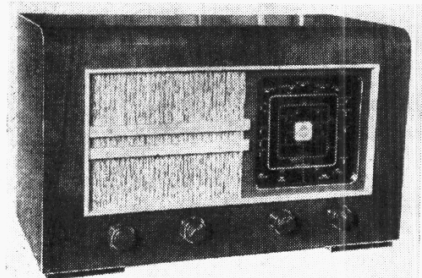


## "TRADER" SERVICE SHEET 797

# Manual ACE A50



THREE wavebands are covered in the Ace A50 receiver, the S.W. band being 16-50 m. The set is a 4-valve (plus rectifier) superhet designed for operation from A.C. mains of 200-250 V, 50-100 c/s. Release date and original price: November, 1945; £15 15s plus £3 8s 3d purchase tax.

### CIRCUIT DESCRIPTION

Aerial input is via coupling coils L2 (S.W.), L3 (M.W.) and L4 (L.W.) to single-tuned circuits L5, C29 (S.W.), L6, C29 (M.W.) and L7, C29 (L.W.), which precede triode hexode valve (V1, Brimar 6K8G) operating as frequency changer with electron coupling. I.F. filter L1, C25 shunts the aerial-earth circuit.

Triode oscillator grid coils L8 (S.W.), L9 (M.W.) and L10 (L.W.) are tuned by C30. Parallel trimming by C31 (S.W.), C32 (M.W.) and C5, C33 (L.W.); series tracking by C6 (S.W.), C7 (M.W.) and C8 (L.W.).

Reaction coupling from anode, via C9, is obtained from the common impedance of trackers on all bands, with additional inductive coupling by L11 on S.W.

Second valve (V2, Brimar 6K7G) is a variable-mu R.F. pentode operating as intermediate frequency amplifier with tuned-primary, tuned-

secondary transformer couplings C34, L12, L13, C35 and C36, L14, L15, C37.

Intermediate frequency 465 kc/s.

Diode second detector is part of double diode triode valve (V3, Brimar 6Q7G). Audio frequency component in rectified output is developed across load resistor R7 and passed via I.F. stopper R8, coupling capacitor C15 and manual volume control R9 to control grid of triode section, which operates as A.F. amplifier. Provision for the connection of a gramophone pick-up across R9.

Second diode of V3, fed from L14 via C14, provides D.C. potentials which are developed across load resistor R14 and fed back through decoupling circuits as G.B. to F.C. and I.F. valves, giving automatic volume control. Delay voltage, together with G.B. for triode section, is obtained from the drop along R10 in V3 cathode circuit.

Resistance-capacitance coupling by R12, C19 and R15, between V3 triode and beam tetrode output valve (V4, Brimar 6V6G). Fixed tone correction in tetrode anode circuit by C20, and variable tone control by C22, R17.

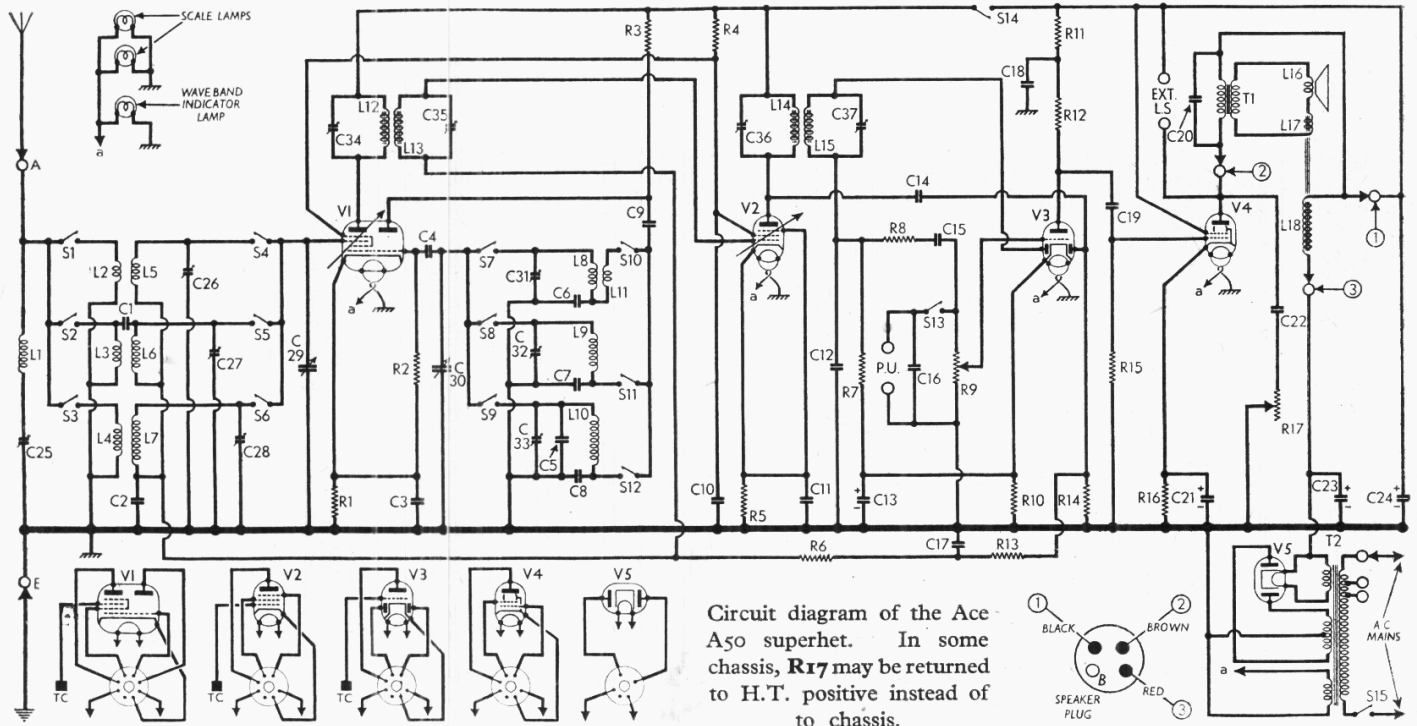
H.T. current is supplied by full-wave rectifying valve (V5, Tungram 5Z4G). Smoothing by speaker field L18 and dry electrolytic capacitors C23, C24.

