TECHNICAL INFORMATION

BULLETIN NO. 154. (Dwg 776)

(TYPE)

TECHNICAL DESCRIPTION AND ADJUSTMENT PROCEDURE

ON MODEL 726 DUAL WAVE RECEIVER.

(Dwgs. Nos. 776 & 777.)

6 valve + eye = 7 V total

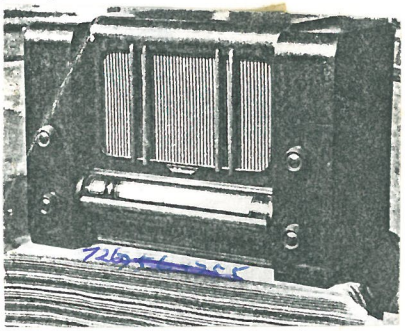
cylindrical dial

July Oct 1946

RECEIVER

COLLIER & BEALE LTD.

WELLINGTON



Model 726 July 1946 Bulletin No 154

MODEL 726 DUAL WAVE RECEIVER.

TECHNICAL DESCRIPTION AND MAINTENANCE DATA.

General Description.

Model 726 is a 6-valve plus tuning indicator receiver of the Superheterodyne type covering the usual broadcast range of 535 Kc/s to 1600 Kc/s and a full cover short-wave range of 6 mc/s to 90 mc/s.

The valves employed and their functions are :-

1 -	type	6U7G	R.F. Amplifier.
1 -	"	6K8GT	Mixer oscillator. ← valve layout sticker marked "CONV"
1 -	"	6U7G	I.F. Amplifier (455-Kc/s)
1 -	"	6Q7G	2nd Detector and Audio Amplifier.
1 -	"	6V6GT	A.F. Power Amplifier.
1 -	"	6X5GT	Power Supply Rectifier.
1 -	"	6U5G	Tuning Indicator.

An energised field loudspeaker of 1500 ohm field resistance is employed.

The circuit of Model 726 is quite conventional. Mechanical features are new and somewhat unusual and the following technical description should be of value in servicing or maintaining the unit.

Technical Description:

A unit coil assembly with integral wave change switch is employed. All alignment condensers are fitted to this assembly and it will be noted that high stability Ceramic type shunt trimmers are employed on the short-wave range. The use of such trimmers ensures a high order of calebration accuracy which is likely to be maintained over the life of the instrument. Trimmers for the broadcast frequency range are of the conventional compression type. Padding condensers are also located on this assembly and these, as well as the trimmer condensers, may be identified in respect of a particular range by reference to Drawing No.777 included in this Bulletin.

Special attention is drawn to the method of feeding HT to the oscillator anode and screen of the mixing valve. This connection is taken from the cathode of the rectifier and adequately filtered by resistor R16 and capacitor C4.

This arrangement provides a source of voltage for the oscillator section of the mixing valve which is substantially immune from the voltage fluctuations normally present when receiving short-wave carriers of varying amplitude. The result is a very marked improvement in frequency stability

of the receiver when receiving widely fluctuating short-wave signals.

Attention is also drawn to the method of feeding the anode of the audio amplifier type 6Q7G, the method being employed to produce a negative feed-back voltage in the output stage of approximately 15%. The system is highly satisfactory for this purpose, but it will be observed that any ripple potential appearing in the DC supply will be amplified by such connection and any increase in hum output of the receiver during its life may be attributed to a reduction in working capacitance of either of the main filter capacitors C2 or C3.

The mechanical features of the receiver are novel to the extent of a dial assembly which displays only the wave range in use. This facility is accomplished by the use of a cylindrical dial ~~unit~~ scale ganged to the wave change switch. The mechanism employed is of simple character and provides means for readily adjusting the angular position of the scales to accurately line up with the transparent escutcheon window. For such adjustment an extended grub screw will be visible in the left-hand end of the drum scale looking at the front of the chassis.

