

R.C.C. Service Manual

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1955 Supplement No. 14

GORDON OLIVER TELEVISION

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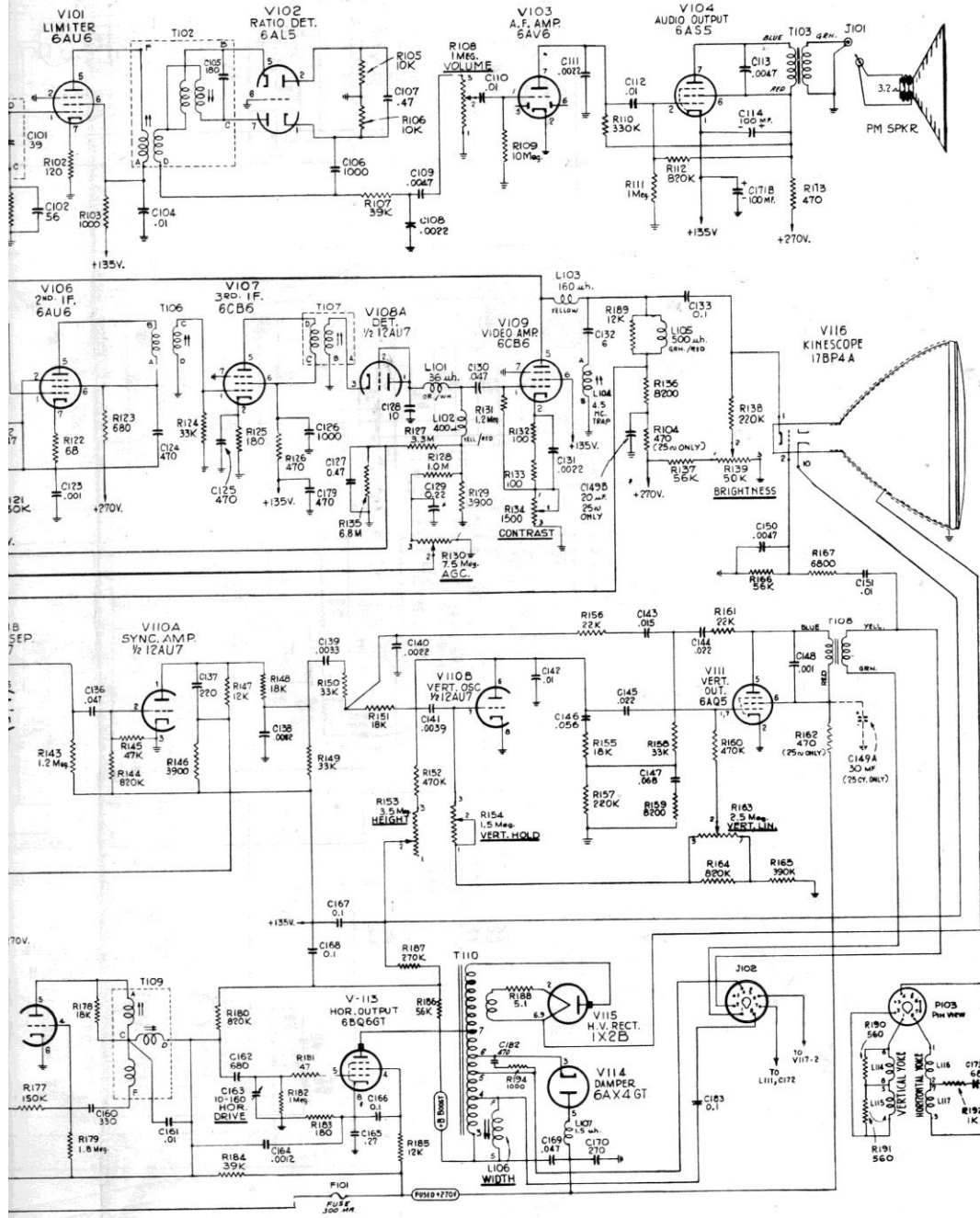
STEWART-WARNER

