



PHILCO



Radio Service Bulletin No. 60

Published by the Philco Radio & Television Corporation of Great Britain, Ltd., Perivale, Greenford, Middlesex

Model A-847

TYPE CIRCUIT.—Eight-valve Superheterodyne Unit—Constructed Receiver with pre-selector H.F. amplifier, Full A.V.C. and Push-pull Pentode Output (7 watts), for operation on Long, Medium and two Short wave-bands. Built-in connections for Philco All-wave Aerial—aerial selector built into and operated by the wave-change switch. With the Philco All-wave Aerial, the red and black leads of the “transmission line” should be connected to terminals 1 and 2 on the terminal panel provided at the rear of the chassis and the link across terminals 3 and 4. If an ordinary aerial is used, the link should be across terminals 2 and 3. The aerial connects to terminal 1 and the earth lead to terminal 3. Provision is made by means of a Jack for connecting a pick-up for gramophone reproduction. Provision is also made for connecting an external speaker of the permanent magnet moving coil type, having an impedance of 2-3 ohms.

POWER SUPPLY.—Alternating current mains of 100-130 volts or 200-260 volts, 40-100 cycles when the voltage adjusting plug is inserted in the correct position.

WAVE-BANDS: COVERAGE.—Four: (a) Long, 150-350 Kilocycles (2,000-857.1 metres); (b) Medium, 530-1,720 Kilocycles (566-174.4 metres); (c) Short, 5.7-11.6 Megacycles (52.6-25.8 metres); (d) Short, 11.5-18.2 Megacycles (26.1-16.4 metres).

TUNING DRIVE.—Two speed drive—ratios 8:1 and 40:1 for slow and accurate tuning. Glowing beam station indicator, new spread band 270 degrees scale and Shadowmeter tuning device.

TO NE CONTROL.—Four positions, giving bright, normal, mellow and deep reproduction respectively. The On/Off switch is combined with this control, thus allowing a particular setting of the separate volume control to be maintained.

LOUD SPEAKER.—An 8 in. diameter fully energised moving coil speaker is used, which gives the highest efficiency audio output, and greater bass response is obtained due to the large baffle.

INTERMEDIATE FREQUENCY.—470 Kilocycles.

POWER CONSUMPTION.—90 watts.

REMOVING SWITCH AND COIL ASSEMBLIES OF H.F. UNIT.—To replace any part in the switch and coil assemblies of the H.F. Unit, each assembly can be removed separately as follows:—

First remove the tuning dial, mask and arm assembly. Remove the centre mounting screw on the rear of the H.F. Unit. Then lift the rear of the unit and push forward until the rubber mounting buffers on each side of the unit clear the mounting slots. The unit is then lifted far enough from the chassis for removal of the two screws holding the wave-change switch indexing plate and shaft (front of unit). Then pull shaft straight out from the unit. Also remove the volume control shaft by releasing the retaining clip, inside the chassis, from the shaft.

IMPORTANT.—When the wave-change switch shaft is replaced, care should be taken to have all wafer rotors in the same position, so that the key on the switch shaft will slide freely into the notched hole in each wafer rotor. NEVER force shaft into rotors.

SERVICING STAGES.—It is necessary to unsolder some connecting leads in order to release the stage for servicing. If all the following connections are unfastened, the stage will be entirely released. Ordinarily, only one or two leads need be loosened in order to change coils, replace coupling condensers or replace switch sections.

AERIAL STAGE ASSEMBLY—REAR SECTION OF UNIT.—A. Remove screw holding shield plate to the unit base. This screw is located in the right-hand corner of the shield plate, facing rear underside of chassis.

B. Unsolder the wires at the I.F. and Aerial terminal panels which connect to the wave-change switch, also wires from tuning condenser stator plates to wave-change switch contact (B9), and earth lead from assembly shield to unit frame. After disconnecting these wires assembly may be removed.

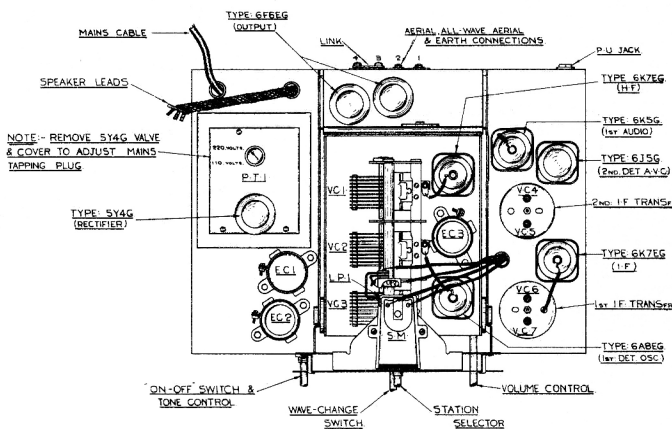
H.F. STAGE ASSEMBLY—MIDDLE SECTION.—A. Remove screw right side of assembly holding shield plate to unit base.

