

murphy service information

MURPHY MODEL SGA821 SERVICE INFORMATION

REFERENCE LIST FOR CIRCUIT DIAGRAM

Abbreviations:

cer - ceramic	m.c.t. - metal case tubular
p.s.m. - protected silver mica	elect. - electrolytic
tub. - paper tubular	v.d.c. - d.c. voltage rating
m. tub. - metallised paper tubular	w. - wattage rating
pl.f. - plastic film	lin. - linear law
p.l.f. - protective lacquer film.	log. - logarithmic law.

Part No.	Circuit No.	Description
M 91063	C1	Capacitor 10 pf \pm .5 pf N750/AP Cer.
M 91114	C2	" 68 pf \pm 5% N750/AP Cer.
M 91104	C3	" 27 pf \pm 5% N750/AP Cer.
M 75259	C4	" 150 pf \pm 1% Plastic film
M 91146	C5	" 22 pf \pm 2 1/2% N750/AP Cer.
M 91144	C6	" 18 pf \pm 2 1/2% " "
M 91155	C7	" 51 pf \pm 2 1/2% " "
M 75250	C8	" 300 pf \pm 5% 125v pl. f.
M 91146	C9	" 22 pf \pm 2 1/2% N750/AP Cer.
M 75253	C10	" 1800 pf \pm 2% 500 v. Pl. f.
	C11	
M 75259	C12	" 150 pf \pm 1% pl.f.
M 91057	C13	" 3.3 pf \pm .5 pf N750/AP Cer.
M 54083	C14	" 470 pf \pm 20% K1200/AD
M 67502	C15	" 56 pf \pm 10% N750/AD
M 66170	C16	" 120 pf \pm 20% N750/BD
EP 1829	{ C17 } { C18 }	2 Section gang condenser Karl-Hopt B0I-03
M 69337	C19	Capacitor 4.7 pf \pm .5 pf N1500/AD
M 66284	C20	" 100 pf \pm 5%
M 66284	C21	" 100 pf \pm 5%
M 81927	C22	" .03 mf \pm 80% K7004/CP3 - 20%
M 66284	C23	" 100 pf \pm 5%
M 75247	C24	" 330 pf \pm 5%
M 54090	C25	" 1800 pf \pm 20% K1200/BD
M 81928	C26	" .02 mf \pm 80% K7004/CP3 - 20%

Cont'd..

murphy service information

- 2 -

Part No.	Circuit No.	Description
M 81927	C27	Capacitor .03 mf + 80% K7004/CP3 - 20%
M 66169	C28	" 100 pf + 20% N750/BD
M 91306	C29	" .01 mf + 25% Hi-K/BP
M 54100	C30	" 220 pf + 20% K1200/AD
M 91477	C31	" .01 mf + 25% Hi-K/BD
M 91477	C32	" .01 mf + 25% Hi-K/BD
M 54100	C36	" 220 pf + 20% K1200/AD
M 54100	C37	" 220 pf + 20% K1200/AD
M 49454	C38	" .04 mf + 25% 150v W99
M 49454	C39	" .04 mf + 25% 150v W99
M 91477	C40	" .01 mf + 25% Hi-K/BD
M 91477	C41	" .01 mf + 25% Hi-K/BD
M 66183	C43	" 330 pf + 10% Hi-K/AD 500v F.E.C.
M 66183	C44	" 330 pf + 10% Hi-K/AD 500v F.E.C.
M 49457	C45	" .002 mf + 20% W99 Met. Pap.
M 49457	C46	" .002 mf + 20% W99 Met. Pap.
M 49456	C48	" .005 mf + 20% W99 Met. Pap.
M 49456	C49	" .005 mf + 20% W99 Met. Pap.
M 49457	C50	" .002 mf + 20% W99 Met. Pap.
M 49457	C51	" .002 mf + 20% W99 Met. Pap.
M 49455	C52	" .02 mf + 20% W99 Met. Pap.
M 49455	C53	" .02 mf + 20% W99 Met. Pap.
M 91477	C55	" .01 mf + 25% Hi-K/BD
M 91477	C56	" .01 mf + 25% Hi-K/BD
M 54083	C57	" 470 pf + 20% Ceramic K1200/AD.
M 54083	C58	" 470 pf + 20% Ceramic K1200/AD.
M 75146	C60	" 50 mf + 100-20% 25v Plessey.
M 74925	{ C61 } { C62 }	" 100 mf + 50 mf Plessey Elect.
M 75431	C63	" 16 mf Plessey Elect.
M 75442	C64	" 2 mf Elect. Plessey
M 81925	C66	" .005 mf + 80% K3500/CP3E - 20%
M 81925	C67	.005 mf + 80% K3500/CP3E - 20%
M 56332	C100	3-30 pf Trimmer type MT31A/6
M 56332	C101	3-30 pf " " "
M 56332	C102	3-30 pf " " "
M 56332	C103	3-30 pf " " "
M 56332	C104	3-30 pf " " "
M 56332	C105	3-30 pf " " "

