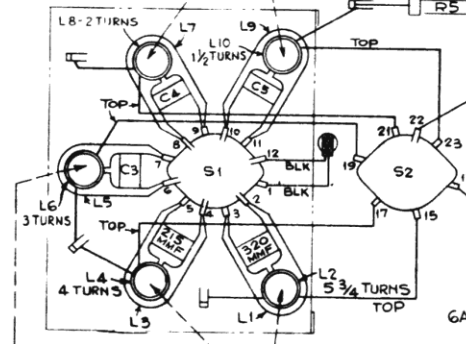
gutters or metal objects. Under certain extremely unusual conditions, it may be possible to rotate or position the antenna so it receives the cleanest picture over a reflected path. If such is the case, the antenna should be so positioned. However, such a position may give variable results as the nature of reflecting surfaces may vary with weather conditions, as a wet surface has been known to have different reflecting characteristics than a dry surface.

In short, 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) Intervening obstacles have a pronounced shielding effect on the ultra-high frequency waves producing low intensity signals. Severe trouble with multi-path transmissions may be experienced, especially in congested city areas.
- (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) It must be continually remembered that the discernment for the eye is much more critical than that of the ear.

ANTENNA ADJUSTMENTS

- BAND 5 - 84-90 MC.
- BAND 4 - 78-84 MC.



- BAND 3 - 66-72 MC.
- BAND 2 - 60-66 MC.
- BAND 1 - 50-56 MC.

OSCILLATOR ADJUSTMENTS

- BAND 5 - 98 MC.
- BAND 4 - 92 MC.
- BAND 3 - 80 MC.
- BAND 2 - 74 MC.
- BAND 1 - 64 MC.

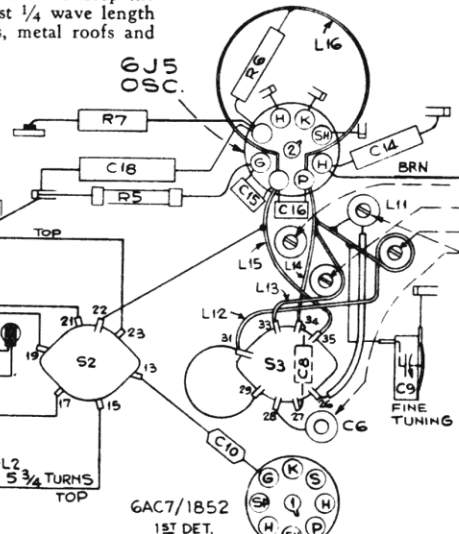


Figure 7—R.F.—Oscillator Unit Wiring and Adjustments

MODELS TRK-9, TRK-12

RADIO CORP. OF AMERICA

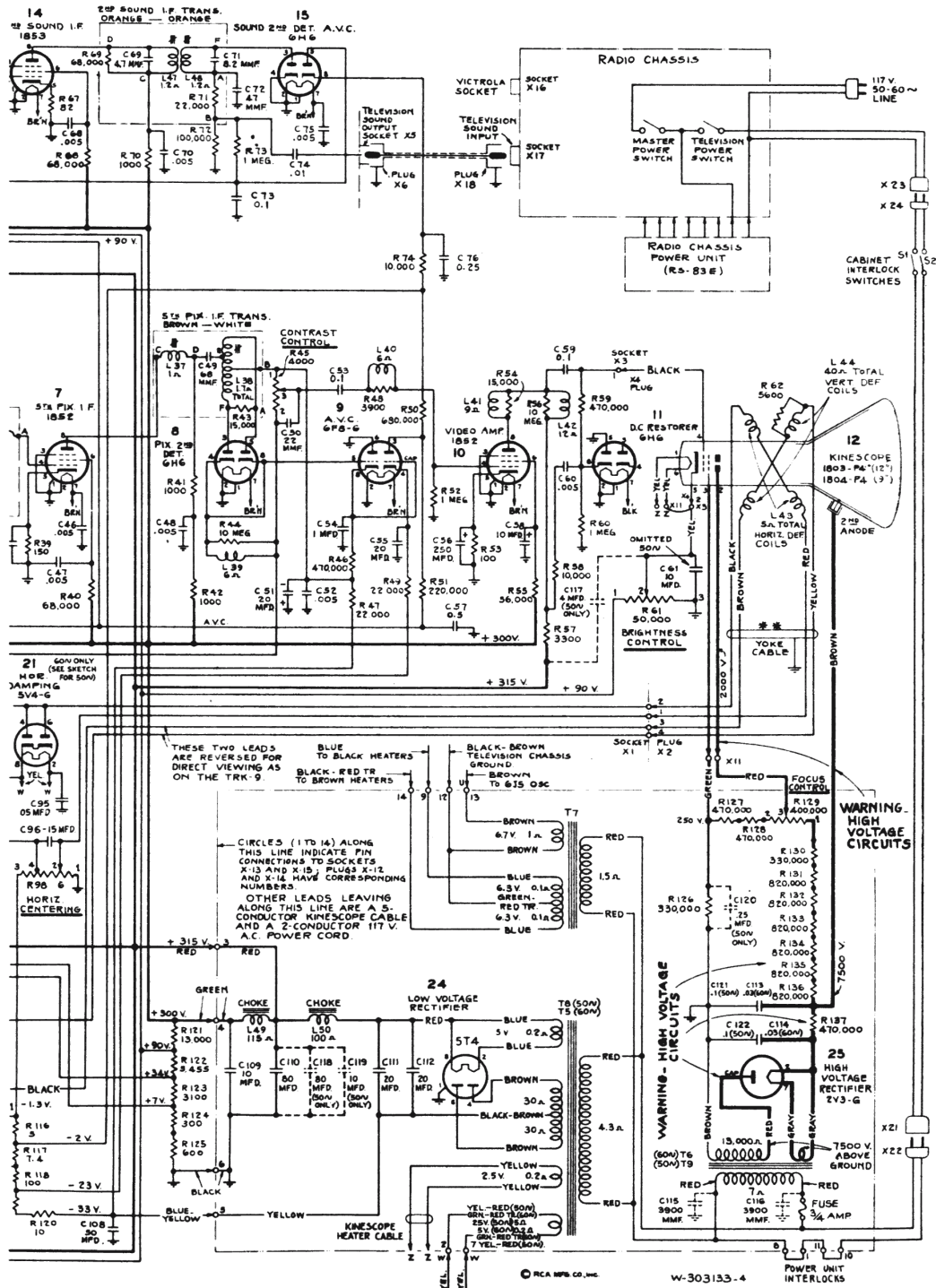


Figure 8—Partial Schematic Diagram TRK-9 and TRK-12 With Picture AVC. Otherwise same as Figure 9.

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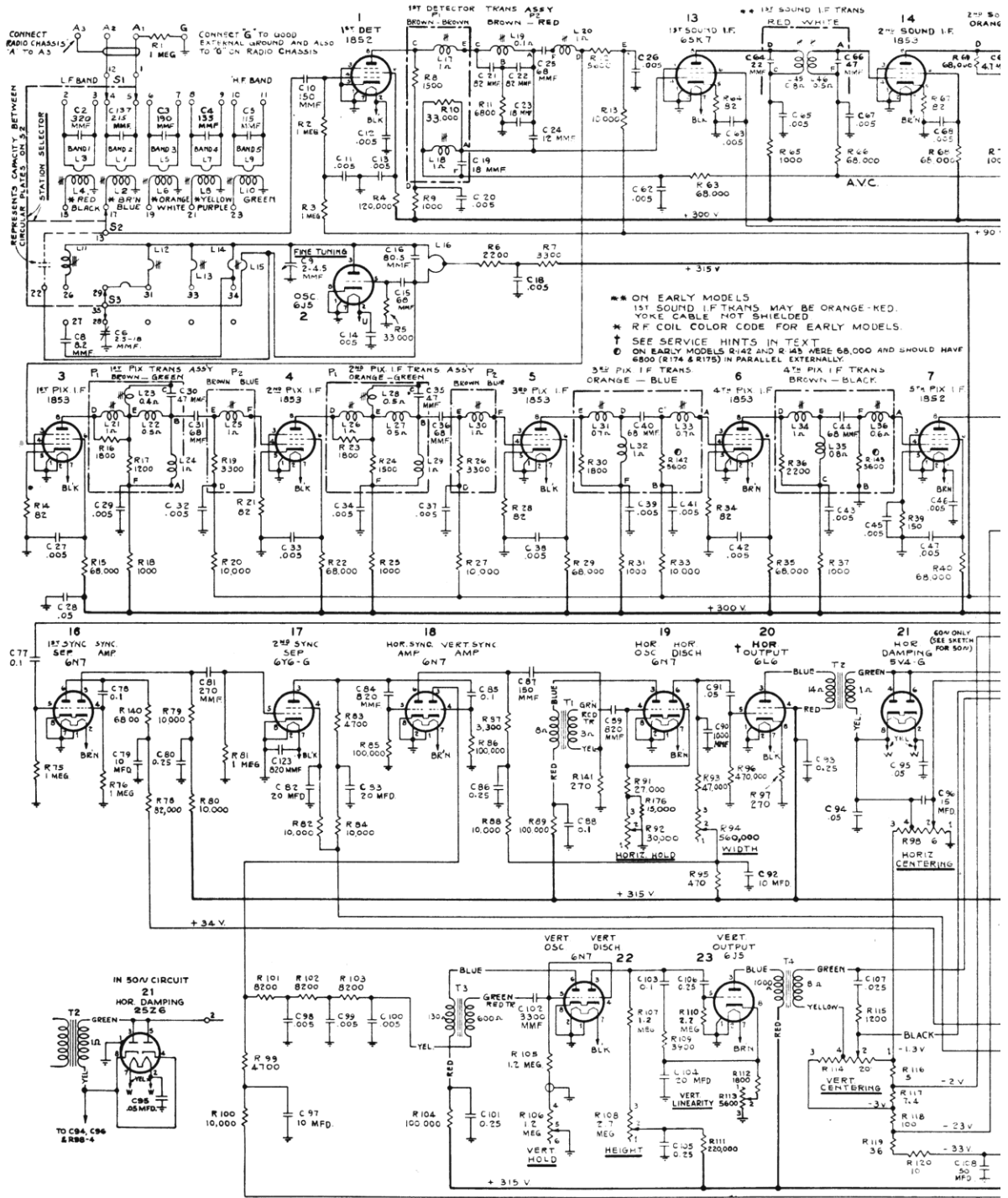


