SERVICE BULLETIN
MODEL 53A
AUGUST, 1946

MODEL 53A

5 Valve Broadcast Receiver

RADIO CORPORATION OF NEW ZEALAND LTD.
80 Courtenay Place, Wellington, C3., New Zealand.

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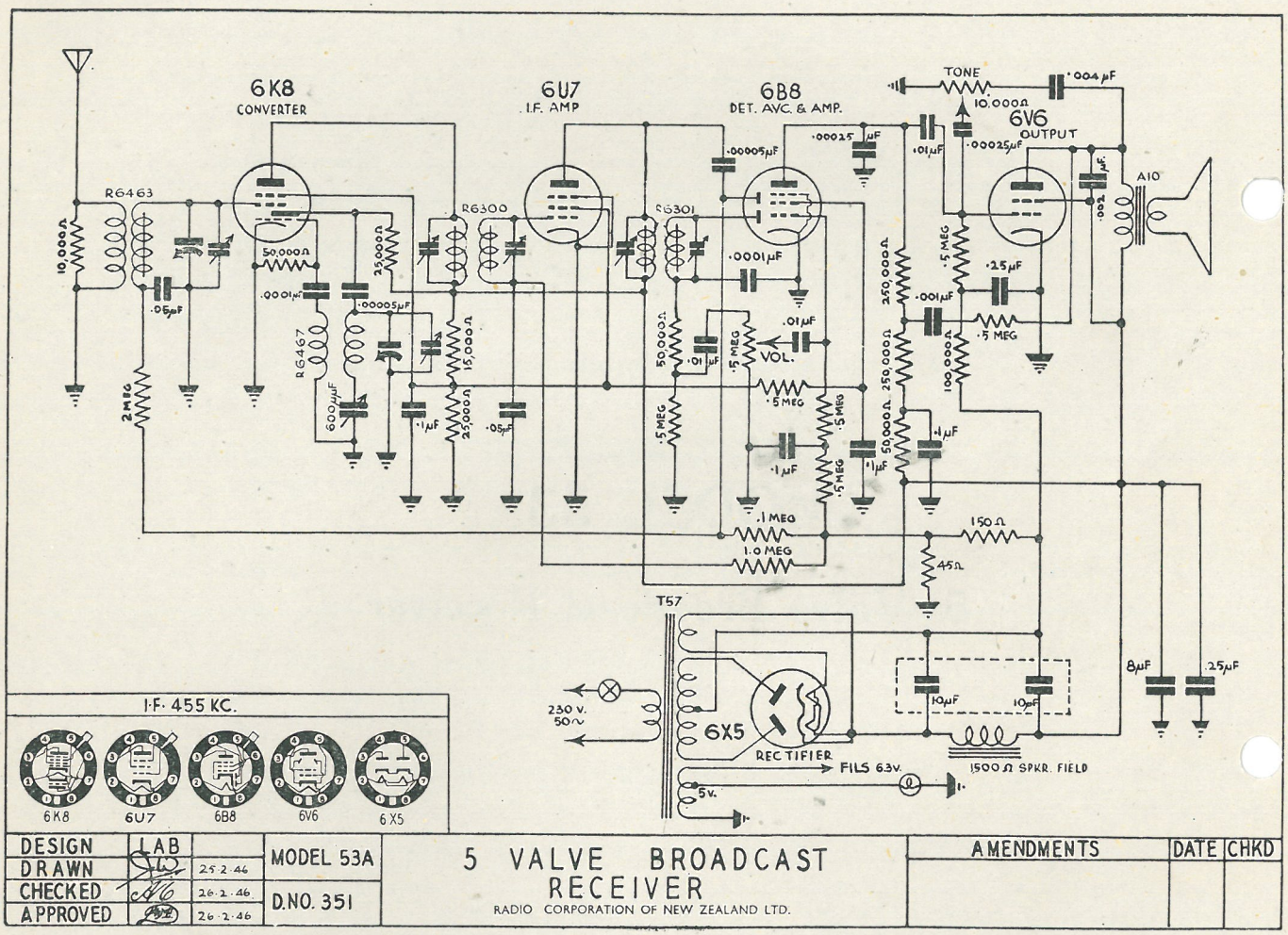

