

### TANNOY TYPE G.A.60 AMPLIFIER (Cont).

approximately 145 volts when V3 is in order.

The H.T. potentiometer, consisting of R1 and R1A, is for polarising an external microphone.

**Removing Chassis.**—Remove the connecting plugs. Undo the six screws underneath the case, and slide the chassis out.

**General Notes.**—The circuit is perfectly straightforward, and though the chassis appears complicated, the wiring is easily traced, and all components can be reached.

Do not run the amplifier with a DA60 suspected of being faulty.

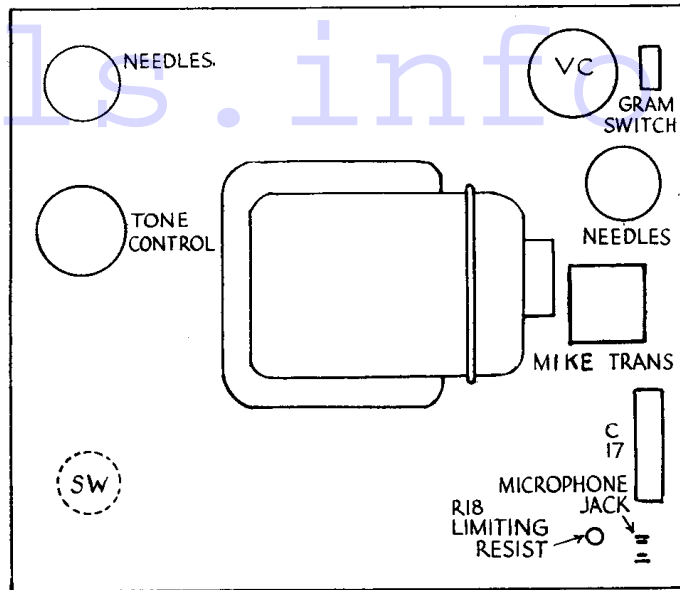
**Replacing Chassis.**—Lay chassis inside cabinet, replace holding screws and insert connecting plugs.

#### CONDENSERS

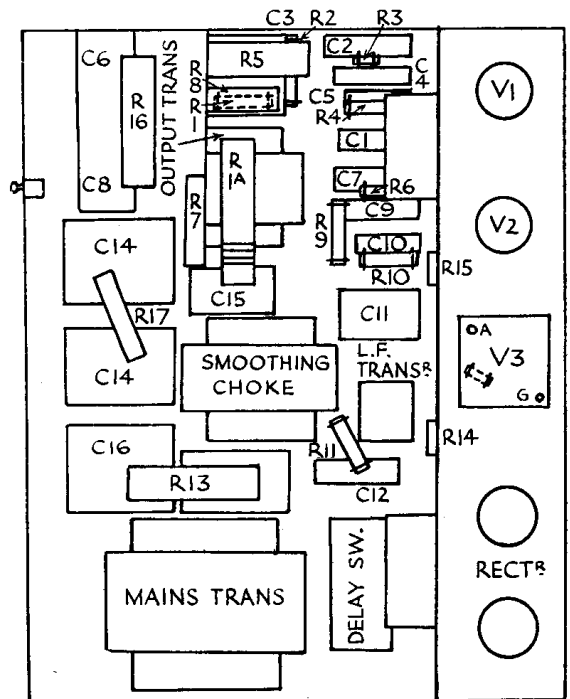
C.	Purpose.	Mfd.
1	Tone control circuit V1 anode ..	.03
2	V1 grid coupling ..	.02
3	Decoupling input H.T. ..	200 el.
4	Decoupling V1 grid ..	1
5	V1 cathode by-pass ..	10 el.
6	Decoupling V1 anode ..	4
7	L.F. coupling V1 to V2 ..	.02
8	Decoupling V2 anode ..	4
9	V2 grid decoupling ..	1
10	V2 cathode by-pass ..	10 el.
11	L.F. coupling V2 to V3 ..	1
12	Decoupling V3 grid ..	1
13	V3 heater (cathode) by-pass ..	8
14	H.T. smoothing ..	4+4
15	H.T. smoothing ..	1
16	H.T. smoothing ..	4
17	Preventing D.C. through microphone transformer ..	10 el.

