HOTPOINT-BANDMASTER

Model F55DU

FIVE VALVE, TWO BAND, UNIVERSAL A.C. OR D.C. OPERATED SUPERHETERODYNE

TECHNICAL INFORMATION & SERVICE DATA

ELECTRICAL SPECIFICATIONS.

FREQUENCY RANGES—

Medium Wave 1600-550 kc. (187.5-545 M.)

Short Wave 22-7 Mc. (13.6-43 M.)

INTERMEDIATE FREQUENCY 455 kc.

POWER SUPPLY RATING 200-260 volts A.C. or D.C.

POWER CONSUMPTION 90 watts.

DIAL LAMP 240 volts, 15 watts, bayonet base.

VALVE COMPLEMENT—

(1) 6J8G Converter.
(2) 6U7G I.F. Amplifier.
(3) 6B6G Det., A.V.C. and A.F. Amp.
(4) 25L6GT Output.
(5) 25Z6GT Rectifier.
302 Barretter.

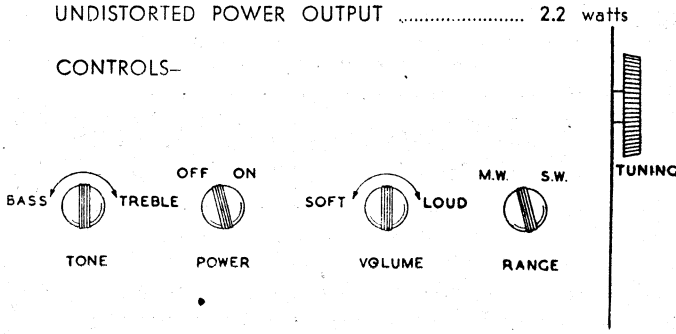
LOUDSPEAKER—

7 inch—Code No. AW5.
Transformer—XA5.

V.C. Impedance—3 ohms at 400 C.P.S.
Field—2,500 ohms.

UNDISTORTED POWER OUTPUT ..... 2.2 watts

CONTROLS–



MECHANICAL SPECIFICATIONS.

	Height.	Width.	Depth.
Cabinet Dimensions (inches)	11	24	10½
Chassis Base Dimensions	3	15	6½
Overall Chassis Height (inches)	8½		8½

	Height.	Width.	Depth.
Carton Dimensions (inches)	12½	25	12

Weight (nett lbs.) 30

Cabinet Finish ..... Walnut Veneer

ALIGNMENT PROCEDURE.

Manufacturer's Setting of Adjustments.

The receiver is tested by the manufacturers with precision instruments and all adjusting screws are sealed. Re-alignment should be necessary only when components in tuned circuits are repaired or replaced, or when it is found that the seals over the adjusting screws have been broken.

It is especially important that the adjustments should not be altered unless in association with the correct testing instruments listed below.

Under no circumstances should the plates of the ganged tuning capacitor be bent, as the unit is accurately aligned during manufacture and cannot be readjusted unless by skilled operators using specialised equipment.

For all alignment operations, connect the "low" side of the signal generator to the receiver chassis, and keep the generator output as low as possible to avoid A.V.C. action. Also, keep the volume control in the maximum clockwise position.

Testing Instruments.