Circuit Alignment:

No specific directions regarding the alignment of this receiver are given as its adjustment follows other receivers of this Company's manufacture and conforms in general to the established methods of Superheterodyne receiver adjustment.

Attention is drawn, however, to the intermediate frequency of 455 Kc/s and the need for maintaining such frequency.

Caution should be observed prior to making any adjustments to trimmer or padding condensers of the signal circuits to ensure that the pointer is correctly established in respect of the dial scale. To assist in the establishing of the pointer in its correct position, pointer limit marks are inscribed between the scales, and the correct adjustment is with the pointer lined up on the left-hand mark with the condenser plates fully meshed.

Further technical information may be obtained from Schematic Circuit Diagram Drawing No.776 and trimmer and valve location sheet Drawing No.777 included herewith.

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COLLIER & BEALE LTD.,
66, GHUZNEE STREET,
WELLINGTON, C.2.

24th October, 1946.

24.7.46 ← 24-7-46 P/ see last page DWG No 776

COMPONENT PARTS LIST COVERING

7-VALVE DUAL WAVE MODEL 726.

Ref.No.	Qty.	Type or Value	Class or Cat.No.	Description or Function.
C 1		25 mfd. 25V		Audio Filter By Pass.
C 2		10 mfd.450V	)	HT Filter.
C 3		10 mfd.450V	)	
C 4		10 mfd.480V		Osc.Screen & Plate Filter.
C 5		10 mfd.480V		RF & IF Screens Filter.
C 6		.25 mfd.		Mix & IF Cathode By Pass.
C 7		.1 mfd.		RF By Pass HT.
C 8		.1 mfd.		RF By Pass Osc. Screen.
C 9		.1 mfd.		RF By Pass RF & IF Screens.
C10		.1 mfd.		Cathode By Pass RF Amp.
C11		.05 mfd.	)	
C12		.05 mfd.	)	AVC By Pass Conds.
C13		.05 mfd.	)	
C14		.01 mfd.		)Audio Coupling 1st Audio.
C15		.01 mfd.		)
C16		.01 mfd.		Audio Coupling Output Tube.
C17		.003 mfd.		Fixed Padder SW.
C18		1000 mmfd.		Var. Padder SW.
C19		.001 mfd.		Tone Correction.
C20		600 mmfd.		Var. Padder BC.
C21		.00025 mfd.		Tone Control Cond.
C22		.0001 mfd.		Det. Plate RF By Pass.
C23		.0001 mfd.		Diode Load RF By Pass.
C24		.0001 mfd.		Oscillator Grid Coupling.
C25		APPROX. 1 mmfd.		Neutralising Cond.
R 1		10 megohms		Det. Grid Bias.
R 2		1 "		AVC Decoupling.
R 3		1 "		Magic Eye Plate Lead, incorporated in socket.
R 4		.5 "		Diode Load Resistor.
R 5		.5 "		Volume Control.
R 6		.5 "		Tone Control incorporating S1.
R 7		.25 "		AVC Decoupling.
R 8		.25 "		Resistors.
R 9		.25 "	)	
R10		100,000 ohms	)	Negative Feedback Potentiometer
R11		15,000 "	)	
R12		50,000 "	(2 x 100K)	RF & IF Screens Dropper.
R13		50,000 "		RF & IF Screens Bleeder.
R14		50,000 "		RF Filter Diode Load.
R15		50,000 "		Osc. Grid Leak.

