Supplement to The Wireless & Electrical Trader, December 10, 1949

"TRADER" SERVICE SHEET

936

VIDOR "RIVIERA"

Covering Battery Models 379, 380, 392

AN automatic switch in the Vidor CN379 switches the set off when the lid is closed. The receiver is a 4-valve 3-band all-dry battery superhet covering wave ranges of 17-50 m, 200-550 m and 1,000-2,000 m. The CN380 is an export version of the 379 with different scale markings, but otherwise the two are identical. The CN392 is a 379 modified to accommodate the Copenhagen Plan. The differences are described under "Frame Windings" overleaf. The M.W. range is 186.5-550 m in the 392.

Release dates: 379, 380, *August* 1949; 392, *October* 1949. *Original prices,* 379 *and* 392, £15 4*s* 6*d with batteries, plus purchase tax.*

CIRCUIT DESCRIPTION

Tuned frame aerial input by **L1, C28** (S.W.), **L2, L3** (in parallel) **C28** (M.W.) and **L3, C28** (L.W.) which precede a heptode valve **(V1, Brimar 1R5 or Mullard DK91)** operating as a frequency changer with electron coupling. On S.W. only, provision is made for the connection of an external aerial to a tapping on **L1.**

Oscillator grid coils **L4** (S.W.), **L5** (M.W.) and **L6** (L.W.) are tuned by **C29.** Parallel trimming by **C30** (S.W.), **C31** (M.W.) and **C32** (L.W.) with series tracking by **C8** (S.W.), **C9** (M.W.) and **C10** (L.W.). Reaction coupling to grid by coils **L7** (S.W.), **L8** (M.W.) and **L9** (L.W.).

Second valve **(V2, Brimar 1T4 or Mullard DF91)** is a variable-mu R.F. pentode operating as intermediate frequency amplifier with tuned transformer couplings **C5, L10, L11, C6** and **C14, L12, L13, C15.**

Intermediate frequency 456 kc/s.

Diode second detector is part of single-diode pentode valve **(V3, Brimar 1S5 or Mullard DAF91).** Audio frequency component in rectified output is developed across manual volume control **R11,** which is the diode load resistor, and passed via A.F. coupling capacitor **C18** and grid resistor **R13** to control grid of pentode section, which operates as A.F. amplifier.

I.F. filtering by **C16, R10, C17** in diode circuit and **C21** in pentode anode circuit. Voltage negative feedback from anode to control grid of **V3** via the isolating capacitor **C19** and attenuating resistor **R12.**

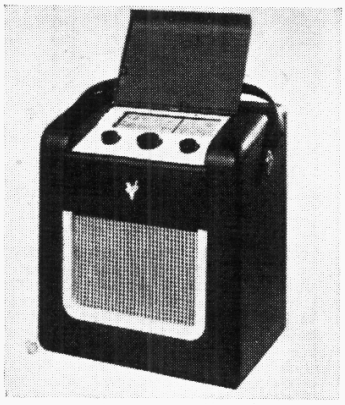
The D.C. potential developed across **R10, R11** is tapped off and fed back, via a decoupling circuit, as G.B. to F.C. and I.F. valves, giving automatic gain control.

Resistance-capacitance coupling by **R15, C22,** and **R16** between **V3** anode and control grid of pentode output valve **(V4, Brimar 3V4 or Mullard DL94),** whose dual filament sections are wired in parallel. Fixed tone correction in anode circuit by **C23.**

