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SERVICE BULLETIN

No. 27 D266

MODEL 67B: 7-VALVE DUAL-WAVE RECEIVER, INCLUDING MAGIC EYE.

First Edition: July, 1937.

68V = 6V + eye DW ~~as 67B but~~

see D278

RADIO CORPORATION OF NEW ZEALAND LTD.

Printed by R.N.Z.—

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1. **GENERAL:** This is a dual-wave battery superheterodyne designed to operate from 6 volts filament supply, and 135 volts high tension. A radio frequency amplifier is incorporated, giving good selectivity as well as sensitivity. The audio end comprises the conventional 30 driver transformer coupled to a 19 twin triode.

An edge-lit etched glass dial is fitted to this model, illumination being provided by means of motor-car type general purpose lamps. In order to minimise the filament battery drain while the set is playing, a special battery switch is arranged to cut off the pilots at will. An innovation to this type of receiver is the provision of a "magic eye" tuning indicator, and the special battery switch mentioned above also cuts off the filament of this extra valve while the receiver is actually playing.

At the rear of the chassis is a modified version of the "economy" switch fitted to earlier models. This is a bias switch which permits of longer usable "B"-battery life by reducing bias voltages as the high-tension voltage falls. With this switch in the "new battery" position, a standard vibrator power unit, type VU-1, may be used in conjunction with this model.

2. **ELECTRICAL SPECIFICATIONS:**

Filament supply		6 volts, approx. 380 m.a.*
High tension supply		135 volts, approx. 20 m.a.
Power output		approx. 1000 m.w.
Valves used	Radio-frequency amplifier	1A4
	Frequency changer	1C6
	Intermed frequency amplifier	1A
	Detector-amplifier	1B5
	Audio driver	30
	Output twin triode	19
	Tuning indicator	6E5
Broadcast band		550/1500 k.c./sec.
Short-wave band		5.5-16 mc/sec.
Line-up frequencies	Intermediate frequency	456 kc/sec.
	Broadcast band	600 and 1400 kc/sec.
	Short-wave band	6 and 15 mc/sec.

* Without pilot lamp or magic eye.

3. **VOLTAGE TESTS:**

Total high-tension voltage	135 volts D.C.
Filament battery voltage	6 volts D.C.
Voltage across each filament	Approx. 2 volts D.C.

Other voltages to ground, using 1000 ohm per volt meter on 500 volt range except where otherwise stated:—

Valve.	Function.	Plate.	Osc. Plate.*	Screen.*	Control Grid.†
1A4	R.F. amp.	135	—	50	—
1C6	Freq. changer	135	75	50	—
1A4	1st I.F. amp.	135	—	50	—
1A4	2nd I.F. amp.	135	—	50	—
1B5	Det.-audio	65	—	—	—
30	Audio driver	135	—	—	—
19	Output Class B	135	—	—	—3
6E5	Tun'g Indicator	20	—	135	—

† 10 volt range, "New battery" position. * 100 volt range.

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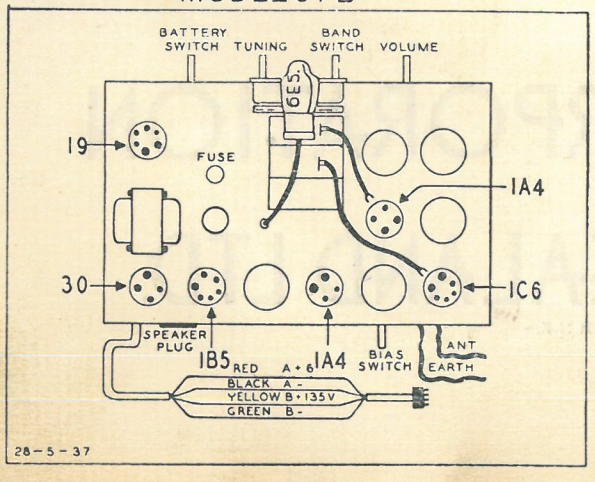

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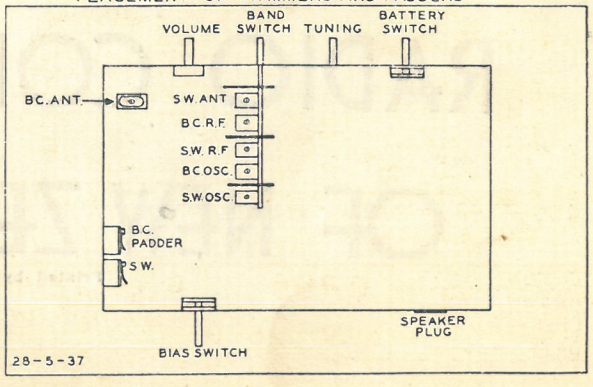
PLACEMENT OF TRIMMERS AND PADDERS



