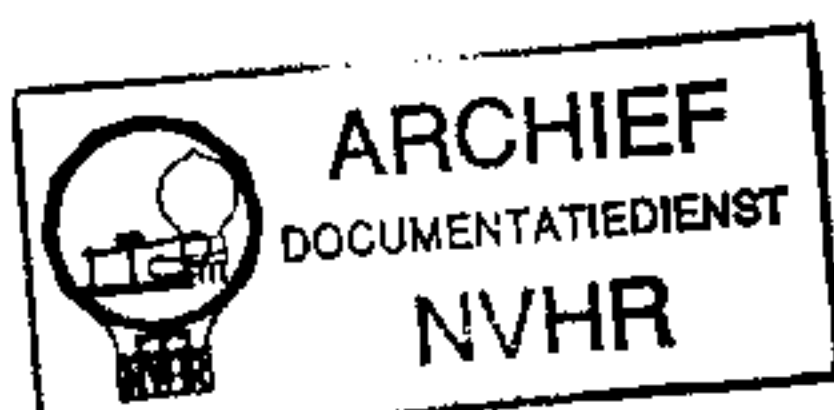


Ned. Ver. v. Historie v/d Radio



VIDOR 393

Portable A.C. Superhet



A PORTABLE receiver designed to operate only from A.C. mains of 200-250 V, 40-100 c/s, the Vidor 393 is one of the "Riviera" range of models, with a carrying strap and a hinged lid over the control panel, in which a switch operates automatically. Release date and original price: October, 1949; £15 11s 5d, plus purchase tax.

CIRCUIT DESCRIPTION

Tuned frame aerial input L1, C29 (S.W.) and L2, L3, L4, C29 (M.W. and L.W.) On M.W., L2 and L3 are connected in parallel, and L4 is in series with them; on L.W., L3 and L4 are in series, and L2 is out of circuit. On S.W. only, provision is made for the connection of an external aerial. First valve (V1, Brimar 6BE6) is a heptode operating as frequency changer with electron coupling.

Second valve (V2, Brimar 6BA6) is a variable-mu R.F. pentode operating as intermediate frequency amplifier.

Intermediate frequency 475 kc/s.

The diode signal detector is part of double diode triode valve (V3, Brimar 6AT6).

Second diode of V3, fed via C17 from V2 anode, provides D.C. potential which is developed across R16 and fed back through decoupling circuit to I.F. valve only, giving automatic gain control.

Resistance-capacitance coupling by R15, C22 and R17 between V3 triode and the pentode output valve (V4, Brimar 6AM5). Fixed tone correction by C23 in anode circuit. A proportion of the speech voltage in T1 secondary circuit is fed back via the potential divider R18, R14 in inverse phase to V3 cathode circuit.