B. Unsolder the two wires connecting the I.F. Unit to wave-change switch; also wires connecting tuning condenser stator plates to wave-change switch contact (E9); wave-change switch contact (F8) to the grid of the 6A8EG valve, and earth lead from shield to unit frame. Remove assembly from the unit.

OSCILLATOR STAGE ASSEMBLY—FRONT SECTION.—A. The oscillator assembly may be removed by unscrewing the four screws holding shield to H.F. base. These screws are located on each side of the H.F. Unit.

B. Unsolder the wires connecting wave-change switch contacts (G7) and (I8) to the 6A8EG socket; tuning condenser stator plates to wave-change switch contact (H9); wave-change switch to TB/2-1, and earth lead to I.F. Unit. With these leads disconnected unit may be removed.

Replace the units by following the above procedure in the reverse order.



TOP CHASSIS DIAGRAM.

TABLE 1 - VOLTAGES.

Valve socket readings to chassis taken with an 065 or 077 Philco Set Tester, using the 500, 250 and 10 volt ranges. Volume control at minimum, tone control in bright position, wave-change switch at M.W. setting, and no aerial connected. A.C. line 230 volts, 50 cycles.

POSITION	VALVE	ANODE	SCREEN	BIAS
H.F. Amplifier, S.4	6K7EG	Pin 3. 235 v.	Pin 4. 75 v.	Pin 5. -2v.
1st Detector and Oscillator, S.5	6A8EG	Pin 3. 220 v. Pin 6. 120 v.*	Pin 4. 75 v.	—
I.F. Amplifier, S.8.. ..	6K7EG	Pin 3. 250 v.	Pin 4. 75 v.	—
2nd Detector and A.V.C., S.7..	6J5G	—	—	—
1st L.F. Amplifier, S.6	6K5G	Pin 3. 160 v.	—	—
Pentode Output, S.2	6F6EG	Pin 3. 240 v.	Pin 4. 250 v.	-15 v. †
Pentode Output, S.3	6F6EG	Pin 3. 245 v.	Pin 4. 230 v.	-15 v. †
Full Wave Rectifier, S.1 ..	5Y4G	Pin 3. 300 v. A.C. Pin 5. 300 v. A.C.	—	—

* Oscillator Anode Volts.

† Bias measured between R.1/3 and chassis.

Total D.C.=280 volts (measured between EC.1 Green and R.1/3). V.1 filament, 5 volts A.C., measured between pins 7 and 8; V.2, 3, 4, 5, 6, 7, 8 filaments each 6.3 volts A.C., measured between pins 2 and 7 on each socket. L.P.1 and L.P.2 filaments each 6.3 volts A.C.

TABLE 2 - RESISTANCES OF COILS.

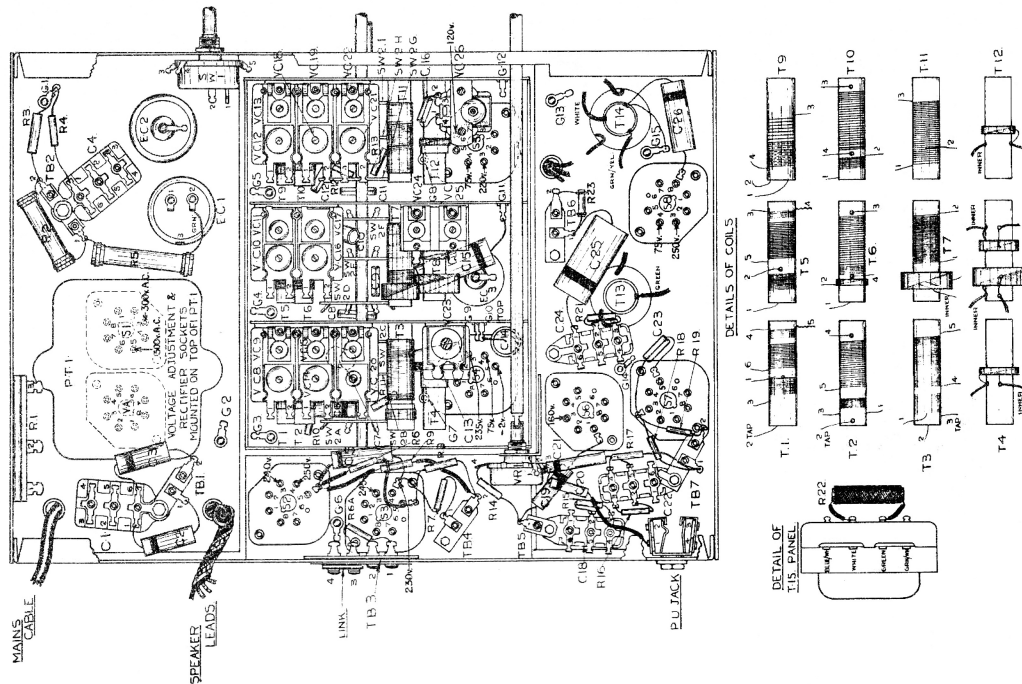
(Link on TB.3 to be across terminals 2 and 3.)

