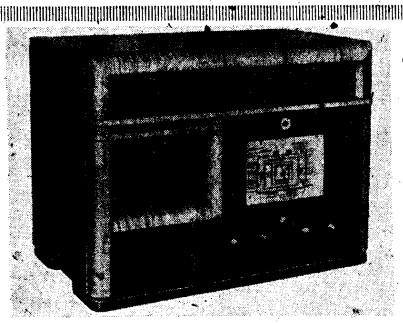
Supplement to The Wireless & Electrical Trader, May 8, 1943

"TRADER" SERVICE SHEET

619

REVISED ISSUE OF SERVICE SHEET No. 286

MARCONIPHONE 347, 346, 363, 366, 367 AND HMV 481, 485A, 488, 496, 498 & 582



The Marconiphone 347.

FIVE bands are covered by the Marconiphone 347 5-valve (plus rectifier) AC superhet, the actual short-wave ranges being 7-16 m. (refered to below as SW1), 16.7-50 m. (SW2), 46-140 m. (SW3). The receiver is for mains of 200-250 V, 50-100 C/S, and has separate treble and bass tone controls, a cathode ray tuning indicator, and provision for an extension speaker and a gramophone pick-up. An identical chassis is fitted in the 367 automatic radiogram, but this model is for mains of 50-60 C/S.

The chassis fitted in the 346 receiver, 363 radiogram and 366 automatic radiogram are very similar, but do not include the tuning indicator.

The equivalent models in the HMV range are as follows, the Marconiphone numbers being in parentheses: 481 (346); 496 (347); 488 (363); 485A (366); 498 (367). The HMV 582 is an automatic radiogram, but although it employs a similar chassis to that in the 496 (347) models, its cabinet is a bureau, and it has no Marconiphone equivalent.

Release dates and original prices:
Marconiphone 346, *September*, 1936, £19 8*s*. 6*d*.; 347, *June*, 1937, £19 19*s*.; 363, *September*, 1936, £30 19*s*. 6*d*.; 366, *August*, 1936, £37 16*s*.; 367, *July*, 1937, £42.
HMV 481, *September*, 1936, £19 8*s*. 6*d*.; 485*A*, *February*, 1936, £39 18*s*. (*reduced June*, 1937, *to* £36 15*s*.); 488, *September*, 1936, £30 19*s*. 6*d*.; 496, *June*, 1937, £19 19*s*.; 498, *July*, 1937, £42; 582, *August*, 1937, £52 10*s*.

CIRCUIT DESCRIPTION

Aerial input on all bands excepting SW1, via coupling coils **L1** (SW2), **L2** (SW3), **L3** (MW) and **L4** (LW) to single-tuned circuits **L6, C52** (SW2), **L7, C52** (SW3), **L8, C52** (MW) and **L9, C52** (LW) which precede variable-mu pentode RF amplifier **(V1, Marconi metallised VMP4G).**

Tuned-primary RF transformer coupling by **C53, L11, L15** (SW2), **C53, L12, L16** (SW3), **C53, L13, L17** (MW) and **C53, L14, L18** (LW), between **V1** and triode hexode valve **(V2, Marconi metallised X41),** which operates as frequency changer with internal coupling.

On SW1 (television band) input is via coupling condenser **C1** to single-tuned circuit **L5, C52,** which is coupled via **C2, L10,** to CG of **V2.**

