ECLIPSE RADIO PTY. LTD.

(A DIVISION OF ELECTRONIC INDUSTRIES LTD.)

11-21 STURT STREET, SOUTH MELBOURNE

TECHNICAL BULLETIN

Bulletin DKL-1 **File : Receivers A/c.** **Date : 1/10/46**

SUBJECT— Type DKL Mantel Model
4 Tube Broadcast Superheterodyne
Receiver.

For operation from:-

200-250 Volt 50 Cycle A/c. Mains.

This Bulletin contains:-

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

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Bulletin DKL-1 **File : Receivers A/c.** **Date : 1/10/46**

SUBJECT–Technical Specifications–Receiver Type DKL

TUBE COMPLEMENT:

6A8G Converter.
6B8G IF. Amplifier, AVC., Detector, 1st Audio.
6V6GT Beam Power Amplifier.
5Y3G Full Wave Rectifier.

INTERMEDIATE FREQUENCY: 455 Kcs.

TUNING RANGE: 535 Kcs. (Kilocycles) to 1640 Kcs.
565 M. (Meters) to 182.9 M.

CALIBRATION: Straight Line Frequency.

POWER CONSUMPTION: 40 Watts (Approx.).

GENERAL DESCRIPTION:

The type DKL Mantel Model is a 4 tube reflexed superheterodyne receiver.

The circuit which is of unusual design has overcome the usual disadvantages of reflexed circuits, i.e., low volume distortion and failure of the volume control to cut off.

The tube line up consists of a 6A8G pentagrid converter followed by a type 6B8G diode pentode used as a combined IF. amplifier, diode detector and A.V.C. bias source and 1st audio amplifier.

A.V.C. is applied to the 6A8G only. Volume is controlled by varying the reflexed audio signal applied to the 6B8G tube. The audio output of this tube is fed directly to the 6V6GT output tube. Degenerative feedback is taken from the secondary of the output transformer and applied to the bottom of the volume control. A second circuit providing bass boost is connected to the tap on the volume control.

Bias (back bias) for the 6V6GT output tube is obtained from the voltage drop across the 250 ohm resistor circuit number 36.

High tension is supplied from full wave rectifier 5Y3G and filtered by resistance capacitive filter comprising 24MFD. electrolytic 400 ohm resistor and 16MFD. electrolytic condenser circuit numbers 17, 37 and 18.

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Bulletin DKL-1 **File : Receivers A/c.** **Date : 1/10/46**

SUBJECT—Alignment Procedure—Receiver Type DKL

- EQUIPMENT:—Signal Generator.
  Dummy Antenna:—
  .01MFD. Mica Capacitor.
  200MMFD. Mica Capacitor.
  Output Meter.
  Alignment Tool.

ALIGNMENT CONDITIONS:—
Load Impedance—5,000 Ohms.
Output Level—50 Milliwatts.
Volume Control—Maximum Volume (Fully Clockwise).

ALIGNMENT:—(Chassis removed from cabinet).
Intermediate Frequency—455 Kcs.
Do not use a screwdriver or alignment tool with an iron point for aligning IF. transformers. A special tool part number PM581 is available from the factory, or failing this an insulated rod with a small brass blade may be used.

Operation No.	Generator Connection	Frequency	Dummy Antenna	Instructions
1.	To grid of 6B8G tube.	455Kcs.	.01MFD. mica capacitor in series with generator.	Gang plates full out. Leave grid cap on tube. Peak 2nd IF. transformer primary and secondary.
2.	To grid of 6A8G tube.	455Kcs.	.01MFD. mica capacitor in series with generator.	Gang plates full out. Leave grid cap on tube. Peak 1st IF. transformer primary and secondary.
3.	Set the dial pointer to the right-hand margin of the dial scale, near 550 K.C. with the gang plates fully meshed.			
4.	To antenna lead	600Kcs.	200MMFD. mica capacitor in series with generator.	Turn dial pointer to 600 Kcs. dial mark. Peak oscillator coil inductance trimmer (iron core) for maximum output rocking gang to and fro while adjusting.
5.	To antenna lead	1400Kcs.	200MMFD. mica capacitor in series with generator.	Turn dial pointer to 1400 Kcs. dial mark. Adjust oscillator trimmer for logging and peak aerial coil trimmer.
6.	Repeat operations Nos. 4 and 5.			