#### RESISTANCES

R.	Purpose.	Ohms.
1	H.T. potentiometer, top part ..	2,000
1A	H.T. potentiometer, lower part ..	30,000
2	Decoupling V1 grid ..	50,000
3	V1 grid leak ..	1 meg.
4	V1 cathode bias ..	1,000
5	V1 anode, L.F. coupling ..	30,000
6	V2 grid leak ..	1 meg.
7	V2 anode decoupling ..	10,000
8	V2 anode, L.F. coupling ..	10,000
9	V2 grid decoupling ..	50,000
10	V2 cathode bias ..	1,000
11	V3 grid decoupling ..	30,000
12	V3 grid stabiliser ..	5,000
13	V3 bias ..	1,200
14	V3 heater potentiometer (artificial C.T.) ..	30
15	V1 and V2 heater potentiometer (artificial C.T.) ..	30
16	V1 anode decoupling ..	30,000
17	Voltage drop to microphone amplifier ..	10,000
18	Microphone limiting resistance ..	800
	Volume control ptr. ..	.5 meg.
	Tone control ..	50,000



Above is a layout showing how the parts are disposed under the motor-board of the Tannoy amplifier.



On the right is the layout of the Tannoy amplifier itself. The output valve, V3, has a square base.

## AERODYNE DRAKE MAINS THREE

**Circuit.**—The H.F. valve, VP4 met. (V1), has a band-pass aerial circuit. The variable mu characteristics are used for controlling volume, and bias is limited by fixed cathode resistance. Coupling to the next valve is by tuned anode coil with reaction.

An SP4 met. detector valve (V2) operates as a power grid detector with low values of grid condenser and leak, and is coupled to the next valve by straight R.C. coupling with the H.T. decoupled.

The output valve, Pen 4 VA (V3), has a grid stabilising resistance, and is compensated by a condenser across the primary of the output transformer.

Mains equipment consists of transformer with screened primary, full-wave R2 rectifier, and smoothing is effected by the L.S. field in the positive H.T. lead with two 8 mfd. electrolytic condensers.

**Quick Tests.**—As the output transformer is inside the chassis, quick tests should be carried out by taking the voltages on the output valve. The aux. grid reading is H.T. smoothed.

**Removing Chassis.**—Undo the screws at

#### VALVE READINGS

Valve.	Type.	Electrode.	Volts.	M.A.
1	VP4 met.(7)	anode ..	210	3.8
		aux.grid ..	90	
2	SP4 met.(7)	anode ..	*	1.2
		aux.grid ..	*	
3	Pen.4VA ..	anode ..	213	32
		aux.grid ..	245	4

\* Owing to the very high value of resistances in circuit inaccurate readings will be taken by any current-consuming meter. The important reading is the anode current.

the top of the dial bracket, pull off the knobs, and remove the four holding screws from underneath the cabinet.

**General Notes.**—The lay-out and wiring of the set are particularly simple.

The condenser C4 consists of a few turns of bare wire wound round the sistoflex covering of a wire from the second band-pass coil, and is situated alongside the switch. In handling the wiring, take care that this is not disturbed.

To clean the switch contacts, rotate the spindle quickly and turn the contact makers to the outside. Wipe with a clean duster.

