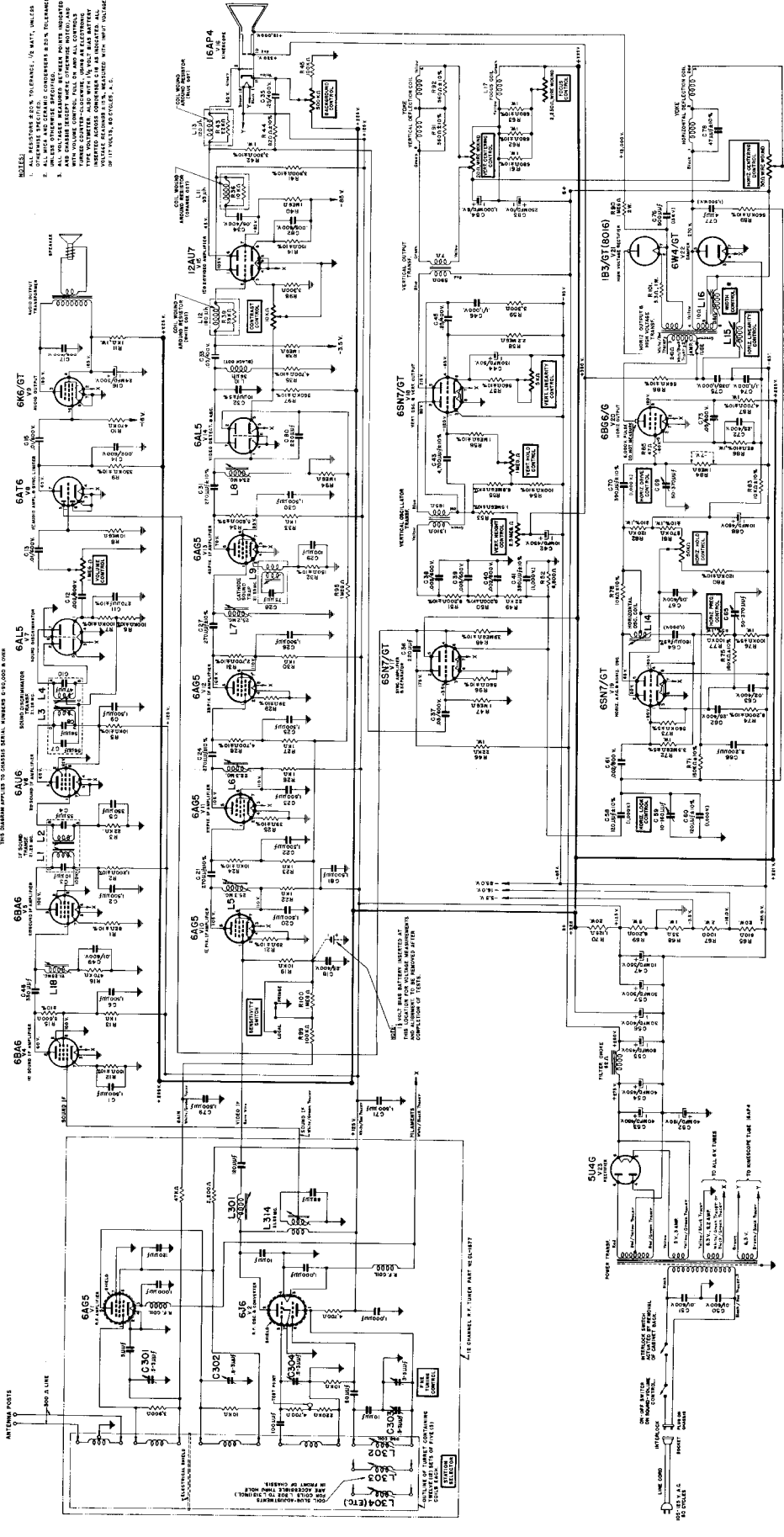


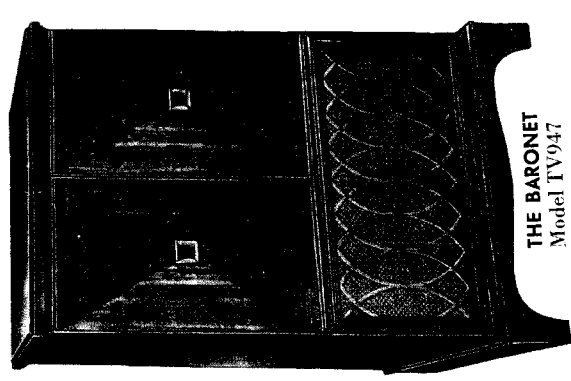
OLYMPIC MODELS TV-947, TV-949 & TV-950

- NOTES:
1. ALL PARTS ARE TO BE INSTALLED IN ACCORDANCE WITH THE LISTING OF PARTS SPECIFIED.
 2. THE TUBE SOCKETS SHOWN ARE OF THE STANDARD TYPE UNLESS OTHERWISE SPECIFIED.
 3. ALL PARTS ARE TO BE INSTALLED IN ACCORDANCE WITH THE LISTING OF PARTS SPECIFIED.
 4. ALL PARTS ARE TO BE INSTALLED IN ACCORDANCE WITH THE LISTING OF PARTS SPECIFIED.
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 9. ALL PARTS ARE TO BE INSTALLED IN ACCORDANCE WITH THE LISTING OF PARTS SPECIFIED.
 10. ALL PARTS ARE TO BE INSTALLED IN ACCORDANCE WITH THE LISTING OF PARTS SPECIFIED.



SEE PAGE 11 FOR VERTICAL CIRCUITRY
 SEE PAGE 12 FOR HORIZONTAL CIRCUITRY

MODELS TV-947, TV-949, TV-950



THE BARONET
Model TV-947

OLYMPIC TELEVISION RECEIVERS MODELS TV-947, TV-949, & TV-950
These instructions apply to serial numbers G-90,001 to G-100,000 inclusive.

These models are twenty-two tube direct viewing 16" picture tube television receivers differing essentially in size of speaker and styling of cabinet.

Electrical and Mechanical Specifications

Channel Number	Channel Frequency	Picture Carrier Freq., MC	Sound Carrier Freq., MC	Receiver RF Osc. Freq., MC
1	56.25	72.75	72.75	81
2	60.75	77.25	77.25	85
3	65.25	81.75	81.75	89
4	69.75	86.25	86.25	93
5	74.25	90.75	90.75	97
6	78.75	95.25	95.25	101
7	83.25	99.75	99.75	105
8	87.75	104.25	104.25	109
9	92.25	108.75	108.75	113
10	96.75	113.25	113.25	117
11	101.25	117.75	117.75	121
12	105.75	122.25	122.25	125
13	110.25	126.75	126.75	129

Power Supply-----105-125 volts 50 cycles 240 watts
Speaker, TV-947-----10" PM 3.16 oz. Alnico 5
Speaker, TV-949-----10" PM 3.16 oz. Alnico 5
Speaker, TV-950-----10" PM 3.16 oz. Alnico 5
Receiver Antenna Input Impedance-----300 ohms balanced
Speaker Coil Impedance-----3-2 ohms at 400 cycles

Tube Complement	Function
(V1) 6AU6	RF Amplifier
(V2) 6AV6	1st. Audio Amplifier and Sync Separator
(V3) 6AR5	1st. Sound IF Amplifier
