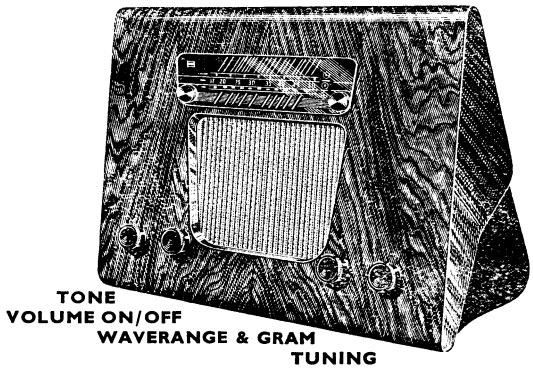
A130 & U130

RECEIVERS



MURPHY RADIO LIMITED
WELWYN GARDEN CITY · HERTFORDSHIRE
Telephone : Welwyn Garden 800

CONTENTS

DIAGRAMS

SPECIFICATION

MAINS SUPPLIES :	A130 : 200–250 volts, a.c. 50–100 c/s. U130 : 200–250 volts, d.c., or a.c. 50–100 c/s.
WAVE RANGES :	SHORT WAVES : 17–51 metres. MEDIUM WAVES : 190–555 metres. LONG WAVES : 900–2050 metres.
INTERMEDIATE FREQUENCY :	465 Kc/s.
VALVES :	A130 : Mazda : 10C1, 10F9, 10LD11, Pen45, U404. U130 : Mazda : 10C1, 10F9, 10LD11, 10P14, U404.
SCALE LAMPS :	A130 only : Osram or Philips, 6·2 V., 0·3 A. (m.e.s.).
SPEECH COIL IMPEDANCE :	2·5 Ohms.
EXTENSION LOUDSPEAKER :	3 to 7 Ohms.
CABINET DIMENSIONS :	20¼″ wide, 14⅛″ high, 9″ deep
TOTAL WEIGHT :	17¼ lbs.
CONSUMPTION :	42 Watts.
RELEASED :	A130 : June, 1949. U130 : August, 1949.
PRICE :	A130 : £17 7s. 6d. plus P.T. U130 : £17 7s. 6d. plus P.T.

MECHANICAL NOTES

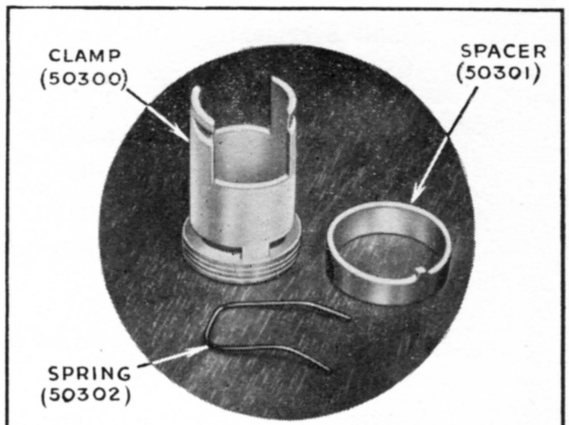
Accessibility. When the back is removed from the cabinet, it will be seen that most of the components on both sides of the chassis are freely accessible. When working on the underside of the chassis, the cabinet may be laid on the bench, front downwards, or stood on end, and the latter position was adopted when preparing some of the diagrams. When making repairs or adjustments, it is most important that a clean soft pad be used to avoid any damage to the cabinet.

Removing the cabinet. To take the chassis from the cabinet, first remove the back and control knobs. Remove the guide for carrier earthing lead by loosening the wood screw that holds the spade tag, and take out the scale lamps ; disengage the cord from the carrier. These details are shown in the scale clamp and the Cord Drive diagrams. The chassis bolts pass through rubber grommets on the chassis, and, after the nuts have been removed, the bolts must be pushed out of the grommets before the chassis can be drawn clear of the cabinet. When replacing the chassis in the cabinet, make sure that the spade tag on the earthing lead is securely held by the wood screw. See also the section, " The A130 Lamps."

The scale mounting. The Perspex **scale** (51694) is secured to the front of the cabinet by two assemblies, each consisting of a **clamp** (50300), a **spacer** (50301) and a **spring** (50302). These assemblies also serve to house the **lamps** (16880) in the A130. To remove the scale, take off the springs from the rear of the clamps, and the whole assembly can then be withdrawn.

When refitting the scale, the large openings in the clamps should be towards the centre of the scale, and the " cut-away " section of the spacers should face in the same direction, to allow the maximum amount of light to be directed on to the scale.

It will be found helpful to lay the cabinet face downwards, so that the scale and clamps are held in position when fitting the springs. The legs of the springs should point towards the chassis, and they should be pressed over the clamps so that they engage in the slots around the sides, as shown in the photograph. It should be noted that each clamp is " earthed " by means of a tag, which is held between the pointer guide and the cabinet, and it is essential that this makes good contact with the *outer* wall of the clamp (*i.e.*, *between* the clamp and the wood).



SCALE CLAMP ACCESSORIES
130

The pointer. The transparent **pointer** (51634) fits into a **holder** (50045) which is mounted on a **carrier** (50041). The carrier is attached to the pointer drive cord, and slides on the **guide for carrier** (50040). If necessary, the pointer and holder may be detached from the carrier after the scale has been removed. To do this the carrier should be held firmly on the guide and the holder withdrawn. When replacing the pointer and holder, it should be pushed on to the carrier as far as it will go. (See Cord Drive Diagram on page 7.)

The carrier and the guide for carrier. The guide is attached to the cabinet by two $\frac{1}{2}$" No. 6 wood screws, under one of which is clamped a **spade tag** (50320) connected to the contact which is attached to the earth socket of the receiver. The wood screws also pass through the **tags** (36833) that earth the scale clamps, the tags being gripped between the guide and the cabinet.

The carrier cannot be removed from or fitted to the guide whilst the latter is screwed to the cabinet. A thin film of grease should be applied to the surface of the guide, so that the carrier will move easily. See that the spade tag is gripped securely between the screw and the guide.

The earth socket. In order to reduce the possibility of an electric shock from the scale

clamps when the receiver is not earthed, a special type of earth socket is used. This ensures that the clamps are completely isolated from the receiver except when a plug is inserted into the earth socket.

A Neoprene **sleeve** (52323) holds a **contact** (52320) and a small **insulator** (52321) in position so that the tip of the contact projects into a hole in the side of the socket. The scale clamps are wired to the contact, and are only connected to the socket when an earth plug is inserted.

The valves. Some of the valves used in these receivers are the new miniature type which have the B8A valve base and holder. The new technique, whereby the valve pins are sealed into the glass envelope, is used, resulting in a small rigid assembly; care must be taken that the pins are not bent, as this may damage the glass seal.

Normally, no difficulty should be experienced when removing these miniature valves, but if they are tight in their holders, even after the spring clip has been moved, it will generally be possible to push the spigot of the valve from beneath the chassis with the end of a pencil, or similar tool.

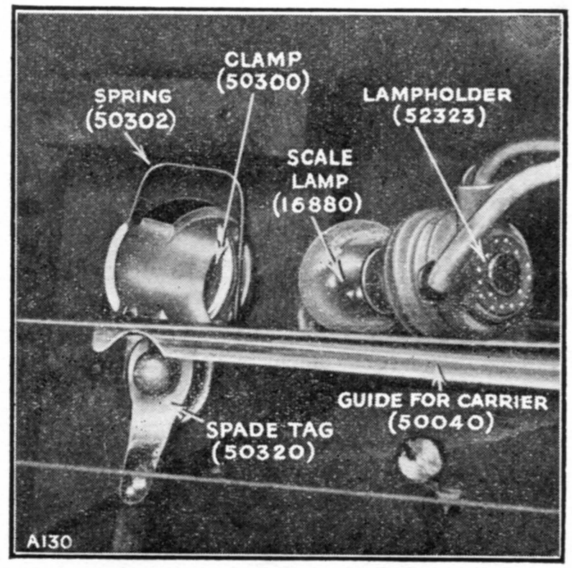
If poor contact is being made between the valve pins and the valve holder, it may be worthwhile to clean them with a fine abrasive paper, especially if there are any burrs, or rough edges on the ends of the pins.

The i.f. transformers of both receivers are tuned by adjustable iron dust cores. These cores are moulded with a thread on the outside and with a slot for trimming at each end. The threads engage with U-shaped pieces of bakelite which are fitted at each end of the i.f. coil formers. It is possible for the cores to be screwed in too far, and they may then drop into the centre of the coil. If this does occur, the opposite core should be removed, and then the loose core can be re-started in its thread.

As these cores are rather fragile, care must be taken when adjusting them, and it is recommended that a non-metallic screwdriver be used for this purpose.

The coil cans may be taken off for inspection, if the securing tabs are bent back, and the self-tapping screws are removed. The tabs are accessible through holes in the chassis below the assemblies. When replacing the cans, first see that the piece of insulating material is wrapped round the assembly to prevent any possibility of a short circuit.

The A130 lamps. To ensure the maximum scale illumination, it is important that the lamp



DETAILS OF SCALE CLAMPS AND LAMPHOLDER

filaments should be in line with the slots in the scale clamps. For this reason, Osram or Philips **lamps** (16880) (6·2 Volt, 0·3 Amp.) are specified, as they are made to close mechanical tolerances and assume the correct position when pushed fully into the clamps; care should be taken when inserting the lamps as the glass may be broken if too much pressure is used. When the lamps are in position, a slight turn will secure them. It is most important that the **rubber grommets** (42842) are not damaged or displaced in any way, otherwise the fuse may "blow" or the user of the receiver may be subjected to an electric shock.

The pick-up sockets. These receivers incorporate pick-up sockets, but as the chassis is "live", suitable precautions must be taken in order to reduce the tendency towards hum, and to avoid any possibility of electric shock.

The amplifier input is designed for use with a crystal pick-up; other types of pick-up are not to be recommended.

