

AMBASSADOR

Model 849

General Description : Eight-valve (including rectifier and tuning indicator), three-waveband superheterodyne receiver. Released 1949.

Power Supplies : A.C./D.C. 200-250 volts. (A.C. only where A.C. record players are incorporated.)

Valves : (V₁) UCH₄₂; (V₂) UAF₄₂ (I.F. and A.V.C. diode); (V₃) UAF₄₂ (det. diode and A.F.); (V₄) UAF₄₂ (phase inverter); (V₅ and V₆) UL_{41/42s} (push-pull output); (V₇) UY₂₁; (V₈) UM₃₄.

Alignment Procedure :

<i>Connect Generator</i>	<i>Inject</i>	<i>Tune Receiver to</i>	<i>Adjust in Order Stated</i>
(1) V ₁ grid through resistive termination	452 kc/s.	—	L ₁₀ ,* L ₉ ,* L ₇ ,* L ₈ *
(2) Aerial socket, through dummy aerial	452 kc/s.	M.W. Band	L ₁₁ (for minimum output)
	250 kc/s.	1200 m.	T ₄ , T ₁
	176.5 kc/s.	1700 m.	L ₄ , L ₁
	1.5 Mc/s.	200 m.	T ₅ , T ₂
	600 kc/s.	500 m.	L ₅ , L ₂
	15 Mc/s.	20 m.	T ₆ , T ₃
	7.5 Mc/s.	40 m.	L ₆ , L ₃

* Special damping procedure to be adopted. See page 159.

General Notes : The valve filaments are wired in two separate chains, each chain being ballasted separately by a 200-volt 25-watt lamp.

The bias to the A.F. amplifier and phase reverser is supplied by a 1.5-volt cell connected in a charging sense between the cathodes and chassis. Deterioration in this cell will result in distortion and loss of volume. If this occurs it is recommended that the cell be replaced by a 1000-ohm resistor by-passed by a 50- μ F. capacitor, to provide normal auto-bias.

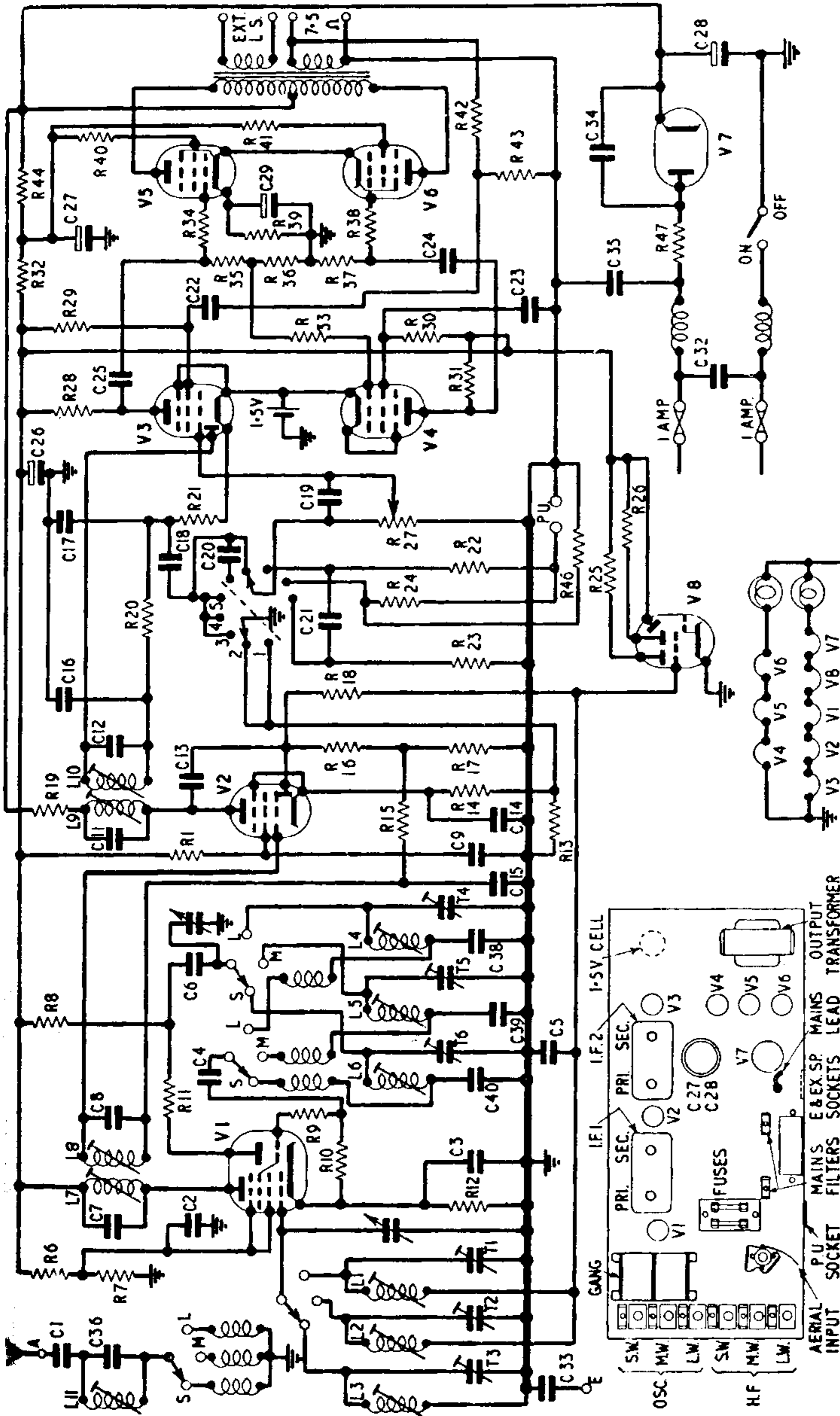
The I.F. amplification is extremely high, and a tendency to instability may occur. This will be most noticeable on the short wavebands, as a whistle on the sidebands of stations. It is due to regeneration in the I.F. amplifier, and can usually be cured by reversing the black and green leads to L₈ (I.F.1).

