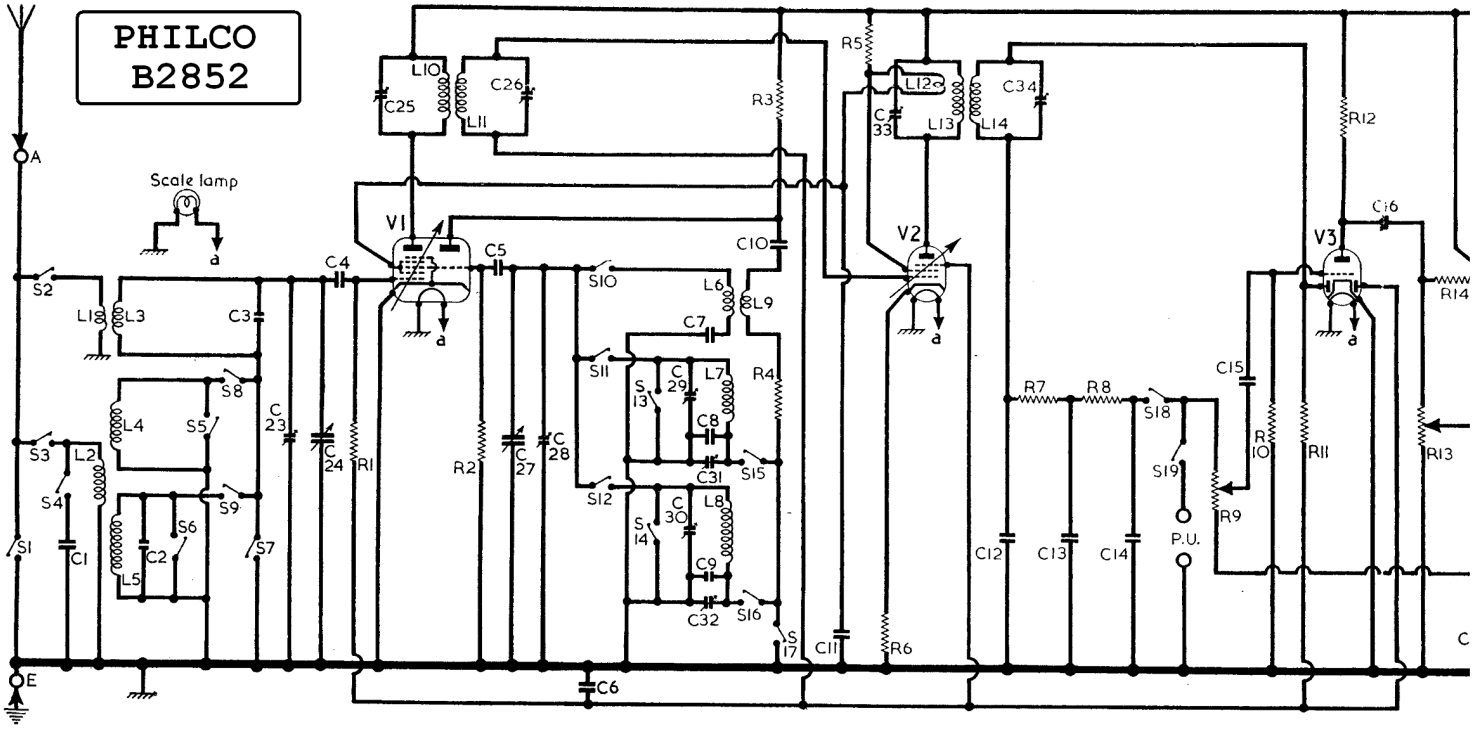
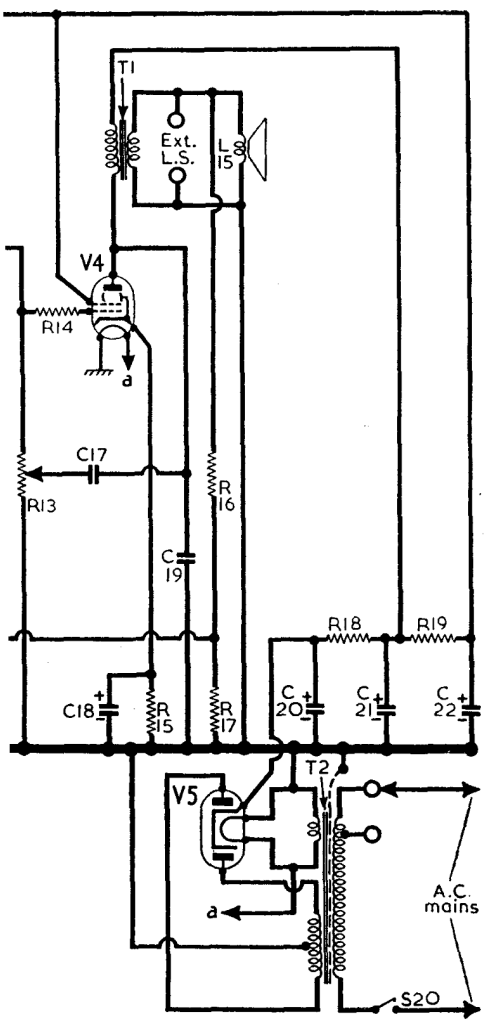