It is particularly important that an efficient earth is connected to the receiver; the motor board and pick-up arm should be connected to earth through the pick-up socket marked "E". The wiring to the pick-up should be as short as possible, twin screened lead with the screening isolated from the pick-up arm and motor board, being essential. The pick-up leads should be connected to the sockets marked "P" and "U", and the screening to the socket marked "C".

The tuning coils. One former only is used for the aerial coils, and no provision is made for adjusting the inductance of these windings. The oscillator coils are wound on two formers, a separate former being used for the short wave range, and provision is made for adjustment of the l.w. oscillator coil by a brass OBA stud. Although it is possible to adjust the s.w. coils by moving the spiral turns (at the l.f. end of the band), we do not recommend this procedure as a general rule with these receivers, and where the alignment is incorrect, a replacement coil should be fitted.

The aerial coil is secured by a single plate clamp which is screwed directly to the chassis. The l.w. and m.w. oscillator coil former is held in place by two small brass clamps which are twisted after they have been passed through holes in the chassis. The s.w. oscillator coil is soldered to the earth tag as shown in the underneath views.

The mains supply and the A130 auto-transformer. An auto-transformer of small overall dimensions is used in the A130 receiver. It has four taps, two of which are for mains voltage adjustments, and the other two supply 4 volts and 96 volts for the different heater supplies. Half-wave rectification is used for the h.t. supply, and the circuit is in some respects similar to the conventional ac/dc receiver.

Note that both the chassis are connected directly to the mains supply—and therefore, earthed equipment such as signal generators, etc., should not be used without adequate precautions being taken. An efficient earth is necessary for satisfactory operation of the mains filter, and as a safety precaution against electric shock, if the pick-up sockets are used.

The drive drum. This is printed with 180 degree divisions, to enable calibration and circuit alignment to be effected when the chassis is out of its cabinet. A list of degree readings corresponding to the alignment frequencies is given on page 10, and it is important for accurate calibration that when the gang capacitor vanes are fully in mesh the " V " on the indicator should correspond with " O " degrees on the drive drum. For accurate calibration it is also essential that the correct grade of drive cord is used for the pointer drive (Murphy Radio Spec. 936).

THE CORD DRIVES

The diagram shows the general arrangement of the cord drives, and also gives the dimension of the looped cord when tied to the spring. In order that subsequent expansion of the cord does not alter the tension, it is advisable to stretch it for a while beforehand, using a weight or something similar. The pointer drive should be fitted before the main drive in the following way.

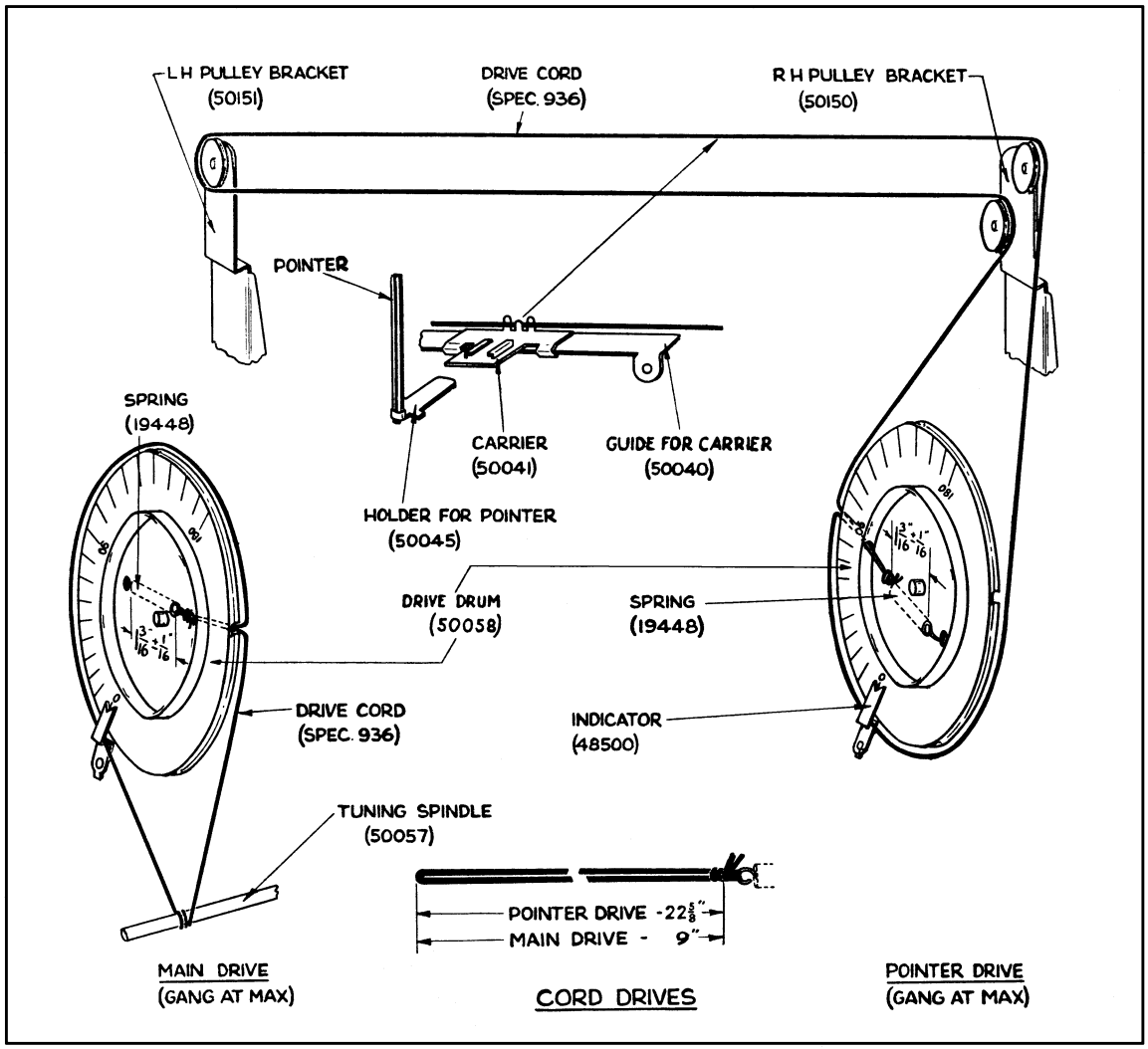
Pointer drive. Pull the 22⅝-in. loop through the holes in the drive drum until the spring is against the inside edge, separate the loop, and pass one end around the lower right hand pulley, then round the left hand pulley, and back to the upper right hand pulley. Both ends should then be laid in the outside groove on the drive drum as shown in the diagram, but the spring should not be fixed in position until the main drive has been fitted, as the cord obstructs the securing hole for the main drive spring.

Main drive. Unclip the spring which holds the tuning control spindle in position, and remove the control spindle.

Pass the 9-in. loop through the slot in the drive drum, and separate the loop. Wind one end round a finger 2½ times, and then pass the tuning control spindle through the loops so formed so that it is right home. Pull both ends so that the turns lie evenly on the spindle, and then place the cord in the groove on the drive drum beside the pointer drive.

Clip the main drive spring and the pointer drive spring into place as shown, and turn the control to see that the operation of the drive is satisfactory, and that both drives lie separately in the groove.

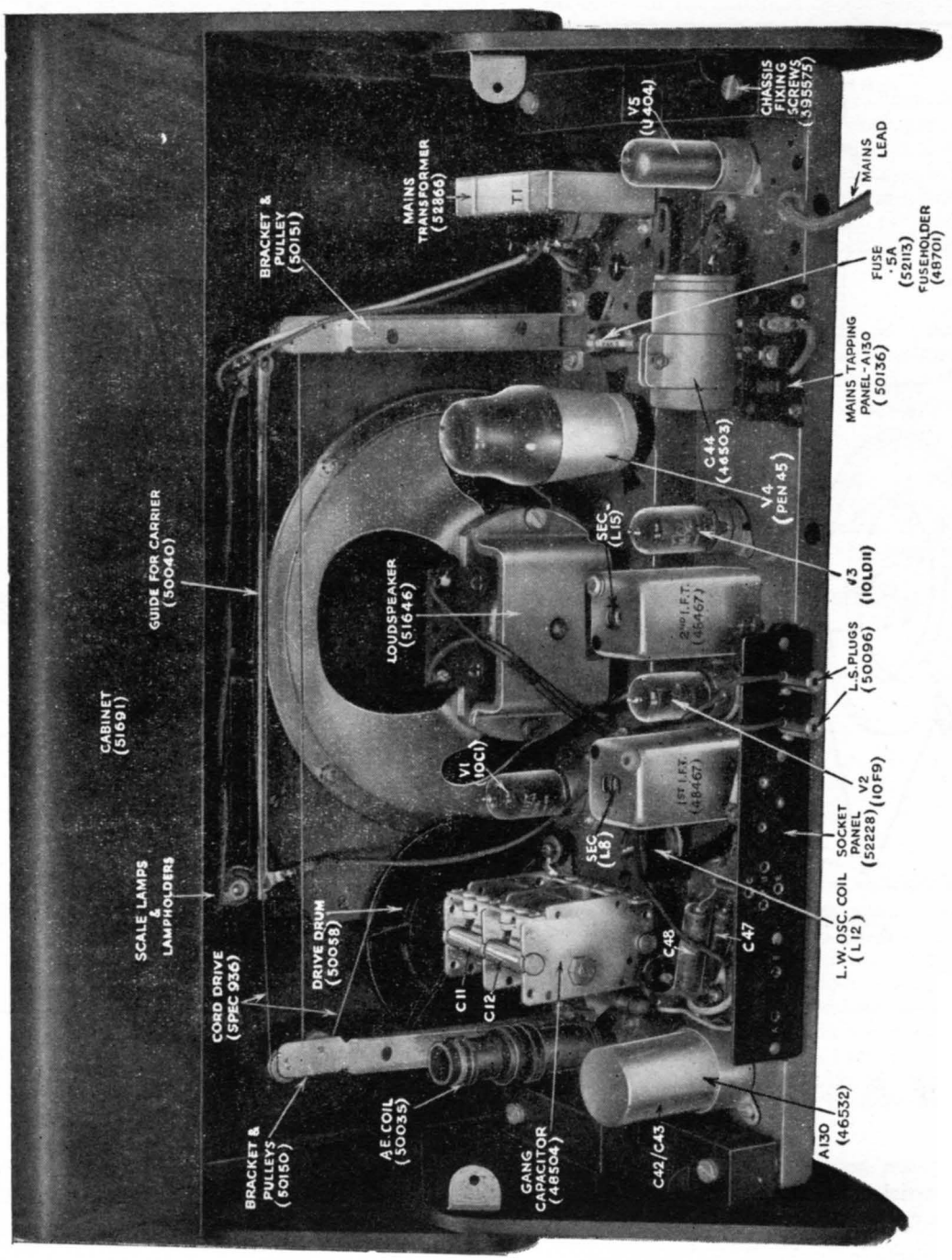
Finally, invert the chassis, and fit the tuning control spring so that the hook is in the hole in the front of the chassis, and the other end is resting on the trimmer panel spacer.