Cont'd..

murphy service information

- 3 -

Part No.	Circuit No.	Description
M 28606	R1	4.7 ohm + .5 ohm 8AP
M 24230	R2	15 ohm + 10% 7AD
M 24358	R3	33 ohm + 10% 7AD
M 24646	R4	180 ohm + 10% 7AD
M 24870	R5	680 ohm + 10% 7AD
M 27398	R8	4.7Kohm + 20% 7AD
M 25574	R9	4.7K ohm + 10% 7AD
M 25499	R10	27K ohm + 10% 10AD
M 25499	R11	27K ohm + 10% 10AD
M 25702	R12	100Kohm + 10% 7AD
M 26950	R13	2.2Kohm + 20% 7AD
M 27270	R15	100Kohm + 20% 7AD
M 27366	R16	330Kohm + 20% 7AD
M 27430	R17	680Kohm + 20% 7AD
M 26182	R18	1.8Mohm + 10% 7AD
M 27398	R19	4.70Kohm + 20% 7AD
M 27654	R22	10M ohm + 20% 7AD
M 27270	R23	100Kohm + 20% 7AD
M 26086	R24	1M ohm + 10% 7AD
M 26086	R25	1M ohm + 10% 7AD
M 26278	R26	3.3Mohm + 10% 7AD
M 25830	R27	220Kohm + 10% 7AD
M 26278	R28	3.3Kohm + 10% 7AD
M 25830	R29	220Kohm + 10% 7AD
M 88067	{ R32 } { R33 }	1. M + 1. M ohm log. ganged vol. Plessey.
M 27270	R34	100Kohm + 20% 7AD
M 27270	R35	100Kohm + 20% 7AD
M 27430	R36	680Kohm + 20% 7AD
M 27430	R37	680Kohm + 20% 7AD
M 27270	R39	100Kohm + 20% 7AD
M 27270	R40	100Kohm + 20% 7AD
M 27654	R41	10M ohm + 20% 7AD
M 27654	R42	10M ohm + 20% 7AD
M 81438	{ R44 } { R45 }	250Kohm + 250Kohm log. Tapped (Treble control)
M 25574	R46	4.7K ohm + 10% 7AD
M 25574	R47	4.7K ohm + 10% 7AD
M 27270	R48	100Kohm + 20% 7AD
M 27270	R49	100Kohm + 20% 7AD
M 25542	R50	39K ohm + 10% 7AD
M 25542	R51	39K ohm + 10% 7AD
M 27238	R53	68K ohm + 20% 7AD
M 27238	R54	68K ohm + 20% 7AD
M 81437	{ R55 } { R56 }	250Kohm + 250Kohm log. (Bass Control).

