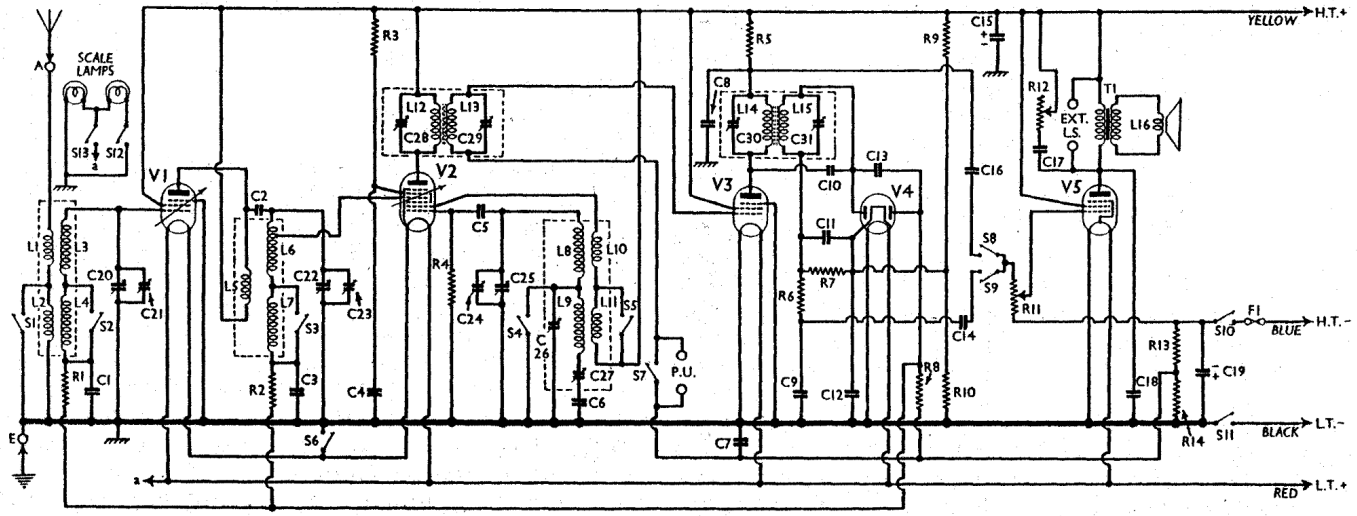
ALBA - 230 & 450



An indirectly heated double diode is used in the Alba 230 battery superhet, and although the I.F. valve is a variable-mu type, it operates with fixed bias. A.V.C. delay voltage is obtained from the potentiometer formed by R9 and R10.

	CONDENSERS	Values (μF)
C1	V1 C.G. decoupling	0·1
C2	H.F. trans. top coupling	0·00005
C3	V2 pent. C.G. decoupling	0·1
C4	V2 S.G.'s by-pass	0·1
C5	V2 osc. C.G. condenser	0·0001
C6	Osc. L.W. tracker	0·005
C7	V3 C.G. decoupling	0·1
C8	V3 anode decoupling	0·002
C9	I.F. by-pass	0·0001
C10	Coupling to V4 signal diode	0·000025
C11	I.F. by-pass	0·0001
C12	V4 cathode by-pass	0·1
C13	Coupling to V4 A.V.C. diode	0·0001
C14	Radio coupling to V5	0·002
C15*	H.T. supply reservoir	8·0
C16	Gram. coupling to V5	0·01
C17	Part of T.C. filter	0·02
C18	Fixed tone corrector	0·005
C19*	Auto. G.B. circuit by-pass	50·0
C20†	Aerial circuit tuning	—
C21‡	Aerial circuit trimmer	—
C22†	H.F. trans. sec. tuning	—
C23‡	H.F. trans. sec. trimmer	—
C24‡	Osc. circuit M.W. trimmer	—
C25†	Osc. circuit tuning	—
C26‡	Osc. circuit L.W. trimmer	0·000075
C27‡	Osc. L.W. tracker	0·0011
C28‡	1st I.F. trans. pri. tuning	—
C29‡	1st I.F. trans. sec. tuning	—
C30‡	2nd I.F. trans. pri. tuning	—
C31‡	2nd I.F. trans. sec. tuning	—

* Electrolytic. † Variable. ‡ Pre-set.

	RESISTANCES	Values (ohms)
R1	V1 C.G. decoupling	500,000
R2	V2 pent. C.G. decoupling	500,000
R3	V2 S.G's H.T. feed	50,000
R4	V2 osc. C.G. resistance	50,000
R5	V3 anode decoupling	2,000
R6	I.F. stopper	50,000
R7	V4 signal diode load	500,000
R8	V4 A.V.C. diode load	500,000
R9	A.V.C. delay voltage potentiometer	1,000,000
R10		100,000
R11	Manual volume control	500,000
R12	Variable tone control	50,000
R13	V3 and V5 automatic G.B. resistances	100
R14		150