(V4) 6AV6	2nd. Sound IF Amplifier
(V5) 6AR5	3rd. Sound IF Amplifier
(V6) 6AL5	Sound Discriminator
(V7) 6AR5	1st. Video Amplifier
(V8) 6AR5	1st. Pix IF Amplifier
(V9) 6AR5	2nd. Pix IF Amplifier
(V10) 6AR5	3rd. Pix IF Amplifier
(V11) 6AR5	4th. Pix IF Amplifier
(V12) 6AR5	5th. Pix IF Amplifier
(V13) 6AR5	6th. Pix IF Amplifier
(V14) 6AR5	Control (AGC Detector & Automatic Gain Control)
(V15) 6AR5	1st. and 2nd. Video Amplifier
(V16) 6AR5	Sync Separator
(V17) 6AR5	Vertical Oscillator & Vertical Output
(V18) 6AR5	Horizontal Osc. & Horizontal Oscillator
(V19) 6AR5	High Voltage Rectifier
(V20) 6AR5	Damper
(V21) 6AR5	Power Supply Rectifier
(V22) 6AR5	Power Supply Rectifier
(V23) 6AR5	Kinescope (Picture Tube)

- Picture Intermediate Frequencies**
Picture carrier frequency -----25.75 MC
Accompanying sound traps -----21.25 MC
- Sound Intermediate Frequencies**
Sound carrier frequency -----21.25 MC
Sound Discriminator Band Width (Between Peaks) 350 KC
- Operating Controls (front panel)**
Channel Selector } Dual Control Knobs
Fine Tuning }
Sound Volume and ON-OFF Switch --- Single Control Knob
Horizontal Hold } Dual Control Knobs
Vertical Hold }
Background } Dual Control Knobs
Contrast }
- Non-Operating Controls**
Sensitivity Switch-----Rear Chassis Adjustment
Horizontal & Vertical Centering-----Rear Chassis Adjustment
Width-----Rear power supply cage
Height-----Rear power supply cage
Horizontal Linearity-----Rear chassis screwdriver adjustment
Vertical Linearity-----Rear chassis adjustment
Horizontal Drive-----Rear chassis screwdriver adjustment
Horizontal Oscillator Frequency (Fine)-----Rear chassis screwdriver adjustment
Horizontal Oscillator Frequency (Coarse)-----Rear chassis screwdriver adjustment
Horizontal Locking Range-----Rear chassis screwdriver adjustment
Focus Coil-----Rear chassis adjustment
Ion trap magnet-----Top chassis screw adjustment (for preliminary tuning of raster)
Deflection Coil-----Top chassis (picture tube) adjustment
Picture tube wing screw adjustment