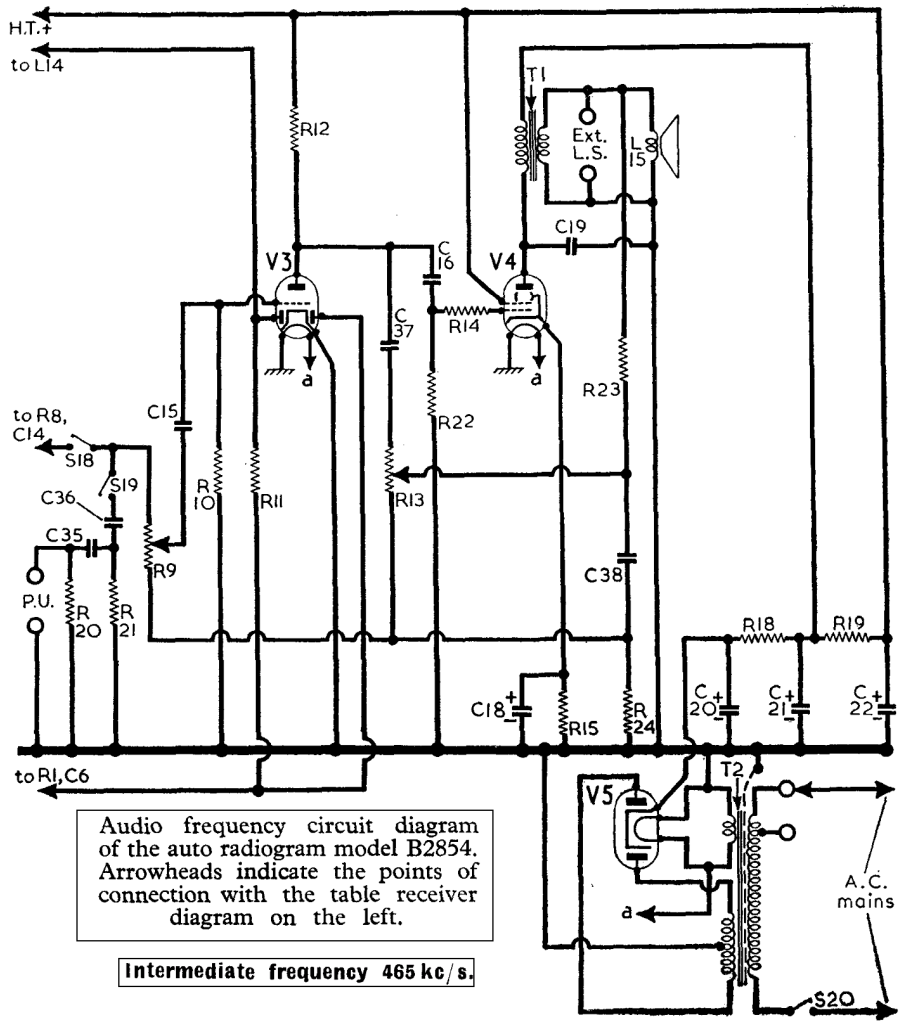
PHILCO B2852