MURPHY NEWS

Topical articles on service matters, as well as technical information about new models, are printed regularly in the MURPHY NEWS.

This is published monthly, and is despatched to every Murphy Dealer ; all service engineers should study it regularly.



A130 REAR VIEW (diagram on page 15)

AERIAL FILTERS

In areas close to powerful Medium Wave transmitters, an aerial filter may be required to prevent overloading the frequency changer, causing whistles on other stations. To reduce this form of interference, suitable filters can be supplied by Murphy Radio Ltd., in the form of single or double units, according to the station, or stations, causing trouble.

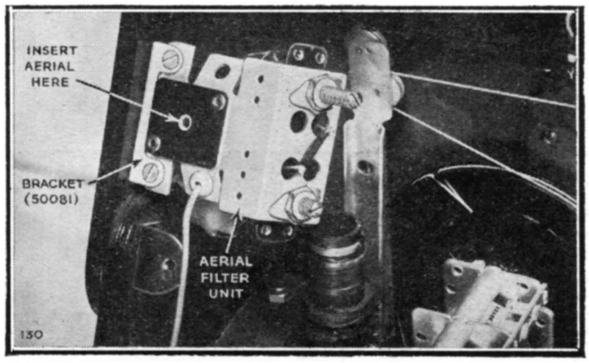
There are three standard filters covering wavelenths as follows :—

A : 200-300 metres (1500-1000 Kc/s)
B : 300-428 metres (1000-700 Kc/s)
C : 428-600 metres (700-500 Kc/s)

The double units can be supplied in any of the following combinations, AA, BB, CC, AB, AC, BC. When ordering please state the receiver type and quote the letter or letters required, as well as the bracket, No. 50081.

Fitting Instructions. The position of the filter is shown in the photograph. Screw the bracket in position, and then fit the filter to the bracket. The lead from the filter is plugged into the receiver aerial socket and the aerial is plugged into the filter ; a hole is provided in the receiver back to allow for this.

Adjusting the Filter. Connect a voltmeter between the cathode and chassis of V2, and switch it to the 5 or 10V. d.c. range. Tune the receiver to the interfering (local) station and adjust the filter core for maximum meter reading.



AERIAL FILTER FITTED TO RECEIVER

CIRCUIT ALIGNMENT

It is possible for these receivers to be completely re-aligned without removing the chassis, providing that a small tool is made up for adjusting the aerial trimmers. This tool may consist of a length of steel or tufnal rod, in the end of which a 6 BA clearance hole is drilled. The aerial trimmers can then be adjusted if the tool is placed over the protruding ends of the screws. The tool should be turned while a sideways pressure is exerted, thus gripping and rotating the end of the screw. This method is suitable for final adjustments, but may prove tedious for preliminary setting up, in which case the chassis should be removed.

Before commencing any trimming adjustments, see that the pointer coincides with the 52-metre division on the scale, or that the drive drum reading is 0 degrees if the chassis has been removed, when the gang capacitor is at maximum.

All adjustments are made for maximum reading on an output meter connected across the L.S. sockets. The input from the service signal generator should be kept as low as possible, and in any case, the output should not exceed 500 milliwatts for the A130 (1 Volt a.c.) or 180 milliwatts for the U130 (0·6 Volts a.c.). The volume control and the tone control switch should be turned fully clockwise.

A non-metallic screwdriver should be used for adjusting the iron dust cores in the i.f. transformers, and as these cores are rather fragile, care must be taken to avoid damaging them. It is advisable to unscrew the cores fully, and then to screw in for the peak reading on the meter.

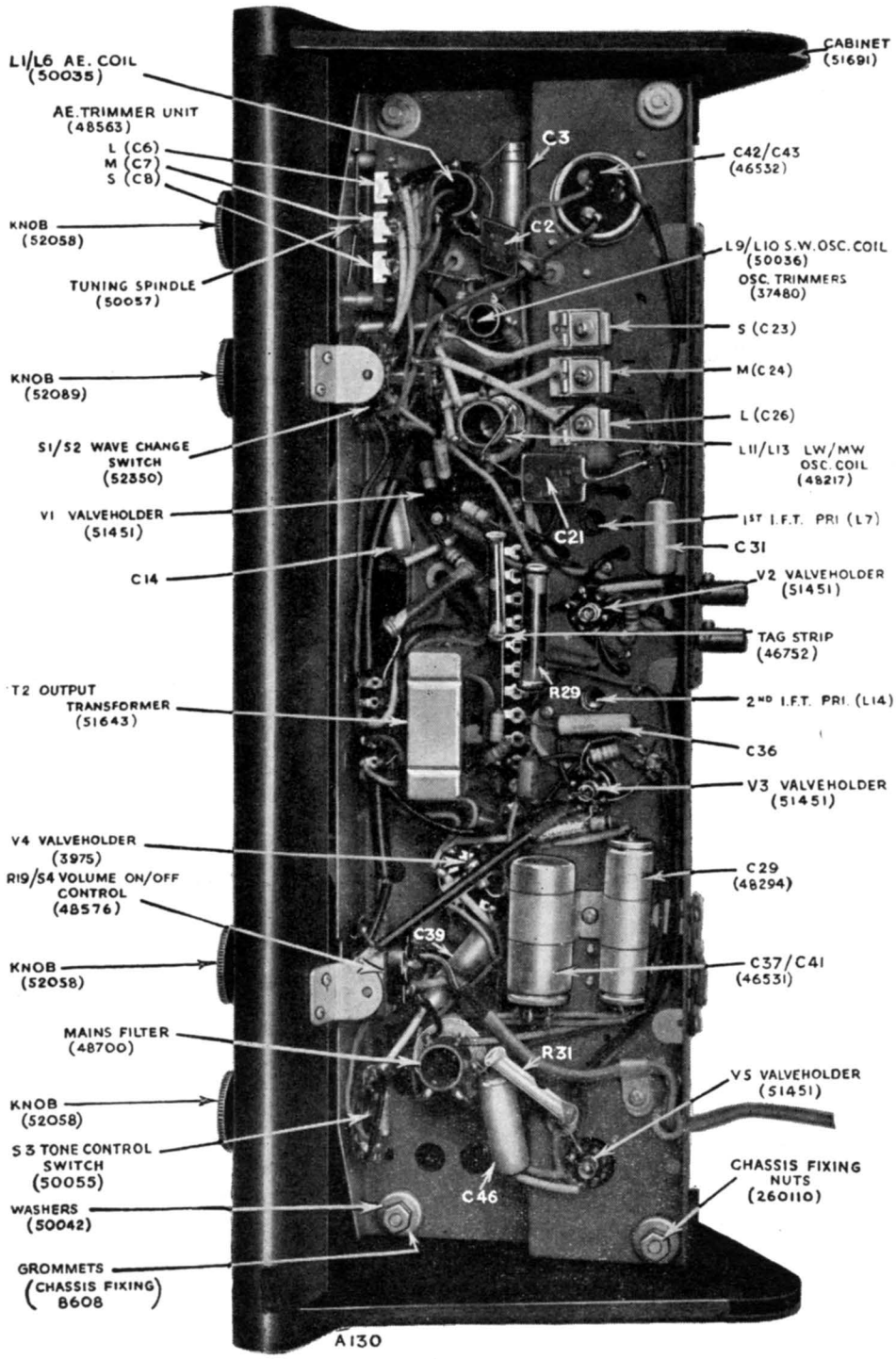
To overcome the effect of " oscillator pulling " on the short waves, the tuning control should be used to hold the signal while adjusting the aerial circuits. The Alignment Table is on page 10.

