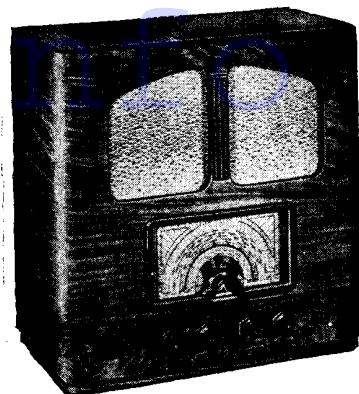


AERODYNE MODEL 63 ALL-WAVE FOUR



The Aerodyne 63, an all-wave A.C. superhet four selling at £10 19s 6d.

CIRCUIT.—The aerial is coupled to the grid of V1, an octode frequency changer, through iron-cored band-pass coils on medium and long waves, and is transformer coupled on short waves.

The signal is converted to the I.F. frequency, and then passes via an I.F. transformer to V2, an H.F. pentode, acting as the I.F. amplifier.

The output of V2 passes to the demodulating section of V3, a double diode, the other diode providing the A.V.C. for the receiver in the usual manner. An inter-station noise suppression network is incorporated in this stage and varies the cathode bias of V3.

The final stage consists of V4, an output pentode, the output of which passes to the speaker. A volume control is connected in the grid circuit and a tone control in the anode circuit of this valve.

Mains equipment consists of mains transformer, smoothing choke, electrolytic condensers and an I.W.3 indirectly heated full-wave rectifier. The usual mains voltage adjustment tapings are provided.

Special Notes.—The three dial lamps are each rated at 6.2 volts .3 amp. One of the dial lights is fixed on the pointer and moves with the rotation of the tuning control. The remaining two bulbs are fixed in screw-in holders clamped on the wavelength dial assembly, one on each side of the dial.

A mains aerial arrangement is supplied for use without an outdoor aerial.

Provision for connection of a pick-up is made.

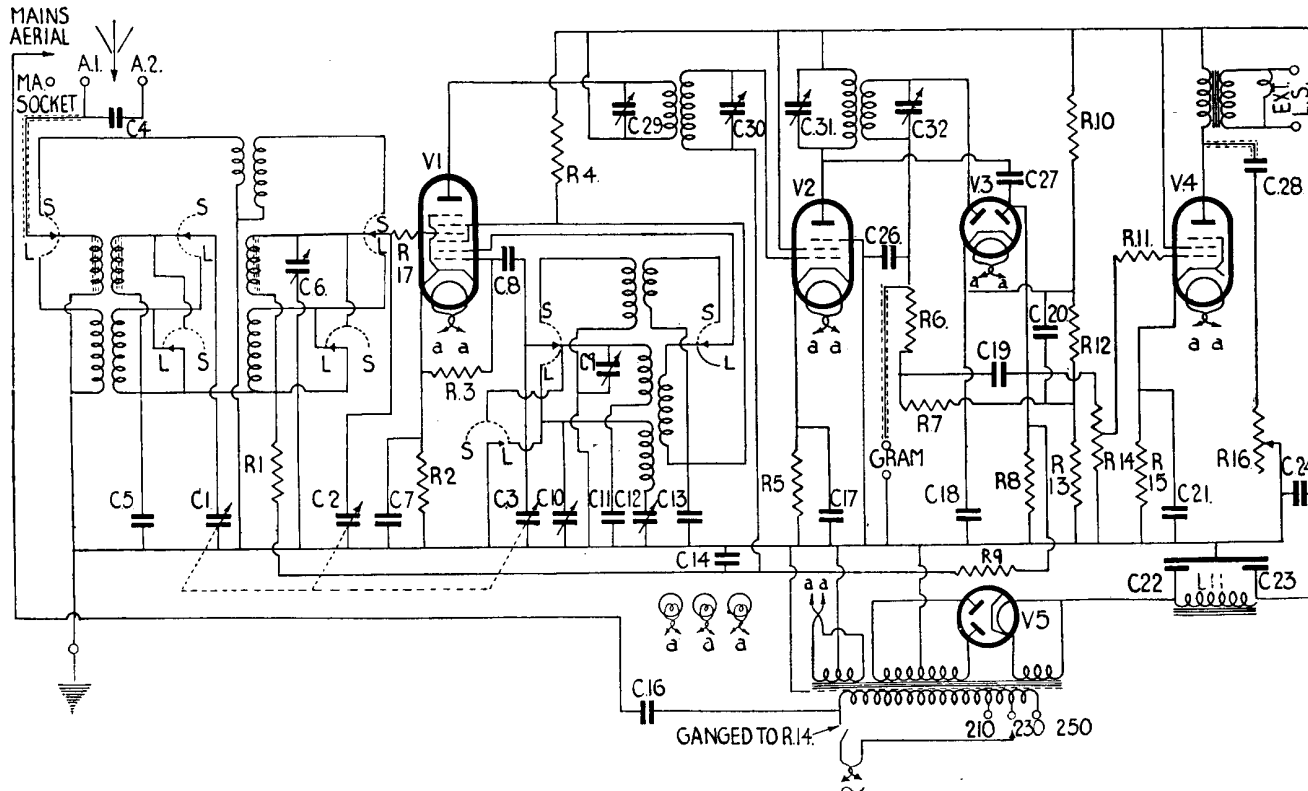
An external speaker can be used if desired. A permanent-magnet moving-coil speaker is to be recommended with a low resistance, as the speaker is

