

TECHNICAL INFORMATION

COVERING

DUAL WAVE RECEIVER TYPE 5251

COLLIER & BEALE Ltd. WELLINGTON.

TYPE SET—A.C. Superheterodyne. Moulded Bakelite Cabinet.

TUBES (Five).—*ECH42 Converter, 6BA6 I.F. Amp., 6AT6 Det.-A.F., 6AQ5 Power Output, 6X4 Rectifier.

POWER SUPPLY.—230 v. A.C. Rating 27 watts.

TUNING RANGE.—Broadcast, 540-1450 Kc/s.; Short Wave, 6.5-19 Mc/s.

ALIGNMENT INSTRUCTIONS

To set pointer, fully mesh variable condenser and set pointer at last reference mark at left end of dial. Set volume control at maximum and keep output from signal generator no higher than necessary to obtain output reading. Use insulated alignment tool for adjusting.

Dummy Antenna	Signal Generator Coupling	Sig. Gen. Frequency	Band Switch Position	Radio Dial Setting	Output Meter	Adjust	Remarks
0.1 μ f.	High side to pin No. 6 (grid) of ECH42.	455 Kc.	B.C.	High freq. end	Across voice coil	A1, A2, A3, A4.	Adjust for maximum output
R.M.A. Standard	High side to ant. term.	1400 Kc.	"	1400 Kc.	"	C24	" "
"	"	1400 Kc.	"	1400 Kc.	"	C25	" "
"	"	600 Kc.	"	Rock Gang	"	C18	" "
"	"	18 Mc.	S.W.	18 Mc.	"	C26	" "
"	"	18 Mc.	"	18 Mc.	"	C27	" "
"	"	1400 Kc.	B.C.	1400 Kc.	"	C25	" "

CAPACITORS			MISCELLANEOUS				RESISTORS		
Ref. No.	Cap.	Volts	Ref. No.	Res., Pri.	Res., Sec.		Ref. No.	Res.	Watts
C1-2	50+50 μ f.	250	PE52	6.5 ohm	6.5 ohm	IF	R1	10 meg.	$\frac{1}{2}$
C3	8 "	"	PE52	6.5 "	6.5 "	"	R2	3 "	"
C4	25 "	25	784-1	20 "	2.7 "	BC	R3	2 "	"
C5	0.25 "	400	189-2	0.82 "	2.7 "	"	R4	500K ohm	"
C6-7	0.1 "	150	786	0.4 "	0.03 "	SW	R5	500K "	Pot.
C8-9	0.05 "	400	186-2	0.45 "	0.03 "	"	R6	100K "	$\frac{1}{2}$
C10	0.03 "	"				"	R7-9	50K "	"
C11	0.02 "	"				"	R10	20K "	"
C12-15	0.01 "	"				"	R11	15K "	"
C16	0.004125 "	Mica	TR5571-2	Volts 230	Volts 175/175	Volts 6.3	R12	3K "	"
C17	0.004 "	"		Type	Transformer		R13	3K "	$\frac{1}{2}$
C18	600 μ f.	Padder	SP1	4X6 PM	5000 ohm		R14	2K "	"
C19	500 "	Mica	S1	SPST attached to R5			R15	500 "	"
C20-21	100 "	"	S2	SPST slide switch			R16	300 "	"
C22-23	50 "	"	S3A-C	3PST rotary switch			R17-18	150 "	"
C24-27	3-30 "	Trimmer	CV	Polar C90-02/1 (swing 351 μ f.)			R19	75 "	"
C28	5 "	Ceramic	P.L.	6.5, 0.3 amp. M.E.S. tub. lamp			R20	50 "	"

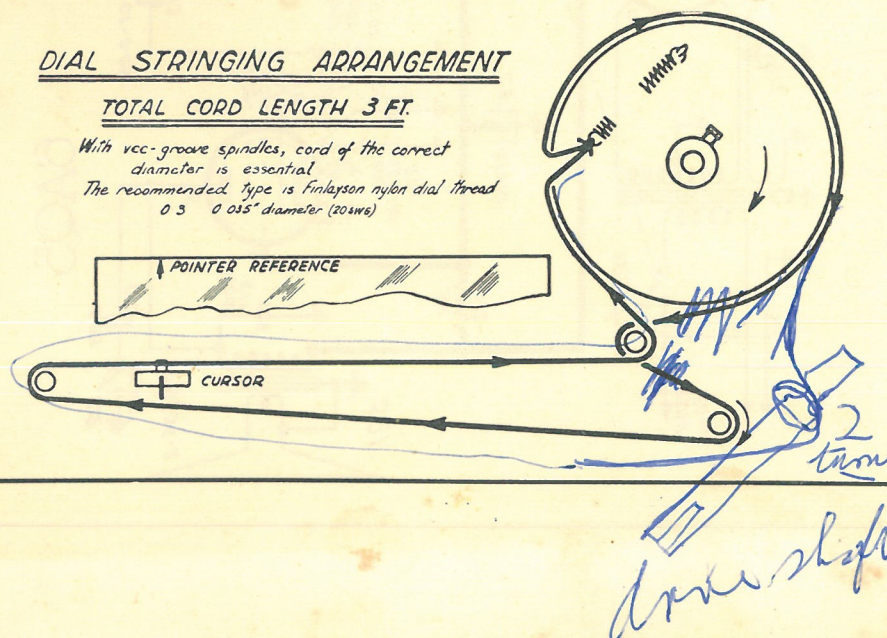
*Some sets use ECH21.