Cont'd..

murphy service information

- 4 -

Part No.	Circuit No.	Description
M 27046	R57	6.8Kohm \pm 10% 7AD
M 27046	R58	6.8Kohm \pm 10% 7AD
M 25446	R60	22Kohm \pm 10% 7AD
M 25446	R61	22Kohm \pm 10% 7AD
M 68597	R62	250K ohm Linear (Balance control)
M 25446	R63	22Kohm \pm 10% 7AD
M 27270	R65	100Kohm \pm 20% 7AD
M 27270	R66	100Kohm \pm 20% 7AD
M 24998	R67	1.5Kohm \pm 10% 7AD
M 24998	R68	1.5Kohm \pm 10% 7AD
M 25574	R70	4.7K ohm \pm 10% 7AD
M 25574	R71	4.7K ohm \pm 10% 7AD
M 27398	R72	4.70Kohm \pm 20% 7AD
M 27398	R73	4.70Kohm \pm 20% 7AD
M 27174	R74	33Kohm \pm 20% 7AD
M 27174	R75	33Kohm \pm 20% 7AD
M 27078	R77	10Kohm \pm 20% 7AD
M 24653	R78	180Kohm \pm 10% Y8 (or 8AD)
M 24653	R79	180Kohm \pm 10% Y8 (or 8AD)
M 79602	R80	1350 ohm \pm 5% Metal Oxide
M 25389	R83	15Kohm \pm 10% Y8 (or 8AD)
M 25389	R84	15Kohm \pm 10% Y8 (or 8AD)

Coils and Transformers

EW 4586	(L1)	Primary SW4 Ae. Coil
	(L2)	Secondary SW4 Ae. Coil
EW 4585	(L3)	Primary SW3 Ae. Coil
	(L4)	Secondary SW3 Ae. Coil
EW 4584	(L5)	Primary SW2 Ae. Coil
	(L6)	Secondary SW2 Ae. Coil
EW 4583	(L7)	Primary SW1 Ae. Coil (3.3 ohm)
	(L8)	Secondary SW1 Ae. Coil
EW 4582	(L9)	Primary of MW Ae. Coil (50 ohm)
	(L10)	Secondary of MW Ae. Coil (7.3 ohm)
EW 4591	(L11)	Secondary of SW4 Osc. Coil
	(L12)	Primary of SW4 Osc. Coil
EW 4590	(L13)	Secondary of SW3 Osc. Coil
	(L14)	Primary of SW3 Osc. Coil

Cont'd..

murphy service information

- 5 -

Part No.	Circuit No.	Description
EW 4589	(L15) (L16)	Secondary of SW2 Osc. Coil Primary of SW2 Osc. Coil
EW 4588	(L17) (L18)	Secondary of SW1 Osc. Coil Primary of SW1 Osc. Coil
EW 4587	(L19) (L20)	Secondary of MW Osc. Coil Primary of MW Osc. Coil (2.2 ohm)
DW 2574	(L21) (L22)	Primary of first IF Trans. (8.7 ohm) Secondary of first IF Trans. (8.7)
DW 2575	(L23) (L24)	Primary of 2nd IF Trans. (8.7 ohm) Secondary of 2nd IF Trans. (4.5 ohm)
DW 4572	T1	Mains Trans: Primary 40 ohms H.T. Sec. 85 ohms
DW 4539	T2	Push Pull Output Trans. Prim. start to centre tap 198 ohms Prim. centre tap to finish 288 ohms Sec. resistance less than one ohm.
DW 4540	T3	"Difference" Output Trans. Prim. resistance 95 ohms. Hum neutralising winding resistance 10 ohms.
XP 1146	V1	Valve 6C12/ECH81
XP 1147	V2	" 6F18/EF89
XP 2329	V3	" 6LD12/EABC80
XP 2322	V4	" EM84
XP 1140	V5	" 6L13/ECC83
XP 1140	V6	" 6L13/ECC83
XP 1143	V7	" 6P15/EL84
XP 1143	V8	" 6P15/EL84
M 16888	PL1/PL2	Pilot lamp 6.8 volt 0.3 amp.
XA 4531		Ass'y of Piano Key Switch completely wired, with coils etc.
M 87766		Gear, driving diecast.
M 76135		Gear, driven, plastic.
M 63479		Spire clip SCB2186/17 for plastic gear.
M 63877		Phosphor bronze, "C" clip for diecast gear.
EP 1457		Moulded rubber tuning indicator guard.
CP 4536		Dial scale reflector complete.
EP 1024		Moulded plastic pulley

