

## SECTION 20

## A.C. TEST BAY AC/55

**General Description**

A.C. Test Bay AC/55 is a 19-inch bay of equipment for the audio-frequency testing of sound apparatus and the audio-frequency and direct-current testing of lines. At small centres where the full facilities are not required the bay is supplied partially equipped as necessary to suit the requirements of the particular station.

A fully-equipped bay comprises the following (see Fig. 20.1):—

- Type 12 Bay Framework
- Equaliser Panel ET/11
- General Purpose Mounting GPM/3 fitted with Aural Sensitivity Network ASN/4 and High-pass Filter FHP/3A
- Amplifier Test Panel ATP/1
- Intermodulation Test Oscillator ITO/1
- Routine Line Tester RLT/1
- Tone Source TS/10
- A.C. Tester Meter ATM/1
- Attenuator Panel AT/30
- Jackfield JF/116
- Telephone Panel TP/12
- Desk DBA/1005
- Relay and Repeating-coil Panel RRC/1
- Standard Level Panel SLP/3
- Mains Distribution Panel MDP/5
- Connection Strip Mounting CSM/2

A block schematic showing how the various testing facilities are obtained via the bay jackfield is given in Fig. 30.

**Description of Apparatus***Equaliser Panel ET/11*

Panel ET/11 is provided for convenience in testing equalisers which are mounted on equaliser chassis CH/18 or CH/34. Two equalisers on chassis CH/18 and one on chassis CH/34 can be mounted on the panel and their inputs and outputs brought to jacks on the bay jackfield.

*Aural Sensitivity Network ASN/4*

This network is used for making frequency-weighted measurements of noise and is described in Section 14. It is fitted on the General Purpose Mounting GPM/3 together with the High-pass Filter FHP/3A. Input and output jacks are provided on the jackfield.

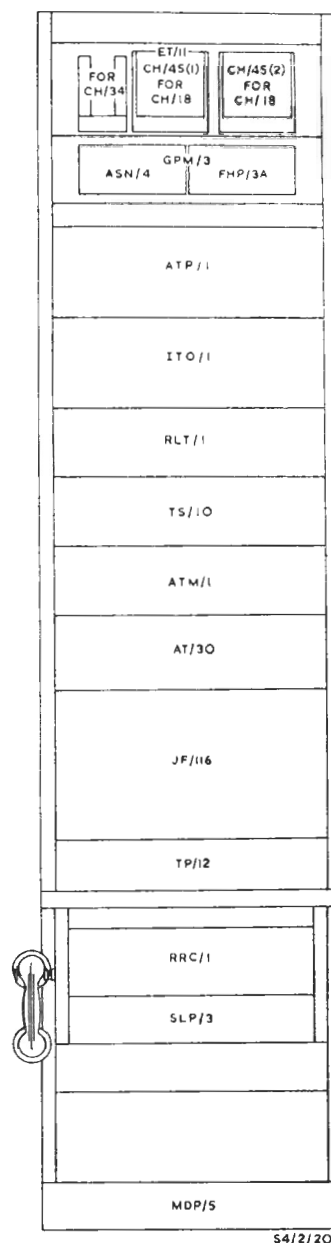


Fig. 20.1. A.C. Test Bay AC/55: Layout  
Drawing No. DB 3236

**Instruction S.4**  
**Section 20**

*High-pass Filter FHP/3A*

The FHP/3A, also known as Harmonic Routine Tester, has a similar circuit to that of the FHP/3 described in Section 5 but is mechanically constructed for mounting on the GPM/3. It is used in measuring total harmonic content at the two fundamental frequencies of 100 c/s and 1 kc/s. Its input and output terminate on jacks on the jackfield.

*Amplifier Test Panel ATP/1*

Panel ATP/1 is provided to simplify the testing of plug-in amplifiers used with Type-B studio equipment. It will accommodate two amplifiers of this type and provides power supplies for both together with switching and metering facilities. The panel contains input and output jacks for both positions and for an attenuator pad for use when testing C/9 amplifiers. A programme meter is provided for testing MNA/3 amplifiers. The circuit is shown in Fig. 32.

*Intermodulation Test Oscillator ITO/1*

This oscillator provides accurate zero-level tone at 900 c/s from a low-impedance source for lining-up purpose and mixed 50-c/s and 900-c/s tones for intermodulation tests. It is an improved, rack-mounted version of the Portable Intermodulation Tester PIT/1 described in Section 16. The 900-c/s oscillator is of the Wien-bridge type similar to that used in the Tone Source TS/10. Jacks are provided on the unit itself and there are also parallel jacks on the bay jackfield. The circuit diagram is shown in Fig. 31.