Earlier models have a 22-ohm limiting resistor in series with the reservoir capacitor. Should hum be excessive it is permissible to replace this by a lead and wire it in series with the 68-ohm limiter in the anode circuit.

Hum may also be due to deterioration in one or other of the output valves (UL₄₁), and replacement of these should be a first check for hum.

If it is required to use a P.U. with table or console models, a type must be selected with winding isolated from the player board, and the player board connected to true earth.

The two loudspeakers are connected in series, if replacement is carried out care must be taken to get the phasing of the speakers correct.



CIRCUIT AND TRIMMER LAY-OUT DIAGRAMS—
AMBASSADOR MODEL 849

Capacitors.

C1	0.001
C2	0.1
C3	0.05
C4	100 pF.
C5	0.1
C6	100 pF. (2%)
C7	100 pF. (2%)
C8	100 pF. (2%)
C9	0.05
C10	0.05
C11	100 pF. (2%)
C12	100 pF. (2%)
C13	15 pF. (2%)
C14	0.05

C15	0.1
C16	120 pF.
C17	120 pF.
C18	0.02
C19	25 pF.
C20	300 pF.
C21	700 pF.
C22	0.1
C23	0.1
C24	0.1
C25	0.1
C26	16 (150 v.)
C27	32 (350 v.)
C28	8 (350 v.)

C29	25 (25 v.)
C30	0.001
C31	0.1
C32	0.05 (1000 v.)
C33	0.01
C34	0.02
C35	0.05
C36	500 pF.
C37	100 pF.
C38	200 pF.
C39	560 pF.
C40	6000 pF.
C41	50 pF. (2%)

Resistors.

R1	39k (1 W.)
R6	22k (1 W.)
R7	47k (1 W.)
R8	15k
R9	33
R10	47k
R11	33
R12	180
R13	220k
R14	270
R15	1M
R16	330k
R17	680k
R18	1M

R19	1000
R20	47k
R21	470k
R22	220k
R23	330k
R24	470k
R25	1M
R26	1M
R27	2M (Pot.)
R28	100k
R29	470k
R30	470k
R31	100k
R32	3.3k (2 W.)

R33	39k
R34	10k
R35	1.1M
R36	20k
R37	1M
R38	10k
R39	110 (2 W.)
R40	100
R41	100
R42	100
R43	100
R44	1k (3 W.)
R46	470k
R47	68 (3 W.)

AMBASSADOR RECEIVERS

GENERAL NOTES

Manufacturers : R. N. Fitton, Ltd., Princess Works, Brighouse, Yorkshire.

Removal of Chassis :

(a) *Table Models.* Lie receiver on back and unscrew chassis-retaining bolts on underside of cabinet. Stand receiver upright and remove back panel and loudspeaker plugs, etc. Remove knobs (clip-on knobs which are stiff can be removed by pressing string underneath them) and withdraw chassis from cabinet.

(b) This system also applies to *Table Radiograms* and *Consoles*. Large radiograms employ various methods, but no difficulty should be experienced, as fitting has always been kept as simple as possible.

I.F. Alignment : Except on Models 4756, 548, 849 and 650H, all alignment is carried out in the normal manner, *i.e.*, adjustment of each I.F. trimmer, in turn, for maximum output. On the chassis types 4756, 548 and 849 a damping stick is necessary. This takes the form of a 22k resistor in series with a 0.01- μ F. capacitor. In use, the 0.01- μ F. capacitor is clipped on to the chassis and the free end of the 22k resistor is connected to the live end of one winding; the other winding of the same transformer is then adjusted for maximum output. The 22k resistor is then transferred to this winding and the first winding adjusted. This alignment method gives a broad and flat I.F. response, with a consequent improvement in reproduction.

In the 650 receiver it is necessary to supply external bias from a battery during alignment. The positive terminal of a 9-volt battery is connected to chassis, and the 6-volt terminal to the A.V.C. end of the I.F. valve grid coil. The signal generator earthy lead is connected to -4.5 volts. Alignment of the second I.F. is then carried out with damping, as above. The first I.F. is then adjusted for maximum output, without damping. The primary and secondary adjustments must be carried out two or three times. The resultant I.F. response has a main peak at 420 kc/s., and should not fall below -4 db. until the generator output is varied beyond 8 kc/s. to one side of 420 kc/s. On the other side of 420 kc/s. it should be sharply attenuated.

A non-metallic trimming tool must be used for aligning the 849 and later models.

On A.C./D.C. table models produced before 1948, a 0.01- μ F. capacitor is used to isolate the pick-up from chassis. If it is desired to use a record player, a crystal pick-up can be employed without alteration. If it is desired to use a magnetic pick-up the isolation capacitor must be shorted out. It would be wiser in this case to use a pick-up which has its windings isolated from the player board, so that the latter can be earthed.