KOLSTER-BRANDES 666 (Cont.)

the requirements of the Rejectostat. The opposing ends of the Rejectostat go to A and E on the set, while the mid point goes to chassis.

Quick Tests.—Between terminals on speaker transformer and chassis :—Top row, left to right : 1, (black) 0; 2, (blue V5 anode), 220 v.+; 3, (red H.T.+) 232 v. positive; 4 (red and black) 80 volts negative. The latter represents the voltage drop across the L.S. field. (Resistance is 1,500 ohms., so set current is 53.5 m.a. approx.)

Removing the Chassis.—Pull off the knobs. Remove speaker plug (end socket at rear).

Remove four screws from underneath.

Slide chassis out.

General Notes. — Alternative valves : V1—VP4, MVSPen. or E447; V2—8A1, SP4, AC/S2/Pen., E446; V3—VP4,MVSPen., E447; V4—TDD4, MHD4, DDT; V5—7A2, ACPen., Pen.4VA, MPT4, or 7A2. Rectifier, any B type.

The power consumption is 70 watts.

The var. tone control consists of seven fixed condensers connected in parallel by the control in such a way that the steps give an apparently continuous variation.

The leads to the mains transformer are coded :—

Front :—2 red, rectifier filament; 2 black, set filaments to V4 pins; brown, earth.

At back :—2 red, rectifier anodes; yellow, 245 v. mains tapping; pink, 225 v.; green, 205 v.; black, chassis earth; blacks with red tracer to R14 (H.T. −).

The numbers for the switch are given in both diagrams. Their operation is :—

	1	2	3	4	6
Gram. ...	c	o	o	o	o
L.W. ...	o	c	o	o	o
M.W. ...	o	o	c	c	c

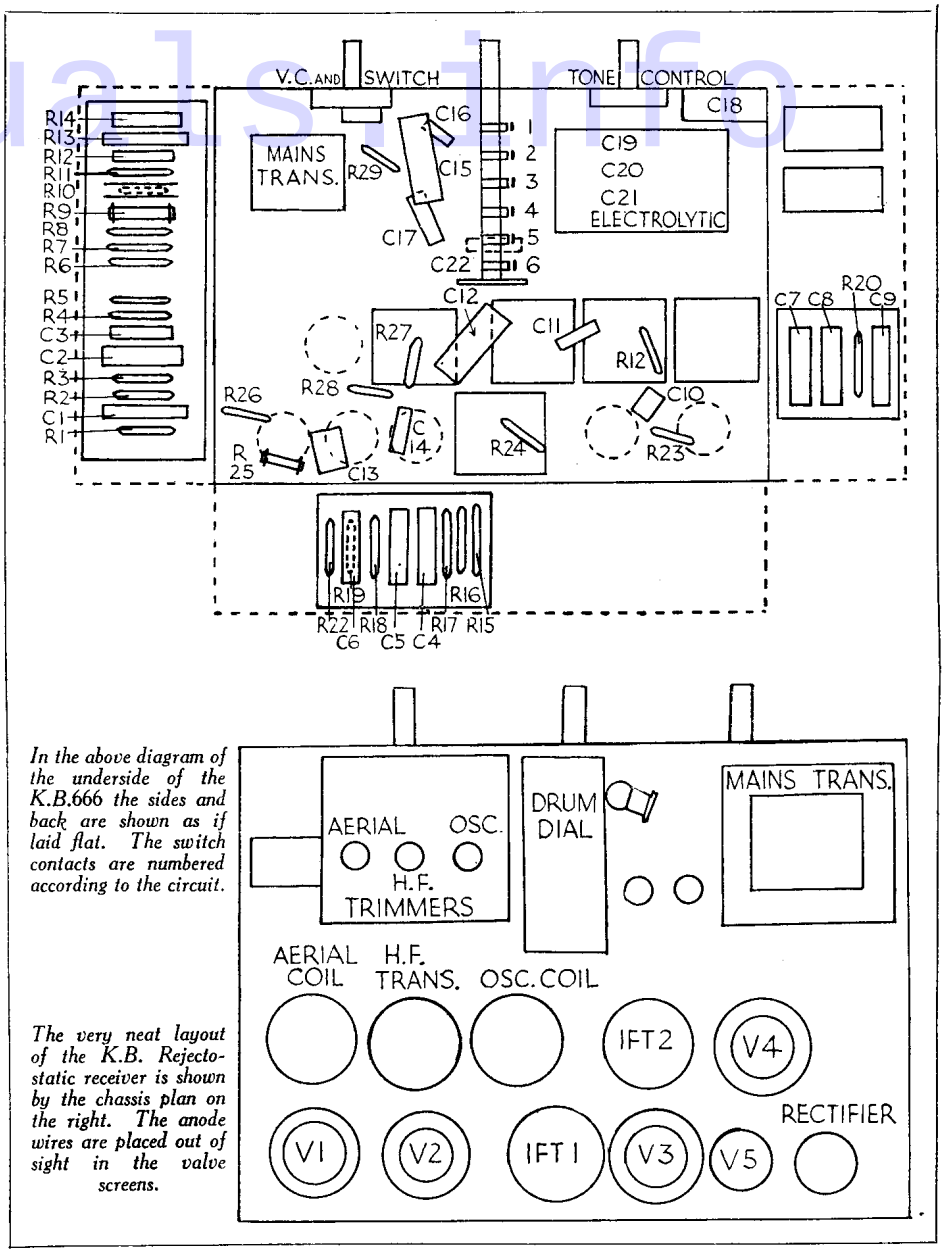
(5 is connected to chassis.)