REF. NO.	TEST PROD 1	TEST PROD 2	RESISTANCE (OHMS)
T.4	V.4 Cap	SW.2 B/7	SW.2. L.W. 25
T.3 Primary	TB.3/1	Chassis	.. M.W. 2
T.3 Primary tapping	TB.3/4	Chassis	.. M.W. 1
T.3 Secondary	V.4 Cap	SW.2 B/3	.. M.W. 5
T.2 Primary	TB.3/1	Chassis	.. S.W. Band 1. 0.5
T.2 Primary tapping	TB.3/4	Chassis	.. S.W. Band 1. 0.25
T.2 Secondary	V.4 Cap	SW.2 B/3	.. S.W. Band 1. less than 0.1
T.1 Primary	TB.3/1	Chassis	.. S.W. Band 2. 0.2
T.1 Primary tapping	TB.3/4	Chassis	.. S.W. Band 2. 0.1
T.1 Secondary	V.4 Cap	SW.2 B/3	.. S.W. Band 2. 0.2
T.2 Secondary tapping	V.4 Cap	VC.8/1	.. S.W. Band 2. 0.15
T.8 Primary	V.4/3	TB.3/2	.. L.W. 125
T.8 Secondary	V.5 Cap	TB.7/2	.. L.W. 30
T.7 Primary	V.4/3	TB.6/2	.. M.W. 120
T.7 Secondary	V.5 Cap	TB.7/2	.. M.W. 5
T.6 Primary	V.4/3	TB.6/2	.. S.W. Band 1. 2
T.6 Secondary	V.5 Cap	TB.7/2	.. S.W. Band 1. 0.1
T.5 Primary	V.4/3	TB.6/2	.. S.W. Band 2. 0.5
T.5 Secondary	V.5 Cap	TB.7/2	.. S.W. Band 2. 0.1
T.12	V.5/5	SW.2 G/8	.. L.W. 16.5
T.11	V.5/5	SW.2 G/8	.. M.W. 8
T.11 tapping	V.5/5	VC.21/2	.. M.W. 7.5
T.10	V.5/5	SW.2 G/8	.. S.W. Band 1. 0.1
T.10 Reaction	V.5/6	SW.2 G/11	.. S.W. Band 1. 0.2
T.9	V.5/5	SW.2 G/8	.. S.W. Band 2. 0.1
T.9 Reaction	V.5/6	SW.2 G/11	.. S.W. Band 2. 0.2
T.14 Primary	V.5/3	TB.6/2	8
T.14 Secondary	V.8 Cap	TB.7/2	12
T.14 Reaction	V.8/5	Chassis	Less than 0.1
S.M.	TB.6/1	TB.6/2	3,500 approx.
T.13 Primary	V.8/3	TB.6/1	12
T.13 Secondary	V.7/5	C.24/3	8
T.15 Primary	V.3/3	TB.4/1	350
T.15 Primary	V.3/2	TB.4/1	350
T.15 Secondary	Output Transformer	Output Transformer	0.2*
Speech Coil	Lead 1	Lead 2	2*
CK.1	EC.1 Green	EC.2	460 approx.
P.T.1 Primary— 100-130 volts	C.1/2	C.1/3	2
200-260 volts	C.1/2	C.1/3	8
H.T. Secondary	V.1/3	R.1/3	60
H.T. Secondary	V.1/5	R.1/3	60
Rectifier, L.T. Secondary ..	V.1/7	V.1/8	0.1 †
Heaters, L.T. Secondary ..	V.2/2	V.2/7	0.2 †

* Resistance of T.15 Secondary alone and Speech Coil alone (taken when disconnected).

† Resistance of L.T. windings taken with all valves removed.

NOTE.—Reference numbers for valves should be read in conjunction with the socket numbers, e.g., V.1-S.1.



UNDER CHASSIS DIAGRAM.

ALIGNMENT PROCEDURE.

Before leaving the Factory, all Philco receivers are accurately aligned, but if misalignment is suspected through damage, it should not be attempted without instruction in the correct adjustment of the padding and trimming condensers. It should only be carried out with the aid of an accurately calibrated Signal Generator, and for this purpose the PHILCO ALL-PURPOSE SET TESTER MODEL 077 is recommended.