COMPONENTS AND VALUES

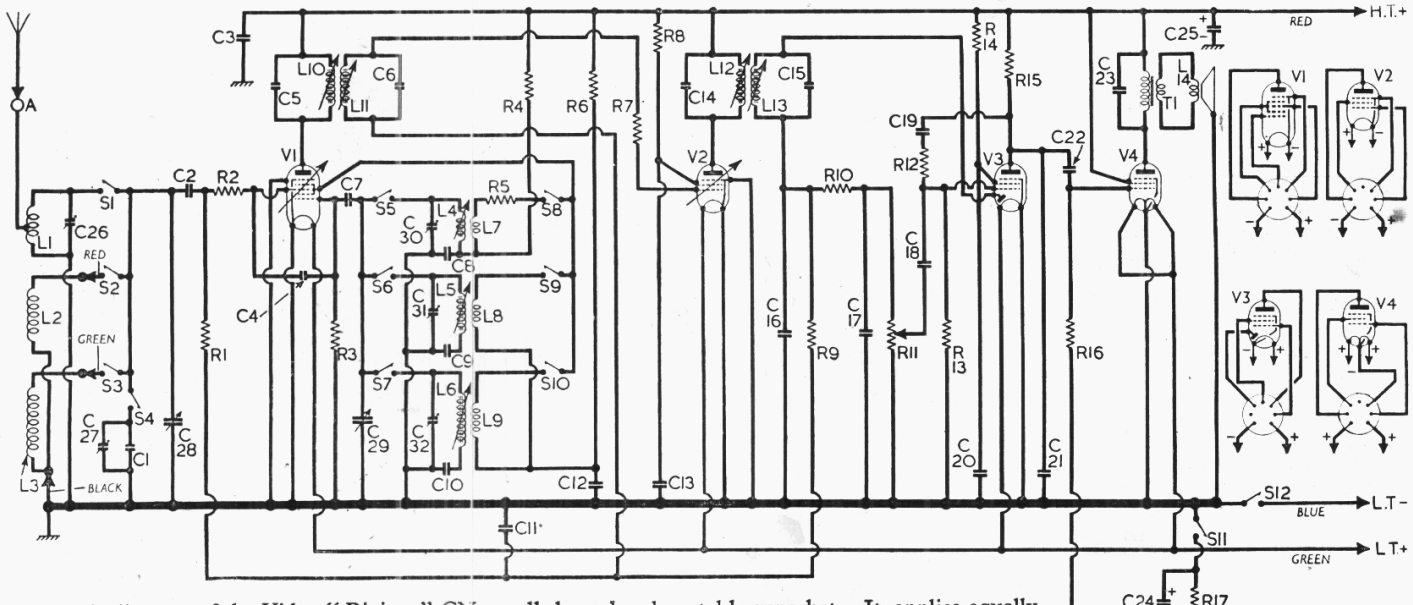
	CAPACITORS	Values (μF)	Locations
C1	L.W. fixed trim. ...	0·000015	C1
C2	V1 pentode C.G. ...	0·0001	D3
C3	H.T. R.F. by-pass	0·1	F3
C4	S.W. neutralising...	0·000004	D3
C5	1st I.F. trans. tuning ...	0·000065	C2
C6	1st I.F. trans. tuning ...	0·000065	C2
C7	V1 osc. C.G. ...	0·0001	E3
C8	Osc. S.W. tracker	0·005	B2
C9	Osc. M.W. tracker	0·000635	B2
C10	Osc. L.W. tracker	0·000230	B2
C11	A.G.C. decoupling	0·1	D4
C12	Osc. H.T. decoup.	0·1	F4
C13	V2 S.G. decoup. ...	0·1	E3
C14	2nd I.F. trans. tuning ...	0·000065	A2
C15	2nd I.F. trans. tuning ...	0·000075	A2
C16	I.F. by-pass capacitors ...	0·0001	G3
C17	I.F. by-pass capacitors ...	0·0001	G3
C18	A.F. coupling ...	0·01	G3
C19	F.B. coupling ...	0·01	H3
C20	V3 S.G. decoupling	0·05	G4
C21	I.F. by-pass ...	0·0001	H3
C22	A.F. coupling ...	0·01	H4
C23	Tone corrector ...	0·003	G4
C24*	G.B. by-pass ...	50·0	F3
C25*	H.T. reservoir ...	2·0	F3
C26‡	Aerial S.W. trim....	0·00004	C1
C27‡	Aerial L.W. trim.	0·00008	C1
C28†	Aerial tuning ...	0·000532	B1
C29†	Oscillator tuning...	0·000532	B2
C30‡	Osc. S.W. trim. ...	0·00003	C1
C31‡	Osc. M.W. trim. ...	0·00008	C1
C32‡	Osc. L.W. trim. ...	0·00024	B1

* Electrolytic. †Variable. ‡ Pre-set.



The appearance of all three models is as shown in this illustration.

	RESISTORS	Values (ohms)	Locations
R1	V1 C.G. resistor ...	1,000,000	D3
R2	V1 grid stopper ...	33	D3
R3	V1 osc. C.G. ...	100,000	D3
R4	Osc. S.W. H.T. feed	10,000	E3
R5	Osc. stabilizer ...	33	C2
R6	Osc. anode decoup.	15,000	E4
R7	V2 grid stopper ...	820	D4
R8	V2 S.G. decoup. ...	68,000	E4
R9	A.G.C. decoupling	2,200,000	G3
R10	I.F. stopper ...	47,000	G3
R11	Volume control ...	1,000,000	A1
R12	F.B. resistor ...	8,200,000	H3
R13	V3 C.G. resistor ...	2,200,000	H3
R14	V3 S.G. decoup. ...	4,700,000	G4
R15	V3 anode load ...	1,000,000	H3
R16	V4 C.G. resistor ...	2,200,000	H4
R17	V4 G.B. resistor ...	680	F3



Circuit diagram of the Vidor "Riviera" CN379 all-dry 3-band portable superhet. It applies equally to the CN380, but in the 392 a loading coil is inserted in the black frame aerial lead.