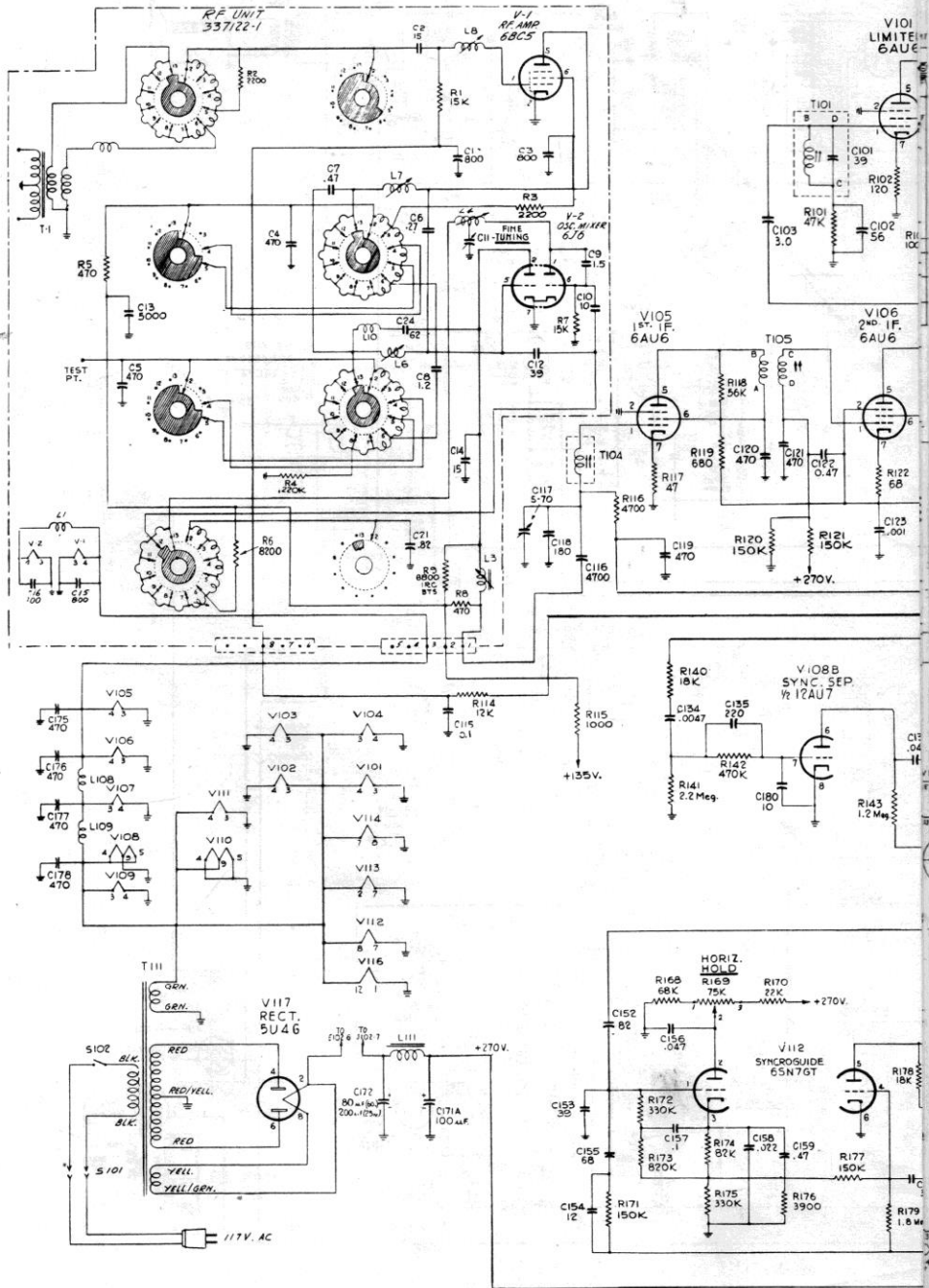
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RCC TELEVISION Supplement No. 14





GENERAL DESCRIPTION

Models 17T131 and 17T132 are "17 inch" table model television receivers incorporating eighteen tubes and a 17BP4A kinescope.

Both models incorporate the new pentode type 41 Mcs. tuner using a 6BC5 RF amplifier tube and a 6J6 mixer oscillator.

The IF circuit consists of an over-coupled stage between the tuner and IF strip, plus a staggered-triple. The first two stages of the IF circuit are stacked to conserve B+ current.

The Video Amplifier is AC coupled, with cathode type contrast control.

AGC is average type taken from the Video Detector, which controls AGC applied to the pentode tuner.

The 6AS5 tube used in the audio output circuit is stacked to the "10" B+ line to the rest of the receiver.