CIRCUIT ALIGNMENT TABLE

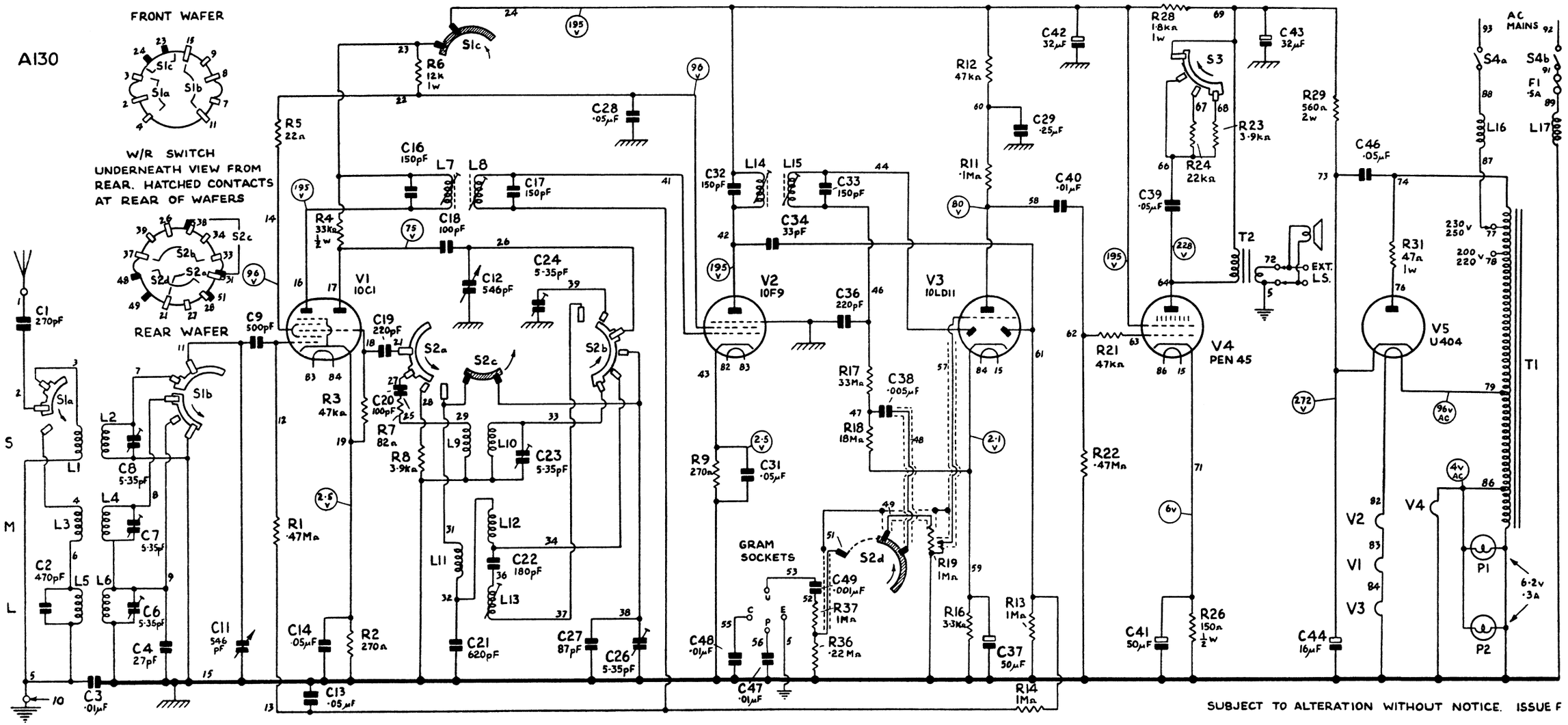
The following table quotes the drive drum degree reading at each calibration point, so that adjustments may be made when the chassis has been removed from its cabinet. The oscillator circuit is tuned to a higher frequency than the signal circuit on all bands.

For further information, see page 9.

CIRCUIT	NOTES	SIG. GEN. FREQ.	SIG. GEN. TERMINATION	CONNECT SIG. GEN. TO	RECEIVER SCALE SETTING	DRIVE DRUM SETTING	RECEIVER RANGE	ADJUSTMENTS
2nd i.f.t.	Unscrew Pri. and Sec. cores to fullest extent	465 Kc/s	Via 0·1 μF. capacitor	V2 Control grid (test pt. 41)	52 metres	0°	M.	2nd i.f.t. Sec. (L15 top of can) 2nd i.f.t. Pri. (L14, under chassis). DO NOT READJUST
1st i.f.t.	Unscrew Pri. and Sec. cores to fullest extent	465 Kc/s	Via 0·1 μF. capacitor	M.W. Ae. Trimmer (test pt. 8)	52 metres	0°	M.	1st i.f.t. Sec. (L8 top of can). 1st i.f.t. Pri. (L7 under chassis). DO NOT READJUST
L.W.	Unscrew trimmers before adjusting. Repeat these adjustments until there is no further improvement.	1000 m. (300 Kc/s)	Dummy Aerial	Aerial Socket	1000 metres	167·5°	L.	l.w. Osc. trimmer(C26) l.w. Ae. trimmer (C6)
		1900 m. (158 Kc/s)			1900 metres	31°	L.	l.w. Osc. Coil stud (L13–A130) (L12–U130)
M.W.	Unscrew trimmers before adjusting. No coil adjustment provided.	220 m. (1363 Kc/s)	Dummy Aerial	Aerial Socket	220 metres	155°	M.	m.w. Osc. trimmer (C24–A130) (C21–U130) m.w. Ae. trimmer (C7).
	Check calibration at 300 m., and 500 m.	300 m. (1000 Kc/s)			300 metres	114·5°–116·5°	M.	—
		500 m. (600 Kc/s)			500 metres	27°-29°	M.	—
S.W.	Unscrew trimmers before adjusting. Lower capacity setting correct for Osc. trimmer. Do not adjust position of s.w. coil turns unless alignment is very poor. Check calibration at 31·25 m. and 41·9 m.	20 m. (15 Mc/s)	Dummy Aerial	Aerial Socket	20 metres	154·5°	S.	s.w. Osc. trimmer (C23–A130) (C24–U130) s.w. Ae. trimmer (C8).
		31·25 m. (9·60 Mc/s)			31·25 metres	92°–95°	S.	—
		41·9 m. (7·16 Mc/s)			41·9 metres	46·5°	S.	s.w. Osc. coil turns. s.w. Ae. coil turns.

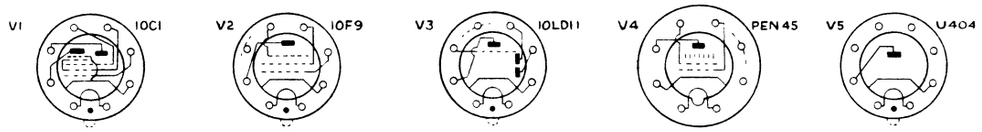


A130—UNDERNEATH VIEW (diagram on page 14)



A130 CIRCUIT DIAGRAM

The wave range switch is drawn in the "S" position. Rotate movable contacts in the direction of the arrows for "M", "L" and "G". The voltages were taken with the receiver switched to "M", under no signal conditions.



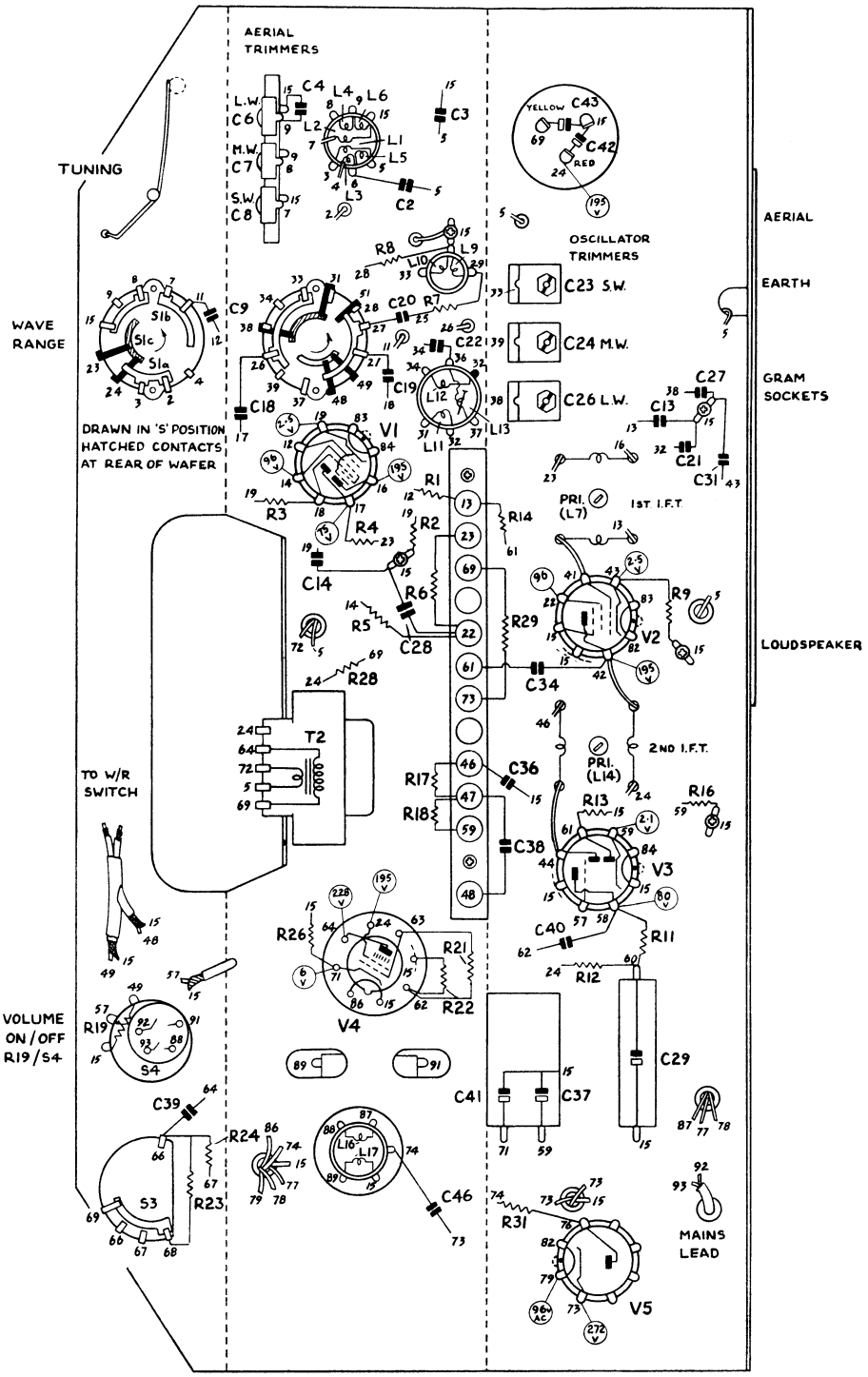
COIL RESISTANCES

These are average figures. The resistance of windings not shown is less than 1 ohm.