- Equipment Required**
1) RF signal generator to provide the following accurate frequencies. If the accuracy of the generator frequencies is not known, some type of crystal calibrator should be utilized to check the correct settings of the RF generator for each particular frequency.
(a) IF Frequencies
21.25 MC Sound IF, Sound Discriminator and Sound Traps
22.3 MC Second Pix IF Coil
25.4 MC Fourth Pix IF Coil
25.4 MC Fifth Pix IF Coil
25.75 MC Picture Carrier
- (a) RF Frequencies**
Channel 2
Picture Carrier
Sound Carrier
Freq., MC
75-25
59.75
61.25
41.75
77.25
87.75
179.75
185.25
161.25
187.25
191.75
187.75
199.25
203.75
209.75
215.75

ALIGNMENT

- Equipment Required**
1) RF signal generator to provide the following accurate frequencies. If the accuracy of the generator frequencies is not known, some type of crystal calibrator should be utilized to check the correct settings of the RF generator for each particular frequency.
(a) IF Frequencies
21.25 MC Sound IF, Sound Discriminator and Sound Traps
22.3 MC Second Pix IF Coil
25.4 MC Fourth Pix IF Coil
25.4 MC Fifth Pix IF Coil
25.75 MC Picture Carrier
- (a) RF Frequencies**
Channel 2
Picture Carrier
Sound Carrier
Freq., MC
75-25
59.75
61.25
41.75
77.25
87.75
179.75
185.25
161.25
187.25
191.75
187.75
199.25
203.75
209.75
215.75

- (c) Output on these ranges should be adjustable and capable of providing at least .1 volt.
- 2) Electronic Voltmeter
3) Standard Ray Oscilloscope, 3" minimum screen
4) RF Sweep Generator, meeting the following requirements:

- (a) Frequency Ranges
18 to 30 MC., 1 MC. sweep width
10 to 30 MC., 10 MC. sweep width
170 to 225 MC., 10 MC. sweep width
- (b) Output adjustable to .1 volt

The chassis may be removed from the cabinet with the kinescope tube in place and servicing and alignment work can be accomplished without removing the kinescope tube. This work is most conveniently performed by placing the chassis on its left side with the cage resting on work bench and the controls facing the operator.

- To remove chassis from cabinet remove
(1) Line cord from power outlet
(2) Masonite back (Caution: An interlock plug is attached to the back. Do not damage same when removing back.)
(3) Speaker plug from rear of chassis
(4) Interlock plug from rear of chassis
(5) Interlock plug from front of cabinet
(6) Knobs from front of cabinet
(7) Four mounting screws and washers from bottom of cabinet

In sliding chassis out of cabinet be careful that the kinescope tube does not strike against cabinet or any other obstruction.

Order of Alignment

When complete receiver alignment is necessary it should be performed in the following sequence.

- (1) Pix IF traps
- (2) Sound IF Transformers
- (3) Pix IF coil eliminator
- (4) Pix IF coil eliminator
- (5) Retouch Pix IF Transformers

After removing chassis from cabinet close circuit of primary by soldering a lead across interlock socket. (Be sure to unsolder this lead after servicing). Then connect power plug and speaker plug. Set sensitivity switch (at rear of chassis) in "Local" position.

If a local station is not operating on channel #9 set the tuner to this channel, turn on power switch and proceed as follows: (If #9 is a local station channel use channel #8 or #13).

Picture I.F. Trap Adjustment

Caution: Persons making any adjustments or alignment be sure that sensitivity switch is in "Local" position.

Connect hot lead of electronic voltmeter to Pin #7 of V14 with meter range switch set to lowest scale and observing polarity for negative readings.

Couple not lead of RF Signal Generator to converter tube V2 by means of a loop consisting of two turns of insulated hook-up wire. Connect ground lead of RF Signal Generator to chassis.

Note: If the converter tube V2 is shielded- remove shield.

Set the generator frequency accurately to 21.25 MC. and adjust trimmer sound trap located at top of tuner (see tube and generator layout drawing) for minimum reading on voltmeter.

Increase generator output to maximum (recheck 21.25 MC. generator setting) and adjust L9 for minimum reading of voltmeter.

Sound IF Transformer Adjustment

Change hot lead connection of electronic voltmeter to terminal marked "C" and sound discriminator transformer. Reduce output of the signal generator to give approximately 2 volts reading on voltmeter scale.