Figure 9—Schematic Diagram TRK-9 and 1K-12 Wit

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MODELS TRK-90, TRK-120

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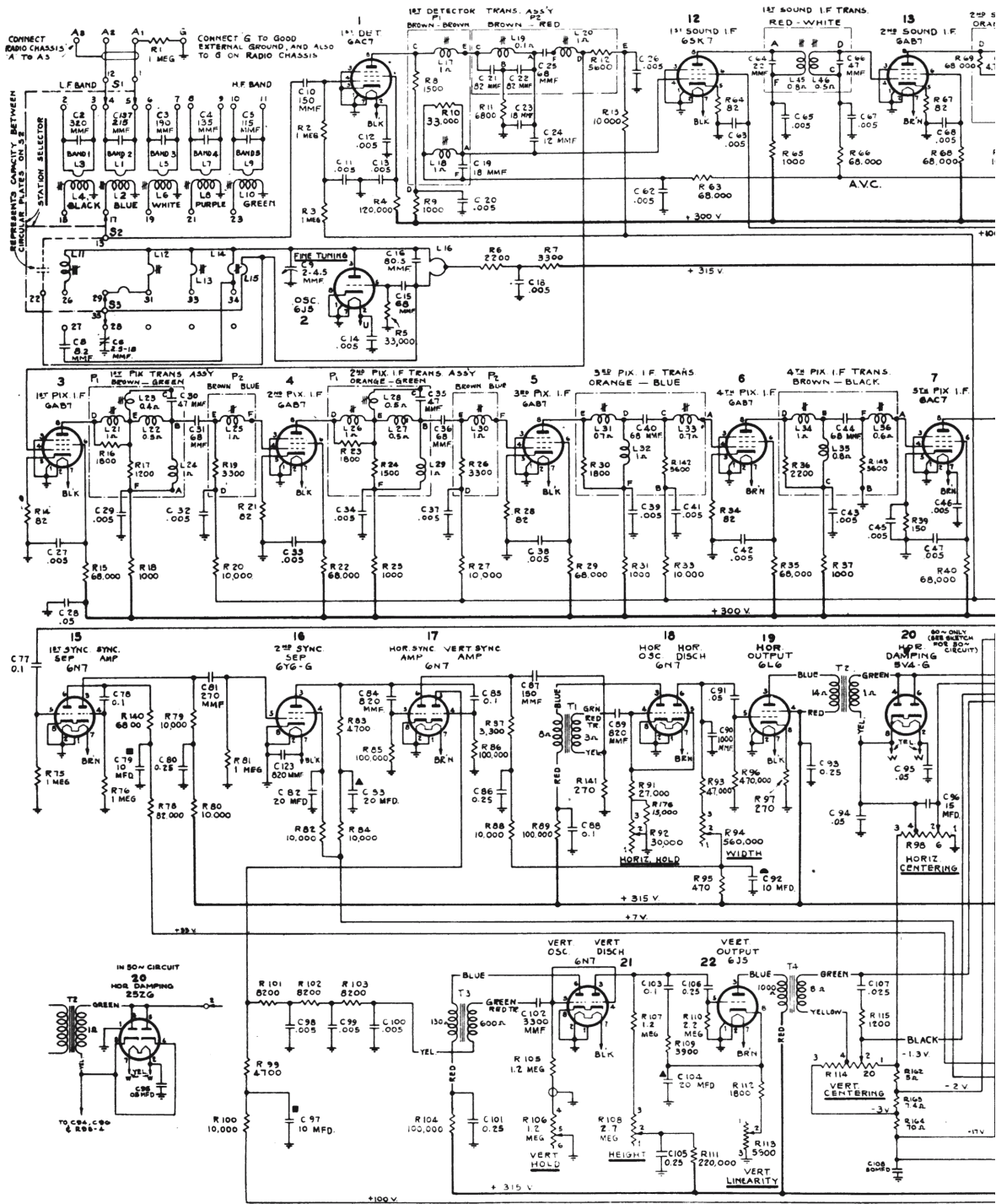
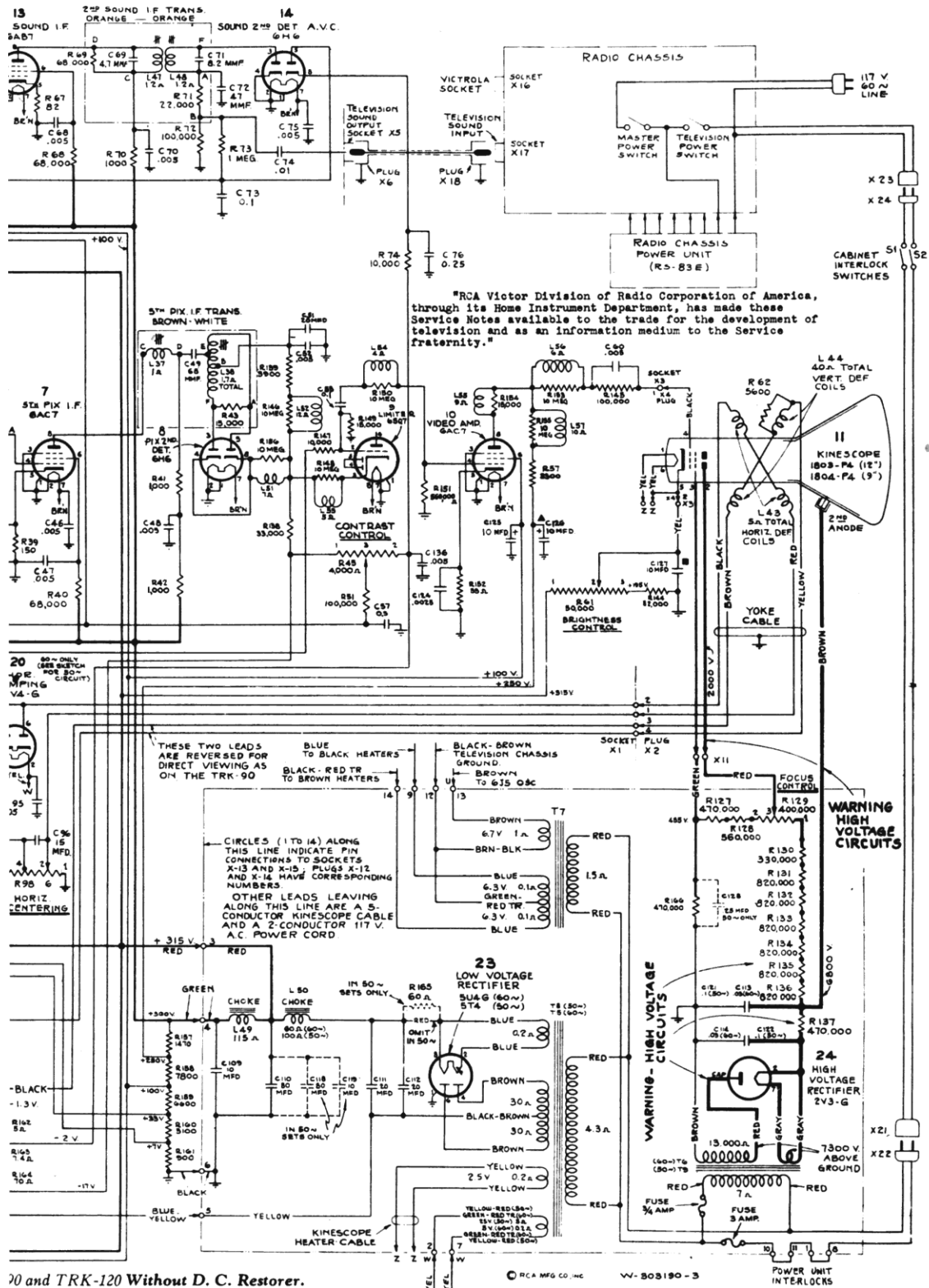


Figure 10—Schematic Diagram TRK-90 and TRK-1





**MODELS TRK-9, TRK-12, RADIO CORP. OF AMERICA  
TRK-90, TRK-120**
**TELEVISION SERVICE SUGGESTIONS**

Some of the possible troubles that may become evident during air-check of Models TRK-9, -12, -90, -120 are listed below, together with the most likely causes of each trouble, based on field experience.

1. Connect the receiver for operation, being certain that all cables are plugged in correctly, and that all tubes are seated down in their correct sockets.

2. **Blown fuse; shorted high-voltage rectifier.** Turn the set on. Look to see that the high-voltage rectifier lights. If it does not, check the fuse. A shorted rectifier will cause the 3/4 ampere fuse to blow.

3. **Intensely bright round spot; no deflection.** If an intensely bright round spot appears on the Kinescope, and cannot be dimmed with the brightness control, turn the set off immediately. This indicates lack of deflection and lack of voltage across the brightness control. Check for —

(a) Defective low-voltage rectifier (5T4 or 5U4-G).

(b) Bent-over pins on the octal plug on cable from the video chassis to the SPU.

(Note that a bright spot may appear for several seconds if the receiver is turned on again too soon after it has been shut off. Avoid doing this.)

4. **Thin vertical line; no horizontal deflection.** If only a thin vertical line appears on the Kinescope when the brightness control is advanced, it indicates lack of horizontal deflection. Check the 6N7 horizontal oscillator and the 6L6 horizontal output tube.

5. **Thin horizontal line; no vertical deflection.** If only a thin horizontal line appears, it indicates failure of vertical deflection. Check the 6N7 vertical oscillator and the 6J5 vertical output tube.

6. **Excessive hum; defective high-voltage filter.** Turn contrast control fully counter-clockwise and adjust the brightness control to secure faint illumination of the raster. "Lock in" any residual hum by adjusting the vertical hold control. Normally the hum should be scarcely discernible. Excessive hum may be caused by a defective (low value) filter resistor R137 in the SPU, which in turn may be caused by a shorted 2V3-G high-voltage rectifier. Observe necessary precautions before checking the filter.

7. **No focus; off-value high-voltage resistors.** Adjust the focus control to secure sharpest lines on the raster. The individual lines can be seen most readily by turning the horizontal hold control to the lowest frequency (counter-clockwise). The lines should be in sharpest focus at one setting of the focus control. Inability to pass through a definite point of focus indicates incorrect voltages, which may be caused by off-value resistors in the SPU. Inability to focus may also be due to a defective Kinescope.

8. **Failure to lock-in; sync trouble.** Turn band switch to a channel that is in operation. Adjust the fine-tuning control for clearest sound, which should be at approximately half-capacity position. Turn contrast control full counter-clockwise. Turn brightness control until the Kinescope is faintly illuminated. Turn contrast control clockwise until the picture signal is evident. Lock in the picture horizontally and vertically. Adjust the contrast and brightness controls for best contrast.

If the picture will not lock-in horizontally or vertically, change the 6N7 and/or 6Y6-G sync tubes: Interchanging 6N7's may correct the trouble. Otherwise check the resistors, capacitors and voltages in the sync circuits. The capacitors should be checked for opens and leakage. Do not forget that advancing the contrast control too far on a strong signal will cause the picture to "tear" out of horizontal sync.

9. **"Smeared" picture or insufficient contrast.** There should be a jumper in the Kinescope socket between the cathode and one side of the heater. Omission of this jumper may cause "smearing" of the picture when the contrast control is advanced for good contrast.

Check for presence of the jumper with an ohmmeter, and insert one if necessary. Diagonals may be used to cut out a partition for the jumper, which should be solid wire. Avoid breaking the socket wafer.

10. **Picture folded back at left-hand side.** If the picture is lapped-over, or folded back on the left-hand side, change the horizontal damper tube.

11. **No picture; weak picture.** If the station's sound is received, it is an indication that the oscillator and first detector are functioning. Run an RF sweep into the antenna and check with a CRO for over-all response at the picture 2nd-detector load resistor. If there is no response, check the picture-IF tubes and circuits. If response at the load resistor is normal, remove the sweep and feed a 10 mc, 400-cycle modulated signal into the 1st-detector grid. Note the amplitude of the 400-cycle signal at the load resistor, and then shift the CRO back through the video stage to localize the point at which the signal disappears.

12. **Picture signal too strong; contrast control ineffective.** In sets where the contrast control is a manual bias control for the picture-IF amplifier (TRK-9 and TRK-12 without AVC; all TRK-90 and TRK-120), a grid short in one of the picture-IF tubes will cause the tubes to operate near full gain regardless of the setting of the contrast control. The defective tube can be found by using the VoltOhmyst to check grid voltages throughout the picture-IF amplifier. First turn the contrast control counter-clockwise and measure the voltage from the arm of the contrast control to the chassis. This should be approximately -17 volts for TRK-90 and TRK-120, or -23 volts for TRK-9 and TRK-12 without AVC. Normally, this same voltage should then exist at each picture-IF grid and at the 1st-detector grid. (The last picture-IF tube has fixed bias.)

The same trouble can exist in TRK-9 and TRK-12 receivers with AVC on the picture-IF amplifier, but in this case the contrast control is the picture 2nd-detector load resistor and the amount of picture signal into the video amplifier can be controlled. In both types of receivers, in normal signal areas, the absence of bias on the picture-IF amplifier will cause over-loading of the last picture-IF tube with resultant grid current and distortion in this tube, which will produce a voltage across the grid resistor of this tube. In normal operation, there should be no grid current and therefore no voltage across this resistor. The VoltOhmyst can be used to check for presence of voltage.

Grid shorts can usually be located by tapping each tube very gently, or by changing one tube at a time. Shorts in '52 or '53 tubes can sometimes be cleared by tapping the base of the tube on a table, holding the tube in an upright position.

13. **Weak picture; insensitive receiver.** A simple sensitivity check can be made by removing the antenna from the receiver and turning the contrast control full clockwise with brightness control at normal position. This should produce some evidence of tube noise which will appear as speckles on the Kinescope raster. When the antenna is connected to the receiver, there should be more pronounced speckles due to random noise, streaks due to ignition interference from passing cars, and possibly hum lines that can be locked in vertically, due to sparking in 60-cycle circuits, diathermy, etc. Check each band for sensitivity. Noise conditions vary from band to band. Certain types of interference, such as diathermy, may exist in only one band and may be seen but not heard, or vice versa. Sensitivity can be estimated in this way, just as with an ordinary radio receiver, by observing the amount of noise and the strength of the weaker stations.

If the receiver is insensitive, check all tubes in the picture-IF amplifier and the 1st-detector by substituting a good tube in each socket. If the trouble is not due to tubes, it may be necessary to check the gain of each picture stage.

14. **Small picture size.** Adjust picture size, centering, and vertical linearity. Inability to secure a full-sized picture may be due to low-voltage on the 315-volt bus. Check the low-voltage rectifier. (On an improvised Kinescope mounting in a service shop, another cause for small picture size is due to placing the deflection yoke too far back on the neck of the Kinescope.)

15. **Insufficient width.** In case of insufficient width on 9-inch and 12-inch receivers, check voltage on the 315-volt bus that feeds the 6L6 horizontal output tube. If the voltage is low, change the low-voltage rectifier (5U4G or 5T4) and check heater voltage of this rectifier. Also check the 6L6.

With low line voltage, if the picture width is not sufficient,

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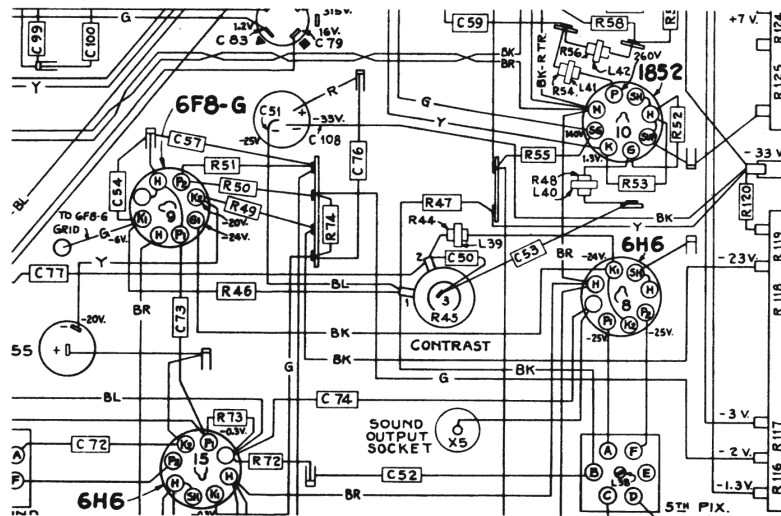
MODELS TRK-9, TRK-12,  
TRK-90, TRK-120

Figure 12—Partial Video Chassis Wiring TRK-9 and TRK-12 With Picture AVC. Otherwise same as Figure 13.

### Television Service Suggestions (Continued)

the 5V4-G damper tube can be replaced by a 5Z4. This may cause a slight spreading of the picture on the left-hand side.

16. **Picture compressed on left-hand side.** Shrinking of the picture on the left-hand side may be caused by a defective 6L6 horizontal output tube. Also check 6L6 cathode resistor.

17. **Inability to center picture.** This may be due to low voltage across the centering control caused by a defective low-voltage rectifier or low line voltage. Another possibility is that the elements in the Kinescope may be tilted. This can be checked as follows:

With the brightness control at normal setting, turn the receiver on and observe the position of the illuminated spot during the few seconds before the horizontal and vertical deflection voltages start operating. The illuminated spot should be in the center of the Kinescope (its position during these few seconds is not affected by the centering controls). If the spot is off center, it is a definite indication that the Kinescope "gun" is tilted.

18. **Distorted sound or sound in picture.** An open in one side of the antenna transmission line can cause distorted sound. Other possibilities include:

(a) If the sound-IF response curve is not linear for 75 kilocycles on each side of 8.25 mc., distortion will result.

(b) Inaccurate adjustment of the oscillator frequency on any channel may result in no sound or distorted sound, due to the fact that the sound-IF beat frequency will not be 8.25 mc. If the oscillator frequency is too low, the beat note, instead of falling on the high-frequency slope of the sound-IF response curve, may fall on the low-frequency slope. In this case, the sound may be satisfactory, but operation on this side of the curve should be avoided. In some localities, it results in sound image interference from other channels.

