

Transistor Table

Transistor	Emitter (V)	Base (V)	Collector (V)
VT1 NKT 152	0.90	0.85	6.4
VT2 NKT 153/35	0.65	0.70	7.2
VT3 NKT 154/35	0.95	1.0	7.2
VT4 NKT 254	1.4	1.4	8.8
VT5 NKT 251	—	0.15	9.0
VT6 NKT 251	—	0.15	9.0

CIRCUIT ALIGNMENT

Equipment Required.—A signal generator with a 30 per cent modulated output at 1,000c/s or 400c/s; an output meter or a 0-5V A.C. voltmeter; an R.F. coupling coil; two 0.1 μ F capacitors and a bladed type insulated trimming tool.

- 1.—Connect the output meter in place of the loudspeaker, or the 0-5 A.C. voltmeter across the loudspeaker speech coil. Set the volume control to maximum output.
- 2.—Switch receiver to M.W. and tune to a quiet spot around 450m. Insert a 0.1 μ F capacitor in each generator lead and connect the generator across L3.
- 3.—Feed in a 470kc/s signal and adjust the generator for an output of 50mW in the

Resistors

R1	56k Ω	A3
R2	10k Ω	A3
R3 \ddagger	3.9k Ω	B3
R4	68k Ω	B3
R5	8.2k Ω	B2
R6	680 Ω	B3
R7 \ddagger	4.7k Ω	B3
R8	22k Ω	B3
R9	4.7k Ω	C3
R10	1k Ω	C3
R11 \ddagger	390 Ω	B3
R12	470 Ω	C3
R13	2.2k Ω	B2
R14	68k Ω	B2
R15	22k Ω	C2
R16 \ddagger	680 Ω	B1
R17	1M Ω	B2
R18	1k Ω	C1
R19	4.7k Ω	C2
R20 \ddagger	91 Ω	C2
R21	100 Ω	B1
R22	4.7 Ω	B2
R23 \S	4.7k Ω	B3
RV1	5k Ω	A2

Capacitors

C1	344pF	A2
C2	25pF	A2
C3	82pF	C1
C4	0.04 μ F	A3

C5	0.01 μ F	B3
C6	250pF	B3
C7	286pF	A3
C8	229pF	A2
C9	25pF	A2
C10	200pF	A1
C11	80pF	A1
C12	8 μ F	B2
C13	0.04 μ F	B3
C14	250pF	C3
C15 \ddagger	175pF	C3
C16	0.04 μ F	C3
C17	0.1 μ F	C3
C18	250pF	C3
C19 \ddagger	60pF	C3
C20 \ddagger	0.03 μ F	C2
C21	0.03 μ F	C2
C22	100 μ F	B1
C23	8 μ F	B2
C24	100 μ F	C1
C25	100 μ F	B1
C26	0.25 μ F	B2
C27	0.04 μ F	B3
C28	0.04 μ F	B2