Adjust for maximum reading in order named: L10, L1, L2 and L3.

Sound Discriminator Adjustment

Change hot lead connection of voltmeter to pin #1 of V7 and adjust L14 for zero reading on voltmeter. This zero setting is very critical and the adjustment must be made with extreme care.

Repeat adjustments for L3 and L4 in the same manner indicated above.

Pix I-F Coil Adjustment

Connect hot lead of voltmeter to pin #7 of V14 and adjust the following slugs for maximum output at frequencies indicated:

L301	-----	21.8 MC
L5	-----	25.3 MC
L7	-----	25.2 MC
L8	-----	23.4 MC

Retouch Pix I-F Transformer Adjustment

Disconnect RF signal generator leads and connect hot lead of sweep generator to coupling loop on converter tube and ground to chassis.

Connect vertical input terminal of oscilloscope to pin #7 of V14 (Pix Detector) and connect ground lead of scope to chassis.

Connect 1 1/2V flashlight battery with positive terminal to chassis and negative terminal to #2 pin of V14.

Set tuner to channel 9 unless local station is operating on this frequency, in which case an adjacent channel should be used.

Set sweep generator frequency to IF sweep on the 20 to 30 MC range.

Adjust sweep generator output to produce a curve on the scope which is approximately 2/3 of the screen diameter.

Loosely couple output of RF signal generator to hot lead of sweep generator and set frequency of RF signal to 25.75 MC (marker).

Curve shown on scope should be similar to the standard response curve shown below. For proper setting of the pix carrier tune 25.75 MC generator to approximately 50% of the vertical height of the curve.

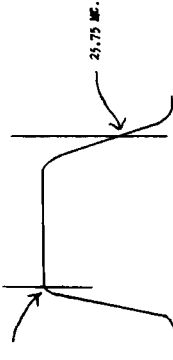
To obtain this setting retouch L5 and L7.

Reset RF signal generator frequency to 22.25 MC, and retouch L301 and L6 for correct positioning of marker on shoulder of curve.

The curve may now be flat topped by retouching U6.

Recheck setting of 25.75 MC marker to make sure that position has not shifted on curve.

Disconnect bias battery.



Tuner Adjustments for Models using Tuner Part #6E-1571
 Note: Before making a complete tuner adjustment it is essential that the sound I-F and discriminator circuits be properly adjusted. Their proper frequency and discriminator settings are given in their respective parts manuals. IT IS NECESSARY TO REALIGN THE OSCILLATOR ADJUSTMENT ON ALL CHANNELS WITH THE V2 TUBE SHIELD IN PLACE.

RF and Converter Alignment

- 1) Set channel selector switch to #3
 - 2) Connect oscilloscope through 10,000 ohms to test point on tuner (bare tinned copper lug) located between V1 and V2)
 - 3) Connect I-F and discriminator controls to fine tuning control at ap- point of its tuning range.
 - 4) Feed sweep generator into antenna terminals, sweeping channel 12.
 - 5) Adjust C301, C302 and C304 for flat top response curve. Check picture and sound carrier markers corresponding to frequencies shown previously for all respective channels.
- * In same manner as described on previous page under "Retouch Pix I-F Transformer Adjustment."

Oscillator Alignment

- 1) Connect channel selector switch to #12
- 2) Connect signal generator to one antenna terminal and ground. Set to sound carrier frequency 209.75 MC.
- 3) Connect electronic voltmeter to pin #1 of V7 (6AL5) sound discriminator.
- 4) Adjust C303 for zero reading on electronic voltmeter between positive and negative peak reading on voltmeter. It is usually not necessary to make any further adjustments. If it is found necessary to touch up the oscillator coils, the following procedure should be observed. Disconnect bias battery.

Oscillator Coil Touch-Up

- (a) Disconnect fine tuning control, as described in Note A.
- (b) Place a non-metallic screwdriver through opening, and adjust oscillator coil on channel 12 (L312)
- (c) Turn channel selector switch to channel 13 and adjust L313.
- (d) This adjustment can be repeated for all channels or if necessary on any single channel.

Note A - The mid-point of the fine tuning range is attained when the ballpoint disc (which is attached to the fine tuning control) faces directly downward.

ADJUSTMENTS

Ion Trap Magnet Adjustment:

Turn the background control fully clockwise and the contrast control fully counter-clockwise. Adjust the ion trap magnet by moving it forward or backward and at the same time rotating it slightly around the neck of the kinescope until the raster on the raster is slightly above average brilliance. Adjust the magnet control (rear of chassis) until the line structure of the raster is clearly visible (sharp). Readjust the ion trap magnet again for maximum raster brilliance. The final touches on this adjustment should be made with the background control at the maximum position with which good line focus can be maintained.