Connect the Output Meter across the Primary of the Output Transformer, i.e., green and white leads. With gang condenser fully closed, check that indicator reads on centre index line.

Set wave-change switch in second position from left (M.W.), turn volume control fully clockwise and tone control as far counter-clockwise as possible without switching off.

NOTE.—The link on TB3 must be placed across terminals 2 and 3.

INTERMEDIATE FREQUENCY.—The L.F. trimmers (V.C.'s 4, 5, 6 and 7) should first be carefully adjusted by feeding in a 470 Kilo-cycle signal from the Signal Generator through an 0.5 mfd. condenser to the grid cap of the 6A8EG valve (with grid lead connected) and the Signal Generator earthed to the chassis or receiver earth terminal (No. 3 on TB3). Adjust the Signal Generator Attenuator to give a half scale reading on the Output Meter. The I.F. trimmers must then be adjusted for maximum output. Substitute a 100 ohms resistor for the 0.5 mfd. condenser and transfer Signal Generator lead to the Aerial terminal (No. 1 on TB3).

SHORT WAVES, BAND 2.—Turn wave-change switch to S.W.2 position (maximum clockwise rotation) and set gang at 18 Mc. Feed in a signal of 18 Mc. and trim VC.13 underneath chassis for the second signal heard from tight (care is necessary as the two peaks are narrowly spaced).

NOTE.—Due to the very small difference between the pre-selector and oscillator frequencies, the adjustment of the pre-selector stages will have a tendency to "pull" or change the frequency of the oscillator. By shunting a 21 plate variable condenser (approx. .00035 mfd.) across the oscillator section of the gang and tuning it so that the second harmonic instead of the fundamental beats with the incoming signal, this "pull" can be minimised.

Connect the shunt condenser between VC.12 tag 1 and chassis and tune it (about half open) for the signal at 18 Mc. Trim VC.'s 11 and 9 underneath chassis in that order for maximum output. Disconnect shunt condenser and retrim VC.13.

Check that the 18 Mc. image is obtained at approx. 17.1 Mc.

Set gang at 12 Mc., feed in a signal of 12 Mc., and adjust VC.'s 12, 10 and 8 underneath chassis in that order for maximum output, finally readjusting VC.12.

Readjust trimming at 18 Mc. as detailed above.

SHORT WAVES, BAND 1.—Turn wave-change switch to third position clockwise (S.W.1) and set gang at 11 Mc. Feed in a signal of 11 Mc. and trim VC.19 for the second signal heard from tight (care is necessary as the two peaks are narrowly spaced).

Connect the shunt condenser between VC.18 tag 1 and chassis and tune it for the signal at 11 Mc. Trim VC.'s 17 and 15 underneath chassis in that order for maximum output. Disconnect shunt condenser and retrim VC.19.

Check that the 11 Mc. image is received at approximately 10.1 Mc.

Set gang at 6 Mc., feed in a signal of 6 Mc. and adjust VC.'s 18, 16 and 14 underneath chassis in that order for maximum output, finally readjusting VC. 18.

Readjust trimming at 11 Mc. as detailed above.

MEDIUM WAVES.—Turn wave-change switch to second position clockwise (M.W.) and set gang at 1,600 Kc. Feed in a signal of 1,600 Kc. and trim VC.'s 22, 24, and 20 underneath chassis in that order for maximum output.

Feed in and tune a signal of 580 Kc. Rock gang and pad VC.21 for maximum output. Readjust VC.22 at 1,600 Kc. and VC.21 at 580 Kc. until no further improvement results, finally adjusting VC.22 at 1,600 Kc.