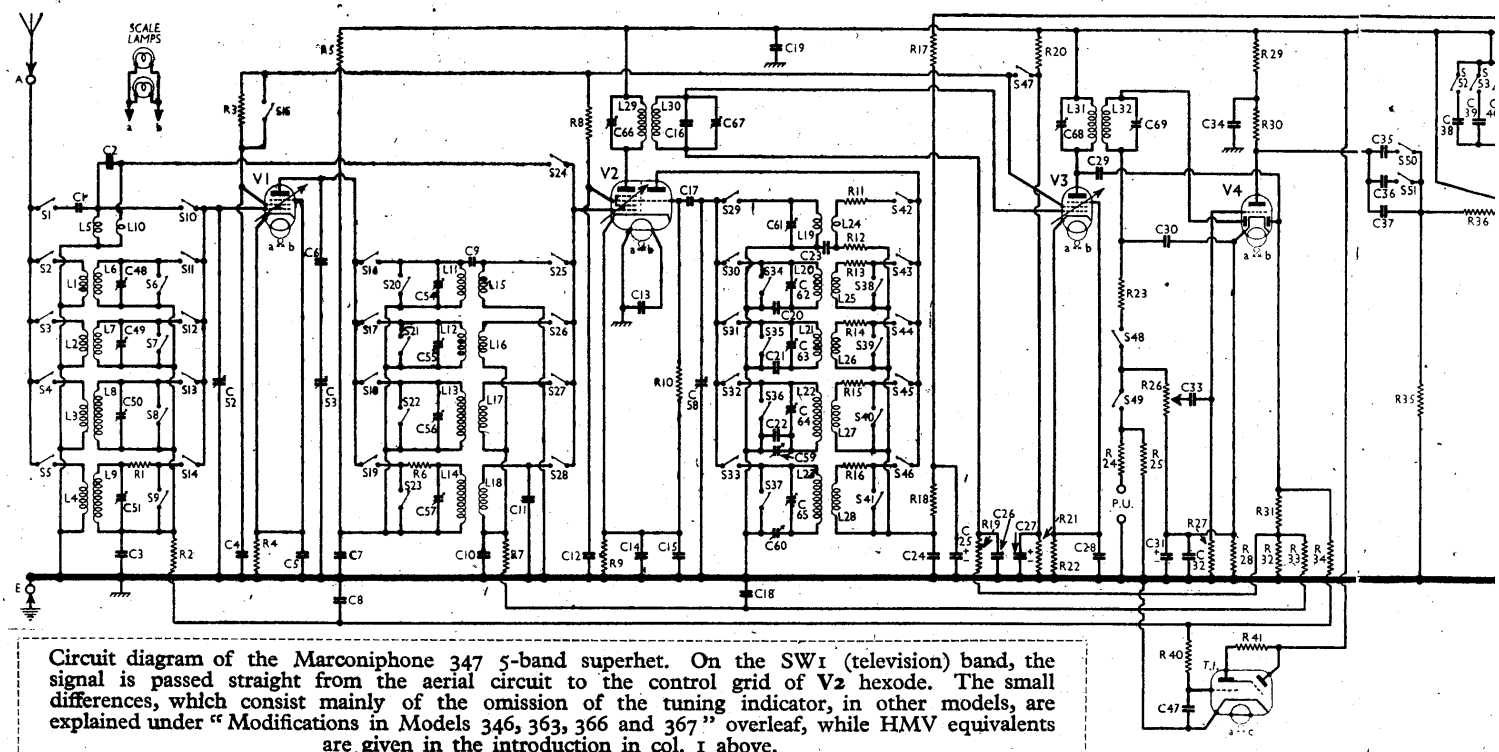
V2 oscillator triode grid coils **L19** (SW1), **L20** (SW2), **L21** (SW3), **L22** (MW) and **L23** (LW) are tuned by **C58;** parallel trimming by **C61** (SW1), **C62** (SW2), **C63** (SW3), **C64** (MW) and **C65** (LW); series tracking by **C20** (SW2), **C21** (SW3), **C22, C59** (MW) and **C60** (LW). Reaction by coils **L24** (SW1), **L25** (SW2), **L26** (SW3), **L27** (MW) and **L28** (LW).

Third valve **(V3, Marconi metallised VMP4G)** is a variable-mu RF pentode operating as intermediate frequency amplifier with tuned-primary tuned-secondary transformer couplings **C66, L29, L30, C16, C67** and **C68, L31, L32, C69.**

Intermediate frequency 460 KC/S.

Diode second detector is part of double diode triode valve **(V4, Marconi metallised MHD4).** Audio frequency component in rectified output is developed across manual volume control **R26,** which operates also as load resistance, and passed via AF coupling condenser **C33** and CG resistance **R27** to CG of triode section, which operates as AF amplifier. Provision for connection of gramophone pick-up across **R26** via **S49** and feed resistances **R24, R25.** When control switch is pushed over to "Gram" **S49** closes and **S47, S48** open, muting radio.

Second diode of **V4,** fed from **V3** anode via **C29,** provides DC potentials which are developed across load resistances **R31, R32** and fed back through decoupling circuits as GB to RF (except on SW1), FC (except on SW1 and SW2) and IF valves, giving automatic volume control. Delay voltage is developed across **R28.**

