MASTERADIO - D527

Resistors

R1	33kΩ	A1
R2	6·8kΩ	A1
R3	1kΩ	A1
R4	220kΩ	A1
R5	100Ω	A1
R6	56kΩ	A2
R7	22kΩ	A2
R8	680Ω	A1
R9	4·7kΩ	A2
R10	680Ω	A1
R11	10kΩ	B2
R12	2·2kΩ	B1
R13	1kΩ	B2
R14	560Ω	B1
R15	12kΩ	B1
R16	1kΩ	B1
R17	18kΩ	B1
R18	10Ω	B1
R19	470Ω	B1
R20	2·2Ω	B1
R21	68Ω	B1
R22	2·2Ω	B1
R23	560Ω	B1
R24	330Ω	B2
R25	820Ω	A1
R26	12kΩ	A1
VR1	5kΩ	B1

Capacitors

C1	33pF	A1
C2	25pF	A1
C3	58pF	A1
C4	0·01μF	A1
C5	560pF	A2
C6	0·05μF	A1
C7	0·022μF	A2
C8	36pF	A1
C9	300pF	A1
C10	0·05μF	A1
C11	250pF	A2
C12	0·02μF	A1
C13	250pF	B2
C14	10μF	A2
C15	0·02μF	A2
C16	0·01μF	B2
C17	160μF	A1
C18	0·01μF	B2
C19	10μF	B1
C20	160μF	B1
C21	6,000pF	B1
C22	400μF	A1
C23	400μF	B1
C24	300pF	A2
C25	100pF	A1
TC1	15pF	A1
TC2	5pF	A1
TC3	5pF	A1
TC4	15pF	A1
TC5	15pF	A1
TC6	15pF	A1
TC7	15pF	A1
VC1	215pF	A2
VC2	215pF	A1
VC3	215pF	A2
VC4	215pF	A2

Coils

L1	—	A1
L2	—	B1
L3	—	A1
L4	—	A1
L5	—	A1
L6	—	A1
L7	—	A2
L8	—	A2
L9	—	A2
L10	—	B2
L11	—	B2
L12	—	B2
L13	—	B2

Miscellaneous

M1	OA90	B2
M2	OA70	A1
S1-S11	—	A1
TH1	VA1040	B1

Circuit diagram of G.E.C., Sobell and Masteradio duplex receivers. On strong signals, the ferrite rod aerial windings are damped by the action of **M2.**

Transistor Table

Transistor		Emitter (V)	Base (V)	Collector (V)
TR1	AF117	1·0	1·15	6·75
TR2	AF117	0·8	1·0	6·9
TR3	AF117	0·94	1·2	6·9
TR4	AC127	4·15	3·9	0·17
TR5	OC81D	—	0·17	4·4
TR6	OC81	4·6	*	9·0
TR7	AC127	4·55	4·4	—

** No reading given.*

CIRCUIT ALIGNMENT

Calibration points referred to in the alignment procedure are punched in the lower edge of the scale backing plate. All coil cores should be adjusted to the outer tuning position. During alignment the receiver output should not be allowed to exceed 50mW with the volume control at maximum.

Equipment Required.—a 0-100mW audio output meter with an impedance to match 10Ω; a signal generator with a low impedance output, modulated 30 per cent; suitable insulated trimming tools; a 0.01μF capacitor and an r.f. coupling coil formed by winding approximately 14 turns of 18 s.w.g. enamelled copper wire on a one inch diameter former, to a length of 1-1¼ inches.

1.—Connect the signal generator via a 0.01μF capacitor to **TR1** base. Switch receiver to m.w. and set the tuning gang to its mid-position. Connect the output meter in place of the loudspeaker.

2.—Feed in a 470kc/s modulated signal and adjust the cores of **L11, L9** and **L7** for maximum output.

3.—Repeat operation 2.

4.—Fully mesh the tuning gang and check that the cursor coincides with alignment point 1 when viewed from the front (see scale drive assembly illustration). Connect the signal generator to the r.f. coupling coil and place the coil about 6in from the ferrite rod aerial.

5.—Switch receiver to l.w. and set the cursor to alignment point 3. Feed in a 170kc/s signal and adjust **L5** for maximum output.

6.—Switch receiver to m.w. Feed in a 600kc/s signal and tune receiver to this signal (cursor at alignment point 2). Adjust **L2** for maximum output.

7.—Set the cursor to alignment point 6 and feed in a 1,440kc/s signal. Adjust **TC6** and **TC3** for maximum output.

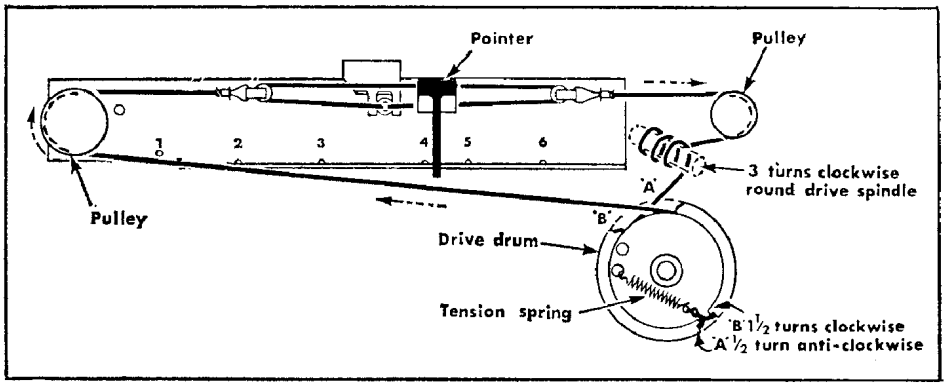
8.—Switch receiver to duplex and set the rotary scale pointer to 208m. Feed in a 1,440kc/s signal and adjust **TC5** and **TC2** for maximum output.

9.—Switch receiver to bandspread and set the cursor at alignment point 4. Feed in a 1,440kc/s signal and adjust **TC4** and **TC1** for maximum output.

10.—Switch receiver to m.w. and set the cursor to alignment point 4. Feed in a 908kc/s signal and rotate the tuning control for maximum output. Then, with the tuning control left in that position, switch receiver to l.w., feed in a 200kc/s signal and adjust **TC7** and **L3** for maximum output.

Note: Check that the tuning of **TC7** does not alter as the tuning tool is withdrawn since this trimmer is "hot". If Welsh Home Service is required as a reference station in place of London Home Service, use 881kc/s instead of 908kc/s.

11.—With the tuning set as in operation 10, switch receiver to bandspread and feed in a 1,439kc/s signal. Adjust **TC4** and **TC1** for maximum output.



Tuning drive system as seen from the front, showing method of routing a replacement cord.