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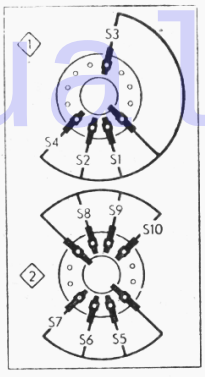
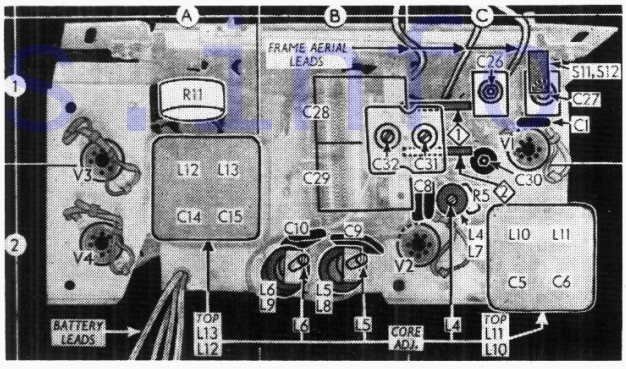
OTHER COMPONENTS		Approx. Values (ohms)	Locations
L1	S.W. frame aerial...	very low	—
L2	M.W. frame aerial	2·0	—
L3	L.W. frame aerial...	25·0	—
L4	Oscillator tuning coils	0·4	C2
L5		1·5	B2
L6		4·0	B2
L7	Oscillator reaction coils	very low	C2
L8		1·2	B2
L9		2·8	B2
L10	1st I.F. trans. Pri.	8·0	C2
L11	1st I.F. trans. Sec.	8·0	C2
L12	2nd I.F. trans. Pri.	8·0	A2
L13	2nd I.F. trans. Sec.	8·0	A2
L14	Speech coil ...	3·0	—
T1	Spkr. trans. Pri.	470·0	—
	Spkr. trans. Sec.	0·2	—
S1-S10	Waveband switches	—	C1
S11	H.T. circuit switch	—	C1
S12	L.T. circuit switch	—	C1





Rear view of the chassis, showing the deck, with the switch units, **1** and **2**, in diamonds, indicated. These units are shown in detail in the diagrams inset on the left of the photograph.

VALVE ANALYSIS

Valve voltages and currents given in the table below are those measured in our receiver when it was operating from a set of new batteries. The receiver was tuned to the lowest wavelength on the M.W. band, and the volume control was at maximum, but there was no signal input.

Voltages were measured on the 100 V range of a model 7 Avometer, chassis being the negative connection. The grid bias voltage measured across **R17** was 6.2 V, using the 10 V meter range.

Valve		Anode V	Anode m/A	Screen V	Screen m/A
V1	1R5	83	1·1	53	1·9
V2	1T4	83	1·2	43	0·48
V3	1S5	11	0·05	7	0·01
V4	3V4	81	3·8	83	1·8

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.

Switch	L.W.	M.W.	S.W.
S1	—	—	C
S2	—	C	—
S3	C	C	—
S4	C	—	—
S5	—	—	C
S6	—	C	—
S7	C	—	—
S8	—	—	C
S9	—	C	—
S10	C	—	—

S11, S12 are the Q.M.B. battery switches operated by a plunger by impact with the lid, so that the switches open to switch off when the lid is closed.

Frame Windings.—The S.W. frame winding **L1** runs round the edge of the sub-baffle. The M.W. and L.W. windings **L2** and **L3** are wound on a separate frame, a box-like structure in the case of the 379 and 380, but of "pancake" form in the 392. This difference in the 392 permits a reduction in self-capacitance, resulting in a lower minimum wavelength on the M.W. band to accommodate the Copenhagen plan.

A loading coil is then inserted in series with **L2, L3** in the 392, in the black lead to chassis. This coil is mounted on the end plate of the gang, just over the oscillator coil assemblies, and in these models too, **C27** is mounted on the gang end-plate as well, just behind the double trimmer **C31, C32.**

Batteries and Leads.—The H.T. battery is a Vidor type L5039 90 V unit with two sockets only for the H.T. leads. The L.T. unit is a Vidor L5050 large-capacity battery with a 2-pin socket.

CIRCUIT ALIGNMENT

Before carrying out these operations the complete receiver must be removed from the carrying case and assembled on the bench.

