

# McMICHAEL 390

Three-valve, plus rectifier, three waveband superhet for 200-250 v., 50-100 cycles.

**Circuit.**—Transformer coils, having a common primary on M. and L.W. feed a TH41 frequency changer. Trimmed-tuned I.F. coils lead to a VP41 I.F. amplifier and to an AC5/Pen/DD combined detector, A.V.C. and output valve. A full-wave UU6 rectifier operates in a conventional circuit.

Mains consumption: 60 watts.  
Wavebands: 18.5-50, 190-550, 850-2,000 metres.  
Provision for P.U. and 2.4 ohm extension speaker.

### GANGING

**I.F. Circuits.**—Set gang to maximum and see that centre of pointer is in line with edge of blackened portion at top of scale. Inject 465 kc. and adjust I.F. trimmers.

**S.W. Band.**—Inject 16.2 mc., tune set to 18.5 m. (gang minimum) and adjust VC1.

Inject 15.3 mc., tune to 19.6 m. and adjust VC2.

**M.W. Band.**—Inject 1,580 kc., tune to 189.87 m. (minimum) and adjust VC3.

Inject 1,400 kc., tune to 214.28 m. and adjust VC4.

**L.W. Band.**—Inject 273 kc., tune to 1,100 m. and adjust VC5 and VC6.

### VALVE VOLTAGES

V	Type	Anode	Screen	Cathode
1	TH41	230	110	—
2	VP41	65(OSC.)	—	—
3	AC5/Pen/DD	230	230	—
4	UU6	—	—	305D.C.

### RESISTANCES

R	Ohm	R	Ohms
1	40,000	11	40
2	.5 meg.	12	1 meg.
3	40,000	13	50,000
4	50,000	14	.5 meg.
5	100	15	1,000
6	2,000	16	180
7	.5 meg.	17	350
8	.5 meg.	18	50
9	.5 meg.	VR1	1 me.
10	.5 meg.	VR2	50,000

### CONDENSERS

C	Mfds.	C	Mfds.
1	—	14	.1
2	.001	15	.01
3	.1	16	.0001
4	.004	17	.1
5	.1	18	.002
6	.1	19	.0001
7	20 mmfds.	20	.0001
8	.0001	21	.002
9	.0001	22	.25
10	50 mmfds.	23	.03
11	168 mmfds.	24	.8
12	507 mmfds.	25	.8
13	3,500 mmfds.	26	.002

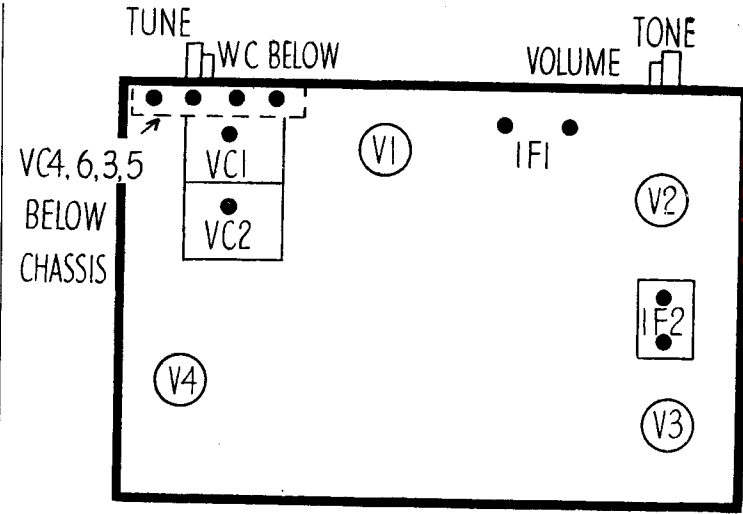
### An Oscillator Fault

A NUMBER of sets of the same type came in with the same fault—not working on L.W., and only on the lower half of M.W. An oscillator fault was suspected. The frequency-changer valve was substituted without result.

A milliammeter was inserted in the oscillator anode feed, and as the pointer was moved up the M.W. band the current increased (signifying less oscillatory voltage). Current reached maximum where signals ceased. It seemed that the reaction system of the oscillator coil was at fault.

The unit was dismantled. The coil gave satisfactory ohmmeter readings

but, as a last resort, we had it re-wound and impregnated. The whole was then assembled and worked perfectly. Presumably the material with which the coils were impregnated, or the formers, had absorbed moisture and this altered the mutual inductance. The same cure was effective in all cases.—F. DAY-LEWIS, Dublin.



The 390 is a "short" three-valve superhet of simple but efficient design. The chassis layout diagram above includes the trimmers, some of which are seen "through" the chassis, actually being underneath.