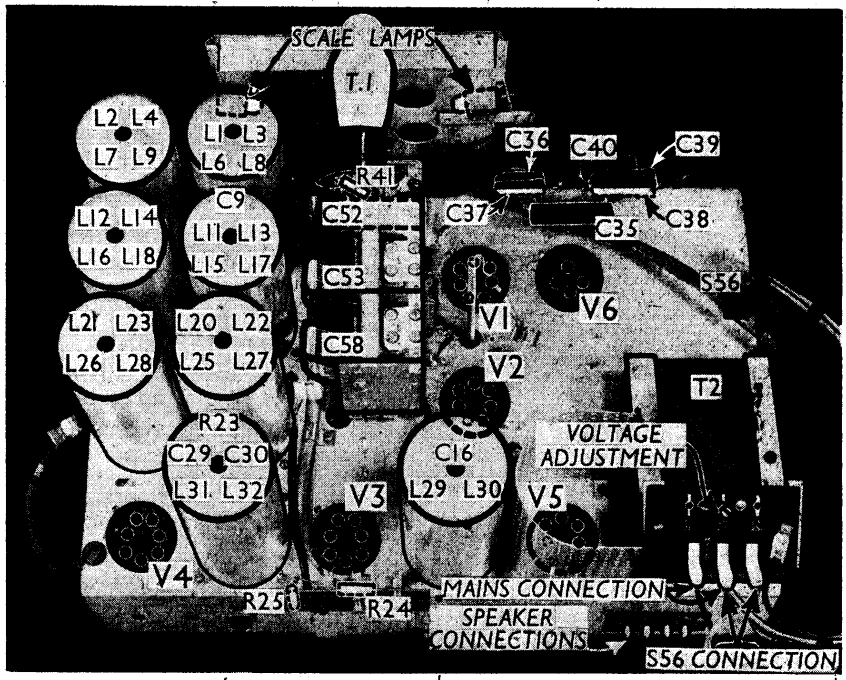


Circuit diagram of the Marconiphone 347 5-band superhet. On the SW1 (television) band, the signal is passed straight from the aerial circuit to the control grid of V2 hexode. The small differences, which consist mainly of the omission of the tuning indicator, in other models, are explained under "Modifications in Models 346, 363, 366 and 367" overleaf, while HMV equivalents are given in the introduction in col. 1 above.

Resistance-capacity coupling by **R30, C37** and **R35,** via stopper **R36,** between **V4** triode and beam tetrode output valve **(V5, Marconi KT41).** Coupling capacity is modified for "Bass" tone control purposes by connecting either **C36** (maximum bass) or **C35** (medium bass) in parallel with **C37,** via switches **S50, S51.** Second, "Brilliant", tone control is effected by means of a five-position rotary switch unit comprising **S52, S53, S54, S55** in anode circuit. High note response is greatest when all switches are open, and is progressively reduced as **C38, C39, C40** or **C41** respectively are switched into circuit. Fixed tone correction by **C43,** also in anode circuit. Provision for connection of low impedance external speaker across secondary of internal speaker transformer **T1.**

Operating potential for cathode ray tuning indicator **(T.I., Marconi Y63)** is obtained from **V1** AVC line. CG feed decoupling by **R40, C47.**

HT current is supplied by full-wave rectifying valve **(V6, Marconi U12).** Smoothing by speaker field **L35** and electrolytic condensers **C45, C46.** HT circuit RF filtering by **C19.**



Plan view of the chassis. **R24** and **R25** are mounted on the pick-up connecting panel at the rear of the chassis. In some models a fixed condenser may be connected across **R25.**

COMPONENTS AND VALUES

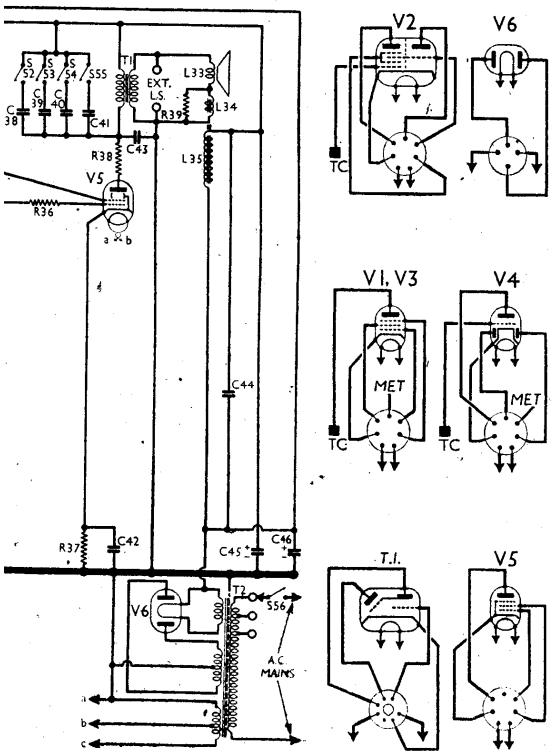
	CONDENSERS	Values (μF)
C1	Aerial SW1 coupling ...	0·00001
C2	Part SW1 coupling ...	0·00023
C3	V1 CG decoupling ...	0·05
C4	V1 SG decoupling ...	0·1
C5	V1 cathode by-pass ...	0·1
C6	HT blocking condenser	0·1
C7	V1 anode decoupling ...	0·1
C8	AVC line decoupling ...	0·001
C9	SW2 coupling	0·000005
C10	V2 hex. CG decoupling...	0·05
C11	RF trans. sec. LW shunt	0·0003
C12	V2 SG decoupling ...	0·1
C13	V2 heater RF by-pass ...	0·002
	(Continued next column)	

