

## CIRCUIT ALIGNMENT

Before commencing these operations the chassis must be removed from the carrying case complete with frame aerial, which remains connected and must be situated in the same position relative to the chassis, as it would normally assume when in the carrying case.

**I.F. Stages.**—Switch set to M.W., turn gang to minimum capacitance and volume control to maximum. Switch set to battery operation and connect signal generator, via an  $0.01 \mu\text{F}$  capacitor in the live lead, to control grid (pin 6) of V1 and chassis. Feed in a  $465 \text{ kc/s}$  ( $645.16 \text{ m}$ ) signal, and adjust the cores of L10, L9, L8, and L7 (location references C1, C2, B1, B2) for maximum output. Repeat these operations until no improvement results.

L9 may be adjusted through a hole in the bottom of the chassis, using a trimming tool with a shaft length of at least  $\frac{1}{4}$  in. An aperture at the top of the H.T. battery holder gives visual access to the trimmer screw.

**R.F. and Oscillator Stages.**—With the gang at maximum capacitance the pointer should coincide with the high wavelength ends of the two scales. It may be adjusted in position if the two grub screws on the slow motion drive are slackened. The signal generator lead should be connected to a suitable dummy aerial and secured approximately 12 inches from the frame aerial.

**M.W.**—With the set switched to M.W., tune to  $200 \text{ m}$  on scale, feed in a  $200 \text{ m}$  ( $1,500 \text{ kc/s}$ ) signal, and adjust C26 (A1) and C25 (A1) for maximum output. Tune to  $500 \text{ m}$  on scale, feed in a  $500 \text{ m}$  ( $600 \text{ kc/s}$ ) signal, and adjust L3 (A3) for maximum output. Repeat these operations until no improvement results.

**L.W.**—Switch set to L.W., tune to  $1,000 \text{ m}$  on scale, feed in a  $1,000 \text{ m}$  ( $300 \text{ kc/s}$ ) signal, and adjust C28 (B3) and C23 (A2) for maximum output. Tune to  $1,800 \text{ m}$  on scale, feed in a  $1,800 \text{ m}$  ( $166.6 \text{ kc/s}$ ) signal, and adjust L2 (A1) and L4 (A3) for maximum output. Repeat these operations until no improvement results.

## CHAMPION - SKYMASTER

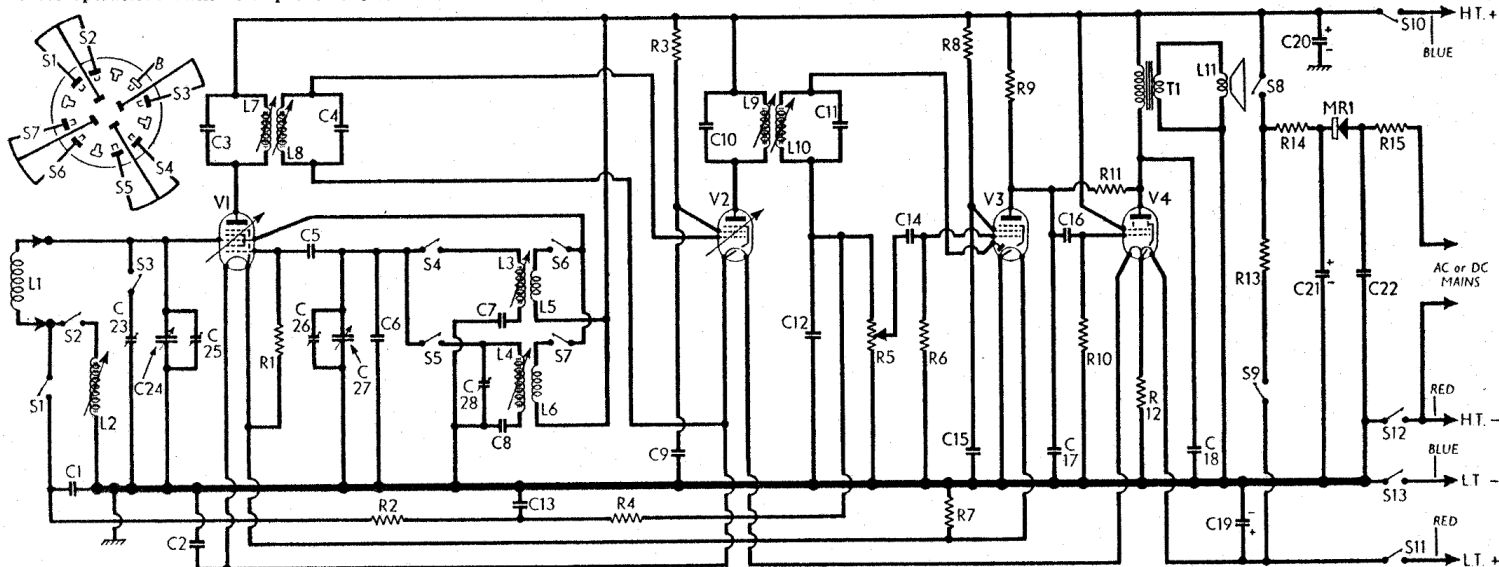
Intermediate frequency  $465 \text{ Kc/s}$