A quick and definite method to check the oscillator frequency is as follows:

(a) Tune in a television station.

(b) Turn the fine-tuning trimmer to minimum capacity. This should produce some evidence of sound in the picture. The sound usually appears as horizontal bars of varying density, and these vary in step with the speech or music. The bars disappear when the voice or music stops.

(c) Turn the trimmer for best sound quality. This should correspond to approximately half-capacity of the trimmer.

(d) Turn the trimmer toward maximum capacity. If the slope of the sound-IF response curve is narrow, this will move the beat on to the peak of the response curve, producing low volume and severe distortion.

On service work in the home or where test equipment is not available, if one or more of the oscillator frequencies require re-adjustment, the recommended procedure is as follows:

(a) Tune in the television station on the channel which requires re-adjustment of the oscillator frequency.

(b) Turn the fine-tuning trimmer to minimum capacity.

(c) Turn the magnetite-core for the particular oscillator coil toward the highest frequency position (core moved away from the coil). This will definitely put sound in the picture. Turn the core in the opposite direction, to lower the oscillator frequency, until the sound is barely perceptible in the picture. Leave the core in this position.

(d) Now, by turning the fine-tuning trimmer to half-capacity, it should be possible to secure good tone quality with no trace of sound in the picture.

If the sound-IF is deliberately moved into the picture-IF by adjusting the oscillator core to produce the highest frequency, the effect of the sound-IF interference will produce a "reversed" image, somewhat like a film negative.

The customer should be instructed to adjust the fine-tuning control for best sound quality, at which point there is no sound in the picture. If the set is turned on in a cold room, it may be necessary for the customer to readjust the fine-tuning trimmer to compensate for the slight drift in oscillator frequency during the warm-up period.

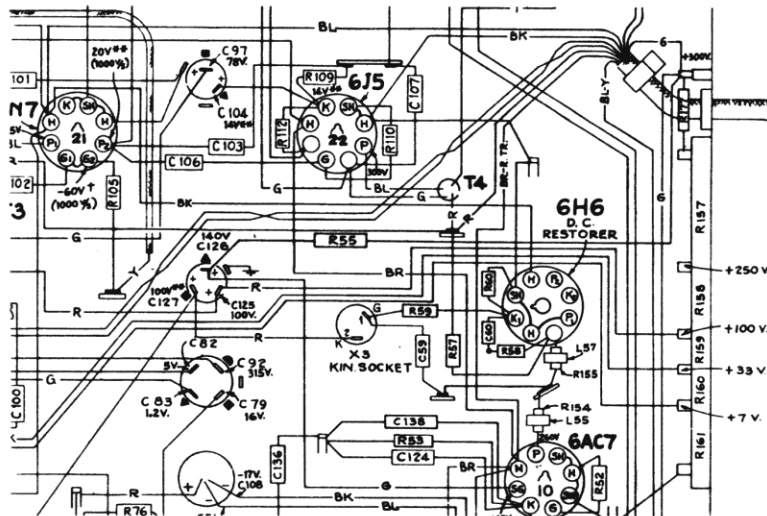
On all converted receivers, the fine-tuning trimmer is permanently fastened to the fine-tuning control, so that it is not necessary to press in on the control knob. ("C" washers are slipped between the end of the shaft and the rubber drive and cement is used between the rubber drive cone and the cup on the fine-tuning trimmer.)

19. **Insufficient sound.** In locations remote from the transmitter, additional sound volume can be obtained in the 9-inch and 12-inch receivers by eliminating the inverse feedback in the audio amplifier of the radio chassis.



MODELS TRK-9, TRK-12,  
TRK-90, TRK-120

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NOTE: Brightness Control, R61, is connected as follows: Terminal 1 (Red) to SG of Tube 12 (100V.); Terminal 2 (Yellow) to C127; Terminal 3 (Bus) to Chassis, R144 being omitted.

Figure 15—Partial Video Chassis Wiring TRK-90 and TRK-120 With D.C. Restorer. Otherwise same as Figure 14.

### Television Service Suggestions (Continued)

To do this, strip away a section of the insulation on the two leads from the radio chassis to the two-prong feedback plug. Twist the leads together, solder and tape. Remove the feedback plug from the speaker socket and tape it out of the way.

In Models TRK-9 and TRK-12, leave the feedback switch on radio chassis in the "with feedback" position (counter-clockwise).

20. **Interference on picture.** If the interference can not be definitely identified as coming from an external source such as diathermy, ignition, etc., check to see if it is present on the remaining channels and then remove the antenna from the television receiver to see if the interference continues.

The various forms of interference may be classified as follows:

(a) Microphonic streaks. Tap the video chassis. If this produces severe streaking or affects picture brightness, check for microphonic tubes and intermittent tubular capacitors and connections in the picture-IF and video stages. If the picture smears completely, check for intermittent grid shorts in the picture-IF tubes. If the tapping produces noise in the sound channel, as well as picture streaking, check for a microphonic oscillator or 1st-detector tube.

If tapping does not affect picture strength or sound, but does upset horizontal or vertical sync, check the sync and deflection tubes.

(b) Electrical interferences. This is caused by sparking or arcing contacts in electrical equipment. If the equipment is a-c operated, there may be horizontal bars or lines that can be locked in vertically. Turn on and off the lights, motors, etc., in the building to determine if the interference is coming from these sources. Occasionally a defective light bulb will arc and radiate interference in a definite frequency band.

(c) Diathermy. This varies in intensity (depending on proximity) from a faint horizontal herringbone streak to a solid black bar. If the diathermy equipment is on the same power supply as the television transmitter, the interference will be stationary. Otherwise it will travel up or down on the picture. In the latter case, if the interference is severe, the

vertical oscillator may lock in occasionally on the diathermy, and the picture will then move up or down.

On remote pickup or chain telecasts, diathermy or other interference may be picked up on one of the remote links, and of course in this case nothing can be done at the receiver to reduce this interference.

(d) RF Interference. This can be produced by:

- (1) Harmonics of a local short-wave station falling in the television channel.
- (2) A station operating in the image-frequency band (which is approximately 8 to 14 mc higher than the oscillator frequency for any band).
- (3) Strong signals in the picture-IF band (8.75 to 14 mc) leaking through to the grid of the 1st picture-IF tube.

RF interference patterns will alter in step with the modulation of the transmitter (dots and dashes or speech and music).

Orientation of the antenna and use of standard antenna reflectors are helpful in reducing the effects of RF interference. If the transmission line is a spaced type, a matching section at the receiver end may reduce interference due to (2) and (3) above.

The nature or source of RF interference can sometimes be determined by listening in on the output of the picture-IF channel. To do this, connect the input lead of an audio amplifier to the cathode of the picture 2nd-detector load resistor through an .01 mfd. capacitor. Connect the ground of the amplifier to the television chassis. This connection will spoil the picture but permits listening to the audio component in the picture channel. The sound will be a composite of picture, blanking, and sync signals, together with any audio modulation on the interfering station, making it somewhat difficult to pick out and identify the interference. A better method is to use the RCA Chanalyst UHF Converter: Place the input probe on the picture 2nd-detector load resistor and tune the converter through the picture-IF band width



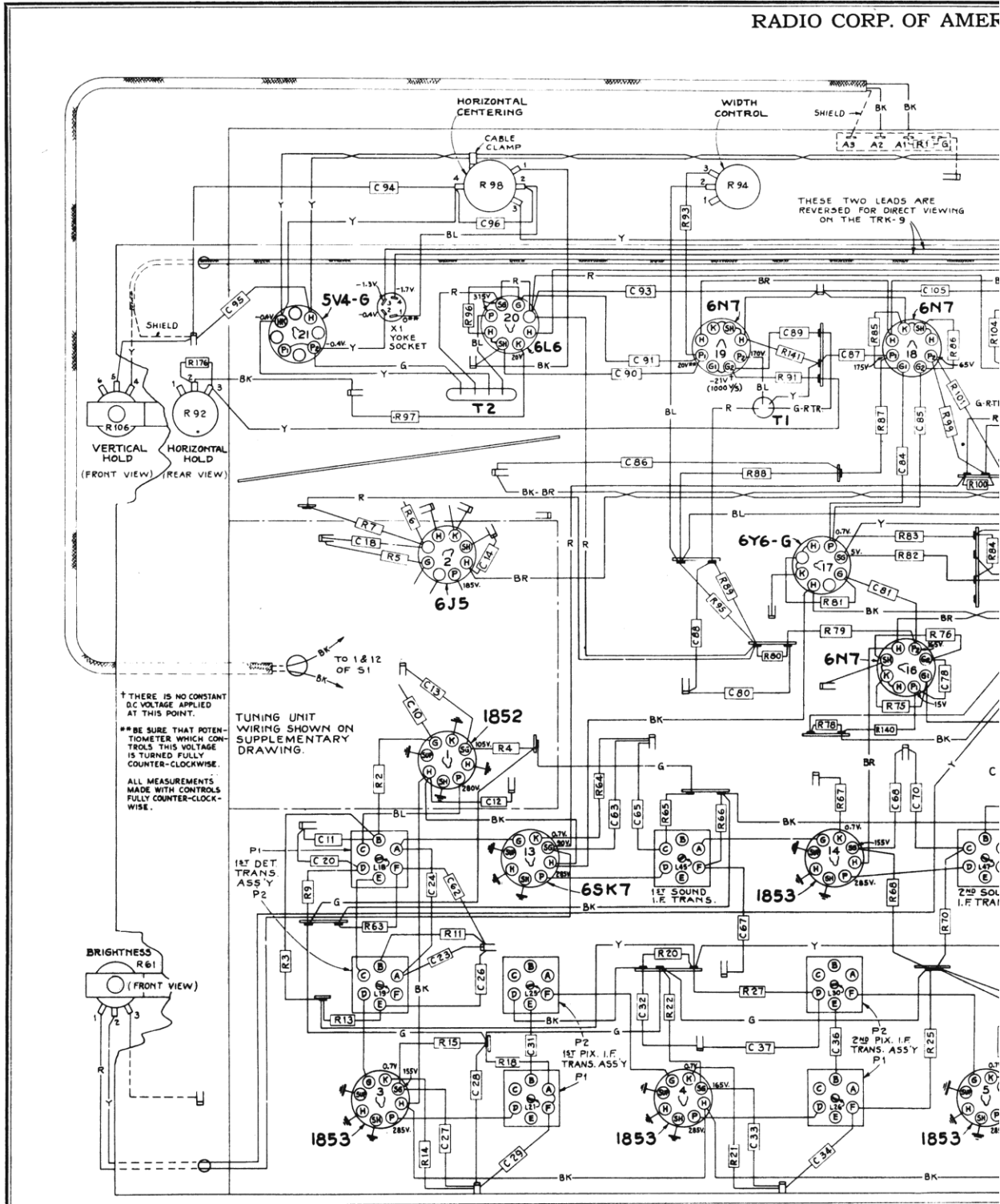
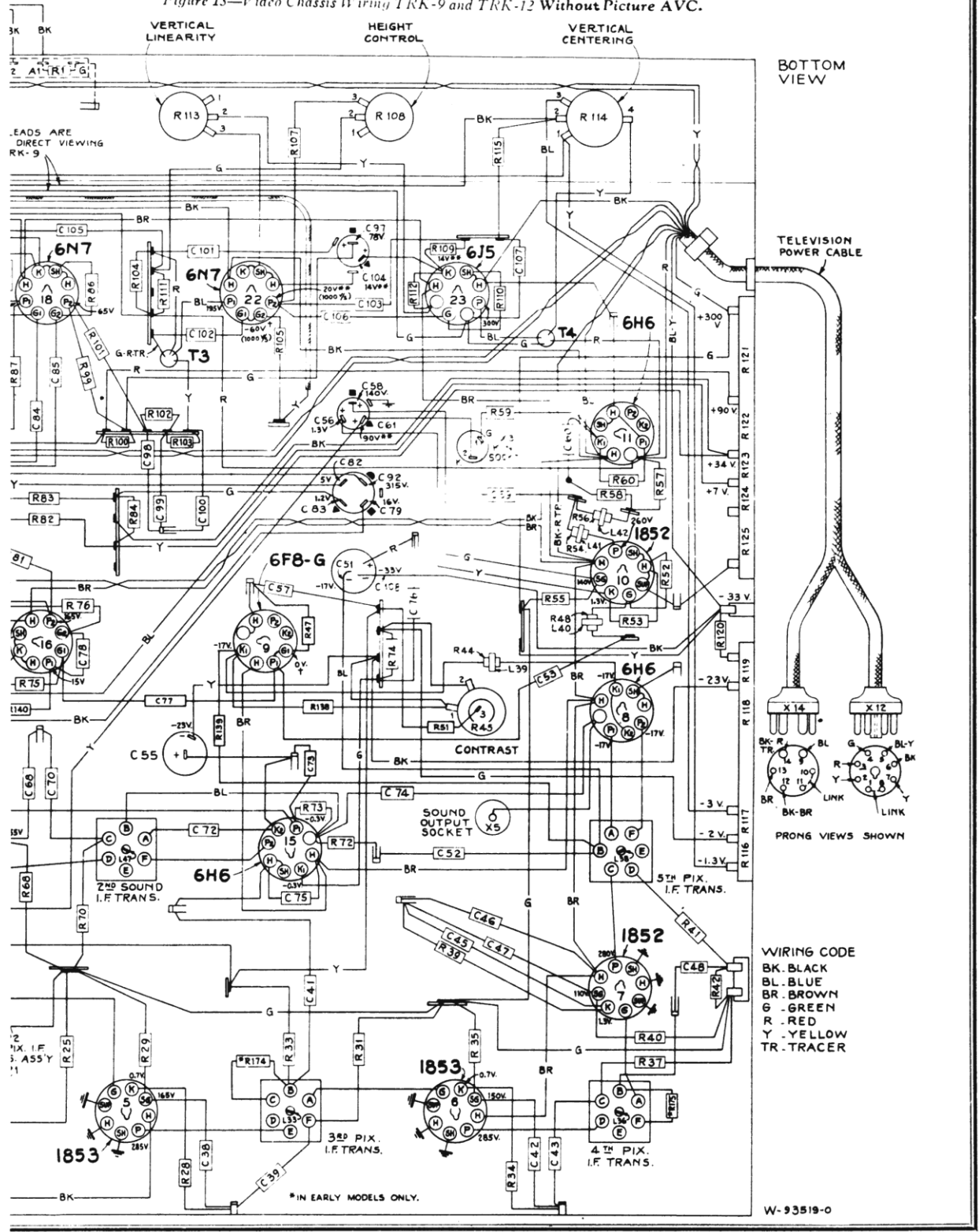


Figure 13—Video Chassis Wiring TRK-9 and TRK-12 Without Picture AVC.