	OTHER COMPONENTS	Approx. Values (ohms)
L1	Aerial coupling coils	12·0
L2		40·0
L3	Aerial tuning coils	3·5
L4		12·0
L5	H.F. trans. primary	125·0
L6	H.F. trans. secondary	3·5
L7		12·0
L8	Oscillator tuning coils	3·0
L9		7·0
L10	Oscillator reaction coils	125·0
L11		400·0
L12	1st I.F. trans. Pri.	50·0
L13	1st I.F. trans. Sec.	50·0
L14	2nd I.F. trans. Pri.	50·0
L15	2nd I.F. trans. Sec.	50·0
L16	Speaker speech coil	2·6
T1	Speaker input trans. Pri.	700·0
	Speaker input trans. Sec.	0·4
S1-S5	Waveband switches	—
S6	V1, V2 L.T. circuit switch	—
S7-S9	Radio-gram changeover switches	—
S10	H.T. circuit switch	—
S11	Main L.T. circuit switch	—
S12	Scale lamp switches	—
S13		—
F1	H.T. circuit fuse	—

VALVE ANALYSIS

Valve voltages and currents given in the table below are those measured in our receiver when it was operating from a new H.T. battery reading 142 V. The receiver was tuned to the lowest wavelength on the medium band and the volume control was at maximum, but there was no signal input.

Voltages were measured on the 1,200 V scale of an Avometer, chassis being negative.

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 VP2	140	1·0	140	0·3
V2 FC2*	140	0·8	70	1·2
V3 VP2	130	0·8	140	0·2
V4 2D2	—	—	—	—
V5 PM22D	135	4·3	140	0·7

* Oscillator anode (G2) 140 V, 0·9 mA.

GENERAL NOTES

Switches.—**S1-S9** are the wavechange and radio-gram. switches, and **S12** the scale lamp switch which controls one of the lamps. These switches are ganged together in a single unit beneath the chassis, and indicated in our underchassis view. The table below gives the switch positions for the various control settings, O indicating open and C, closed.

S10 and **S11** are the H.T. and L.T. supply switches, of the Q.M.B. type, ganged with the volume control **R11**. Looking at the underside of the chassis, the top and bottom right hand tags belong to **S11**, and the top and bottom left-hand tags to **S10**.

Switch	M.W.	L.W.	Gram.
S1	C	O	O
S2	C	O	O
S3	C	O	C
S4	C	O	O
S5	C	O	O
S6	C	C	O
S7	C	C	O
S8	O	O	C
S9	C	C	O
S12	C	O	C

S13 is the Q.M.B. scale lamp master switch, at the rear of the chassis. It is closed when the knob is down.

Coils.—**L1-L4, L5-L7, L8-L11** and the two I.F. transformers, **L12, L13** and **L14, L15** are in five screened units on the chassis deck. The **L5-L7** unit also contains **C2,** while the **L8-L11** unit also contains the L.W. trimmer and tracker **C26** and **C27.** The I.F. transformers contain their associated trimmers.

Scale Lamps.—These are two Osram M.E.S. types rated at 2.5 V, 0.2 A.

Fuse F1.—This is a Competa M.E.S. type, screwing into a holder on the chassis deck. It is rated at 0.15 A.

Batteries.—L.T., Three Star Type S.G.F. 3, 2 V 36 AH glass cell. H.T., Drydex 135 V, Type S55. Automatic grid bias is employed.

Battery Leads and Voltages.—Black lead, spade tag, L.T. negative; red lead, spade tag, L.T. positive 2 V; blue lead, black plug, H.T. negative; yellow lead, red plug, H.T. positive 135 V.

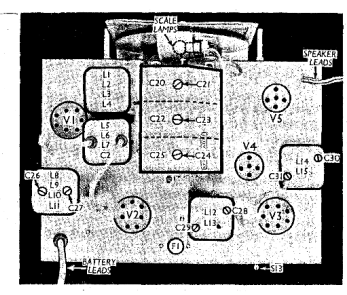
External Speaker.—Two terminals are provided on the internal speaker terminal strip for the connection of a high impedance (20,000 O) external speaker.

CIRCUIT ALIGNMENT

I.F. Stages.—Connect signal generator between top cap of **V2** and chassis, switch set to M.W. and feed in a 117.5 KC/S signal. Adjust **C31, C30, C29** and **C28** in that order for maximum output, keeping the input low.

H.F. and Oscillator Stages.—Adjust pointer to coincide with horizontal lines at top end of scale when gang is at maximum. Connect signal generator to A and E sockets, switch set to M.W., adjust pointer to 250 m. on scale, and feed in a 250 m. signal. Adjust **C24, C23** and **C21,** in that order, for maximum output.

Switch set to L.W., tune to 1,000 m. on scale, feed in a 1,000 m. signal, and adjust **C26** for maximum output. Feed in a 1,900 m. signal, tune receiver to it, and adjust **C27** while rocking gang.



The plan view of the chassis shows a clean lay-out. Note that C2 is included in the H.F. transformer (L5, L6, L7) can. The fuse is a flash-lamp type screwed into a holder on the chassis deck and S13 at the rear of the chassis is the master switch for the scale lamps.