I.F. AND TRAP ALIGNMENT

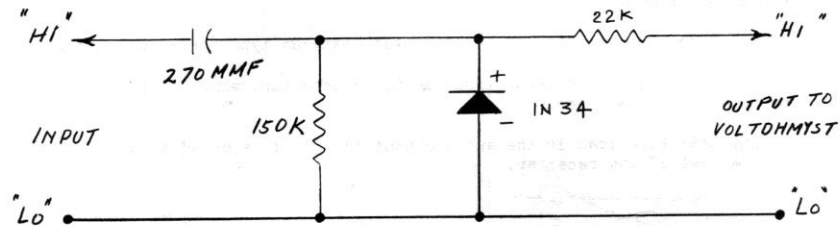
1. Set up a 3.0 volt bias using dry cells. Connect the positive to the ground and the negative to the I.F. and Tuner AGC line. (Junction of C-127 and R127 and junction of R128 and C129).
2. Connect signal generator to V-105-1
3. Set Volttohmyst on -10 volt range, zero centered, and connect D.C. lead to junction of L-101 and L-102.
4. Signal input: 44.4 Mc.--Adjust T-107 for maximum deflection from zero center on Volttohmyst.
5. Signal Input: 45.6 Mc.--Adjust T-106 for maximum deflection from zero center on Volttohmyst.
6. Signal Input: 43.2 Mc--Adjust T-105 for maximum deflection from zero center on Volttohmyst.
7. Connect Volttohmyst d.c. lead to V102-2.
8. Connect R.F. Generator Output to junction of L101 and L102.

NOTE: For steps 3, 10 and 11 signal input should be adjusted as necessary so that final alignment of T101 (top), and T102 (top) is made at approximately 5 volt deflection from zero center on Volttohmyst.

9. Signal Input: 4.5 Mc. Adjust T101 (top) For max. deflection from zero on volttohmyst.
10. Signal Input: 4.5 Mc. Adjust T102 (top) For max. deflection from zero on volttohmyst.
11. Signal Input: 4.5 Mc. Adjust T101 (top) For max. deflection from zero on volttohmyst.
12. Transfer D.C. lead to junction R107 and C108.
13. With Volttohmyst on -5 volt range, zero centered, adjust T102 (bottom) for zero center, swinging meter through zero to ensure alignment at correct point.
14. Remove Volttohmyst D.C. lead.

4.5 Mc SOUND TRAP ALIGNMENT

1. Set signal generator to 4.5 Mc. modulated 30% with 400 cycles.
2. Connect signal generator "hi" end to junction of L101 and L102 and "lo" end to chassis.
3. Connect diode jig "hi" input end to junction of C133 and R138 and "lo" end to chassis.

JIG SET UP

4. Connect voltohmyst to output "Hi" terminal of diode jig, and low end to chassis.
5. Set contrast control to maximum clockwise position.
6. Adjust L104 for minimum amplitude on scope.

OSCILLATOR ALIGNMENT

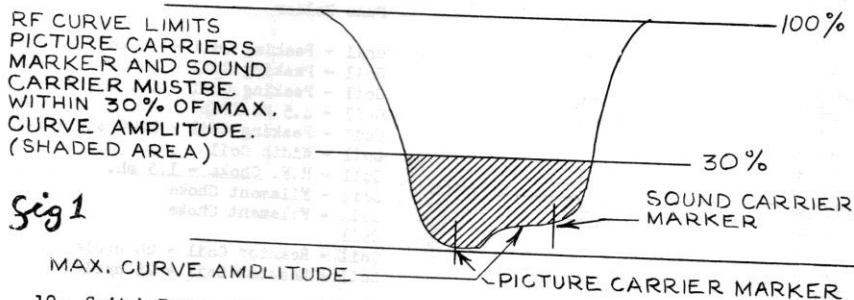
There are several ways in which the oscillator frequency may be aligned. The easiest way and the way which will be recommended in this procedure will be to use the marker generator as a heterodyne frequency meter and beat the oscillator against the marker generator.

The procedure for this is as follows:-

1. Insert one end of a piece of insulated wire into the tuner unit through the hole next to L3. Be careful that the wire does not touch any of the tuned circuits as it may cause the frequency of the tuner oscillator to shift.
2. Connect the other end of the wire to the "R.F. IN" terminal of the signal generator.
3. Turn tuner selector switch to Ch. 13 and set fine tuning control to mechanical centre.
4. Tune signal generator to Ch. 13 oscillator frequency 257 MC. with crystal accuracy.
5. Adjust Ch. 13 oscillator adjusting screw for zero beat.
6. Repeat for channels 12-2. Note Ch. 6 has its adjustment at lower front of tuner.