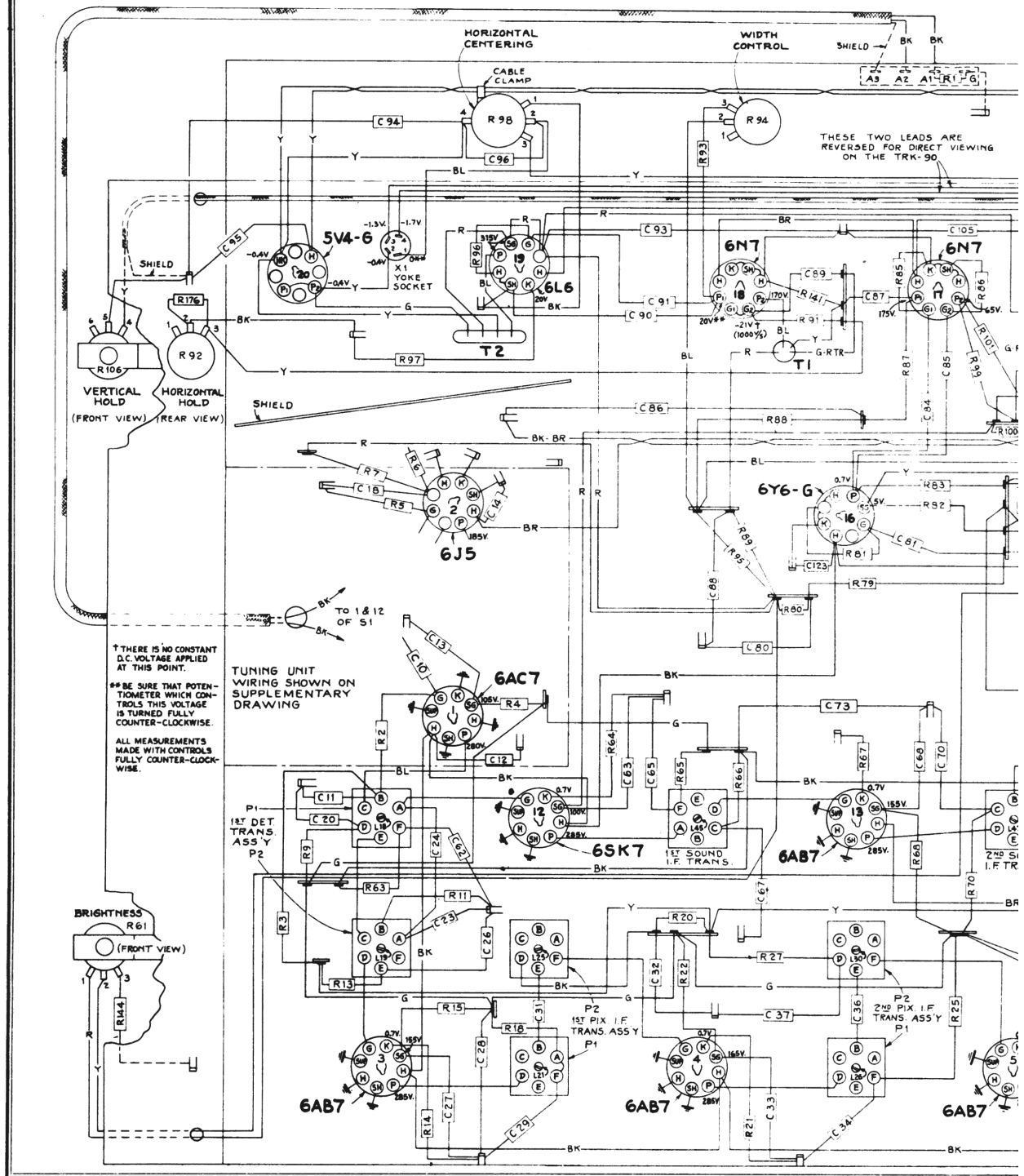
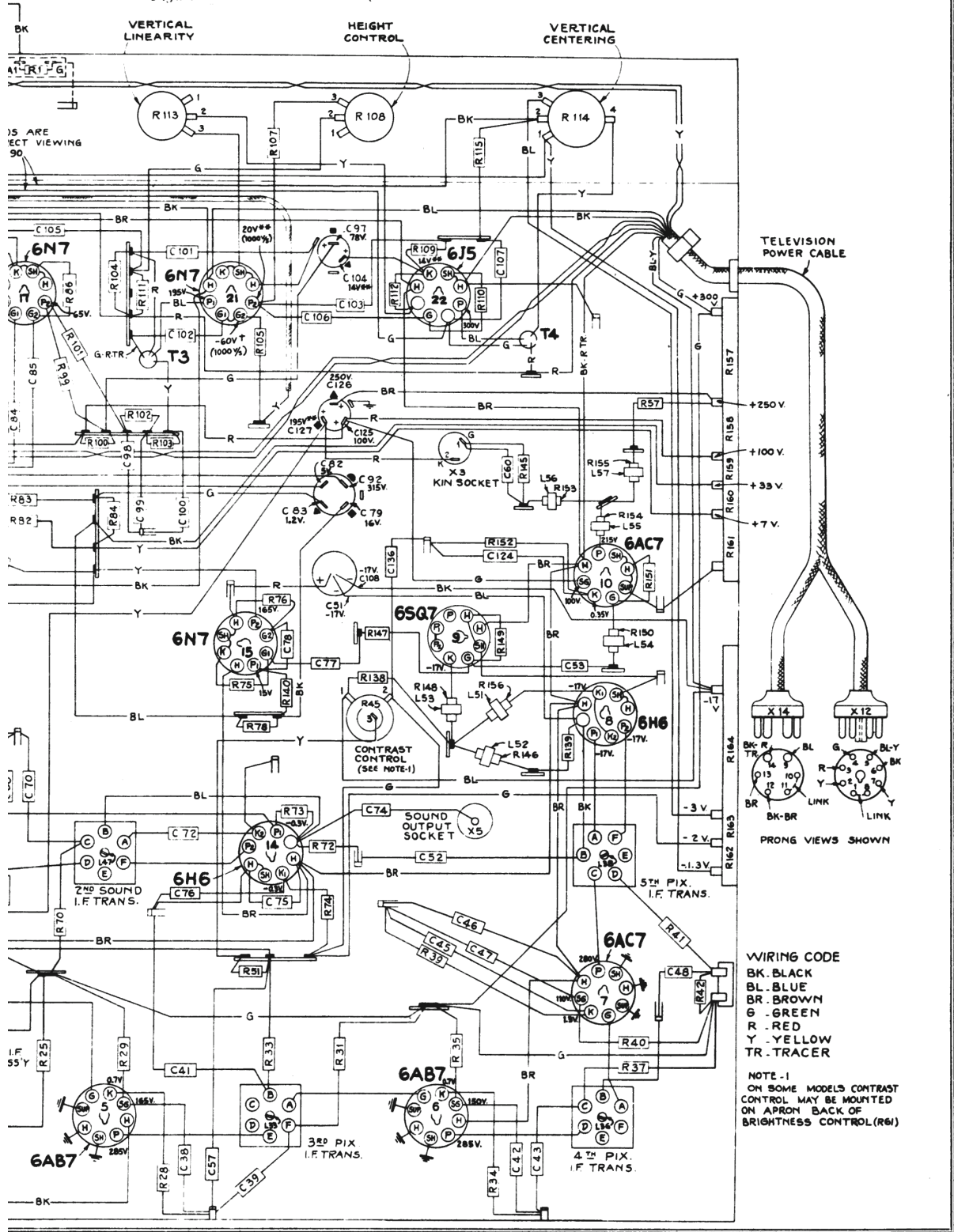


Figure 14—Video Chassis Wiring TRK-90 and TRK-120 Without D.C. Restorer.





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MODELS TRK-9, TRK-12, TRK-90, TRK-120

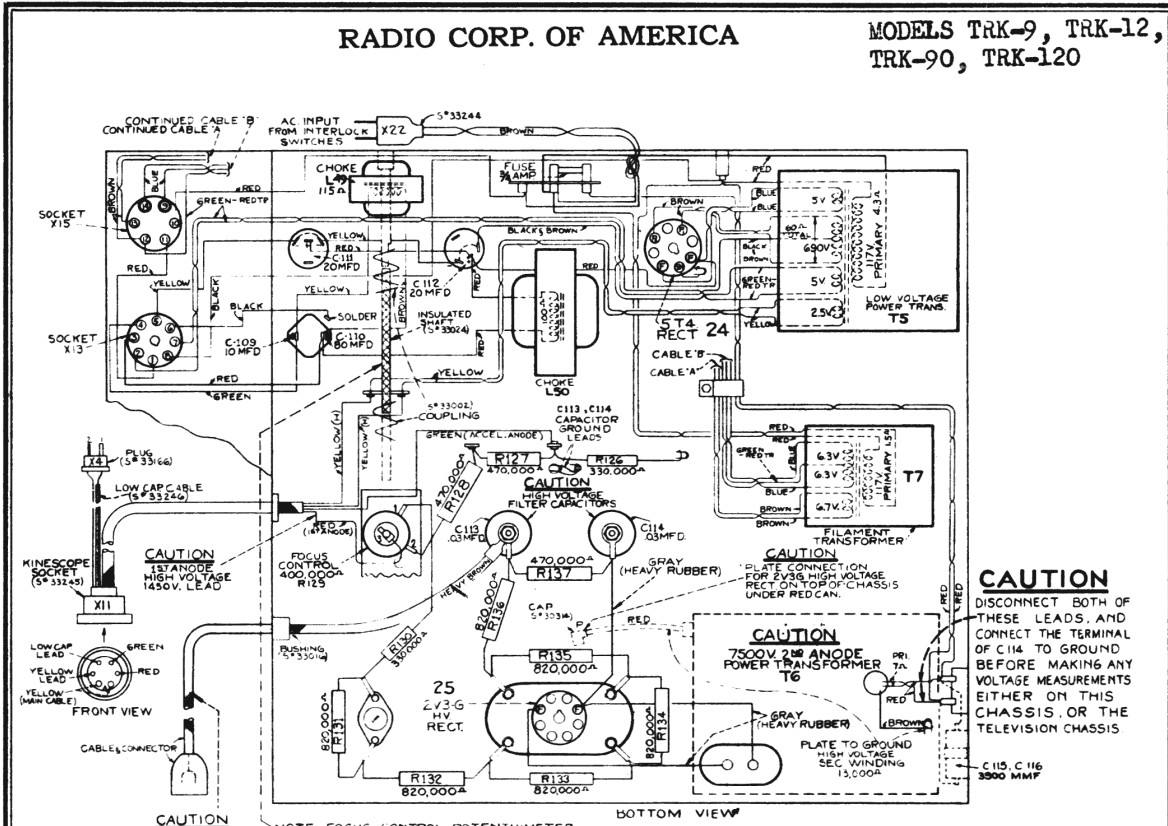


Figure 16—Television SPU Wiring TRK-9 and TRK-12 (60 cycle models)

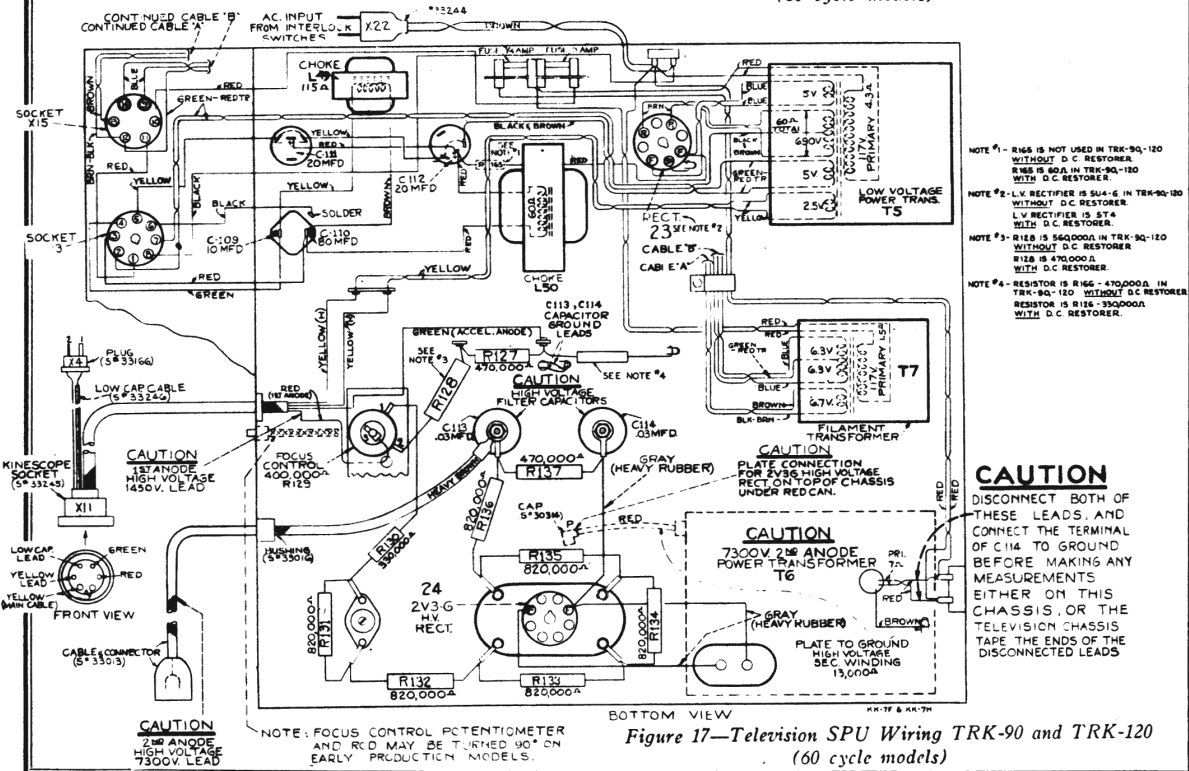


Figure 17—Television SPU Wiring TRK-90 and TRK-120 (60 cycle models)

**MODELS TRK-9, TRK-12, TRK-90, TRK-120**
**RADIO CORP. OF AMERICA**
**TELEVISION SERVICE SUGGESTIONS (CONTINUED)**

(8.75 to approximately 14 mc). The RF interference can thus be picked out and identified.

