

# Trader

## SERVICE SHEET

# 3117

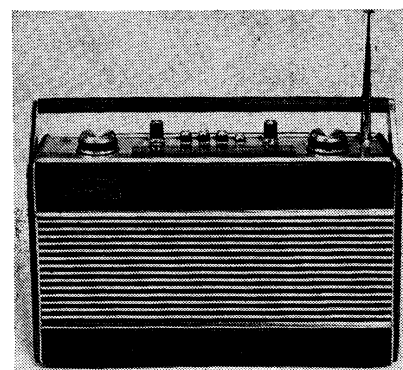
## Roberts

### R606

#### AM/FM

#### Portable Receiver

Contained in a cushioned black, silver-trimmed cabinet with natural teak ends, the Roberts R606 covers medium and long wave broadcast bands on AM, and the broadcast VHF band on FM. The receiver uses three modules in combination with a discrete a.f. amplifier; these comprise an AM/FM tuner, and two separate i.f. amplifiers, one for AM, the other for FM. Reception on AM is from an internal ferrite aerial and on FM from a 29in (extended) telescopic aerial. Switchable a.f.c. is used on FM. Powered from six 1.5V batteries (9V), the receiver features rotary treble, bass, volume and tuning controls, with push-button waveband and a.f.c. selection. Sockets allow for connection of an external VHF aerial, an external loudspeaker or earphone (with automatic internal loudspeaker muting), and an external 9V d.c. supply. Station logging markers are provided for the tuning scale. A carrying handle is fitted.



### Dismantling

(See disassembly diagram)

1. Invert complete receiver onto a protective surface, with the loudspeaker facing front.
2. Prise out wood bottom cover by levering outwards polished end flanges.
3. Release catch at l.h. end retaining moulded battery holder, lift out holder (note stud at holder r.h. end entering recess in cabinet r.h. end) and disconnect receiver battery leads from holder. Note polarity.
4. Slacken, but do not remove, two screws A which hold fibre strips connected to the receiver chassis top escutcheon. Remove completely screw B securing VHF telescopic aerial.
5. Push complete chassis out through top of cabinet. If completely removing chassis from cabinet, disconnect loudspeaker leads.
6. The complete chassis, less speaker, can now be laid flat for servicing, and the speaker and battery leads connected appropriately for testing.

### Alignment

#### Equipment required

1. AM/FM signal generator covering 260 to 1500kHz AM, 90 to 102MHz with a.f. output of 1000Hz. Normal modulation 400Hz at 30 per cent.
2. Oscilloscope.
3. Valve voltmeter (VTVM) a.c. voltmeter, or suitable output meter.
4. Input matching components as detailed in instructions.

NOTE. No IF adjustment instructions are provided; alignment of IF modules is carried out during manufacture, and no further adjustment should be attempted.

#### Preliminary adjustments

Check d.c. supply voltage (must be 9.0V across capacitor C40).

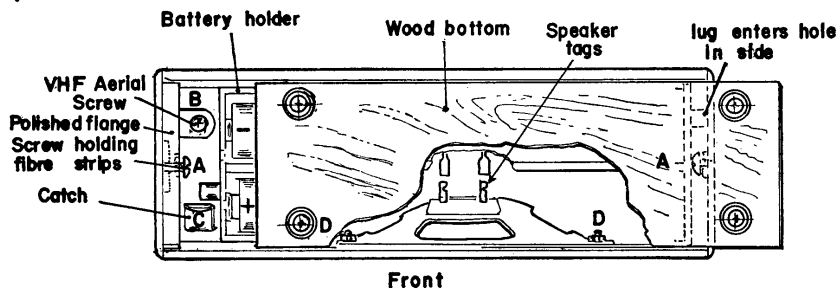
1. **Output stage d.c. balance.** Adjust preset R26 to give 4.25V d.c. between Tr5 emitter (junction Tr5 and R24) and chassis.
2. **Output stage quiescent current.** Place milliammeter, set to 5mA range, in series with the link LK on the p.c. board underside. Allow one minute

