

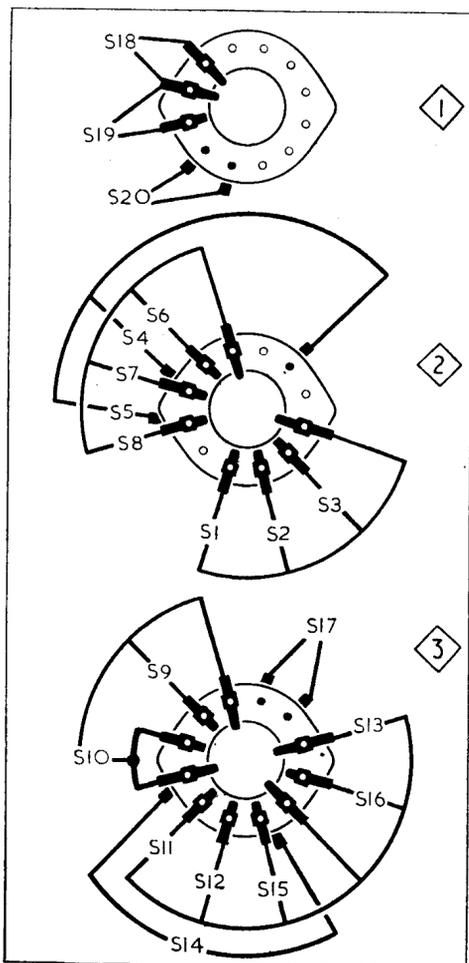
RESISTORS		Values	Locations
R1	V1 C.G. ...	470kΩ	G3
R2	V1 G.B. ...	220Ω	F3
R3	V1 osc. C.G. ...	22kΩ	F4
R4	Osc. stabilizers ...	56Ω	G4
R5		15Ω	G4
R6	Osc. anode feed ...	27kΩ	F4
R7	S.G. pot. divider ...	27kΩ	F4
R8		12kΩ	F4
R9	V2 G.B. ...	330kΩ	F4
R10	I.F. stopper ...	160kΩ	E4
R11	T.I. decoupling ...	2.2MΩ	F4
R12	Signal diode load ...	150kΩ	E3
R13		330kΩ	D3
R14	Volume control ...	1MΩ	E3
R15	V3 G.B. ...	1.5kΩ	E4
R16	H.T. feed* ...	2.2kΩ	C2
R17	V3 anode load ...	47kΩ	E4
R18	A.G.C. decoupling ...	1MΩ	E4
R19	A.G.C. diode load ...	1MΩ	E4
R20	T.I. anode load ...	1MΩ	B1
R21	V4 C.G. ...	100kΩ	E4
R22		470kΩ	E4
R23	Tone corrector ...	6.8kΩ	D4
R24	V4 anode stopper ...	47Ω	E4
R25	V4 G.B. ...	180Ω	E4

\*Special type: see "Safety Devices" under "General Notes."

OTHER COMPONENTS		Approx. Values (ohms)	Locations
L1	I.F. rejector ...	3-0	A1
L2	Aerial coupling coils	—	A1
L3		1-2	A2
L4		22-0	A2
L5	Aerial tuning coils	—	A1
L6		4-0	A2
L7		22.5	A2
L8	Osc. reaction coils	—	G4
L9		1-0	G4
L10	Osc. tuning coils	—	G4
L11		5-0	G4
L12	1st I.F. trans. { Pri. ...	2-2	G4
L13		6-2	B2
L14	2nd I.F. trans. { Pri. ...	6-2	B2
L15		6-2	B2
L16	Whistle filter ...	6-2	B2
L17		—	B2
L18	Whistle filter ...	305-0	B2
L19	Speech coil ...	2-4	—
L20	H.T. smoothing ...	267-0	E3
T1	O.P. trans. { a...	310-0	B2
		b...	—
		c...	157-0
		d...	167-0
T2	Mains trans. { e...	—	C2
	d...	—	
	e total	36-0	
S1-S20	Waveband switches ...	—	G3
S21-S26	Tone switches ...	—	D3
S27, S28	Mains switches ...	—	D3

