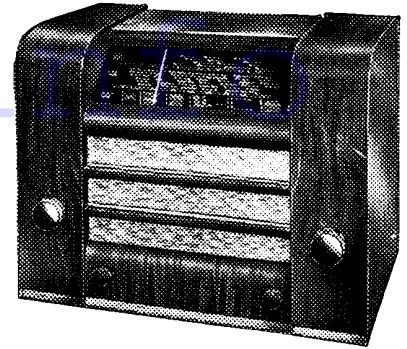


HALCYON A581 A.C. A.-W. SUPERHET



The Halcyon A581, an all-wave A.C. superhet with the refinement of flywheel tuning.

CIRCUIT.—The aerial is capacitively and inductively coupled to V1, a triode-hexode frequency changer, through a band-pass filter on medium waves and long waves. On short waves the aerial input passes through a coupling condenser and thence to a tapping on the short-wave coil connected in the grid of V1.

V2, the next stage, is an H.F. pentode acting as the I.F. amplifier of the receiver, and is fed by an I.F. transformer from the preceding stages.

The output of V2 passes through a further I.F. transformer to the demodulating diode of V3, a double-diode triode, the other diode providing a D.C. potential, and is fed back through coupling circuits to give A.V.C. In the grid circuit of the triode section of V3 is connected the volume control of the receiver.

The output of V3 passes to the final stage, V4, an output pentode, via a resistance-capacity coupling network. A variable tone control arrangement operates between the anode of V4 and the earth line of the receiver. The signal then passes to the speaker via a matching transformer.

A switch in the H.T. supply of V1 and V2 operates so as to cut off the supply to those two valves when the receiver is being used for gramophone reproduction, so as to prevent radio signals from interfering with the gramophone. Incidentally, this switch also puts a slightly higher voltage on to the amplifying valves, V3 and V4.

Mains equipment consists of mains transformer, in the primary of which is included a fuse, a full-wave rectifying valve, electrolytic smoothing condensers and smoothing choke (speaker field).

Special Notes.—The dial lamp of the receiver is rated at 230 volts 10 watts, and is connected across the mains side of the mains transformer. It is fitted in a holder on the chassis deck, and the lamp is mounted on an M.E.S. base. Replacements from Halcyon are numbered No. 4908. A fuse is incorporated in the receiver in the mains lead. This is to be found on the rear of the power pack chassis and is rated at 1 amp.

Two sockets are provided on a panel mounted at the rear of the cabinet for connecting a pick-up.