Pilot Lamp.—5.5 volts, .3 amps.

Extra Speaker Connections.—For internal and external together (1 ohm. impedance), leave wander plug in G on transformer and connect ex. L.S. speech coil to A and B.

For external only, connect wander plug to A and connect ex. L.S. to G and B.

Replacing Chassis.—Slide chassis into cabinet. Replace four screws underneath. Replace knobs and insert L.S. plug into L.S. socket (end one).



In the above diagram of the underside of the K.B.666 the sides and back are shown as if laid flat. The switch contacts are numbered according to the circuit.

The very neat layout of the K.B. Rejectostatic receiver is shown by the chassis plan on the right. The anode wires are placed out of sight in the valve screens.

MADRIGAL A.C. MAINS THREE BY R.I.

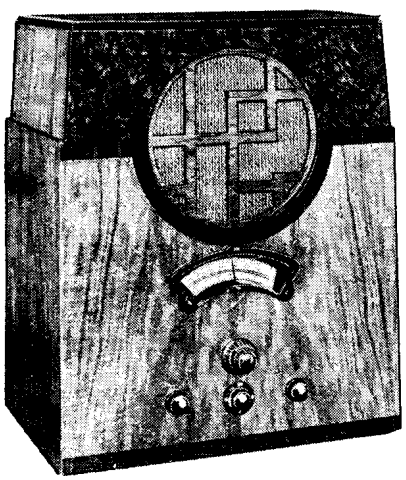
Circuit.—The H.F. valve AC/SG (V1) is preceded by a single tuned aerial circuit with a special filter controlled by a variable condenser. Tuned H.F. transformer coupling is used in the anode circuit.

A power grid detector AC/HL (V2) employing reaction is coupled to the output valve by a parallel-fed transformer (Parrafeed) and the anode is decoupled.

The output pentode AC/Pen (V3) has an H.F. stopper (R8) in its grid lead, and is tone compensated by the condenser (C12) between the anode and earth. A large permanent magnet speaker completes the set.

Full wave mains rectification is used and smoothing is by choke and two 8 mfd. electrolytic condensers. Hum stabilisers are incorporated in the rectifier circuit across the high potential A.C. winding, and an artificial centre point of the set filament winding is obtained by a potential divider.

Quick Tests.—Between one terminal on L.S. transformer and chassis 220 volts (H.T.+). Between other terminal and chassis 200 volts (V3 anode).



The R.I. Madrigal is a very simple service proposition.

As the transformer is not connected to a field winding it is immaterial to which terminal either lead is connected.

Removing Chassis.—Remove the knobs (grub screw).

Undo cleat holding speaker cable.

Remove two wood-screws and distance pieces from the ends of the dial (inside).

Remove four holding screws underneath.

Withdraw chassis carefully.

L.S. leads are sufficiently long to allow tests without disconnecting.

General Notes. — The lay-out and assembly of this set are simple, and repairs can be entrusted to the beginner. Switch contacts are robust, and are easily reached. Separate components are used and replacements are standard.

Pilot lamps are in parallel circuits, but each is in series with a limiting resistance R 11 and R 12. The ordinary 3.5 volt bulb is adequate.

Replacing the Chassis.—In our model it was necessary to remove the catch on the

(*Continued on next page.*)

R.I. MADRIGAL THREE
(Cont.)

right side of the back (looking from rear) to allow the chassis to slide into the cabinet.

Replace four holding screws underneath.

Clip speaker cable under cleat.

Replace the two screws and distance pieces at the ends of the dial (the distance pieces are shaped) longer side uppermost.