(To gain experience in recognizing the visual aspect of various forms of interference, it is possible to produce the interference locally and study the results. Sparking motors and similar devices can be operated near the television receiver. A test oscillator can be coupled to the receiver input while a television program is being received. Tune the oscillator to the picture carrier frequency and then shift it up several megacycles to produce a range of beat frequencies with the picture carrier. The oscillator output can be increased and decreased, and modulation can be turned on and off to note the effects.)

**21. Failure to operate when installed in cabinet.**

- (a) Check for grid shorts in '52 and '53 tubes.
- (b) Check for bent-over pins on the octal plug from video chassis to SPU.

**TRK-9, TRK-12, TRK-120 for 105-125 Volts—50-60 Cycle Power Supply**

General differences are as follows:

**Chassis KC-4B, KC-4C, KC-4J**

1. Horizontal Damping tube, formerly RCA-5V4G, changed to RCA-25Z6 and socket wiring revised.
2. TRK-9, TRK-12 only: Capacitor C-61 not connected. Its function is performed by an added capacitor C117 (4 mfd.—450 volts).

**Chassis KK-7D, KK-7E, KK-7J**

1. Capacitors C-118 (80 mfd.) and C-119 (10 mfd.) added in parallel with C-110.
2. Capacitor C-128—TRK-120 or C-120—TRK-9, TRK-12 (0.25 mfd.) added in parallel with resistor R-166—TRK-120 without D.C. Restorer, or R-126—TRK-9, TRK-12, TRK-120 with D.C. Restorer.
3. Capacitors C-113 (0.03 mfd.) and C-114 (0.03 mfd.) changed to C-121 (0.1 mfd.) and C-122 (0.1 mfd.).
4. Power transformer (T-5) changed to (T-8) having a 25v. heater winding to supply the RCA-25Z6 horizontal damping tube.
5. High voltage power transformer (T-6) changed to (T-9).
6. Resistor R-165 is added (TRK-120 only).
7. Inductance L-50 is 100 ohms in these models.
8. An RCA-5T4 is used in these models as low voltage rectifier.

In addition Kinescope shielding is provided as follows:

1. A metallic conical section is installed in the cabinet to shield the Kinescope bulb.
2. A double metallic cylindrical section is installed with the deflecting yoke mounting assembly to shield the deflecting yoke proper. The accompanying illustration shows its assembly.

**CAUTION:** The conical shield is of the proper size to permit installing the 12AP4/1803-P4 Kinescope with its protective cardboard sleeve. The latter should never be removed. To prevent Kinescope breakage, when installing a Kinescope, the deflecting yoke and shield assembly must be in place. To prevent breakage of Kinescope when removing the deflecting yoke and shield assembly the Kinescope must be removed first.

Replacing or orienting deflecting yoke:

1. Remove Kinescope.
2. Loosen yoke support bracket wing nuts and remove complete yoke and shield assembly.
3. Remove outer shield. Loosen yoke clamp screws to permit removal or orientation of yoke. If it is necessary to orient yoke, pull yoke out so it extends about one inch. Tighten screws just enough to hold yoke but not too tight as it may be necessary to turn it in this extended position. Replace the inner shield and yoke in the yoke mounting brackets.
4. Replace Kinescope and protective glass cover.
5. Move the inner shield and yoke assembly vertically until yoke is gently touching Kinescope bulb. Tighten yoke bracket wing nuts.

**22. Interference from harmonics of horizontal deflecting circuits.** In 1st-production 9-inch and 12-inch receivers, harmonics of the horizontal deflecting frequency (15.75 kc) may cause interference on nearby radio receivers. In this case, install the following:

- (1) A shielded yoke (RCA Stock No. 9857N). This has a metal pigtail at plug end of cable for grounding under one of the mounting screws on the horizontal output transformer. Unshielded yokes do not have this pigtail.
- (2) A tube shield (RCA Stock No. 12181) on the 5V4G horizontal damper tube. Ground the tube shield to chassis with a pigtail.
- (3) Remove the external ground connection from the television receiver.

6. Rotate yoke carefully with one hand to orient raster or picture.

7. Remove Kinescope.

8. Remove carefully (so as not to disturb yoke adjustment) the inner shield and yoke assembly. Place the latter on a flat surface with the extended yoke end flush to surface. Press inner shield gently down until yoke edge is flush with inner shield edge. Tighten yoke clamp screws evenly by first pulling one up and then the other.

9. Assemble outer shield to inner shield and yoke assembly so bottoms of shields are flush.

10. Replace complete shield and yoke assembly in the yoke support bracket.

11. Replace Kinescope and tighten protective glass cover.

12. Push gently complete assembly up flush against the Kinescope bulb. Tighten wing nuts.

**IMPORTANT:** 1. The hole in the conical metallic shield must line up with the hole in the protective sleeve to permit connection of the second anode cable.

2. Do not jar or drop the shields and keep away from the loudspeaker field coil to prevent magnetization.

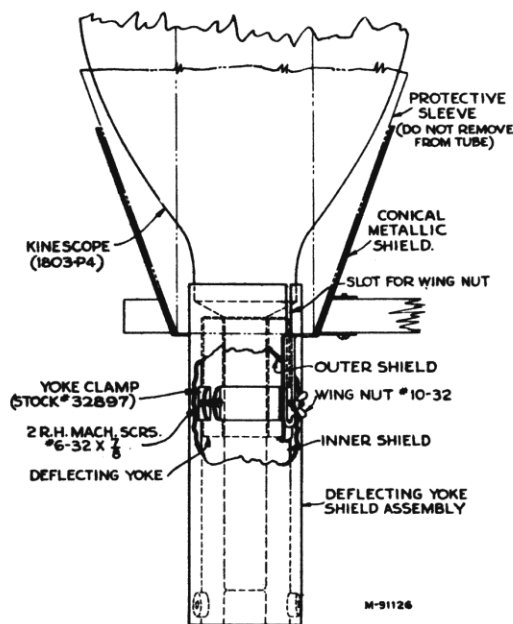


Figure 18—Assembly Details, Showing Kinescope and Deflecting Yoke Shielding



RADIO CORP. OF AMERICA MODEL TRK-9, CHASSIS RC-427A  
 MODEL TRK-12, CHASSIS RC-427  
 MODEL TRK-90, CHASSIS RC-427G  
 MODEL TRK-120, CHASSIS RC-427F

# Radio Receiver Chassis No. RC-427, RC-427A, RC-427F, RC-427G and Socket Power Unit No. RS-83E

## Three-Band, Electric-Tuning, A-C, Superheterodyne Receiver

### Electrical Specifications

FREQUENCY RANGES  
 Standard Broadcast ("A" band)..... 540-1,720 kc  
 Intermediate Frequency..... 455 kc  
 Medium Wave ("B" band)..... 2.3-7.0 mc  
 Short Wave ("C" band)..... 7.0-22 mc

TUBE COMPLEMENT  
 (1) RCA-6K7..... R-F Amplifier  
 (2) RCA-6A8..... 1st Detector  
 (3) RCA-6J7..... Oscillator  
 (4) RCA-6K7..... 1st I-F Amplifier  
 (5) RCA-6K7..... 2nd I-F Amplifier  
 (6) RCA-6R7..... 2nd-Det., A.F., A.V.C., and Muting  
 (7) RCA-6J5..... 2nd A-F Amplifier  
 (8) RCA-6J5..... Phase Inverter  
 (9) RCA-6F6..... Power Output  
 (10) RCA-6F6..... Power Output  
 RC-427 and RC-427A only: RCA6U5..... Magic Eye  
 (11) RCA-5U4G (In RS-83E SPU).... Full-Wave Rectifier

Dial Lamps..... } Two Mazda No. 44, 6.3 volts, .25 amp.  
 } One Mazda No. 47, 6.3 volts, .15 amp.  
 (The Mazda No. 47 is the electric tuning set-up lamp, located at center of dial.)

Power Supply Rating..... 105-125 volts, 50-60 cycles, 120 watts

POWER OUTPUT  
 Undistorted..... 10 watts  
 Maximum..... 12 watts  
 LOUDSPEAKER (RL-70F-5)  
 Type..... 12-inch electrodynamic  
 Voice-Coil Impedance..... 2.2 ohms at 400 cycles

### General Description

Radio receiver chassis No. RC-427 is used in RCA Victor Television Console Model TRK-12; RC-427A in TRK-9; RC-427F in TRK-120; and RC-427G in TRK-90.

The audio output of the television chassis is connected to the audio input of the radio chassis by means of jack X-17 and section S7 of the fidelity switch. The functions of this switch are tabulated on a following page.

A separate plug-in power unit, RS-83E, is used to supply heater and plate voltages to the radio chassis. Service data and diagram for this power unit are shown below.

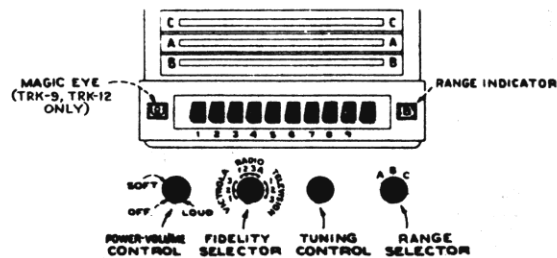
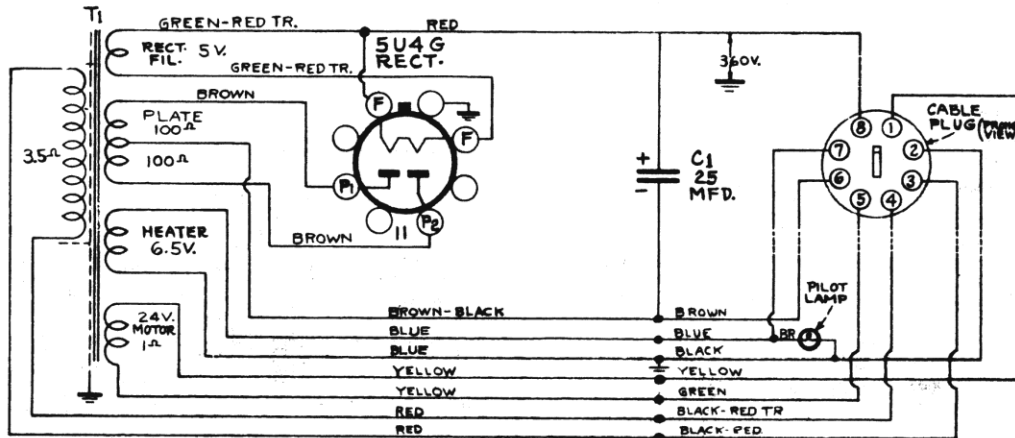


Figure 19—Operating Controls (Radio)

Figure 20—Schematic Diagram Radio SPU, RS-83E



MODELS TRK-9, TRK-12,  
TRK-90, TRK-120

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### Electric Tuning Mechanism

When a station button is pushed in, it completes the 24-volt circuit through the corresponding station-setting contact and one-half of the brass selector disc, which is connected to one side of the motor field coil. This energizes the motor, and the rotor is pulled forward, engaging with the gear train that drives the tuning condenser and selector disc. The condenser and disc rotate until the insulation line comes under the particular station-setting contact, and the motor circuit is broken.

When the electric tuning mechanism is in action, the motor-supply voltage is fed into a diode rectifier circuit which applies a high bias to the first-audio amplifier. This prevents audio amplification and makes the set quiet or "mute" while the mechanism is operating.

The brass selector disc is fastened to the rear shaft of the tuning condenser by means of two set-screws. When the condenser is at maximum (plates fully meshed) the insulation line should be horizontal, with the operating-end at the left (viewed from rear). The brass is beveled at this end.

The selector disc should be set so that the contact-tip plungers in the station-setting contacts project not more than 1/16-in. from the body of the contacts.

#### LUBRICATION

**Motor bearings and gear bearings;** use light machine oil.  
**Gear faces;** use "Pure Oil No. 611" or petroleum jelly.  
**Dial-Indicator pulleys and rails;** use "Castordag" or petroleum jelly.  
**Selector disc;** apply thin film of petroleum jelly.