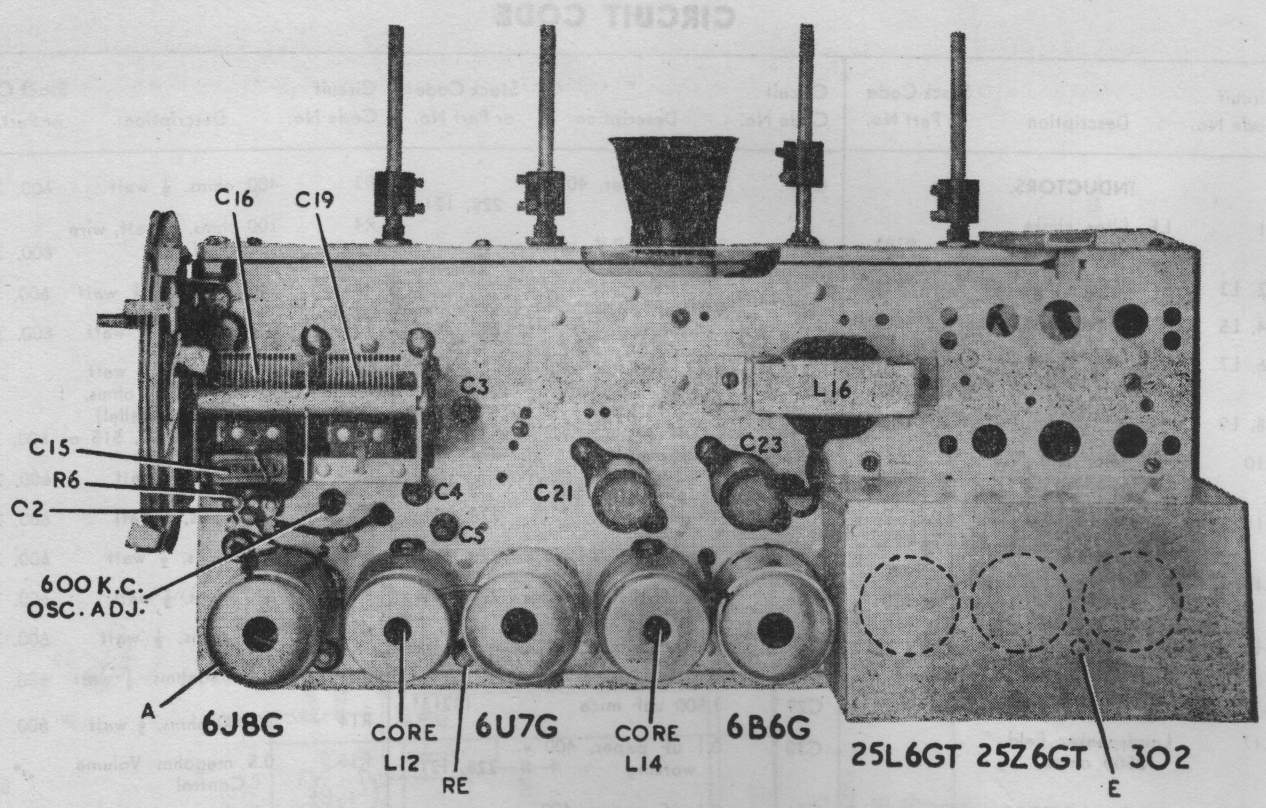
(1) A.W.A. Junior Signal Generator, type 2R3911,
or
(2) A.W.A. Modulated Oscillator, type J6726.

If the modulated oscillator is used, connect a 0.25 megohm non-inductive resistor across the output terminals, and, for short wave alignment, an additional 400 ohms non-inductive resistor in series with the "high" output lead of the instrument.

