



SERVICE BULLETIN

No. 80
JUNE, 1941

MODEL 69

6 Valve Broadcast-Shortwave Receiver with
Band-spread 16-19 metres and 25-31 metres

R.N.Z.
RADIO CORPORATION OF NEW ZEALAND LTD.

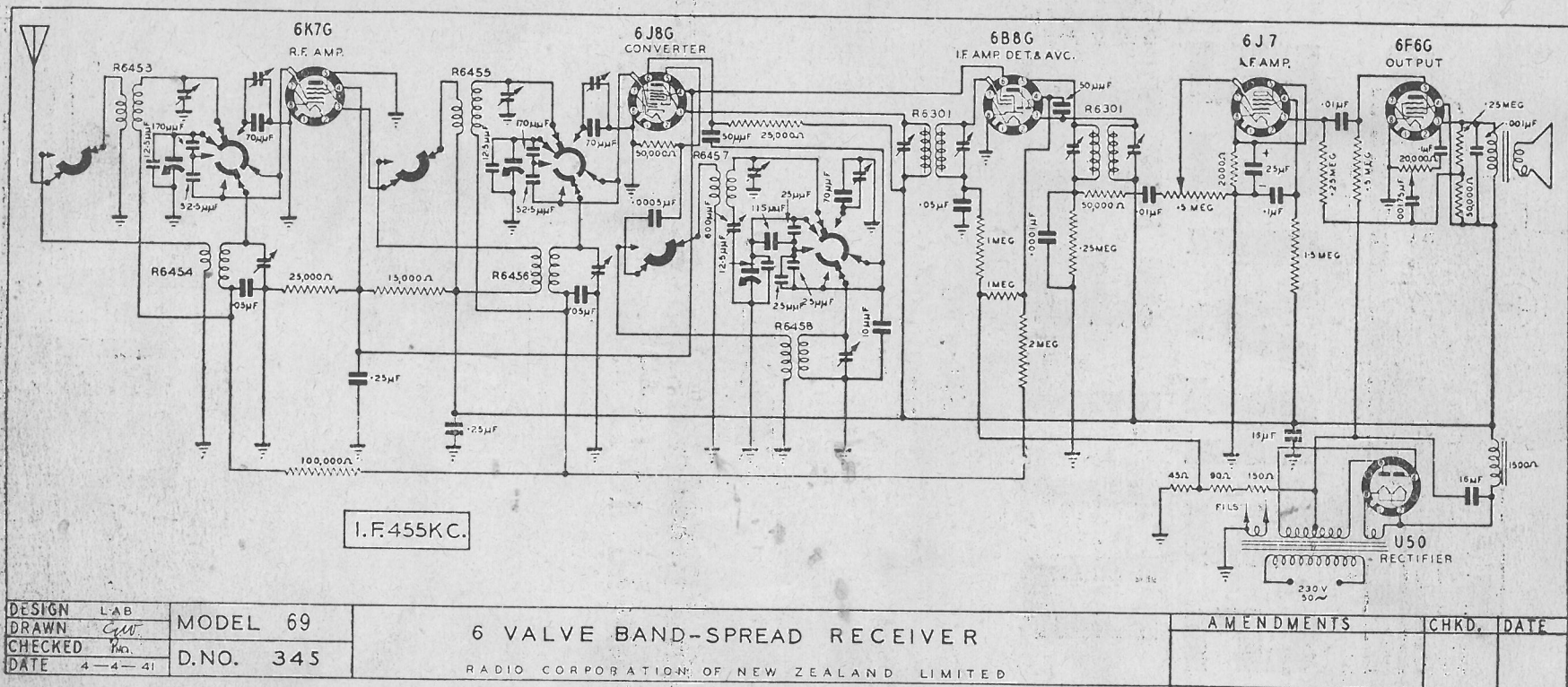
80 Courtenay Place, Wellington, C3., New Zealand.

(259)

*Align ment some as 63
in loose boxes
Data.*

MODEL 69

6 Valve Broadcast Shortwave Receiver with Bandspread 16-19 metres and 25-31 metres



NOTE.—Instead of 6J8G converter valve, type 6K8G valve can be used. In such cases .0005 mmf. capacitor from pin 5 should be changed for one of .00005 mmf. capacity.

1. General Description.

This is a six valve three-band receiver incorporating expanded short wave tuning. This model is notable for high sensitivity on both broadcast and short wave bands and, due to the use of a high gain R.F. stage, signal-to-noise ratio is extremely good .

There are two short wave ranges covering from 9,300 to 12,000 k.c. and from 15,000 to 18,100 k.c. These ranges include the four short wave bands at 16, 19, 25 and 31 metres, which occupy six times the length of dial scale that would be taken up if the band spread principle were not incorporated. This results in much greater ease of tuning and means that short wave stations that would normally be passed over may be tuned in without difficulty.