Focus Coil Adjustments:

Turn the horizontal and vertical centering controls (rear of chassis) to mid-position. Loosen the three screws holding focus coil mounting plate to studs and bracket and adjust both vertically and horizontally until the entire raster is visible on the screen, approximately centered and without shadows in the corners. It may be necessary to adjust ion trap at the same time to attain mid-position. Tighten the above three screws again. Further centering adjustments by means of the horizontal and vertical centering controls at rear of the chassis.

Deflection Yoke Adjustment:

If the lines of the raster are not horizontal or squared with the picture mask, loosen the deflection yoke adjustment screw and retighten the yoke adjustment screw.

Check of Horizontal Oscillator Alignment:

Obtain a test pattern and turn the horizontal hold control to the extreme counter-clockwise position. The picture should remain in synchronization. Turn channel selector switch OFF and immediately back again. Normally, the picture will now be out of synchronization. Turn the horizontal hold control until the picture slowly begin to synchronize, and will in one moment pull into synchronization. This should occur when the control is approximately 90 degrees from the extreme counter-clockwise position. It should now remain in synchronization for approximately 90 degrees additional clockwise rotation of the control. At the extreme clockwise position, the picture should again pull out of synchronization and should show from 1/3 to 1/2 bars sloping downward to the right.

If the receiver passes this test and the picture is normal and stable, the horizontal oscillator is properly adjusted. Skip the "Alignment of Horizontal Oscillator" and proceed with "Focus" adjustment.

Alignment of Horizontal Oscillator:

With the hold control at the extreme counter-clockwise position or fails to hold synchronization for at least 60 degrees of clockwise rotation of the control from the point of "pull in" it will be necessary to make the following adjustment:

Horizontal Frequency Adjustment:

Turn horizontal hold control to the extreme clockwise position, turn trimmer C65 (rear of chassis) until the picture is out of synchronization and show 1 1/2 bars insufficient fringe set the trimmer to mid position (one turn from right) and adjust the horizontal oscillator coil L14 (consult circuit diagram) until this condition is obtained.

Horizontal Locking Range Adjustment:

Set the horizontal hold control to the extreme counter-clockwise position. Slowly turn the horizontal hold control clockwise and note the least number of horizontal bars obtained just before the picture pulls into synchronization. If more than 4 1/2 bars are present just before the picture pulls into synchronization, adjust the "horizontal lock" trimmer C59 (rear of chassis) slightly clockwise. Turn the contrast control counter-clockwise and switch on bars at the "pull-in" point. Repeat this procedure until 3 1/2 to 4 1/2 bars are present.

Repeat the adjustments of the horizontal frequency adjustment and horizontal locking range adjustment until the conditions specified above are fulfilled. When the horizontal hold operates as outlined in "Check of Horizontal Oscillator Alignment" the oscillator is properly adjusted.

Height and Vertical Linearity Adjustments:

Adjust the height control on the rear of chassis until the picture fills the mask vertically. Adjust vertical linearity (rear of chassis) until the test pattern is symmetrical from top to bottom.

Adjustment of one control will require readjustment of the other. Then adjust vertical centering control to align the picture with the mask.

Width, Drive and Horizontal Linearity:

Turn the width control R16 (accessible through a hole in the upper right hand corner on the rear wall of the high voltage compartment) to the maximum clockwise position. Adjust the trimmer horizontal drive C69 (rear of chassis) to give the best degree of horizontal linearity. Turn the width control until the right half of the picture. Readjust the width control until the picture just fills the mask and adjust the horizontal centering (rear of chassis) to align the picture with the mask. * This control is omitted on some models.

Focus: the focus control (rear of chassis) for maximum definition of the vertical wedge of the test pattern.

CHECK TO SEE THAT YOKL TRUPE SCREENS ARE TIGHT.

Sensitivity Switch:

A two-position switch is provided at the rear of the chassis for increasing the gain of the receiver which may be required for operation in fringe areas. Where sound and picture reception is weak with the sensitivity switch set in LOCAL position, switching to "FRINGE" position will improve the performance of the receiver.

SERVICE AND TROUBLE SHOOTING PROCEDURE

FOR MODELS TV-947, TV-949 & TV-950

HORIZONTAL SWEEP CIRCUIT

1) NO LIGHT OR GR TUBE

- (a) Ion trap misplaced. (Very critical). Move trap.
- (b) Ion trap de-magnetized. Replace.
- (c) IR socket loose. Check whether CR Filament lights up.
- (d) No high voltage. After checking fuses, check these symptoms:
 - 6XN7 Horizontal Oscillator Tube not oscillating. Determine by measuring pin 5. If +65 volts, tube oscillates. Determine cy voltage, tube is not oscillating, so that Horizontal Output Tube 6B6 is not excited and HV cannot be developed.
 - Possible cause of 6B6 not oscillating:
 - Defective C64. Replace.
 - Defective C64. 180 pfd (at horizontal Oscillator Can.)
 - " Replace.
 - " 065-2200 " " " "
 - " 065-2200 " " " "
 - " R72, 2.3 Megohms (at tube socket 6XN7) Replace
 - " R71, 150,000 ohms " " "
 - " Shorted C57; Trimmer at back of chassis (Horizontal Lock control) Remove Short.