Coils*

L1	—	B1
L2	1.4	B1
L3	—	B1
L4	11.2	C1
L5	—	C1

L6	—	B3
L7	—	B3
L8	—	B3
L9	—	B3
L10	—	B3
L11	—	C3
L12	—	C3
L13	—	C3
L14	—	C3
L15	3.0	—

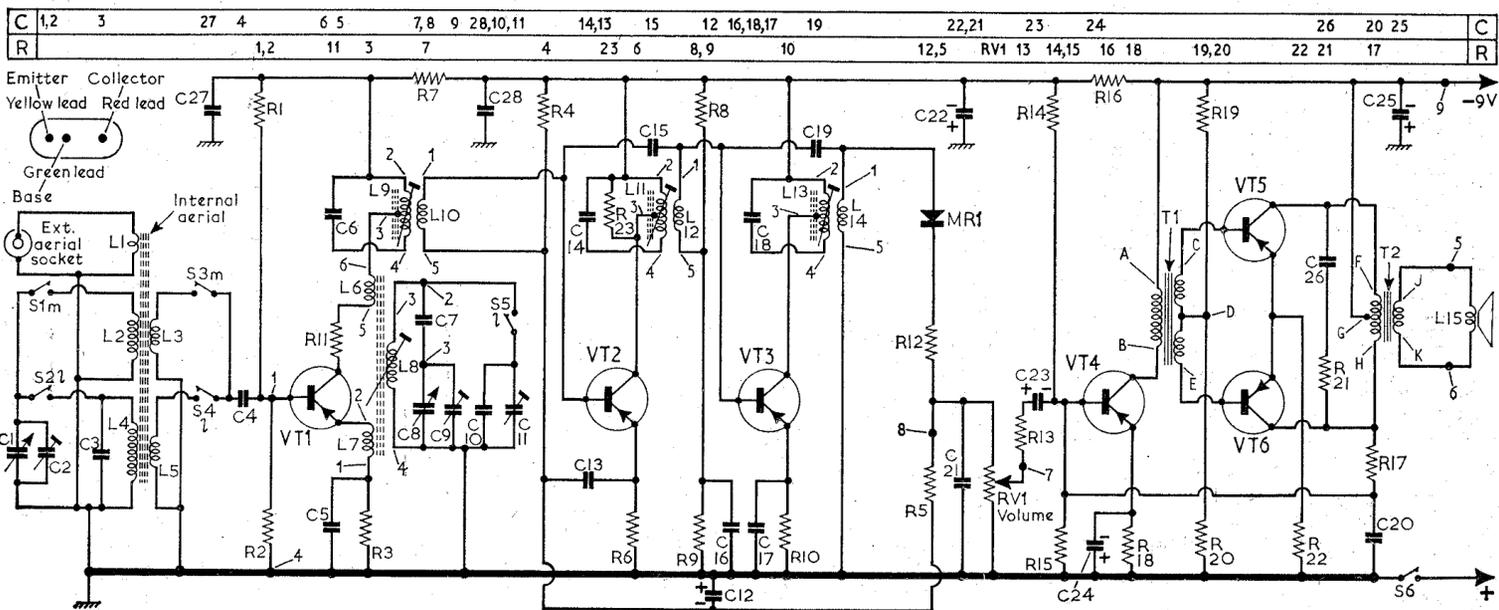
Transformers*

T1	Pri	153.0	C2
	Sec	37.0	
	Sec	37.0	
T2	Pri	3.6	B2
	Pri	3.6	
	Sec	0.22	

Miscellaneous

MR1 \ddagger	NKT155	C3
S1-S5	—	A2
S6	—	A2

*Approximate D.C. resistance in ohms.
 \S In some receivers only.
 \ddagger See "Modifications."



output meter (0.5V on the A.C. voltmeter). Adjust the cores of L13 (location reference C3), L11 (C3) and L9 (B3) in that order for maximum output. Repeat as necessary.

- 4.—Disconnect the signal generator and output meter and replace the printed panel in the case. Fit the tuning knob so that with the gang fully meshed, the datum marks line up with the brass studs on the case.
- 5.—Connect the signal generator output leads to the R.F. coupling coil and place the coil at a distance of approximately 12in from the centre of ferrite rod, coaxial with the rod on the L2 side. Connect the output meter at the panel end of the loudspeaker leads.

Note: The oscillator coil L8 can be adjusted through the foil side of the printed panel and capacitors C2 and C9 through the escutcheon aperture. C2 is the upper adjustment.

- 6.—Tune receiver to 500m. Feed in a 600kc/s signal and adjust L8 (A3) and L2 (A1) for maximum output.
- 7.—Tune to 200m, feed in a 1,500kc/s signal and adjust C9 for maximum output. Tune to 214.3m, feed in 1,400kc/s signal and adjust C2 for maximum output.

- 8.—Repeat operations 6 and 7 until no further improvement can be obtained.
- 9.—Switch receiver to L.W. and tune to 1,400m. Feed in a 214.3kc/s signal and adjust C11 (A1) and L4 (C1) for maximum output.

Where it is not convenient to use the coupling loop method of signal injection (the preferred method), the external aerial socket may be used although this may introduce an error at the H.F. end of the M.W. band.

MODIFICATIONS

Some receivers employ an alternative printed circuit panel using Mullard transistors in

place of Newmarket transistors as follows: VT1 OC44, VT2 OC45, VT3 OC45, VT4 OC81D, VT5 OC81 and VT6 OC81. Detector diode MR1 is a Mullard OA70.

R7, R11, C20, C27 and C28 are omitted. A 1.2k Ω resistor (R7 on the Mullard printed panel illustration) is inserted in series with C15 between C15 and the base of VT2. A 3.9k Ω resistor (R11 on the Mullard printed panel illustration) is inserted in series with C19 between C19 and the base of VT3. A 0.3 μ F capacitor (C20 on the Mullard printed panel illustration) is connected from the junction of MR1 and R12 to chassis. R3 is 3.9k Ω not 3.3k Ω , R16 is 470 Ω not 680 Ω , R20 is 100 Ω not 91 Ω , C15 is 56pF not 175pF and C19 is 18pF not 60pF.

EKCO - PT378