CAPACITORS		Values	Locations
C1	I.F. rejector tune ...	470pF	A1
C2	L.W. aerial shunt ...	470pF	F3
C3	L.W. aerial trim ...	47pF	F3
C4	V1 C.G. ...	470pF	G3
C5	1st I.F. trans. tuning ...	150pF	B2
C6		150pF	B2
C7	V1 cath. by-pass ...	0.05μF	F3
C8	V1 osc. C.G. ...	100pF	G4
C9	Osc. trackers ...	180pF	G4
C10		620pF	G4
C11	Osc. trimmers ...	92pF	G4
C12		10pF	G4
C13	Osc. anode coup. ...	150pF	G4
C14	S.G. decoupling ...	0.1μF	F3
C15	A.G.C. decoupling ...	0.05μF	F3
C16	V2 Cath. by-pass ...	0.05μF	F4
C17	2nd I.F. trans. tuning ...	150pF	B2
C18	I.F. by-passes ...	47pF	E4
C19		82pF	E4
C20	V3 cath. by-pass ...	50μF	C1
C21*		0.01μF	G3
C22	A.F. coupling ...	0.01μF	C1
C23	A.G.C. coupling ...	47pF	E4
C24*	H.T. decoupling ...	16μF	E3
C25	T.I. decoupling ...	0.05μF	B1
C26	A.F. coupling ...	0.01μF	E4
C27	Part tone control ...	390pF	D3
C28		0.0022μF	D3
C29	I.F. by-pass ...	0.0022μF	D3
C30		100pF	E4
C31	Part whistle filter ...	820pF	B1
C32	Tone corrector ...	0.02μF	E4
C33*	V4 cath. by-pass ...	50μF	C1
C34*		16μF	D3
C35*	H.T. smoothing ...	32μF	D3
C36†		35pF	F3
C37†	M.W. aerial trim ...	35pF	G3
C38†	L.W. aerial trim ...	35pF	F3
C39†	Aerial tuning ...	580pF	A1
C40†	S.W. osc. trim. ...	35pF	G4
C41†	L.W. osc. trim. ...	35pF	G4
C42†	M.W. osc. trim. ...	35pF	G4
C43†	Oscillator tuning ...	580pF	A2

\* Electrolytic. † Variable. ‡ Pre-set.



Diagrams of the waveband switch units, drawn as seen from the rear of an inverted chassis. Beside the diagrams in the next column is the associated switch table.

### CIRCUIT ALIGNMENT

The chassis should be removed from its cabinet for the following alignment adjustments. Turn volume control to maximum and set the tone control to position 1.

**I.F. Stages.**—When adjusting the I.F. transformers a damping unit consisting of a 10 kΩ resistor in series with an 0.01 μF capacitor should be connected via the shortest possible leads across one winding while the core of the other is adjusted. Connect output of signal generator, via an 0.01 μF capacitor in the "live" lead, to control grid (pin 6) of V2 and chassis. Tune receiver to highest wavelength end of M.W., feed in a 465 kc/s (645.16 m) signal and adjust the cores of L16 (B2) and L15 (E4) for maximum output. Transfer signal generator leads with isolating capacitor to control grid (pin 6) of V1 and chassis, and adjust the cores of L14 (B2) and L13 (F4) for maximum output.

**R.F. and Oscillator Stages.**—As the tuning scale remains fixed in the cabinet when the chassis is withdrawn, reference is made during alignment to the substitute tuning scale printed on the front of the drive drum. Readings on this scale are taken against the "V" notch in the metal cursor mounted below the drum. The substitute scale readings are given in brackets after each calibration point in the following alignment and refer to the moulded drive drum only. For receivers using a metal drive drum, 60 must be added to each substitute scale reading quoted. Check that with the gang at maximum capacitance, the notch in the metal cursor coincides with "0" on the moulded drive drum scale, or "60" on the metal drive drum scale. Transfer signal generator leads, with isolating capacitor, to A and E sockets.

	S.W.	M.W.	L.W.	Gram.
S1	C	—	—	—
S2	—	C	—	—
S3	—	—	C	—
S4	—	—	—	—
S5	C	—	—	—
S6	C	—	—	—
S7	—	C	—	—
S8	—	—	C	—
S9	C	—	C	—
S10	—	—	—	—
S11	C	—	C	—
S12	—	C	—	—
S13	—	C	C	C
S14	C	—	C	—
S15	—	—	C	—
S16	—	C	—	—
S17	C	—	C	—
S18	—	C	—	—
S19	—	—	C	—
S20	—	—	—	C

Valves	Anode		Screen		Cath.
	V	mA	V	mA	V
V1 6C9 ...	245 74 Oscillator	2.2 5.0	100	4.0	2.5
V2 6F15 ...	245	6.0	100	1.8	2.4
V3 6LD20 ...	134	1.5	—	—	4.5
V4 6P25 ...	230	38.0	245	7.7	7.8
V5 UU9 ...	230†	—	—	—	260.0

† Each anode A.C.