- 3) Vertical Sweep Circuit
- 1) CR tube shows horizontal line only: No vertical sweep.
 - (a) Defective 6SN7 (V18). Replace
 - (b) 6SN7 (V18) not oscillating. Determine by measuring plate pin 2. If +14 volts, tube oscillates. If negative voltage, tube does not oscillate. Symptoms: Defective C43 4700 mfd ceramic condenser. Replace. Vertical Hold control open or shorting against ground. Vertical Height control open or shorting against ground. Blocking Transformer open.
 - 2) 6SN7 (V18) oscillating, but still no sweep indicates defective vertical output transformer. Check voltage at pin 5 of 6SN7 (V18) for open transformer.
 - (a) Picture Linearity Incorrect: Check R57 560 ohm at cathode of 6SN7 (V18) and Vertical Linearity Control.
 - (b) Picture Folding on top or bottom. Frequency incorrect. Check R56 1 Megohm, R54 100,000 ohms, C43 4700 mfd. Check 6SN7 (V18).
 - (c) Picture movement up and down cannot be stopped. See under "Sync Circuit".
- 4) Sync Circuit
- Position of Sensitivity Switch will affect sync stability. Try both settings and use position giving strongest vertical hold.
- Picture moves in all directions, cannot be stopped: No vertical nor horizontal sync. Symptoms:
- (a) Defective 6SN7 (V17) Sync amplifier. Replace.
 - (b) Plate pin 2 should read +175 volts. If higher, ground connection may be loose (tube not drawing current). Pin 5 should read +225 volts. Check whether C41 390 mfd is defective.
 - (c) C36 220 mfd condenser to sync amplifier may be defective. Replace.
 - (d) 6M5 (V14) (1/2 AGC, 1/2 video detector) defective. Replace.
 - (e) R116 (1/2 1st audio, 1/2 sync limiter) defective. Replace.
- No Vertical Sync:
- (a) Defective vertical hold control.
 - (b) Sync pulses too weak. Increase contrast. If vertical locks in, but horizontal tears, realign I-F.
- No Horizontal Sync:
- (a) Check C58 120 mfd coupling Sync Amplifier to Horizontal oscillator
 - (b) Check C59 Trimmer Horizontal Lock Control
 - (c) Check C60 120 mfd parallel to Lock Control
 - (d) Check R89 560,000 ohms
 - (e) Check C77 4 mfd (in series with R89)
- Weak Vertical Sync (slipping):
- Sync pulses weak. Check I-F alignment.
- Weak Horizontal Sync (picture holds only at very small portion of screen):
- (a) B-line at output (pin 5) of 6SN7 (V17) sync amplifier
 - (b) Defective 6A76 (sync limiter)
 - (c) Defective C77 4 mfd
 - (d) Defective C58 120 mfd
- Upper edge of picture bends to one side:
- (a) Replace C77 4 mfd
 - (b) Replace C58 120 mfd
 - (c) Reset L14 (Horizontal Oscillator Coil)
 - (d) Reset C65 Horizontal Frequency Control
 - (e) Reset C59 Horizontal Lock Control
 - (f) Replace 6SN7 (V17) Sync Amplifier
- Test Pattern Distorted:
- (a) Sync pulses too weak. Realign I-F. Check 6SN7 (V17) Sync Amplifier voltage. Check for defective 6A76 (sync limiter).
 - (b) Sync pulses too strong. Check I-F Alignment. Check for defective 6A76 (sync limiter)
- Picture does not fall into Sync after change of station:
- Reset C65 Horizontal Frequency Control
 - Reset C59 Horizontal Lock Control
- After 6SN7 has been found oscillating, or if oscillation has been restored and still no HV is being developed, check these symptoms:
- 6866 not being driven. Determine by measuring across R84 (1 Megohm between Horizontal Drive Trimmer and Terminal Strip) and R85 (1 Megohm between Drive Trimmer and Terminal Strip). If insufficient, increase by .50 to .75 volts. Insufficient drive can be caused by:
- Defective 6SN7 (V18)
 - Defective C70 390 mfd (at Horizontal Oscillator Can or Horizontal Drive Trimmer). Replace.
 - Shorted C69 (Horizontal Drive Trimmer). Remove Short.
- After 6866 has been found being driven or its drive restored, check whether screen (pin 8) reads +180 volts, grid (pin 5) -80 volts, plate (read return via flyback transformer at any lag of HV fuse) +330 volts. Low plate voltage indicates excessive consumption of 6866 is too high. Check 6866 heater. Check whether 6866 is shorted or leaky C70 (390 mfd). High screen and plate voltage indicates open flyback transformer. Hot or burnt-out R86 (82 ohms at cathode of 6866) indicates C70 (390 mfd) shorted, or shorted C73 (.05-600V). After all voltages of 6866 have been found correct, and still no HV, replace IB3-8016 HV rectifier. Do not interchange plate leads for IB3 (red tracer) and 6866 (black tracer). Dress leads away from all metal parts and surfaces.
- (e) Background control defective. Check how voltage at arm (centerpoint) of background control changes with respect to CR tube grid. The latter measured at peaking coil 120 microhenry (pin 6) 12AV7 video output tube should read +15 volts. The voltage at arm of background control should vary from +100 to +225 volts. If this voltage cannot be brought down to at least +110 volts, CR tube is at cutoff and therefore dark.
- 2) Picture on CR Tube (For "No Picture" see under "Video")
- (a) Picture appears in duplicate, triplicate or more: Horizontal Frequency Control. If adjustment of Horizontal Locking Horizontal Frequency Controls or of broaded slug of Horizontal Frequency Coil (L14) (inside chassis) does not change this condition sufficiently, replace 6SN7 (V19) C64-180 mfd or C66-2200 mfd. In some cases, the Horizontal Frequency Coil L14 may have to be replaced.
 - (b) Picture appears half or less or folded over. Horizontal Frequency too low. Same procedure as under (a).
 - (c) Picture not wide enough: If adjustment of drive control not sufficient, measure voltage at HV fuse. If less than 4500, increase. Check whether 6866 is shorted or leaky C70, C71, C72, C73, C74, C75, C76, C77, C78, C79, C80, C81, C82, C83, C84, C85, C86, C87, C88, C89, C90, C91, C92, C93, C94, C95, C96, C97, C98, C99, C100. Check whether B+ of set is +225 volts and B- 85 volts. Defective Horizontal Output Transformer or Deflection Yoke. Defective C78 (47 mfd) across half of Horizontal Deflection Coil.
 - (d) Incorrect horizontal linearity. Linearity coil may have to be shorted out, or shorting bar may have to be removed. Try increasing capacity of C75 (.035 mfd) by adding from .05 to .1 mfd. Reset drive control. Defective 6866. Defective Horizontal Output Transformer.
 - (e) White vertical line or lines on left side: Dumper-circuit not working properly. Replace 6MGT. Check linearity coil and C74-C75 (.1 and .035 mfd). Check setting of drive control, may be too far counter-clockwise.
 - (f) Black vertical line on left side (when upper channels are being switched in). Burghausen-effect. Redress plate leads to IB3 and 6866. If no improvement, replace 6866.
 - (g) Horizontal flashes at sides of picture if no outside noise present: 6SN7 (V19) horizontal oscillator defective. Replace.
 - (h) Picture sloping over left or right, or shifting so that black blocking bar, dividing picture, can be seen: See under "Sync circuit".

