MONARCH RADIO

ECLIPSE RADIO PTY. LTD.

(A DIVISION OF ELECTRONIC INDUSTRIES LTD.)

11-21 STURT STREET, SOUTH MELBOURNE

TECHNICAL BULLETIN

Bulletin BKS-1 **File : Receivers Vibrator** **Date : 1/10/46**

SUBJECT—Model BKS 4 tube Superheterodyne

Broadcast Mantel Receiver

For operation from

A 6 volt accumulator

This Bulletin Contains:-

1. Technical Specifications
2. General Description
3. Alignment Instructions
4. Voltage Table
5. Component Parts List
6. Circuit Diagram
7. Coil and IF. Transformer Connections
8. Photographic Illustrations

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SUBJECT—Technical Specifications—Receiver Type BKS

Tube Complement:

Type 1C7G Converter
Type 1M5G IF. Amplifier
Type 1K7G 1st Audio, AVC and Detector
Type 1L5G Power Output Amplifier

Intermediate Frequency: 455Kc.

Broadcast Coverage: 1640Kc. (Kilocycles) to 540Kc.
182.9M. (Metres) to 555M.

Battery Supply: 6 Volt Accumulator

Battery Consumption: 1.1 Amps.

Power Output: .5 Watt (undistorted)

Vibrator: Self Rectifying, Synchronous Type.

General Description:

The model BKS is a 4 tube broadcast vibrator, mantel receiver for operation from a 6 volt accumulator. A synchronous vibrator and a step-up transformer provide high tension supply.

A type 1C7G pentagrid converter tube is followed by a type 1M5G tube as an IF. amplifier. Signal detection is effected by one diode circuit of a type 1K7G duo-diode pentode tube, and delayed A.V.C. by the other. The full A.V.C. voltage is applied to the converter tube and approximately half to the IF. amplifier tube. Delay voltage for the A.V.C. is obtained by reason of the position of the type 1K7G tube filament in the circuit. Bias for the other tube is provided in the same manner, thus the type 1L5G tube operates with minus 4 volts grid bias, the type 1K7G tube with minus 2 volts grid bias and the type 1A5G and type 1C7G tubes with zero bias.

The type 1L5G power amplifier tube provides a power output of ·5 of a watt without distortion to a 6 inch permagnetic speaker. A tone control is provided.

Dial lighting is controlled by the on/off switch so that in the interests of battery economy, the receiver may be operated without the dial lights.

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SUBJECT—Alignment Instructions—Receiver Type BKS

Equipment:—

Signal Generator
Dummy capacitor .01MFD
Dummy capacitor 200MMFD
Output Meter
Alignment Tool

Alignment Conditions:—

Load Impedance – 15,000 Ohms
Output Level – 15 Milliwatts (voice coil connected)
Battery Supply – 6 Volt accumulator
Volume Control – Full on (Clockwise)
Tone Control – High tone position

Alignment:—

Intermediate Frequency 455Kc.
Tuning Range 1640-540Kc.

Set the pointer to the right hand margin of the dial scale, near 550Kc. (Gang plates fully meshed.)

Do not use a screwdriver or alignment tool with an iron point for aligning IF. transformers. A special tool, Part No. PM581 is obtainable from the factory, or failing this, an insulated rod with a small brass blade may be used.

Operation	Generator Connection	Frequency	Dummy Capacity	Instructions
1.	To grid of 1M5G tube.	455Kc.	.01MFD mica capacitor in series with generator.	Leave grid cap on. Peak 2nd IF. transformer primary and secondary.
2.	To grid of 1C7G tube.	455Kc.	.01MFD mica capacitor in series with generator.	Gang plates full out. Leave grid cap on. Peak 1st IF. Transformer primary and secondary.
3.	To antenna terminal.	1400Kc.	200MMFD mica capacitor in series with generator.	Set dial pointer on 1400 Kc. Adjust oscillator and aerial trimmers.
4.	To antenna terminal.	600Kc.	200MMFD mica capacitor in series with generator.	Set dial pointer on 600 Kc. Peak series padder rocking gang to and fro while adjusting for maximum output.

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Bulletin BKS-1 **File : Receivers Vibrator** **Date : 1/10/46**

SUBJECT—Voltage Table—Receiver Type BKS

Equipment:—

1,000 Ohm per volt meter with 0-250 volt and 0-10 volt scales.
0-2 Amp. Meter.