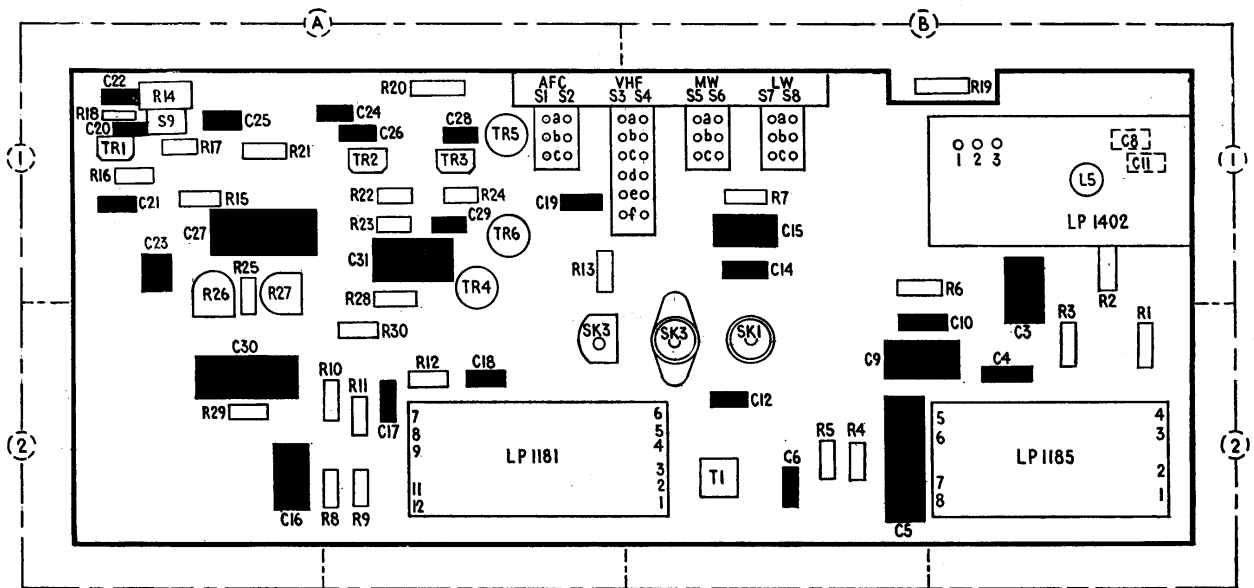
(continued on opposite page)

### Brief Specification

Power supply	Six SP2 (or equivalent) batteries or 9V d.c.
Wavebands	AM: MW 185 to 566m (530 to 1620kHz) LW 1152 to 2000m (150 to 265kHz) FM: VHF 17.5 to 104.5MHz
Intermediate frequencies	AM: 470kHz FM: 10.7MHz
AF output	1.5W
Transistors	BC149 (two), BC158, AC128/T2, AC187, AC188
Modules	RF Tuner: Mullard type LP1402 AM IF: Mullard type LP1181 FM IF: Mullard type LP1185
Loudspeaker	7 x 4in (178 x 102mm), impedance 4Ω
Input and output sockets	VHF aerial, 9V d.c., external loudspeaker or earphone
Dimensions	Width 12½in (318mm), height 8½in (210mm), depth 3½in (89mm)
Manufacturer and Service Department	Roberts Radio Company Ltd., Molesey Avenue, West Molesey, Surrey KT8 ORL. 01-979 7474

### Disassembly





↑ Printed circuit panel

**Alignment (continued)**

warm-up, then adjust preset **R27** for a current of 3-5mA.

**3. Output stage dynamic balance.** With a 1000Hz a.f. sinewave signal fed into the junction **C19/R14**, and the oscilloscope connected across the loudspeaker terminals, adjust preset **R26** for sinewave symmetry at onset of "clipping".

**MW**

1. Select "MW". Tune receiver to 200m and signal generator to 1500kHz. Feed in signal via an inductive loop to ferrite rod aerial. Connect output meter

across loudspeaker terminals. Adjust **C7, C13** for maximum.