### COMPONENTS AND VALUES

RESISTORS		Values (ohms)
R1	V1 fixed G.B. resistor	300
R2	V1 osc. C.G. resistor	50,000
R3	V1 osc. anode H.T. feed	50,000
R4	V1, V2 S.G.'s H.T. feed	50,000
R5	V2 fixed G.B. resistor	300
R6	A.V.C. line decoupling	220,000
R7	V3 signal diode load	1,000,000
R8	I.F. stopper	100,000
R9	Manual volume control	500,000
R10	V3 fixed G.B. resistor	3,000
R11	V3 anode decoupling	50,000
R12	V3 triode anode load	220,000
R13	A.V.C. line decoupling	1,000,000
R14	V3 A.V.C. diode load	1,000,000
R15	V4 C.G. resistor	220,000
R16	V4 fixed G.B. resistor	330
R17	Variable tone control	50,000

CAPACITORS		Values (µF)
C1	Aerial M.W. "top" coupling	Very low
C2	V1 hex. C.G. decoupling	0-1
C3	V1 cathode by-pass	0-1
C4	V1 osc. C.G. capacitor	0-0002
C5	Osc. L.W. fixed trimmer	0-00005
C6	Osc. circ. S.W. tracker	0-004
C7	Osc. circ. M.W. tracker	0-00045
C8	Osc. circ. L.W. tracker	0-000205
C9	V1 osc. anode coupling	0-0005
C10	V1, V2 S.G.'s decoupling	0-1
C11	V2 cathode by-pass	0-1
C12	I.F. by-pass	0-0001
C13*	V3 cathode by-pass	25-0
C14	V3 A.V.C. diode coupling	0-0001
C15	A.F. coupling to V3 triode	0-01
C16	Pick-up tone corrector	0-0001
C17	A.V.C. line decoupling	0-1
C18	V3 triode anode decoupling	0-1
C19	A.F. coupling to V4	0-01
C20	Fixed tone corrector	0-005
C21*	V4 cathode by-pass	25-0
C22	Part variable tone control	0-05
C23*	H.T. smoothing capacitor	8-0
C24*	tors	8-0
C25†	Aerial I.F. filter tuning	—
C26†	Aerial circ. S.W. trimmer	—
C27†	Aerial circ. M.W. trimmer	—
C28†	Aerial circ. L.W. trimmer	—
C29†	Aerial circuit tuning	—
C30†	Oscillator circuit tuning	—
C31†	Osc. circ. S.W. trimmer	—
C32†	Osc. circ. M.W. trimmer	—
C33†	Osc. circ. L.W. trimmer	—
C34†	1st I.F. trans. pri. tuning	—
C35†	1st I.F. trans. sec. tuning	—
C36†	2nd I.F. trans. pri. tuning	—
C37†	2nd I.F. trans. sec. tuning	—

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



Circuit diagram of the Ace A50 superhet. In some chassis, R17 may be returned to H.T. positive instead of to chassis.