CONDENSERS

C.	Purpose.	Mfids.
1	Aerial section of gang ..	.00044
2	Band pass section of gang ..	.00044
3	Oscillator section of gang ..	.00044
4	Series aerial ..	.00005
5	Lower band-pass coupling ..	.05
6	Medium wave band-pass trimmer ..	3/35 mfd.
7	V1 cathode shunt ..	.1
8	Oscillator grid ..	.00005
12	Long wave oscillator pauder ..	.0008
13	Screen and oscillator anode decoupling ..	.2
14	A.V.C. decoupling ..	.02
16	Mains aerial condenser ..	.0002
17	V2 cathode shunt ..	.1
18	V3 cathode shunt ..	.1
19	L.F. coupling ..	.05
20	V3 cathode bias shunt (part) ..	.1
21	V4 cathode shunt ..	.25
22	H.T. smoothing ..	.8
23	H.T. smoothing ..	.8
24	H.F. by-pass ..	.1
26	H.F. by-pass ..	.0003
28	A.V.C. coupling condenser ..	.00005
27	Tone control ..	.02

RESISTANCES

R.	Purpose.	Ohms.
1	V1 A.V.C. decoupling ..	500,000
2	V1 cathode bias ..	250
3	Oscillator grid leak ..	50,000
4	V1 screen and oscillator anode decoupling ..	30,000
5	V2 cathode bias ..	200
6	Demodulator diode load (part) ..	50,000
7	Demodulator diode load (part) ..	1 meg.
8	A.V.C. diode load ..	1 meg.
9	V1 A.V.C. decoupling ..	1 meg.
10	V3 cathode bias potr. (part) ..	100,000
11	V4 grid stopper ..	50,000
12	V3 cathode bias potr. (part) ..	300
13	V3 cathode bias potr. (part) ..	5,000
14	Volume control ..	500,000
15	V4 cathode bias ..	140
16	Tone control ..	50,000
17	V1 series grid ..	140



Theoretical circuit diagram of the Aerodyne model 63 all-wave A.C. superhet four. The arrangement is straightforward and uses an octode frequency-changer, an I.F. pentode, a double-diode, an output pentode and a rectifier.

For more information remember
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connected to the secondary of the output transformer.

The valves and valve holders are numbered to expedite replacement if the valves have to be removed for servicing.

The mains voltage adjustment is found at the rear of the chassis, and takes the form of a wander plug and three sockets.

Chassis Removal.—Remove the six fixing screws on the back of the cabinet when the back can be detached.

The four control knobs on the face of the cabinet are fixed with grub screws and must be removed.

Then turn the receiver on its side, and take out the four fixing bolts and washers securing the chassis to the cabinet.

It will be observed that there are two screws on the top of the wavelength dial assembly. With the removal of these the chassis can be taken out to the extent of the speaker cable. The speaker can be removed by unscrewing the four fixing claws and two small screws on the frame.

Circuit Alignment Notes

I.F. Circuits.—Inject a signal of 465 kc. between the grid of V1 and chassis through a small fixed condenser in the usual manner. Connect an output meter across the primary of the speaker transformer.

Adjust IFT1, IFT2, IFT3 and IFT4 respectively for maximum response on

the output meter, reducing the input from the oscillator as the circuits come into line to render the A.V.C. inoperative.

Signal Circuits.—Only sufficient input should be fed to give an audible or reliable signal so as to prevent operation of the A.V.C.

Short Waves.—Tune the set to 16 metres (1,875 kc.) and inject an oscillator signal of corresponding wavelength between the aerial terminal of the set and the chassis. Adjust the trimmer on the rear section of the gang condenser for maximum response.

Tune the set to 40 metres (7,500 kc.) and inject a signal of that wavelength and, if calibration is out, adjust the movable turn at the tag end of the short-wave aerial coil.

Medium Waves.—Tune the set to 210 metres (1,476 kc.) and inject an oscillator signal of corresponding frequency. Adjust the medium wave oscillator trimmer (connected to the centre contact on the end bank of the wave-change switch) for maximum response in the output meter. Then adjust the trimmer on the centre contact of the middle bank of the wave-change switch and the trimmer on the front section of the gang condenser.

Long Waves.—Inject a signal of 1,300 metres (230 kc.) and tune the set to that wavelength. Adjust the padder on the side of the chassis nearer the front for maximum response. Then adjust the trimmer connected to the end contact on the centre bank.

