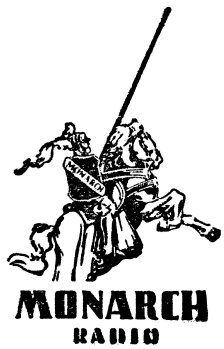

ECLIPSE RADIO PTY. LTD.

(A DIVISION OF ELECTRONIC INDUSTRIES LTD.)

11-21 STURT STREET, SOUTH MELBOURNE

TECHNICAL BULLETIN

BULLETIN BKQ-1 **File : Receivers Portable.** **Date : 7/2/49**

SUBJECT:- MODEL B.K.Q.

Personal Portable.

4 Tube Superheterodyne Receiver.

For operation from:

Two 1.5 volt torch cells
and
One 67.5 volt Layer built H.T. Battery.

This Bulletin Contains:

1. Technical Specification.
2. General Description.
3. Instructions for Replacing Batteries. Voltage Table.
4. Alignment Procedure.
5. Circuit Diagram.
6. Component Parts List.
7. Coil and I.F. Transformer Connections.

SUBJECT:- Technical Specifications—Model B.K.Q.

Tube Complement: Type 1R5 Convertor.
Type 1T4 IF. Amplifier.
Type 1S5 Detector, AVC. and Audio Amplifier.
Type 3S4 Pentode Power Amplifier.

Intermediate Frequency: 455 Kc/s.

Tuning Range: 540–1610 Kc/s.

Operation Voltages: "A" Voltage 1.5 volts.
"B" Voltage 67.5 volts.

Power Output: 200 milliwatts maximum.
100 milliwatts undistorted.

General Description: The Model "BKQ" is a 4 tube superheterodyne broadcast receiver designed as a midget (personal) portable.

The receiver chassis is housed in a Coloured Plastic case with lid and is built in three sections for ease in assembly and convenience for servicing. The total weight of the receiver including the batteries is approximately 4½ lbs.

The set operates from internal dry batteries and no external connections are required. The "A" battery consists of two standard size (type D torch) 1.5 volt cells wired in parallel. The "B" battery is a 67.5 volt layer-built type with press stud connections.

The lid of the case automatically switches the receiver "on" when opened and "off" when closed. This function is accomplished by a spring return switch wired in the battery circuits.

Signal pickup is from a high "Q" loop antenna wound with nylon covered litz wire and is assembled into the plastic lid. Connections to the receiver are made by spring loaded flexible leads.

The tubes used are the new series single-ended miniature type. The tube filaments all operate from 1.4 volts including the output tube, the dual filaments of which are wired in parallel.

The circuit consists of tuned aerial and oscillator stages with a type 1R5 tube as a converter followed by an IF. amplifier stage using a 1T4 tube. A type 1S5 tube is used for diode detection, AVC. and first audio which is resistance capacity coupled to a type 3S4 power output amplifier tube.

Bias for the output tube is obtained from the negative voltage developed across the oscillator grid leak. A grid stopper (circuit No. 27) is included in the oscillator grid circuit to provide a more even oscillator voltage over the tuning range.

"B" battery economy has been achieved by slightly over biasing the output tube and by operating the screen of the 1T4 IF tube at a lower than rated voltage.

MONARCH RADIO

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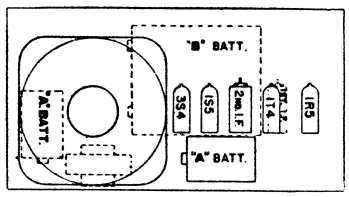
BULLETIN BKQ-1 **File : Receivers Portable.** **Date : 7/2/49**

SUBJECT:- Removing and Refitting Batteries—Model BKQ.

1. Switch the receiver "off" by fully closing the lid.
2. Lay the receiver down on the front of the lid.
3. Remove the screw in the both ends of the case by using a small cane, nail file or screw-driver, then lift case off front panel.
4. Remove strap retaining "B" battery so that it may be lifted out. Disconnect leads by prising off the press stud clips attached to the battery clips.
5. Remove "A" Batteries from carrier clips provided noting which end of clips the top of the battery fits.
6. Replace the new batteries (see 7) in the exact reverse procedure adopted for removing the old batteries, making sure that the "A" cells are correct way round, pressed firmly home and that the studs are properly fastened to the "B" battery.
7. Two 1.5 volt standard type D torch cells are required as "A" batteries and one 67.5 volt. Miniature or "Mini-Max" type for the "B" battery.