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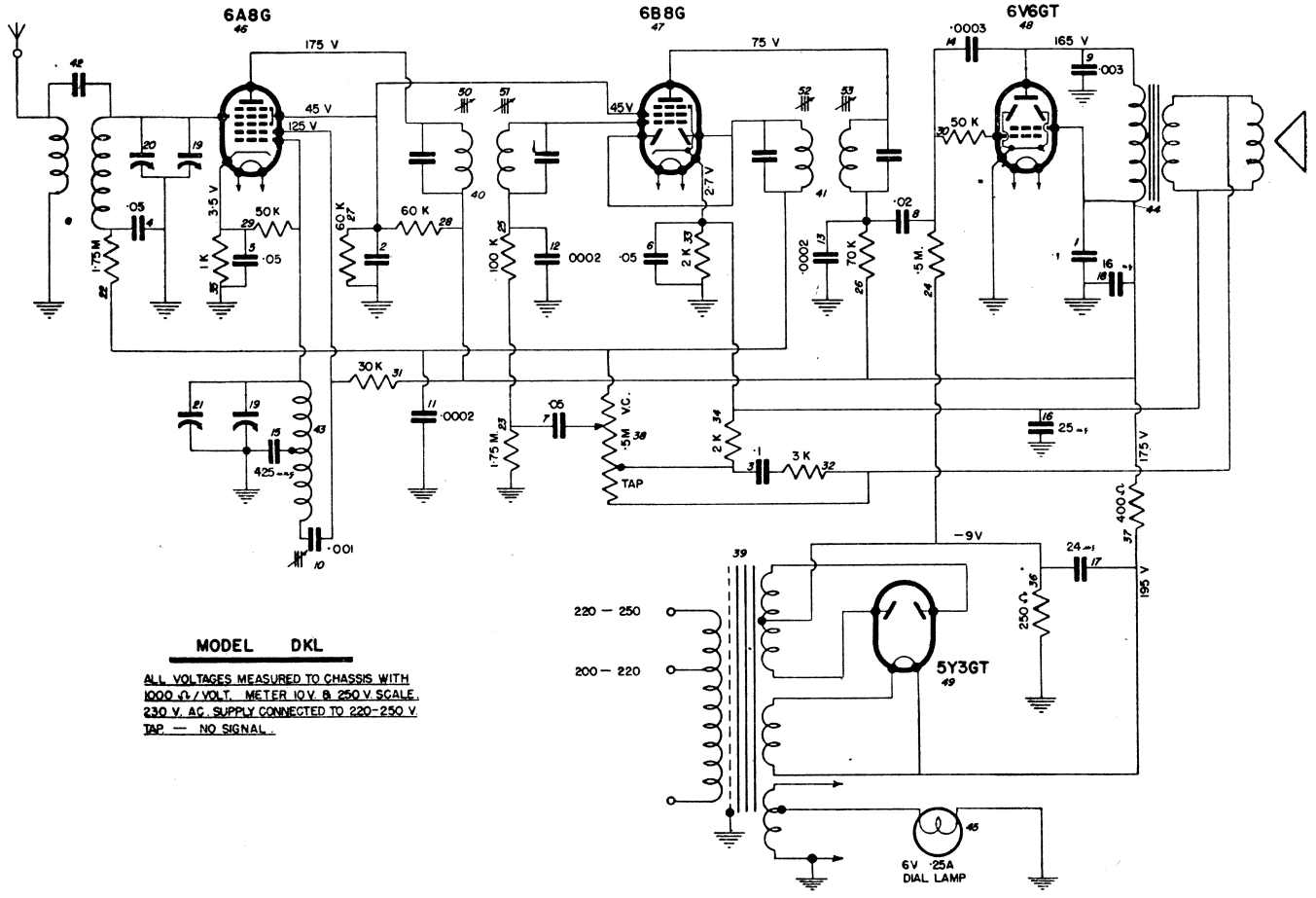
Bulletin DKL-1 **File : Receivers A/c.** **Date : 1/10/46**

SUBJECT—Schematic Circuit Diagram—Receiver Type DKL



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Bulletin DKL-1 **File : Receivers A/c.** **Date : 1/10/46**

SUBJECT–Voltage Table–Receiver Type DKL

EQUIPMENT:–

Volt Meter:–

1,000 ohms per volt with 0-250 volt and 0-10 volt scales.