*Routine Line Tester RLT/1*

The RLT/1 is intended for carrying out all normal d.c. tests on lines and is described in Section 18. Jacks for line connections are fitted on the bay jackfield.

*Tone Source TS/10*

This is described in Section 8. A parallel output jack is provided on the bay jackfield.

*A.C. Test Meter ATM/1*

The ATM/1 can be used as either an amplifier detector or a test programme meter amplifier and is described in Section 17. A 600-ohm input jack and a high-impedance input jack are provided on the jackfield.

*Attenuator Panel AT/30*

This panel contains two-pairs of 600-ohm variable attenuators each pair covering 0—60 dB in 0.5-dB steps. The input and output of each pair are connected to jacks on the jackfield. The panel also contains a key switch for operating the relay on Relay and Repeating-coil Panel RRC/1.

*Jackfield JF/116*

This is fitted with jacks giving access to the various units mounted on the bay. It also includes jacks for bay tie-lines and miscellaneous jacks providing additional facilities for setting up test circuits. Some of these jacks are connected to such commonly used apparatus as fixed attenuator pads and 600-ohm resistors which are mounted on the back of the jackfield. Fig. 30 shows a block schematic.

*Telephone Panel TP/12*

Panel TP/12 contains the necessary apparatus for a single channel telephone with ringing and lamp indicator facilities. Fig. 33 shows the circuit.

*Relay and Repeating-coil Panel RRC/1*

The RRC/1 provides facilities for the insertion of repeating-coils between balanced and unbalanced circuits when measurements are being carried out, and also for quick comparison between two test circuits. As shown in Fig. 34 it contains two separate repeating-coils which are connected to jacks on the bay jackfield, and a change-over test circuit also connected to jacks. The latter circuit has a specially balanced repeating-coil which can be switched to the input of either of two test circuits by means of a relay to give an accurately balanced 600-ohm source impedance. Simultaneous operation of a second relay changes over the outputs of the two test circuits to whatever measuring apparatus is being used, usually the ATM/1. The key switch controlling the relays is mounted for convenience on the Attenuator Panel AT/30 which is largely used in measurements for which the change-over circuit is used, e.g. in comparing the gain or loss of two circuits at different frequencies.

*Standard Level Panel SLP/3*

This panel provides facilities for the accurate measurement of tone level at +10 dB or +20 dB. It is described in Section 19.

*Mains Distribution Panel MDP/5*

The MDP/5 distributes the mains supply to the various mains-operated units via fused connectors. Five of its six outlets are used, leaving one spare.