	CONDENSERS *(continued)*	Values (μF)
C14	V2 cathode by-pass condensers ...	0·0023
C15		0·1
C16	1st IF trans. sec. fixed trimmer	0·0001
C17	V2 osc. CG condenser ...	0·00005
C18	AVC line decoupling ...	0·05
C19	HT circuit RF by-pass...	0·23
C20	Osc. circ. SW2 tracker...	0·00285
C21	Osc. circ. SW3 tracker...	0·00184
C22	Osc. MW fixed tracker...	0·00035
C23	Osc. SW1 coupling ...	0·0023
C24	V2 osc. anode decoupling condensers	0·05
C25*		8·0
C26	V3 CG decoupling ...	0·05
C27*	V3 SG decoupling ...	4·0
C28	V3 cathode by-pass ...	0·1
C29	Coupling to V4 AVC diode	0·0001
C30	IF by-pass	0·00035
C31*	V4 cathode by-pass condensers ...	4·0
C32		0·1
C33	AF coupling to V4 triode	0·05
C34	V4 triode anode decoupling	0·5
C35	"Bass" tone control condensers	0·0015
C36		0·05
C37	V4 triode to V5 coupling	0·001
C38	"Brilliant" tone control condensers ...	0·0023
C39		0·005
C40		0·02
C41		0·05
C42	V5 cathode by-pass ...	0·1
C43	Fixed tone corrector ...	0·0023
C44	Speaker field shunt ...	0·05
C45*	HT smoothing condensers	8·0
C46*		16·0
C47	T.I. CG decoupling ...	0·00023
C48‡	Aerial SW2 trimmer ...	—
C49‡	Aerial SW3 trimmer ...	—
C50‡	Aerial MW trimmer ...	—
C51‡	Aerial LW trimmer ...	—
C52†	Aerial circuit tuning ...	—
C53†	RF trans. pri. tuning ...	—
C54‡	RF trans. SW2 trim. ...	—
C55‡	RF trans. SW3 trim. ...	—
C56‡	RF trans. MW trim. ...	—
C57‡	RF trans. LW trim. ...	—
C58†	Oscillator circuit tuning	—
C59‡	Osc. circ. MW tracker ...	—
C60‡	Osc. circ. LW tracker ...	—
C61‡	Osc. circ. SW1 trimmer	—
C62‡	Osc. circ. SW2 trimmer	—
C63‡	Osc. circ. SW3 trimmer	—
C64‡	Osc. circ. MW trimmer...	—
C65‡	Osc. circ. LW trimmer	—
C66‡	1st IF trans. pri. tuning	—
C67‡	1st IF trans. sec. tuning	—
C68‡	2nd IF trans. pri. tuning	—
C69‡	2nd IF trans. sec. tuning	—

*Electrolytic. †Variable. ‡Pre-set.

	RESISTANCES	Values (ohms)
R1	Aerial circ. LW damping	100
R2	V1 CG decoupling ...	100,000
R3	V1 SG HT feed	230,000
R4	V1 fixed GB resistance ...	150
R5	V1 anode HT feed ...	5,000
R6	V1 anode LW damping ...	100
R7	V2 hex. CG decoupling ...	100,000
R8	V2 SG HT feed	23,000
R9	V2 fixed GB resistance ...	150
R10	V2 osc. CG resistance ...	50,000
R11	Osc. circ. SW1 stabiliser...	6
R12	V2 osc. anode SW1 decoupling	5,000
R13	Osc. circ. SW2 stabiliser...	150
R14	Osc. circ. SW3 stabiliser...	500
R15	Osc. circ. MW stabiliser ...	2,300
R16	Osc. circ. LW stabiliser ...	15,000
R17	V2 oscillator anode HT feed resistances ...	35,000
R18		15,000
R19	V3 CG decoupling ...	1,000,000
R20	V1, V2, V3 SG's HT feed potential divider ...	7,666*
R21		3,750†
R22	V3 fixed GB resistance ...	150
R23	IF stopper	50,000
R24	PU feed resistances	23,000
R25		50,000
R26	Manual volume control and V4 signal diode load	250,000
R27	V4 triode CG resistance	1,000,000
R28	V4 GB; AVC delay ...	1,000
R29	V4 triode anode decoupling	50,000
R30	V4 triode anode load ...	35,000
R31	V4 AVC diode load resistances	350,000
R32		230,000
R33	AVC line decoupling resistances	750,000
R34		1,500,000
R35	V5 CG resistance ...	230,000
R36	V5 grid stopper	1,000
R37	V5 GB resistance ...	100
R38	V5 anode stopper ...	500
R39	Hum neut. coil shunt ...	0·6
R40	T.I. CG feed resistance ...	500,000
R41	T.I. anode HT feed ...	1,000,000

* Three 23,000 Ω 3W resistances in parallel.
† Two 7,500 Ω 3W resistances in parallel.