CAPACITORS		Values ( $\mu\text{F}$ )	Locations
C1	A.G.C. decoup. ...	0.1	A2
C2	R.F. by-pass ...	0.1	A2
C3	1st I.F. transformer {	0.0001	B1
C4		0.0001	B1
C5	V1 osc. C.G. ...	0.0001	A2
C6	Oscillator trim. ...	0.000015	A2
C7	Osc. M.W. track ...	0.0006	A3
C8	Osc. L.W. track ...	0.0001	A3
C9	V2 S.G. decoup. ...	0.1	C2
C10	2nd I.F. trans - {	0.0001	C1
C11		0.0001	C1
C12	I.F. by-pass ...	0.0001	D1
C13	I.F. by-pass ...	0.1	B2
C14	A.F. coupling ...	0.005	D2
C15	V3 S.G. decoup. ...	0.1	D2
C16	A.F. coupling ...	0.01	D2
C17	I.F. by-pass ...	0.0001	D2
C18	Tone corrector ...	0.005	D2
C19*	L.T. smoothing ...	50.0	D3
C20*	H.T. smoothing {	32.0	F3
C21*		32.0	F2
C22	Mains by-pass ...	0.01	F3
C23†	L.W. aerial trim ...	0.00005	A2
C24†	Aerial tuning ...	0.000375	A1
C25†	Aerial trimmer ...	0.000015	A1
C26†	Osc. trimmer ...	0.000015	A1
C27†	Osc. tuning ...	0.000375	A1
C28†	Osc. L.W. trim ...	0.00005	B3

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

RESISTORS		Values (ohms)	Locations
R1	V1 Osc. C.G. ...	100,000	B2
R2	A.G.C. decoup. ...	470,000	A2
R3	V2 S.G. H.T. feed ...	4,700	C2
R4	I.F. stopper ...	2,400,000	C2
R5	Volume control ...	1,000,000	D1
R6	V3 C.G. resistor ...	6,800,000	D2
R7	Filament ballast ...	240	B2
R8	V3 S.G. H.T. feed ...	2,400,000	C2
R9	V3 Pent. load ...	470,000	D2
R10	V4 C.G. resistor ...	1,000,000	D2
R11	F.B. coupling ...	2,400,000	D2
R12	Filament ballast ...	1,500	E2
R13	Fil. dropper ...	1,400	C2
R14	Smoothing res. ...	2,500	C2
R15	Mains dropper ...	150	C2

OTHER COMPONENTS		Approx. values (ohms)	Locations
L1	Frame aerial ...	0.5	—
L2	L.W. aerial coil ...	8.0	A1
L3	Osc. M.W. tuning ...	1.0	A3
L4	Osc. L.W. tuning ...	4.0	A3
L5	Osc. M.W. coup. ...	0.9	A3
L6	Osc. L.W. coup. ...	2.6	A3
L7	1st I.F. trans. {	11.0	B1
L8		11.0	B1
L9	2nd I.F. trans. {	11.0	C1
L10		11.0	C1
L11	Speech coil ...	2.0	—
T1	Output trans {	280.0	C3
S1-S7	W/band switches ...	0.5	A2
S8-		—	—
S11	Mains/Battery sw.'s	—	D3
S12, S13	Common supply sw.'s ganged R6	—	D1



**Drive Cord Replacement.**—Two feet of twine is required for the tuning drive cord, which is made up into a single loop about 18 inches in circumference. It is perfectly simple, making altogether half a turn round the gang drum and half a turn in the same direction round the pulley at the other end of the scale.

Valve	Anode		Screen	
	V	m/A	V	m/A
V1 DK91 ...	67	1.36	67	3.0
V2 DF91... ..	67	2.8	56	1.3
V3 DAF91 ...	5	0.8	0.3	0.02
V4 384 ...	63	7.8	67	1.9