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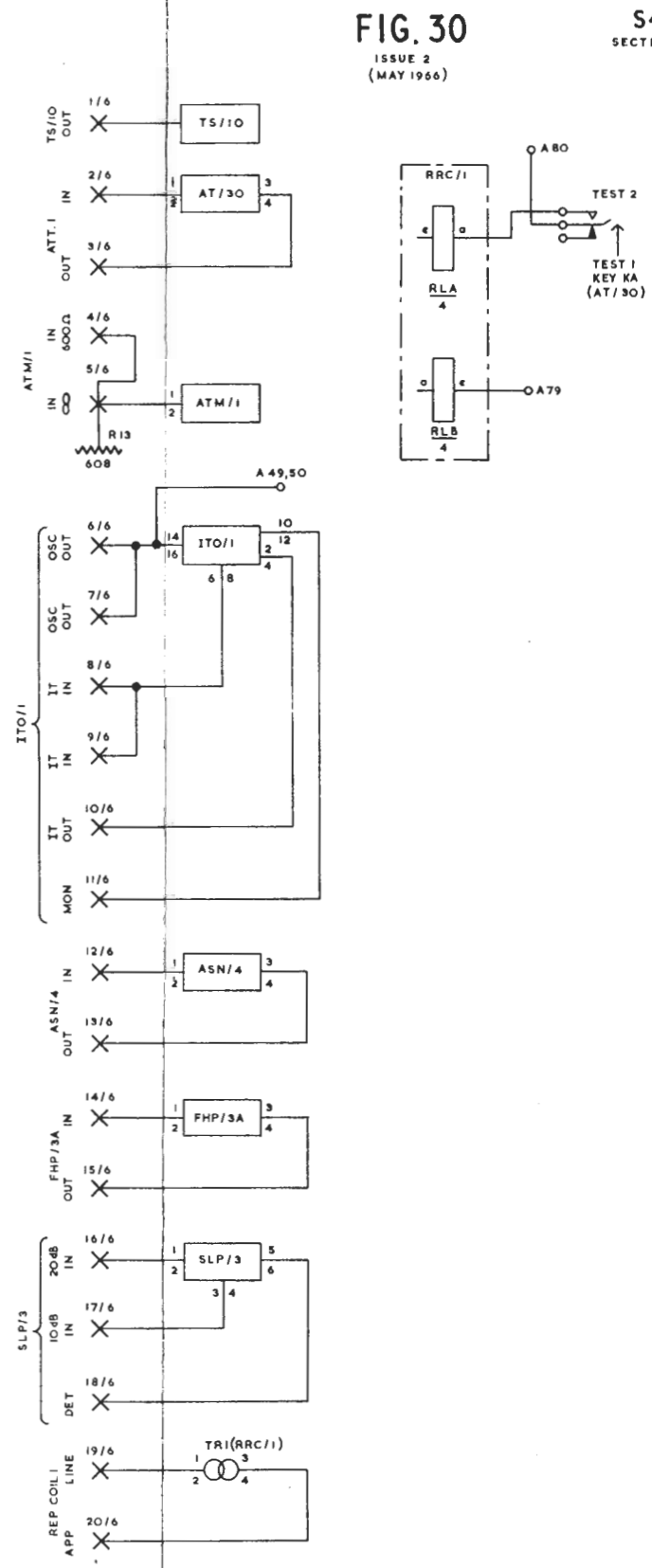