Conditions of Test:—

All voltages measured from tube socket contacts to chassis. Receiver tuned to 1000Kc. Volume control full on (clockwise) no signal. Accumulator voltage 6 volts.

Tube	Plate	Screen	Grid	Oscillator Plate
1C7G	155V.	60V.	–	65V.
1M5G	155V.	60V.	–	–
1K7G	30V.	30V.	2V.	–
1L5G	146V.	155V.	4V.	–

Note:—Grid voltages derived from voltage drop across filaments.

Battery Consumption:—

1.1 Amps (does not include dial lamps).

CAUTION—Tubes must not be withdrawn from their sockets while the receiver is switched on.

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TECHNICAL BULLETIN

Bulletin BKS-1 **File : Receivers Vibrator** **Date : 1/10/46**

SUBJECT—Component Parts List—Electrical—Receiver Type BKS

Circuit No.	Part Name	Rating	Tol. ±	Eclipse Part No.
1.	1 mfd Paper Condenser	200V.	20%	PC182
2.	1 mfd Paper Condenser	200V.	20%	PC182
3.	.5 mfd Paper Condenser	400V.	20%	PC115
4.	.5 mfd Paper Condenser	200V.	20%	PC121
5.	.1 mfd Paper Condenser	400V.	20%	PC103
6.	.1 mfd Paper Condenser	200V.	20%	PC218
7.	.05 mfd Paper Condenser	200V.	20%	PC102
8.	.05 mfd Paper Condenser	200V.	20%	PC102
9.	.02 mfd Paper Condenser	400V.	20%	PC111
10.	.02 mfd Paper Condenser	400V.	20%	PC111
11.	.01 mfd Paper Condenser	600V.	20%	PC140
12.	.01 mfd Paper Condenser	600V.	20%	PC140
13.	.004 mfd Paper Condenser	600V.	20%	PC221
14.	.006 mfd Paper Condenser	600V.	20%	PC217
15.				
16.				
17.	.004 mfd Mica Condenser	2000V.	10%	PC143
18.	.001 mfd Mica Condenser	1000V.	10%	PC108
19.	.0001 mfd Mica Condenser	1000V.	10%	PC110
20.	.0001 mfd Mica Condenser	1000V.	10%	PC110
21.	.00025 mfd Mica Condenser	1000V.	10%	PC128
22.	.0003 mfd Mica Condenser	1000V.	10%	PC212
23.	.00005 mfd Mica Condenser	1000V.	10%	PC141
24.	.00005 mfd Mica Condenser	1000V.	10%	PC141
25.				
26.	500 mfd Electrolytic Condenser	12PV.	20%	PC295
27.	500 mfd Electrolytic Condenser	350V.	20%	PC295
28.	16 mfd Electrolytic Condenser	350V.	20%	PC283
29.	8 mfd Electrolytic Condenser	12PV.	20%	PC640
30.	2 Gang Condenser			PC636
31.	Series Pad 150-500 mmf.			PC164
32.	Trimmer Condenser			PC250
33.	Wire Wound trimmer 0-30 mmf.			PC663
34.				
35.				
36.	1.75 Megohm Carbon Resistor	½ watt	10%	PR248
37.	1.75 Megohm Carbon Resistor	½ watt	10%	PR248
38.	1.75 Megohm Carbon Resistor	½ watt	10%	PR248
39.	.75 Megohm Carbon Resistor	½ watt	10%	PR267
40.	.5 Megohm Carbon Resistor	½ watt	10%	PR245
41.	.5 Megohm Carbon Resistor	½ watt	10%	PR245
42.	.25 Megohm Carbon Resistor	1 watt	10%	PR496
43.	50,000 ohm Carbon Resistor	½ watt	10%	PR160
44.	50,000 ohm Carbon Resistor	½ watt	10%	PR160
45.	50,000 ohm Carbon Resistor	½ watt	10%	PR160

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Bulletin BKS-1 **File : Receivers Vibrator** **Date : 1/10/46**