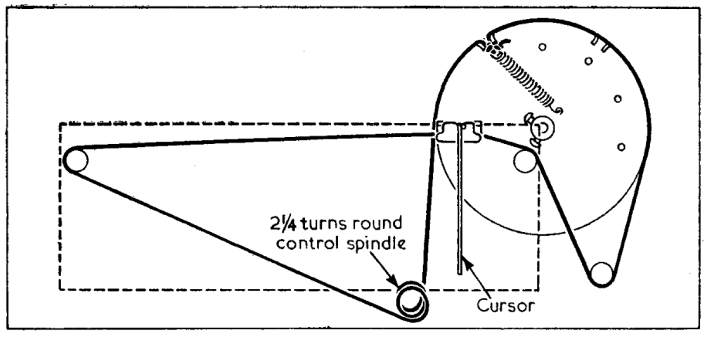


Audio frequency circuit diagram of the auto radiogram model B2854. Arrowheads indicate the points of connection with the table receiver diagram on the left.

Intermediate frequency 465 kc/s.

Valve	Anode		Screen		Cath.
	V	mA	V	mA	V
V1 7S7 ...	270 (Oscillator) 140	1.6 2.8	60	3.5	—
V2 7B7 ...	270	4.0	60	1.1	1.0
V3 7C6 ...	100	0.3	—	—	—
V4 6V6GT	275	40·0	270	3.0	12.5
V5 6X5GT	250†	—	—	—	310·0

† A.C. reading, each anode.



Sketch showing the tuning drive system, drawn as seen from the front of the chassis when the gang is at minimum capacitance. The position of the scale backing plate is indicated by a dotted outline.

	RESISTORS	Values	Locations
R1	V1 C.G.	1MΩ	G4
R2	V1 osc. C.G. ...	68kΩ	G4
R3	Osc. anode feed ...	33kΩ	G4
R4	Osc. stabilizer ...	180Ω	H4
R5	S.G. H.T. feed ...	47kΩ	F4
R6	V2 G.B.	180Ω	G4
R7	I.F. stoppers ...	47kΩ	C2
R8		68kΩ	F4
R9	Volume control ...	500kΩ	F3
R10	V3 C.G.	10MΩ	F3
R11	A.G.C. decoupling	2·2MΩ	F4
R12	V3 anode load ...	470kΩ	F3
R13	Tone control ...	500kΩ	E3
R14	V4 C.G. stopper ...	10kΩ	E3
R15	V4 G.B.	270Ω	E4
R16	Negative feed-back	220Ω	F4
R17		33Ω	F3
R18	H.T. smoothing ...	470Ω	G3
R19		1·5kΩ	G3
R20§	P.U. tone correctors	2·2MΩ	—
R21§		2·2MΩ	—
R22§	V4 C.G.	470kΩ	—
R23§	Negative feed-back	1·5kΩ	—
R24§		220Ω	—

	OTHER COMPONENTS	Approx. Values (ohms)	Locations
L1	Aerial coupling coils	2·3	G3
L2		29·0	B2
L3	Aerial tuning coils	—	G3
L4		3·2	B2
L5		38·0	B2
L6	Oscillator tuning coils	—	H4
L7		3·6	H4
L8		16·0	H4
L9	Osc. reaction coil...	1·0	H4
L10	1st I.F. trans. Pri.	34·0	B2
L11	Sec.	34·0	B2
L12	2nd I.F. trans. Neut.	—	C2
L13	Pri.	25·0	C2
L14	Sec.	25·0	C2
L15	Speech coil ...	2·5	—
T1	O.P. trans. Pri. ...	600·0	C1
	Sec.	—	
T2	Mains trans. Pri., total H.T. sec., total ...	33·0 / 410·0	D2
	Htr. sec. ...	—	
S1-S19	Waveband switches	—	H3
S20	Mains sw., g'd R13	—	E3

CIRCUIT ALIGNMENT

All the trimmer adjustments are accessible with the chassis in its cabinet.

I.F. Stages.—Switch receiver to M.W., tune it to low wavelength end of band and connect signal generator output across **C24.** Feed in a 465 kc/s (645.16 m) signal and adjust **C34, C33, C26** and **C25** (location references C2, B2) for maximum output. Repeat these adjustments.

R.F. and Oscillator Stages.—As the tuning scale is fixed to the cabinet, the following alignment should be carried out with the chassis in its cabinet. Check that with the gang at maximum capacitance the cursor coincides with zero on the lower 0-100 calibration scale.

S.W.—Switch receiver to S.W., tune to 17 Mc/s, and transfer "live" signal generator lead, via a 400 Ω carbon resistor, to **A** socket. Feed in a 17 Mc/s (17.65 m) signal and adjust **C28** (A1) for maximum output. If two peaks are found, use that involving the lesser trimmer capacitance. Adjust **C23** (A2) for maximum output while rocking the gang for optimum results.

