

# FERGUSON 901

Four-valve, plus rectifier, three waveband superhet for 200-260-v., 50-cycle supplies, in table, console or radiogram forms.

**Circuit.**—L1 is an aerial choke. L3, the L.W. coil, becomes the primary of a transformer on M.W. Link coupling from L1 is used on L.W. V1, the frequency changer, employs a tuned anode oscillator circuit and is coupled by orthodox I.F. transformers to V2, the amplifier, and V3, a double-diode triode with strapped diodes. V4, a beam output pentode, and V5, a full-wave rectifier, are on a separate small chassis.

Provision is made for a P.U. and a high impedance extension speaker. The same R.F. chassis is employed in A.C.-D.C. models, except the heaters are series run. The universal power chassis is also very similar but incorporates a CL4 output valve and a conventional, series-connected CY1 half-wave rectifier.

## GANGING

**I.F. CIRCUITS.**—Tune to top of M.W. band Inject 470 kcs. at V1 grid and adjust I.F. trimmers.

**S.W. BAND.**—Inject 16 mcs. and adjust VC1, using signal at lowest capacity. Then adjust VC2.

Pad with VC3 at 6 mcs., rocking gang slightly. **M.W. BAND.**—Trim with VC4 and VC5 at 1,400 kcs. and pad with VC6 at 600 kcs.

**L.W. BAND.**—Trim with VC7 and VC8 at 240 kcs. and pad with VC9 at 150 kcs. On all bands repeat adjustments once or twice, finishing in trimming position.

## VALVE VOLTAGES

V	Type	Anode	Screen	Cathode
1	ECH3	245	80	2.8
		115 (Osc. anode)	—	—
2	EF9	240	80	2.6
3	EBC3	45	—	.8
4	6V6G	245	245	12.5
5	5Y3G	—	—	336

## CONDENSERS

C	Mfds.	C	Mfds.
1	250 mmfds.	29	100 mmfds.
2	.002	30	.01
4	10 mmfds.	31	100 mmfds.
6	.1	32	.25
9	.1	33	250 mmfds.
12	100 mmfds.	34	.01
13	.1	35	.1
14	.1	36	250 mmfds.
15	.001	37	.25
17	100 mmfds.	38	.002
24	.1	39	.01
27	100 mmfds.	40	16 + 8
28	.1		

## RESISTANCES

R	Ohms.	R	Ohms.
1	.5 meg.	12	.5 meg.
2	50,000	13	25,000
3	100,000	14	500
4	25,000	15	.5 meg.
5	50,000	16	2,500
6	500	17	100,000
7	.5 meg.	18	50,000
8	20	19	300
9	5,000	20	50,000
10	5,000	21	25,000
11	1,000	22	200

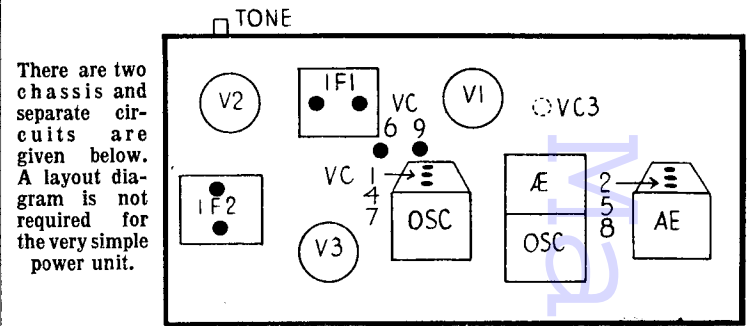
## WINDINGS

L	Ohms.	L	Ohms.
1	224	11	19.3
2	13	12	16.5
3	26.5	13	16.5
4	4.2	14	1,500
5	V. low	15	500
6	16.5	16	.5
7	16.5	17	.15
8	V. low	18	2.2
9	V. low	19	31-38
10	4.7	20	250

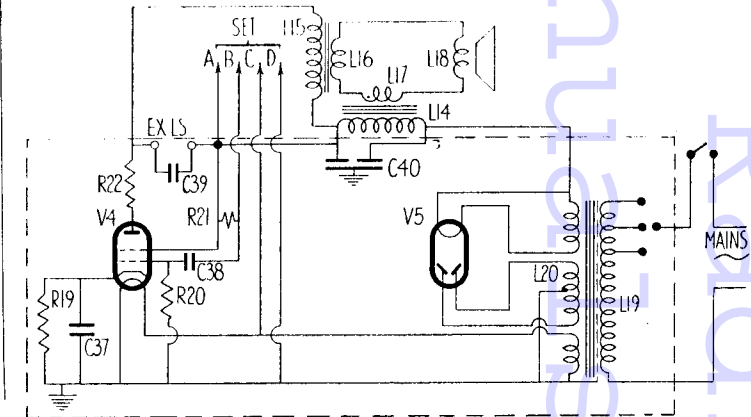
## A Transformer Fault

THE customer complained a set had considerably lost power. I traced the trouble to the L.F. section and found that the anode voltage to the output pentode was considerably less than that specified.

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There are two chassis and separate circuits are given below. A layout diagram is not required for the very simple power unit.



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I at once suspected a short-circuited cathode by-pass condenser, but this proved to be O.K. The resistance of the output transformer primary was found to be in order. Next I tested the output valve for electrode "shorts," etc., but without success.

Once again, almost in desperation, I turned my attention to the output transformer. When I disconnected the H.T. positive lead from the transformer, the voltage on the lead returned to normal. I decided to test the insulation of the transformer primary to earth, and it was then I hit upon the trouble.

The ohmmeter showed a reading of 8,000 ohms between transformer primary and chassis. Evidently the primary winding was making partial contact with the transformer casing, thereby causing the voltage drop on the anode of the output valve.

Upon fitting a new transformer the set worked perfectly.—K. G. PILGRIM, Pilgrims, Hove.