Conditions of test:–

All voltages measured from tube socket contacts to chassis. 230 volts 50 cycle A/c. input, receiver tuned to 1,000 Kcs., volume control at maximum volume (fully clockwise) no signal.

TUBE	FIL.	PLATE	SCREEN	GRID	CATHODE	OSCL. PLATE
6A8G	6.3V.	175V.	44.5V.	–	3.5V.	115V.
6B8G	6.3V.	75V.	44.5V.	–	2.7V.	–
6V6GT	6.3V.	165V.	175V.	9.0V.	–	–
5Y3G	5V.	198V/198V. RMS. The initial surge voltage across the first electrolytic condenser (circuit No. 17) is 255 volts dropping to normal operating value of 196 volts. DC voltage across 400 ohm filter resistor is 16 volts.				

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Bulletin DKL-1 **File : Receivers A/c.** **Date : 1/10/46**

SUBJECT—Component Parts List—Electrical—Receiver Type DKL

Circuit No.	Part	Name	Rating	Tol.	Eclipse Part No.
1.	.1 mfd.	Paper Condenser	400V	20%	PC103
2.	.05 mfd.	Paper Condenser	400V	20%	PC109
3.	.1 mfd.	Paper Condenser	200V	20%	PC218
4.	.05 mfd.	Paper Condenser	200V	20%	PC102
5.	.05 mfd.	Paper Condenser	200V	20%	PC102
6.	.05 mfd.	Paper Condenser	200V	20%	PC102
7.	.05 mfd.	Paper Condenser	200V	20%	PC102
8.	.02 mfd	Paper Condenser	400V	20%	PC111
9.	.003 mfd	Paper Condenser	600V	20%	PC274
10.	.001 mfd	Mica Condenser	1000V	10%	PC108
11.	.0002 mfd	Mica Condenser	1000V	10%	PC124
12.	.0002 mfd	Mica Condenser	1000V	10%	PC124
13.	.0002 mfd	Mica Condenser	1000V	10%	PC124
14.	.0003 mfd	Mica Condenser	1000V	10%	PC212
15.	.000425mfd	Mica Condenser	1000V	2½%	PC683
16.	25 mfd	Electrolytic Condenser	40PV	20%	PC660
17.	24 mfd	Electrolytic Condenser	350PV	20%	PC276
18.	16 mfd	Electrolytic Condenser	350PV	20%	PC283
19.	2 gang	Variable Condenser			PC635
20.	1.5-18 mmfd	Trimmer Condenser			PC634
21.	0-30 mmfd	Trimmer Condenser Wire Wound			PC663
22.	1.75 megohm	Carbon Resistor	½ Watt	10%	PR248
23.	1.75 megohm	Carbon Resistor	½ Watt	10%	PR248
24.	.5 megohm	Carbon Resistor	½ Watt	10%	PR245
25.	100,000 ohm	Carbon Resistor	½ Watt	10%	PR103
26.	70,000 ohm	Carbon Resistor	½ Watt	10%	PR256
27.	60,000 ohm	Carbon Resistor	½ Watt	10%	PR125
28.	60,000 ohm	Carbon Resistor	½ Watt	10%	PR125
29.	50,000 ohm	Carbon Resistor	½ Watt	10%	PR160
30.	50,000 ohm	Carbon Resistor	½ Watt	10%	PR160
31.	30,000 ohm	Carbon Resistor	½ Watt	10%	PR151
32.	3,000 ohm	Carbon Resistor	½ Watt	10%	PR185
33.	2,000 ohm	Carbon Resistor	½ Watt		PR253

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Bulletin DKL-1 **File : Receivers A/c.** **Date : 1/10/46**

