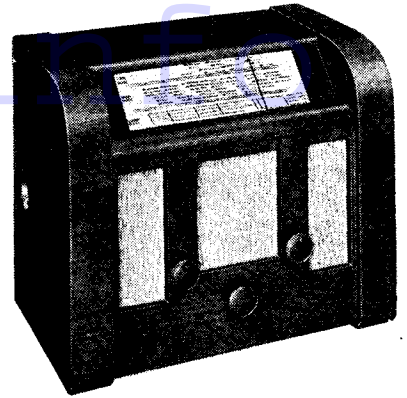


HALCYON MODEL U573 THREE BAND



The model U573 by Halcyon Radio Ltd. is an A.C.-D.C. four-valve plus rectifier superhet operating on three wavebands.

CIRCUIT.—The aerial coupling to the grid of V1, a triode-hexode frequency changer is via a series aerial condenser to a set of band-pass coils on the medium- and long-wave bands and to a single tuned circuit on the short waves.

The signal, converted to the I.F., passes by a transformer tuned to 130.5 kc. to the I.F. amplifier V2, an H.F. pentode. Another transformer leads to the demodulating diode of V3, a double-diode triode.

A manual volume control is included in the coupling arrangements to the grid of the triode section of V3. The remaining diode of V3, fed by a coupling condenser C11, provides a D.C. potential utilised for A.V.C.

V3 is resistance capacity coupled to the output pentode, V4, in the anode circuit of which is connected the speaker matching transformer. Across the primary of the transformer is a pentode compensator condenser. A switch enables a further condenser to be placed into circuit between the anode of the valve and chassis.

Mains equipment consists of a tapped mains voltage adjustment resistance, a half-wave rectifying valve V5, electrolytic smoothing condenser and a smoothing choke (speaker field). Both mains leads are protected by fuses.

Chassis Removal.—Remove the back of the cabinet by sliding clips, and the three control knobs (grub screws). Remove the on-off switch from the side of the cabinet. This is best achieved by removing the two nuts and bolts securing the switch panel and pulling the switch through the hole made thereby.

After the four chassis securing bolts have been taken from the base of the cabinet the chassis together with speaker can be completely removed.

Special Notes.—A twin fuse holder

located at the rear of the chassis deck holds two 1-amp. cartridge fuses.

The single dial lamp of the receiver, located on the top of IFT2 in a screw-in holder, is fitted with an M.E.S. base. The bulb is rated at 220 volts and is an Ismay type C3L.

The mains voltage adjustment resistance at the rear of the chassis deck is of the usual type with wander tags fitting under terminals.

The chassis is "live" under certain conditions and must not be earthed.

Circuit Alignment Notes

Connect an output meter across the primary of the speaker transformer via a condenser of sufficient voltage rating. Connect a service oscillator between the top grid cap of V1 and chassis. Switch the set to the medium band and fully mesh the vanes of the gang. Set the volume control to maximum.

Tune the service oscillator to 130.5 kc. and adjust first the trimmers of IFT2 and then IFT1 for maximum, simultaneously

reducing the input from the oscillator to render the A.V.C. inoperative.