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DWG No 776

Ref.No.	Qty.	Type or Value	Class or Cat.No.	Description or Function.
R16		25,000 ohms.	(2 x 50K)	Osc. Plate & Screen Dropper.
R17		500 "		RF Suppressor Output Tube.
R18		300 "		Output Tube Bias.
R19		300 "		RF Tube Bias.
R20		150 "		RF Grid Suppressor.
R21		150 "	)	IF & MIX Bias
R22		150 "	)	Resistors.
R23		100 "		Osc. Grid Suppressor.
R24		50 "		MIX Grid Suppressor.
T 1		)		
T 2		)		
T 3		)		High Frequency Alignment
T 4		)		Trimmers.
T 5		)		
T 6		)		
L 1		Type No. 786.		SW Antenna Coil.
L 2		Type No. 785/1.		BC Antenna Coil.
L 3		Type No. 486.		SW Interstage Coil.
L 4		Type No. 485.		BC Interstage Coil.
L 5		Type No. 186.		SW Oscillator Coil.
L 6		Type No. 185.		BC Oscillator Coil.
Gang		3 section Plessey 1842-14.		

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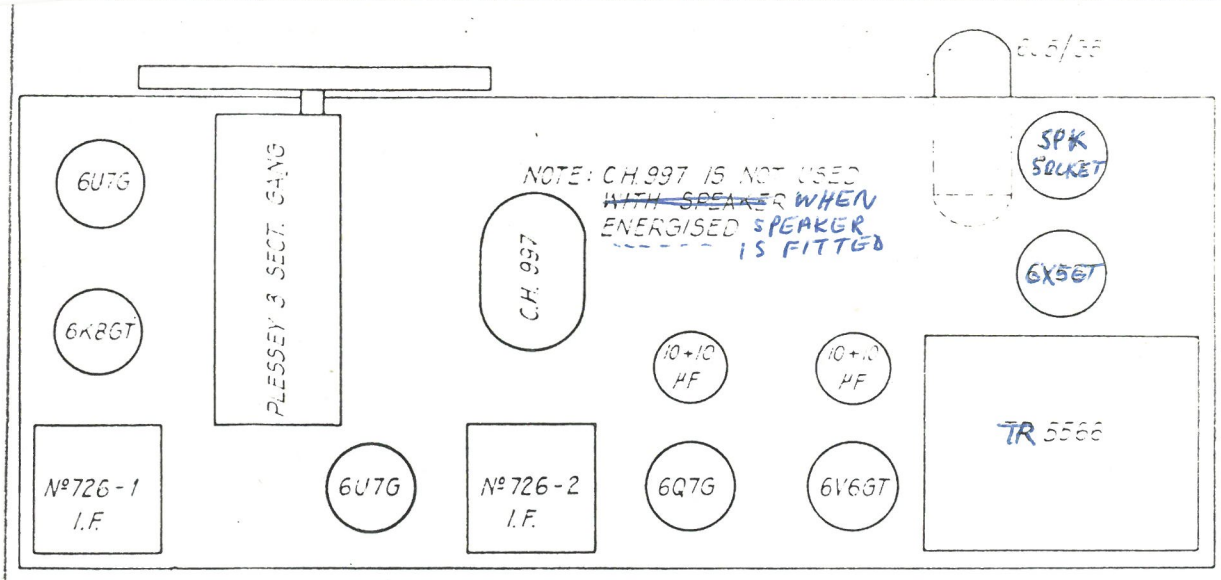
DATE 24.7.46 (see last page)

