



RADIO SERVICE BULLETIN

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Subject: Model 418



STEREOPHONIC LOWBOY RADIOGRAM MODEL 418 'MELODY'

Description

The Model 418 Stereogram is a high quality stereophonic radiogram incorporating the latest circuit and cabinet designs.

Its wide frequency range speakers and amplifiers enable the unit to reproduce with perfect realism stereophonic or monophonic records; whilst adding a new dimension to broadcast transmissions.

Features

Its principle design features include:-

7 valve performance – using four multi purpose valves and a selenium bridge rectifier.

C3B Selenium Rectifier – giving longer life and less heat dissipation.

High sensitivity – providing clearer long distance reception.

Automatic Volume Control – across two stages.

Twin Isolated Audio Amplifiers.

Low distortion – negative feedback across each amplifier.

Differential balance control – enabling the gain of the two amplifiers to be adjusted for balanced output conditions.

High frequency response – grain oriented iron speaker transformers giving wider frequency response with better efficiency.

Twin 8" loudspeakers – with wide frequency band cones.

Large reinforced baffle system.

Variable tone control – in each amplifier.

Four speed automatic record changer.

SPECIFICATION

Tuning Range

530 - 1620 Kc/s

Intermediate Frequency

455 Kc/s

Valve Compliment

| | |
|---|-------|
| V1 – Frequency Changer | 6AN7 |
| V2 – I.F. Amplifier Detector and A.V.C. | 6N8 |
| V3 – Audio Frequency Amplifiers | 12AX7 |
| V4 – Twin Audio Output Pentodes | ELL80 |

Power Rectifier

Sentercel type C3B Selenium Bridge Rectifier

Power Supply

230 – 240 volts and 250 – 260 volts 50 cycles A.C. only
180 milliamperes at 240 volts – Radio only
280 miliamperes at 240 volts – Radiogram

Audio Power Output

2.5 watts per channel 10% distortion

Hum Level

Measured across the loudspeaker voice coil with the controls adjusted:-

Tone and Volume Control Maximum 10 m.v.

Tone Maximum and Volume Control Minimum 6 m.v.

Loudspeakers

2 – 8" circular permanent magnet – 13 ohm voice coils

Controls

Mains On/Off

Tone

Radio/Stereo/Mono

Volume

Balance

Tuning

Record Changer

B.S.R.type UA 14

Cartridge

"Full-Fi" type TC8S

PARTS LIST

| <u>Circuit Ref.</u> | <u>Part No.</u> | <u>Description</u> |
|--|-------------------------|--------------------------------------|
| <u>Valves</u> | | |
| V1 | 6AN7 | Frequency Changer |
| V2 | 6N8 | IF Amplifier, Detector and A.V.C. |
| V3 | 12AX7 | Audio Frequency Amplifiers |
| V4 | ELL80 | Twin Audio Output Pentodes |
| | C3B | Sentercel Selenium Bridge Rectifier |
| <u>Potentiometers</u> | | |
| P1A-B | SP40894-M | 2x .5 meg. Taper 'A' Balance Control |
| P2A-B | SP40894-K | 2x 1 meg. Log Volume Control |
| P3A-B | SP40894-W | 2x .5 meg. Taper 'C' Tone Control |
| <u>Switches</u> | | |
| STA-D | SP40549-D | Selector Switch (Radio/Mono/Stereo) |
| S2 | SP70236 | Mains On/Off Rotary |
| <u>Coils & Transformers</u> | | |
| | SP30648-A | Aerial Coil |
| | SP30511-C | Oscillator Coil |
| | 74-SU-56F | 1st I.F. Transformer |
| | 74-SU-56C | 2nd I.F. |
| T1, T2 | SP54565-P | Speaker Output Transormer |
| T3 | 74-SU-48H | Power Transformer |
| <u>Miscellaneous</u> | | |
| | 418 | Cabinet c/w back |
| | Goldring 3 1/8" | Tuning Drum |
| | SP70120-C | Dial Scale |
| | MES 6.3V 3A | Dial Lamps |
| | Suflex B184 | Dial Cord .66 yds |
| | SP30310-C | Dial Cord Tension Spring |
| | Howard-Silvers 20052 | Control Knobs .25" Bore |
| | CS1216 | Grille Material .3 yds 68" wide |
| | SP54109A | Medallion (S.T.C.) |
| | SP70157A | Monogram (Stereogram) |
| | Rola H00.74/15 | 8" Loudspeaker |
| | SP40768 | Warranty Card |
| | SP70237 | Operating Instructions |

Stylis

S35 (Sapphire) 78 rpm, S35/S (Sapphire) Stereo/LP

Cabinet Dimensions

Packed in Carton 3'7" x 1'9" x 1'7" - 80 lbs.

Less Carton 3'2½" x 1'6" x 1'4½" - legs 11"

MEASUREMENT SPECIFICATION

Sensitivity

The following procedure should be used when measuring the receiver sensitivity or carrying out an alignment check:-

Adjust the Balance Control for maximum on either of the channels and use this channel for carrying out the tests

Similarly the volume and tone controls should also be adjusted for maximum output.

After which, connect the measuring meter across the primary of the particular speaker output transformer.

NOTE

When measuring the I.F. sensitivity at the control grids of V1 or V2 do not disconnect any of the wiring and always use a .01 mfd condenser connected between the "Hot" lead of the signal generator and the point under test.

The following signal input voltages are required to obtain 50 milliwatts audio output.

I.F. Sensitivity: 25 microvolts (Control grid V1)

Broadcast Sensitivity: 3 microvolts average (Aerial Input)

Alignment Frequencies

600 Kc/s

1000 Kc/s

1400 Kc/s

Voltage Analysis

| Valve | Plate | Screen | Cathode | Heater | Remarks |
|-------|------------|------------|------------|--------|--------------------|
| V1 | 240 | 80 | 4 | 6.25 | |
| V2 | 240 | 115 | 3.8 | 6.25 | |
| V3 | 125 125 | | 1.1 1.1 | 6.25 | |
| V4 | 280 280 | 240 240 | 9 | 6.25 | |
| C3B | 250A.C. | | 290 | | Selenium Rectifier |