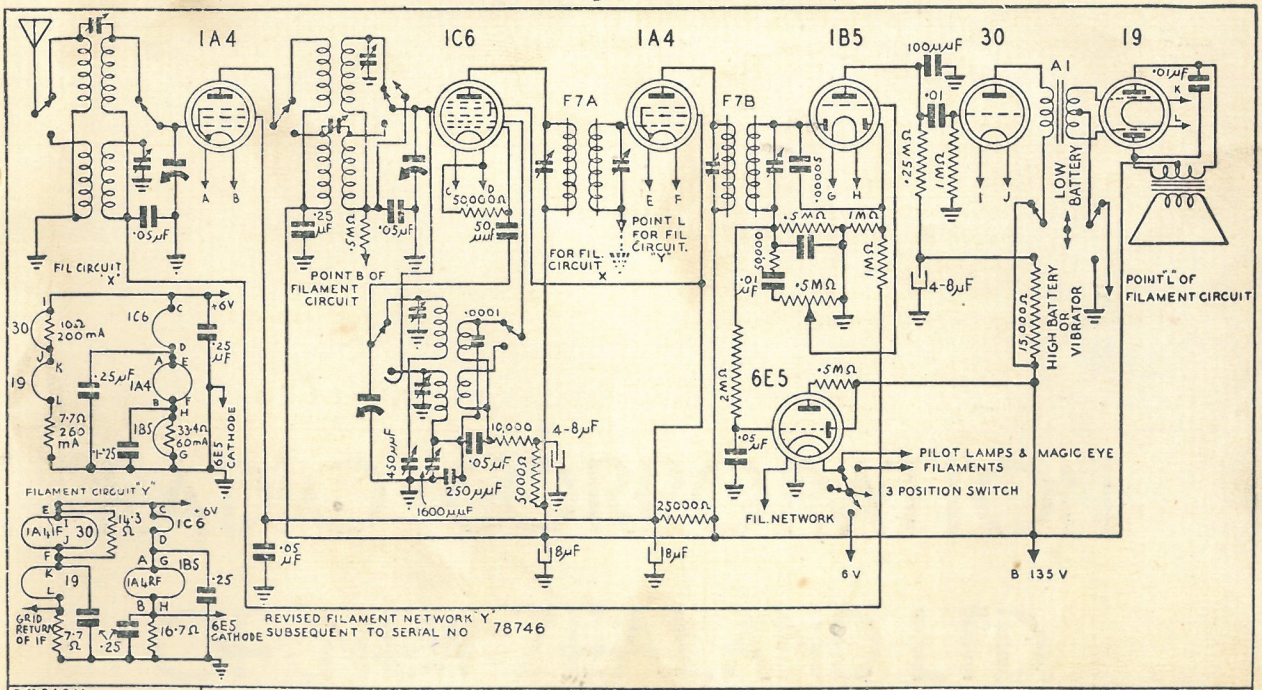
4. RESISTANCE TESTS:

Coil.	Where Measured.	Resistance in Ohms.
Speaker input tran.	Speaker Socket	Approx. 600 (total)
1st I.F. primary	See Circuit	Approx. 7
1st I.F. secondary	See Circuit	Approx. 7
2nd I.F. primary	See Circuit	Approx. 7
2nd I.F. secondary	See Circuit	Approx. 7
Broadcast ant. primary	7 to 5 of Coil R 37	Approx. 38
Broadcast ant. secondary	1 to 3 of Coil R 37	Approx. 8
Short-wave ant. primary	7 to 6 of Coil R 37	Approx. 4
Short-wave ant. secondary	2 to 3 of Coil R 37	(Short Circuit)
Broadcast R.F. primary	7 to 5 of Coil R 36	Approx. 72
Broadcast R.F. secondary	1 to 3 of Coil R 36	Approx. 8
Short-wave R.F. primary	7 to 6 of Coil R 36	Approx. 5
Short-wave R.F. secondary	2 to 3 of Coil R 36	(Short Circuit)
Broadcast osc. primary	4 to 5 of Coil R 89	Approx. 2
Broadcast osc. secondary	7 to 1 of Coil R 89	Approx. 4
Short-wave osc. primary	4 to 6 of Coil R 89	Approx. 2
Short-wave osc. secondary	2 to 3 of Coil R 89	(Short Circuit)
Audio tran. primary	See Circuit	Approx. 570
Audio tran. secondary	See Circuit	Approx. 750 (total)

5. **LINE-UP PROCEDURE:** This is fully explained in Service Bulletin No. 12, "Standard Line-up Procedure for Multi-wave Receivers," a copy of which is obtainable on application to the Engineering Department if desired.

6. SENSITIVITY TESTS: (Microvolts input to give standard output of 50 milliwatts):

Frequency.	Applied to:	Microvolts.
456 kc/sec.	Grid of 1A4 I.F. amp.	20,000
456 kc/sec.	Grid of 1C6 frequency changer.	400
1400 kc/sec.	Antenna through standard "dummy"	7
1400 kc/sec.	Antenna through standard "dummy"	7
600 kc/sec.	Antenna through standard "dummy"	9
15 mc/sec.	Antenna through standard "dummy"	4
12 mc/sec.	Antenna through standard "dummy"	7
9 mc/sec.	Antenna through standard "dummy"	25
6 mc/sec.	Antenna through standard "dummy"	15



DESIGN LAB.	D 266	6 VALVE DUAL WAVE BATTERY RECEIVER	AMENDMENTS	CHKD	DATE
DRAWN					
CHECKED	MODEL 67B				
DATE 4-8-37		RADIO CORPORATION OF NEW ZEALAND LTD			

Note: It may be found that there are considerable divergences between valves of the same type, even if they are all of the same make. If difficulty is experienced in attaining any of the above sensitivity figures, it is suggested that other valves be tried.

7. **GRAMOPHONE CONNECTION:** Under some circumstances, it may be desired to attach a gramophone pick-up to this receiver. Owing to the limited demand for this arrangement, however, it is not standard practice to include it in ordinary models, but to supply details for the necessary modifications to be made. The circuit is shown and described in Service Bulletin No. 13, "Gramophone Attachment to Standard Model Receivers."

The only parts required are one D.P.D.T. switch, one pick-up jack (or two terminals), and the requisite length of twin shielded wire. This bulletin is obtainable on application to the Engineering Department, and the factory can, if necessary, supply the above parts already wired for connection to the receiver, at a nominal charge.