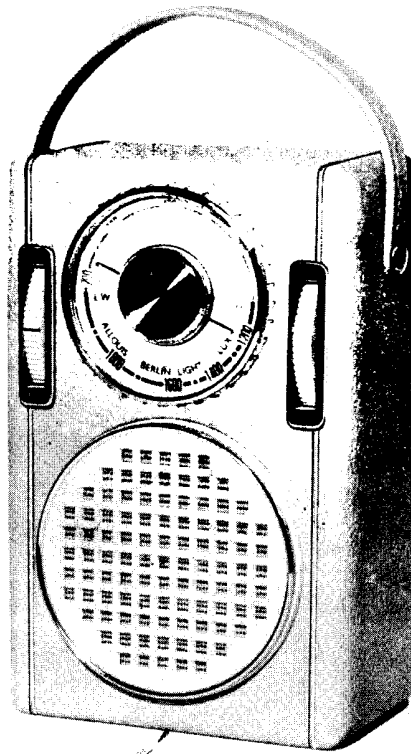


DECCA

SERVICE NOTES

TRANSISTOR RECEIVER TP 75



DECCA RADIO AND TELEVISION

branch of The Decca Record Co., Ltd.

**INGATE PLACE,
QUEENSTOWN ROAD, LONDON, S.W.8.**

MACaulay 6677

S P E C I F I C A T I O N

- AERIALS:** Internal aerials for Medium and Long Wavebands. Provision for car aerial.
- WAVEBANDS:** Medium 190-565 metres
Long Waves 1120-1950 metres
Intermediate frequency 472 Kc/s
- LOUDSPEAKER:** 3 $\frac{3}{8}$ " round high flux density speaker - 50 ohms.
- TRANSISTORS:**
- | | |
|----------|--------------------|
| OC44 | Frequency Changer |
| OC45 | 1st I.F. Amplifier |
| OC45 | 2nd I.F. Amplifier |
| OA70 | Detector Diode |
| OC81/D | Audio Amplifier |
| (2) OC81 | Output |
- BATTERIES:** Two Vidormax T6001 or Ever Ready PP6 or equivalents. Please note we recommend that BOTH are replaced at the same time.

GENERAL NOTES - TRANSISTOR SERVICING

- 1) Take great care not to scratch or chip the paint covering on glass-cased transistors. If light is admitted, the transistors will act as a photo electric device (i.e. light will modulate the transistor current) and this may produce hum etc.
- 2) When soldering transistor connections, it is essential to use a heat sink (preferably a reasonably sized pair of pliers). If excessive heat is transmitted to the transistors, it could easily cause serious damage and transistors should not be subjected to a temperature above 60°C. It is also important to realize that the electric soldering iron should be earthed, irons often have a very slight leak when hot and the resultant current can often damage a new transistor.
- 3) When replacing transistors, please note that a standard wiring coding has been used in the model TP.50 i.e.

Green.....Base

White.....Collector

Red.....Emitter

CIRCUIT DESCRIPTION.

The first stage consists of an OC44 transistor operating in a self oscillator mixing circuit. Two OC45's (T2 and T3) act as 1st and 2nd I.F. transformers, the signal being fed by the 3rd I.F. transformer, (T3) to the detector diode (OA70)

AGC is supplied to the base of the 1st I.F. amplifier (TR2) via the secondary of T1. The detected signal is amplified by an OAC81D (TR4), the amplified signal being applied to the primary of (T4), the secondaries of which drive the output transistors (TR5, TR6). No output transformer is used, the speech coil of the loudspeaker being used for the transistor loading. Negative feedback is applied to the base of TR4 from the junction of C22 and the loudspeaker.

MAIN PARTS LIST.

<u>QUANTITY</u>	<u>DESCRIPTION</u>	<u>CIR. REF.</u>	<u>PART NO.</u>
1	Aerial Coil & rod assembly	L1/2/3	B56630
1	Medium Wave aerial coil M.W.	L1	A56627
1	Long Wave aerial coil L.W.	L2	A56628
1	Aerial coupling coil	L3	A56626
1	Aerial rod		A56618
1	Ganged condenser	C3/10	A58067
1	Aerial Trimmer	C2	A58006
1	Oscillator Trimmer	C8	A58006
1	Driver Transformer	T4	A56619
2	Trimmer		A58066
2	Battery Connector		A59927
1	Oscillator Coil Pack	T5	A56621
1	1st I.F. Transformer	T1	A56623
1	2nd I.F. Transformer	T2	A56623
1	3rd I.F. Transformer	T3	A56625
1	Potentiometer 5K Lin.	VR1	A59922
1	Potentiometer		A50613
1	Control Knob - Wavechange		B59923/RS
2	Knob Spring Clips		A52161
1	Volume Control Knob		A59923
2	Knob Spring Clips		A52161
1	Case Back		C64476
1	Carrying Handle		A64476
1	Dial		A59928
1	Tuning Knob		C59804
1	Tuning Pointer		A55991
1	Tuning Pointer Spring Clip		A52133A
1	Wavechange/On Off switch	SLA/B/C	B599921
1	Speaker Grille		D55963
1	Wavechange/On Off escutcheon		A50618
1	Volume Control escutcheon		A50619
1	50 ohms $3\frac{3}{8}$ " diameter Loudspeaker		B59929
4	Speaker securing clips		A52315
1	Aerial socket		A550088
1	Aerial socket fixing clips		A52159
2	Battery Connector clips		A59927

CONDENSERS.