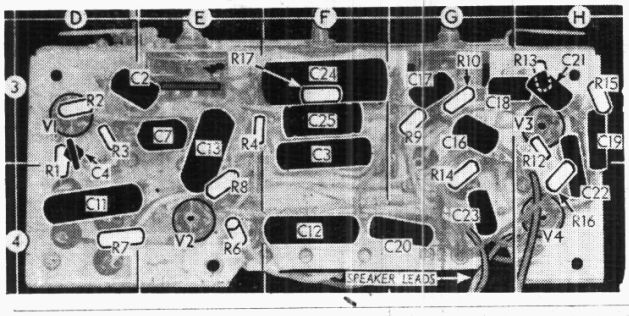
I.F. Stages.—Connect signal generator, via an 0.0001 μF capacitor in the "live" lead, to control grid (pin 6) of **V1** and chassis. Switch set to L.W. and tune to 2,000 m on scale, turn volume control to maximum, short circuit **C29** (location reference B2), and feed in a 456 kc/s (657.8 m) signal. Adjust the cores of **L13, L12, L11** and **L10** (A2, C2) for maximum output, progressively attenuating the input as the circuits are aligned to avoid A.G.C. action. Finally, remove short-circuit from **C29** and disconnect signal generator leads from receiver.

R.F. and Oscillator Stages.—For these operations the batteries must be in their normal positions in the assembly, and the signal generator leads should be secured on the bench, close to the assembly. With the gang at maximum capacitance, the pointer should be horizontal and coincident with the high wavelength ends of the three scales.

S.W.—Switch set to S.W., tune to 17 m on scale, feed in a 17 m (17.64 Mc/s) signal and adjust **C30** (C1) and **C26** (C1) for maximum output. If the output under these conditions is unworkably low the "live" signal generator lead may be connected to the brass plate on the frame aerial via a 0.0002 μF capacitor, and to chassis. Tune to 50 m on scale, feed in a 50 m (6.0 Mc/s) signal, and adjust the core of **L4** (C2) for maximum output while rocking the gang slightly after each adjustment. Repeat the operations until no improvement results, and finally seal **C30.**

M.W.—Switch set to M.W., and tune to 200 m on scale, feed in a 200 m (1,500 kc/s) signal, and adjust **C31** (C2) for maximum output. Tune to 550 m on scale, feed in a 550 m (545.4 kc/s) signal, and adjust the core of **L5** (B2) for maximum output. Repeat these adjustments until no improvement results.

L.W.—Switch set to L.W., tune to 1,000 m on scale, feed in a 1,000 m (300 kc/s) signal, and adjust **C32** (B1) and **C27** (C1) for maximum output. Tune to 2,000 m on scale, feed in a 2,000 m (150 kc/s) signal, and adjust the core of **L6** (B2) for maximum output. Repeat the adjustments until no improvement results.

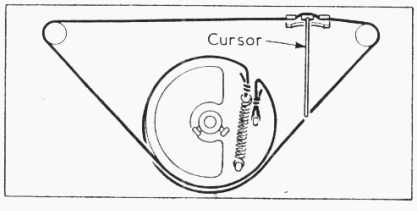


Front (reverse) side of the chassis, in which the undersides of the valve holders and the speaker leads are indicated.

DISMANTLING THE SET

The chassis, speaker and S.W. frame aerial should be removed from the carrying case as a complete assembly, but before this can be done the M.W. and L.W. frame aerial must be removed.

Removing M.W. and L.W. frame aerial.—Remove batteries and lay the carrying case, face downward, on a felt pad;



The tuning drive system as seen from the front after removing the scale. The cord is about 30 inches long.

unsolder the three rubber covered leads from the tag panel at the top of the frame assembly and the systoflex-covered lead from the external aerial connection on the right-hand side of the frame;

remove a 4BA nut securing a vertical metal bracket from the chassis to the left-hand side of the frame, and another 4BA nut securing a similar bracket mounted on the first I.F. transformer to the right side of the frame;

loosen the 4BA nut of the clamp holding the bottom of the frame to the carrying case and lift out the frame aerial assembly, taking care not to damage the windings.

Removing Chassis Assembly.—Remove the frame aerials as previously described;

remove two 4BA nuts (with one plain washer each) from behind the scale backing plate, and two 4BA nuts (with one plain washer each) from the lower corners of the speaker baffle board.

The complete assembly may now be withdrawn from the cabinet.

When replacing, resolder the frame aerial leads as follows, numbering the three tags on the connecting panel from left to right when viewed from the rear: 1, red; 2, black; 3, green. The stiff green systoflex-covered lead goes to the external aerial connecting tag.

Removing speaker.—Remove batteries and unsolder the leads from the transformer;

remove the three 4BA nuts (with washers) securing the speaker to the sub-baffle.

When replacing, the transformer should point to the bottom left-hand corner of the carrying case (when viewed from the rear), a black earthing lead being fitted to the left-hand fixing nut.

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