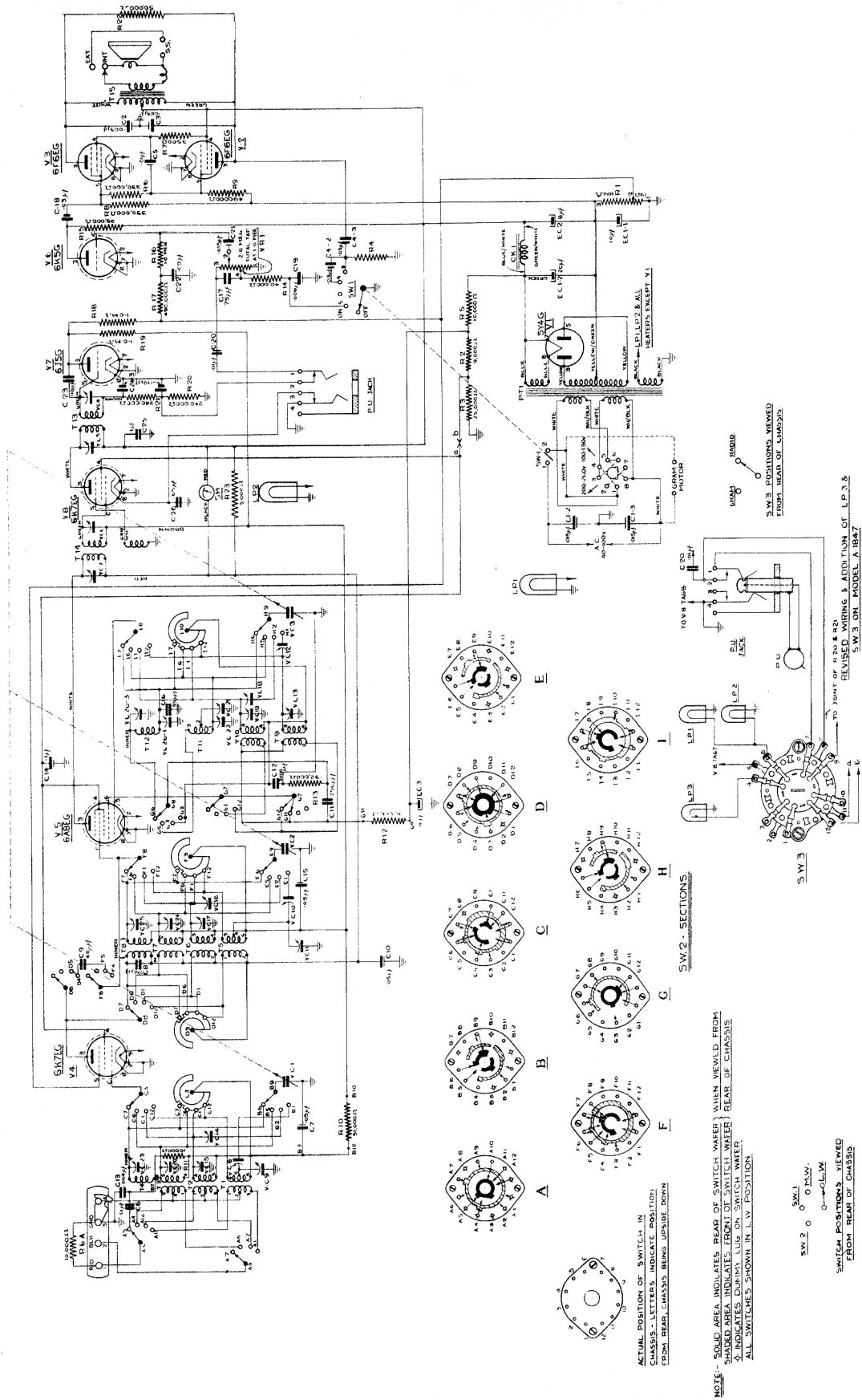
Set gang at 1,500 Kc. Feed in a signal of 1,500 Kc. and again adjust VC.'s 24 and 20 in that order for maximum output.

Check calibration at 1,700 Kc.

LONG WAVES.—Substitute a Standard Dummy for the 100 ohms resistor, turn wave-change switch to L.W. position (fully counter-clockwise rotation) and set gang at 300 Kc. Feed in a signal of 300 Kc. and trim VC.'s 26 (screw), 25 and 23 underneath chassis in that order for maximum output.

Feed in and tune a 160 Kc. signal. Rock gang and pad VC.26 (nut) for maximum output. Readjust VC.26 (screw) at 300 Kc. and VC. 26 (nut) at 160 Kc. until no further improvement is obtainable, finally adjusting VC. 26 (screw) at 300 Kc.

Check calibration.



SCHEMATIC DIAGRAM.

PARTS AND PRICE LIST - MODEL A-847.