Cont'd..

murphy service information

- 7 -

<u>Part No.</u>	<u>Description</u>
M 88852	Spring, lid retaining
M 87626	Escutcheon for tone switch
DA 4592	Leg assembly
EP 4593	Leg mounting plate
M 84190 (Blade	Special trimming tool for R.F. alignment
M 84191 (Handle	

CIRCUIT ALIGNMENT

SPECIAL TRIMMING TOOL:

A hexagon headed trimming tool is required for adjusting the coil cores. It is obtainable from Fisher and Paykel Limited. Part No. M 84190 (Blade) and M 84191 (Handle).

POINTER SETTING:

With the ganged capacitor at maximum capacitance, the centre of the pointer must register with the datum marks at left hand end of scale. During alignment, the pointer must register with the calibration marks on the dial scale at the frequencies specified below.

RECEIVER OUTPUT:

It is essential that a 3 ohm loudspeaker or dummy load is connected to each channel. Make all adjustments for maximum output with the volume control at maximum and the balance control at mid position. Adjust the modulated signal generator attenuator so that the receiver output does not exceed 500 mV on each channel (1.2 volts A.C. across either voice coil).

RECEIVER OSCILLATOR FREQUENCY:

This is above the signal frequency on all wave ranges.

R.F. COIL CORES:

The correct peak when aligning the oscillator and aerial coils is the one obtained with the core nearest to the hexagon flange of the former, except in the case of the S3 and S4 oscillator coils where it is the one obtained with the core nearest to the tag end of the former.

Cont'd..

murphy service information

- 8 -

I.F. ALIGNMENT:

Unscrew all the I.F.T. cores before commencing alignment. Set the signal generator to 455 Kc/s (modulation "on",) connect its output lead to the control grid (Pin 2) of the valve preceding each transformer, and adjust the I.F.T. cores for maximum output in the following sequence:-

- 2nd I.F. secondary and primary, 1st I.F.T. secondary and primary.