SUBJECT—Component Parts List—Electrical—Receiver Type BKS

Circuit No.	Part Name	Rating	Tol. ±	Eclipse Part No.
46.	25,000 ohm Carbon Resistor	½ watt	10%	PR155
47.	16.6 ohm Wire Wound Resistor	1 watt	5%	PR374
48.	.5 Megohm Volume Control			PR578
49.				
50.				
51.	Vibrator Transformer			PT455
52.	1st I.F. Transformer			PT753
53.	2nd I.F. Transformer			PT387
54.	Antenna Transformer			PT381
55.	Oscillator Coil			PT414
56.	Filter Choke L.T.			PT112
57.	Filter Choke H.T.			PT108
58.	R.F. Choke H.T.			PT109
59.	R.F. Choke H.T.			PT109
60.	R.F. Choke L.T.			PT439
61.	Hash Choke			PT111
62.				
63.				
64.	Tube type 1C7G			
65.	Tube type 1M5G			
66.	Tube type 1K7G			
67.	Tube type 1L5G			
68.				
69.	Pilot Lamp 6.5V. .25A.			PM678
70.	Aerial Terminal			PM306
71.	Earth Terminal			PM306
72.	Vibrator 6V. Synchronous			PM413
73.	Speaker 6-12 Permag 15000 ohm input			K101
74.	Switch on-off			S101
75.	Switch tone			S108
76.				
77.	1st I.F. Primary adjusting Screw			
78.	1st I.F. Secondary adjust. Screw			
79.	2nd I.F. Primary adjusting Screw			
80.	2nd I.F. Secondary adjust. Screw			
81.				
82.	Battery Cable			
83.	Fuse			
84.	Hash Plate			
85.	Tuning Control			
86.				
87.				
88.				
89.				
90.				

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Bulletin BKS-1 **File : Receivers Vibrator** **Date : 1/10/46**

SUBJECT—Component Parts List—Mechanical—Receiver Type BKS

Part Name	Eclipse Part No.
Vibrator Shield	16/E231
Pointer Carrier Assembly	A103/E231
Slide Bar Assembly	A106/E231
Lever Assembly	A104/E233
Pilot Light Assembly	A134/30C
Dial Drum	4/E231
Terminal Strip Assembly (8 Lug)	A103/509
Vibrator Socket Assembly	A102/58
Grid Clips	873/495
Valve Shield Earth Contacts	22/30C
Hash Plate	19A/47
Bakelite Plate	19B/47
Mica	29/216
Battery Clip (Positive)	3/245-1
Battery Clip (Negative)	3/245-2
Spring (Lever Assembly)	30/E231
Light Diffuser Assembly	A102/E231
Dial Cord	12/282
Diffuser Springs	11/E231-2
Dial Glass	7/E240

CABINET FITTINGS

CABINET		KNOBS		FELT WASHERS	
Colour	Part No.	Colour	Part No.	Colour	Part No.
Walnut	B-4	Walnut	38/81-1	To Match	124/74-1
Cream	..	Cream	..	..	..
Green	..	Green	..	..	..
Blue	..	Blue	..	..	..
Champagne	..	Champagne	..	..	..

