STC RADIO SERVICE BULLETIN

Issue No. 160

Date of Issue: May 1961

Subject: Model No. 414

STEREOPHONIC CONSOLE RADIOGRAM
MODEL 414 "REVERB-A-GRAM"

DESCRIPTION:

The model 414 Reverb-a-gram is a high quality stereophonic radiogram incorporating the latest circuit and cabinet designs.

It introduces electronic reverberation, a feature providing even the smallest living room with the accoustics of the largest concert hall.

FEATURES:

It's principle design features include:-

High Sensitivity – 6 valve broadcast bank radio receiver.

MEASUREMENT SPECIFICATION:

The following procedure should be used when measuring the receiver sensitivity.

(a) Adjust the balance control to maximum on either of the channels and use this channel for carrying out any tests.

(b) The volume and tone controls should now be adjusted for maximum output.

(c) Connect the measuring meter across the primary of the particular output transformers.

(d) When measuring the I.F. sensitivity do not disconnect any wiring and always use a 0.1 mfd condenser connected between the "Hot" lead of the generator and the control grids of V1 and V2.

The following signal input voltages are required to obtain 22.4 volts measured across the primary of the receiver output transformer.

I.F. sensitivity: V1 – 40 microvolts
V2 – 5 millivolts

Broadcast Sensitivity – 5 microvolts average.

ALIGNMENT FREQUENCIES:

600 Kc/s and 1400 Kc/s.

CHECK POINT:

1000 Kc/s.

ALIGNMENT PROCEDURE (R.F.):

The same procedure should be used as for carrying out the I.F. alignment, with the exception that the signal generator should be connected via a suitable termination pad to the receiver aerial input circuit.

To obtain the best results proceed as shown in the table below:-

	Oscillator Section	Aerial Section
Peak Core	530 Kc/s	600 Kc/s
Peak Trimmer	1620 Kc/s	1400 Kc/s

Controllable Reverberation – using a separate amplifier.
Low Distortion – twin audio amplifiers with constant negative feedback.
High Fidelity pick-up for both stereophonic and monaural record reproductior
Four Speed automatic record changer.
Three Loudspeakers – mounted on isolated baffles.

TUNING RANGE:

530-1620 Kc/s.

INTERMEDIATE FREQUENCY

455 Kc/s.

VALVE COMPLEMENT:

V1 – Frequency Converter	6AN7
V2 – I.F. Amplifier, Detector and A.V.C.	6N8
V3 – Audio Frequency Amplifiers	12AX7
V4 – Twin Audio Output Pentodes	ELL80
V5 – Reverberation Amplifier	6GW8
V6 – Power Rectifier	6AC4

POWER SUPPLY:

230-240 volts and 250-260 volts 50 cycles AC only.
250 milliamperes at 240 volts – Radio only.
310 milliamperes at 240 volts – Radiogram.

LOUDSPEAKERS:

2 - 6" circular permanent magnet – 15 ohm voice coil.
1 - 9" eliptical permanent magnet – 15 ohm voice coil.

CONTROLS:

Tone ON/OFF
Volume
Balance
Tuning
Reverberation
Radio/Gram

RECORD CHANGER:

B.S.R. type UA20

CARTRIDGE:

"Ful-Fi" type TC8S

STYLII:

S35 (Saphire) 78 rpm., S35/S (Saphire) Stereo.

CABINET DIMENSIONS:

Packed in Carton 58" x 20" x 20" Weight 110 lbs.
Less Carton 52½" x 17" x 16½" plus legs 12"

CIRCUIT VOLTAGES:

Refer to circuit diagram.
Voltages should be within 10% of their stated value.
Measuring meter should not be less than 20,000 ohms/volts.

MEASUREMENT SPECIFICATION:

The following procedure should be used when measuring the receiver sensitivity.

(a) Adjust the balance control to maximum on either of the channels and use this channel for carrying out any tests.

(b) The volume and tone controls should now be adjusted for maximum output.

(c) Connect the measuring meter across the primary of the particular output transformers.

(d) When measuring the I.F. sensitivity do not disconnect any wiring and always use a 0.1 mfd condenser connected between the "Hot" lead of the generator and the control grids of V1 and V2.

The following signal input voltages are required to obtain 22.4 volts measured across the primary of the receiver output transformer.

I.F. sensitivity: V1 – 40 microvolts
V2 – 5 millivolts

Broadcast Sensitivity – 5 microvolts average.