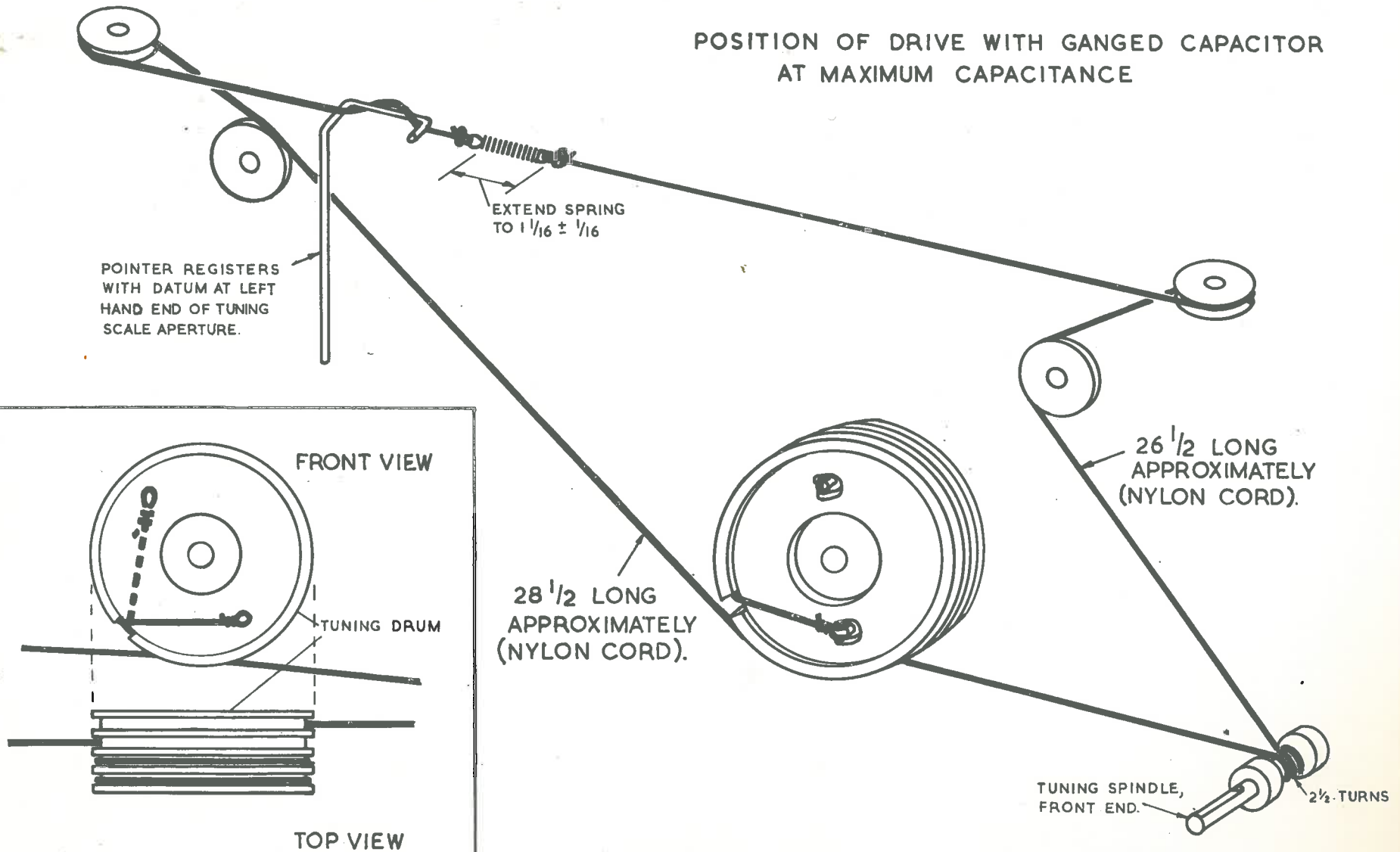
R.F. ALIGNMENT:

Connect the signal generator, (Modulation "on") via a dummy aerial, to the aerial and earth sockets and proceed as follows:-