DESIGN	LAB		MODEL 53A	5 VALVE BROADCAST RECEIVER RADIO CORPORATION OF NEW ZEALAND LTD.	AMENDMENTS / DATE / CHKD
DRAWN		25·2·46			
CHECKED		26·2·46	D.NO. 351		
APPROVED		26·2·46			

NOTES ON MAIN COMPONENTS:

Power Transformer: Type T57
Output Transformer: Type A10
Tuning gang: 2 gang Plessey K. 1852/22
Dial lamp: 1 only Auto Type 6.3 v.
Dial Scale: OE.20

1. GENERAL DESCRIPTION:

This is a 5 valve broadcast receiver of excellent sensitivity and tonal quality.

A special oscillator circuit ensures that the oscillator frequency is unaffected by changes in A.V.C. voltage, and to ensure constancy of calibration and alignment, silvered-mica fixed condensers and high quality trimmers are used in all tuned circuits.

The tone control operates on the selective negative feedback principle, giving a wide range of control.

For Model 53A the valves used are as follows:

6K8 Converter

6U7 I.F. Amplifier

6B8 Detector Audio Amplifier and A.V.C.

6V6 Power Output.

6X5 Rectifier

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2. ALIGNMENT PROCEDURE:

This is fully covered in Service Bulletin No. 72. "Standard Line-up Procedure for Multi-band Receivers," a copy of which is obtainable on application to the Engineering Department. The intermediate frequency is 455 k.c. and the line-up points are 1400 and 600 k.c.

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3. VOLTAGE TESTS.

A.C.

High voltage secondary of power transformer, from each rectifier plate to centre tap	340v.
Heater of Rectifier	5v.
All other Heaters	6v.
Dial Lamps	5v.

D.C. (Measured with a meter of 1000 ohms per volt sensitivity, between point indicated and chassis.)

First 10 mfd. electrolytic condenser	340v.
Second 10 mfd. electrolytic condenser	260v.
Screens of 6K8 and 6U7	100v.
Screen of 6B8	30v.
Plate of 6B8	40v.
Junction of 45 and 150 ohm resistors (A.V.C. Delay bias)	3v.
Negative terminals of 10 mfd. condensers	13v.

All measurements should be made with the receiver tuned to approximately 1000 k.c. and with no signal input.

4. RESISTANCE TESTS:

Where measured.	Approx. D.C. Resistance in ohms
Across power cord	45
Each rectifier plate to centre tap of power transformer secondary	400
Across speaker field	1500
Speaker transformer primary	600
I.F. transformer coils	5.54
B/C Aerial Primary	20
B/C Aerial Secondary	3
B/C Osc. Primary	1
B/C Osc. Secondary	3
Between negative terminals of 10 mfd. electrolytic condensers and chassis	185

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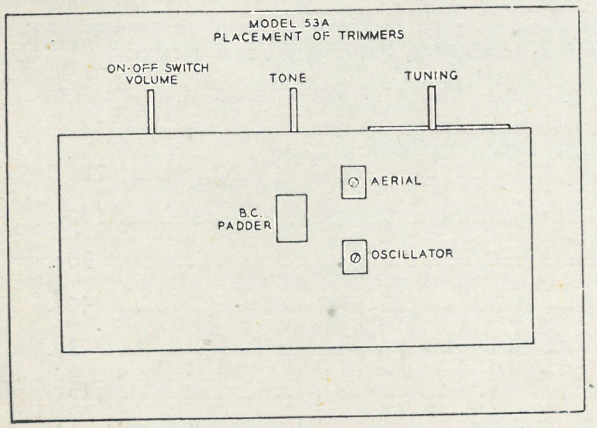
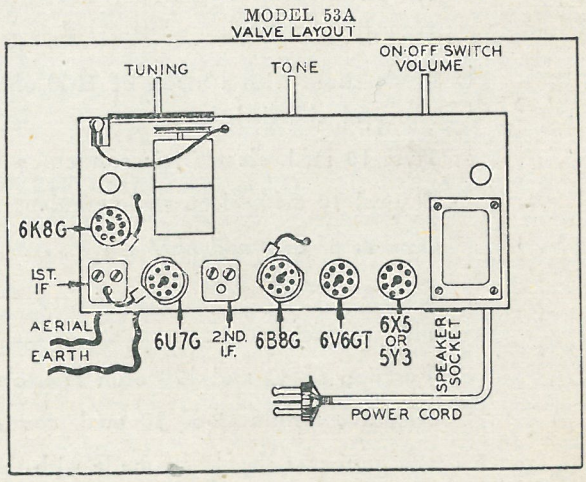
5. SENSITIVITY TESTS:

(Microvolts input to give standard output of 50 milliwatts.)

Frequency:	Input to	Microvolts:
455 k.c.	Grid of 6B8	2000
455 k.c.	Grid of 6K8	110
1,400 k.c.	Aerial lead through standard dummy antenna	25
1,000 k.c.	Aerial lead through standard dummy antenna	25
600 k.c.	Aerial lead through standard dummy antenna	27





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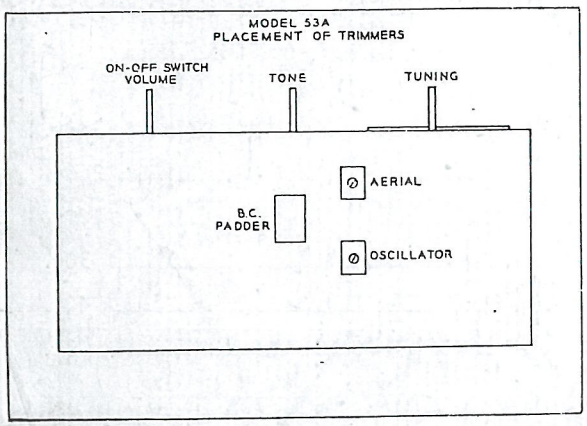

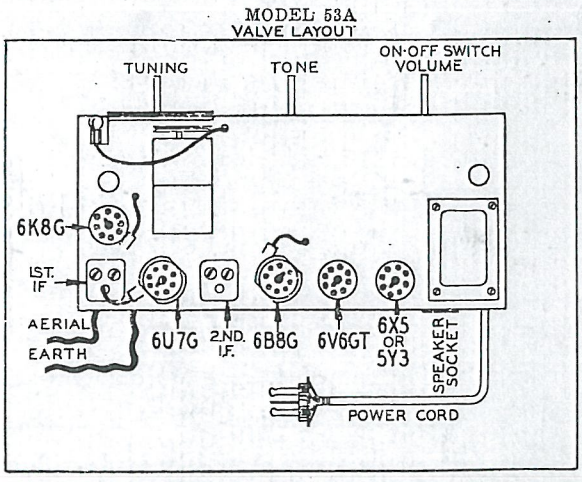

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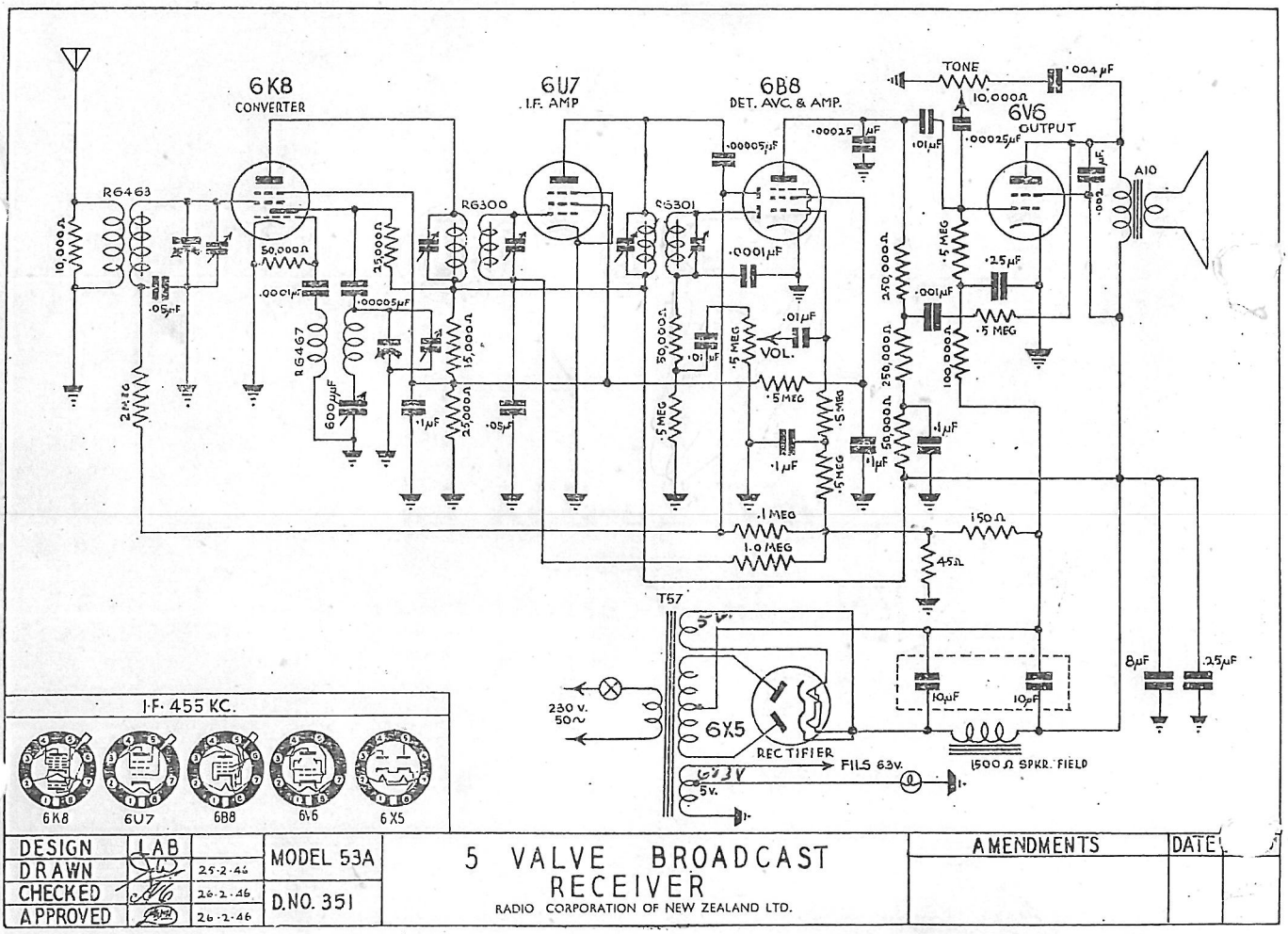

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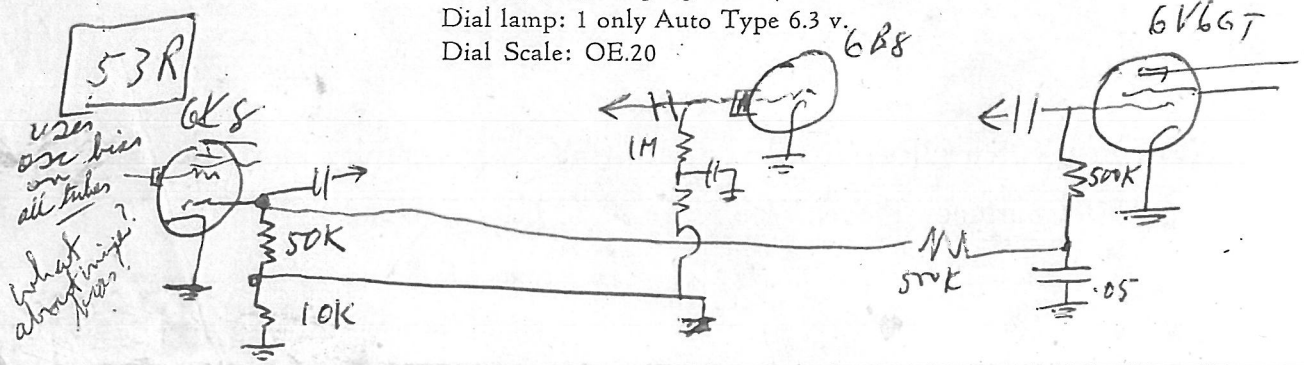
Note 6X5 G Heater is running on 5 volts ?