2. Retune signal generator to 560kHz, receiver to 536m. Adjust **T1, L1** for maximum.

3. Repeat steps 1 and 2 for optimum result.

**LW**

4. Select "LW". Tune receiver to 200m, signal generator to 263kHz. Adjust **C9, C15** for maximum.

5. Retune receiver to 536m, signal generator to 158kHz. Adjust **L2** for maximum.

6. Repeat steps 4 and 5 for optimum result.

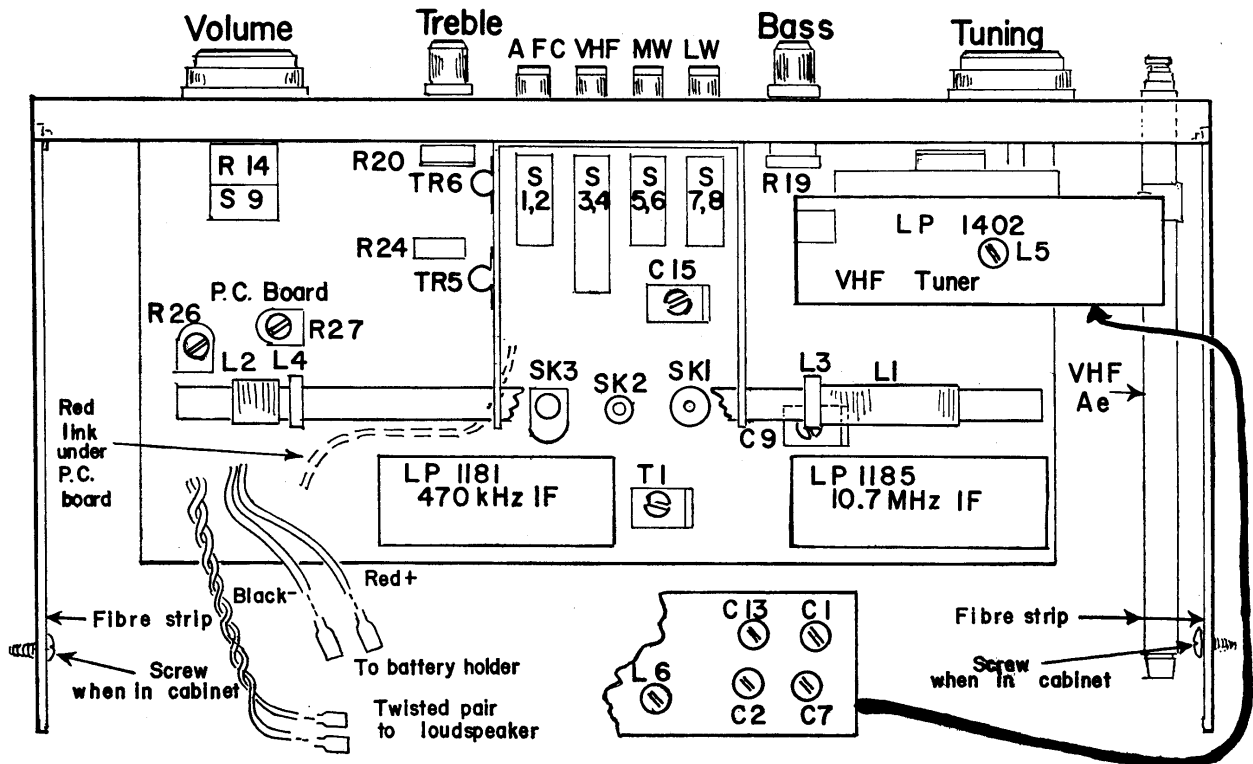
**VHF/FM**

7. Select "VHF/FM". Tune receiver and FM signal generator to 102MHz. Inject signal into VHF aerial socket; depress "AFC" button. Adjust **C2, C1** for maximum.