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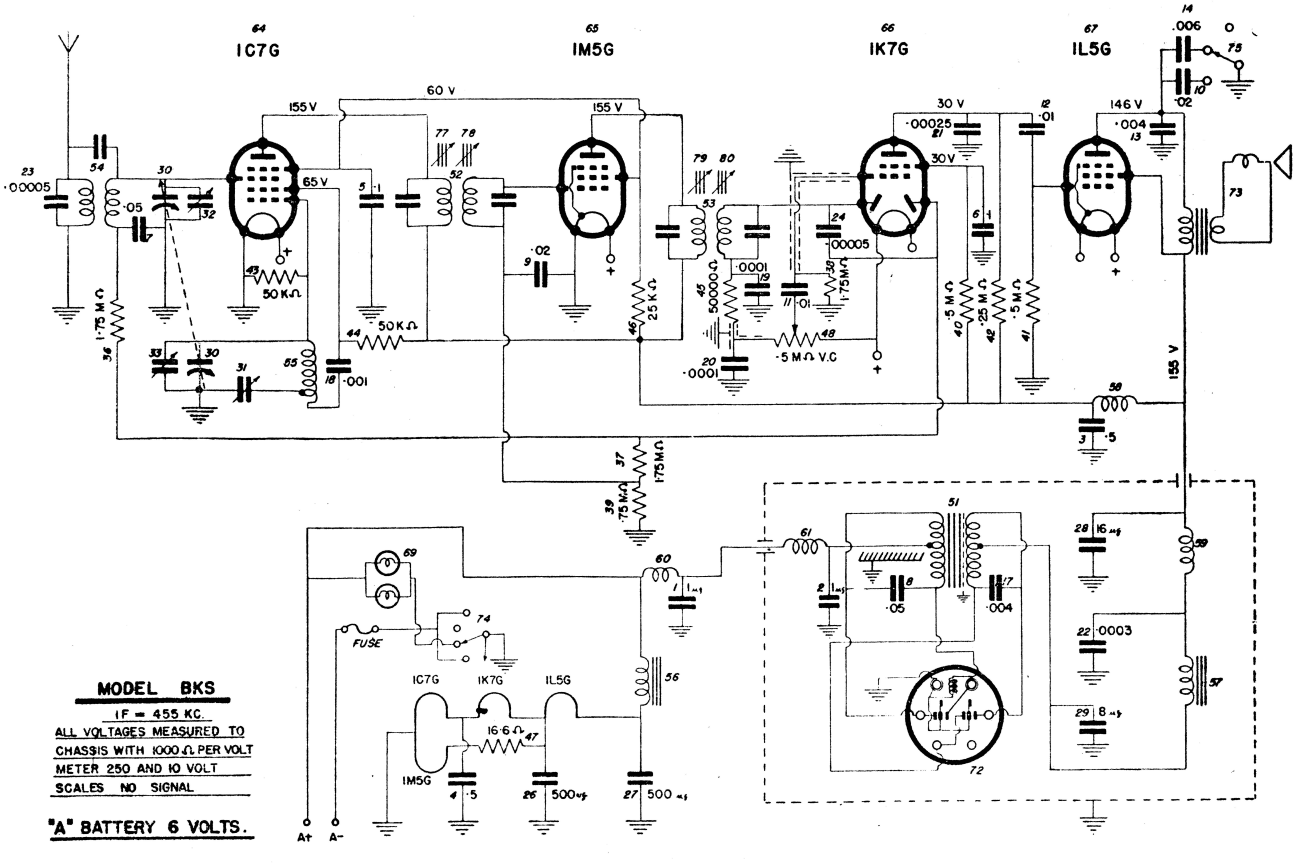
Bulletin BKS-1 **File : Receivers Vibrator** **Date : 1/10/46**

SUBJECT—Schematic Circuit Diagram—Receiver Type—BKS



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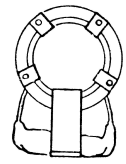
Bulletin BKS-1 **File : Receivers Vibrator** **Date : 1/10/46**

SUBJECT—Coil Connections—Receiver Type BKS

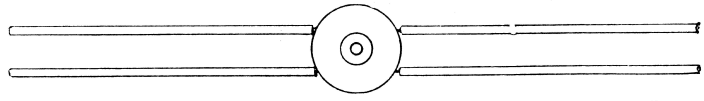
A.V.C. Earth



(Outside secondary) Grid Antenna. (Inside Primary)

Aerial Coil

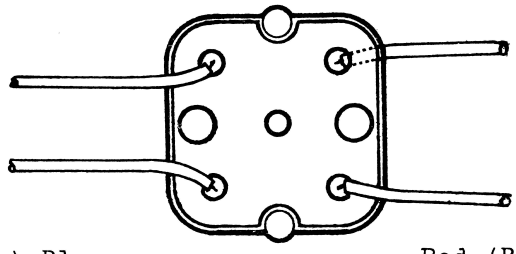
(padder cond.) Red Black (padder cond.)



(1C7G Osc. plate cond.) Blue Green (1C7G Oscl. grid)

Oscl. Coil

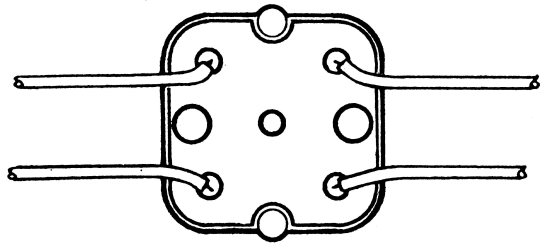
(A.V.C.) Black Green (1M5G Control Grid)



(Plate) Blue Red (B+)

1st IF. Trans.