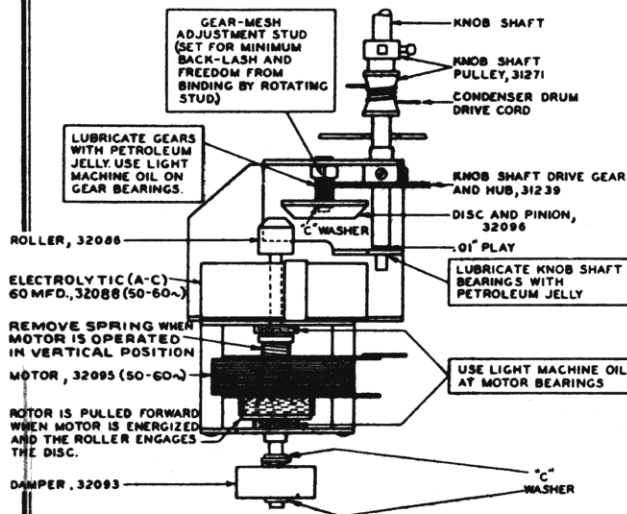
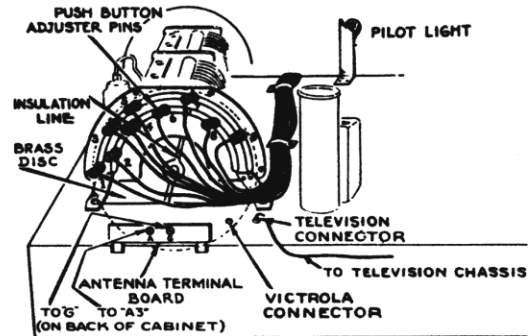


Figure 21—Detail of Tuning Motor Drive



Station Button	Color of Lead To Station-Setting Contact	Station Button	Color of Lead To Station-Setting Contact
No. 1	Yellow-green	No. 6	Red
No. 2	Black	No. 7	Red-black
No. 3	Brown	No. 8	Brown-black
No. 4	Blue	No. 9	Red-yellow
No. 5	Green		

Figure 22—Electric Tuning Adjustments

### Adjustments for Electric Tuning

With power turned off, disconnect the antenna transmission line and ground connection, turn fidelity control to radio (3rd radio position—6th position from full counter-clockwise). Remove the back from the cabinet and reconnect the 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 turn on power, set range selector to "A," allow a few moments warm-up period and proceed as follows:

1. Make a list of the desired nine stations, arranged in order from low to high frequencies.
2. Turn on power-volume control, turn range selector to "A" band, and allow a few minutes for warming up.
3. Press down the "dial-tuning" (right-hand) button.
4. Manually tune in the first station on the list.
5. Hold down the "dial-tuning" button and press down station button No. 1 (left-hand). Both buttons will stay down. Move station adjuster contact pin No. 1 to the insulating line on the disc at rear of gang. When the

pin is correctly centered on the insulating line, the central dial lamp will go out completely.

6. Press down any other button in order to release the dial-tuning button and station button No. 1. Tune to some other section on the dial, and then press down station button No. 1 again; the electric tuning mechanism will function to tune in the first station, and the central dial lamp will stay on.
7. Repeat this process for the remaining stations.

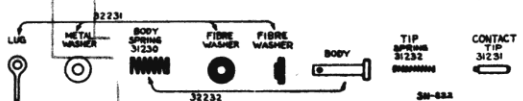


Figure 23—Components of Station Setting Contact

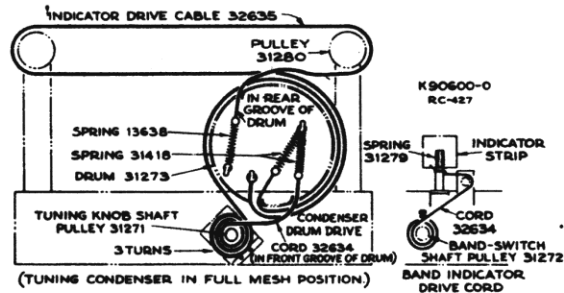


Figure 24—Dial Mechanism





RADIO CORP. OF AMERICA

MODELS TRK-9, TRK-12,  
TRK-90, TRK-120

### Fidelity Switch (S4, S5, S6, S7)

Switch Position	For	I-F Amp.	Audio Amp.	110-V. Supply for Tele. Chassis*	Osc. + B Supply	Dial Lamps**
No. 1 (Counter-clockwise)	Victrola	—	Min. Highs	Off	Off	On
No. 2	Victrola	—	Max. Highs Reduced Lows	Off	Off	On
No. 3	Victrola	—	Full Range	Off	Off	On
No. 1	Radio	Sharp	Min. Highs Max. Lows	Off	On	On
No. 2	Radio	Sharp	Max. Highs Reduced Lows	Off	On	On
No. 3	Radio	Sharp	Max. Highs Full Lows	Off	On	On
No. 4	Radio	Broad	Full Range	Off	On	On
No. 1	Television	—	Min. Highs	On	Off	Off
No. 2	Television	—	Med. Highs Reduced Lows	On	Off	Off
No. 3	Television	—	Full Range	On	Off	Off

\* Controlled by switch (S12) on rear of fidelity switch.  
\*\* The 1st-I.F. heater is opened on television positions 1, 2 and 3.

Figure 27—Functions of Fidelity Switch

### Calibration Scale

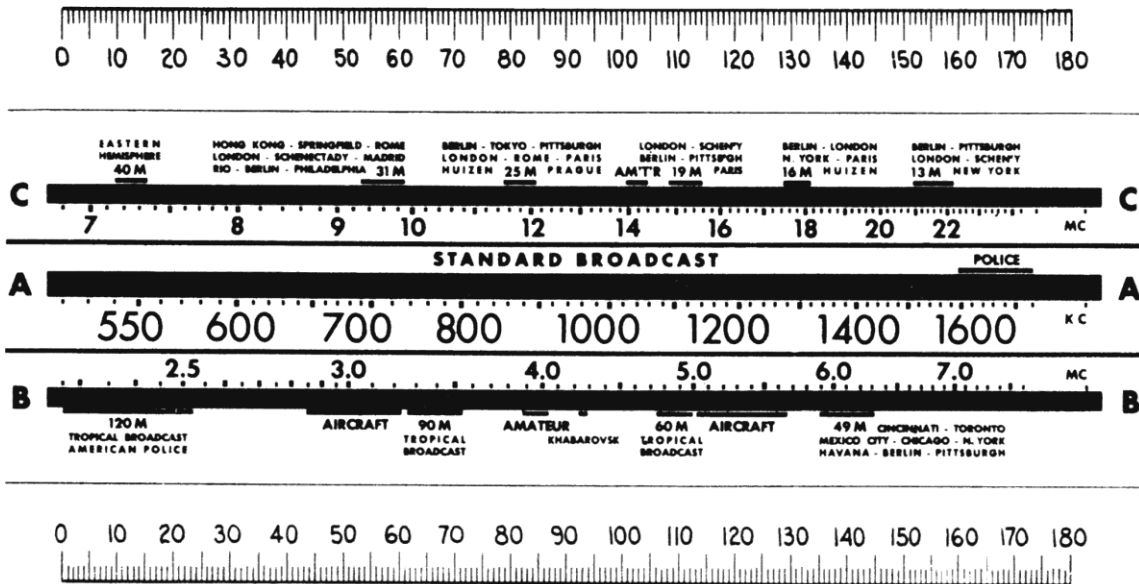


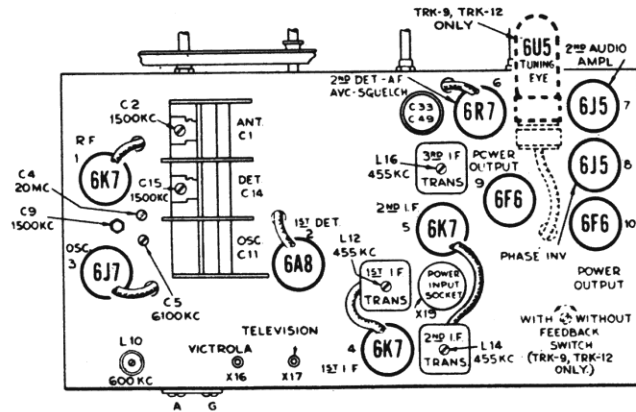
Figure 28—Tuning Dial, and Corresponding 0-180° Calibration Scale

The corresponding dial setting for any reading of the calibration scale can be determined by drawing a line straight up from this point; for example, 151° on the calibration scale corresponds to a dial reading of 1,500 kc on "A" band. Read instructions under "Alignment Procedure."

MODELS TRK-9, TRK-12, TRK-90, TRK-120 RADIO CORP. OF AMERICA

### Alignment Procedure (RADIO CHASSIS)

Figure 29—At Right—Tube and Trimmer Locations



**Cathode-Ray Alignment** is the preferable method. Connections for the oscilloscope are shown in the chassis drawing.

**Output Meter Alignment.**—If this method is used, connect the meter across the voice coil, and turn the receiver volume control to maximum.

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

**Calibration Scale on Indicator-Drive-Cord Drum.**—The tuning dial is fastened in the cabinet and cannot be used for reference during alignment, therefore a calibration scale is attached to the rear of the indicator-drive-cord drum which is mounted on the front shaft of the gang condenser. The setting of the gang condenser is read on this scale, which is calibrated in degrees. The correct setting of the gang in degrees, for each alignment frequency, is given in the alignment table.

As the first step in r-f alignment, check the position of the drum. The "O" mark on the drum scale must be vertical, and directly over the center of the gang-condenser shaft when the plates are fully meshed. The drum is held to the shaft by means of two set screws, which must be tightened securely when the drum is in the correct position.

To determine the corresponding frequency for any setting of the calibration scales, refer to the accompanying drawing which shows the dial with 0-180° calibration scales drawn at top and bottom.

**Pointer for Calibration Scale.**—Improvise a pointer for the calibration scale by fastening a piece of wire to the gang-condenser frame, and bend the wire so that it points to the "O" mark on the calibration scale when the plates are fully meshed.

**Dial-Indicator Adjustment.**—After fastening the chassis in the cabinet, attach the dial indicator to the drive cable with indicator approximately 1/16-inch above end dots at low-frequency ends of bands with gang condenser fully meshed. See that pointer does not rub background screen or dial face. The indicator has a spring clip for attachment to the cable.

Figure 30—Alignment Procedure

Steps	Connect the high side of test-osc. to—	Tune test-osc. to—	Set tuning gang to—	Adjust the following—	To obtain—
1	Turn fidelity switch to No. 3 radio (sharp).				
2	6K7 2nd I-F grid cap, in series with .01 mfd.	455 kc	Quiet point on "B" band	L15, L16 (3rd I-F Trans.)	Coincidental images on cathode-ray oscilloscope, or max. output on output meter
3	6K7 1st I-F grid cap, in series with .01 mfd.			L13, L14 (2nd I-F Trans.)	
4	6A8 1st Det. grid cap, in series with .01 mfd.			L11, L12 (1st I-F Trans.)	
5	Turn fidelity switch to No. 4 radio (broad). The curve on CRO should broaden out to a double peak and reduce gain nearly 50%.				
6	Turn fidelity switch to No. 3 radio for the following adjustments. Back out the "B" and "C" oscillator trimmers, C5 and C4. Preset "A" band oscillator trimmer, C9, approximately an inch out.				
7	Antenna terminal, in series with 100 mmf.	600 kc	600 kc (31°) "A" band	L10 (osc.)	Max. Output
8		1,500 kc	1,500 kc (151°) "A" band	C9 (osc.) C2 (ant.) C15 (det.)	Max. Output
9		600 kc	600 kc "A" band	L10 (osc.)	Rock in for Max. Output
10	Repeat Step No. 8.				
11	Antenna terminal, in series with 300 ohms	6,100 kc	6,100 kc (140°) "B" band	C5 (osc.)	Max. Output*
12		20 mc	20 mc (146°) "C" band	C4 (osc.)	Rock in for Max. Output*

Follow "Adjustments for Electric Tuning." \* Use minimum capacitance peak if two peaks can be obtained. Note: The oscillator tracks 455 kc above the signal on all bands.



REPLACEMENT PARTS

Insist on genuine factory-tested parts, which are readily identified and may be purchased from authorized dealers.

Miscellaneous Data for Radio Chassis  
Feedback Switch (S8 and S9)  
(TRK-9 and TRK-12 only)

Counter-clockwise position (with feedback)	Clockwise position (without feedback)
1. Provides inversed feedback by connecting part of secondary of output transformer in cathode of 6J5 2nd-audio tube.	1. Removes reversed feedback and grounds cathode of 2nd-audio tube.
2. Disconnects compensating network (R22, C43, C54, C40) from plate circuit of output tubes.	2. Connects compensating network (R22, C43, C54, C40) to plate circuit of output tubes.
3. Connects grid of 2nd audio to high side of 1st A-F plate resistor R17, for maximum input.	3. Connects grid of 2nd audio to low side of 1st A-F plate resistor R17, for reduced input.
4. Connects capacitor C53 (.005) from plate of 2nd audio to chassis.	4. Disconnects C53 from plate of 2nd audio.

Figure 31—Functions of Feedback Switch (TRK-9 and TRK-12 only)

Precautionary Lead Dress

- (1) All A-C leads should be twisted together and dressed away from parts in chassis to prevent hum pickup.
- (2) Keep pilot light leads away from 6R7 grid.
- (3) Yellow, green, and black leads from fidelity switch to 1st i-f transformer must be twisted together and dressed away from chassis.
- (4) Yellow, green, and black leads from fidelity switch to 2nd i-f transformer must be twisted together and dressed away from chassis.

Victrola Attachment

A jack (X-16) is located near the antenna terminal board for convenience in plugging in a Victrola Attachment. The cable from the Victrola Attachment should be terminated in a Stock No. 31048 plug to fit the jack.