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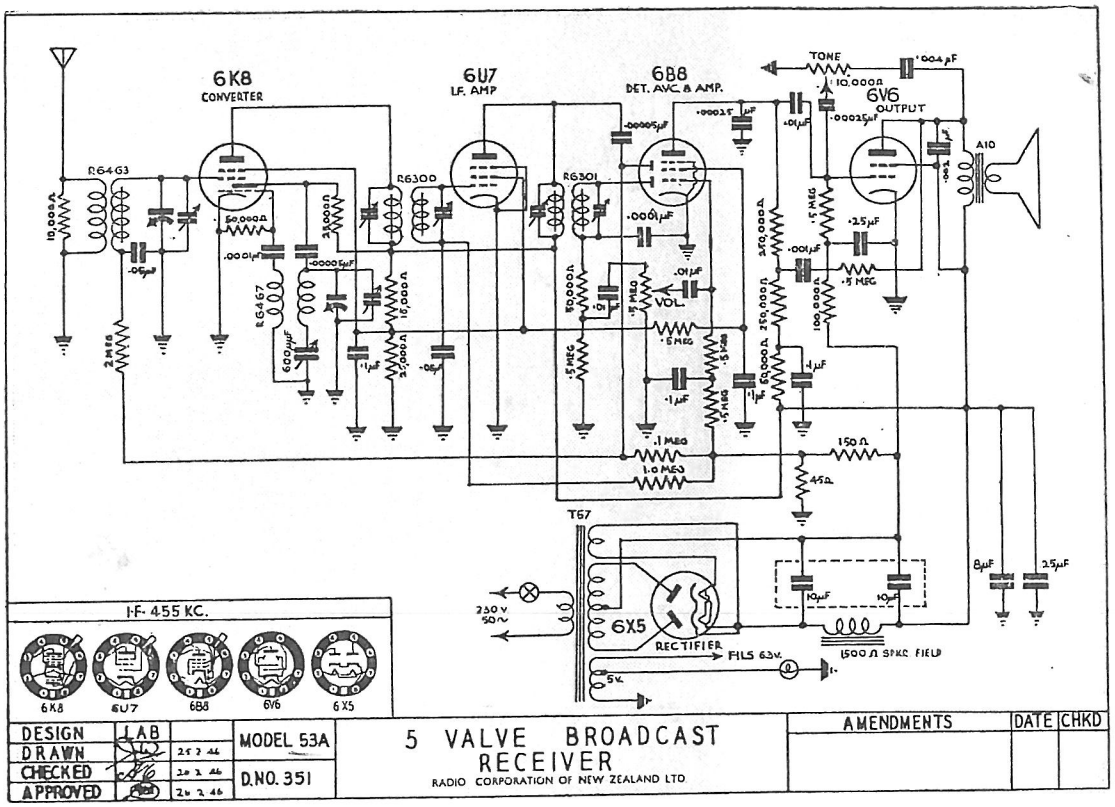

SCHEMATIC DIAGRAM (Model 53)

1. CIRCUIT

Models 53 and 55 are broadcast and dualwave versions respectively, of a 5-valve superheterodyne receiver which is designed notably for high-quality tonal reproduction.

A high impedance aerial coil is employed to minimise repeat spots and to promote selectivity. The oscillator is a plate-tuned, shunt-fed circuit which, in Model 55, contributes to stability and constancy of calibration at shortwave frequencies. Both I.F. transformers are iron-core, dual-tuned type. The volume control is isolated from both the diode and signal-grid circuits in order to eliminate noise during rotation of the control.

Frequency discrimination is applied to the control of tone through the feedback circuits, thereby considerably enhancing tonal effectiveness.

2. COVERAGE

Both models cover the standard broadcast band from 550 - 1,600 kilocycles. Model 55 covers shortwave frequencies 9,400 to 15,600 in a single

MODELS 53, 55 & 53S (proto)

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