SUBJECT—Component Parts List—Electrical—Receiver Type DKL

Circuit No.	Part	Name	Rating	Tol.	Eclipse Part No.
34.	2,000 ohm	Carbon Resistor	½ Watt	10%	PR253
35.	1,000 ohm	Carbon Resistor	½ Watt	10%	PR252
36.	250 ohm	Wire Wound Resistor	½ Watt	10%	PR259
37.	400 ohm	Wire Wound Resistor	1 Watt	10%	PR148
38.	.5 megohm	Volume Control			PR377
	Tapped at 40,000 ohms				
39.		Power Transformer			PT794
40.	1st I.F.	Transformer			PT753
41.	2nd I.F.	Transformer			PT387
42.	Antenna	Transformer			PT787
43.	Oscillator	Coil			PT793
44.	Permag Speaker				
	5,000 ohm Input				K 109
45.	6-8V .25A	Pilot Lamp			PM678
46.	Type 6A8G	Tube			
47.	Type 6B8G	Tube			
48.	Type 6V6G/GT	Tube			
49.	Type 5Y3G/GT	Tube			
50.	1st I.F. Primary Adjusting Screw				
51.	1st I.F. Secondary Adjusting Screw				
52.	2nd I.F. Primary Adjusting Screw				
53.	2nd I.F. Secondary Adjusting Screw				
54.	Tuning Control				

MONARCH
RADIO

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Bulletin DKL-1 **File : Receivers A/c.** **Date : 1/10/46**

Subject—Component Parts List—Mechanical—Receiver Type DKL

Part Name	Eclipse Part No.
Pointer and carrier Assy.	A105/E246
Pulley	4/501-2
Pulley lever Assy.	A104/E233
Spring—(Lever Assy.)	21/E233
Dial Drum	15/E233
Circlip—Drive spindle	11/E246
Pilot Light Assy.	A130/30C
Valve shield earth contact	22/30C
Control Knob	4/E252
Control Knob Insert (Steel)	86/71
Speed Nuts (dial clamp)	227/250
Dial Glass	15/E246
Light Diffuser	10/E246
Grid Clips	873/495
Trim Plate	12/E246

CABINET FITTINGS

CABINET		KNOBS		FELT WASHERS	
Colour	Part No.	Colour	Part No.	Colour	Part No.
Walnut	D-1	Walnut	4/E252	To match	124/74-1
Cream	D-1	Cream	4/E252	..	..
Green	D-1	Green	4/E252	..	..
Blue	D-1	Blue	4/E252	..	..
Champagne	D-1	Champagne	4/E252	..	..

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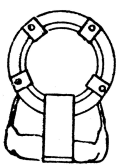
Bulletin DKL-1 **File : Receivers A/c.** **Date : 1/10/46**

SUBJECT—Coil and IF. Transformer Connections—Receiver Type DKL

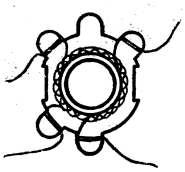
A.V.C. Earth



(Outside secondary) Grid Antenna. (Inside Primary)

ANT. TRANSFORMER

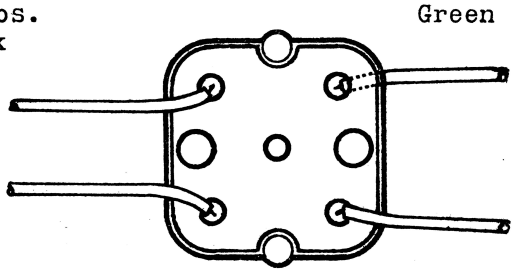
Grid 6A8G Oscl. Plate cond.



Series pad Series pad

OSCL. COIL

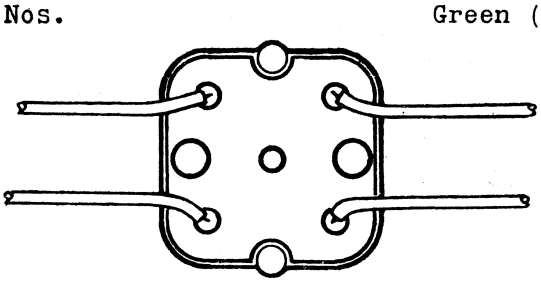
(Junction of circuit Nos. 12 and 25 Black Green (6B8G Grid)



(6A8G Plate) Blue Red (B+)

1st IF. TRANS.