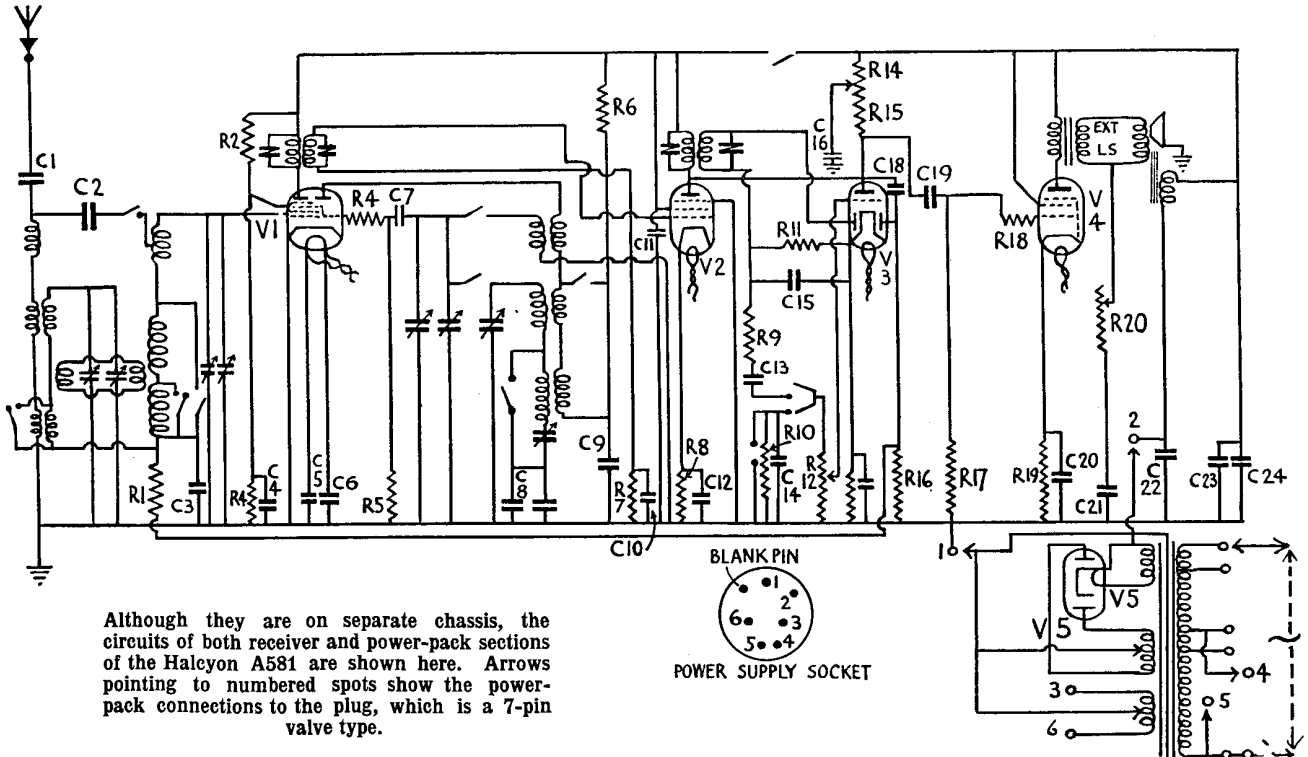
Another pair of sockets provide connections for use with an external loudspeaker. This should be of the permanent-magnet moving coil (Continued on page 56)

RESISTANCES

R.	Purpose.	Ohms.
1	V1 A.V.C. decoupling	1 meg.
2	V1 screen ptr. part	19,000
3	V1 screen ptr. part	15,000
4	Harmonic stabiliser	50
5	Oscillator grid leak	33,000
6	Oscillator anode decoupling	15,000
7	V2 A.V.C. decoupling	1 meg.
8	V2 cathode bias	300
9	H.F. stopper	250,000
10	Pick-up shunt	10,000
11	V3 demodulator diode load	100,000
12	Volume control	1 meg.
13	V3 cathode bias	1,000
14	V3 triode anode decoupling	10,000
15	V3 triode anode load	33,000
16	A.V.C. diode load	1 meg.
17	V4 grid leak	100,000
18	V4 grid stopper	100,000
19	V4 cathode bias	150
20	Tone control	50,000

CONDENSERS

C.	Purpose.	Mfds.
1	Series aerial	.0005
2	Aerial short wave coupling	.0005
3	Bottom band pass coupling	.25
4	V1 screen decoupling	2
5	V1 heater R.F. by-pass	.01
6	V1 heater R.F. by-pass	.01
7	Oscillator grid	.00005
8	Oscillator medium wave fixed tracker	.0015
9	V1 osc. anode decoupling	.1
10	V2 A.V.C. decoupling	.1
11	V2 screen decoupling	.0001
12	V2 cathode shunt	.1
13	L.F. coupling	.001
14	Pick-up shunt	.01
15	H.F. by-pass	.0001
16	V3 triode anode decoupling	2
17	V3 cathode shunt	50
18	V3 A.V.C. diode coupling	.001
19	L.F. coupling	.01
20	V4 cathode shunt	50
21	Tone control	.05
22	H.T. smoothing	8
23	H.T. smoothing	8
24	H.T. line R.F. by-pass	.1



Although they are on separate chassis, the circuits of both receiver and power-pack sections of the Halcyon A581 are shown here. Arrows pointing to numbered spots show the power-pack connections to the plug, which is a 7-pin valve type.

(Continued from page 54)

type with a low resistance of about 2 ohms. These sockets are to be found on a panel fixed to the side of the cabinet at the back of the receiver.

The resistance R7 is covered by insulating sleeving to prevent short circuits occurring. In our chassis, R15 was found to be 10,000 ohms. C8 is to be found in the oscillator coil can. C14 and R10 were omitted in our particular chassis.

