ACE A50

Four-valve, plus rectifier, three waveband superheterodyne for AC mains supplies of 190—250v, 50—100 cycles. Equipped with PU sockets and sockets for high impedance external speaker. Manufactured by Ace Radio, Ltd., Tower Road, Pound Lane, Willesden, London, NW10. Released March, 1946. Retail price, £15, plus £3 4s. 6d. tax.

AERIAL circuit incorporates a conventional IF filter rejector circuit L1, T1. S1 passes the signals from the aerial socket to the three RF transformers feeding the V1, the frequency-changer. On SW, L2 is the aerial coil and L3 with trimmer T2 form the grid circuit, S2 providing switching to the main RF tuning capacitor VC1. MW uses L4 as the aerial coil, while L5 and trimmer T3 constitute the switched portion of the grid circuit. Similarly, on LW, L6 is the aerial coil, L7 the grid coil with T4 its associated trimmer.

AVC is series fed through R1 decoupled by C1 in common with the IF valve grid V2. Cathode bias from R2, C2 is used for V1. Screen potential is derived from R4 decoupled by C8 in common with the IF valve V2. V1 and V2 HT anode supplies are switched by S3 to mute radio when PU is in use.

Oscillator anode potential is applied *via* R3, C3 parallel feeds the various circuits. On SW reaction coupling by L8 in the anode lead and L9 in the grid is employed aided by a measure of capacitive coupling due to C7 being common to both anode and grid circuits. T5 is the SW oscillator trimmer.

Oscillator MW band uses a single tuned circuit L10 trimmed by T6 and a fixed padder C5. On LW, L11 is the inductance and T7 the trimmer, C4 acts as padder. C6 is a fixed trimmer to bring the resonant frequency within the long waveband. The

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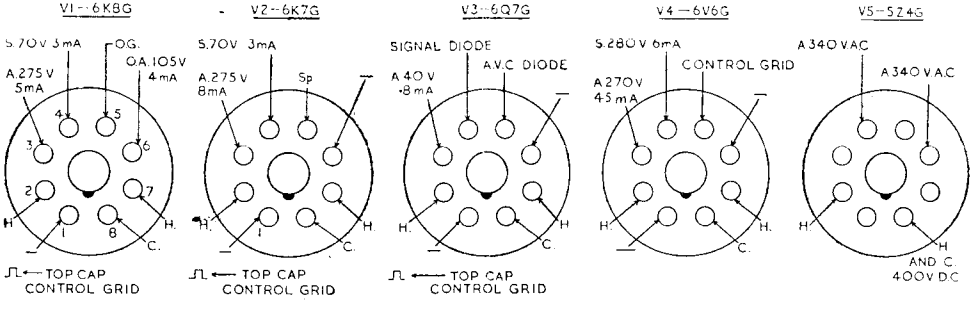
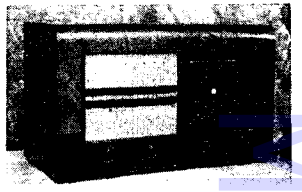




Ace Radio's A50 three-band AC Superhet.

CAPACITORS

C	Mfds
1	.1
2	.1
3	.0005
4	205 pf
5	450 pf
6	68 pf
7	4600 pf
8	.1
9	.0002
10	.1
11	100 pf
12	.01
13	25
14	100 pf
15	.1
16	100 pf
17	.1
18	100 pf
19	.01
20	.25
21	.05
22	.8
23	.8
24	.005
25	.0001

RESISTORS

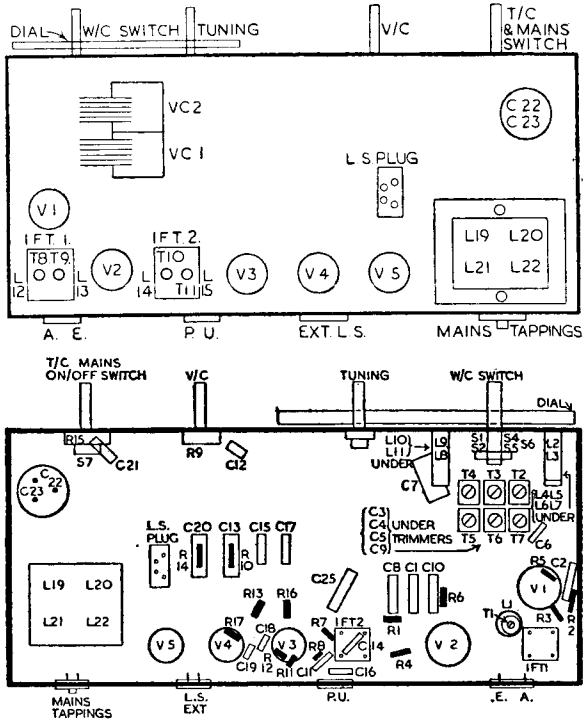
R	Ohms
1	22,000
2	300
3	50,000
4	50,000
5	50,000
6	300
7	100,000
8	1 megohm
9	.5 megohm
10	3,000
11	1 megohm
12	1 megohm
13	50,000
14	330
15	50,000
16	220,000
17	220,000