ANTENNA & R.F. ALIGNMENT

1. Connect a -3.0 volt bias supply to junction of R127 and C127 and junction of R128 and C129 with positive end to chassis and negative end to junction.
2. Connect Sweep Generator to antenna terminal and set to Chnl. 13.
3. Connect Marker Generator supplying sound and Picture Carrier Marker for each channel as required, to antenna terminal through an isolating resistor of approximately 1000 ohms, and feed in appropriate sound and picture carrier frequency.
4. Set Tuner to Channel 13.
5. Connect scope to test-point on tuner.
6. Adjust L-7 (RF. Plate Coil) for maximum peak at Sound Carrier Marker.
7. Adjust L-6 (Mixer Grid Coil) for Max. peak at Picture Carrier Marker.
8. Adjust L-8 Antenna Coil for maximum gain between markers.
9. If the curve does not appear symmetrical it may be necessary to re-adjust L-6 and L-7 slightly, until a good curve is obtained. (SEE FIG. 1)

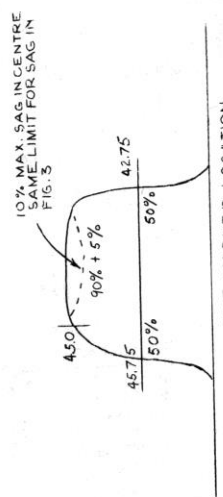
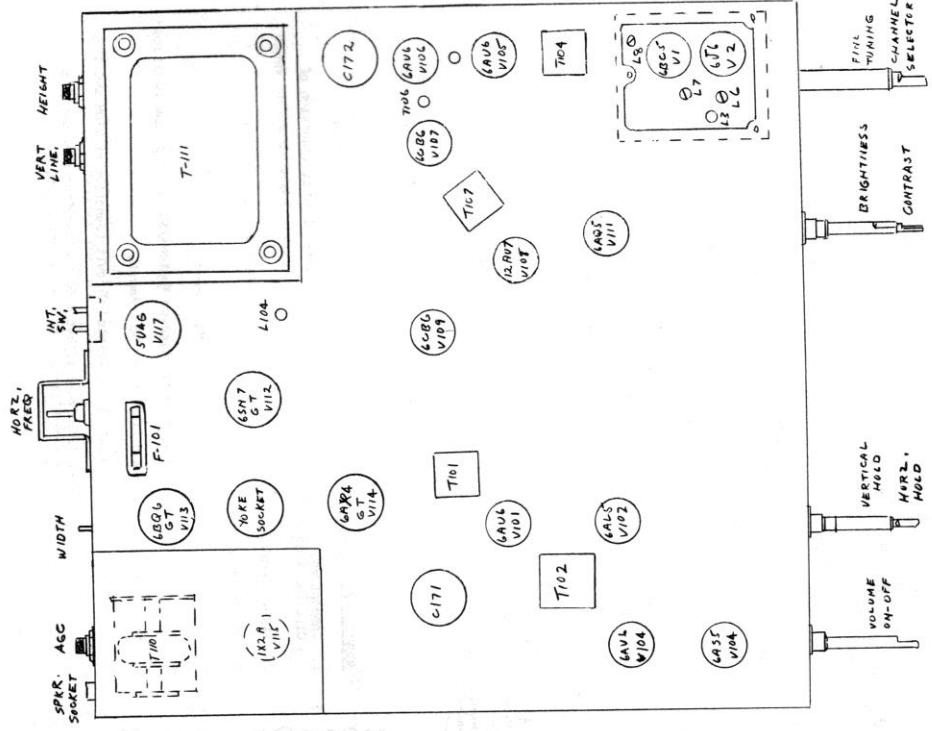


10. Switch Tuner, sweep and Marker Generator to Channel 6, feeding in correct sound and picture carrier.
11. Adjust Channel 6, RF Amplifier Plate Coil for maximum peak at sound carrier marker, by spreading or closing up the coil winding.
12. Adjust Channel 6, Mixer Coil in grid circuit of 6J6 Mixer Oscillator tube for maximum peak at picture carrier marker, by closing or spreading up the coil winding.
13. Adjust Channel 6 antenna coil for maximum gain between markers. If the curve is not symmetrical--readjust RF plate coil and mixer grid coil slightly until a good curve is obtained.
14. Remove scope.
15. Connect a 180 ohm, non-inductive resistor across the terminals A and B of T-105.
16. Connect scope to V-106-5 through the Demodulator Probe type WG291. (If this type of probe is not available connect jig input "Hi" to V-106-5 "Lo" to chassis and connect scope to "Hi" on jig output).
17. Connect oscilloscope to output of detector jig. Set scope sensitivity to 180 millivolts peak to peak.

