

Wireless Retailer & BROADCASTER SERVICE ENGINEER

AERODYNE "BLUEBIRD" A.C. MAINS THREE

CIRCUIT.—This is a three-valve receiver for A.C. mains covering the usual medium- and long-wave bands.

The aerial input to the aerial coil is through either a wave trap incorporating two fixed condensers, C1 and C4, a semi-variable condenser C3 and a small coil CK1, or through a small condenser C2.

The aerial coil is of the inductive type and feeds the grid of V1, an H.F. pentode. The output of V1 passes to the detector V2, a triode, via an H.F. coil and C12. Reaction is applied in the orthodox manner, and is controlled by the condenser C11.

The L.F. output is fed to V3, the output pentode, through a resistance and capacity network, and after amplification passes to the speaker through a matching transformer.

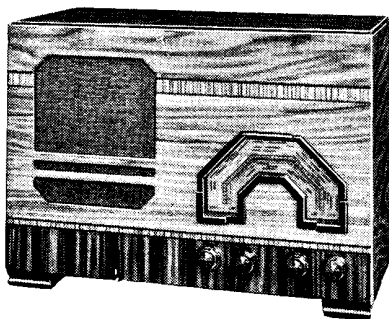
Mains equipment consists of transformer, full-wave rectifier, electrolytic condensers and the speaker field.

Special Notes.—The external speaker is connected on the low-resistance side of the output transformer and should have a low speech coil impedance.

The dial lamp is rated at 6.2 v. 3 amp. The holder is not removable.

Removing Chassis.—Remove the four knobs from the front of the cabinet (spring clips) and three bolts from underneath.

Remove the two wood screws holding the tuning dial to the cabinet. The chassis will then slide out of the cabinet far enough for the usual inspection and test.



The "Bluebird" receiver made by Aerodyne Radio, Ltd., is a straightforward three-valve plus rectifier model for operation from A.C. mains.

QUICK TESTS

Quick tests are available on this receiver on the terminal strip on the speaker transformer. Volts measured between this and the chassis should be:—

- Red lead, smoothed H.T., 220v.
- Blue lead, V3 anode volts, 200v.
- Black lead, unsmoothed H.T., 300 v.

VALVE READINGS

No signal. No reaction. Volume at maximum.

V.	Type.	Electrode.	Volts.	Ma.
1	VP4B met.(7)	anode ...	200	7
		screen ...	110	2.3
2	354V.	anode ...	80	2.3
		anode ...	200	34
3	Pen.4VB (7)	anode ...	200	3.7
		screen ...	210	—
(Above are Mullard)				
4	R3 (4) (Micromesh)	filament ...	300	—

CIRCUIT ALIGNMENT NOTES

Wave Trap Adjustment.—The wave trap is a Droitwich rejector. To adjust it tune in Droitwich on the long waves and adjust the trimmer C3 for minimum signal strength.

The receiver is straightforward from the point of view of tuned circuit adjustment, and has only two circuits to be aligned. The following procedure can be adopted.

Medium- and Long-wave Bands.—Con-

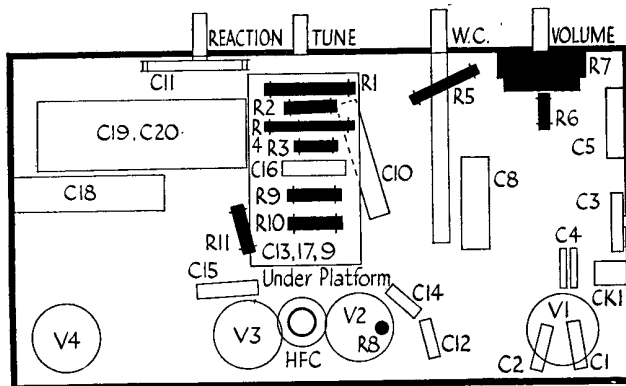
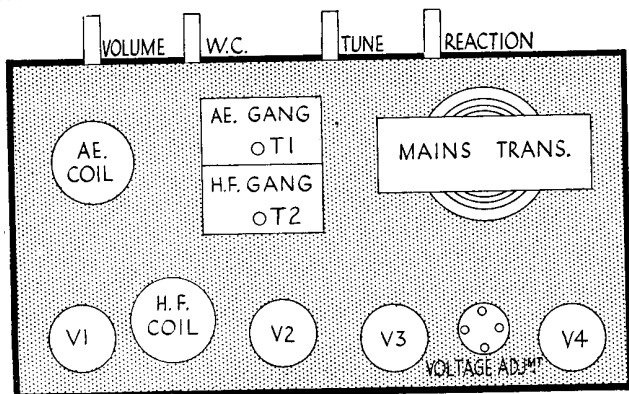
nect a modulated oscillator to the aerial and earth terminals and an output meter across external speaker terminals.

Tune both oscillator and receiver to 210 metres and adjust T1 and T2 for maximum reading on output meter.

Repeat at 500 metres and again at 210 for check.

The long-wave circuits should then be in gang.

(For circuit diagram see opposite page.)



As these layout diagrams show, the construction of the "Bluebird" is logical and clean. The "tinted" diagram, left, shows how the parts are situated on the top of the chassis, and the one on the right gives the underneath layout.