Removing Chassis.—It should be noted that this receiver has a removable false bottom, secured by six wood screws. With this removed, the underside of the chassis is conveniently exposed for most, if not all, service requirements, and routine valve tests for voltages, etc., can be performed. Should it be found essential, however, the procedure is as follows:—

Remove the four control knobs on the front of the cabinet. These are fixed by grub screws. The back is secured by three clips. Next turn the set on its side and remove the eight fixing bolts and washers observed on the base (or only four under the receiver chassis proper if removal of the receiver chassis only is contemplated). It will be noted that the power pack is an entirely separate unit from the receiver, connections to the set being made by a detachable six-contact plug.

Remove next the two screws and rubber washers on the top (inside) of the cabinet. Now remove the two wood screws observed on the metal cross-bar, when the chassis is free to the extent of the speaker leads. To remove the chassis completely, the various leads to the speaker will have to be unsoldered. It should be noted that the leads to the speaker are connected as follows:—

Blue lead, red spot; and brown lead, green spot; to upper tag on speaker transformer. Yellow lead, black spot, to lower tag of the speaker transformer.

Brown lead, green spot; to upper tag on speaker panel or left side of the speaker.

Red lead, yellow spot; to lower tag on speaker panel on left side of speaker.

Black lead, yellow spot; to earthing tag on the speaker frame.

The volume control and on/off switch will have to be removed from the front of the cabinet. The receiver and power pack can then be removed.

I.F. Circuits.—Turn the gang condenser to maximum capacity, and volume control to maximum volume. Connect a service oscillator between the top cap (control grid) of V1 and chassis, and an output meter across the primary of the loudspeaker transformer.

Tune the oscillator to a frequency of 130.5 kc.s and adjust IFT1, IFT2, IFT3, and IFT4 for maximum response in the output meter, reducing the input from the service oscillator as the circuits come into line, to render the A.V.C. inoperative.

Short Waves.—Tune the set to 13 metres (23.07 mc.s) and the oscillator to a corresponding wavelength. Adjust T1, the oscillator short-wave trimmer (on oscillator section of gang condenser), for maximum response on the output meter. If there are two peaks, that with the least trimmer capacity is the correct setting.

Medium Waves.—Tune the set to 250 metres and the oscillator to 250 metres (1,200 kc.s) and adjust T2, the medium-wave oscillator trimmer, for maximum results. If there are two peaks, then the setting with the least capacity is the correct one. Then adjust T3 and T4 for maximum sensitivity.

Tune the set to 500 metres (600 kc.s) and the oscillator to a wavelength to correspond. Adjust P1 for maximum response, simultaneously rocking the gang for optimum results.

Long Waves.—Tune the set to 1,800 metres and oscillator to 1,800 metres (166.7 kc.s) and adjust P2 for maximum response, also rocking the gang to ensure optimum results.

Replacement Condensers

REPLACEMENTS for certain condensers in the Halcyon A581 are made by A. H. Hunt, Ltd., of Garratt Lane, Wandsworth, London, S.W.18. They are as follows: for C17, 50 mfd.: type 3531, price 1s. 10d. For C's 4 or 16, 2 mfd. each: type 2519, price 2s. For C's 22 and 23, 8 mfd. each: type 3632, an 8 + 8-mfd. unit, price 6s. 9d.

VALVE READINGS

No signal. Volume maximum. 200 volt A.C. mains.

V.	Type.	Electrode.	Volts.	M.a.
1	All Tung-ram. TX4 met (7)	Anode ..	232	5
		Osc. anode ..	185	5
		Screen ..	62	5.3
2	VP4B met (7)	Anode ..	230	9.2
		Screen ..	230	*
3	DDT4 met (7)	Triode anode	140	3.9
4	APP4C (7)	Anode ..	232	34
		Screen ..	355	3.2
5	APV (4)	Filament ..	355	—

*Inaccessible

Halcyon A581 on Test

MODEL A581.—Standard model for A.C. mains operation, 200-260 volts, 40-100 cycles. Price, 15 gns.

