

**TBI27**

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# **MURPHY SUPPLEMENTARY SERVICE INSTRUCTIONS**

**TO BE USED WITH THE TBI25 INSTRUCTIONS**

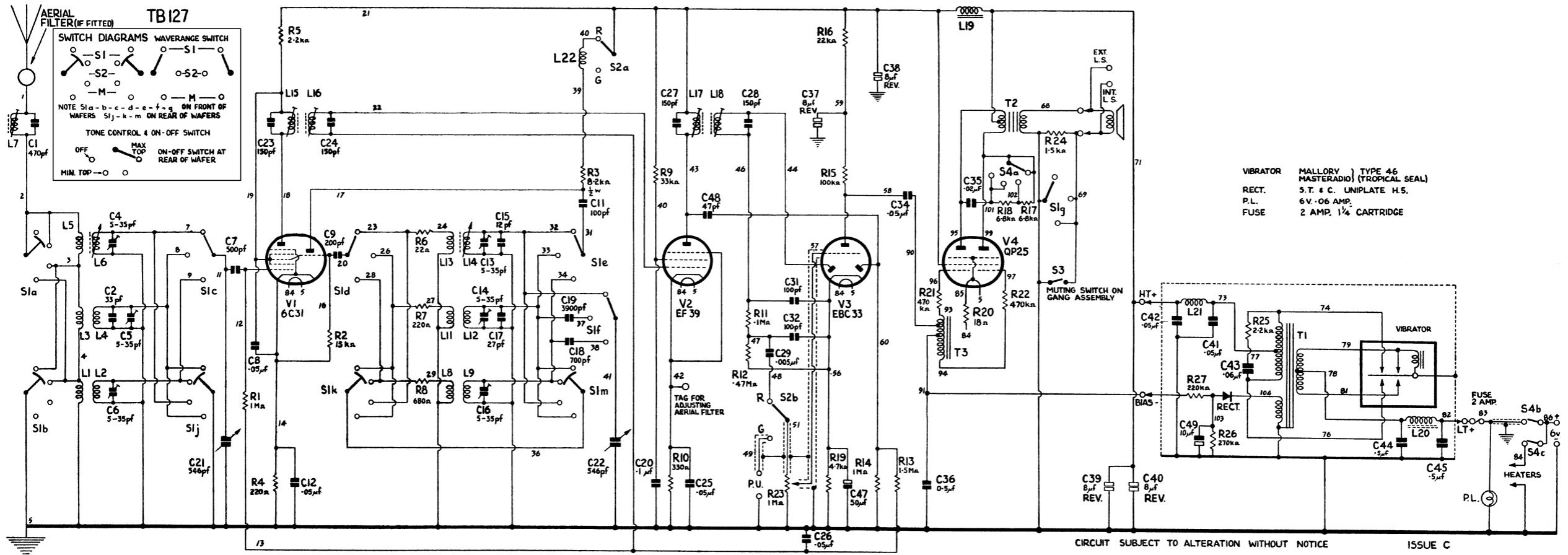
<b>SUPPLY:</b>	6 Volts d.c. at approximately 2.5 Amperes
<b>WAVE RANGES:</b>	<b>S1:</b> 6.73—22 Mc/s (44.6—13.6 metres) in six overlapping band spread ranges <b>S2:</b> 2.88—7.1 Mc/s (104—42.2 metres) <b>Medium:</b> 540—1620 Kc/s (555—185 metres)
<b>INTERMEDIATE FREQUENCY:</b>	465 Kc/s
<b>VALVES:</b>	<b>International Octal:</b> 6C31 (Mazda or Ediswan), EF39 (Mullard), EBC33 (Mullard) <b>British Octal:</b> QP25 (Mazda or Ediswan)
<b>VIBRATOR:</b>	6 Volt, self rectifying, tropically sealed; Masteradio Type 46, or Mallory Type 46
<b>PILOT LAMP:</b>	6 Volt, 0.06 Amp. miniature screw
<b>SPEECH COIL IMPEDANCE:</b>	3 Ohms
<b>CABINET DIMENSIONS:</b>	20½ in. wide, 9 in. deep, 12½ in. high, (52 by 23 by 32 cms.)
<b>TOTAL WEIGHT:</b>	27 lb. (12.25 Kg.)

**The appearance and mechanical details of the TBI27 are exactly the same as the TBI25**

*Issued by*

**MURPHY RADIO LTD · WELWYN GARDEN CITY  
HERTS · ENGLAND      PHONE: WELWYN GARDEN 800**

**FOREIGN TELEGRAMS AND CABLES: RADMURPHY, LONDON**



**COIL RESISTANCES**

These are average figures. The resistance of coils not shown is less than 1 Ω. Vibrator resistance, 35 Ω.

COIL	L2	L7	L9	L15	L16	L17	L18	L19	L21
OHMS	3	3	2	5.5	5.5	5.5	5.5	270	9
COIL	L22	T1, H.T. Sec.	T1, G.B. Sec.	T2 Pri.	T3				
OHMS	6	35+35	2.8	300+300	600+350+400				

**VOLTAGE MEASUREMENTS**

Voltages measured with a 500 Ohms/Volt meter on "M" waveband under no signal conditions.

