

SERVICE DATA - COLUMBUS MODEL 66 - 66E - 66J

1. General Description.

This is a six valve two-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 RF stage, signal-to-noise ratio is extremely good.

The short-wave band covers from 9,400 to 15,600 k.c. This range includes the three principal short wave bands at 19, 23, and 31 metres, which occupy three times the length of dial scale that would be taken up if the band spread principle were not incorporated. This results in 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.

For Models 66 and 66J the valves used are as follows: (For Model 66E, see notes under circuit diagram.)

6K7G RF Amplifier	6K8G Converter
6B8G I.F. Amplifier, Detector and A.V.C.	
6J7G Audio Amplifier	6F6G Output Pentode
5Y3G or U50 Rectifier	

2. Alignment Procedure.

The intermediate frequency is 455 k.c. and the line-up points are 1400 and 600 k.c. on broadcast and 15,000 k.c. on the short wave band.

3. Voltage Tests.

AC

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.

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

First 16 mfd. electrolytic- condenser.....	340V.
Second 16 mfd. electrolytic condenser.....	230V.
Screens of 6K7G, 6K8G 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

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

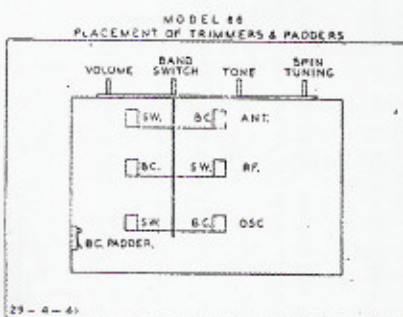
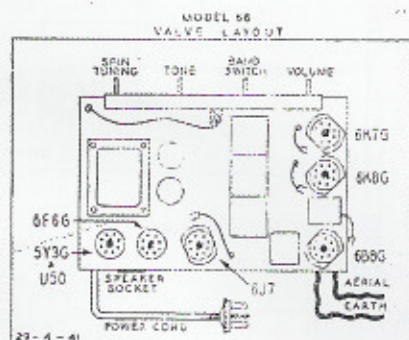
4. Resistance Tests.

Where measured	Approx. DC 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 RF Primary.....	70
B/C RF Secondary.....	2
B/C Osc. Primary.....	3
B/C Osc. Secondary.....	3
S/W Aerial, RF and Oscillator primary.....	0
S/W Aerial, RF and Oscillator Secondary.....	0
Between negative terminal of first 16 mfd. electrolytic condenser and chassis.....	285
Between Cathode of 6J7 and chassis.....	2000

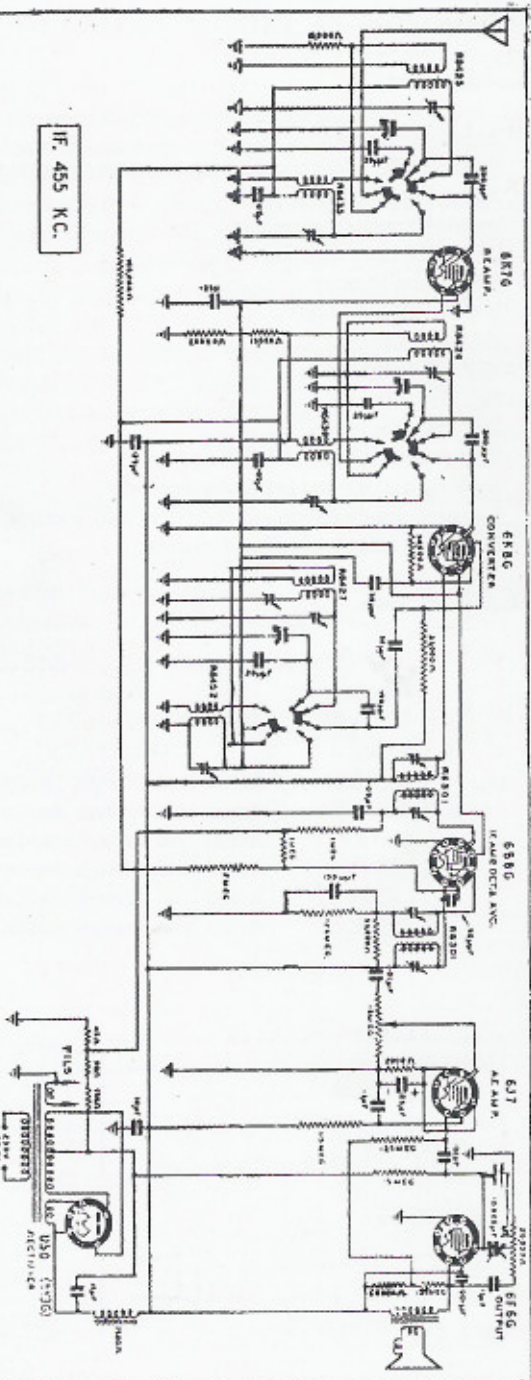
5. Sensitivity Tests.

(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 6K8G	150
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
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



MODEL 66 — 66E — 66J (See notes below)



DESIGN	S.A.B.	MODEL	66	6 VALVE BAND-SPREAD RECEIVER		AMENDMENTS	CHANGED	DATE
DRAWN	C.C.C.	D. NO.	346	RADIO CORPORATION OF NEW ZEALAND LIMITED				
CHECKED	W.P.							
DATE	28 - 4 - 41							

Notes on difference between models

- Transformer All models type T57
- Audio Output transformer: all models type A10
- Dial scale: Model 66, type OE1, models 66E & 66J type OE8
- Wavechange Switch: All models type 2H, 2XC, XE

Valve lineup: Model 66E used 6B7 in place of 6B8 and 6C6 in place of 6J7.

Coils Model 66E used S.W. osc R6460.

Model 66J used coil assembly box instead of individual coils in cans.

Tuning gang: Model 66 type Plessey K, Model 66E and 66J, type Plessey E

Note: Instead of 6K8G converter valve type 6J8G can be used. In such case the 50 mmf capacitor from pin 5 should be change for one of 500 mmf. Also a 30 ohm 1/3 watt resistor should be inserted between the primary of R6452 oscillator coils and the handswitch. For model 66 this resistor is not required.