18. Set band width trimmer C117 to near max. capacity.
19. Adjust L-3 and T104 for a flat-topped curve on the oscilloscope with the 42.75 Mc. marker at 75% response.
20. Adjust band width trimmer C117 to position 45.75 Mc. (picture carrier) marker at 75% response.
21. Re-adjust L-3 and T104 (bottom) and C138 as required for a flat-topped curve with a 42.75 Mc and a 45.75 Mc marker at 75% response.
22. Disconnect scope from V-106-5.
23. Connect scope to junction of L101 and L102. Set scope sensitivity to 3.0 volts peak to peak.
24. Adjust T105, T106 and T107 to place markers within required limits (Fig. 2) (T-105 Controls Sound-side; T-106 Controls Picture-side; (T-107 Controls--Tilt).
25. Check curves on other Channels with Oscillator fine tuning set to mechanical centre (Fig. 3).

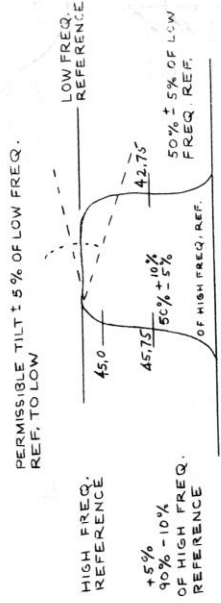
<u>SYMBOL</u>	<u>STOCK NO.</u>	<u>DESCRIPTION</u>
F-101	S-9687 S-9472	Fuse Fuse Holder
L-101	76011	Coil - Peaking Coil - 36 mh.
L-102	S-9611	Coil - Peaking Coil - 400 mh.
L-103	*S-9929	Coil - Peaking Coil - 160 mh.
L-104	*S-9941	Coil - 4.5 Mc Trap
L-105	S-9405	Coil - Peaking Coil - 1000 mh. † 12K
L-106	S-9657	Coil - Width Coil
L-107	S-9545	Coil - R.F. Choke - 1.5 mh.
L-108	73477	Coil - Filament Choke
L-109	73477	Coil - Filament Choke
L-110		Coil
L-111	*S-9940	Coil - Reactor Coil - 60 cycle.
L-111	*S-9939	Coil - Reactor Coil - 25 cycle.
L-112		
L-113		Coil - in vertical yoke
L-114		Coil - in vertical yoke
L-115		Coil - in vertical yoke
L-116		Coil - in vertical yoke
L-117		

<u>SYMBOL</u>	<u>STOCK NO.</u>	<u>DESCRIPTION</u>
T-101	*S-9934	Transformer - Sound - Take Off Trans.
T-102	S-9661	Transformer - Ratio Detector
T-103	*S-9935	Transformer - Audio Output
T-104	*S-9934	Transformer - Converter Trans.
T-105	*S-9971	Transformer - 1st Pix IF Trans.
T-106	*S-9971	Transformer - 2nd Pix IF Trans.
T-107	*S-10011	Transformer - 3rd Pix IF Trans.
T-108	S-9648	Transformer - vertical output
T-109	S-9701	Transformer - Horizontal Osc.-Trans.
T-110	S-9936	Transformer - H. V. Trans.
T-111	S-9932	Transformer - Power Trans. - 60 cycle
T-112	S-9933	Transformer - Power Trans. - 25 cycle



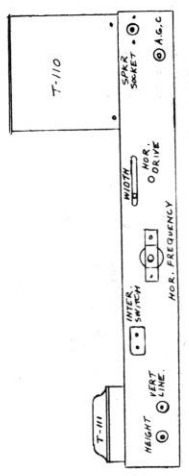
OVERALL ALIGNMENT MARKER LOCATION

Fig 2



PERMISSIBLE TILT ± 5% OF LOW FREQ. REF. TO LOW

Fig 3 OVERALL RESPONSE LIMITS ON CHANNELS OTHER THAN ON WHICH RECEIVER IS ALIGNED



REAR VIEW OF CHASSIS