	OTHER COMPONENTS	Approx. Values (ohms)
L1	Aerial SW2 coupling ...	2·5
L2	Aerial SW3 coupling ...	16·0
L3	Aerial MW coupling ...	50·0
L4	Aerial LW coupling ...	150·0
L5	Aerial SW1 tuning coil ...	Very low
L6	Aerial SW2 tuning coil ...	0·1
L7	Aerial SW3 tuning coil ...	0·75
L8	Aerial MW tuning coil ...	5·5
L9	Aerial LW tuning coil ...	30·0
L10	V2 SW1 grid coil... ...	0·7
L11	RF trans. SW2 pri. ...	0·1
L12	RF trans. SW3 pri. ...	0·75
L13	RF trans. MW pri. ...	5·5
L14	RF trans. LW pri. ...	30·0
L15	RF trans. SW2 sec. ...	3·0
L16	RF trans. SW3 sec. ...	27·0
L17	RF trans. MW sec. ...	95·0
L18	RF trans. LW sec. ...	145·0
L19	Osc. SW1 tuning coil ...	Very low
L20	Osc. SW2 tuning coil ...	0·1
L21	Osc. SW3 tuning coil ...	0·5
L22	Osc. MW tuning coil ...	5·0
L23	Osc LW tuning coil ...	10·0
L24	Osc. SW1 reaction ...	0·1
L25	Osc. SW2 reaction ...	0·4
L26	Osc. SW3 reaction ...	0·7
L27	Osc. MW reaction ...	2·0
L28	Osc. LW reaction ...	7·0
L29	1st IF trans. Pri. ...	12·0
L30	1st IF trans. Sec. ...	8·0
L31	2nd IF trans. Pri. ...	12·0
L32	2nd IF trans. Sec. ...	12·0
L33	Speaker speech coil ...	4·0
L34	Hum neutralising coil ...	0·5
L35	Speaker field coil ...	1,100·0
T1	Speaker input trans. Pri.	580·0
	Speaker input trans. Sec.	0·5
T2	Mains trans Pri. total ...	15·0
	Mains trans Heat. sec., total	0·2
	Mains trans Rect. heat. sec.	0·1
	Mains trans HT sec., total	300·0
S1-S46	Waveband switches ...	—
S47-49	Radio/gram switches ...	—
S50-51	"Bass" control switches	—
S52-55	"Brilliant" control switches	—
S56	Mains switch	—

VALVE ANALYSIS

Valve voltages and currents given in the table below are those measured in our receiver when it was operating on mains of 225 V, using the 211-230 V tapping on the mains transformer. The receiver was tuned to the lowest wavelength on the medium band and the volume control was at maximum, but there was no signal input.

Voltages were measured on the 400 V scale of a model 7 Universal Avometer, chassis being negative.

If, as in our case, **V1** and **V3** should become unstable when measurements are being made of the screen and anode current respectively, they can be stabilised by connecting a non-inductive condenser of about 0.1 μF from the test electrode to chassis.

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 VMP4G	253	0·6	15	0·2
V2 X41	257	0·8	42	1·4
	Oscillator			
	84	7·3		
V3 VMP4G	257	6·0	73	3·1
V4 MHD4	103	1·6	—	—
V5 KT41	212	40·0	257	9·3
V6 U12	365†	—	—	—
T.I. Y63	18	0·2	—	—
	Target			
	257	0·5		

† Each anode, AC

DISMANTLING THE SET

Removing Chassis.—Remove the small tuning knob (recessed grub screw), the large tuning knob (pull off), and the other four knobs (recessed self-tapping screws);
free the mains and speaker leads from the cleats holding them to the cabinet;
remove the mains switch from the side of the cabinet (lock nut and knurled escutcheon);
remove the strap holding the tuning indicator (two round-head screws with lock-washers), and free the indicator;
remove the four bolts (with washers, rubber washers, and distance pieces) holding the chassis to the bottom of the cabinet.