CIR. REF.	VALUE	WORKING VOLTAGE	TOLERANCE	DESCRIPTION PART NO.	LOCATION
1		12V	2 $\frac{1}{2}$ %	Suflex	A4
2/8	3/30pf.				A4
3/10				A58067 Main tuning condenser	B2
4/9	3/30pf.			A58067 Trimmers	B2
5	45mfd.	10V		Electro CE85	D2
6	.05mfd.	3V		Erie Transcap	A2
7	.01mfd.	3V		Erie Transcap	A3
8	3/30pf.				A1
9	See C4				B2
10	See C3				B2
11	200pf.	125V	2 $\frac{1}{2}$ %	Suflex	A1
12	220pf.				A2
13	56pf.	125V	2 $\frac{1}{2}$ %	Suflex	A2
14	10mfd.	6V		Electro CE10	C2
15	10mfd.	6V		Electro CE10	C2
16	18pf.	125V	2 $\frac{1}{2}$ %	Suflex	C2
17	102mfd.				C3
18	10mfd.	6V		Electro CE10	C3
19	.05mfd.	3V		Erie Transcap	B3
20	10mfd.	6V		Electro CET	C4
21	50mfd.	6V		Electro CE24	D4
22	50mfd.	6V		Electro CE24	D1

RESISTORS.

CIR. REF.	VALUE	WATTAGE	TOLERANCE	LOCATION
1	220K	$\frac{1}{4}$ W	10%	A4
2	330K	$\frac{1}{4}$ W	10%	A2
3	10K	$\frac{1}{4}$ W	10%	A3
4	3.9K	$\frac{1}{4}$ W	10%	A3
5	82K	$\frac{1}{4}$ W	10%	C2
6	1K	$\frac{1}{4}$ W	10%	C2
7	3.9K	$\frac{1}{4}$ W	10%	C3
8	560 Ω	$\frac{1}{4}$ W	10%	C2
9	1.5K	$\frac{1}{4}$ W	10%	C3
10	4.7 Ω	$\frac{1}{4}$ W	5%	A3
11	18K	$\frac{1}{4}$ W	10%	D4
12	470 Ω	$\frac{1}{4}$ W	10%	B3
13	680 Ω	$\frac{1}{4}$ W	10%	D3
14	47K	$\frac{1}{4}$ W	10%	D3
15	1K	$\frac{1}{4}$ W	10%	D4
16	2K	$\frac{1}{4}$ W	5%	D2
17	100 Ω	$\frac{1}{4}$ W	5%	D2
18	2K	$\frac{1}{4}$ W	5%	D2
19	100 Ω	$\frac{1}{4}$ W	5%	D2
20	4.7 Ω	$\frac{1}{4}$ W	5%	D2
21	4.7 Ω	$\frac{1}{4}$ W	5%	D2
22	680 Ω	$\frac{1}{4}$ W	10%	C2
23	10K	$\frac{1}{4}$ W	10%	C2
24	470 Ω	$\frac{1}{4}$ W	10%	C3

ALL RESISTORS DUBILIER BTT

TRANSISTOR ALIGNMENT INSTRUCTIONS.

Readings taken with meter across loudspeaker coil on low A.C. range.

I.F. ALIGNMENT.

Set signal generator to 472 kc/s.

Turn main tuning condenser until gang is closed.

Switch to medium waveband.

Connect signal generator across coupling coil L3 via a 2K resistor.

Feed in modulated signal to give low output indication.

Peak cores T1, T2 and T3 for maximum output.

Adjust generator level whenever necessary.

Repeat above operation.

R.F. ALIGNMENT.Medium Wave.

Tune receiver to 555 metres.

Set signal generator to 540 kc/s.

Feed signal into coupling coil L3 via a 2K resistor.

Adjust oscillator coil T5 for maximum output.

Tune receiver to 192 metres.

Adjust signal generator to 1560 kc/s.

Adjust C9 for maximum output.

Repeat above operation.

Tune receiver to 500 metres.

Re-set signal generator to maximum output, approximately 600 kc/s.
and adjust L1 for maximum output.

Re-tune receiver to 200 metres.

