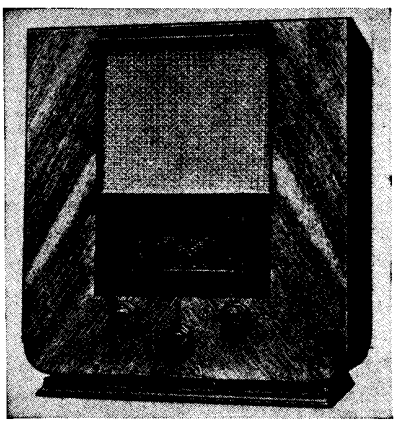
TRUPHONIC MODEL AW5 ALL-WAVE SET

CIRCUIT.—The aerial is coupled to V1, a frequency changer, through a tuned band-pass circuit. The signal is then passed to V2, an H.F. pentode, via an I.F. transformer tuned to 127 kc., and to V3 through a second I.F. transformer.

V2 has a resistance, R11, in the cathode lead shorted by a switch, which acts as a gain control.

V3 is a double-diode triode, and its L.F. output is passed by resistance and capacity coupling and the volume control, R20, to the output pentode, V4. This is tone controlled by R22 and C20.

Mains equipment consists of transformer, full-wave directly-heated rectifier, V5, electrolytic condensers and the speaker field.



The Truphonic AW5 is a four-valve plus rectifier A.C. superhet, which covers a 16-50 metre waveband in addition to the two usual bands.

Special Notes.—The external speaker is connected on the low resistance side of the output transformer, and should have its own matching transformer.

The dial lamps are 4.3 v. .3 amp. type, and the holders are clipped on to the dial and are easily withdrawn.

The set received for inspection did not correspond throughout with the circuit diagram, and so slight discrepancies may be found in other receivers.

Removing Chassis.—Remove the four knobs from the front (grub screws) and the four bolts from underneath the cabinet. Disconnect the speaker plug from its socket on the chassis, and the chassis will then slide out of the cabinet.

If it is required to test the set under working conditions with the chassis removed, the speaker plug must be replaced in its socket, as the field forms part of the H.T. smoothing equipment.

ALIGNMENT NOTES

I.F. Circuits.—Connect modulated oscillator tuned to 127 kc. to oscillator grid of V1 and output meter across external speaker terminals. Adjust first and second I.F. transformer trimmers for maximum.

Short-wave Band.—Connect modulated oscillator to aerial and earth terminals. Tune set and oscillator to 16 metres and adjust T2 and T7 for maximum reading.

Medium-wave Band.—(1) Tune set and

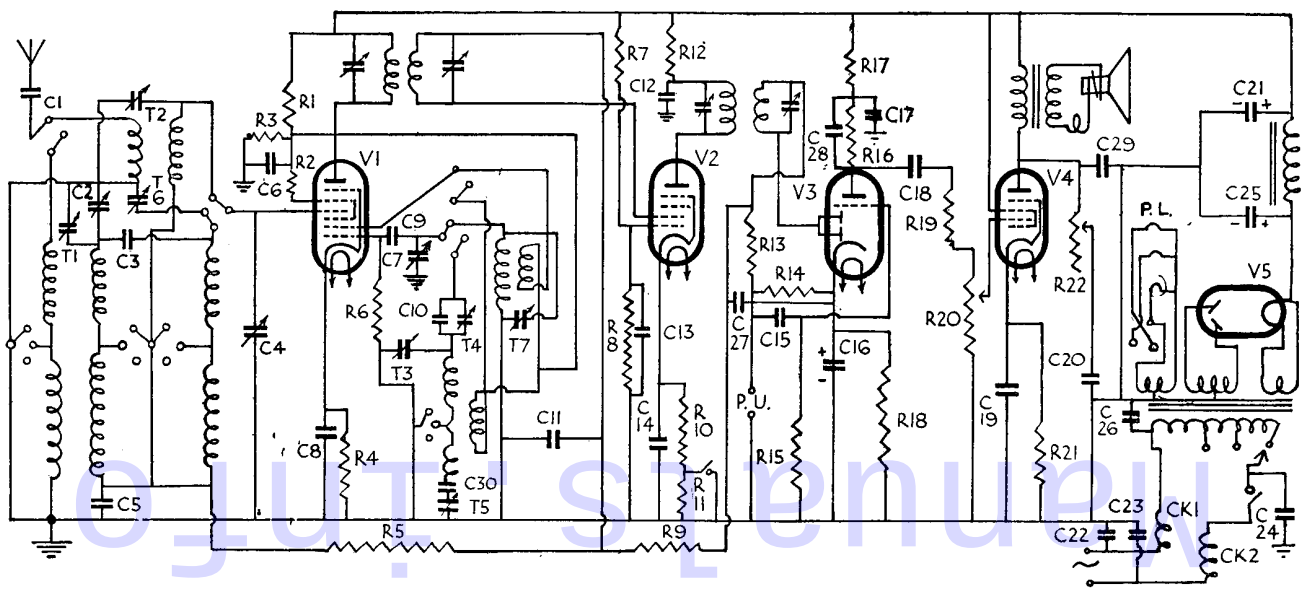
(*Continued on next page.*)