A special oscillator circuit ensures that the oscillator frequency is unaffected by changes in A.V.C. voltage. This greatly reduces the effects of fading on short-wave. To ensure constancy of calibration and alignment, silvered-mica fixed condensers and high quality trimmers are used in all tuned circuits. The oscillator circuit is compensated against changes in temperature to eliminate drift.

The tone control operates on the selective negative feedback principle, giving a wide range of control. A fixed amount of negative feedback is also incorporated to improve the fidelity of reproduction.

The valves used are as follows:—

6K7G	R.F. Amplifier
6J8G	Converter
6B8G	I.F. Amplifier, Detector and A.V.C.
6J7G	Audio Amplifier
6F6G	Output Pentode
U50 or 5Y3G	Rectifier

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. on broadcast, and 17,800 and 11,800 k.c. on the short wave bands.

3. Voltage Tests.

A.C. High voltage secondary of power transformer, from each rectifier plate to centre tap	335V.
Heater of Rectifier	5V.
All other heaters	6V.
Dial Lamps	5V.
D.C. (Measured between point indicated and chassis)	
First 16 mfd. electrolytic condenser.....	340V.
Second 16 mfd. electrolytic condenser.....	230V.
Screens of 6K7G, 6J8G and 6B8G	80V.
Plate of 6J7G	50V.
Cathode of 6J7G	1V.
Junction of 45 and 90 ohm resistors	3V.
Negative terminal of first 16 mfd. condenser	16V.

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

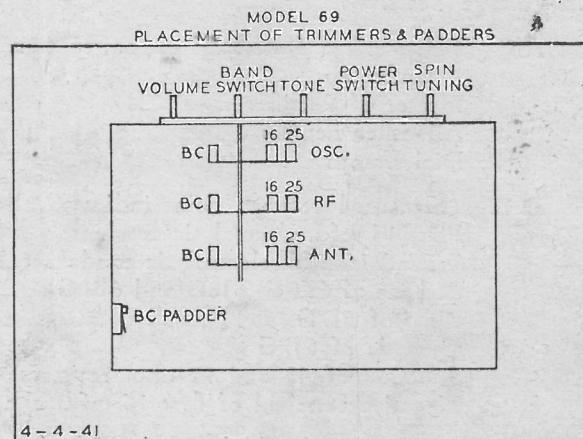
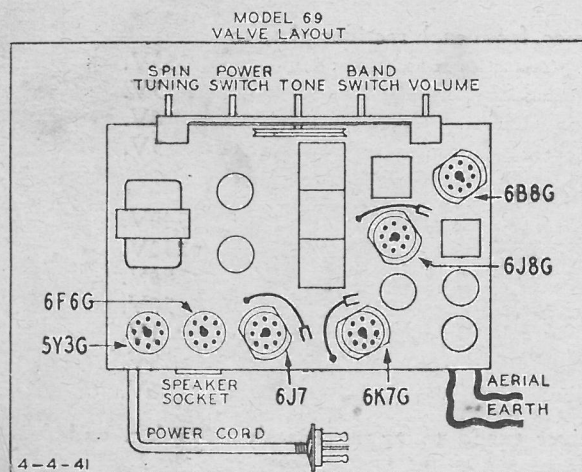
4. Resistance Tests.

Where measured.	Approx. resistance in ohms.
Across power cord	45
Each rectifier plate to centre tap of power transformer secondary	300
Across speaker field	1500
Speaker transformer primary	500
I.F. transformer coils	7
B/C Aerial Primary	20
B/C Aerial Secondary	4
B/C R.F. Primary	70
B/C R.F. Secondary	4
B/C Osc. Primary	2
B/C Osc. Secondary	3
S/W Aerial, R.F. and Osc. Primary	0
S/W Aerial, R.F. and Osc. Secondary	0
Between negative terminal of first 16 mfd. electrolytic condenser and chassis	285
Between Cathode of 6J7 and chassis	2000

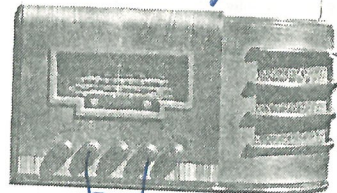
5. Sensitivity Tests.

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

Frequency:	Input to	Microvolts:
455 k.c.	Grid of 6B8G	5000
455 k.c.	Grid of 6J8G	100
1,400 k.c.	Aerial lead through standard dummy antenna	Under 1
1,000 k.c.	Aerial lead through standard dummy antenna	Under 1
600 k.c.	Aerial lead through standard dummy antenna	Under 1
17,800 k.c.	Aerial lead through standard dummy antenna	Under 1
15,200 k.c.	Aerial lead through standard dummy antenna	1
11,800 k.c.	Aerial lead through standard dummy antenna	1
9,600 k.c.	Aerial lead through standard dummy antenna	2