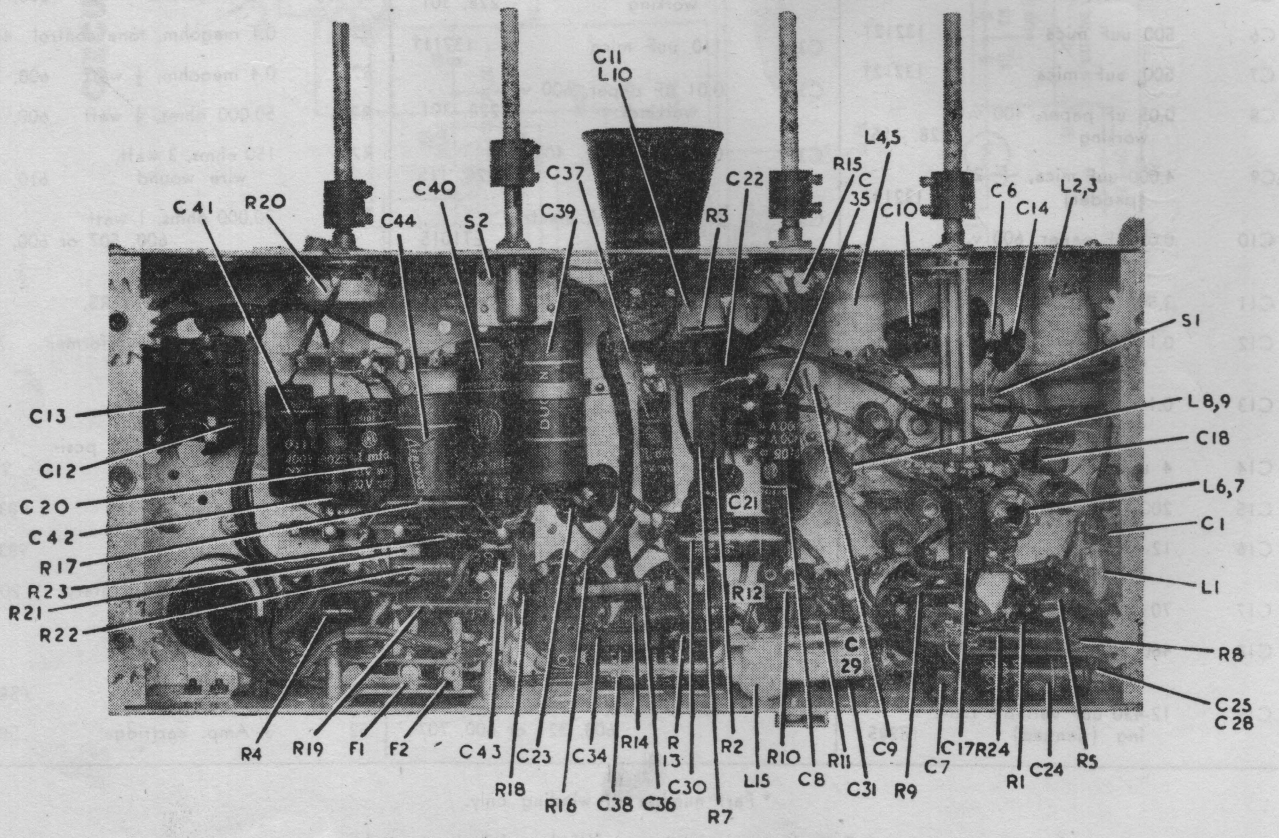
(3) Output Meter.

The instrument recommended should have an output impedance of 2,000 ohms and a range of 5-3,000 milliwatts. The meter should be connected across the primary of the loudspeaker transformer with the voice coil of the loudspeaker open-circuit.

If the output meter used is one which does not impress a load on the anode circuit of the output valve, it will not be necessary to open circuit the voice coil.



CHASSIS (TOP VIEW).



CHASSIS (UNDERNEATH VIEW).