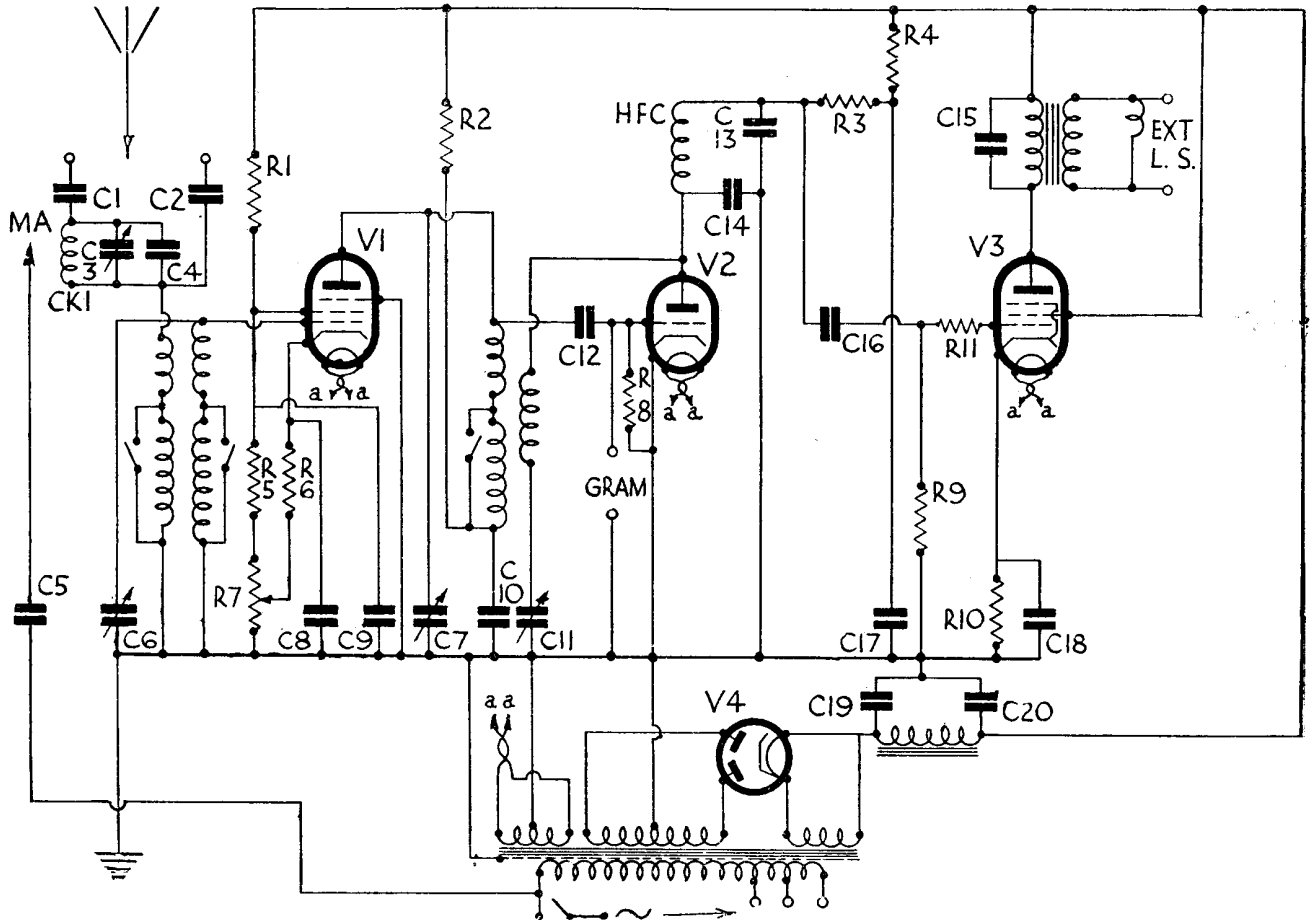
AERODYNE "BLUEBIRD" (Contd.)

CONDENSERS		
C.	Purpose.	Mfd.
1	Series aerial ... ..	.0005
2	Series aerial ... ..	.001
3	Droitwich rejector ... ..	.002
4	Droitwich rejector ... ..	.003
5	Mains aerial ... ..	.0002
6	Aerial tuning ... ..	.0005
7	H.F. tuning ... ..	.0005
8	V1 cathode bias shunt ... ..	.1

(Continued)

C.	Condensers (Continued)	Mfd.
9	V1 screen decoupling... ..	.1
10	V1 anode decoupling... ..	1
11	Reaction ... ..	.0003
12	V2 grid... ..	.00005
13	H.F. filter ... ..	.0005
14	H.F. filter ... ..	.0005
15	Pentode compensating ... ..	.01
16	L.F. coupling ... ..	.01
17	V2 anode decoupling... ..	1
18	V3 cathode bias shunt	25
19	H.T. smoothing	8
20	H.T. smoothing	8

RESISTANCES		
R.	Purpose.	Ohms.
1	V1 screen decoupling potr.	15,000
2	V1 anode decoupling... ..	3,000
3	V2 anode feed... ..	50,000
4	V2 anode decoupling... ..	20,000
5	V1 screen decoupling potr.	20,000
6	V1 cathode bias	100
7	Volume control	8,000
8	V2 grid leak	1 meg.
9	V3 grid leak ... ..	.5 meg.
10	V3 cathode bias	140
11	V3 grid stopper	50,000



The aerial circuit of the Aerodyne "Bluebird" incorporates a Droitwich wave trap. Capacity-controlled reaction and a resistance-fed L.F. auto-transformer are further features.

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