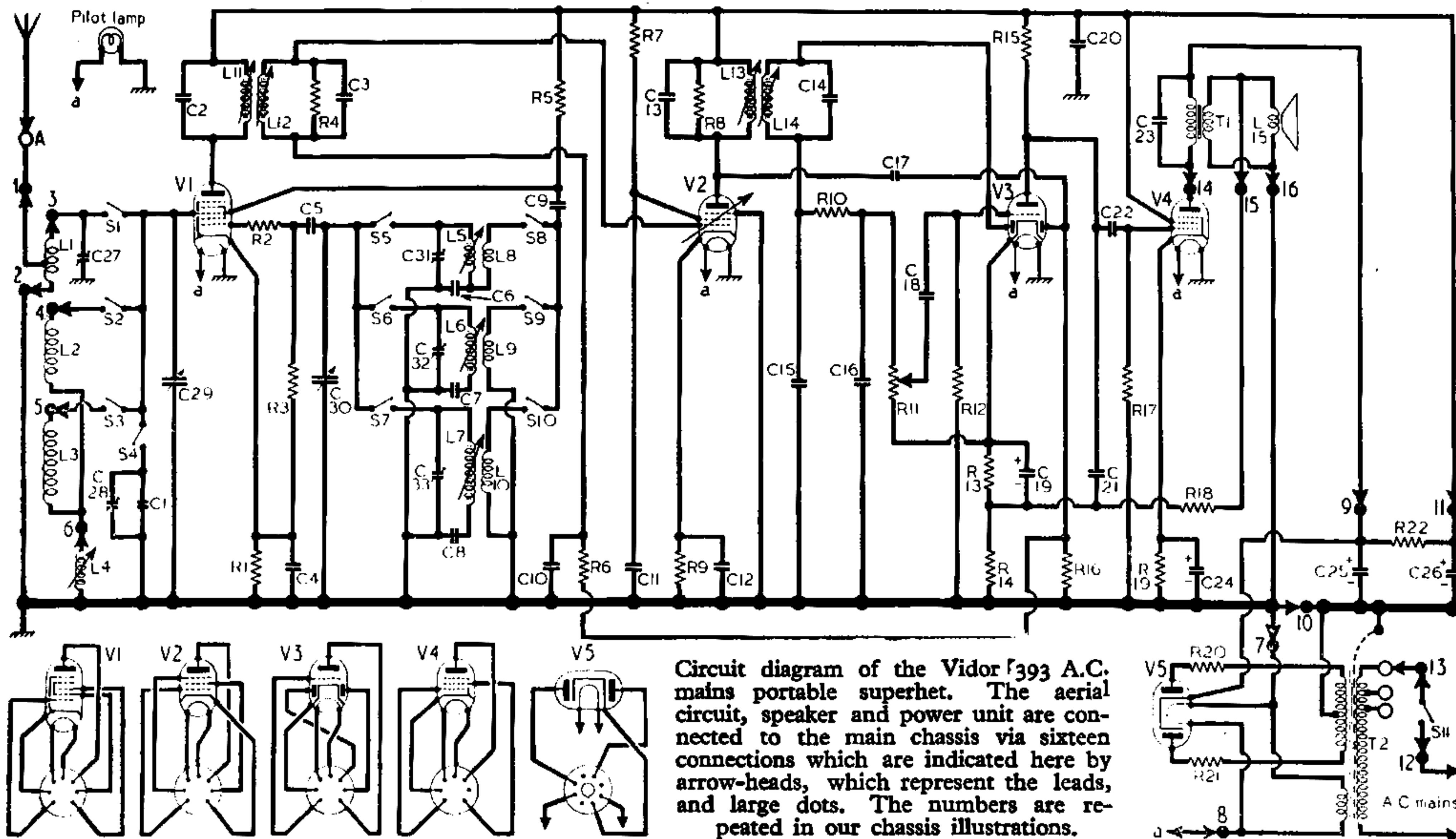
H.T. current is supplied by I.H.C. full-wave rectifying valve (V5, Brimar 6X5GT) whose heater is energized from the same secondary winding on T2 as the other valves.

COMPONENTS AND VALUES

CAPACITORS	Values	Locations
C1	L.W. fixed trimmer	15pF B2
C2	1st I.F. transformer	150pF C2
C3	tuning ...	150pF C2
C4	V1 cath. by-pass ...	0.1μF D3
C5	V1 osc. C.G. ...	100pF E3
C6	Osc. S.W. tracker...	0.005μF B2
C7	Osc. M.W. tracker	635pF B2
C8	Osc. L.W. tracker...	230pF F4
C9	Osc. coupling ...	0.01μF E3
C10	A.G.C. decoupling	0.1μF D4
C11	V2 S.G. decoupling ...	0.1μF F3
C12	V2 cath. by-pass ...	0.1μF F4
C13	2nd I.F. trans-	150pF A2
C14	former tuning ...	300pF A2
C15	I.F. by-passes ...	100pF G3
C16	A.G.C. coupling ...	100pF G3
C17	A.F. coupling ...	50pF G4
C18	A.F. coupling ...	0.002μF H3
C19*	V3 cath. by-pass...	50μF F3
C20	H.T. R.F. by-pass	0.1μF G4
C21	I.F. by-pass ...	300pF G3
C22	A.F. coupling ...	0.01μF H4
C23	Tone corrector ...	0.002μF —
C24*	V4 cath. by-pass ...	25μF F4
C25*	H.T. smoothing ...	40μF J5
C26*	H.T. smoothing ...	40μF J5
C27†	S.W. aerial trim. ...	40pF C1
C28†	L.W. aerial trim. ...	80pF B2
C29†	Aerial tuning ...	\$532pF B1
C30†	Oscillator tuning ...	\$532pF B1
C31†	S.W. osc. trim. ...	30pF C2
C32†	M.W. osc. trim. ...	80pF B1
C33†	L.W. osc. trim. ...	240pF B1

* Electrolytic. † Variable. ‡ Pre-set.
§ "Swing" value, min. to max.