DESCRIPTION.—Three-waveband, four-valve plus rectifier superhet with separate power-pack chassis; horizontal table cabinet.

FEATURES.—Flywheel tuning; a single spin of the knob carries the pointer over a quarter of the scale, which is a very large illuminated full-vision type calibrated in station names and wavelengths. Other controls for volume, tone and wavechanging. Sockets for pick-up and extra speaker.

Sensitivity and Selectivity

SHORT WAVES (16.5-51 metres).—Very good gain and selectivity. Tuning is exceptionally easy and there is no appreciable drift.

MEDIUM WAVES (190-550 metres).—Selectivity and sensitivity up to standard; local stations spread on adjacent channels only. Sensitivity well maintained over the waveband.

LONG WAVES (850-2,000 metres).—Very good gain; selectivity up to standard, with only slight interference on Deutschlandsender.

Acoustic Output

Volume ample for ordinary room without overloading. Tone is full with a reasonable amount of top response; middle and lower registers are quite predominant. Very slight colouration of speech; general nature of response very pleasing.

QUICK TESTS

Quick tests are available on the Halcyon A581 between the leads on the speaker.

Volts measured between this and the chassis should be:—

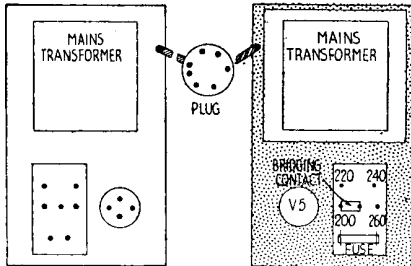
Brown lead, green spot, 228 volts.

Red lead, yellow spot, 355 volts, unsmoothed H.T.

Yellow lead, black spot, 219 volts.

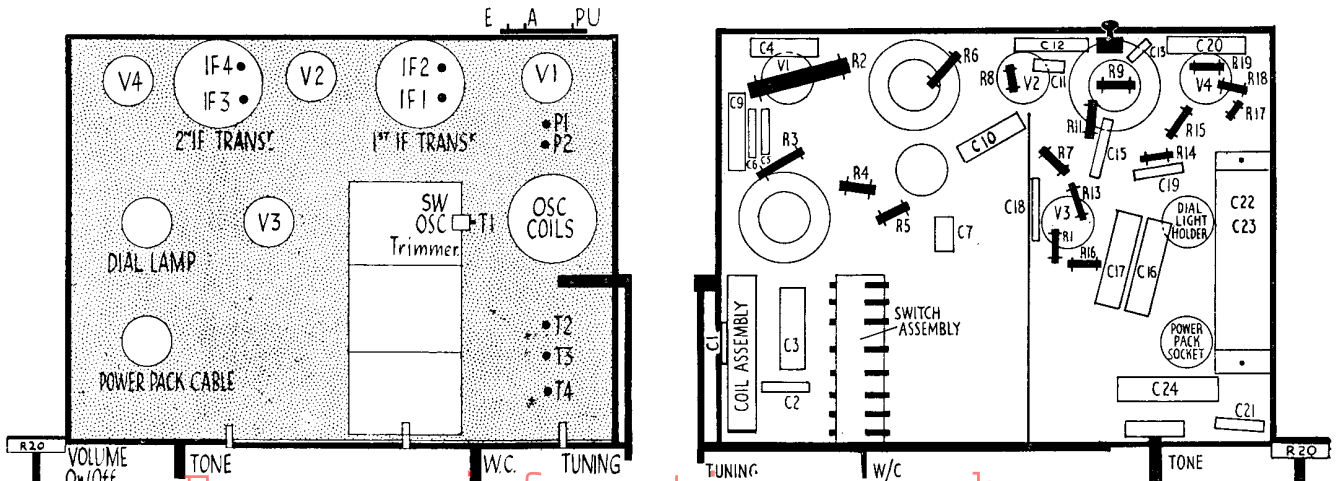
Blue lead, red spot.

Brown lead, green spot, 228 volts.



Above: Top and underside views of the power-pack chassis. The plug is shown once only for clarity.

Below: Top and underside views of the receiver chassis. In each case the top view is "tinted."



For more information remember
www.savoy-hill.co.uk