INDUCTORS

L	Ohms
1	22
2	very low
3	very low
4	10
5	3
6	35
7	23
8	very low
9	very low
10	3
11	7
12	3.5
13	3.5
14	5
15	5
16	220
17	very low
18	2 ohms DC
19	26 maximum
20	230 plus 230
21	2
22	very low
23	2,000
24	very low

ACE A50—*Continued*

The Ace A50 has a straight forward layout as these top and underside chassis views show.



oscillator switching is by S4, and S5 brings in the main tuning capacitor VC2. The automatic bias components are C9, R5.

A capacity-tuned iron-cored IF transformer passes the signal to V2 grid. The primary is formed by T8, L12 while T9, L13 comprise the secondary. AVC is series fed to V2 grid *via* the transformer secondary from R1, C1. Cathode bias is utilised for V2 from R6, C10.

IFT2 is similar to IFT1 with T10, L14 forming the primary and T11, L15 the secondary.

C11, R7, C25 form the usual IF filter. R8 is the signal diode load to V3. C12 passes the AF products of rectification to the volume control R9 and hence to grid of V3 triode portion. S6 allows a PU input to be applied to the remote end of R9. Cathode bias for V3 is secured by R10, C13.

The AVC diode of V3 is fed from V2 anode *via* C14, its load being R11. R12, C15 form the usual low-pass filter. AVC delay is obtained from R10 in the cathode lead.

An unusual feature of V3 triode anode circuit is the use of decoupling by R13, C17. R16 is the anode load and C18 is a fixed tone control from anode to earth. The AF coupling condenser is C19, R17 being the usual grid leak allowing cathode bias from R14, C20 to be applied to V4.

Full HT is used on the screen of V4. Variable tone control is effected by C21 and R15 across the output transformer primary L16. C24 across the primary gives further treble cut.

OPT secondary L17 feeds the mains-energised speaker speech coil L18 *via* the hum coil L24. An external output transformer may be used to feed an external speaker as the external speaker sockets are in parallel with OPT primary.

Mains transformer primary L19 has tappings for 200—215, 216—235, 236—250v (50—100 cycles) switched by S7 on the tone control. A 6.3v valve heater winding L22, which also supplies pilot lamp, is used, earthed on one side. A full-wave HT unit uses an earthed centre tapped secondary winding L20 and a 5v rectifier heater winding L21. Smoothing is accomplished by C22, L23, C23.

TRIMMING INSTRUCTIONS

The use of a signal generator and output meter is strongly recommended. Output meter to be connected across OPT secondary. Chassis should be removed whilst trimming is in progress. Maintain input as low as possible to eliminate AVC action.

Apply Signal as Below	Tune Receiver to	Trim in Order stated for Max. Output
(1) 465 KC to top cap V1, leaving existing lead connected	LW 2,000 metres	T11, T10, T9, T8
(2) 465 KC to A ..	LW 2,000 metres	T1 for *Minimum*
(3) 1,200 KC to A, *via* MW dummy A	MW 250 metres	T6, T3
(4) 600 KC as in (3) ..	MW 500 metres	Check as compared with (3)
(5) 17 MC to A, *via* SW dummy A	SW 17.6 metres	T5, T2
(6) 6 MC as in (5) ..	SW 50 metres	Check as compared with (5)
(7) 247.6 KC to A, *via* LW dummy A	LW 1,200 metres	T7, T4
(8) 166.6 KC as in (7) ..	LW 1,800 metres	Check as compared with (7)

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controlled by S5. S5 also shorts the V1 grid to earth on gram position to mute the radio.

A full-wave HT circuit uses an HT winding L19 whose centre tap is returned to earth *via* R15, R19 to provide AVC delay voltage and some standing bias for all valves. Smoothing is accomplished by C21, L13 and C20 when a mains-energised speaker is used and by C21, R22, C22, R21, C20, when a PM speaker is employed. In the latter case the V4 HT supply is taken from the final stage of smoothing.