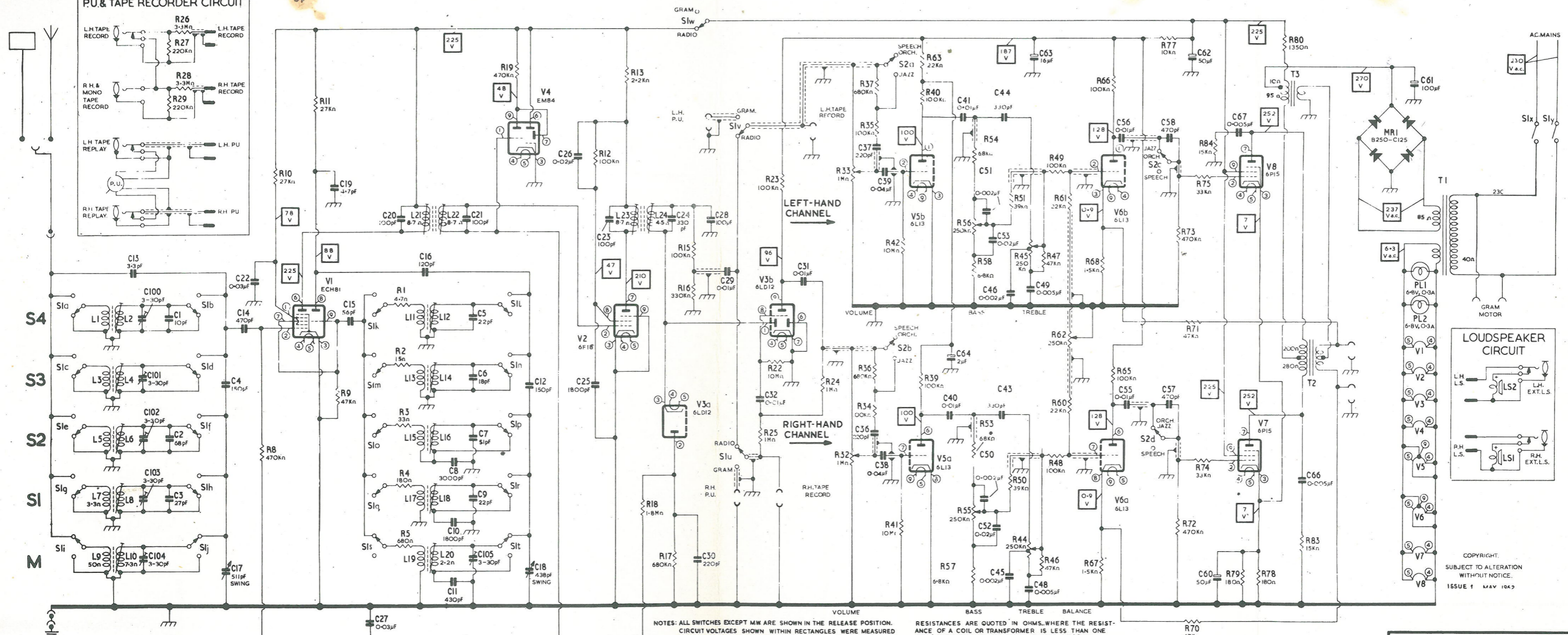
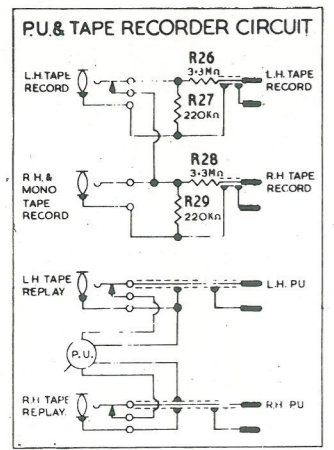
<u>Range</u>	<u>Remarks</u>	<u>Sign. Gen. Setting</u>	<u>Adjustments</u>
M	Repeat these adjustments until there is no further improvement.	600 Kc/s 1364 Kc/s 1500 Kc/s	L20 (Osc) L10 (Ae) C105 (Osc) C104 (Aerial)
S1	As above	2.5 Mc/s 5.0 Mc/s	L18 (Osc) L8 (Ae). C103 (Aerial)
S2	As above. Also rock tuning control for maximum sensitivity while adjusting aerial trimmers.	6.1 Mc/s 9.6 Mc/s	L16 (Osc) L6 (Ae). C102 (Ae).
S3	As above	11.8 Mc/s 15.23 Mc/s	L14 (Osc) L4 (Ae). C101 (Aerial)
S4	As above	17.8 Mc/s 26.1 Mc/s	L12 (Osc) L2 (Ae) C100 (Aerial)