VALVE PLACEMENT DIAGRAM MODEL BKQ. 343/279

SUBJECT:- Voltage Table—Model B.K.Q.

Equipment:-

DC. Voltmeter: 1000 ohms per voltmeter with 0-10 and 0-250 volt scales.
DC. Ammeter: 0-10 and 0-250 milliamp scales.

Conditions of Test:

Set tuned to 1000 Kc/s; no signal, volume control full on "A" Battery 1.5V. "B" Battery 67.5V. All voltages measured from tube socket contacts to chassis.

Tube.	Fil.	Plate.	Screen.	Grid.
IR5.	1.4V.	67.5V.	42V.	–
IT4.	1.4V.	67.5V.	30V.	–
1S5.	1.4V.	10V.	4V.	–
3S4.	1.4V.	66.5V.	67.5V.	7.5V.

"A" Battery drain 250 milliamps.
"B" Battery drain 8 milliamps (no signal).

SUBJECT:- Alignment Instructions-Model "BKQ".

Operation	Generator Connection	Generator Frequency	Dummy Antenna	Instructions
1.	To control grid of 1T4 tube (Pin No. 6).	455Kc/s.	·01MFD Mica capacity in series with generator.	Turn cond. gang plates full out. Peak 2nd IF. transformer primary and secondary for max. output.
2.	To control grid of 1R5 tube (pin No. 6).	455Kc/s.	.01MFD mica capacitor in series with generator.	Turn cond. gang plates full out. Peak 1st IF. Transformer primary and secondary for maximum output.
3.	To AVC. lead of loop-aerial (outside turn).	600Kc/s.	200mmfd mica capacitator in series with generator.	Turn cond. gang and dial to tune 600Kc/s. Adjust oscillator coil inductance trimmer (iron core) for max. output. Rock the gang to and fro through the signal while adjusting.
4.	To AVC. lead of loop-aerial.	1610Kc/s.	200mmfd. mica capacitor in series with generator.	Turn gang to full open. Adjust oscillator trimmer for maximum signal.
5.	To AVC. lead of loop-aerial.	1500Kc/s.	200mmfd. mica capacitor in series with generator.	Turn gang to maximum signal on 1500 Kc/s and adjust loop aerial trimmer for maximum output.
6.	Repeat Nos. 3, 4 and 5.			

Tuning range after alignment 540-1610 Kc/s.