Tune the set to 1,900 metres (157 kc.) and inject a signal of 1,900 metres, and adjust the padder on the side and nearer the back for maximum sensitivity, at the same time rocking the set tuning control for maximum results.

Aerodyne 63 on Test

MODEL 63.—Standard model for A.C. mains operation. 200-250 volts, 50-100 cycles. Price £10 19s. 6d.

DESCRIPTION.—Three-waveband, table model superhet using four valves plus rectifier. Controls for volume, tone, wave selection, and tuning with push-pull action, concentric slow motion. Full-vision illuminated scale calibrated in wavelengths and station names. Pick-up and extension speaker sockets.

LOADING.—62 watts.

Sensitivity and Selectivity.
SHORT WAVES (16-50 metres).—Very good sensitivity and selectivity. Easy tuning control, no appreciable drift and no difficulty in handling. Gain sufficient for reception of many well-known stations.
MEDIUM WAVES (200-550 metres).—Representative gain and selectivity. Gain well maintained over waveband. Spread of local stations on adjacent channels only. No undue whistles or bad background.
LONG WAVES (800-2,000 metres).—Average gain, very good selectivity. Deutschlandsender separated with practically complete freedom from interference.

Acoustic Output.
 Ample for any ordinary room, with representative balance and even tone in the fullest top position. Tone control not unduly severe, very little colouration on speech, with pleasing reproduction.

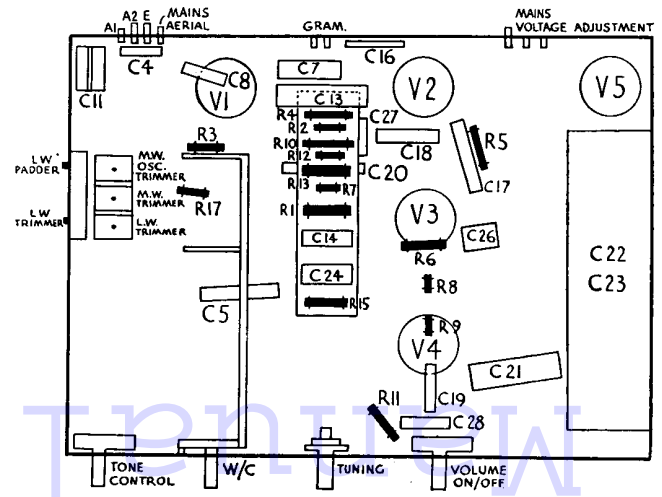
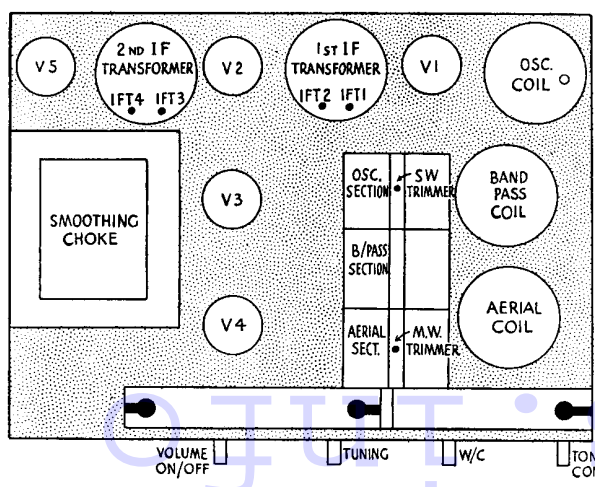
VALVE READINGS				
No signal. Volume maximum 200 volt A.C. mains.				
V.	Type.	Electrode.	Volts	Ma.
1	Mullard FC4 met. (7)	Anode ..	245	1.5
		Screen ..	60	4.
		Osc.anode	55	2.1
2	Mullard VP4B met. (7)	Anode ..	230	In-
		Screen ..	252	access-
3	Mullard 2D4A (5) met.	Diode ..	—	—
4	Brimar 7A3 (7)	Anode ..	223	33
		Screen ..	350	6
5	Mullard 1W3(4)	Filament	350	—

QUICK TESTS

For quick tests on this receiver, voltages measured between the speaker leads and the chassis should be:—
 Green lead, 350 volts, unsmoothed H.T.
 Grey lead, 225 volts, smoothed H.T.
 Pink lead, 245 volts, smoothed H.T.

Replacement Condensers

Exact replacement condensers for the Aerodyne 63, made by A. H. Hunt, Ltd., Garratt Lane, Wandsworth, London, S.W.18, are as follows: for C13, list 1,735, price 1s. 9d.; for C21, list 1,571, price 1s. 6d.; for C's 22 and 23, which are a single unit, list 1,979, price 6s. 9d.



These diagrams show the arrangement of components on the chassis of the Aerodyne 63. That on the left, shown tinted, is the top view; on the right is the underside view. Trimmers are clearly indicated.