ELECTRODE	V1	V2	V3	V4
CATHODE	2.7	1.7	1.4	2 (Fil +)
ANODE	95	116	50	120 + 120
SCREEN	95	68	—	116
OSC. ANODE	73	—	—	—

## TB127 RECEIVER

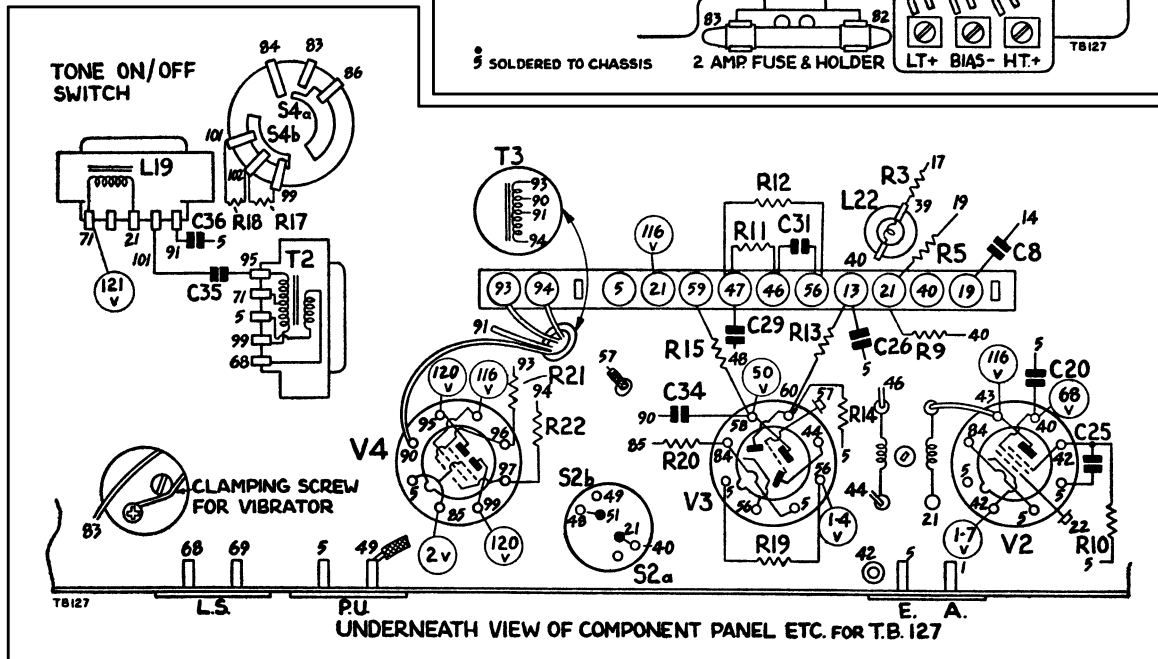
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This Supplementary Instruction sheet should be kept with the TB125 Service Instruction book, and used in conjunction with it.

## THE DIAGRAMS

The diagrams on these pages show the complete circuit, and the principal differences as compared with the TB125.

The diagram on the right corresponds with that in the TB125 Service Instructions on page 8 and shows the components in the power unit as seen when the cover is taken off the box and inverted. The rectifier is soldered to the two tags which



project from the power transformer, with the red +ve tag to test point 104 as shown. The resistor R26 is wired on to the transformer before impregnating and cannot be removed separately. The earthy connection of the G.B. winding is also connected to the transformer laminations inside the fibre box.

The lower diagram shows the underneath view of the TB127, and it also corresponds with the diagram on

page 11 of the TB125 Service Instructions. Note that the positions of the output transformer, smoothing choke, and tone control switches are only relative and are not to scale. The remainder of the receiver corresponds with the TB125 diagrams on pages 1, 4, 5, 6, 8, 11, of the Service Instructions. The voltages were measured under "No Signal" conditions as given on page 2 of these notes, using a 500 Ohms/Volt meter.

## GENERAL NOTES

**T**HE TB127 is very similar to the TB125, except that a quiescent push-pull output stage is incorporated; as automatic bias is not satisfactory with this type of circuit, the power unit supplies a negative grid bias of approximately 7.5 Volts.

**Transit Instructions.** The receiver is shipped with the vibrator already fitted in the power unit, and it is held firmly in place by the clamping screw (shown on page 3) during transit. Before the receiver is used, this screw must be slackened to its fullest extent, so that the vibrator is freely suspended on its spring. As in the TB125, the rear gang mounting stud (marked in red) should be removed from its support and screwed into the tapped hole at the upper rear end of the gang, and the four chassis mounting screws should be slackened about three-quarters of a turn.

If the receiver has to be transported, the stud should be replaced in the gang, and the chassis screws and the vibrator clamping screw should also be tightened.

