

## 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 0.1μF 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 0.1μF 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	56kΩ	A3
R2	10kΩ	A3
R3‡	3.3kΩ	B3
R4	68kΩ	B3
R5	8.2kΩ	B2
R6	680Ω	B3
R7‡	4.7kΩ	B3
R8	22kΩ	B3
R9	4.7kΩ	C3
R10	1kΩ	C3
R11‡	390Ω	B3
R12	470Ω	C3
R13	2.2kΩ	B2
R14	68kΩ	B2
R15	22kΩ	C2
R16‡	680Ω	B1
R17	1MΩ	B2
R18	1kΩ	C1
R19	4.7kΩ	C2
R20‡	91Ω	C2
R21	100Ω	B1
R22	4.7Ω	B2
R23§	4.7kΩ	B3
RV1	5kΩ	A2

## Capacitors

C1	344pF	A2
C2	25pF	A2
C3	82pF	C1
C4	0.04μF	A3

C5	0.01μF	B3
C6	250pF	B3
C7	286pF	A3
C8	229pF	A2
C9	25pF	A2
C10	200pF	A1
C11	80pF	A1
C12	8μF	B2
C13	0.04μF	B3
C14	250pF	C3
C15‡	175pF	C3
C16	0.04μF	C3
C17	0.1μF	C3
C18	250pF	C3
C19‡	60pF	C3
C20‡	0.03μF	C2
C21	0.03μF	C2
C22	100μF	B1
C23	8μF	B2
C24	100μF	C1
C25	100μF	B1
C26	0.25μF	B2
C27	0.04μF	B3
C28	0.04μF	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 Sec 37.0 Sec 37.0 }	C2
T2	{ Pri 3.6 Pri 3.6 Sec 0.22 }	B2

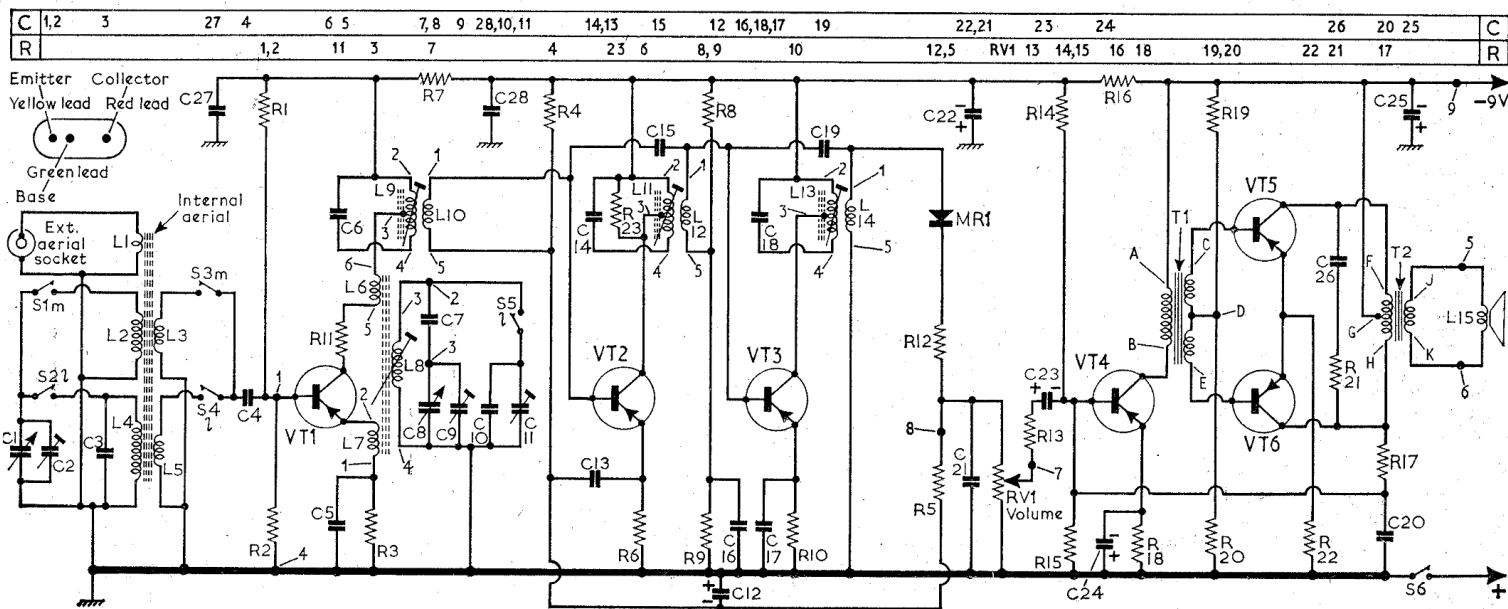
## Miscellaneous

MR1‡	NKT155	C3
S1-S5	—	A2
S6	—	A2

\*Approximate D.C. resistance in ohms.

§In some receivers only.

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

**EKCO - PT378**