**L.W.**—Switch receiver to L.W., tune to 1,900 m (37.5 on substitute scale), feed in a 1,900 m (158 kc/s) signal and adjust the core of L11 (A2) for maximum output. Tune receiver to 1,000 m (167.5 on scale), feed in a 1,000 m (300 kc/s) signal and adjust C41 (G4) and C38 (F3) for maximum output. Repeat these adjustments until no further improvement results.

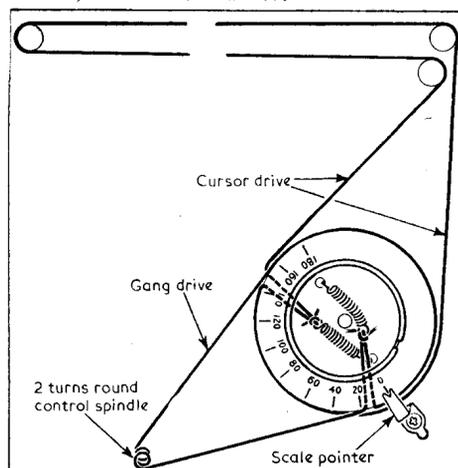
**M.W.**—Switch receiver to M.W., tune to 200 m (164 on scale), feed in a 200 m (1,500 kc/s) signal and adjust G42 (G4) and C37 (G3) for maximum output. Feed in a 500 m (600 kc/s) signal, tune the receiver for maximum output and check that the substitute scale reading is between 32.5 and 34.5.

**S.W.**—Switch receiver to S.W., tune to 19.7 m (150 on scale) feed in a 19.7 m (15.23 Mc/s) signal and adjust C40 (G4) and C36 (F3) for maximum output. Rock gang while adjusting C36 for optimum results. Feed in a 41.4 m (7.25 Mc/s) signal, tune receiver for maximum output, and check that the substitute scale reading is between 49.5 and 53.5.

If the reading falls outside these limits the inductance of L10 and L5 should be adjusted by spacing the end turns of the coils until calibration is correct. Readjust C40 and C36 at 19.7 m (15.23 Mc/s) after making these adjustments.

**I.F. Filter.**—The core of L1 (A1) has been accurately set at the factory and should not need readjustment. If necessary, however, the core can be moved with a non-metallic tool and should be adjusted for maximum voltage at V1 or V2 cathode, feeding a 465 kc/s signal into the A and E sockets.

### MURPHY - A172

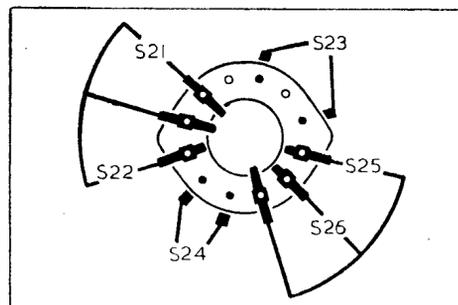


Sketch showing the tuning drive system, drawn as seen from the front with the gang at maximum capacitance.

**Drive Cord Replacement.**—Two separate drive cords are used in this receiver, the gang drive cord and the cursor drive cord, and the makers quote the lengths required for replacement as 28in and 60in respectively. To fit a new cord, it is necessary to remove the chassis from its cabinet. Supplies of cord (part No. 3962/1) and springs (part No. 19448) can be obtained from the makers, and the cords should be stretched by a few hours before fitting.

It is unimportant which cord is fitted first, but the (shorter) gang drive is the outer one; that is to say, farther from the chassis. The tension should be such that the springs are extended to about 1in each.

Diagram of the tone control switch unit, as seen from the rear. Below it is the associated table.



	Off	1	2	3	4
S21	—	C	C	C	—
S22	—	—	—	—	C
S23	—	—	—	—	C
S24	—	—	—	C	—
S25	—	—	C	—	—
S26	—	C	—	—	—