If the chassis is now tilted slightly at the rear, it can be withdrawn to the extent of the speaker leads, which is sufficient for normal purposes.
To free chassis entirely, unsolder the speaker leads from the panel at the back of the chassis.
When replacing, connect the leads as follows, numbering the tags from left to right: 1, red/yellow; 2, red/black; 3, red; 4, black.
Removing Speaker.—Unsolder the leads from the chassis and those from the external speaker terminal panel; or, alternatively, remove the panel (two round-head wood screws); remove the two round-head bolts (with washers) holding the speaker cross-bar, and withdraw the speaker.
When replacing, if the leads have been disconnected from the speaker, connect them as follows, using the numbers marked on the speaker: 6, red; 7, red/black; 8, red/yellow. The black lead goes to the earthing tag, and the leads from the external speaker panel to tags 2 and 3.

GENERAL NOTES

Switches.—S1-S46 are the wavechange switches, in six rotary units beneath the chassis. They are indicated in our under-chassis view, and shown in detail in the diagrams, where each unit is drawn as seen looking from the rear of the underside of the chassis. The table (col. 3) gives the switch positions for the five control settings, starting from fully anti-clockwise. Note that our SW1 band (lowest wavelengths) is designated by the makers as S3, our SW2 as S2 and our SW3 as S1.

S47-S49 are the QMB radio-gram switches in a lever type unit at the rear of the chassis, indicated in our under-chassis view. **S47** and **S48** are closed on radio and open on gram; **S49** is open on radio and closed on gram.

S50 and **S51** are the bass control switches. They are in a rotary unit at the front of the chassis, and are indicated in our under-chasis view (unit 7), and shown in detail in the diagram in col. 4. In the fully anti-clockwise position of the control, both switches are open; in the next position, **S50** is closed; and in the third position **S51** is closed.

S52-S55 are the brilliance control switches, ganged in another rotary unit at the front of the chassis, and indicated in our under chassis view (unit 8), and shown in detail in the diagram in col. 4. In the fully anti-clockwise position of the control **S55** is closed; in the second, **S54** is closed; in the third, **S53**; in the fourth, **S52**; while in the fifth position all the switches are open.

S56 is the QMB mains switch, mounted on the plate at the left-hand side of the cabinet.

Coils.—All the coils except **L5, L10, L19** and **L24** are in eight screened units on the chassis deck, some of the units containing one or two other components. No trimmers are inside the tops of the cans, but all are reached from beneath the chassis, most of them being beneath their respective coil units.

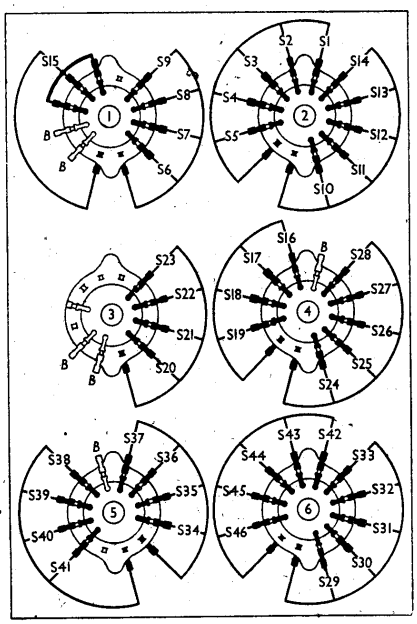
L5, L10 and **L19, L24,** the coils for the lowest wavelength band, are beneath the chassis, on two small tubular formers.

Scale Lamps.—These are two Osram 6.2 V, 0.3 A MES types, with tubular bulbs.

External Speaker.—Two sockets are provided on a bracket at the rear of the cabinet for a low impedance (about 6 Ω) external speaker.

Condensers C45 and **C46.**—These electrolytics are mounted on a platform on the speaker unit.