Coil	L3	L4	L5	L6	L7	L8	L12
Ohms	1	3·5	20·5	21	6	6	2

Coil	L13	L14	L15	L16	L17	T1 Pri.	T2 Pri.
Ohms	5·2	6	6	7·5	7·5	145	290

C	L	R
4 3 43 6 42		
7 2 8		
23		8
9 20 22 24		7
19 27 26 18 13		
21 31	7	1 3
14		2 14 4
		6 5 9 29
34		28
36	14	17 16
38		13 18
40		26 11
		21 22 12
29 41 37		19
39		24
46		23 31
CAPACITORS	INDUCTANCES	RESISTORS

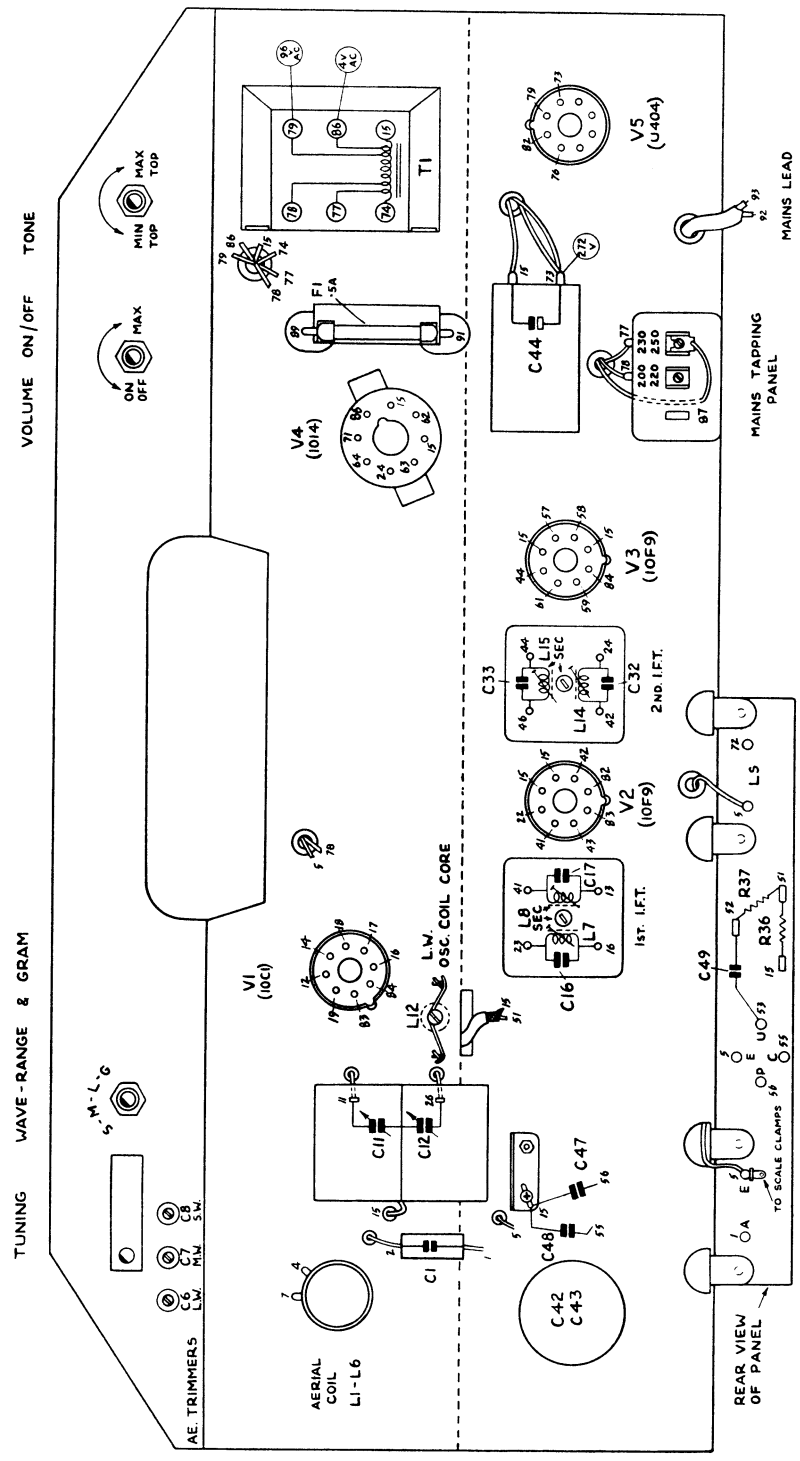


A130 UNDERNEATH VIEW

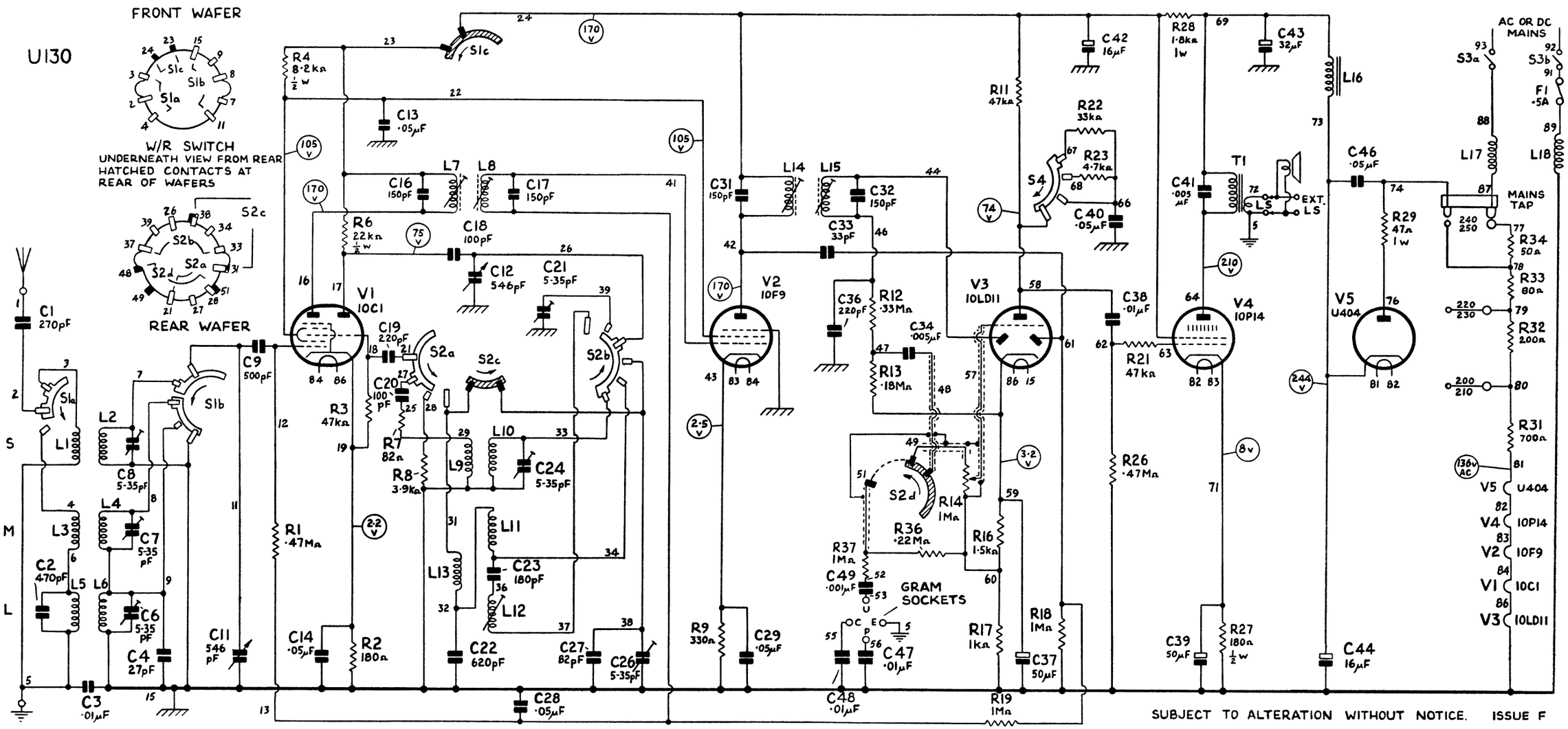
Voltage measurement conditions as on page 12. The black tag on the oscillator coil (underneath view) corresponds with the "nick" in the former. (The corresponding photographs are on pages 8 and 11).

