FERGUSON - 342BU

Intermediate frequency 470 kc/s.

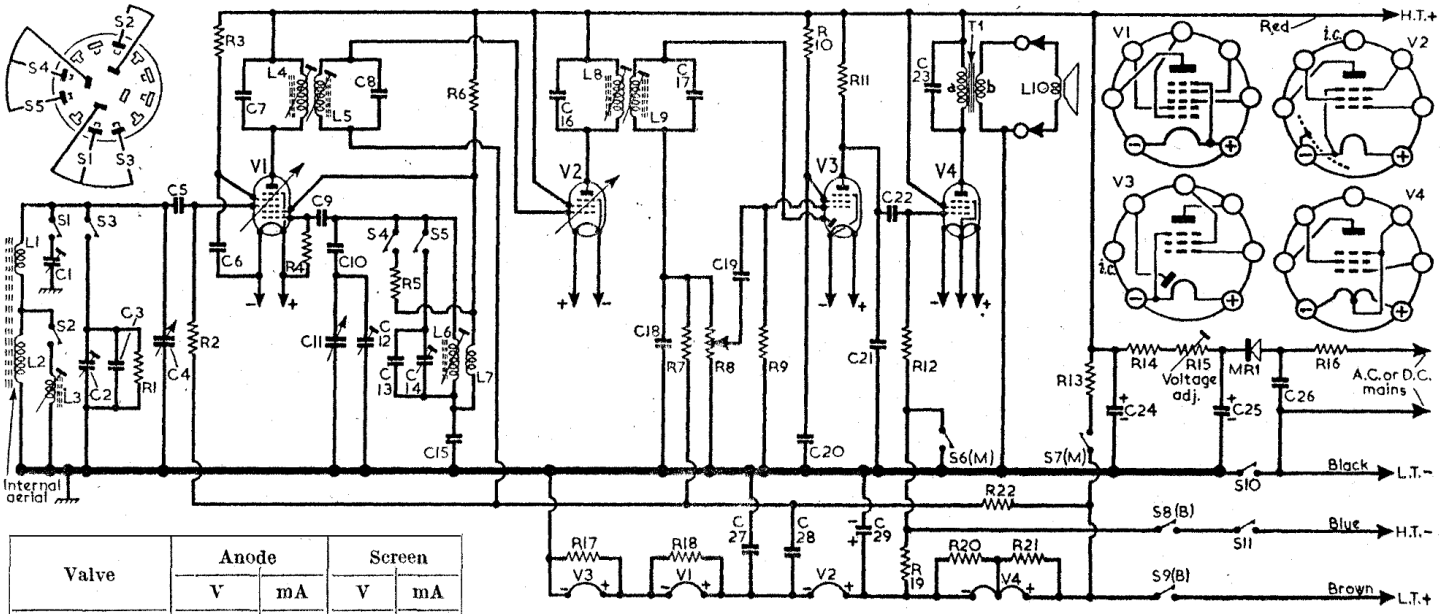
OTHER COMPONENTS		Approx. Values (ohms)	Locations
L1	Internal aerial coils	—	A1
L2	Internal aerial coils	3·5	C1
L3	M.W. loading coil	0·5	C1
L4	1st I.F.T. Pri.	8·0	B1
L5	1st I.F.T. Sec.	8·0	B1
L6	Oscillator tuning	2·0	B1
L7	Oscillator reaction	—	B1
L8	2nd I.F.T. Pri.	8·0	C1
L9	2nd I.F.T. Sec.	8·0	C1
L10	Speech coil	2·5	—
T1	O.P. trans. a	600·0	C1
	O.P. trans. b	—	—
MR1*	H.T. rectifier	—	A1
S1-S5	Band switches	—	B1
S6(M)-S9(B)	Mains/battery sw.	—	G3
S10-S11	On/off sw., g'd R8	—	B1

* Westinghouse 18RA11161.

RESISTORS		Values	Locations
R1	L.W. aerial shunt	100kΩ	E2
R2	V1 C.G.	2·2MΩ	E3
R3	V1 S.G. feed	100kΩ	F3
R4	V1 osc. C.G.	27kΩ	F3
R5	M.W. osc. limiter	100kΩ	B1
R6	Osc. anode feed	33kΩ	F3
R7	A.G.C. decoupling	2·2MΩ	E3
R8	Volume control	1MΩ	B1
R9	V3 C.G.	10MΩ	D3
R10	V3 S.G.	6·8MΩ	E3
R11	V3 anode load	2·2MΩ	E3
R12	V4 C.G.	2·2MΩ	D2
R13	Filament ballast	3kΩ	A1
R14	H.T. smoothing	2·25kΩ	A1
R15	Voltage adj.	1·5kΩ†	F3
R16	Surge limiter	500Ω	A1
R17	Filament H.T. shunts	330Ω	E2
R18	Filament H.T. shunts	1kΩ	F2
R19	V4 G.B.	560Ω	E2
R20	Filament H.T. shunts	240Ω	D2
R21	Filament H.T. shunts	330Ω	D2
R22	V1, V2 G.B.	6·8MΩ	D3