CIRCUIT CODE

Circuit Code No.	Description	Stock Code or Part No.
	INDUCTORS.	
L1	I.F. filter choke (including C1)	9382
L2, L3	Aerial Coil, 550-1600 kc.	7974
L4, L5	Aerial Coil, 7-22 Mc.	9569
L6, L7	Oscillator Coil, 550-1600 kc.	9206
L8, L9	Oscillator Coil, 7-22 Mc.	9205
L10	I.F. filter unit (including C11)	5080
L11, L12	1st I.F. transformer	8286-Z, 8282*
L13, L14	2nd I.F. transformer	8287-Z, 8281*
L15	I.F. filter unit (including C29)	5080
L16	A.F. filter choke	TU17
L17	Loudspeaker field, 2500 ohms	
	CAPACITORS.	
C1	50 uuF mica	224, 255
C2	2-20 uuF air trimmer	3661
C3	6-24 uuF air trimmer	5435A
C4	11-29 uuF air trimmer	3411B
C5	2-10 uuF air trimmer	3658
C6	500 uuF mica	13212†
C7	500 uuF mica	13212†
C8	0.05 uF paper, 400 v. working	228, 115
C9	4,000 uuF mica, ± 2½% (padder)	13213†
C10	0.02 uF paper, 600 v. working	228, 307
C11	3,500 uuF mica	13213†
C12	0.1 uF paper, 400 v. working	228, 121
C13	0.1 uF paper, 400 v. working	228, 121
C14	4 uuF mica	224, 233
C15	200 uuF mica	224, 267
C16	12-430 uuF variable tuning (ganged)	18285
C17	70 uuF mica	13211†
C18	460 uuF mica, ± 2½% (padder)	13212†
C19	12-430 uuF variable tuning (ganged)	18285
C20	0.1 uF paper, 400 v. working	228, 121
C21	8 uF, 525 P.V. electrolytic	EE0810
C22	0.01 uF paper, 600 v. working	228, 301
C23	8 uF, 525 P.V. electrolytic	EE0810
C24	0.1 uF paper, 400 v. working	228, 121
C25	0.1 uF paper, 400 v. working	228, 121
C26	70 uuF silvered mica	226, 460
C27	70 uuF silvered mica	226, 460
C28	0.02 uF paper, 600 v. working	228, 307
C29	3,500 uuF mica	13213†
C30	0.1 uF paper, 400 v. working	228, 121
C31	0.1 uF paper, 400 v. working	228, 121
C32	70 uuF silvered mica	226, 460
C33	70 uuF silvered mica	226, 460
C34	110 uuF mica	13211†
C35	0.01 uF paper, 600 v. working	228, 301
C36	110 uuF mica	13211†
C37	0.01 uF paper, 600 v. working	228, 301
C38	0.05 uF paper, 400 v. working	228, 115
C39	8 uF, 525 P.V. electrolytic	ET1015
C40	0.5 uF paper, 400 v. working	228, 135
C41	0.1 uF paper, 400 v. working	228, 121
C42	0.0025 uF paper, 600 v. working	228, 289
C43	0.02 uF paper, 600 v. working	228, 307
C44	25 uF, 40 P.V. electrolytic	ET10769
	RESISTORS.	
R1	0.1 megohm, ½ watt	600, 321
R2	20,000 ohms, 1 watt	600, 321 or 600, 707
R3	400 ohms, ½ watt	600, 273
R4	100 ohms, 3 watt, wire wound	600, 361
R5	50,000 ohms, ½ watt	600, 315
R6	0.5 megohm, ½ watt	600, 335
R7	25,000 ohms, 2 watt (2 x 50,000 ohms, 1 watt in parallel)	600, 515 or 600, 715
R8	320 ohms, ½ watt	600, 271
R9	630 ohms, ½ watt	600, 277
R10	630 ohms, ½ watt	600, 277
R11	630 ohms, ½ watt	600, 277
R12	630 ohms, ½ watt	600, 277
R13	1.6 megohms, ½ watt	600, 345
R14	50,000 ohms, ½ watt	600, 315
R15	0.5 megohm Volume Control	5622
R16	10 megohms, 1 watt	600, 561 or 600, 761
R17	50,000 ohms, 1 watt	600, 515 or 600, 715
R18	0.2 megohm, 1 watt	600, 527 or 600, 727
R19	1.6 megohms, 1 watt	600, 345
R20	0.1 megohm, tone control	4540
R21	0.4 megohm, ½ watt	600, 333
R22	50,000 ohms, ½ watt	600, 315
R23	150 ohms, 3 watt, wire wound	610, 605
R24	20,000 ohms, 1 watt	600, 507 or 600, 707
	TRANSFORMERS.	
T1	Loudspeaker transformer	XA5
	SWITCHES.	
S1	Range, 2 wafer, 2 position rotary	9830
	Wafer 1	9830/1
	Wafer 2	9830/2
S2	Power, D.P.S.T., rotary	20007
	FUSES.	
F1	3 Amp. cartridge	S8940
F2	3 Amp. cartridge	S8940

* Part number of winding only.

† Capacitance and tolerance (if shown) to be quoted.