Mains transformer connections are:—

Outside: Two red and yellow sistoflex rectifier heaters; two blue covered with yellow

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# AERODYNE "DRAKE" A.C. MAINS THREE

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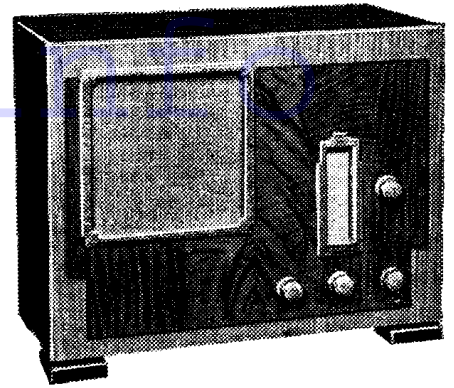
sistoflex, rectifier anodes; one green 230-volt tapping.

Inside: Two black and yellow sistoflex, set heaters; one red sistoflex, 210-volt tapping; one blue sistoflex, 250-volt tapping; one yellow sistoflex, mains O. to switch; one red rubber, one black and one green silk-covered to chassis.

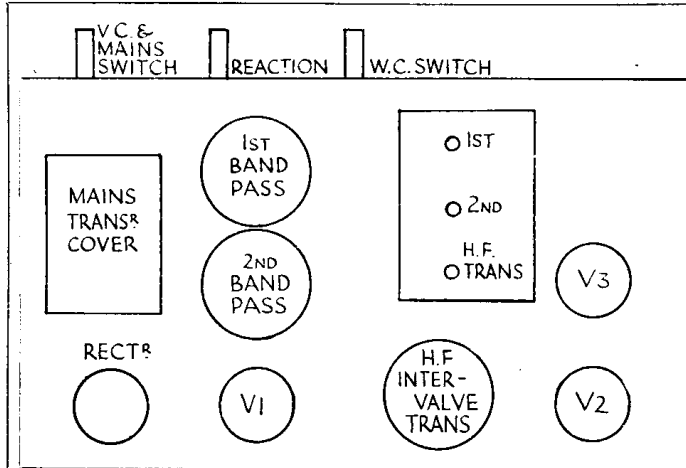
Several of the components are fixed to the

chassis by tubular rivets. If these components require replacement, drill out the rivets and use 6BA bolts for the replacements.

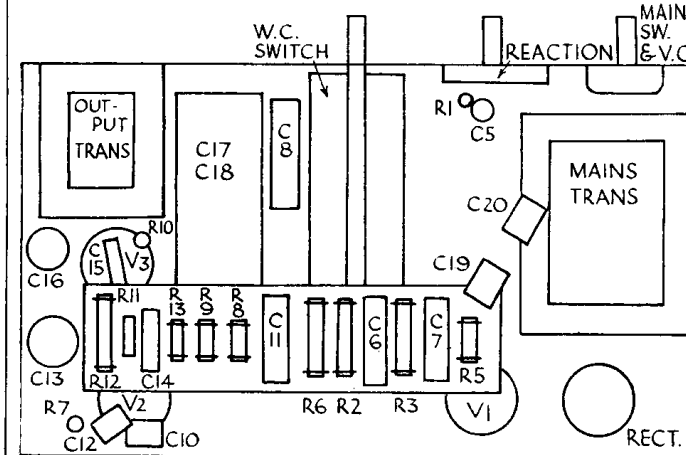
**Replacing Chassis.**—Lay chassis inside cabinet, replace holding screws, two wood screws on dial bracket, and press on the knobs.



The "Drake" receiver, produced by Aerodyne Radio, Ltd., utilises a straight three-valve circuit.