MODELS TV-947, TV-949, TV-950

7) Pix I.F. Oscillation

- 5) Video
Faster on CR Tube, but no picture, no sound
If noise (spots and streaks travelling over tube face) is visible:
(a) Check R.F. Tuner for defective or loose 6J6 oscillator tube.
(b) Antenna-connections.
If sound is audible, but no picture visible:
(a) Check video I.F. for B+ voltages.
(b) Check video I.F. for defective 6AG5 tubes.
(c) Check for defective 6AL5 detector tube.
(d) Check for defective 12AU7 video output tube.
(e) Check for shorts in I.F. section, and in tuner at 6J6 socket lugs.
(f) Check for open peaking coils.

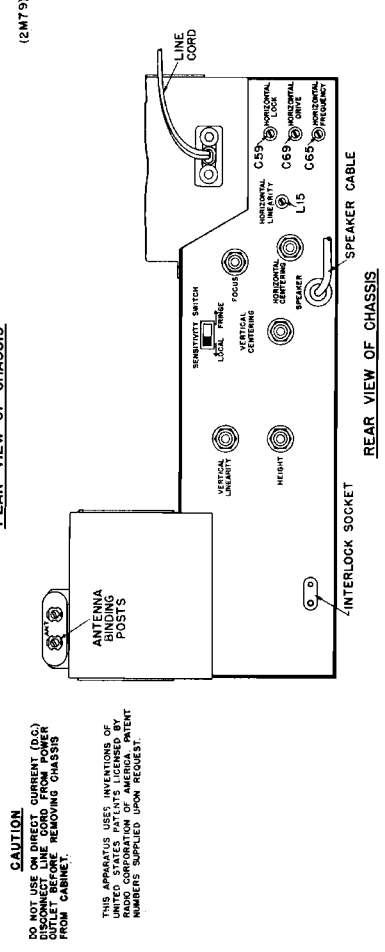
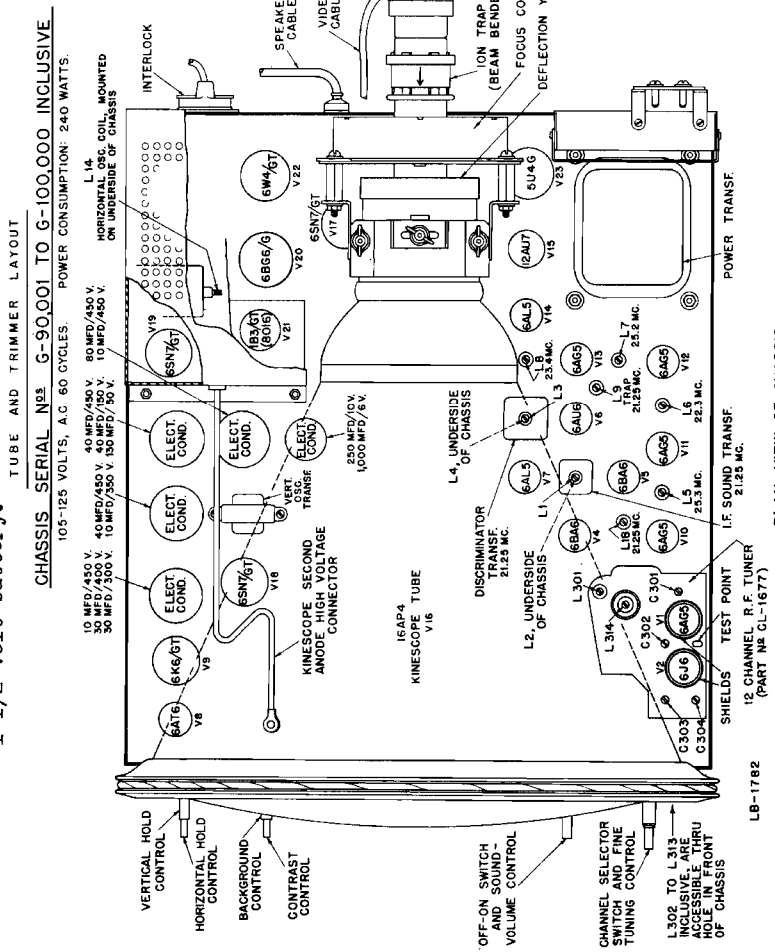
Note: Realignment is not always necessary if I.F. tubes are changed. Only in case of greater differences in tube capacities (lack of band width - vertical lines on test pattern not reaching middle at low contrast, or breaking into oscillation - wavy vertical lines or black smudges) realignment should take place. For procedure, see under "Alignment".

- Picture gray at full contrast, while neighboring sets show strong black-white pictures in same area.
(a) Check for defective 6AG5 I.F. tubes (V10; V11; V12; V13)
(b) Check for insufficient B+ in I.F. (L15 to L35V with bias battery connected across C18 as indicated on circuit diagram.
(c) Misalignment, particularly L-6 and L-8 Pix I.F. coils.
(d) Check for defective 6AG5 R.F. tube in tuner.
(e) Move Sensitivity Switch to "Fringe" position.
Picture smears (letters, etc. having tails to the right).
(a) Check for open peaking coils (L10; L11; L12; L13)
(b) Check alignment, especially of L5 at 25.3 MC and L7 at 25.2 MC.
(c) Defective C33 or C34 (.05-400) condenser.

- 6) Sound
If picture appears, but no sound:
(a) Check audio output section (6AT6, 6X6)
(b) Check tubes in Sound I.F. V4; V5; V6; V7.
(c) Check B+ voltages in Sound I.F.
If sound weak:
Realign Sound I.F.
Defective Sound I.F. tube of Discriminator tube V4; V5; V6; V7.
Shorted or open Sound Trap L314 (on tuner).
If noise comes through at sound peak:
Realign Discriminator Transformer at Zero
If sound does not coincide with picture:
(a) I.F. misaligned. Picture carrier (25.75 MC.) too low on I.F. response curve. See "Alignment" data.
(b) Tuner misaligned. See Tuner adjustments.

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Indicated by reading of approximately -3.0 volts or more at pin #7 of V14 video detector with no signal input. Realign Pix I.F. with 3 volt bias battery instead of 1 1/2 volt battery.



PLAN VIEW OF CHASSIS

REAR VIEW OF CHASSIS

CAUTION

DO NOT USE ON DIRECT CURRENT (D.C.) DISCONNECTS. ALWAYS REMOVE THE PLUG OUTLET BEFORE REMOVING CHASSIS FROM CABINET.

THIS APPARATUS USES INVENTIONS OF UNITED STATES PATENTS LICENSED BY JOHN F. RIDER TO KE3GK. PART NUMBER SUPPLIED UPON REQUEST.