Loudspeaker Service.

It is inadvisable to attempt loudspeaker repairs other than adjustment of the voice coil and replacement of the transformer. The fitting of a new cone or the replacement of a field winding should be done only by Service Department suitably equipped to do the work.

To centre the voice coil first remove the dust cover. To do this, use a sharp razor blade and cut the centre out of the dust cover, cutting just inside the edge of the voice coil former, which can be felt with the finger. Do not attempt to tear the cover from the cone. Loosen the suspension screws, insert three narrow paper "feelers" in the gap, and re-tighten the suspension screws. The "feelers" should be approximately 3/16 inch wide, and 0.006 inch thick.

After adjusting, test the loudspeaker, and, if satisfactory, fasten a replacement dust cover in place with latex rubber cement. (See "Mechanical Replacement Parts.")

ALIGNMENT TABLE.

Order.	Connect "high" side of Generator to:	Tune Generator to:	Set Receiver Drive Drum Scale to:	Adjust for Maximum Peak Output:
1	6J8G Grid*	455 kc.	0	L14 core
2	6J8G Grid*	455 kc.	0	L13 core
3	6J8G Grid*	455 kc.	0	L12 core
4	6J8G Grid*	455 kc.	0	L11 core
	Repeat above adjustments until maximum output is obtained.			
5	Aerial Terminal	600 kc.	18	L.F. Osc. Core Adj. (L7)†
6	Aerial Terminal	1500 kc.	154	H.F. Osc. Adj. (C4)
7	Aerial Terminal	1500 kc.	154	H.F. Aer. Adj. (C2)
	Repeat adjustments 5, 6 and 7.			
8	Aerial Terminal	20 Mc.	157	H.F. Osc. Adj. (C5)‡
9	Aerial Terminal	20 Mc.	157	H.F. Aer. Adj. (C3)§

* With grid clip connected. A 0.001 uF capacitor should be connected in series with the high side of the test instrument.

† Rock the tuning control back and forth through the signal.

‡ Use minimum capacity peak if two can be obtained. Check to determine that C5 has been adjusted to correct peak by tuning the receiver to approximately 19.09 Mc. where a weaker signal should be received.

§ Use maximum capacity peak if two can be obtained.

Connection to Power Supply.

The receiver is designed to operate on alternating current (A.C.) or direct current (D.C.) mains supplying between 200 and 260 volts inclusive.

IMPORTANT: When connected to D.C. mains the receiver will operate only when the power cable is inserted in the power point with the right polarity. Should the receiver fail to operate after the warm-up period has elapsed, switch off the power point and reverse the plug in the socket.

Chassis Removal and Replacement.

(1) First remove the back of the cabinet and then the control knobs. The knobs on the front of the cabinet are held by a set screw; the Tuning Control knob at the side pulls straight off.

(2) Disconnect the pointer from the dial drive cord by unscrewing the thumb nut and disconnect the loudspeaker cable from the loudspeaker.

(3) The chassis is held in the cabinet by four bolts. Remove these and withdraw the chassis from the cabinet.

On replacing the chassis in the cabinet, care must be taken to connect the dial pointer to the drive cord correctly, as follows:

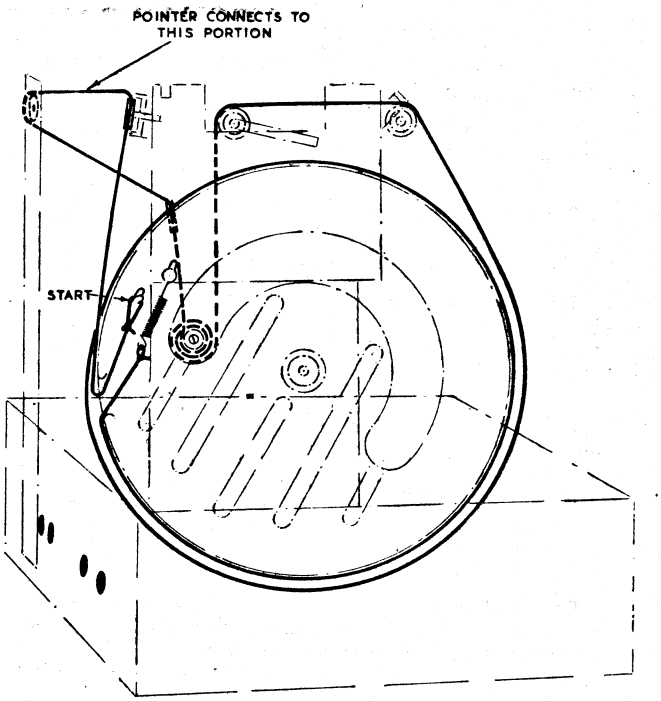
(1) Turn the Tuning Control to bring the rotor plates of the ganged capacitor into full mesh.