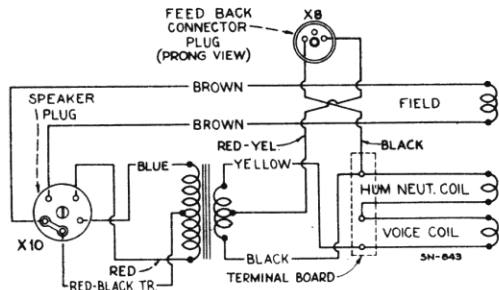


Figure 32—Connections and Colors of Loudspeaker and Cable

STOCK No.	DESCRIPTION
TELEVISION CHASSIS ASSEMBLIES	
KC-4A in TRK-9 (60 cycle)	KC-4H in TRK-90 (60 cycle)
KC-4C in TRK-9 (50 cycle)	KC-4F in TRK-120 (60 cycle)
KC-4 in TRK-12 (60 cycle)	KC-4J in TRK-120 (50 cycle)
KC-4B in TRK-12 (50 cycle)	
33387	Adjuster—Magnetite core and stud in tube for high frequency oscillator circuit adjustment (Used with L11, L12, L14, L15)
33835	Adjuster—Magnetite core and stud in tube, for high frequency oscillator circuit adjustment (Used with L13)
31253	Board—4 terminal antenna-ground terminal board
12884	Capacitor—Adjustable plunger type air trimmer (C6)
33097	Capacitor—4.7 mmfd. (neg. temp. coeff.) (C69)
33476	Capacitor—5.2 mmfd., 500 volts (C8)
33381	Capacitor—8.2 mmfd. (neg. temp. coeff.) (C71)
33380	Capacitor—12 mmfd., 500 volts (C24)
33100	Capacitor—18 mmfd., 500 volts (neg. temp. coeff.) (C19, C23)
14021	Capacitor—22 mfd. (C50)
33101	Capacitor—22 mmfd. (neg. temp. coeff.) (C64)
33102	Capacitor—47 mmfd. (neg. temp. coeff.) (C30, C35, C66, C72)
33103	Capacitor—68 mmfd., 500 volts (C31, C36, C15, C25, C40, C44, C49) (neg. temp. coeff.)
33477	Capacitor—80.5 mmfd., 500 volts (C16)
33104	Capacitor—82 mmfd. (neg. temp. coeff.) (C21, C22)
33106	Capacitor—115 mmfd. (C5)
33107	Capacitor—135 mmfd. (C4)
12725	Capacitor—150 mmfd., 400 volts (C10, C87)
33108	Capacitor—190 mmfd. (C3)
33760	Capacitor—215 mmfd. (C137)
12488	Capacitor—270 mmfd. (C81)
33109	Capacitor—320 mmfd. (C2)
31730	Capacitor—820 mmfd. (C123)
32788	Capacitor—820 mmfd., 400 volts (C84, C89)
12635	Capacitor—1,000 mmfd., 400 volts (C90)
4881	Capacitor—3,300 mmfd., 400 volts (C102)
34459	Capacitor—.0025 mfd., 1,400 volts (C124)
33584	Capacitor—.005 mfd., 1,200 volts (C11, C12, C13, C14, C18, C20, C26, C27, C29, C32, C33, C34, C37, C38, C39, C41, C42, C43, C45, C46, C47, C48, C52, C60, C62, C63, C65, C67, C68, C70, C75, C98, C99, C100, C136)
4937	Capacitor—.01 mfd., 1,000 volts (C74)
4870	Capacitor—.025 mfd., 400 volts (C107)
30882	Capacitor—.05 mfd., 200 volts (C94, C95)
32787	Capacitor—.05 mfd., 400 volts (C28)
4886	Capacitor—.05 mfd., 400 volts (C91)
4839	Capacitor—.01 mfd., 400 volts (C73, C53, C77, C78, C85, C58, C103)
12484	Capacitor—.025 mfd., 350 volts (C86, C93, C101, C106, C80, C76, C105)
12741	Capacitor—.5 mfd. (C57)
32015	Capacitor—1.0 mfd., 150 volts (C54)
32145	Capacitor—4 mfd., 450 volts (C117)—(Used in 50 cycle chassis only)
33158	Capacitor—10 mfd., 150 volts, 20 mfd., 25 volts (C97, C104)
33159	Capacitor—10 mfd., 350 volts; 10 mfd., 150 volts; 250 mfd., 15 volts (C56, C58, C61)
33878	Capacitor—10 mfd., 450 volts, 10 mfd., 450 volts, 10 mfd., 150 volts (C125, C126, C127)
33160	Capacitor—10 mfd., 350 volts, 10 mfd., 150 volts, 20 mfd., 25 volts, 20 mfd., 25 volts (C92, C79, C82, C83)
32045	Capacitor—15 mfd. (C96)
33475	Capacitor—20 mfd., 25 volts (C55)
33161	Capacitor—20.50 mfd., 35 volts (C51, C108)
33243	Coil—Oscillator coil with core and stud (L11)
35582	Coil—1½ turn antenna coil, core, stud, and capacitor assembly (C5, L9, L10)
33647	Coil—2 turn antenna coil, core, stud and capacitor assembly (C4, L7, L8) (yellow or purple)
33646	Coil—3 turn antenna coil, core, stud and capacitor assembly (C3, L5, L6) (orange or white)
33645	Coil—5½ turn antenna coil, core, stud and capacitor assembly (C2, L3, L4) (red or black)
33644	Coil—4 turn antenna coil, core, stud and capacitor assembly (C137, L1, L2) (brown or blue)
33535	Coil—Peaking coil (L39, R44)
33534	Coil—Peaking coil (L40, R48)
33536	Coil—Peaking coil (L41, R54)
33537	Coil—Peaking coil (L42, R56)
35820	Coil—Peaking coil (L51, R156)
35821	Coil—Peaking coil (L52, R146)
35818	Coil—Peaking coil (L53, R148)
35817	Coil—Peaking coil (L54, R150)
35815	Coil—Peaking coil (L55, R154)
35819	Coil—Peaking coil (L56, R153)
35816	Coil—Peaking coil (L57, R155)
33228	Condenser—Oscillator "Fine tuning" condenser, located on range switch (C9)
33164	Control—Dual 1.2 meg. and 30,000 ohms "Vertical hold" and "Horizontal hold" controls (R106, R92)

MODELS TRK-9, TRK-12,  
TRK-90, TRK-120

RADIO CORP. OF AMERICA

Replacement Parts (Continued)

STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
33206	Control—6 ohm tapped "Horizontal centering" control (R89)			34600	Cable—Kinescope cable and socket (TRK-12 and TRK-120 only)
33210	Control—20 ohm tapped "Vertical centering" control (R114)			34601	Cable—Kinescope cable and socket (TRK-9 and TRK-90 only)
33162	Control—4,000 ohm "Contrast" control (R45)			33246	Cable—Low capacity Kinescope grid cable (TRK-12 and TRK-120 only)
33209	Control—5,600 ohm "Vertical linearity" control (R113)			33605	Cable—Low capacity Kinescope grid cable (TRK-9 and TRK-90 only)
33163	Control—50,000 ohm "Brightness" control (R61)			29872	Cable—Television power supply cable
35066	Control—50,000 ohm "Brightness" and 4,000 ohm "Contrast" dual control (R61, R45)			33597	Cap—Blue pilot lamp "Bulls Eye"
33207	Control—560,000 ohm "Width" control (R94)			32897	Clamp—Deflecting yoke clamp assembly
33208	Control—2.7 meg "Height" control (R108)			4573	Connector—2-prong female connector for power supply circuit (X23)
35092	Coupling—Flexible bronze coupling, located on control shaft end of "Contrast" control			33363	Connector—2-prong female connector, used on interlock cable (X21)
33383	Coupling—Flexible bronze coupling, located on panel shaft end of "Contrast" control			33002	Coupling—Flexible bronze coupling
4574	Plug—6-prong male plug for Television chassis power supply cable (X14)			31456	Cover—Eight protective covers for push button markers
16836	Plug—8-prong male plug for Television chassis power supply cable (X12)			32815	Cushion—Kinescope masking cushion (TRK-12 and TRK-120 only)
32723	Resistor—10 ohms, 1 watt (R120)			33019	Cushion—Kinescope masking cushion (TRK-9 and TRK-90 only)
14671	Resistor—33 ohms, 1 watt (R152)			33643	Cushion—Television chassis mounting cushion with screw, spacer and washer (sufficient for one chassis)
35068	Resistor—Voltage divider comprising a 70, 7.4 and 5 ohm section (R164, R163, R162)			35894	Decalcomania—"1-2-3-4-5" decal (TRK-12 and TRK-120)
33326	Resistor—Voltage divider comprising a 600-300-3,100-9,455 and 13,000 ohm section (R125, R124, R123, R122, R121)			38305	Decalcomania—"1-2-3-4-5" decal (TRK-9 and TRK-90)
14074	Resistor—82 ohms, 1 watt (R64, R67, R14, R21, R28, R34)			35890	Decalcomania—"Contrast Brightness" decal
14439	Resistor—100 ohms, 1 watt (R53)			35893	Decalcomania—"Fine Tuning" decal
13428	Resistor—150 ohms, 1 watt (R39)			35891	Decalcomania—"Horizontal and Vertical Holding" decal
13451	Resistor—270 ohms, 1 watt (R41)			35896	Decalcomania—"Power-Volume, tone, tuning, range" decal
13219	Resistor—270 ohms, 2 watts (R97)			35392	Decalcomania—"RCA Victor" decal
30499	Resistor—470 ohms, 1 watt (R95)			35892	Decalcomania—"Station selector" decal
35067	Resistor—Voltage divider comprising a 900-3,100-6,600-7,800 and 1,470 ohm section (R161, R160, R159, R158, R157)			35895	Decalcomania—"Victrola-Radio-Television" decal
33325	Resistor—Voltage divider comprising a 36-100-7.4 and 5 ohm section (R119, R118, R117, R116)			33442	Dial—Three-band glass dial scale
14720	Resistor—1,000 ohms, 1 watt (R9, R85, R70, R18, R41, R25, R31, R37, R42)			33329	Escutcheon—Dial escutcheon less buttons, button shaft and dial scale (TRK-90 and TRK-120)
14993	Resistor—1,200 ohms, 1 watt (R17)			35889	Escutcheon—Dial escutcheon less buttons, button shaft and dial scale (TRK-9 and TRK-12)
12267	Resistor—1,200 ohms, 1 watt (R18)			32083	Frame—Dial frame with screen less pointer, carriage and rod
14499	Resistor—1,500 ohms, 1 watt (R8, R24)			33074	Glass #1 by #1 inch safety protective glass (TRK-9 and TRK-90 only)
31920	Resistor—1,800 ohms, 1 watt (R16, R23, R36)			35076	Glass #2 by 1 1/2 inch safety protective glass (TRK-12 and TRK-120 only)
12194	Resistor—1,800 ohms, 1 watt (R12)			33282	Hinge—Piano type lid hinge and screws
11863	Resistor—2,000 ohms, 1 watt (R36)			33468	Knob—Radio tuning, volume or range selector knob
13486	Resistor—2,200 ohms, 1 watt (R6)			33470	Knob—Television "Contrast," "Hor. hold" or "Fine Tuning" knob
13031	Resistor—3,300 ohms, 1 watt (R19, R26)			33471	Knob—Television "Brightness" or "Vert. hold" knob
12312	Resistor—3,300 ohms, 1 watt (R47)			33472	Knob—Television "Station selector" knob
30150	Resistor—3,300 ohms, 1 watt (R7, R54)			33469	Knob—Victrola-Radio-Television-Fidelity selection knob
12955	Resistor—3,900 ohms, 1 watt (R109)			11891	Lamp—6.3 V pilot lamp, Mazda No. 44
35943	Resistor—3,900 ohms, 1 watt (R139)			31589	Marker—Complete set of call letter markers
30146	Resistor—4,700 ohms, 1 watt (R83, R99)			31458	Marker—"Dial Tuning" push button marker
31789	Resistor—5,600 ohms, 1 watt (R12, R142, R143)			31457	Marker—"Victrola" push button marker
12265	Resistor—6,800 ohms, 1 watt (R11, R140)			33075	Mirror—201 by 141 in. viewing mirror
14075	Resistor—8,200 ohms, 1 watt (R101, R102, R103)			33225	Nut—Speed nut for mounting high frequency coil assemblies
14559	Resistor—10,000 ohms, 1 watt (R20, R27, R33, R13, R58, R82, R84, R88, R100, R74, R147)			4577	Plug—2-prong male plug for power supply circuit (X24)
13097	Resistor—10,000 ohms, 1 watt (R79, R80)			33244	Plug—2-prong male plug, used on interlock cable (X22)
13594	Resistor—15,000 ohms, 1 watt (R43)			33166	Plug—2-prong male plug for Kinescope grid-cathode cable (X4)
35944	Resistor—15,000 ohms, 1 watt (R149)			32816	Plug—4-prong male plug for deflecting yoke cable (X2)
36714	Resistor—15,000 ohms, 1 watt (R178)			12493	Plug—5-prong female speaker cable plug (X9)
14284	Resistor—22,000 ohms, 1 watt (R71)			4574	Plug—6-prong male plug for Television chassis power supply cable (X14)
13998	Resistor—22,000 ohms, 1 watt (R47, R49)			16836	Plug—8-prong male plug for Television chassis power supply cable (X12)
12738	Resistor—27,000 ohms, 1 watt (R91)			31542	Pointer—Station selector pointer with carriage
11300	Resistor—33,000 ohms, 1 watt (R10)			31287	Rod—Dial frame pointer slide rod
35945	Resistor—33,000 ohms, 1 watt (R3, R138)			31306	Screen—Dial frame diffusing screen with rivets
12412	Resistor—47,000 ohms, 1 watt (R93)			4560	Screw—1/20 by 1 1/2 in. long machine screw, washer and lockwasher for chassis mounting (12 required)
30650	Resistor—56,000 ohms, 1 watt (R55)			35032	Shaft—Push button pivot shaft
12010	Resistor—68,000 ohms, 1 watt (R69)			33517	Sleeve—Bell mouth sleeve for screw-driver adjustments (TRK-9 and TRK-90 only)
13715	Resistor—68,000 ohms, 1 watt (R63, R66)			33471	Spring—Knob spring for Stock Nos. 33468, 33471, 33472, 33469 knobs
14138	Resistor—68,000 ohms, 1 watt (R15, R22, R29, R30, R40, R68)			30330	Spring—Knob spring for Stock No. 33470 knob
30435	Resistor—82,000 ohms, 1 watt (R78)			33362	Switch—Interlock switch with leads (TRK-9 and TRK-12)
14560	Resistor—82,000 ohms, 1 watt (R144)			33384	Switch—Interlock switch and cover (TRK-90 and TRK-120)
30180	Resistor—120,000 ohms, 1 watt (R4)			31022	Support—Left hand lid support
12264	Resistor—220,000 ohms, 1 watt (R01—TRK-9, TRK-12 with AVC) (R111)			31478	Support—Right hand lid support
12285	Resistor—170,000 ohms, 1 watt (R46, R59, R96)			9857	Yoke—Deflecting yoke complete with cable and 4-prong plug (L43, L44, R62)
12486	Resistor—560,000 ohms, 1 watt (R151)				
12413	Resistor—680,000 ohms, 1 watt (R50)				
13730	Resistor—1 meg. 1 watt (R1, R2, R76, R75, R73, R52, R80, R81)				
2546	Resistor—1 meg. 1 watt (R3)				
30208	Resistor—1.2 meg. 1 watt (R105)				
30182	Resistor—1.2 meg. 1 watt (R107)				
12679	Resistor—2.2 meg. 1 watt (R110)				
33229	Roller—Rubber roller for oscillator condenser drive. Part of range switch assembly				
33165	Socket—2-prong female socket for Video output to Kinescope (X3)				
			7,500 VOLT TELEVISION POWER UNIT		
			KK-7A in TRK-9 (60 cycle) KK-7F in TRK-120 (60 cycle)		
			KK-7E in TRK-9 (50 cycle) KK-7G in TRK-120 (60 cycle)		
			KK-7D in TRK-12 (60 cycle) KK-7J in TRK-120 (50 cycle)		
33016	Bushing—Porcelain bushing and spring				
33288	Cable—Insulated connector complete with cable for Kinescope (2nd anode)				
33018	Capacitor—0.03 mfd., 7,500 volt (C113, C114)				
34331	Capacitor—0.1 mfd., 7,500 volt (C121, C122)				
	(Used in 50 cycle model only)				
18388	Capacitor—0.25 mfd., 600 volt (C120, C128)				
32400	Capacitor—20 mfd., 450 volt (C111, C112)				
33023	Capacitor—80-10 mfd., 400 volt (C110, C109, C118, C119)				
14854	Choke—Filter choke (L49)				
32940	Choke—Filter choke (L50) (Used in TRK-9, TRK-12, TRK-120, 50 cycle)				
36887	Choke—Filter choke (L50) (Used in TRK-90 and TRK-120, 60 cycle only)				
30314	Clip—Plate connector for 2V2G Radiotron				
33037	Control—Focus control, 400,000 ohms (R129) (Used in first production TRK-9, TRK-12, and in TRK-90)				
33971	Control—Focus control, 400,000 ohms (R129) (Used in second production TRK-9, TRK-12, and in TRK-120)				
33002	Coupling—Flexible bronze coupling				
10907	Fuse—3 ampere, 250 volt				
34527	Fuse—1 ampere glass type fuse				
33015	Insulator—Stand-off insulator only—less hardware				
32937	Knob—Focus control knob				
33244	Plug—2-prong male connector for A.C. power cord (X22)				
33166	Plug—2-prong male plug for Kinescope grid-cathode cable (X4)				
35897	Resistor—60 ohms, 10 watt (R165)				
33329	Resistor—330,000 ohms, 1W (1,000V.) (R126, R130)				
33502	Resistor—470,000 ohms, 1W (1,000V.) (R127, R137, R166) (R128 in TRK-9, TRK-12, TRK-90, and TRK-120 with D.C. Restorer)				
33593	Resistor—560,000 ohms, 1 watt (1,000V.) (R128 in TRK-90 and TRK-120 without D.C. Restorer)				
33554	Resistor—820,000 ohms, 1W (1,000V.) (R131, R132, R133, R134, R135, R136)				
33024	Shaft—Bakelite shaft for focus control				
18007	Socket—Ceramic octal base socket and retaining ring for high voltage rectifier				
33245	Socket—Kinescope socket, less cable (X11)				
31251	Socket—Octal base 5T4 or 5U4G rectifier, or television power supply socket (X13)				
12143	Socket—8-prong television power supply socket (X15)				
32909	Support—Rectifier socket, plate, and stand-off insulator assembly				
32939	Transformer—Filament power transformer (T7), 105-125 volts, 50-60 cycle				
32938	Transformer—Low voltage power transformer (T5), 105-125 volt, 60 cycle (Used in 60 cycle models only)				
34302	Transformer—Low voltage power transformer (T8), 105-125 volts, 50 cycle (Used in 50 cycle models only)				
9861	Transformer—High voltage power transformer (T6), 105-125 volts, 60 cycle (Used in 60 cycle models only)				
34526	Transformer—High voltage power transformer (T9), 105-125 volts, 50 cycle (Used in TRK-9, 50 cycle and TRK-12, 50 cycle only)				
35888	Transformer—High voltage power transformer (T9), 105-125 volts, 50 cycle (Used in TRK-120, 50 cycle only)				
			SPEAKER ASSEMBLY		
			RL-70F-5		
			Cap—Cone center dust cap		
			Coil—Hum neutralizing coil (L21)		
			Coil—Speaker field coil (L17)		
			Coil—Speaker cone assembly (L18)		
			Plug—3-prong male feed back cable plug (X8)		
			Plug—3-prong speaker plug (X10)		
			Speaker—Speaker complete (RL-70F-5)		
			Transformer—Speaker output transformer (T1)		
			MISCELLANEOUS ASSEMBLIES		
			Button—Station selector push button		
			Cable—17 1/2 inch shielded audio lead with plugs (X6, X18) (Model TRK-9 and TRK-90 only)		
			Cable—38-inch shielded audio lead with plugs (Model TRK-12 and TRK-120 only) (X8, X18)		