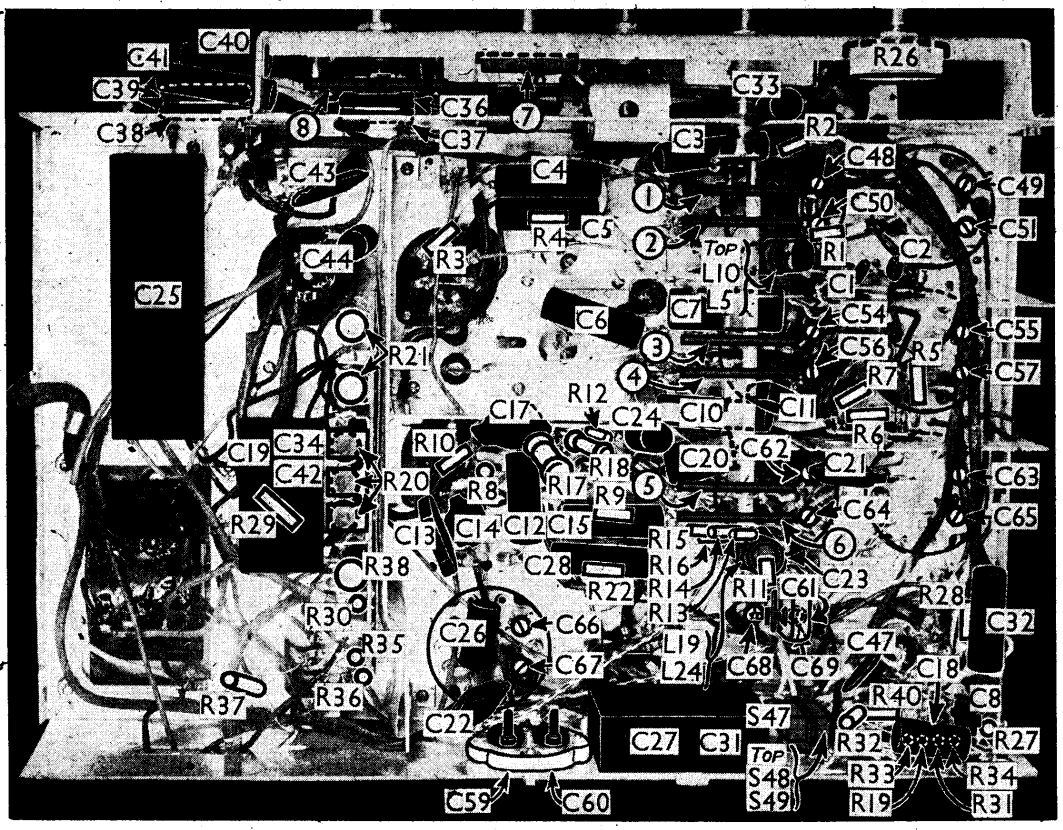
Resistance R39.—This is also on the speaker unit, and consists of a short length of resistance wire, in yellow sleev-



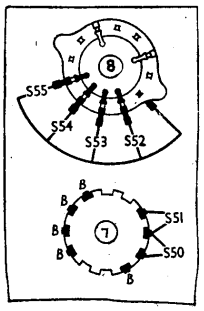
Diagrams of the six wavechange switch units, as seen when viewed from the rear of the underside of the chassis.

Switch Table

Switch	SW1 (S3)	SW2 (S2)	SW3 (S1)	MW	LW
S1	C	—	—	—	—
S2	—	C	—	—	—
S3	—	—	C	—	—
S4	—	—	—	C	—
S5	—	—	—	—	C
S6	C	—	—	—	—
S7	—	C	—	—	—
S8	—	—	C	—	—
S9	—	—	—	C	—
S10	C	—	—	—	—
S11	—	C	—	—	—
S12	—	—	C	—	—
S13	—	—	—	C	—
S14	—	—	—	—	C
S15	C	C	C	—	—
S16	—	C	—	—	—
S17	—	—	C	—	—
S18	—	—	—	C	—
S19	—	—	—	—	C
S20	C	—	—	—	—
S21	—	C	—	—	—
S22	—	—	C	—	—
S23	—	—	—	C	—
S24	C	—	—	—	—
S25	—	C	—	—	—
S26	—	—	C	—	—
S27	—	—	—	C	—
S28	—	—	—	—	C
S29	C	—	—	—	—
S30	—	C	—	—	—
S31	—	—	C	—	—
S32	—	—	—	C	—
S33	—	—	—	—	C
S34	C	—	—	—	—
S35	—	C	—	—	—
S36	—	—	C	—	—
S37	—	—	—	C	—
S38	C	—	—	—	—
S39	C	C	—	—	—
S40	—	C	C	—	—
S41	—	—	C	C	—
S42	C	—	—	—	—
S43	—	C	—	—	—
S44	—	—	C	—	—
S45	—	—	—	C	—
S46	—	—	—	—	C



Under - chassis view. The only coils beneath the chassis are the **L5, L10** and **L19, L24** units. The various trimmer screws are all indicated. **R20** and **R21** are each made up of paralleled resistances.



The two tone control switch units, which are mounted at the front of the chassis, as seen from the rear.

ing, connected between tags 3 and 4 on the speaker unit.

Condensers C19, C34, C42.—These are three paper condensers in a single metal case beneath the chassis. Each condenser is brought out separately to two tags. The two tags nearest the rear of the chassis (marked 1) belong to **C19** (0.25 μF); the next two tags (marked 2) belong to **C34** (0.5 μF); and the two tags nearest the front of the chassis (marked 3) belong to **C42** (0.1 μF).

Condensers C27, C31.—These are two 4 μF dry electrolytics in a single metal case, fixed inside the rear member of the chassis, and having a common negative (black) lead. The red lead to **S47** is the positive of **C27**, and the red lead to **V4** valveholder is the positive of **C31.**

Resistances R20, R21.—Note that these respectively consist of three and two resistances in parallel.