REF. No.	DESCRIPTION	PART No.	LIST PRICE	
			£	s. d.
T.1 ..	S.W.2 Aerial Transformer	32-2175	4	0
T.2 ..	S.W.1 Aerial Transformer	32-2150	4	0
T.3 ..	M.W. Aerial Transformer	32-2108	3	6
T.4 ..	L.W. Aerial Coil	32-2218	3	6
SW.2A	Wave-change Switch (Aerial Section).. .. .	42-1209	8	6
SW.2B				
SW.2C				
T.5 ..	S.W.2 H.F. Transformer	32-2176	4	0
T.6 ..	S.W.1 H.F. Transformer	32-2151	4	0
T.7 ..	M.W. H.F. Transformer	32-2105	3	6
T.8 ..	L.W. H.F. Transformer	32-2219	4	6
SW.2D	Wave-change Switch (H.F. Section)	42-1254	7	6
SW.2E				
SW.2F				
T.9 ..	S.W.2 Oscillator Coil	32-2182	2	6
T.10 ..	S.W.1 Oscillator Coil	32-2152	2	6
T.11 ..	M.W. Oscillator Coil	32-2120	2	9
T.12 ..	L.W. Oscillator Coil	32-2221	2	9
SW.2G	Wave-change Switch (Oscillator Section)	42-1204	7	6
SW.2H				
SW.2I				
T.13	2nd I.F. Transformer and Trimmers Assembly	32-2172	9	6
VC.4				
VC.5				
T.14	1st I.F. Transformer and Trimmers Assembly	32-2170	9	6
VC.6				
VC.7				
T.15 ..	Output Transformer, Part No. 32-7634	Complete Speaker K.35 36-1231	1	12
CK.1 ..	Speech Coil and Cone, Part No. 36-3174			
VC.1 ..	Field Coil, Part No. 36-3687			
VC.2	Three-gang Condenser	31-1855	1	7
VC.3				
VC.8				
VC.9	Multiple Padder, 400+85+700+85+10 mmfd.	31-6153	2	6
VC.14				
VC.16				
VC.20	Multiple Padder, 400+45+700+50 mmfd.	31-6125	2	9
VC.10				
VC.11				
VC.16	Multiple Padder, 400+85+700+85+600+30 mmfd.	31-6111	3	0
VC.17				
VC.12				
VC.13	Single Padder, 35-70 mmfd.	31-6126	1	6
VC.18				
VC.19				
VC.21	Double Padder, 15+80 mmfd.	31-6115	1	8
VC.22				
VC.23				
VC.24	Double Padder, 375+45 mmfd.	31-6074	2	0
VC.25				
VC.26				
EC.1 ..	Electrolytic Condenser, 20+10 mfd.	30-2163	14	0
EC.2 ..	Electrolytic Condenser, 8 mfd.	30-2024	7	0
EC.3 ..	Electrolytic Condenser, 16 mfd.	30-2118	5	0
C.1 ..	Moulded Condenser, .015+.015 mfd.	3793 D.G.	8	
C.2 ..	Tubular Condenser, .003 mfd.	30-4469	9	
C.3 ..	Tubular Condenser, .003 mfd.	30-4469	9	
C.4 ..	Moulded Condenser, .05+.03 mfd.	3615 Y.U.	1	6
C.5 ..	Tubular Condenser, .01 mfd.	30-4169	7	
C.6 ..	Tubular Condenser, .01 mfd.	30-4169	7	
C.7 ..	Tubular Condenser, .05 mfd.	30-4020	7	
C.8 ..	Mica Condenser, 250 mmfd.	30-1032	—	
C.9 ..	Mica Condenser, 40 mmfd.	or 300-1057	8	
C.10 ..	Tubular Condenser, .05 mfd.	30-1076	1	0
C.11 ..	Mica Condenser, 250 mmfd.	30-4020	7	
C.12 ..	Mica Condenser, 3,000 mmfd.	30-1032	—	
C.13 ..	Mica Condenser, 3,000 mmfd.	or 300-1057	8	
C.14 ..	Mica Condenser, 3,000 mmfd.	30-1028	3	6
C.15 ..	Mica Condenser, 3,000 mmfd.	or 300-1028	—	
C.16 ..	Tubular Condenser, .004 mfd.	30-4185	6	
C.17 ..	Tubular Condenser, .1 mfd.	30-4170	9	
C.18 ..	Tubular Condenser, .05 mfd.	30-4123	9	
C.19 ..	Mica Condenser, 35 mmfd.	30-1044	—	
C.20 ..	Mica Condenser, 75 mmfd.	or 300-1046	6	
C.21 ..	Mica Condenser, 75 mmfd.	30-1053	6	
C.22 ..	Mica Condenser, 75 mmfd.	or 300-1051	6	
C.18 ..	Moulded Condenser, .03 mfd.	8318-SU	—	
C.19 ..	Tubular Condenser, .006 mfd.	30-4024	2	6
C.20 ..	Tubular Condenser, .01 mfd.	30-4479	5	
C.21 ..	Tubular Condenser, .015 mfd.	or 30-4124	6	
C.22 ..	Moulded Condenser, .09 mfd.	30-4368	1	0
		4989-SG	9	

PARTS AND PRICE LIST - MODEL A-847.—Contd.