RADIO CORP. OF AMERICA

MODELS TRK-9, TRK-12,  
TRK-90, TRK-120

Replacement Parts (Continued)

STOCK No.	DESCRIPTION
33011	Socket—4-contact female socket for Kinescope deflecting yoke (X1)
31251	Socket—8-contact octal type socket
18007	Socket—Ceramic octal socket for 6L6 "Hor. out" and 6J5 "Osc"
14278	Socket—Television audio output pin socket (X5)
33227	Switch—Range switch with shield plate and mounting studs—less coils, condenser and friction roller (S1, S2, S3)
33330	Transformer—1st det. P1 I-F transformer (L17, L18) (br. and br.)
33331	Transformer—1st det. P2 I-F transformer (L19, L20) (brown and red)
33334	Transformer—1st pix. P1 I-F transformer (L21, L22, L23, L24) (brown and green)
33335	Transformer—1st pix. P2 (L25) or 2nd pix. P2 (L30) I-F transformer (brown and blue)
33338	Transformer—1st sound I-F transformer (L45, L46) (orange and red) (Used in early production)
33526	Transformer—1st sound I-F transformer (L45, L46) (red and white) (Used in late production)
33516	Transformer—2nd pix. P1 I-F transformer (L26, L27, L28, L29) (orange and orange)
33339	Transformer—2nd sound I-F transformer (L47, L48) (orange and orange)
33333	Transformer—3rd pix. I-F transformer (L31, L32, L33) (orange and blue)
33336	Transformer—4th pix. I-F transformer (L34, L35, L36) (brown and black)
33337	Transformer—5th pix. I-F transformer (L37, L38) (brown and white)
32899	Transformer—Horizontal oscillation transformer (T1)
9862	Transformer—Horizontal output transformer (T2)
32900	Transformer—Vertical output transformer (T4)
32898	Transformer—Vertical oscillation transformer (T3)
<b>3-BAND RADIO RECEIVER CHASSIS</b>	
	RC-427A in TRK-9 RC-427G in TRK-90
	RC-427 in TRK-12 RC-427F in TRK-120
31863	Board—Antenna-ground terminal board
32232	Body—Station setting contact body and spring
32090	Bracket—Motor mounting bracket
31282	Bracket—"Magic Eye" mounting bracket and clip (TRK-9 and TRK-12 only)
32635	Cable—Indicator pointer drive cable—60-in. length
30766	Cap—"Magic Eye" cap (TRK-9, TRK-12 only)
14392	Capacitor—4.7 mmfd. (C46)
31353	Capacitor—15 mmfd. (C6)
31270	Capacitor—100 mmfd. (C41, C42)
12720	Capacitor—100 mmfd. (C38, C16)
12724	Capacitor—120 mmfd. (C12, C21)
13003	Capacitor—180 mmfd. (C3, C17)
12952	Capacitor—330 mmfd. (C39)
31435	Capacitor—560 mmfd. (C8)
31552	Capacitor—880 mmfd. (C19, C20, C23, C24)
32197	Capacitor—3,900 mmfd., 500 volts (C7)
31405	Capacitor—6,000 mmfd., 500 volts (C10)
5107	Capacitor—0.0025 mfd., 700 volts (C35, C36, C59)
30303	Capacitor—0.0035 mfd., 700 volts (C40, C54)
33584	Capacitor—0.005 mfd., 1,200 volts (C53)
4937	Capacitor—0.1 mfd., 1,000 volts (C37, C44, C43, C29)
11315	Capacitor—0.15 mfd., 400 volts (C31)
4870	Capacitor—0.25 mfd., 400 volts (C32, C50)
32787	Capacitor—0.5 mfd., 400 volts (C27, C25)
4839	Capacitor—0.1 mfd., 400 volts (C22, C18, C26, C34, C52)
12484	Capacitor—25 mfd., 350 volts (C13, C28, C48, C45, C51)
12741	Capacitor—0.5 mfd., 150 volts (C47)
18530	Capacitor—20-20 mfd., 350 volts (C33, C49)
32088	Capacitor—Motor capacitor 60 mfd., 40 volts (C30)
31263	Coil—"A" band antenna coil (L1, L2)
31265	Coil—"A" band detector coil (L6, L7)
31296	Coil—"A" band oscillator coil (L10)
31980	Coil—"B" and "C" band antenna coil (L3, L4, L5)
31783	Coil—"B" and "C" band oscillator coil (L8, L9)
31234	Condenser—3-gang variable condenser (C1, C11, C14, C2, C15)
12714	Condenser—Air trimmer condenser (C9)
31292	Condenser—Double section trimmer capacitor 3-30 mmfd., each section (C4, C5)
31971	Contact—Push button switch contacts comprising 11 contacts riveted on insulating strip
31972	Contact—Push button switch contacts comprising 14 contacts riveted on insulating strip
31231	Contact—Station setting contact tip
33446	Contact—"Power-volume control"—1 meg. (R12, S10, S11)
32634	Cord—Band indicator and variable condenser drive cord
31269	Core—Core and stud for 1st, 2nd, or 3rd I-F transformer
32093	Damper—Flywheel for rear end of motor shaft

STOCK No.	DESCRIPTION
32096	Disc—Friction disc and pinion gear
32091	Drive—Friction drive gear assembly
31273	Drum—Variable condenser drive drum
31239	Gear—Knob shaft drive gear and hub
31532	Indicator—Band indicating strip (Model TRK-12 and TRK-120)
31304	Indicator—Band indicating strip (Model TRK-9 and TRK-90)
31480	Lamp—6.3 volt electric tuning set-up lamp Mazda No. 47
11891	Lamp—6.3 volt dial lamp Mazda No. 44
31969	Lockplate—Push button switch lockplate comprising 10 contact locks in 1 strip
32095	Motor—Electric tuning drive motor complete (M1)
31228	Plate—Station selector contact plate—less plungers
31227	Plate—Station selector mounting plate—mounts on rear of variable condenser
12493	Plug—Female connector for speaker cable (X9)
31271	Pulley—Drive pulley fastens on station selector knob shaft
31280	Pulley—Indicator pointer drive cord pulley
31272	Pulley—Range switch pulley
14720	Resistor—1,000 ohms, 1 watt (R7)
12267	Resistor—1,200 ohms, 1 watt (R6)
12312	Resistor—3,300 ohms, 1 watt (R5)
14559	Resistor—10,000 ohms, 1 watt (R10)
12695	Resistor—15,000 ohms, 1 watt (R14)
12738	Resistor—27,000 ohms, 1 watt (R13)
13477	Resistor—27,000 ohms, 1 watt (R22)
12454	Resistor—33,000 ohms, 1 watt (R3, R4)
12266	Resistor—39,000 ohms, 1 watt (R23)
12412	Resistor—47,000 ohms, 1 watt (R18)
12286	Resistor—56,000 ohms, 1 watt (R30)
14560	Resistor—100,000 ohms, 1 watt (R11, R16, R20, R32, R31)
14020	Resistor—150,000 ohms, 1 watt (R17—TRK-9 and TRK-12 only)
13698	Resistor—180,000 ohms, 1 watt (R17—TRK-90 and TRK-120 only)
12199	Resistor—270,000 ohms, 1 watt (R15, R33, R34)
18020	Resistor—470,000 ohms, 1 watt (R24)
12486	Resistor—560,000 ohms, 1 watt (R21)
12013	Resistor—1 meg., 1 10 watt (R8)
13730	Resistor—1 meg., 1 watt (R1, R2, R19)
12679	Resistor—2.2 meg., 1 watt (R9)
31548	Resistor—Voltage divider consisting of one 1,500, one 2,950, one 3,400, one 30 and one 3,165 ohm section (R25, R26, R27, R28, R29)
14887	Retainer—Drive cord pulley retainer
32086	Roller—Rubber friction roller for front end of motor shaft
31233	Rotor—Station selector rotor disc—mounts on rear of variable condenser shaft
5042	Screw—No. 8-32 set screw for drive pulley
14350	Screw—No. 8-32 square head set screw for rotor disc, Stock No. 31233
31681	Shaft—Dial drive knob shaft
31364	Socket—Dial or electric tuning set-up lamp socket
13871	Socket—"Magic Eye" socket (TRK-9 and TRK-12 only)
31251	Socket—Octal type Radiotron or power supply socket
14278	Socket—Pin socket for phono or television input with mounting plate (X16) (X17)
31279	Spring—Band indicator tension spring
13638	Spring—Indicator drive cord tension spring
31970	Spring—Push button switch lock bar spring
31232	Spring—Station setting tip spring
12007	Spring—Stud retaining spring for I-F adjuster
31418	Spring—Variable condenser drive cord tension spring
33448	Switch—Feed-back switch (S8, S9)
33447	Switch—H F. tone control phono-radio-television and power switch (S4, S5, S6, S7, S12)
31979	Switch—Range switch (S1, S2, S3)
31968	Switch—Station selector push button switch complete
31565	Transformer—1st I-F transformer complete (L11, L12, C19, C20, L19)
31551	Transformer—2nd I-F transformer complete (L13, L14, C23, C24, L20)
31540	Transformer—3rd I-F transformer complete (L15, L16, C41, C42)
32231	Washers—Comprising one metal washer, two fibre washers and one solder lug or retainer for station setting body
32094	Washers—Assorted washers for mounting damper on motor shaft
<b>POWER SUPPLY UNIT TELEVISION AUDIO RECEIVER RS-83E</b>	
14531	Capacitor—25 mfd. filter capacitor (C1)
33696	Plug—8-contact male plug for power supply cable (X20)
31251	Socket—5U4G Radiotron tube socket
33445	Transformer—110 V. 50-60 cycle power transformer (T1)