(Junction of circuit Nos. 11, 22 and 38 Black Green (6B8G Diode)

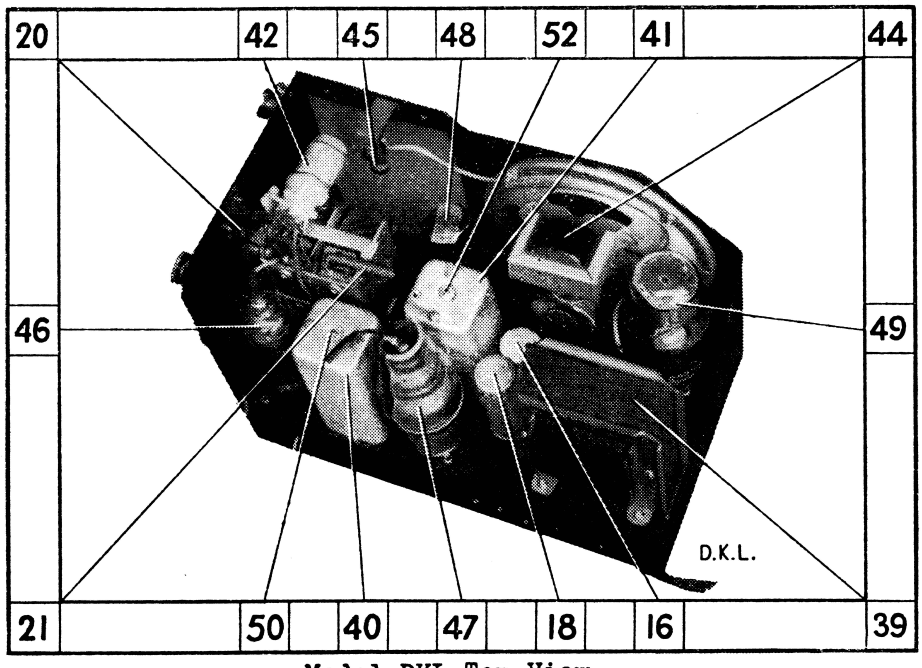


(6B8G plate) Blue Red(Junction of Nos. 8, 13 and 26

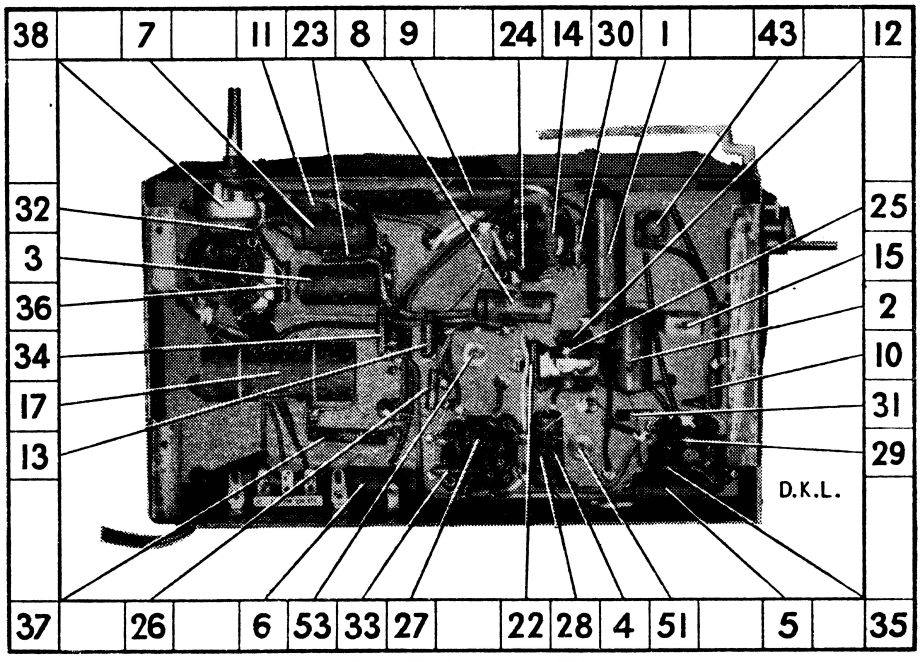
2nd IF. TRANS.

Bulletin DKL-1 File : Receivers A/c. Date : 1/10/46

SUBJECT: CHASSIS TOP AND BOTTOM VIEWS
Receiver Type DKL.



Model DKL Top View.



Model DKL Bottom View.