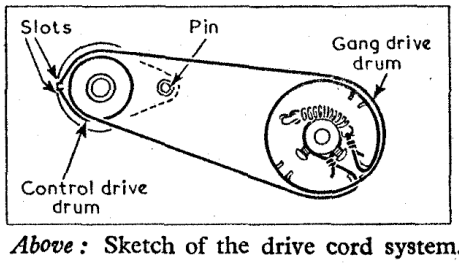
†Wire-wound variable potentiometer, Colvern CL901.

CAPACITORS		Values	Locations
C1	M.W. aerial trim.	50pF	E2
C2	L.W. aerial trimmers	50pF	E2
C3	L.W. aerial trimmers	160pF	E2
C4	Aerial tuning	528pF	A1
C5	V1 C.G.	100pF	E2
C6	V1 S.G. decoupling	0·01μF	F2
C7	1st I.F.T. tuning	200pF	B1
C8	1st I.F.T. tuning	200pF	B1
C9	V1 osc. C.G.	100pF	E2
C10	Osc. tracker	660pF	B1
C11	Oscillator tuning	528pF	A1
C12	M.W. osc. trim.	50pF	F2
C13	L.W. osc. trimmers	460pF	B1
C14	L.W. osc. trimmers	50pF	F2
C15	Osc. tracker	0·005μF	B1
C16	2nd I.F.T. tuning	200pF	C1
C17	2nd I.F.T. tuning	200pF	C1
C18	I.F. by-pass	100pF	E3
C19	A.F. coupling	0·001μF	C1
C20	V3 S.G. decoupling	0·01μF	D3
C21	I.F. by-pass	30pF	D3
C22	A.F. coupling	500pF	D3
C23	Tone correction	0·003μF	E2
C24	H.T. smoothing	50μF	A1
C25	H.T. smoothing	50μF	A1
C26	Mains R.F. by-pass	0·002μF	A1
C27	Filament by-pass	0·5μF	E3
C28	A.G.C. decoupling	0·01μF	F3
C29	Filament by-pass	100μF	D3



Valve	Anode V	Anode mA	Screen V	Screen mA
V1 DK96 ...	85 / Oscillator / 30	0·6 / — / 1·6	70	*
V2 DF96 ...	85	1·2	85	0·5
V3 DAF96 ...	17	*	18·5	*
V4 DL96 ...	81·5	4·8	85	0·9
MR1† ...	213‡	—	—	—

* Less than 0·5 mA. † Westinghouse 18RA11161. ‡ A.C. voltage.



Above: Sketch of the drive cord system.

CIRCUIT ALIGNMENT

Apparatus Required.—A signal generator covering the range of 200-1,600 kc/s; an output meter; two 0.01 μF isolating capacitors.

I.F. Stages

1.—Remove chassis from cabinet (see dismantling instructions).
2.—Connect output of signal generator via an 0.01 μF capacitor in each lead, between chassis and the junction of **C4, C5.**
3.—Connect output meter across **T1** secondary winding.
4.—Switch receiver to M.W. and turn gang to maximum. Feed in a 470 kc/s signal and adjust the cores of **L9** (location reference E3), **L8** (C1), **L5** (F3) and **L4** (B1) for maximum output.
5.—Repeat the adjustments in operation 4 until no further improvement results, reducing the input as the circuits come into line to prevent A.G.C. operation.

R.F. and Oscillator Stages

6.—Replace chassis in cabinet, leaving off the battery holders and the base cover.
7.—Couple output of signal generator to receiver by laying the output leads near the ferrite rod aerial.
8.—Check that with gang at maximum capacitance, the cursor coincides with the brown dot at the high wavelength end of the scale.
9.—Switch receiver to M.W., and tune it to brown calibration dot at left-hand end of tuning scale.
10.—Feed in a 1,540 kc/s signal and adjust **C12** (F2) for maximum output.
11.—*Turn gang to maximum capacitance, feed* in a 535 kc/s signal and adjust the core of **L6** (E3) for maximum output.
12.—Feed in a 1,400 kc/s signal, tune it in on receiver, and adjust **C1** (E2) for maximum output.
13.—Feed in a 535 kc/s signal, tune it in on receiver, and adjust the core of **L3** (E2) for maximum output.
14.—Repeat operations 12 and 13 until no further improvement results.
15.—Switch receiver to L.W. and tune it to red calibration dot at 1,400 m. Feed in a 214.3 m signal and adjust **C14** (F2) and **C2** (E2) for maximum output.