ALIGNMENT FREQUENCIES:

600 Kc/s and 1400 Kc/s.

CHECK POINT:

1000 Kc/s.

ALIGNMENT PROCEDURE (R.F.):

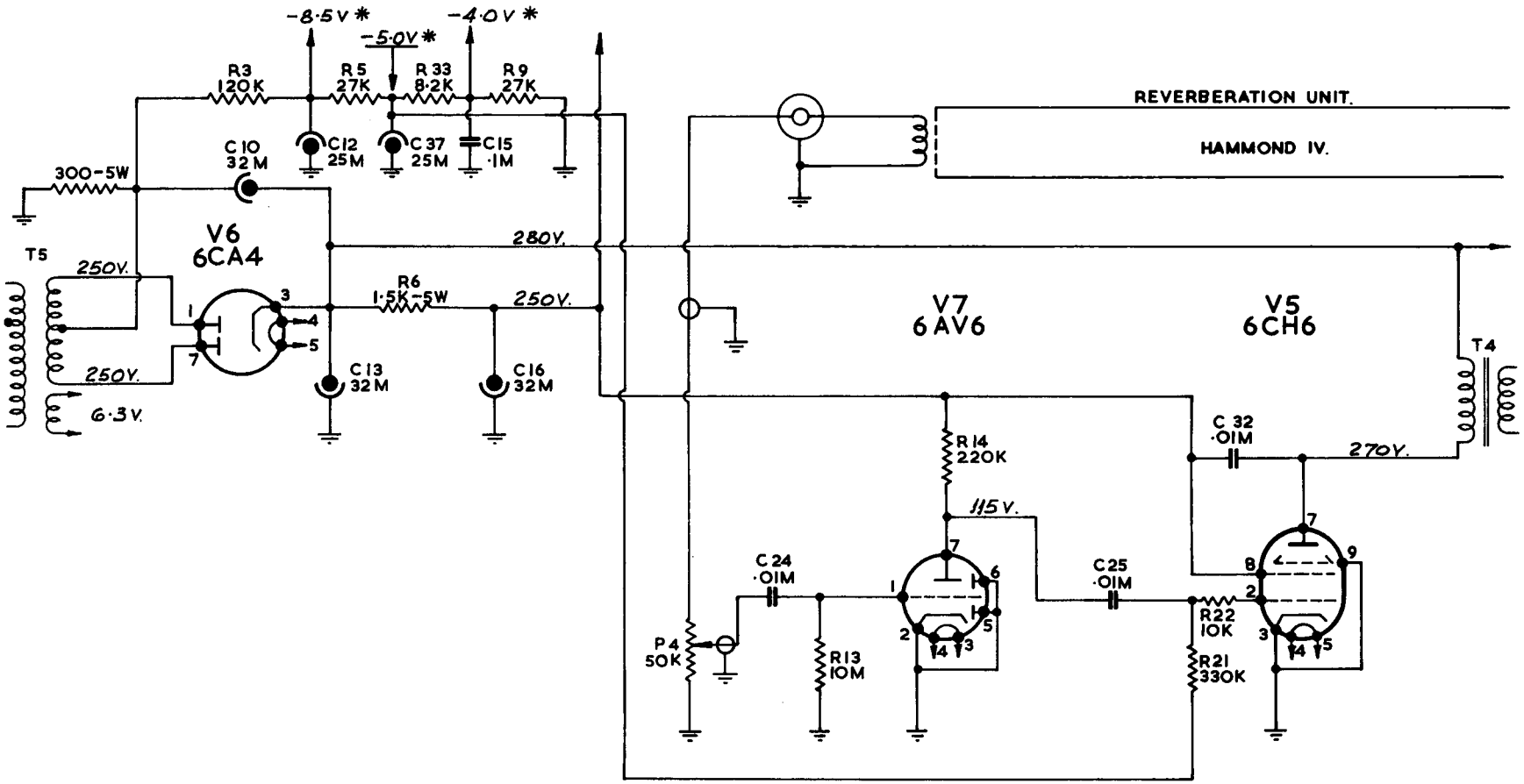
The same procedure should be used as for carrying out the I.F. alignment, with the exception that the signal generator should be connected via a suitable termination pad to the receiver aerial input circuit.