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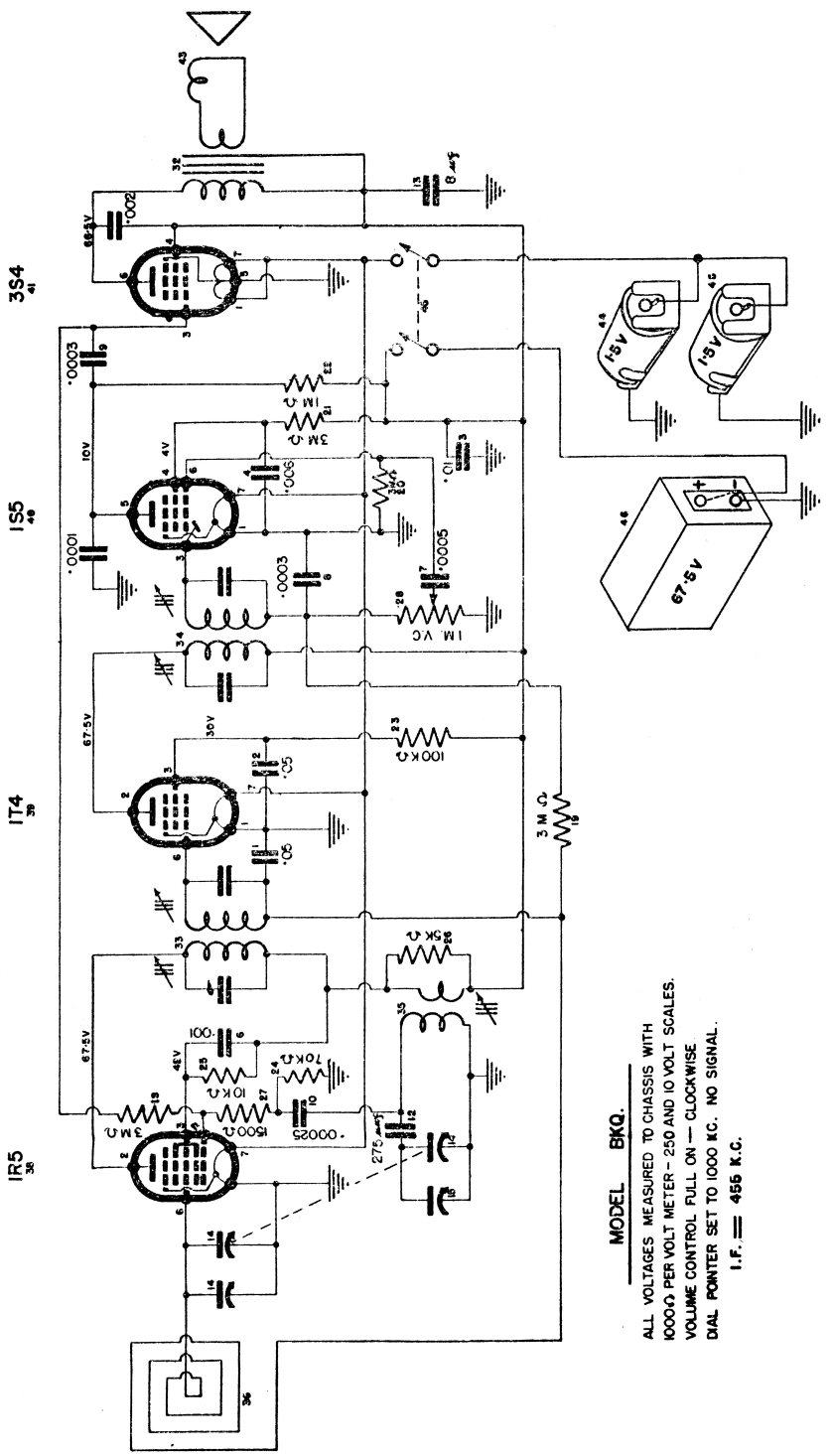
TECHNICAL BULLETIN

MONARCH RADIO

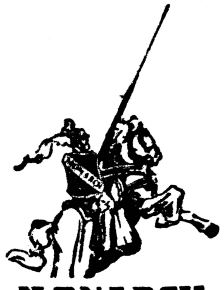
BULLETIN BKQ-1 **File : Receivers Portable.** **Date : 7/2/49**

CIRCUIT DIAGRAM. Model B.K.Q.



SUBJECT:- Component Parts List—Receiver Type BKQ.