DWG No 776



B.C. BAND

S.W. BAND

R.F. AMPLIFIER

MIXER

ROADCAST PADDER

OSCILLATOR

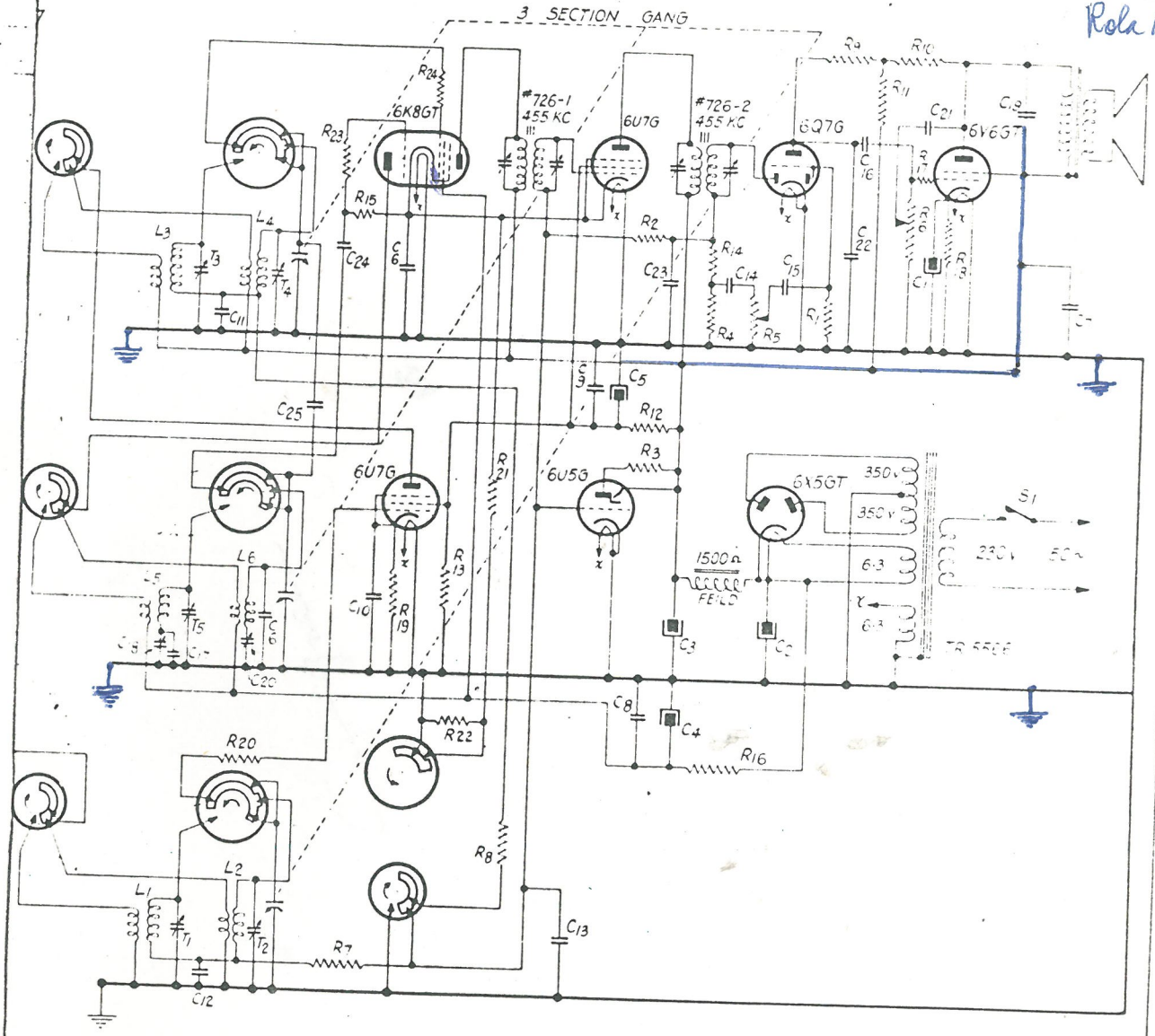
SHORTWAVE PADDER

TRIMMER & VALVE LOCATION CHART

DATE 24.7.46

DWG. Nº 777

Rola K8



FREQUENCY RANGE	
BROADCAST FREQ.	535 K/C. - 1600 K/C.
SHORT WAVE FREQ.	6 M/C. - 19 M/C.