RESISTANCES

R.	Purpose.	Ohms.
1	V1 screen and oscillator network	15,000
2	V1 screen and oscillator network	1,000
3	V1 screen and oscillator network	25,000
4	V1 cathode bias	250
5	V1 A.V.C. decoupler	100,000
6	V1 triode grid leak	50,000
7	V2 screen decoupling potentiometer	10,000
8	V2 screen decoupling potentiometer	75,000
9	V2 A.V.C. decoupler	1 meg.
10	V2 cathode bias	250
11	V2 sensitivity control	5,000
12	V2 anode decoupling	10,000
13	Diode load (part)	50,000
14	Diode load (part)	½ meg.
15	V3 grid decoupling	50,000
16	V3 anode decoupling	25,000
17	V3 anode decoupling	5,000
18	V3 cathode bias	1,000
19	V3-V4 L.F. coupling	500,000
20	Volume control	500,000
21	V4 cathode bias	145
22	Tone control	25,000

CONDENSERS

C.	Purpose.	Mfd.
1	Series aerial	.0001
2	Aerial tuning	.0005
3	H.F. coupling	.000025
4	H.F. tuning	.0005
5	Band pass coupling	.02
6	V1 triode anode decoupling	.1
7	Oscillator tuning	.0005
8	V1 cathode by-pass	.1
9	V1 triode grid condenser	.00005
10	Medium wave padding	.001
11	A.V.C. decoupling	.006
12	V2 anode decoupling	.1
13	V2 screen decoupling	.1
14	V2 cathode by-pass	.1
15	L.F. coupling	.01
16	V3 cathode by-pass	50
17	V3 anode decoupling	2
18	V3-V4 L.F. coupling	.1
19	V4 cathode by-pass	50
20	Tone control	.05
21	H.T. smoothing	8
22	Mains filter	.01
23	Mains filter	.01
24	Mains aerial	.001
25	H.T. smoothing	8
26	Mains filter	.001
27	A.V.C. decoupling	.0002
28	V3 anode decoupling	.002
29	Pentode compensating	.002
30	Long wave padder	.002



The AW5 has quite an orthodox circuit arrangement with extra short wave coils in the input and oscillator sections. Minor differences between the circuit and actual models may be met with.

TRUPHONIC MODEL AW5 (Continued)

VALVE READINGS

No signal. Tone and volume controls turned fully clockwise. Switch to "A.V.C." 200 volt mains.

V.	Type.	Electrode.	Volts.	M.A.
1	FC4 (met 7)	anode ..	220	3
		oscillator anode ..	75	2.5
2	VP4B (met 7)	anode ..	105	2.2
		auxiliary grid ..	130	6
3	TDD4 (met 7)	anode ..	110	2.8
4	Pen.4VB (7)	anode ..	180	29
		auxiliary grid ..	210	3.5
5	1W3 (4) .. (All Mullard)	filament ..	370	—

Field Coil Readings

WEAK signals may be caused by the rectifying valve having a low emission.

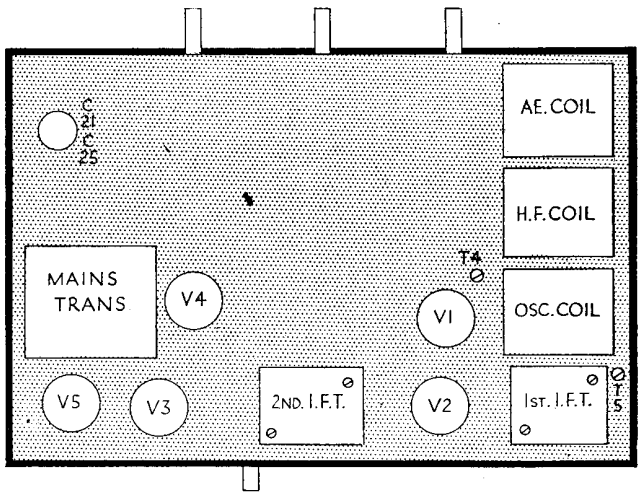
If the voltage across the field smoothing coil is much lower than it should be—it is usually obtainable by subtracting the H.T. smoothed voltage from the H.T. unsmoothed voltage (these figures are usually given under "Quick Tests")—the rectifier should be suspected. If the voltage is high the coil is open circuited or disconnected.

When reproduction is weak and excessive current is following through the field it is probable that some of the turns are shorting.

modulated oscillator to 200 metres and adjust T3 for maximum. (2) Tune set and modulated oscillator to 500 metres and adjust T1, T4 and T6 for maximum response. (3) Repeat (2) at 200 metres for check.

Long-wave Band.—Tune modulated oscillator to 1,500 metres and adjust T5 for maximum.

An orderly arrangement of parts is found on the top "deck" of the AW5. The tuning condenser is inside the chassis and this assists in giving a clean appearance.



In this underneath "view" of the chassis identification of components is greatly facilitated by the indication of resistors in solid black.