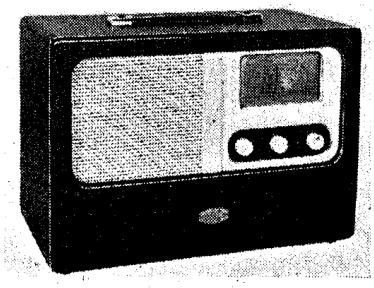
AMPLION - ADP1, ADP2



The Amplion ADP2 portable.

CIRCUIT ALIGNMENT

It is necessary to remove the chassis from the carrying case before commencing these operations.

I.F. Stages.—Switch set to M.W., tune to 200 m on scale, turn volume control to maximum, and connect signal generator (via an 0.1 μF capacitor in the "live" lead) to control grid (top cap) of **V1** and chassis. Feed in a 465 kc/s (645.16 m) signal, and adjust **C20, C21, C22** and **C23** (location references B2, C2) for maximum output, progressively attenuating the signal generator output as the circuits are aligned, to avoid A.G.C. action.

R.F. and Oscillator Stages.—With the gang at maximum capacitance the pointer should be horizontal and coincident with the high-wavelength end of the M.W. scale. It may be adjusted in position by rotating it on the gang capacitor spindle. Loosely couple the signal generator by means of a 6in piece of wire laid close to the frame aerial winding.

M.W.—Switch set to M.W., tune to 500 m on scale, feed in a 500 m (600 kc/s) signal, and adjust the core of **L3** (A1) for maximum output. Tune to 200 m on scale, feed in a 200 m (1,500 kc/s) signal, and adjust **C18** (K4) and then **C15** (A1 if fitted) for maximum output. Repeat these operations until no improvement results.

L.W.—Switch set to L.W., tune to 2,000 m on scale, feed in a 2,000 m (150 kc/s) signal, and adjust the core of **L4** (A2) for maximum output. Tune to 1,000 m on scale, feed in a 1,000 m (300 kc/s) signal, and adjust **C19** (K5) for maximum output. Repeat these operations until no improvement results.

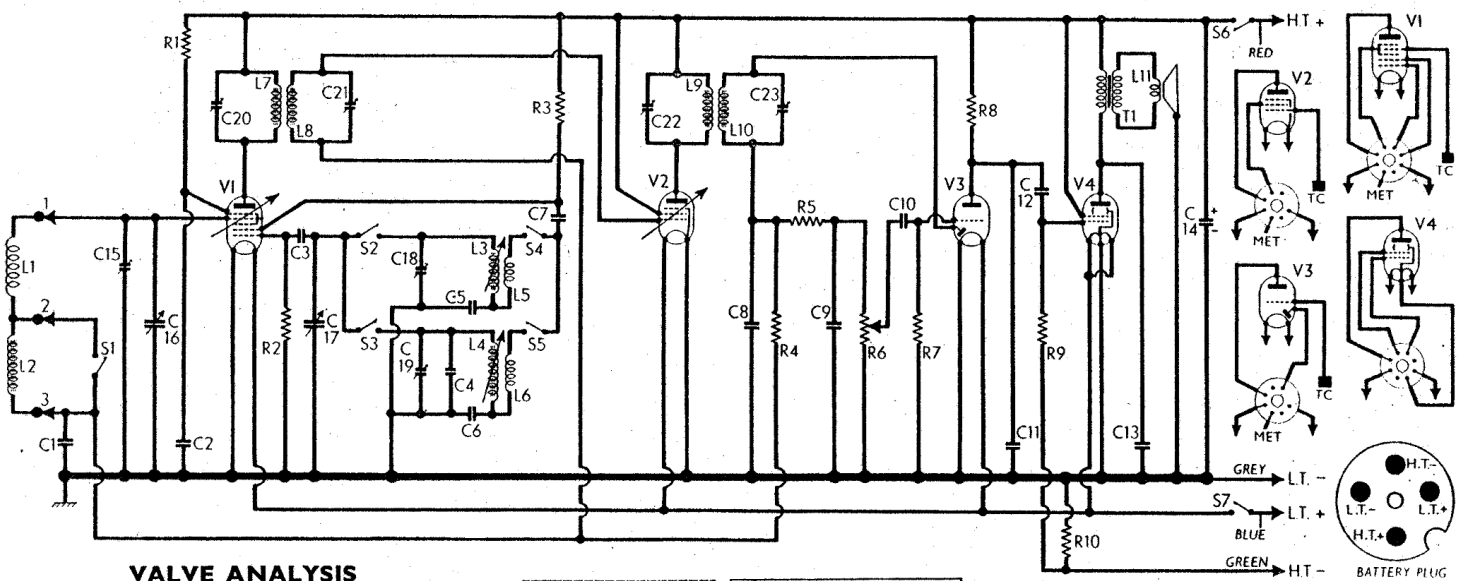
	RESISTORS	Values (ohms)	Locations
R1	V1 S.G. feed ...	47,000	J5
R2	V1 osc. C.G. ...	220,000	K6
R3	Osc. anode load ...	22,000	J5
R4	A.G.C. decoupling	2,500,000	H5
R5	I.F. stopper ...	47,000	F4
R6	Volume control ...	500,000	H3
R7	V3 triode C.G. ...	2,500,000	H5
R8	V3 triode load ...	1,000,000	G5
R9	V4 C.G. resistor ...	2,500,000	F5
R10	V4 G.B. resistor ...	560	E6