DIAL STRINGING ARRANGEMENT

TOTAL CORD LENGTH 3 FT.

With vcc-groove spindles, cord of the correct diameter is essential

The recommended type is Finlayson nylon dial thread 0.3 0.055" diameter (204W6)

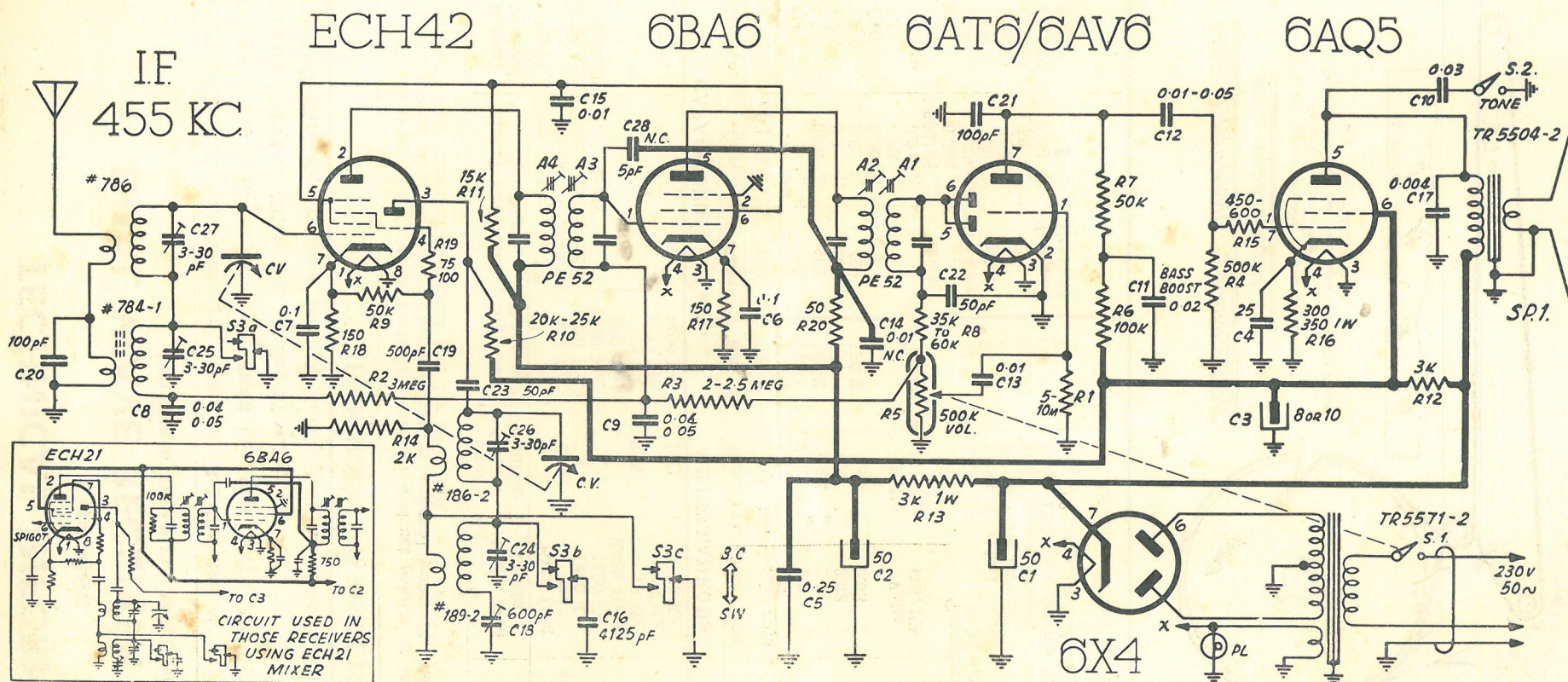


ALIGNMENT

Simplification of the wave-switching has been achieved in this receiver by special series arrangements of broadcast and shortwave coils.

Attention is directed to the need of re-peaking the B.C. antenna trimmer after finishing the normal S.W. alignment, as the resonant circuits of the two bands are partly interdependent.

Should it prove necessary to alter the S.W. oscillator trimmer, this change will affect the B.C. oscillator frequency, necessitating realignment.



SCHEMATIC DIAGRAM MODEL 5251

VOLTAGE READINGS

Use	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
Conv.	ECH42	5.9 a.c.	125	55	—4	60	0	0.8	—
I.F.	6BA6	0	—	—	5.9 a.c.	120	60	0.8	—
Det.-A.F.	6AT6	—	—	—	—	0	0	80	—
Output	6AQ5	0	7.4	—	—	146	142	0	—
Rect.	6X4	150 a.c.	—	—	—	—	150 a.c.	156	—

RESISTANCE READINGS

Use	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
Conv.	ECH42	—	500K	525K	50K	520K	5.5 meg.	150	—
I.F.	6BA6	2.5 meg.	—	—	—	500K	520K	150	—
Det.-A.F.	6AT6	10 meg.	—	—	—	550K	550K	650K	—
Output	6AQ5	500K	300	—	—	500K	500K	500K	—
Rect.	6X4	250	—	—	—	—	250	500K	—

1. D.C. voltage measurements are at 2,000 ohms per volt—A.C. voltage measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to chassis. Band switch in B.C. position.

4. Nominal tolerance on component values make possible a variation of + 10% in voltage and resistance readings.
5. Volume control at maximum, no signal applied for voltage measurements.
6. Resistance readings in B+ circuits may vary widely according to the condition of filter capacitors.

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