RESISTORS	Values	Locations
R1	V1 G.B. ...	150Ω D3
R2	Osc. grid stopper ...	47Ω D3
R3	Osc. grid resistor ...	22kΩ D3
R4	I.F. shunt ...	150kΩ D4
R5	Osc. H.T. feed ...	18kΩ F3
R6†	A.G.C. decoupling	1MΩ G3
R7†	V2 S.G. feed ...	33kΩ F3
R8	I.F. shunt ...	100kΩ G4
R9	V2 G.B. ...	100Ω F4
R10	I.F. stopper ...	100kΩ G3
R11	Volume control ...	1MΩ A1
R12	V3 C.G. resistor ...	1MΩ G3
R13	V3 G.B. ...	3.3kΩ F3
R14	Neg. feedback ...	47Ω G3
R15	V3 anode load ...	270kΩ G3
R16	A.G.C. diode load...	470kΩ H4
R17	V4 C.G. resistor ...	680kΩ H4
R18	Neg. feedback ...	100Ω G4
R19	V4 G.B. ...	750Ω F4
R20	Surge limiters ...	220Ω K5
R21	Surge limiters ...	220Ω K5
R22	H.T. smoothing ...	1kΩ J5



OTHER COMPONENTS		Approx. Values (ohms)	Locations
L1	Frame aerial windings	Very low	—
L2		1.7	—
L3		19.0	—
L4	M.W. trimmer	1.6	B2
L5	S.W. Osc. tuning coil	Very low	C2
L6	M.W. Osc. tuning coil	1.4	B2
L7	L.W. Osc. tuning coil	3.5	B2
L8	S.W. Osc. reaction coil	Very low	C2
L9	M.W. Osc. reaction coil	0.5	B2
L10	L.W. Osc. reaction coil	0.8	B2
L11	1st I.F. trans.	4.8	C2
L12		4.8	C2
L13	2nd I.F. trans.	5.1	A2
L14		3.6	A2
L15	Speech coil	2.8	—
T1	Output trans.	660.0	—
T2	Mains trans.	0.3	—
		67.0	—
		740.0	K5
		0.3	—
S1-S10	Waveband switches	—	C2
S11	Mains switch	—	C1

GENERAL NOTES

Switches.—S1-S10 are the waveband switches, ganged in two rotary units on the chassis deck. These are indicated in our rear view of the chassis, where arrows show the direction in which they are viewed in the diagrams beside it. The table below gives the switch positions for the three control settings, starting from the fully anti-clockwise position of the control. A dash indicates open, and C, closed.

S11 is the mains switch, operated by a spring-loaded plunger which is depressed when the lid is closed, opening the switch to switch off the receiver.

Pilot Lamp.—This is an Osram lamp, with a small clear spherical bulb and an M.E.S. base, rated at 6.5 V, 0.3 A.

Interconnecting Leads.—The four units comprising the complete receiver (aerial, chassis, power and speaker units) are interconnected by sixteen connecting leads which are numbered and shown with arrow-heads in our circuit diagram, the numbers being repeated in the chassis illustrations. 1-6 are the aerial connections, 7-13 are the power unit connections, including one from the speaker, and 14-16 are the remaining speaker connections.

Drive Cord Replacement.—The tuning drive is a friction device, but a cord is used for the cursor drive. It is very straightforward, and its course can be seen in our rear chassis view. About 30 inches of cord is required, and it goes down under the drum from each side, then round it until it meets the slot, when it enters the drum.

CIRCUIT ALIGNMENT

I.F. Stages.—It is advisable to remove the chassis from the carrying case for these adjustments. Connect signal generator via a 0.001 μ F capacitor to control grid (pin 7) of V1 and chassis. Switch set to L.W., tune to 2,000 m on scale, turn the volume control to maximum, and short-circuit C30. Feed in a 475 kc/s (631.6 m) signal, and adjust the cores of L14, L13, L12 and L11 (location references A2, C2) for maximum output, reducing the input as the circuits come into line. Then remove the short-circuit from C30 and disconnect signal generator leads.