	C	L	R
CAPACITORS	6 7 8 42 43 1 47 48	11 12	16 49
INDUCTANCES	1, 6,	12	7, 8,
RESISTORS			36 37

	C	L	R
CAPACITORS	17	33 32	43
INDUCTANCES		14 15	T1
RESISTORS			



A 130 TOP VIEW



SUBJECT TO ALTERATION WITHOUT NOTICE. ISSUE F

U130 CIRCUIT DIAGRAM

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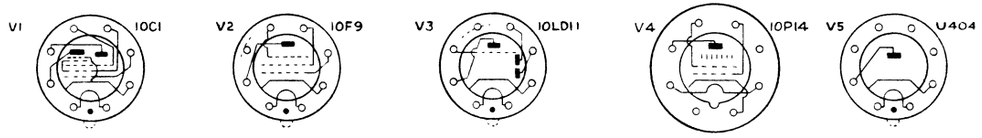


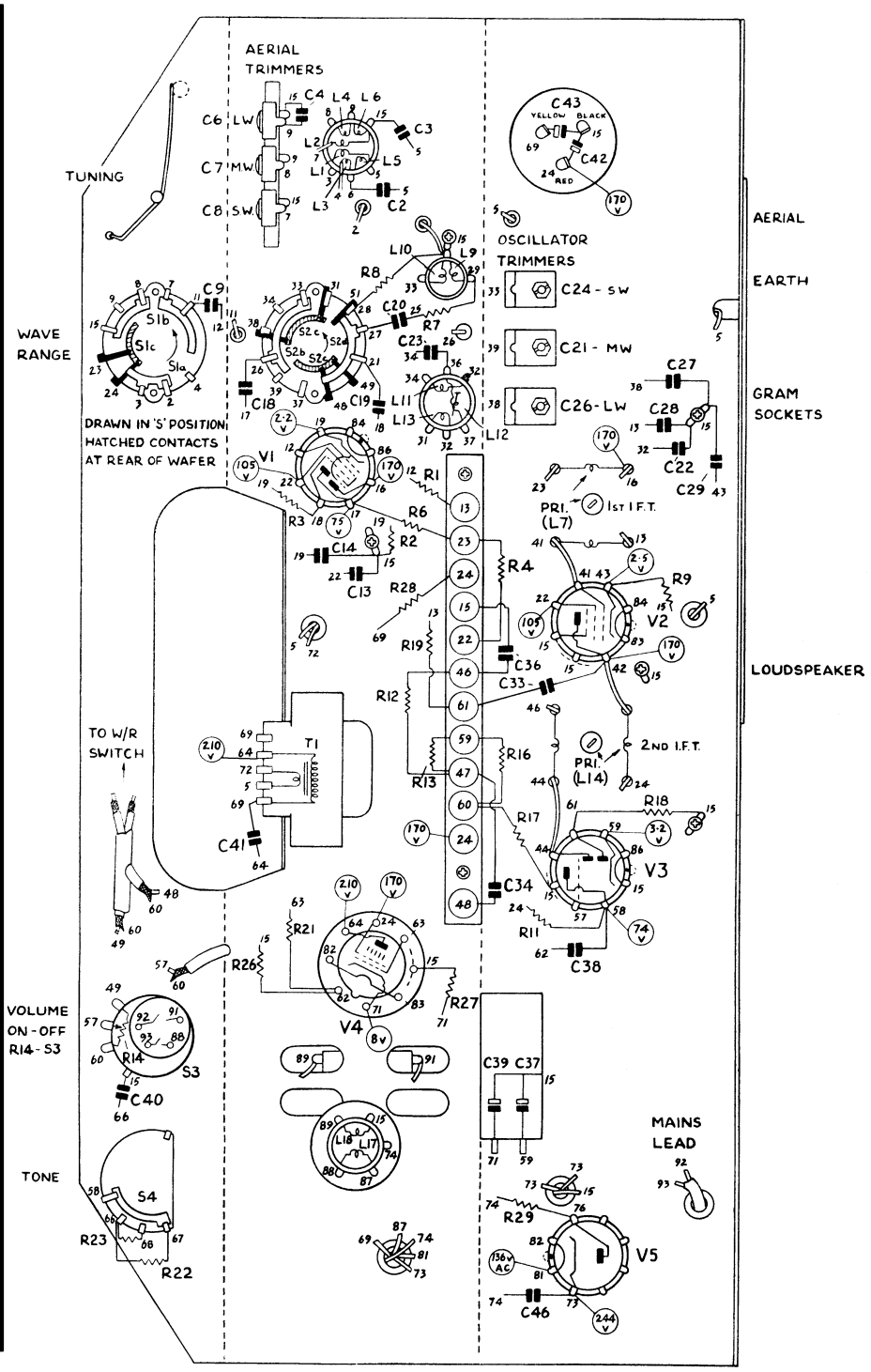
COIL RESISTANCES

These are average figures. The resistance of windings not shown is less than 1 ohm.

Coil	L3	L4	L5	L6	L7	L8	L11
Ohms	1	3·5	20·5	21	6	6	2

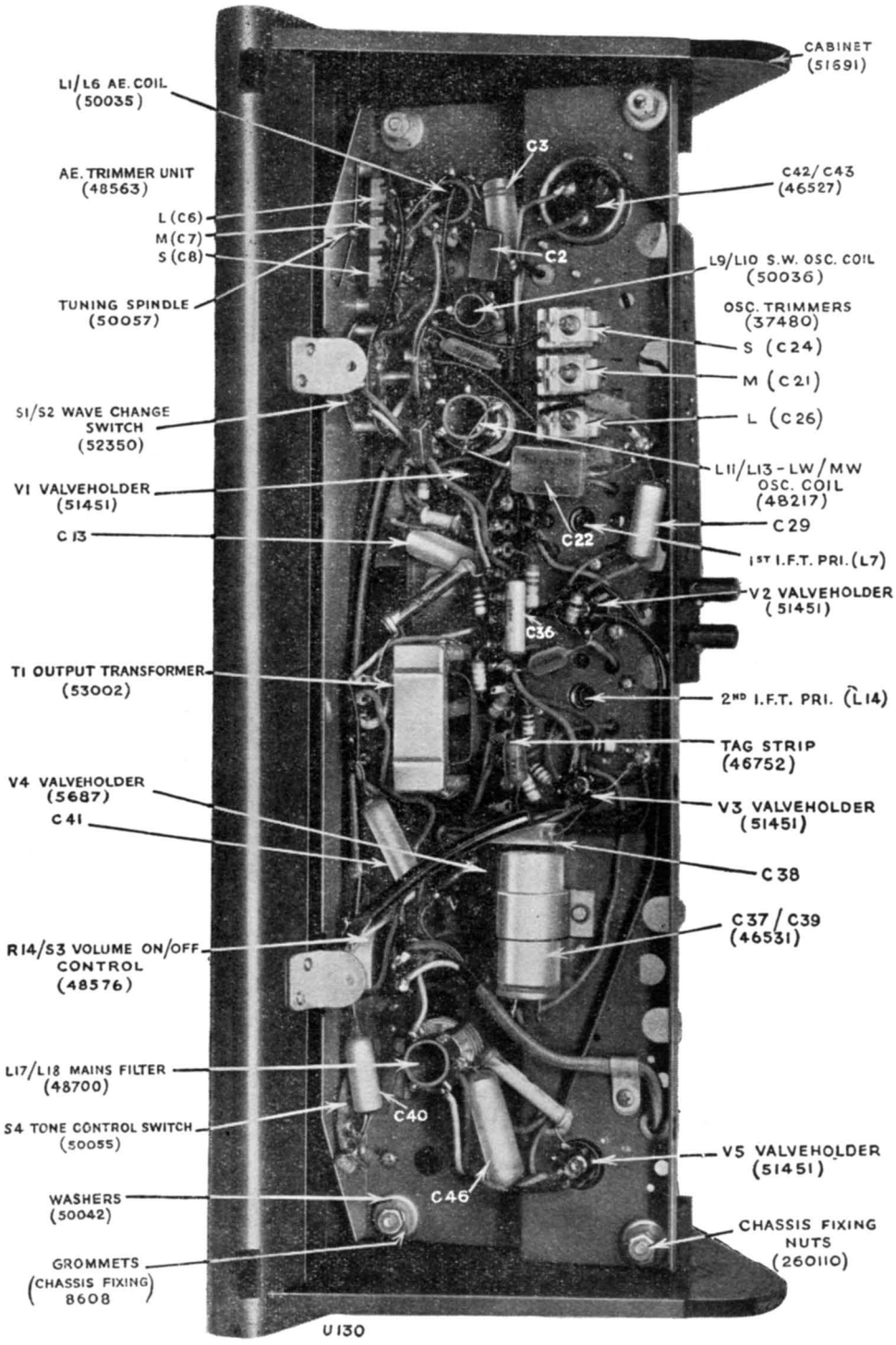
Coil	L12	L14	L15	L16	L17	L18	T1 Pri.
Ohms	5·2	6	6	270	7·5	7·5	300

C	L	R
4 6, 3, 43	4, 6	
42 7 2 8	2 1 5 3	
9 24	10 9	8
20 23, 21		7
27 18 26 19 28	11 12 13	
22 29		1 3, 2
	7	6 14 13 4, 9
		28 19
36 33		12
	14 4	13 16
41		18 17
34		21 11
38		26 27
		14
40, 39, 37	18 17	
		29
		23 22
CAPACITORS	INDUCTANCES	RESISTORS