Chassis Divergencies.—R24 in our chassis was 23,000 O and **R25,** 50,000 O. Most chassis, however, will have **R24,** 75,000 O and **R25,** 23,000 O, and in addition a fixed condenser of 0.01 μF will be connected across **R25** (not in our chassis). This modification increases the volume on gram.

MODIFICATIONS IN MODELS 346, 363, 366 and 367

Model 367, the auto-radiogram version of the 347, has an almost identical chassis. The speaker is slightly different, having a speech coil resistance of 1.75 O instead of 4 O, while the resistance of the primary of **T1** is 300 O.

Model 346 is a table receiver, only differing from the 347 in that a tuning indicator is not fitted. The circuit is therefore the same except for the deletion of the **T.I., R40, R41** and **C47,** while the heater secondary of **T2** has no 6.3 V tapping.

Models 363 and 366 are radiogram and auto-radiogram versions of the 346, but are otherwise similar.

CIRCUIT ALIGNMENT

IF Stages.—Set bass tone control to minimum cut, brillance control to maximum cut, waveband switch to MW, volume control to maximum, and gang condenser about half-way in mesh. Connect signal generator to control grid (top cap) of **V2** and chassis, see that the screen is on the IF valve, and then short circuit **C58.**

Feed in a 460 KC/S signal and adjust **C66, C67, C68** and **C69,** in that order, for maximum output. Recheck these settings, then remove short from **C58.**

RF and Oscillator Stages.—Tone and volume controls should be set as above. Connect signal generator to **A** and **E** sockets. With gang fully meshed, pointer should cover 0 and 50 calibration marks on vernier scale (or 25 and 75 in the radiogram models).

The calibration mark for 46 m on the S1 (our SW3) range is used as a ganging point on all bands. Where instructed, see that pointer is over this calibration mark, but that the waveband switch is set correctly for the range being aligned. A dummy aerial of 400 O resistance should be used.

LW.—Adjust receiver to ganging point, switch to LW, and feed in a 750 m (400 KC/S) signal. Adjust **C65** for maximum output. Feed in a 775 m (387 KC/S) signal, tune it in, and adjust **C57** and **C51,** while rocking the gang.

Feed in a 1,700 m (176 KC/S) signal, tune it in, and adjust **C60** for maximum output while rocking the gang.

Repeat these adjustments. It may be necessary to desensitise **V2** by temporarily including an additional 2,000 O resistance in its cathode circuit to make the receiver stable while ganging.

MW.—Adjust receiver to ganging point, switch to MW and feed in a 185 m (1,620 KC/S) signal. Adjust **C64** for maximum output. Feed in a 205 m (1,460 KC/S) signal, tune it in, and adjust **C56** and **C50** for maximum output.

Feed in a 500 m (600 KC/S) signal and tune it in. Adjust **C59** for maximum output, while rocking the gang.

Repeat these adjustments.

SW3 (S1).—Adjust receiver to ganging point, switch to SW3 (S1) band, and feed in a 46 m (6.5 MC/S) signal. Adjust **C63** for maximum output. Feed in a 50 m (6 MC/S) signal, tune it in, and adjust **C55** and **C49** for maximum output, rocking the gang.

Repeat these adjustments.

SW2 (S2).—Adjust receiver to ganging point, switch to SW2 (S2) band, and feed in a 16.7 m. (18 MC/S) signal. Adjust **C62** for maximum output. Two resonance points will be found, and the correct one is that requiring the least capacity. Feed in a 17.8 m (16.8 MC/S) signal, tune it in, and adjust **C54** and **C48** for maximum output, rocking the gang very carefully for optimum results. The adjustment of **C54** is particularly critical. Repeat all these adjustments several times to ensure that correct results have been obtained.

SW1 (S3).—Switch set to SW1 (S3) range, feed in a 16 m (18.75 MC/S) signal, and having set **C61** approximately half-way between maximum and minimum capacity, tune in the signal. If two tuning points are found, use that received with the greater capacity of the gang condenser.

The inductance of **L19** must now be adjusted for maximum output. This is done by altering the length of the return lead from the coil tag to the chassis. This lead (of thick tinned copper wire) is in two parts; unsolder them, and slide that from the chassis up and down that from the coil tag until a point is reached where the maximum output reading is obtained; finally, solder the two wires together at this point.

Feed in a 7 m (43 MC/S) signal, and tune to 7 m on scale. Adjust **C61** for maximum output. If two peaks are obtained, use that requiring the greater trimmer capacity. Now, while rocking the gang slightly very carefully, readjust **C61** for optimum results.

Printed in Great Britain by The Cornwall Press Ltd., Paris Garden, London, S.E.1