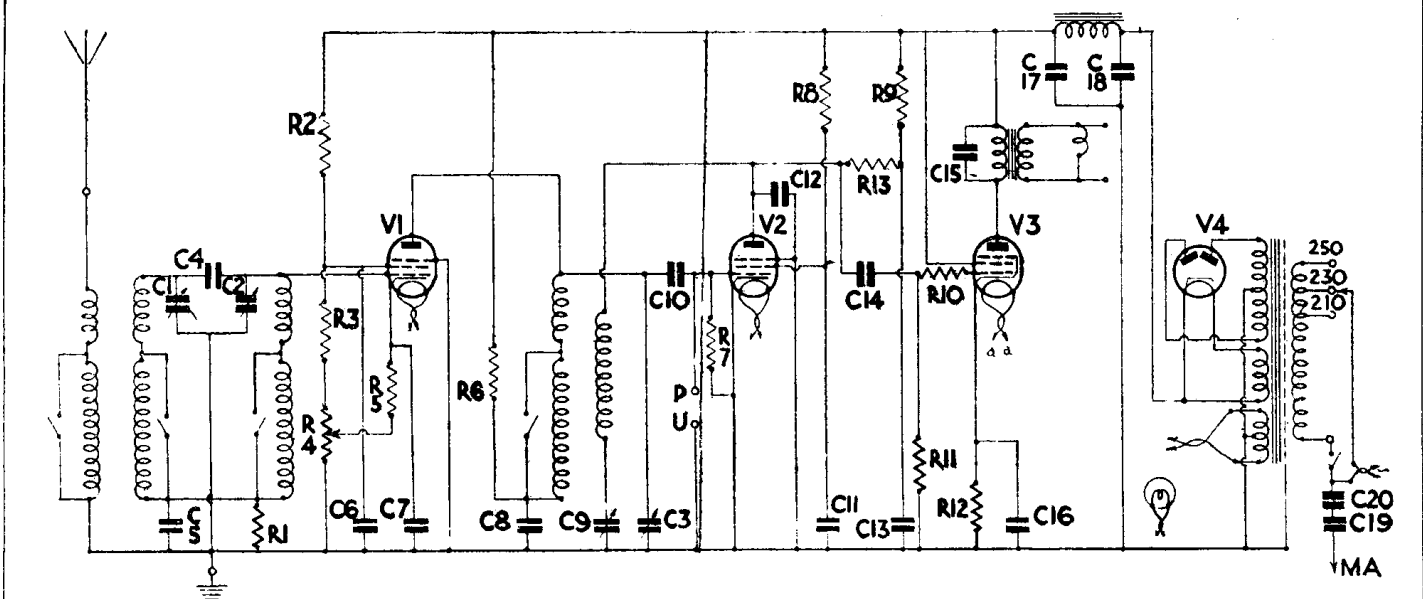
A straightforward, logical arrangement of parts is utilised in the "Drake".



A resistance and condenser assembly strip simplifies the underside of the Aerodyne receiver.

RESISTANCES		
R.	Purpose.	Ohm s.
1	Low potential end of band pass coils	1,000
2	Top part of V1 aux. grid ptr.	30,000
3	Lower part of V1 aux. grid ptr.	20,000
4	Volume control	8,000
5	V1 cathode bias (fixed)	300
6	Decoupling V1 anode	8,000
7	V2 grid leak	.25 meg.
8	Voltage dropping to V2 aux. grid	.5 meg.
9	Decoupling V2 anode	20,000
10	V3 grid stabiliser	100,000
11	V3 grid leak	.5 meg.
12	V3 cathode bias	500
13	V2 anode L.F. coupling	100,000
--	L.S. field	2,500

CONDENSERS		
C.	Purpose.	Mfd
4	Twisted wire. Band pass coupling	—
5	Band pass coupling	.05
6	V1 aux. grid by-pass	.1
7	V1 cathode by-pass	.1
8	V1 anode decoupling	.5
10	V2 grid reservoir	.00005
11	V2 aux. grid by-pass	.1
12	V2 anode by-pass	.0005
13	V2 anode decoupling	1
14	V2, V3 L.F. coupling	.01
15	Tone compensating V3 anode	.005
16	V3 cathode by-pass	20 el.
17	H.T. smoothing	8 el.
18	H.T. smoothing	8 el.
19	Mains aerial	.0003
20	Series with C19	.0003



Band-pass, tuned-anode and resistance-capacity couplings are utilised in the Drake mains receiver.