	CAPACITORS	Values	Locations
C1	Aerial shunt ...	0·001μF	H4
C2	L.W. aerial trim ...	20pF	H3
C3	S.W. aerial trim	20pF	H3
C4	V1 C.G.	100pF	G4
C5	V1 osc. C.G. ...	100pF	G4
C6	A.G.C. decoupling	0·05μF	F4
C7	S.W. osc. tracker...	3,790pF	H4
C8	M.W. osc. tracker	430pF	H4
C9	L.W. osc. tracker	80pF	H4
C10	Osc. anode coup.	220pF	G4
C11	S.G. decoupling ...	0·05μF	G4
C12	I.F. by passes	100pF	C2
C13		100pF	C2
C14		220pF	E3
C15	A.F. coupling ...	0·005μF	F3
C16		0·01μF	F3
C17	Part tone control	220pF	E3
C18*	V4 cath. by pass	10μF	B1
C19	Tone corrector ...	0·01μF	E3
C20*	H.T. smoothing ...	40μF	B1
C21*		20μF	B1
C22*		10μF	B1
C23‡	S.W. aerial trim.	—	A2
C24†	Aerial tuning ...	—	A2
C25‡	1st I.F. trans.	—	B2
C26‡	tuning	—	B2
C27†	Oscillator tuning	—	A1
C28‡	S.W. osc. trim. ...	—	A1
C29‡	M.W. osc. trim. ...	—	H4
C30‡	L.W. osc. trim. ...	—	H4
C31‡	M.W. osc. tracker	—	H4
C32‡	L.W. osc. tracker	—	H4
C33‡	2nd I.F. trans.	—	C2
C34‡	tuning	—	C2
C35§	P.U. tone	0·001μF	—
C36§	correctors ...	0·001μF	—
C37§	Part tone control	0·01μF	—
C38§	Neg. feed back ...	0·25μF	—

* Electrolytic. † Variable. ‡ Pre-se
§ Gram models only.

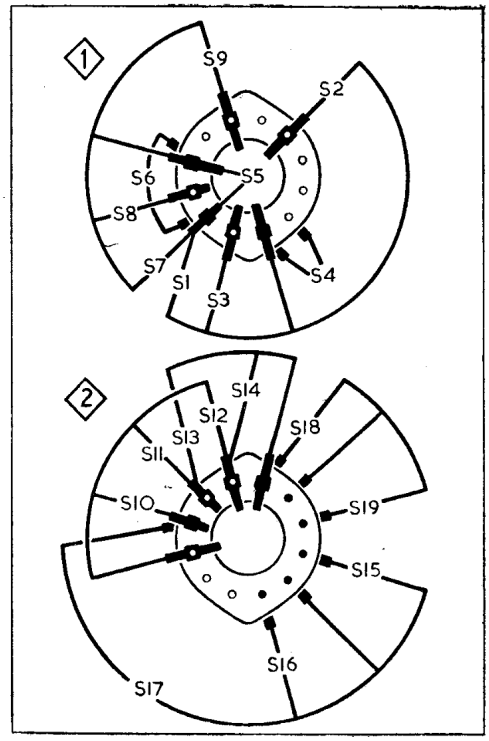
M.W.—Switch receiver to M.W., tune to 545.4 m and replace the 400 Ω carbon resistor with a 200 pF capacitor. Feed in a 545.4 m (550 kc/s) signal and adjust **C31** (H4) for maximum output while rocking gang for optimum results. Tune receiver to 200 m, feed in a 200 m (1,500 kc/s) signal and adjust **C29** (H4) for maximum output while rocking the gang for optimum results. Repeat these adjustments.

L.W.—Switch receiver to L.W. and with the same input conditions as for M.W. tune to 2,000 m. Feed in a 2,000 m (150 kc/s) signal and adjust **C32** (H4) for maximum output while rocking the gang for optimum results. Tune receiver to 882.2 m, feed in a 882.2 m (340 kc/s) signal and adjust **C30** (H4) for maximum output while rocking gang for optimum results.

DRIVE CORD REPLACEMENT

About four feet of nylon braided glass yarn is required for a new drive cord, which should be run as shown in the accompanying sketch, where the tuning drive system is drawn as seen when viewed from the front of the chassis, "through" the scale backing plate, with the gang at minimum capacitance. Four feet of cord leaves an ample margin for tying off.

WAVEBAND SWITCH DIAGRAMS AND TABLE



Switch	L.W.	MW.	S.W.	Gram.
S1	—	—	—	C
S2	—	—	C	—
S3	C	C	—	—
S4	C	—	—	—
S5	—	—	C	—
S6	—	C	C	—
S7	—	—	C	—
S8	—	C	—	—
S9	C	—	—	—
S10	—	—	C	—
S11	—	C	—	—
S12	C	—	—	—
S13	—	—	C	—
S14	—	C	C	—
S15	—	C	—	—
S16	C	—	—	—
S17	—	—	C	—
S18	C	C	C	—
S19	—	—	—	C

Diagrams of the waveband switches (left) drawn as seen when viewed from the rear of an inverted chassis. On

In this position the cord can easily be wound 2¼ times round the control spindle while pulling against the gang stop. When passing the cord over the lower right-hand pulley position, two pulleys will be found, and the cord should run under the rear one to bring it in line with the groove in the drum. The cursor can be slipped on afterwards and it should then be adjusted as explained under "Circuit Alignment."

PHILCO B2852