To obtain the best results proceed as shown in the table below:-

	Oscillator Section	Aerial Section
Peak Core	530 Kc/s	600 Kc/s
Peak Trimmer	1620 Kc/s	1400 Kc/s

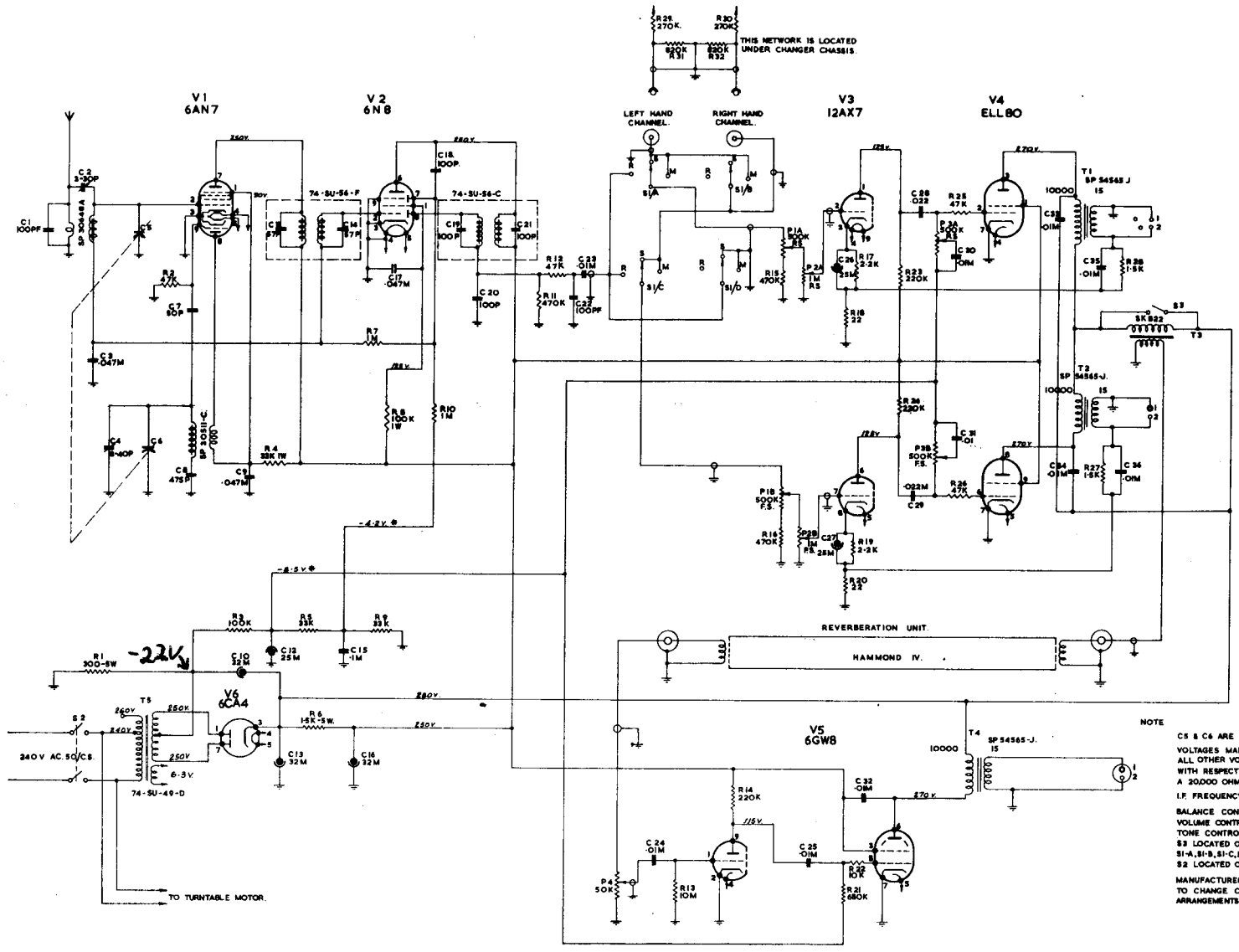
MODEL 414.

CIRCUIT OF MODIFIED REVERBERATION AMPLIFIER.



MODEL 414.

REVERB-A-GRAM.



NOTE

C5 & C6 ARE GANGED.

VOLTAGES MARKED ⊕ ARE MEASURED WITH A V.T.V.M. ALL OTHER VOLTAGES ARE MEASURED WITH RESPECT TO CHASSIS & WITH A 20,000 OHM. PER VOLT METER.

I.F. FREQUENCY 455 K/CS.

BALANCE CONTROL P1-A & P1-B ARE GANGED.
VOLUME CONTROL P2-A & P2-B ARE GANGED.
TONE CONTROL P3-A & P3-B ARE GANGED.
S3 LOCATED ON P4.
S1-A, S1-B, S1-C, S1-D, SP 40549-D.
S2 LOCATED ON TONE CONTROL.

MANUFACTURER RESERVES THE RIGHT TO CHANGE COMPONENTS AND CIRCUIT ARRANGEMENTS WITHOUT NOTICE.