Signal Circuits.—Feed the service oscillator to the A. and E. sockets of the

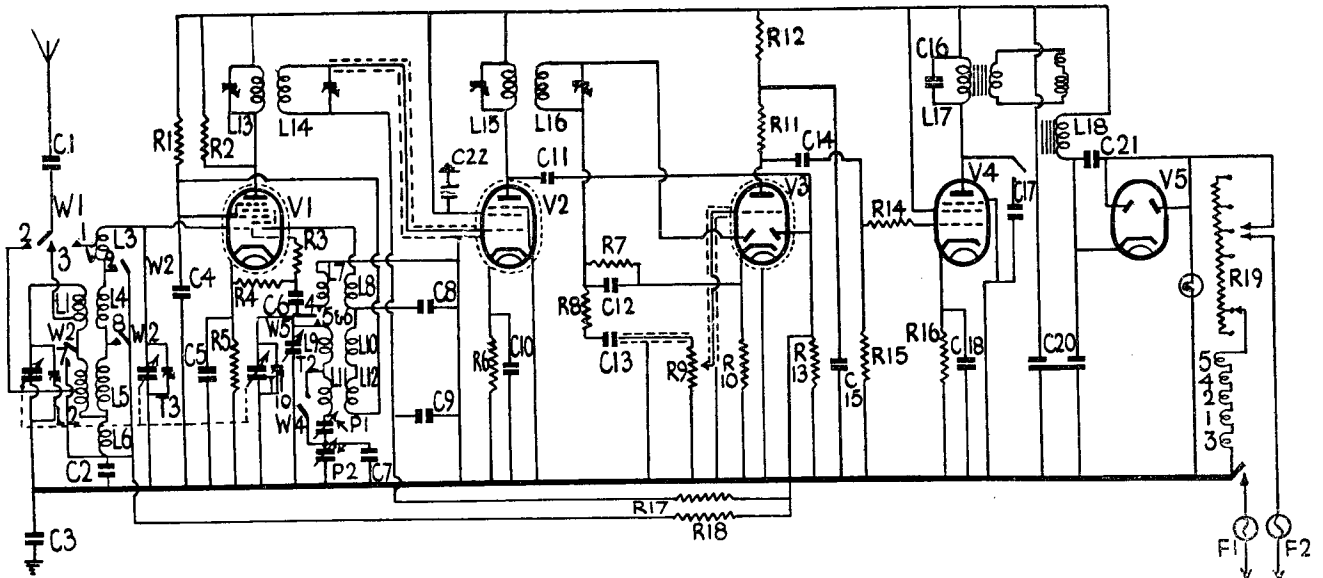
VALVE READINGS

No signal. Volume maximum. M.W. min. cap. 200 volts. A.C. mains.

V.	Type.	Electrode.	Volts.	Ma.
1	Tungsram TX21 (7)	Anode ..	160	4
		Screen ..	80	2
		Osc. anode ..	80	5.8
2	Tungsram VP13B (7)	Anode ..	160	6.5
		Screen ..	155	2
3	Tungsram DDT13 (7)	Anode ..	90	2.8
4	Mullard Pen.36C (7)	Anode ..	150	37
		Screen ..	160	6
		Cathode ..	190	—
5	Tungsram U30 (5)			

RESISTANCES

R.	Purpose.	Ohms.
1	V1 screen and osc. anode decoupling ..	10,000
2	I.F.T.I. primary shunt ..	500,000
3	Osc. grid series resistors ..	50
4	Oscillator grid leak ..	33,000
5	V1 cathode bias ..	150
6	V2 cathode bias ..	300
7	Demodulating diode load ..	100,000
8	H.F. stopper ..	250,000
9	Volume control ..	1 meg.
10	V3 cathode bias ..	1,000
11	V3 anode load ..	10,000
12	V3 anode decoupling ..	10,000
13	A.V.C. diode load ..	1 meg.
14	V4 grid stopper ..	100,000
15	V4 grid leak ..	100,000
16	V4 cathode bias ..	150
17	V2 A.V.C. decoupling ..	1 meg.
18	V1 A.V.C. decoupling ..	1 meg.
19	Mains adjustment resistance	760



A straightforward "short" superhet circuit is used in the U573 with band-pass input to the frequency changing valve.

receiver, preferably *via* a dummy aerial or fixed condenser. Only feed sufficient input to obtain definite peaks in the output meter.

Short Waves.—Tune set and oscillator to 17 metres (17,647 kc.) and adjust T1 for maximum.

Tune set and oscillator to 50 metres (6 mc.) and check calibration. If very much out, adjust end turns of SW oscillator coil to compensate and then readjust T1. Check again at 30 and 50 metres.

Repeat until no further improvement results.

Medium Waves.—Tune set and oscillator to 250 metres (1,200 kc.) and adjust T2, T3 and T4, in that order, for maximum response.

Tune set and oscillator to 500 metres (600 kc.) and adjust P1 for maximum, simultaneously rocking the gang.

Repeat until no further improvement results.

Long Waves.—Tune set and oscillator to 1,875 metres (160 kc.) and adjust P2 for maximum, simultaneously rocking the gang.

Replacement Condensers

EXACT replacement condensers for the U573 are available from A. H. Hunt, Ltd., Garratt Lane, Wandsworth, London, S.W.18. These are: for C20, the block containing two 16-mfd. units, condenser list number 3991, 8s. 6d.; for C18, 2915, 1s. 9d.; and for either C4 or C15, unit 3479, 1s. 9d.

Halcyon U573 on Test

MODEL U573.—Standard model for universal mains operation, 190-265 volts and A.C. 40-100 cycles. Price, 9 gns.

DESCRIPTION.—Four-valve, plus rectifier, three-band table superhet.

FEATURES.—Full-vision scale calibrated in station names and metres and coloured as to wave-band. Controls for volume, tone, tuning and wavechange. Separate mains switch on side of cabinet.

LOADING.—74 watts.

Sensitivity and Selectivity

SHORT WAVES (16.5-50 metres).—Very good gain and selectivity. No tuning or drift trouble. General performance very satisfactory.

MEDIUM WAVES (200-550 metres).—Good gain, reasonable selectivity, local stations spreading slightly. Gain well maintained, with good background.

LONG WAVES (800-2,000 metres).—Representative gain and selectivity. Interference noticed on Deutschlandsender and one or two whistles. All main stations easily received.