REF. NO.	DESCRIPTION	PART NO.	LIST PRICE		
			£	s.	d.
C.23	Mica Condenser, 110 mmfd.	30-1031			
		or 300-1040			6
C.24	Moulded Condenser, 110+110 mmfd.	8035-DG	1	0	
C.25	Tubular Condenser, .1 mfd.	30-4170			9
C.26	Tubular Condenser, .05 mfd.	30-4020			7
R.1	Candohm Wire-wound Resistor, 19+109 ohms	33-3280	1	6	
R.2	2-watt Carbon Resistor, 9,000 ohms	33-1215	1	6	
R.3	1-watt Carbon Resistor, 25,000 ohms	3656			9
R.4	½-watt Insulated Resistor, 1 Megohm	330-2018			9
R.5	2-watt Carbon Resistor, 10,000 ohms	33-1024	1	6	
R.6	½-watt Insulated Resistor, 330,000 ohms	330-2017			9
R.6A	½-watt Insulated Resistor, 10,000 ohms	330-2014			9
R.7	½-watt Insulated Resistor, 3,500 ohms	330-2047			9
R.8	½-watt Insulated Resistor, 330,000 ohms	330-2017			9
R.9	½-watt Insulated Resistor, 490,000 ohms	330-2013			9
R.10	½-watt Insulated Resistor, 51,000 ohms	330-2015			9
R.11	½-watt Insulated Resistor, 10,000 ohms	330-2014			9
R.12	½-watt Insulated Resistor, 10,000 ohms	330-2014			9
R.13	½-watt Insulated Resistor, 32,000 ohms	330-2031			9
R.14	½-watt Insulated Resistor, 40,000 ohms	330-2020			9
R.15	½-watt Insulated Resistor, 99,000 ohms	330-2012			9
R.16	½-watt Insulated Resistor, 1 Megohm	330-2018			9
R.17	½-watt Insulated Resistor, 490,000 ohms	330-2013			9
R.18	½-watt Insulated Resistor, 1 Megohm	330-2018			9
R.19	½-watt Insulated Resistor, 1 Megohm	330-2018			9
R.20	½-watt Insulated Resistor, 240,000 ohms	330-2002			9
R.21	½-watt Insulated Resistor, 240,000 ohms	330-2002			9
R.22	1-watt Carbon Resistor, 50,000 ohms	33-1060			9
R.23	½-watt Carbon Resistor, 5,000 ohms	6096			9
VR.1	Volume Control, 2 Megohms (tapped at 1 Megohm)	33-5158	2	6	
SW.1	Combined On/Off Switch and Tone Switch	42-1184	5	0	
	Shadowmeter Socket and Leads Assembly	41-3225	2	6	
S.M.	Shadowmeter	450-2001P	6	6	
	Shadowmeter Plug	27-4384			5
PT.1	Power Transformer	32-7608	1	15	0
V.A.	Voltage Adjustment Socket				
	Voltage Adjusting Plug				
S.1	Rectifier Valve Socket	27-6052			6
S.2	7-prong Valve Socket (Octal Base)	27-6057			6
S.3	7-prong Valve Socket (Octal Base)	27-6057			6
S.4	7-prong Valve Socket (Octal Base)	27-6057			6
S.5	8-prong Valve Socket (Octal Base)	27-6058			6
S.6	7-prong Valve Socket (Octal Base)	27-6057			6
S.7	7-prong Valve Socket (Octal Base)	27-6057			6
S.8	7-prong Valve Socket (Octal Base)	27-6057			6
LP.1	Pilot Bulb (Scale)	34-2039			
		or 34-2141	1	4	
LP.2	Pilot Bulb (Shadowmeter)	34-2039			
		or 34-2141	1	4	
	Grid Clip	28-2214	doz.		5
	Valve Shield	28-2726			2
	Speaker Cable	41-3202			5 0
	Mains Cable	L-2183			
		or LO-1009	1	7	
	Mains Plug	380-5043			5
	Insulator for EC.1 and EC.2	27-7194			1
	Lug for EC.1 and EC.2	29-1022	doz.		3
	Rubber Buffers	27-4317			1
		or 270-7189			1
	External Speaker Panel and Leads Assembly	380-5338	2	0	
	Pick-up Jack	42-1197	3	6	
	Dial Indicator Screen	270-5053			6
	Dial Scale and Hub Assembly	380-5320	3	9	
	Wave-band Indicator Mask	270-5052	1	0	
	Bezel Escutcheon	270-4045			10
	Bezel Glass	270-7285	2	9	
	Bezel Spring	290-1160			1
	Chassis Mounting Rubbers	5189			1
	Chassis Mounting Washers	29-2089	doz.		2
	Chassis Mounting Bolts	W-1345A			1
	Large Tuning Knob and Spring	27-4330			4
	Small Tuning Knob and Spring	27-4331			4
	Knob, Tone	27-4332			4
	Knob, Volume	27-4332			4
	Knob, Wave-change	27-4326			3
	Dial Scale Guard	27-8324			2
V.1	Type 5Y4G Full Wave Rectifier Valve	34-2116	8	0	
V.2	Type 6F6EG Pentode Output Valve	34-2115E	13	6	
V.3	Type 6F6EG Pentode Output Valve	34-2115E	13	6	
V.4	6K7EG Variable-mu H.F. Pentode Valve	34-2112E	12	6	
V.5	6A8EG Variable-mu Heptode Valve	34-2113E	15	0	
V.6	6K5G Triode Valve	34-2126	12	6	
V.7	6J5G Triode Valve	34-2119			9 0
V.8	6K7EG Variable-mu H.F. Pentode Valve	34-2112E	12	6	