CORD DRIVE ARRANGEMENT DIAGRAM

POSITION OF DRIVE WITH GANGED CAPACITOR
AT MAXIMUM CAPACITANCE



C	13	100	101	12	22	14	19	15	20	16	21	5	26	23	24	28	29	32	31	37	39	41	44	43	63	56	58	62	67	61	C																																																																																													
L	1	3	2	4	7	9	11	13	15	17	19	21	22	23	24					33	35	37	42	45	49	61	66	77	75	84	80	L																																																																																												
R	7	9	8	10	11	9	2	1	3	5	19	12	13	15	16	18	17	25	22	24	33	35	37	42	45	49	61	66	77	75	84	83	R																																																																																											
MISC.	S1a	S1c	S1f	S1b	S1d	S1j	V1	S1k	S1m	S1s	S1l	S1n	S1t	V2	S1w	S1y	V3a	S1u	V3b	S2a	S2b	V5b	V5a	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	S14	S15	S16	S17	S18	S19	S20	S21	S22	S23	S24	S25	S26	S27	S28	S29	S30	S31	S32	S33	S34	S35	S36	S37	S38	S39	S40	S41	S42	S43	S44	S45	S46	S47	S48	S49	S50	S51	S52	S53	S54	S55	S56	S57	S58	S59	S60	S61	S62	S63	S64	S65	S66	S67	S68	S69	S70	S71	S72	S73	S74	S75	S76	S77	S78	S79	S80	S81	S82	S83	S84	S85	S86	S87	S88	S89	S90	S91	S92	S93	S94	S95	S96	S97	S98	S99	S100	MISC.



NOTES: ALL SWITCHES EXCEPT MM ARE SHOWN IN THE RELEASE POSITION.
CIRCUIT VOLTAGES SHOWN WITHIN RECTANGLES WERE MEASURED UNDER NO SIGNAL CONDITIONS (RECEIVER SWITCHED TO MEDIUM WAVE) USING A 20000 OHM/VOLT METER.

RESISTANCES ARE QUOTED IN OHMS, WHERE THE RESISTANCE OF A COIL OR TRANSFORMER IS LESS THAN ONE OHM THE VALUE IS NOT SHOWN ON THE DIAGRAM.

JAZZ, ORCH, SPEECH, BUTTONS ARE SHOWN IN ORCH POSITION.

REFER TO PARTS LIST FOR PART NUMBERS AND COMPLETE DESCRIPTIONS OF ELECTRICAL COMPONENTS. ORDER ALL REPLACEMENTS BY PART NUMBER AND LIST DESCRIPTION.

CIRCUIT DIAGRAM FOR MURPHY 'LA SCALA' SGA821 SUPER STEREOGRAPHIC RADIOGRAM

DRAWN	M.B.L.	CHECK'D	R.P.P.	31-5-62	USED ON
TRACED	30-5-62	APPR'D	R.P.P.	31-5-62	SGA 821
TITLE					DRG N°
CIRCUIT DIAGRAM, SGA 821					AP4600
ALLIED INDUSTRIES LIMITED - AUCKLAND - NEW ZEALAND					

PRODUCT CHANGE NOTICE.

APPLIANCE. SGA821

PART NAME. "La Scala"

PART NO.

CHANGE EFFECTIVE. From receiver 341, 251 onwards.

CHANGE. Capacitor C30, (220 pfd). has been replaced with a 22 pfd. ceramic capacitor, Part No. M 66161.

Capacitor C29, (.01 mfd.) wired in Piano Key switch has been deleted and replaced by a bridge of tinned copper wire.

REASON FOR CHANGE. To reduce detector distortion occurring at high modulation levels.

RECOMMENDATIONS. Where receiver is in the shop, it is recommended that C30 should be replaced. C29 can be made non-effective by soldering a bridge of tinned copper wire across its connections on the printed circuit board. C29 is situated behind the printed circuit board in the "gram" section and its connections lie on the right hand side of the shielded pick up, tape record, and volume control lead connections to the switch. It is not considered so important to change C29.

These changes should be made to receivers in the field, where the customer is dissatisfied and complains of "speaker rattle".

FISHER & PAYKEL LIMITED.