(2) Bring the dial pointer to a position opposite a mark on the scale approximately 1/16 inch to the left of 2CR.

(3) Connect the pointer to the top drive cord and tighten the fastening thumb screw.

Tuning Drive Cord Replacement.

The accompanying diagram shows the route of the cord and the method of attachment. Whilst fitting the cord, keep it taut and adjust the length so that the tension spring measures approximately two inches long when fitted. The spring should be sheathed to prevent it from rattling against the drum.



SOCKET VOLTAGES

Valve.	Cathode to Negative Volts.	Screen Grid to Negative Volts.	Plate to Negative Volts.	Plate Current mA.	Heater Volts.
6J8G Converter M.W.	2.5	80	220	0.9	6.3
S.W.	2.5	80	220	1.3	6.3
Oscillator M.W.	—	—	140	4.5	—
S.W.	—	—	140	4.5	—
6U7G I.F. Amp.	3.0	80	220	4.0	6.3
6B6G Detector	—	—	140*	0.4	6.3
25L6G Output	7.0	105	90	41	25.0
25Z6G	235	—	240	—	25.0

Voltage across loudspeaker field—130.

* Cannot be measured with ordinary voltmeter.

Measured at 240 volts A.C. Supply. No Signal input.

Volume at maximum.

D.C. RESISTANCE OF WINDINGS.

Winding.	D.C. Resistance in ohms.
Aerial Coil (M.W.)—	
Primary (L2)	10.5
Secondary (L3)	3.5
Aerial Coil (S.W.)—	
Primary (L4)	2
Secondary (L5)	*
Oscillator Coil (M.W.)—	
Primary (L6)	1
Secondary (L7)	6
Oscillator Coil (S.W.)—	
Primary (L8)	*
Secondary (L9)	*
I.F. Transformer Windings	7.5
I.F. Filter (L1)	17.5†
I.F. Filter (L10, L15)	2†
A.F. Filter Choke (L16)	1000
Loudspeaker Input Transformer (T1)	125

The above readings were taken on a standard chassis, but substitution of materials during manufacture may cause variations, and it should not be assumed that a component is faulty if a slightly different reading is obtained.

* Less than 1 ohm.

† In some receivers this reading may be higher.

MECHANICAL REPLACEMENT PARTS.

Item.	Part No.
Cabinet	F5
Cable, loudspeaker	17822
Cable and plug, power	19730
Cable, volume control	15320
Chassis end	9901
Clip, grid	7459
Cone Assembly, loudspeaker	9356
Coupling	S8512
Dial frame assembly	19711A
Dial scale	19033
Drum, drive	9090
Dust cover, loudspeaker	9843
Mount plate assembly, tuning drive	9727
Panel, fuse	19738
Pulleys, brass	1730
Reflector, Barretter	19725
Screen, I.F. Transformer	3351
Cap	8372
Screen, Valve	8147
Cap	8148
Register	4733
Socket, valve	4704
Socket, valve, cushion	7326
Spindle, extension	19736
Spindle, tuning drive	9768
Spring, drive tension	6641
Strip, tag, 1-way	7628
3-way	9877
5-way	8239
7-way	19664

CIRCUIT DIAGRAM