Model A-1847 Auto-Radiogram

Model A-1847 is an auto-radiogram receiver employing a similar circuit to Model A-847 but with the following refinements:—

GRAMOPHONE.—Automatic record changing equipment (with A.C. motor and 2,000 ohms pick-up) is incorporated, which plays eight 9 inch, 10 inch and 12 inch records mixed in any order entirely automatically without pre-setting. Any record may be repeated or rejected whilst the instrument is in operation should it be desired to do so, and the turntable is automatically stopped at the end of the final record. A "Stop" button is also fitted which allows the machine to be stopped at any time. Operation of the gramophone is controlled by a separate switch located below the wave-change switch, which makes change over from radio to gramophone without the possibility of radio break-through and at the same time operates a warning light located on the motor board.

CONTROLS.—All controls are on the motor board.

REMOVAL OF CHASSIS.—This is easily effected by loosening the bracket nuts inside the cabinet, allowing the chassis to be lowered and lifted out, after the knobs have been removed.

POWER SUPPLY.—The range of operation is limited by reason of the gramophone motor to 100-130 volts or 200-250 volts, 50-60 cycles. Separate terminals are fitted to a panel on the motor, and care must be taken to see that the correct connections have been made for the mains supply on which the receiver is to be used.

LOUD SPEAKER.—A full size (11 inch) auditorium speaker is used, which embodies the latest principles in acoustic design and covers the entire useful range of audio frequencies.

TOP CHASSIS DIAGRAM.—Mains cable for motor added.

CIRCUIT DIAGRAM.—Revised wiring for pick-up connection, change-over switch and gram-motor connections shown on diagram.

UNDER CHASSIS DIAGRAM.—Gram change-over switch (SW.3) and mounting bracket fastened to front of chassis adjoining SW.2 and mains cable for motor added.

Tables 1 and 2 and Alignment Procedure are the same as for Model A-847.

TABLE 3 – PARTS AND PRICE LIST.

Remove:—

REF. No.	DESCRIPTION.	PART NUMBER.
T.15	Output Transformer, Part No. 32-7634	Complete Speaker K.35
CK.1	Speech Coil and Cone, Part No. 36-3174	
EC.2	Field Coil, Part No. 36-3687	36-1231
EC.2	Electrolytic Condenser, 8 mfd.	30-2024
EC.3	Electrolytic Condenser, 16 mfd.	30-2118
	Chassis Mounting Rubbers	5189
	Chassis Mounting Washers	29-2089
	Chassis Mounting Bolts	W-1345A
	Extension Speaker Panel and Leads Assembly	380-5338

Add:—

REF. No.	DESCRIPTION.	PART NUMBER.	LIST PRICE.
T.15	Output Transformer, Part No. 32-7634	Complete Speaker H.26	£ s. d. 1 17 6
CK.1	Speech Coil and Cone, Part No. 02625		
CK.1	Field Coil, Part No. 36-3687	36-1238	
EC.2	Electrolytic Condenser, 8 mfd.	300-2000	4 9
EC.3	Electrolytic Condenser, 16 mfd.	30-2126	4 3
SW.3	Gram Change-over Switch	420-1013	2 3
	Warning Light (Gram)	380-5368	3 6
L.P.3	Pilot Lamp (Painted)	340-2008	1 4
	P.U. Jack Plug	350-3002	2 0
	"A" and "E" Panel Assembly	380-5369	2 9
	Cables for "A" and "E" Panel	LO-1013	8
	Motor Cable	LO-1013	8
	Black Wander Plug	380-5015	doz. 1 6
	Red Wander Plug	380-5087	2
	Extruded Washer (Rubber)	27-4199	doz. 2 1
	Plain Washer (Rubber)	27-4198	2
	Rubber Bumper	27-4197	3
	Bracket	280-7000	1 2
	Bolt (Coach type)	WB-1109	1
	Nut (Square)	WN-1109	1
	Bridge type Automatic Record Changer, A.C. Motor, Turntable, Needle Cups and Pick-up and Lead Assembly	350-2021	10 10 0
	Extension Speaker Panel and Leads Assembly	380-5373	2 9