**Notes on Testing.** The voltage measurements are given on pages 2 and 3. The bias voltage cannot be accurately measured except by using a valve voltmeter, but if necessary a fairly accurate indication can be obtained by connecting a grid bias (or "C") battery between the Bias -ve terminal and chassis (after disconnecting the Bias lead from the power unit) and adjusting the battery voltage to produce the same H.T. current at V4 anodes, as was measured with the internal bias supply.

When testing a power unit that is either faulty, or of doubtful efficiency, the following procedure (as with the

TB125) is recommended in order to reduce the possibility of causing damage to the components.

1. Remove the power unit front cover, disconnect the leads and take out the vibrator. Check the vibrator for sticking contacts with an Ohm meter.

2. Check for short circuits on the receiver chassis.

3. Check for short circuits between chassis and the H.T. + and L.T. + leads (res. inf.), primary and secondary windings of the power transformer (test points 74, 76, 79, 81;— res. inf., test point 104, res. 2.8Ω).

4. Check for short circuits across the windings (pri. 0.3Ω, h.t. sec. 70Ω, G.B. sec. 2.8Ω).

5. Fit a vibrator known to be good, reconnect the power unit to the receiver, and connect an 0-30 Ammeter **in the place of the fuse**. Connect *one* battery lead to the battery and switch on the receiver.

6. Momentarily complete the battery circuit with the other lead, and note the meter reading—disconnecting immediately if the reading is excessive.

The following readings were taken on a typical model, with the battery voltage maintained at 6 Volts. Note that these readings do not include the L.T. current.

Receiver operating correctly	0.93 Amps.
H.T. Smoothing condenser (C38) s/c	5.1 Amps.
H.T. Reservoir condenser (C39, C40) s/c	10.1 Amps.
One anode V4 s/c to chassis	4.7 Amps.
Timing condenser (C43) s/c	4.0 Amps.
One end of T1 Secondary s/c to chassis	12.0 Amps.
One end of T1 Primary s/c to chassis	27.0 Amps.
T1 Secondary s/c	14.0 Amps.
Vibrator with sticking contacts	24.0 Amps.

## MODIFICATIONS AND CORRECTIONS

In some receivers a 0.2 μF capacitor may be used for C20.

In the TB125 Parts List, C29 is quoted as 0.05 μF. This value should be 0.005 μF.

The oscillator coil for the medium wave and S2 bands in the TB127 has been re-designed. The part number of the new coil is 52254.

## PARTS LIST

The parts list as given in the TB125 Service Instructions is correct for the TB127 with the following exceptions.

CIRCUIT NO.	VALUE	PART NO.	REMARKS	CIRCUIT NO.	VALUE	PART NO.	REMARKS
C20	0.1 $\mu$ F	41404	20% tub.	R27	220 K $\Omega$	27333	20% $\frac{1}{2}$ W
C34	0.05 $\mu$ F.	48284	20% tub. 500VW	L8	—	52254	M and S2 Osc. coil
C35	0.02 $\mu$ F.	41420	20% tub. 1000VW	L9	2 $\Omega$		
C36	0.5 $\mu$ F.	49443	20% tub. 150 VW	L11	—		
C43	0.06 $\mu$ F.	51534	Tub. special 300V a.c.	L12	—		
C48	47 pF	52172	ceramicon	L19		51521	Smoothing Choke
C49	10 $\mu$ F.	47579	+50—20% EL 25VW	L22		51522	H.F. Choke
R3	8.2 K $\Omega$	25293	10% $\frac{1}{2}$ W	T1		51524	Power Transformer
R5	2.2 K $\Omega$	25061	10% $\frac{1}{2}$ W	T2		51838	Output Transformer
R9	33 K $\Omega$	27173	20% $\frac{1}{2}$ W	T3		51627	Intervalve Transformer
R10	330 $\Omega$	24741	10% $\frac{1}{2}$ W	Rect.		51523	Uniplate H.5
R15	100 K $\Omega$	25701	10% $\frac{1}{2}$ W	Fuse		33205	2 Amp. cartridge type
R16	22 K $\Omega$	27141	20% $\frac{1}{2}$ W	V4		QP25	q.p.p. valve
R17	6.8 K $\Omega$	25253	10% $\frac{1}{2}$ W			51629	Back of Cabinet
R18	6.8 K $\Omega$	25253	10% $\frac{1}{2}$ W			52099	Loudspeaker
R19	4.7 K $\Omega$	25189	10% $\frac{1}{2}$ W			51624	Power Pack, complete
R20	18 $\Omega$	40458	5% $\frac{1}{2}$ W special				(TB127)
R21	470 K $\Omega$	27397	20% $\frac{1}{2}$ W			51474	Switch, Radio Gram
R22	470 K $\Omega$	27397	20% $\frac{1}{2}$ W				(also for TB125)
R25	2.2 K $\Omega$	25061	10% $\frac{1}{2}$ W			3975	Valveholder, Brit. Octal
R26	270 K $\Omega$	25861	10% $\frac{1}{2}$ W				

## NOTES