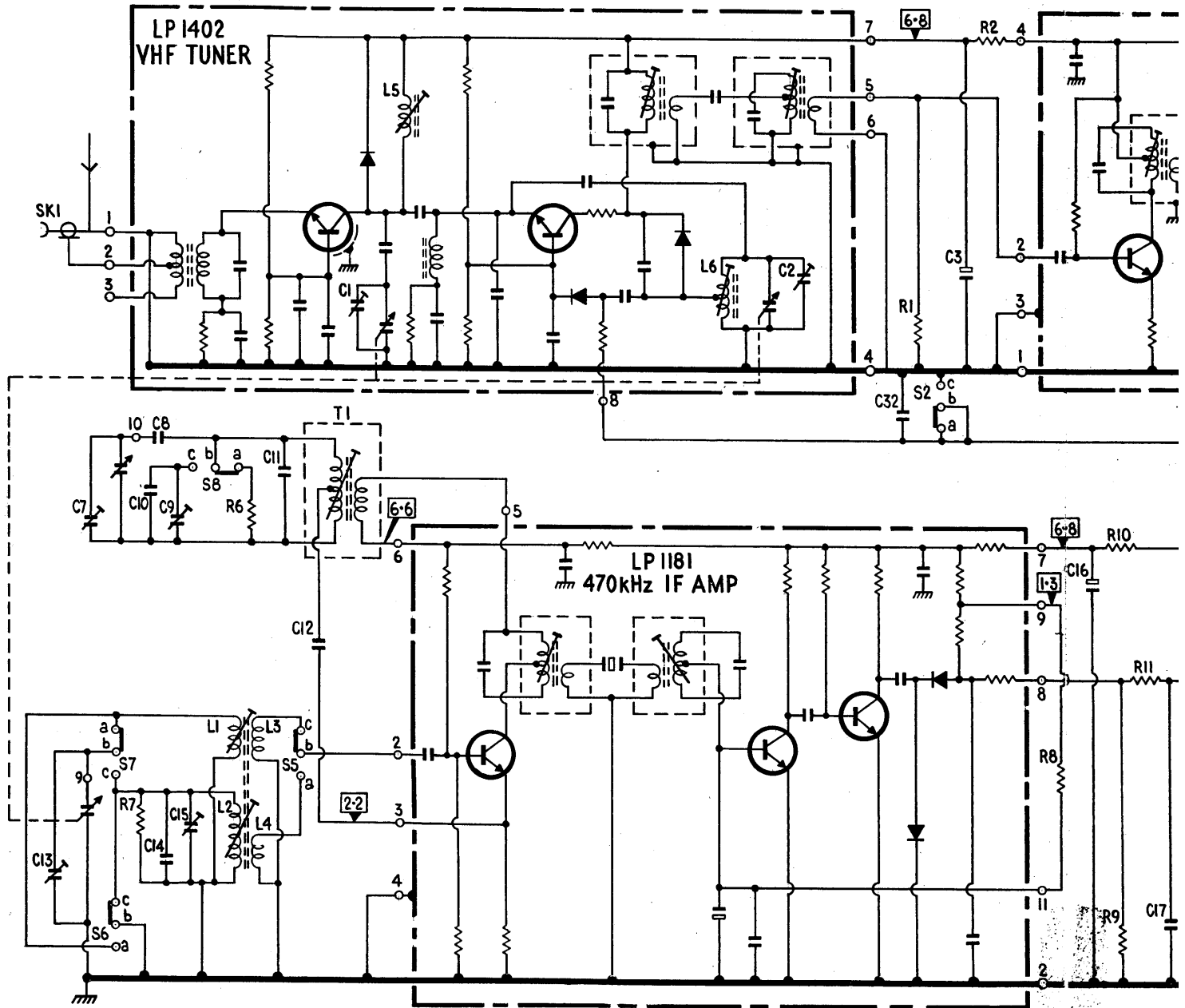
8. Retune receiver and signal generator to 90MHz; with conditions as in step 7, adjust **L6, L5** for maximum.

9. Repeat steps 7 and 8 for optimum result.

Chassis ↓



C	13 7	10 8 14 9 15	11 12			32	3		16	17
R		7	6				1	2	8	9 10 11
L			12 3 4	T1						



**COMPONENTS**

**Resistors**

R1	270Ω	B2	R16	1.8kΩ	A1
R2	68Ω	B1	R17	5.6kΩ	A1
R3	56kΩ	B2	R18	180Ω	A1
R4	220Ω	B2	R19	10kΩ*	B1
R5	22kΩ	B2	R20	10kΩ*	A1
R6	150kΩ	B1	R21	1kΩ	A1
R7	150kΩ	B1	R22	1kΩ	A1
R8	39kΩ	A2	R23	12Ω	A1
R9	390Ω	A2	R24	560Ω	A1
R10	8.2kΩ	A2	R25	56kΩ	A1
R11	8.2kΩ	A2	R26	47kΩ*	A1
R12	8.2kΩ	A2	R27	220Ω*	A1
R13	8.2kΩ	A1	R28	8.2kΩ	A1
R14	100kΩ*	A1	R29	390Ω	A2
R15	150kΩ	A1	R30	270Ω	A2

**Capacitors**

C1	Trimmer	on VHF Tuner	C12	0.022μF	B2
C2	Trimmer	on VHF Tuner	C13	Trimmer	on VHF tuner
C3	150μF	B2	C14	47pF	B1
C4	0.01μF	on VHF tuner	C15	80pF*	B1
C5	470μF	B2	C16	150μF	A2
C6	220pF	B2	C17	220pF	A2
C7	Trimmer	on VHF tuner	C18	220pF	A2
C8	330pF	B1	C19	0.1μF	A1
C9	80pF*	B2	C20	0.1μF	A1
C10	220pF	B2	C21	270pF	A1
C11	8.2pF	B1	C22	0.47μF	A1
			C23	47μF	A1
			C24	not quoted	A1