Counter

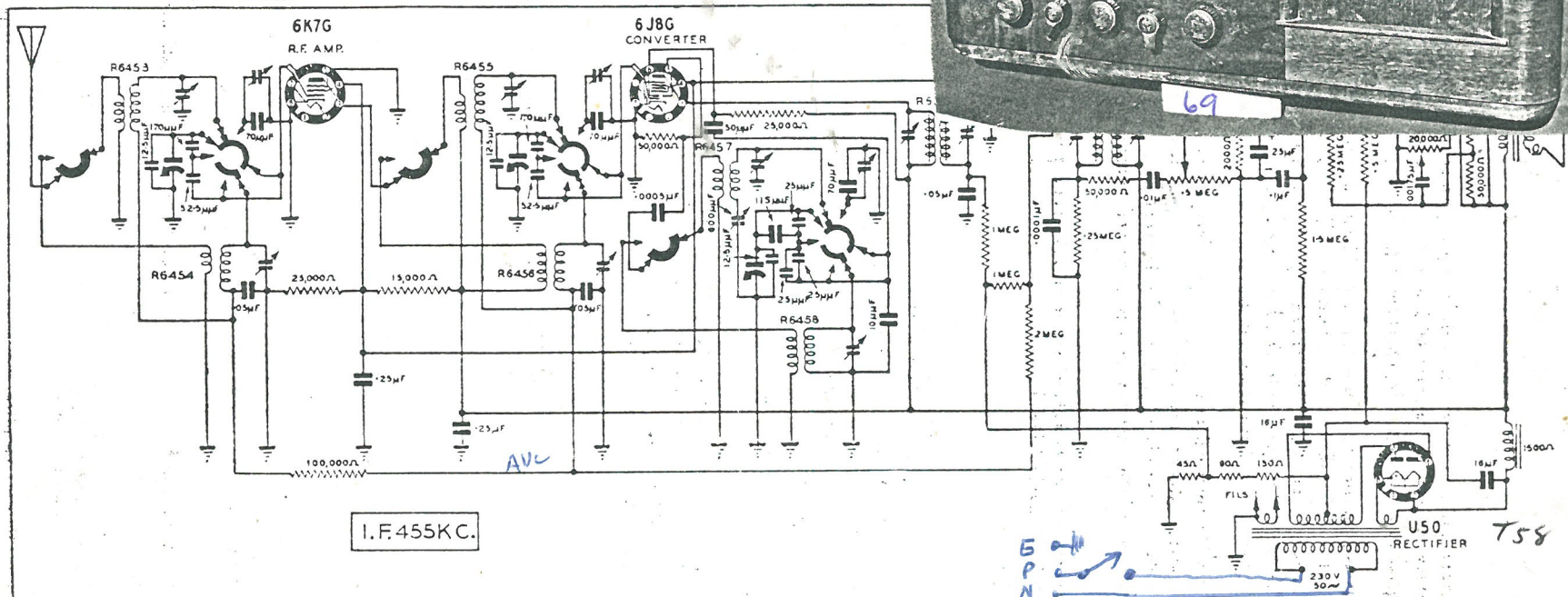
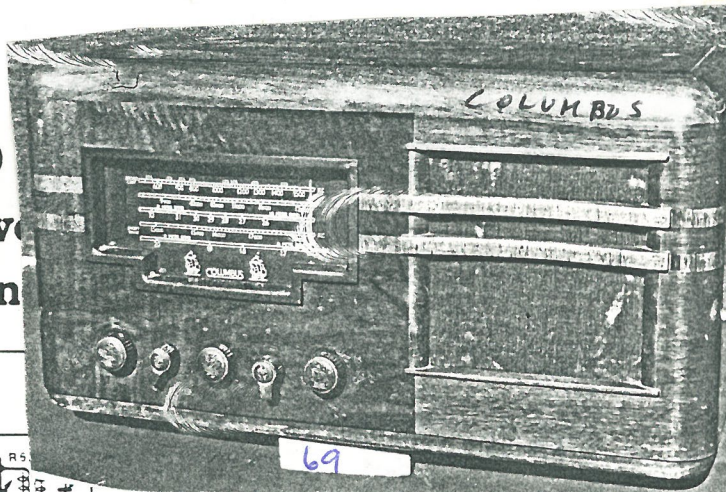


Model 69 6-valve
semi-bandspread 1941

two non-original
base

MODEL 69

6 Valve Broadcast Shortwave
Bandspread 16-19 metres and



5 P N

DESIGN	LAB	MODEL 69	6 VALVE BAND-SPREAD RECEIVER		AMENDMENTS	CHKD.	DATE
DRAWN	C.M.						
CHECKED	Y.R.	D.NO. 345	RADIO CORPORATION OF NEW ZEALAND LIMITED				
DATE	4-4-41						

NOTE.—Instead of 6J8G converter valve, type 6K8G valve can be used. In such cases .0005 mmf. capacitor from pin 5 should be changed for one of .00005 mmf. capacity.

Model 69

2/59