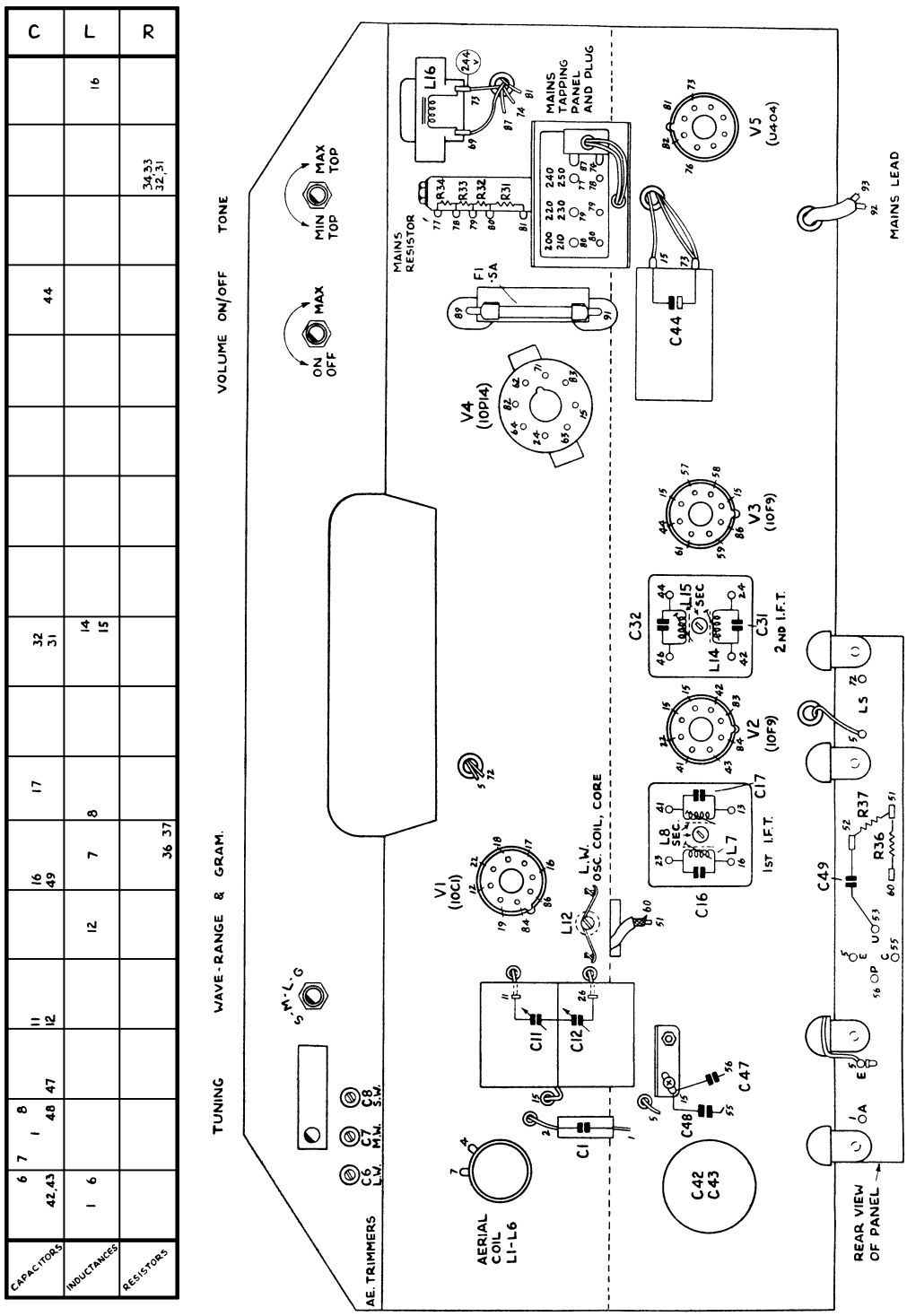


U130 UNDERNEATH VIEW

Voltage measurement conditions as on page 12. The black tag on the oscillator coil corresponds with the "nick" in the former.

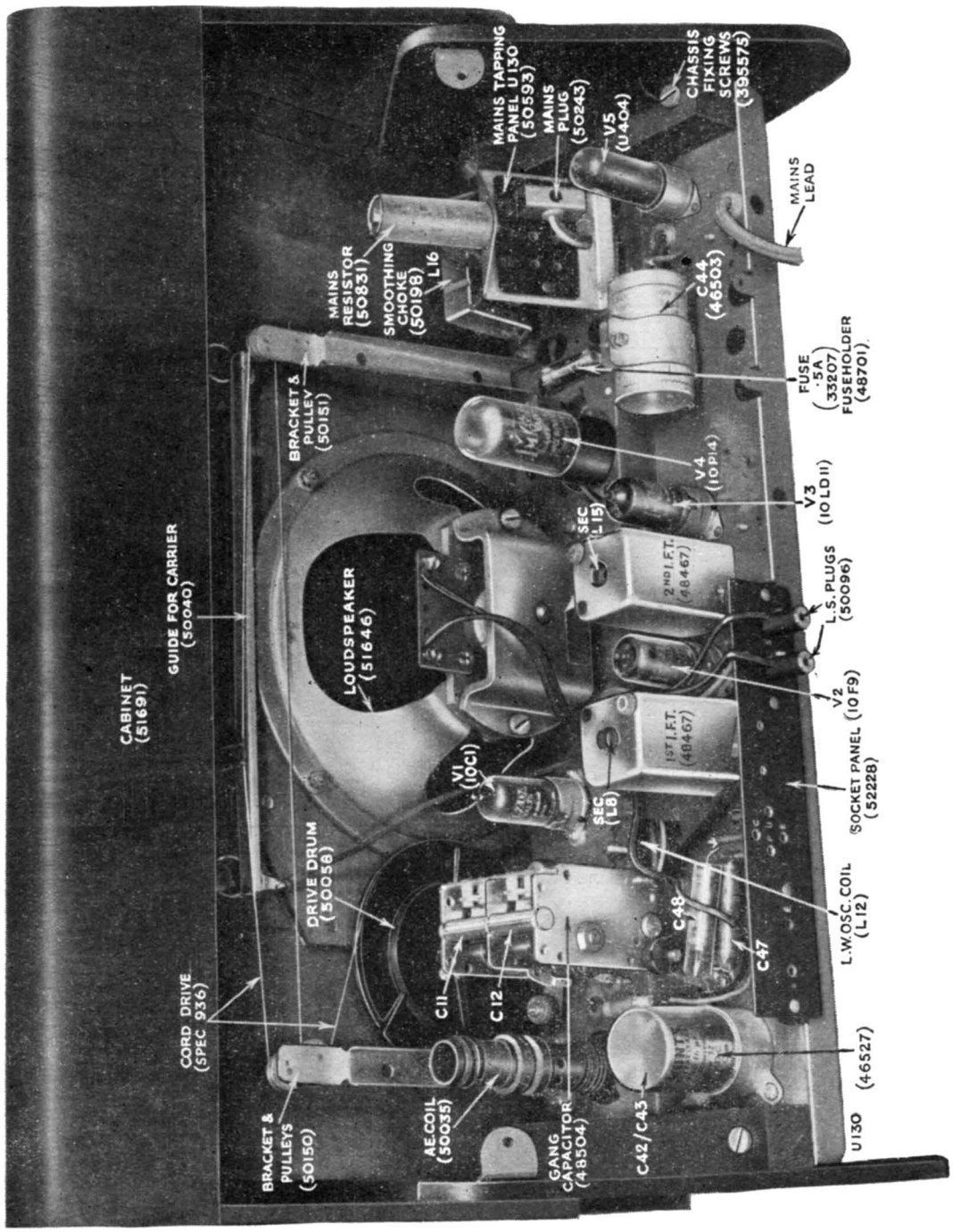


U130—UNDERNEATH VIEW (diagram opposite)



	C	L	R
		16	
			34,33 32,31
	44		
	32 31	14 15	
	17		
	16 49	7 8	36 37
		12	
	11 12		
	6 7 8 47 48		
	42,43	1 6	
CAPACITORS		INDUCTANCES	RESISTORS

U 130 TOP VIEW



U130—REAR VIEW (diagram opposite)

PARTS LIST (Electrical Components)

This list is in two parts due to the different component numbers used for the A130 and U130 receivers. In both lists the following abbreviations are used : cer. for Ceramicon ; m.m. for Moulded Mica ; p.s.m. for Protected Silvered Mica ; Tub. for Tubular Paper ; El. for Electrolytic Type Capacitor ; w. for Wattage Ratings of resistors ; v. for Working Voltage, etc.

The d.c. resistances quoted for coils and transformers are average figures, and should be taken as a general guide only. Where no figure is given the resistance is less than 1 ohm. One part number only is given for each component in the tables although an alternative may be available in some cases.

A 1 3 0

PART NO.	CIRCUIT NO.	VALUE	TOLERANCE AND REMARKS
52183	C1	270 pf.	20% cer.
28243	C2	470 pf.	2% p.s.m.
41419	C3	0·01 μ.f.	25% Tub. 1000v.
23673	C4	27 pf.	10% p.s.m.
48563	C6	5–35 pf.	Triple Trimmer Unit
	C7	5–35 pf.	
	C8	5–35 pf.	
23966	C9	500 pf.	20% m.m.
48504	C11	546 pf.	Gang Capacitor
	C12	546 pf.	
41403	C13	0·05 μf.	20% Tub. 350v.
41403	C14	0·05 μf.	20% Tub. 350v.
28169	C16	150 pf.	5% p.s.m.
28169	C17	150 pf.	5% p.s.m.
52178	C18	100 pf.	20% cer.
52182	C19	220 pf.	20% cer.
52178	C20	100 pf.	20% cer.
28241	C21	620 pf.	1% p.s.m.
28242	C22	180 pf.	1% p.s.m.
37480	C23	5–35 pf.	Trimmer
37480	C24	5–35 pf.	Trimmer
37480	C26	5–35 pf.	Trimmer
23676	C27	82 pf.	10% p.s.m.
41403	C28	0·05 μf.	20% Tub. 350v.
48294	C29	0·25 μf.	20% Tub. 350v.
41403	C31	0·05 μf.	20% Tub. 350v.
28169	C32	150 pf.	5% p.s.m.
28169	C33	150 pf.	5% p.s.m.
23618	C34	33 pf.	10% p.s.m.
52182	C36	220 pf.	20% cer.
46531	C37	50 μf.	+50% —20% El. 25 v. with C41
41409	C38	0·005 μf.	25% Tub. 500v.
51542	C39	0·05 μf.	20% Tub. 1000v.
50964	C40	0·01 μf.	20% Tub. 500v.
46531	C41	50 μf.	+50% —20% El. 25v. with C37
46532	C42	32 μf.	+50% —20% El. 350v.
	C43	32 μf.	
46503	C44	16 μf.	+50% —20% El. 450v.
41421	C46	0·05 μf.	20% Tub. 1000v.
41419	C47	0·01 μf.	25% Tub. 1000v.
41419	C48	0·01 μf.	25% Tub. 1000v.
41407	C49	0·001 μf.	25% Tub. 500v.
27397	R1	470KΩ	20% ¼w.
24709	R2	270Ω	10% ¼w.
27205	R3	47KΩ	20% ¼w.
25517	R4	33KΩ	10% ½w.
26565	R5	22Ω	20% ¼w.
25372	R6	12KΩ	10% 1w.
24517	R7	82Ω	10% ¼w.
25157	R8	3.9KΩ	10% ¼w.
24709	R9	270Ω	10% ¼w.
27269	R11	100KΩ	20% ¼w.
27205	R12	47KΩ	20% ¼w.
27461	R13	1·0KΩ	20% ¼w.
27461	R14	1·0MΩ	20% ¼w.
25125	R16	3·3KΩ	10% ¼w.
25893	R17	330KΩ	10% ¼w.
25797	R18	180KΩ	10% ¼w.
48576	R19/S3	1·0MΩ	V/C with Switch
28544	R21	47 KΩ	25% ¼w.
27397	R22	470KΩ	20% ¼w.
25165	R23	3.9KΩ	10% ½w.
27141	R24	22KΩ	20% ¼w.
24621	R26	150Ω	10% ½w.
25052	R28	1·8KΩ	10% 1w.
29848	R29	560Ω	10% 2w.
26652	R31	47Ω	20% 1w.
27333	R36	220KΩ	20% ¼w.
27461	R37	1·0MΩ	20% ¼w.