Acoustic Output

Well balanced tone, with reasonable amount of high-note response and attack, and good low-note radiation. Practically no colouration on speech and a pleasing balance. Tone control effective.

Test Report

Television Plug and Socket

BELLING AND LEE, LTD., Cambridge Arterial Road, Enfield, Middlesex, have introduced a plug and socket intended to work up to 6,000 volts. The chassis moulding is in the form of a deeply recessed bakelite socket with an external $\frac{3}{8}$ -in. thread and a locking nut. The socket is about $1\frac{1}{4}$ in. long, which means that when bolted to $\frac{1}{4}$ -in. panel there will be a minimum distance of about an inch between an earthy back nut and the connector on the end. Inside this moulding is a long split plug member.

High Finish

The moulding designed for connection to the flexible lead, is an artistically shaped bakelite moulding, with a right-angle sleeve to provide for flex entry. The socket member is screwed into this moulding, and has a long spike, which is adapted to penetrate the rubber covering on the lead and establish connection with the conductor.

The whole unit is extremely nicely made and excellently finished. The sleeve portion on the socket will admit cables up to 9 mm. in diameter, but is designed so that a satisfactory connection can be made with cables of smaller size.

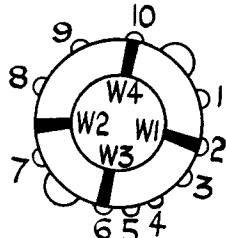
The distances are sufficient to provide the necessary insulation. We also found there was no corona trouble up to 6,000 volts.

CONDENSERS

C.	Purpose.	Mfds.
1	Series aerial	.0003
2	V1 A.V.C. decoupling	.25
3	Chassis isolating	.01
4	V1 screen and oscillator anode decoupling	2
5	V1 cathode bias shunt	.00005
6	Oscillator grid	.0015
7	Oscillator fixed padder	.0003
8	M.W. and L.W. regeneration by-pass	.1
9	V2 A.V.C. decoupling	.25
10	V2 cathode bias shunt	.001
11	A.V.C. diode coupling	.0001
12	H.F. by-pass	.001
13	L.F. coupling	.01
14	L.F. coupling	.01
15	V3 anode decoupling	2
16	Pentode compensator	.001
17	Tone modifier	.025
18	V4 cathode bias shunt	50
20	H.T. smoothing	16+16
21	Rectifier H.F. by-pass	.025
22	V2 screen H.F. by-pass	.1

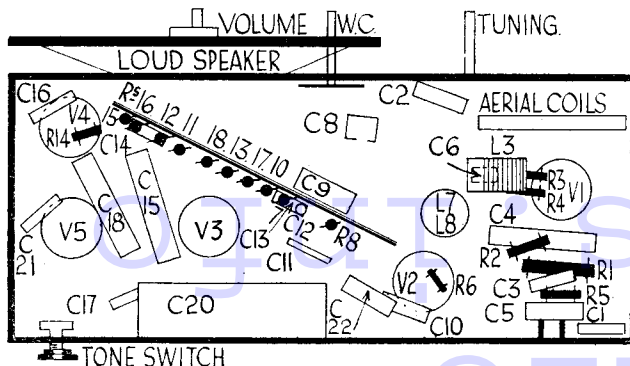
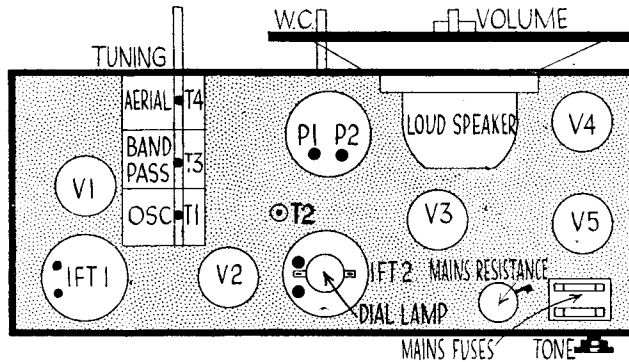
WINDINGS

Winding.	Ohms.	Winding.	Ohms.
L1	2.6	L9	2.25
L2	30.5	L10+L12	3
L3	Very low	L13	73
L4	2.4	L14	73
L5	30	L15	73
L7	Very low	L16	73
L8	.1	L17	320
		L18	580



The switch bank of the U573 with the contacts numbered to correspond with the circuit diagram.

The parts on the top of the Halcyon chassis are identified by the tinted diagram on the right. The arrangement of chassis, speaker and dial light in the cabinet is rather unusual.



Left is the drawing showing how the parts are situated "below deck." A resistance and condenser assembly strip simplifies the construction considerably.