C25	47μF	A1
C26	0.22μF	A1
C27	470μF	A1
C28	69pF	A1
C29	470pF	A1
C30	470μF	A2
C31	680μF	A1

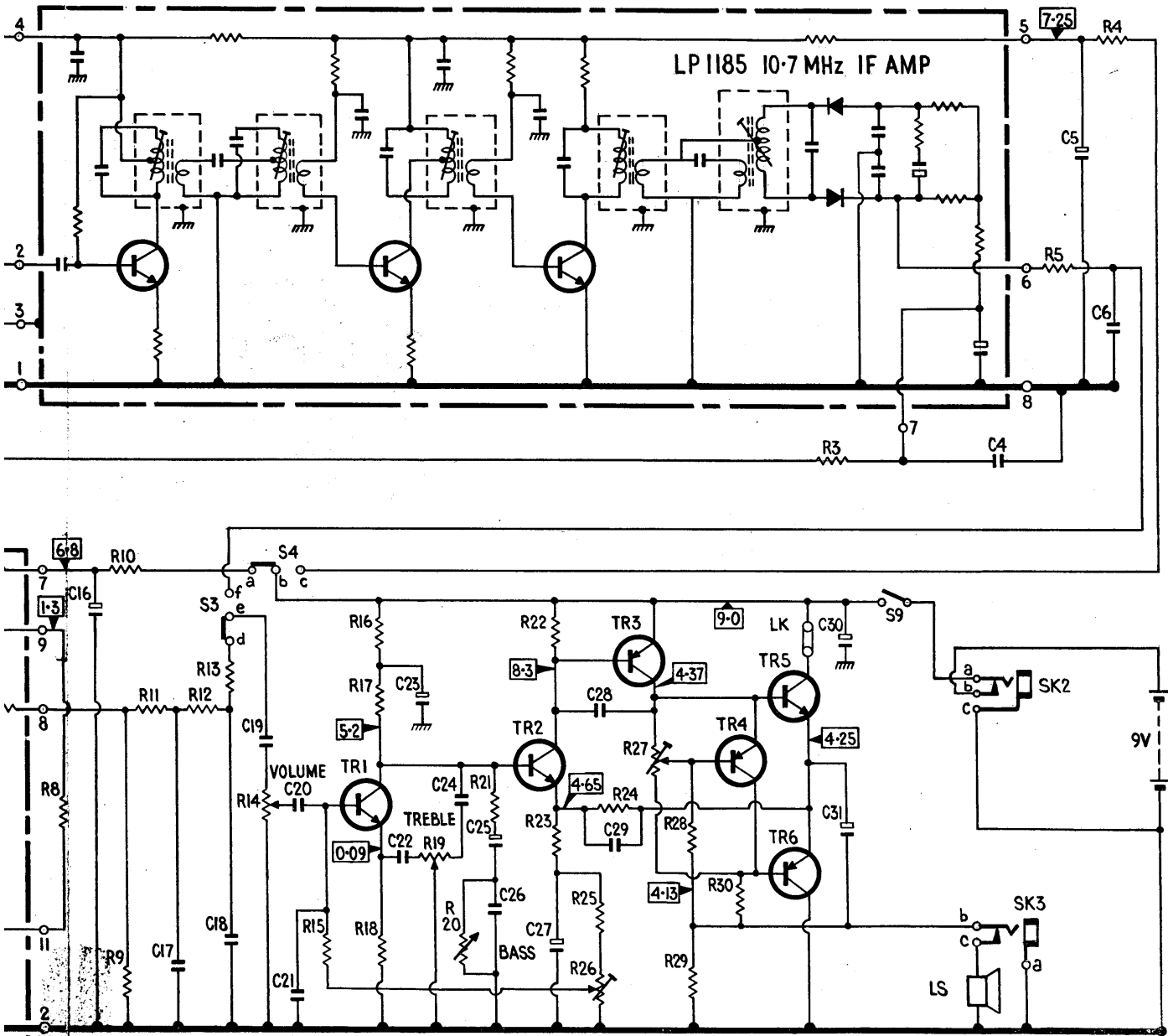
\* Variable

**Transistors**

Tr1	BC149	A1
Tr2	BC149	A1
Tr3	BC158	A1
Tr4	AC129/T2	A1
Tr5	A1187	A1
Tr6	A1888	A1

Printed in G. Stamford Str.

16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	4										
8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	3	5	4



- Resistors:
- BC149 A1
  - BC149 A1
  - BC159 A1
  - AC123/T2 A1
  - AT187 A1
  - A 688 A1

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