VALVE READINGS

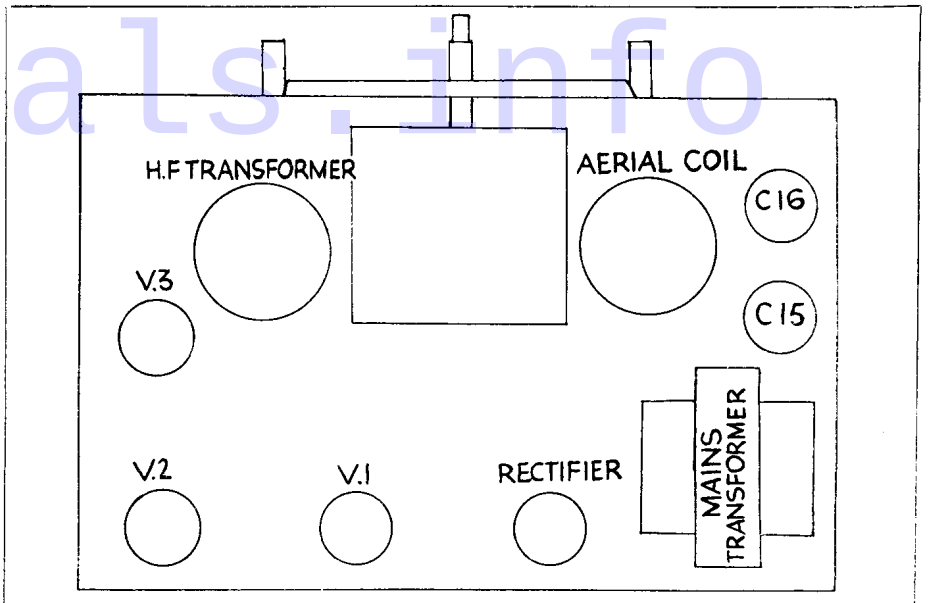
Valve.	Connection.	Volts.	M.A.
V1 AC/SG ...	anode ...	218	4.5
	screen ...	65	
V2 AC/HL ...	anode ...	95	2.9
V3 AC/Pen ...	anode ...	200	30
	aux. grid	220	5.5
Rectifier UU 60/250	anodes	225 A.C. each	

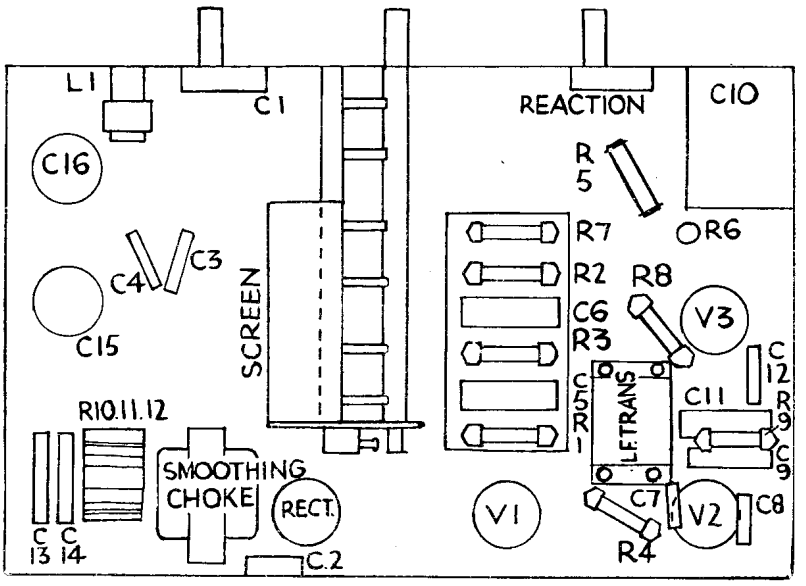
CONDENSERS

C.	Purpose.	Mfd.
1	Selectivity control	.003 max.
2	Aerial series condenser ...	.0001
3	Across filter circuit	.0005
4	Across one section (L1) of filter	.0005
5	V1 cathode	.1
6	V1 screen	.1
7	V2 grid	.0001
8	V2 anode by-pass	.0005
9	L.F. feed condenser to transformer	.1
10	V2 anode decoupling	2
11	V3 cathode (electrolytic 12-volt type).	50
12	V3 tone compensating	.005
13	Modulation-hum stopper } rectifier ...	.01
14	Modulation-hum stopper } " ...	.01
15	Smoothing condenser (electrolytic).	8
16	Smoothing condenser (electrolytic).	8

RESISTANCES

R.	Purpose.	Ohms.
1	V1 cathode bias...	200
2	Lower part of V1 screen ptr. ...	30,000
3	Upper part of V1 screen ptr. ...	50,000
4	V2 grid leak	1 meg.
5	Feed to reaction circuit ...	400
6	Filter coupling to L.F. transformer.	30,000
7	V2 anode decoupling	10,000
8	H.F. stopper, grid V3	100,000
9	V3 cathode bias...	400
10	Filament heater ptr.	30
11	Voltage dropping to pilot lamp	5
12	Voltage dropping to pilot lamp	5
—	Output transformer primary ...	700
—	Smoothing choke (between C15 and C16).	760





The R.I. Madrigal has a straightforward circuit and obtains its good performance through careful design and the efficiency of the components. As the layouts above indicate, the chassis is simple. The valves can be tested with the chassis in the cabinet.