

# FERRANTI 139 239

Four-valve, plus rectifier, three waveband superhet for 200-270 v., 40-100 cycle supplies. (139 has a bakelite cabinet; 239 is in wood).

**Circuit.**—Transformer coils on each band couple the aerial to V1, a heptode frequency-changer. Trimmer-tuned I.F. transformers lead to V2, the amplifier, and V3, a double-diode triode. This provides detection, A.V.C. and amplification and feeds V4, the output valve. V5 is a conventional full-wave rectifier.

Bias for V1 and V2 and AVC delay is obtained across R17 in the negative H.T. lead.

Wavebands.—16.5-51, 200-560, 1,000-2,000 metres.

Provision for P.U. and 2 ohm extension-speaker.

The model 239, in wood cabinet, contains a number of mechanical differences but is electrically the same as the model 139. A plug and socket speaker muting switch is included and this should be inspected when no signals are obtained.

### GANGING

**I.F. CIRCUITS.**—Tune to maximum, L.W., volume maximum. Inject 450 kcs. and adjust I.F. trimmers.

**S.W. BAND.**—Tune to minimum, inject 18 mcs. and adjust VC6, using signal at lowest capacity setting.

Tune to and inject 15 mcs. and adjust VC3.

**M.W. BAND.**—With gang at minimum, inject 1,500 kcs. Adjust VC7.

At 228 m. (1,316 kcs.) adjust VC4.

Pad with VCS at 500 m., rocking gang.

Tune to maximum, inject 450 kcs. and adjust VC1, for minimum.

**L.W. BAND.**—Inject 1,128 m. (266 kcs.), and adjust VC9 and VC5.

Pad at 1,800 m. (166.5 kcs.) with VC10, rocking gang slightly.

Tune to 261 m., and inject strong 261 m. signal. Adjust VC2 for minimum.

Repeat whole L.W. procedure until best results are obtained.

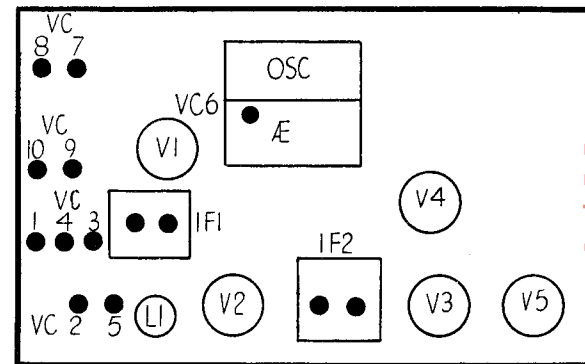
### WINDINGS

L	Ohms.	L	Ohms.
1	35	13	1.5
2	5	14	3
3	.25	15-18 (each)	9.5
4	35	19	2
5	65	20	.25
6	V. low	21	1,000
7	2.5	22	220
8	.05	23	4
9	5	24	45
10	2	25	.2
11	12	26	.2
12	V. low	27	450

### CONDENSERS

C	Mfds.	C	Mfds.
1	.00005	15	.00005
2	V. low	16	.02
3	.05	17	.05
4	.0001	18	.0004
5	.1	19	.005
6	.004	20	.01
7	.0001	21	50
8	.0004	22	12
9	.00015	23	4
10	.001	24	4
11	.1	25	12
12	.00015	VC8	.0002
13	.00015	VC10	.00007
14	6	I.F. trimmers	.0002

Orderly layout is seen in the chassis diagram on right. Trimmers are very accessible. The circuit contains an interesting subsidiary H.T. feed through R18, R19.



### VALVE READINGS

V	Type	Electrode	Volts	Ma.
1	6A8G	Anode	295	1.2
		Screen	85	2.5
		Osc. anode	140	5
2	6K7G	Anode	295	2.5
		Screen	65	3
3	6A7G	Anode	86	.6
		Screen	280	38
4	6F6G	Anode	295	7.5
		Screen	350 A.C.	—
5	R4	Anode	350 A.C.	—

Dial lamps—Osram M.E.S., 6.5 v., .3a, type S.

### RESISTANCES

R	Ohms.	R	Ohms.
1	50,000	11	2 meg.
2	10,000	12	2
3	40,000	13	500,000
4	100,000	14	20,000
5	500,000	15	450
6	1 meg.	16	100
7	20,000	17	50
8	250	18	10,000
9	10,000	19	10,000
10	250,000		