	CAPACITORS	Values (μF)	Locations
C1	A.G.C. decoupling	0·1	J6
C2	V1 S.G. decoup. ...	0·1	J5
C3	V1 osc. C.G. ...	0·0001	K4
C4	Osc. L.W. trimmer	0·0001	J4
C5	Osc. M.W. tracker	0·00035	J4
C6	Osc. L.W. tracker...	0·00015	J4
C7	Osc. anode coup. ...	0·002	K5
C8	I.F. by-pass capacitors ...	0·0001	G4
C9		0·0001	F6
C10	A.F. coupling ...	0·01	G4
C11	I.F. by-pass ...	0·0001	G4
C12	A.F. coupling ...	0·02	F5
C13	Tone corrector ...	0·001	E6
C14*	H.T. reservoir ...	8·0	F4
C15‡	Aerial M.W. trim....	—	A1
C16†	Aerial tuning ...	—	B1
C17†	Oscillator tuning ...	—	B1
C18‡	Osc. M.W. trim. ...	—	K4
C19‡	Osc. L.W. trim. ...	—	K5
C20‡	1st I.F. transformer tuning	—	B2
C21‡		—	B2
C22‡	2nd I.F. transformer tuning	—	C2
C23‡		—	C2

* Electrolytic. † Variable. ‡ Pre-set.

	OTHER COMPONENTS		Approx. Values (ohms)	Locations
L1	Frame aerial ...		2·1	A2
L2	L.W. loading coil...		12·5	B2
L3	Oscillator tuning coils		2·6	K4
L4			6·3	K5
L5	Oscillator reaction coils		0·5	K4
L6			0·6	K5
L7	1st I.F. trans.	Pri.	5·0	B2
L8		Sec.	5·0	B2
L9	2nd I.F. trans.	Pri.	9·5	C2
L10		Sec.	9·5	C2
L11	Speech coil ...		2·75	—
T1	Speaker trans.	Pri.	470·0	—
		Sec.	0·2	—
S1-S5	W/band switches ...		—	K3
S6	H.T. circuit switch		—	K3
S7	L.T. circuit switch		—	K3

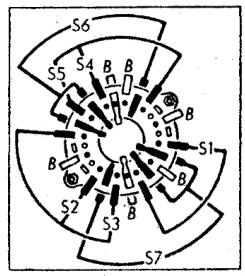
Intermediate frequency 465 kc/s.



VALVE ANALYSIS

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 1A7GT	97	1·0	51	0·87
	Oscillator			
	70	0·9		
V2 1N5GT	97	0·68	97	0·17
V3 1H5GT	12	0·03	—	—
V4 3Q5GT	93	6·8	97	0·75

Diagram of the waveband switch unit, as seen from the rear of an inverted chassis. Below is the associated table.



Switch	Off	M.W.	L.W.
S1	—	C	—
S2	—	C	—
S3	—	—	C
S4	—	C	—
S5	—	—	C
S6	—	C	C
S7	—	C	C

Divergencies.—Differences that occur in the ADP2 are that **C4**, which in our sample was 50 pF (0.00005 μF) may be 100 pF, while **C15** may be omitted altogether; Osram valves may be used instead of those we quote, and their type numbers would be **X14 (V1), Z14 (V2), HD14 (V3)** and **N14 (V4)**. In such versions **R10** becomes 820 Ω instead of 560Ω.

In the earlier model ADP1, the frame aerial consisted of a M.W. winding and a L.W. winding, instead of a M.W. winding (our **L1**) and a loading coil (our **L2**), and the Osram range of valves given for the ADP2 was used, **R10** again being 820 Ω.