NOTE:- WAVE-CHANGE SWITCH SHOWN IN BROADCAST POSITION

DUAL WAVE RECEIVER MODEL 726

SCHEMATIC CIRCUIT DIAGRAM

DATE 24.7.46

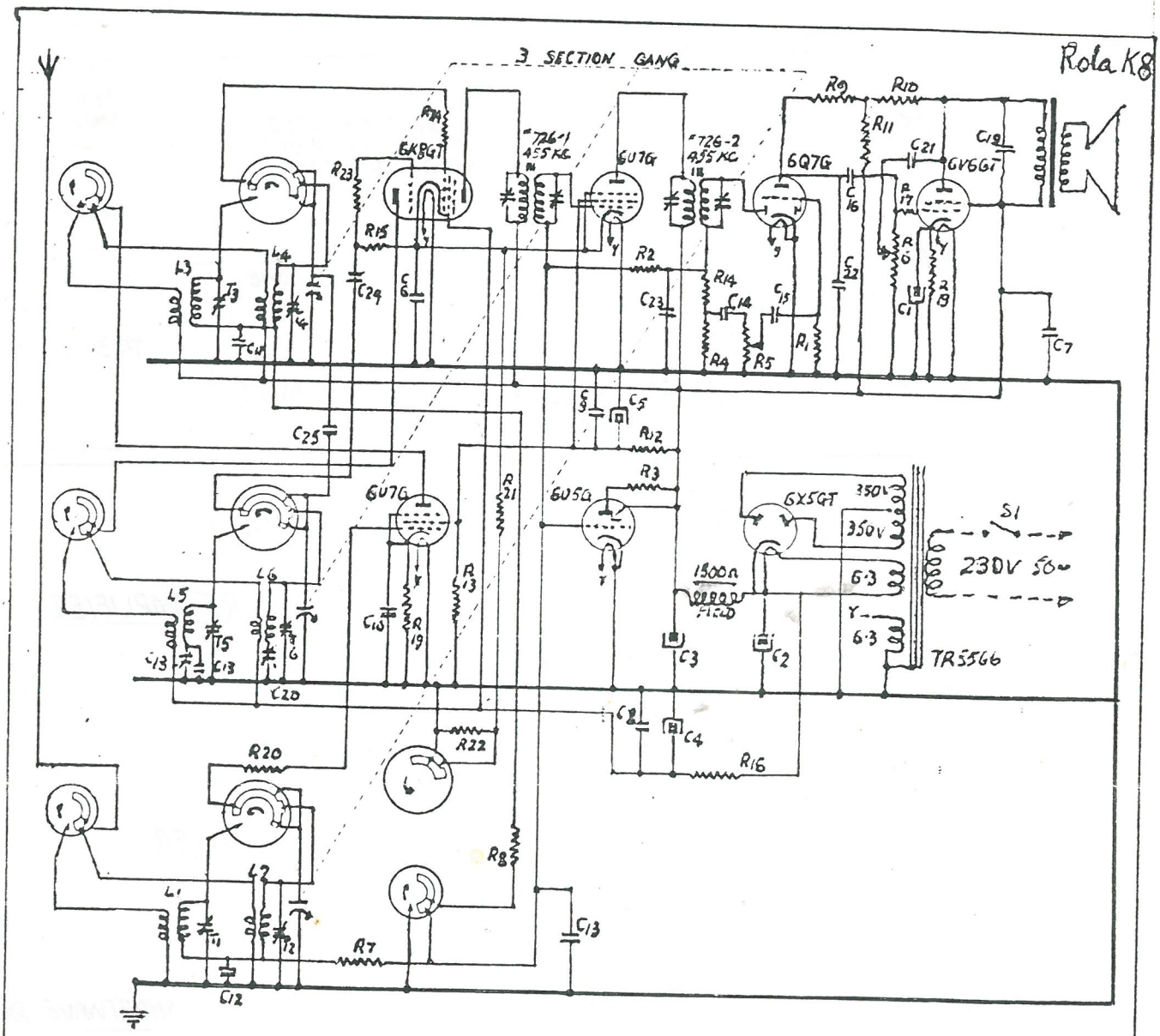
DWG No 776

later models { used PM speaker + filter choke CH997
" dropping resistor

see next page

G. BILLMAN.

Rola K8



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SCHEMATIC CIRCUIT DIAGRAM

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