PART NO.	CIRCUIT NO.	D.C. RESISTANCE	REMARKS
50035	L1	—	s.w. Ae. Coupling Coil
	L2	—	s.w. Ae. Coil
	L3	1Ω	m.w. Ae. Coupling Coil
	L4	3.5Ω	m.w. Ae. Coil
	L5	20·5Ω	l.w. Ae. Coupling Coil
	L6	21Ω	l.w. Ae. Coil
48467	L7	6Ω	1st i.f.t. Pri.
	L8	6Ω	1st i.f.t. Sec.
50036	L9	—	s.w. Osc. Grid Coil
	L10	—	s.w. Osc. Anode Coil
48217	L11	—	m.w. Osc. Grid Coil
	L12	2Ω	m.w. Osc. Anode Coil
	L13	5.2Ω	l.w. Osc. Anode Coil
48467	L14	6Ω	2nd i.f.t. Pri.
	L15	6Ω	2nd i.f.t. Sec.
48700	L16	7·5Ω	Mains Filter
	L17	7·5Ω	
52866	T1 (total)	145Ω	Mains Transformer
51643	T2 (pri.)	290Ω	Output Transformer

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PART NO.	CIRCUIT NO.	VALUE	TOLERANCE AND REMARKS
52183	C1	270 pf.	20% cer.
28243	C2	470 pf.	2% p.s.m.
41419	C3	0·01 μ.f.	25% Tub. 1000v.
23673	C4	27 pf.	10% p.s.m.
48563	C6	5–35 pf.	Triple Trimmer Unit
	C7	5–35 pf.	
	C8	5–35 pf.	
23966	C9	500 pf.	20% m.m.
48504	C11	546 pf.	Gang Capacitor
	C12	546 pf.	
41403	C13	0·05 μf.	20% Tub. 350v.
41403	C14	0·05 μf.	20% Tub. 350v.
28169	C16	150 pf.	5% p.s.m.
28169	C17	150 pf.	5% p.s.m.
52178	C18	100 pf.	20% cer.
52182	C19	220 pf.	20% cer.
52178	C20	100 pf.	20% cer.
37480	C21	5–35 pf.	Trimmer
28241	C22	620 pf.	1% p.s.m.
28242	C23	180 pf.	1% p.s.m.
37480	C24	5–35 pf.	Trimmer
37480	C26	5–35 pf.	Trimmer
23676	C27	82 pf.	10% p.s.m.
41403	C28	0·05 μf.	20% Tub. 350v.
41403	C29	0·05 μf.	20% Tub. 350v.
28169	C31	150 pf.	5% p.s.m.
28169	C32	150 pf.	5% p.s.m.
23618	C33	33 pf.	10% p.s.m.
41409	C34	0·005 μf.	25% Tub. 500v.
52182	C36	220 pf.	20% cer.
46531	C37	50 μf.	+50% —20% El. 25 v. with C39
50964	C38	0·01 μf.	25% Tub. 500v.
46531	C39	50 μf.	+50% —20% El. 25 v. with C37
41403	C40	0·05 μf.	20% Tub 350 v.
41418	C41	0·005μf.	25% Tub. 1000v.
46527	C42	16 μf.	+50% —20% El. 350v.
	C43	32 μf.	
46503	C44	16 μf.	+50% —20% El. 450v.
41421	C46	0·05 μf.	20% Tub. 1000v.
41419	C47	0·01μf.	25% Tub 1000 v.
41419	C48	0·01μf.	25% Tub 1000 v.
41407	C49	0·001μf.	25% Tub 500v.
27397	R1	470 KΩ	20% ¼w.
24645	R2	180Ω	10% ¼w.
27205	R3	47KΩ	20% ¼w.
25293	R4	8·2 KΩ	10% ½w.
25453	R6	22 KΩ	10% ½w.

PART NO.	CIRCUIT NO.	VALUE	TOLERANCE AND REMARKS
24517	R7	82Ω	10% ¼w.
25157	R8	3.9 KΩ	10% ¼w.
24741	R9	330Ω	10% ¼w.
27205	R11	47 KΩ	20% ¼w.
25893	R12	330 KΩ	10% ¼w.
25797	R13	180 KΩ	10% ¼w.
48576	R14	1.0 MΩ	V/C with Switch
24997	R16	1·5 KΩ	10% ¼w.
24933	R17	1·0 KΩ	10% ¼w.
27461	R18	1.0 MΩ	20% ¼w.
27461	R19	1.0 MΩ	20% ¼w.
28544	R21	47 KΩ	25% ¼w.
27173	R22	33 KΩ	20% ¼w.
25189	R23	4·7 KΩ	10% ¼w.
27397	R26	470 KΩ	20% ¼w.
24653	R27	180Ω	10% ½w.
25052	R28	1·8 KΩ	10% 1w.
26652	R29	47Ω	10% 1w.
50831	R31	700Ω	5% Mains Resistor
	R32	200Ω	
	R33	80Ω	
	R34	50Ω	
27333	R36	220 KΩ	20% ¼w.
27461	R37	1.0 MΩ	20% ¼w.

PART NO.	CIRCUIT NO.	D.C. RESISTANCE	REMARKS
50035	L1	—	s.w. Ae. Coupling Coil
	L2	—	s.w. Ae. Coil
	L3	1Ω	m.w. Ae. Coupling Coil
	L4	3·5Ω	m.w. Ae. Coil
	L5	20·5Ω	l.w. Ae. Coupling Coil
	L6	21Ω	l.w. Ae. Coil
48467	L7	6Ω	1st i.f.t. Pri.
	L8	6Ω	1st i.f.t. Sec.
50036	L9	—	s.w. Osc. Grid Coil
	L10	—	s.w. Osc. Anode Coil
48217	L11	2Ω	m.w.Osc.AnodeCoil
	L12	5·2Ω	l.w. Osc. Anode Coil
	L13	—	m.w./l.w. Osc. Grid Coil
48467	L14	6Ω	2nd i.f.t. Pri.
	L15	6Ω	2nd i.f.t. Sec.
50198	L16	270Ω	Smoothing Choke
48700	L17	7·5Ω	Mains Filter
	L18	7·5Ω	
53002	T1 (pri.)	300Ω	Output Transformer

PARTS LIST (Mechanical Components)

This list does not include the components in the electrical Parts List, and those items that are unlikely to be required under normal circumstances. Nuts and bolts, self-tapping screws, and similar accessories can also be supplied as required. Where more than one item is used per receiver, the quantity is shown bracketed.

PART NO.	DESCRIPTION	REMARKS
51692	Back for Cabinet	A130
51693	Back for Cabinet	U130
50150	Bracket, with pulleys	Right-hand
50151	Bracket, with pulley	Left-hand
50081	Bracket	For aerial filter (if fitted)
51691	Cabinet	
50041	Carrier	For pointer and holder
395575	Chassis fixing screw (4)	oBA, Ch. Hd. 1⅝" long
260110	Chassis fixing nut (8)	oBA
50062	Clamp	For securing aerial coil
50300	Clamp (2)	For supporting scale
52320	Contact	For E socket
46911	Core (4)	Iron dust for i.f.t.'s
Spec. 936	Cord (type 3)	Pointer drive, 47"
Spec. 936	Cord (type 3)	Main tuning drive, 20"
50058	Drive Drum (pulley)	For cord drive
33207	Fuse (0·5 amp. cartridge)	For U130
52113	Fuse (0·5 amp. PAK type)	For A130
48701	Fuseholder	
8608	Grommet (4)	Chassis mounting
42842	Grommet (4)	For lampholders (2 per lampholder)
50040	Guide for carrier	
50045	Holder for pointer	
48500	Indicator	For drive drum
52321	Insulator	For E socket
52058	Knob (3)	Plain
52089	Knob	Marked for wave-range control
16880	Lamp (2)	For scale, 6·2 Volt, 0·3 Amp.
52323	Lampholder (2)	For scale lamps, less grommets
51646	Loudspeaker	
37392	Mains lead	
52228	Panel and sockets	For A. E. LS. and PU.
50136	Panel, mains tapping	A130
50593	Panel, mains tapping	U130
37974	Plug, aerial	
37975	Plug, earth	
50096	Plug, L.S.	
50243	Plug, mains tapping	For U130
51634	Pointer	Tuning
51694	Scale	
52322	Sleeve, neoprene	For E socket
50301	Spacer (2)	For scale clamps
50320	Spade tag	Earthing, guide for carrier
19448	Spring (2)	For cord drives
48228	Spring	For l.w. oscillator coil stud
51171	Spring	For tuning spindle
50302	Spring retainer (2)	For securing scale clamp
48222	Stud oBA	For adjusting l.w. oscillator coil
22521	Stud 4BA	For mains resistor (U130)
36833	Tag 2BA (2)	For earthing scale clamp
46752	Tag strip	12 way, less components
50055	Tone control switch	
50057	Tuning control spindle	
51451	Valveholder (4)	B8A
3975	Valveholder	British octal (A130)
5687	Valveholder	International octal (U130)
52763	Volume control and switch	
50042	Washer (8)	Chassis mounting
52350	Wave-range switch	