Circuit No.	Part	Name	Rating	Tol.±	Eclipse Part No.
1.	·05mfd	Paper Condenser	200V DCW	20%	PC102
2.	·05mfd	Paper Condenser	200V DCW	20%	PC102
3.	·01mfd	Paper Condenser	400V DCW	20%	PC140
4.	.006mfd	Paper Condenser	600V DCW	20%	PC217
5.	·002mfd	Mica Condenser	1000VT	10%	PC168
6.	·001mfd	Mica Condenser	1000VT	10%	PC108
7.	·0005mfd	Mica Condenser	1000VT	10%	PC144
8.	.0003mfd	Mica Condenser	1000VT	10%	PC212
9.	·0003mfd	Mica Condenser	1000VT	10%	PC212
10.	.00025mfd	Mica Condenser	1000VT	10%	PC126
11.	·0001mfd	Mica Condenser	1000VT	10%	PC110
12.	275mmfd	Silvered Mica Condenser	1000VT	2½%	PC724
13.	8 mfd	Electrolytic Condenser	525VP	20%	PC576
14.	2 Gang	Variable Condenser			PC703
15.	0–30mmfd				PC663
16.					
17.					
18.	3 Megohm	Carbon Resistor	½ watt	10%	PR282
19.	3 Megohm	Carbon Resistor	½ watt	10%	PR282
20.	3 Megohm	Carbon Resistor	½ watt	10%	PR282
21.	3 Megohm	Carbon Resistor	½ watt	10%	PR282
22.	1 Megohm	Carbon Resistor	½ watt	10%	PR246
23.	100,000 Ohm	Carbon Resistor	½ watt	10%	PR103
24.	70,000 Ohm	Carbon Resistor	½ watt	10%	PR630
25.	10,000 Ohm	Carbon Resistor	½ watt	10%	PR164
26.	5,000 Ohm	Carbon Resistor	½ watt	10%	PR250
27.	1,500 Ohm	Carbon Resistor	½ watt	10%	PR244
28.	1 Megohm	Carbon Potentiometer			PR636
29.					
30.					
31.					
32.	5000 Ohm Input Transformer				PT820
33.	1st IF. Transformer				PT800
34.	2nd IF. Transformer				PT800
35.	Oscillator Coil				PT776
36	Loop Aerial				PT844
37.					
38.	Type 1R5 Valve				1R5
39.	Type 1T4 Valve				1T4
40.	Type 1S5 Valve				1S5
41.	Type 3S4 Valve				3S4
42.					



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BULLETIN BKQ-1 **File : Receivers Portable.** **Date : 7/2/49**

SUBJECT:- Component Parts List—Receiver Type B.K.Q.

Circuit No.	Part Name	Rating.	Tol.±	Eclipse Part No.
43.	3" Permag. Speaker			K118
44.	1.5V "A" Cell			PM466
45.	1.5V "A" Cell			PM466
46.	67.5 "B" Battery			M101
47.				
48.	On/Off Switch Assembly			A104/634
	Valve Sockets (4)			A104/58
	Nuts—I.F.T. Mounting (2)			10/638
	Stud—Battery Clip—negative			245/250
	Stud—Battery Clip—positive			246/250
	Speed Nuts—Set Mounting (4)			231/250
	Vernier Tuning Wheel			23/647
	Tuning Wheel			24/647
	Thumb Wheel—Volume Control			25/647
	Terminal Strip (2 lug)			A143/30C
	Terminal Strip (3 lug)			A103/500
	Terminal Strip (1 lug)			A107/30C
	"A" Battery Clip			A104/630
	"A" Battery Contact—Positive			19/639
	"A" Battery Contact—Insulation			20/639
	Insulation—transformer			22/647
	Mounting Screws			11/647
	Spring Battery Tape			10/526
	Case Assembly			102/647
	Case drilled			3/647
	Lid Clip			44/634—1
	Handle Strap Assembly			A108/634
	Handle Loop (2)			37/634
	Shoulder Strap			A111/634
	Lid and Cover Assembly			103/647
	Cover and Hinge			A104/647
	Lid			2/647
	Lid Catch			27/647
	Aerial Lead Strainer			41/634
	Tension Spring			39/634
	Aerial Lead Insulators			42/634
	Limit Arm R.H.			28/647—1
	Limit Arm L.H.			28/647—2
	Aerial Cover			5/647
	Burglar Trap Wire			WM.2

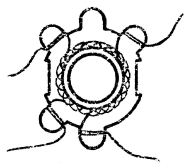
SUBJECT:- Coil and IF. Transformer Connections—Model BKQ.

Loop Aerial

Inside turn—Grid.
Outside turn—AVC.

Junction of Circuit Nos. 10 and 12

B+



Junction of Circuit Nos. 6, 25 and 33.

Chassis.

Oscl. Coil.

Grid

Grid Return

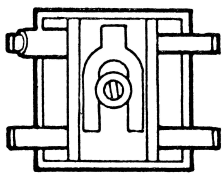


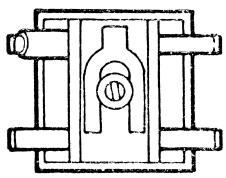
Plate.

Junction of Circuit Nos. 6, 25 and 35.

1st I.F. Trans.

Diode.

Diode Return.



Plate

B+

2nd I.F. Trans.