(Diode return) Black Green (1K7G Diode)

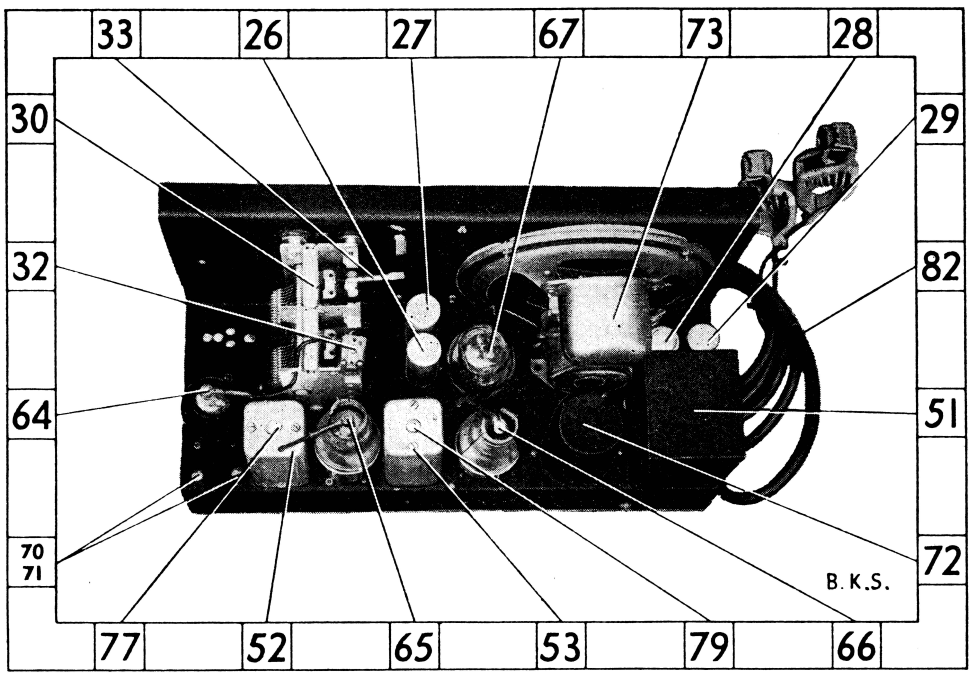


(1M5G plate) Blue Red (B+)

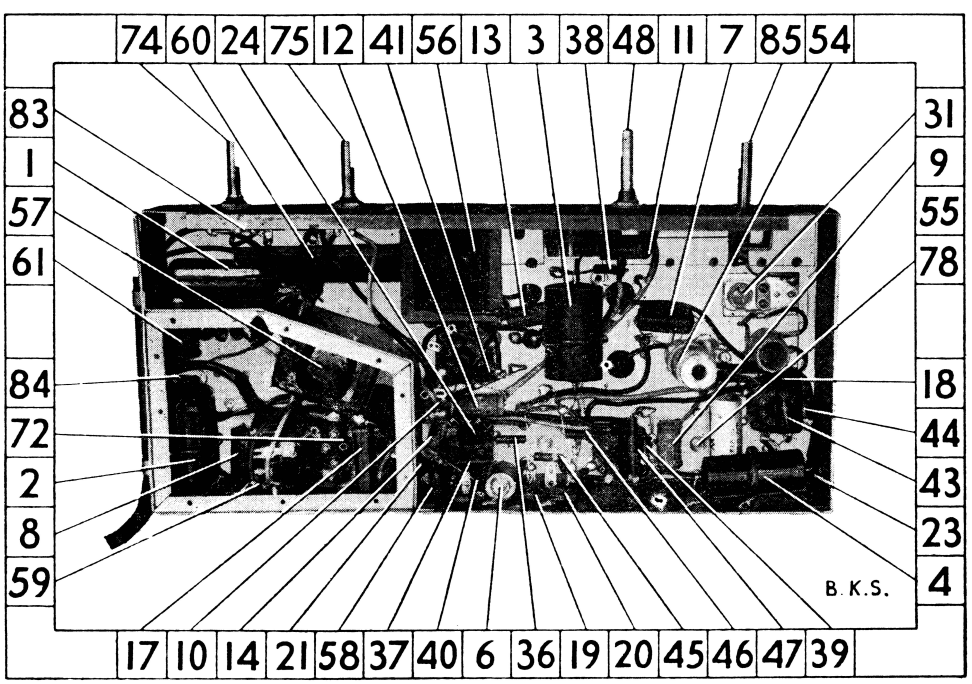
2nd IF. Trans.

Bulletin BKS-1 **File : Receivers Vibrator** **Date : 1/10/46**

SUBJECT: Chassis—Top and Bottom Views—Model BKS.



Model BKS—Top View.



Model BKS—Bottom View.