Re-set signal generator for maximum output, approximately 1500 kc/s.
and adjust C4 for maximum output.

Repeat above operation.

Long Wave.

Close gang.

Set signal generator to 150 kc/s and adjust C8 for maximum output.

Tune receiver to 1760 metres.

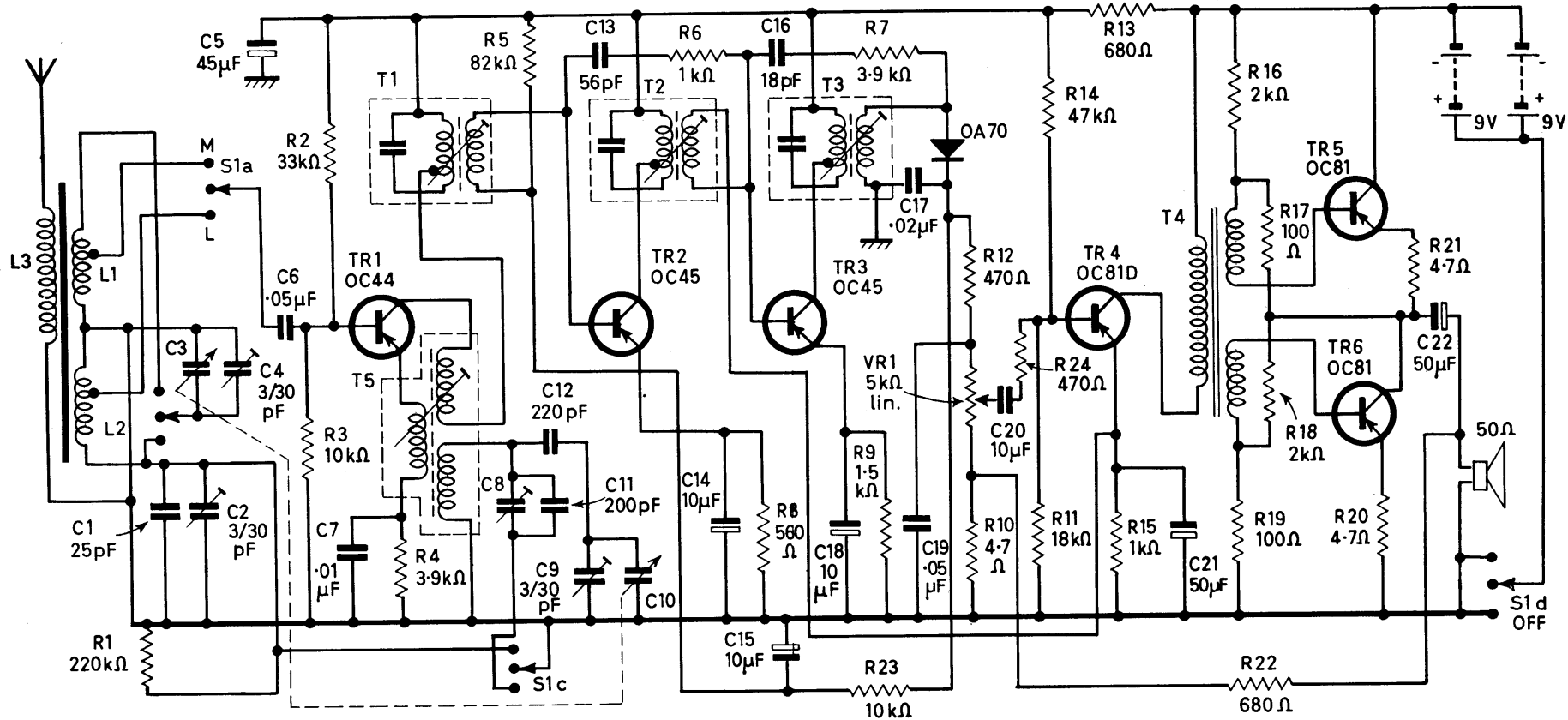
Re-set signal generator to maximum, approximately 170 kc/s.

Adjust L2 for maximum output.

Set receiver to 1250 metres.

Re-set signal generator to maximum, approximately 240 kc/s
and adjust C2 for maximum

Repeat above operation.



VOLTAGE READNG CHART

TRANSISTOR	EMITTER (Red)	COLLECTOR (White)	BASE (Green)
TR1	1.75v.	7.85v.	1.8v.
TR2	0.7v	7.3v.	0.8v.
TR3	1.45v.	7.3v.	1.6v.
TR4	1.6v.	8.6v.	1.65v.
TR5	4.75v.	9v.	4.9v.
TR6	-	4.5v.	0.2v.

1. Voltage readings taken on AVO Model 8 on 10v. range.
2. Readings taken from transistor terminal to positive earth point under zero signal conditions with volume control at minimum.
3. Total current reading 15mA.