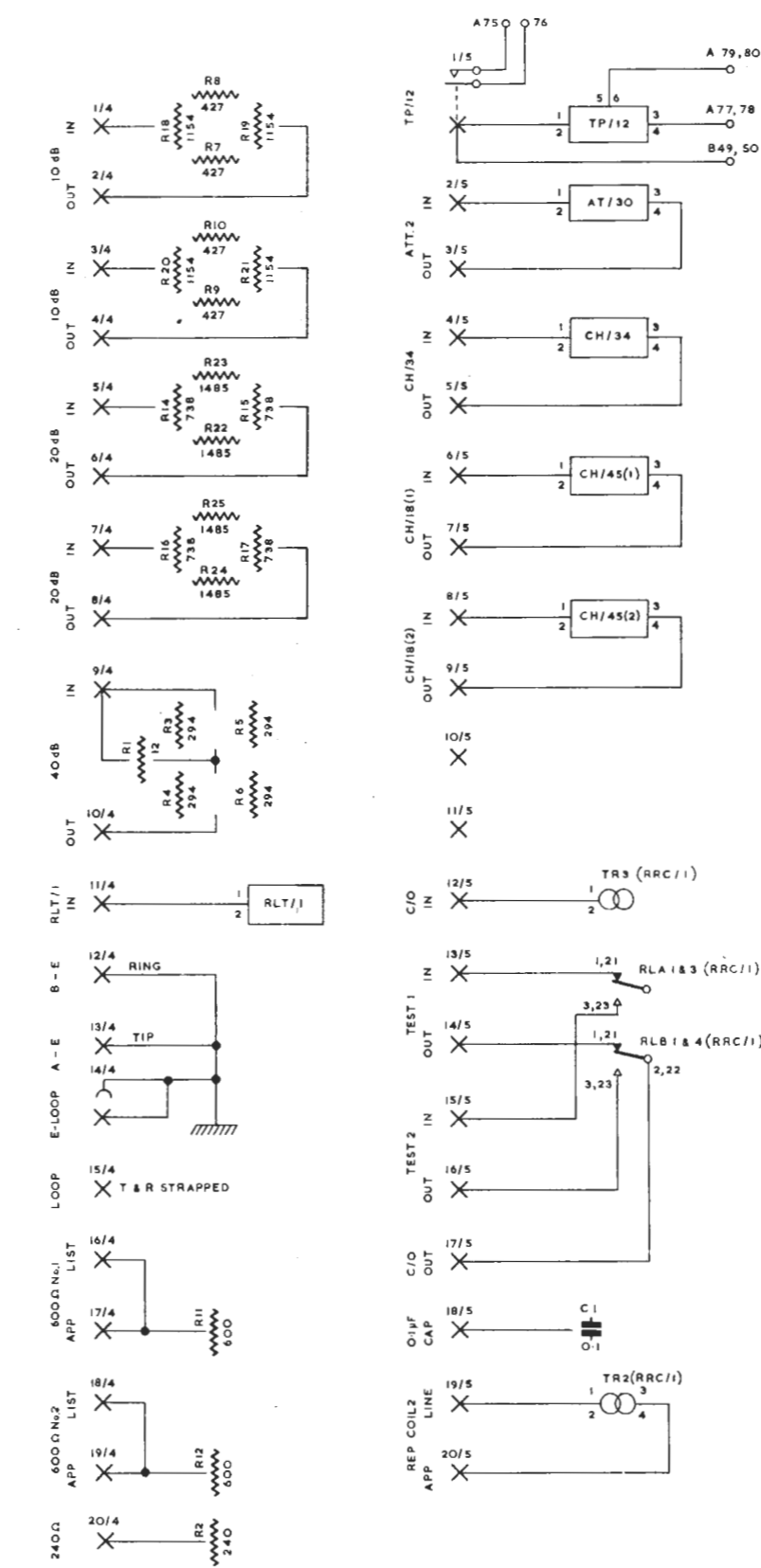
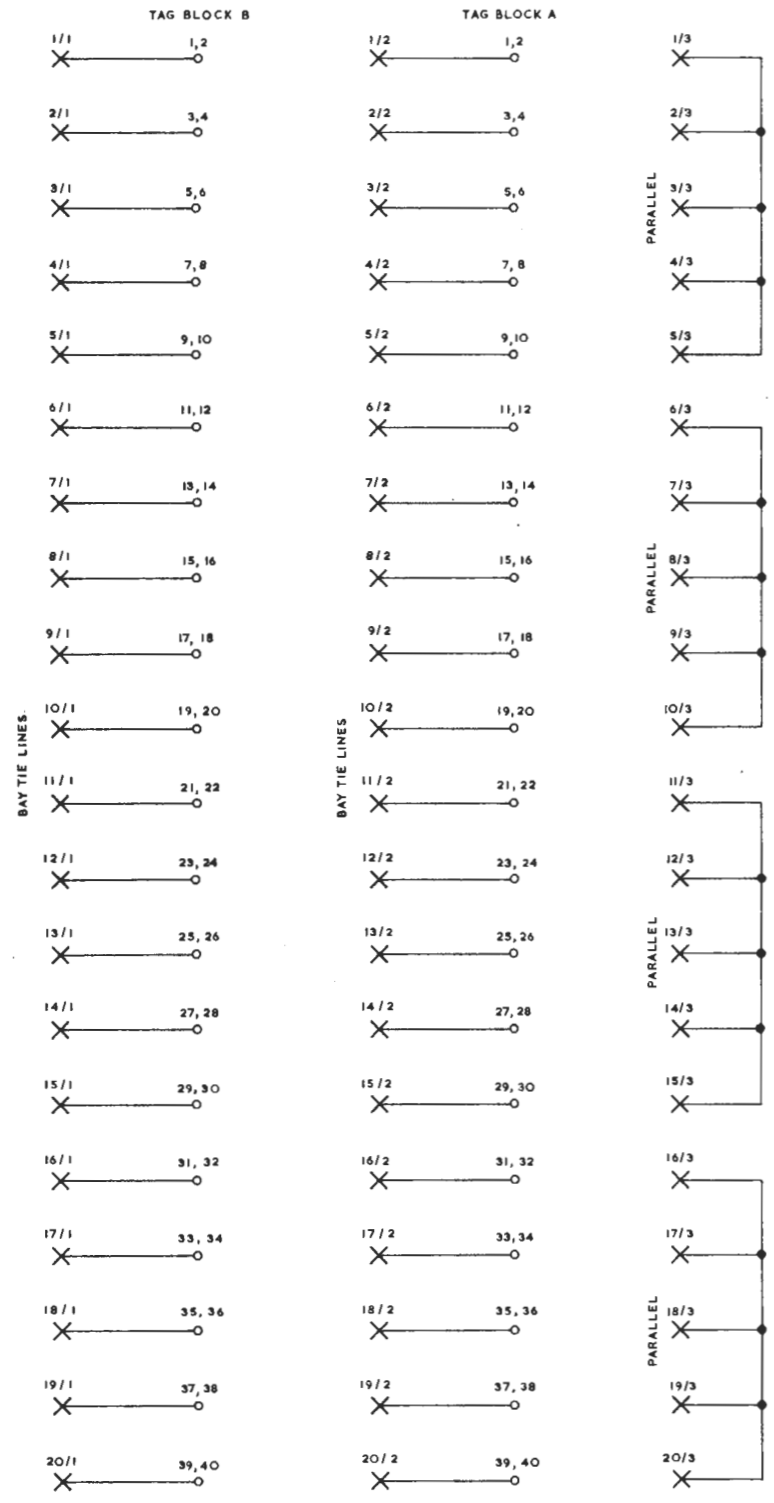


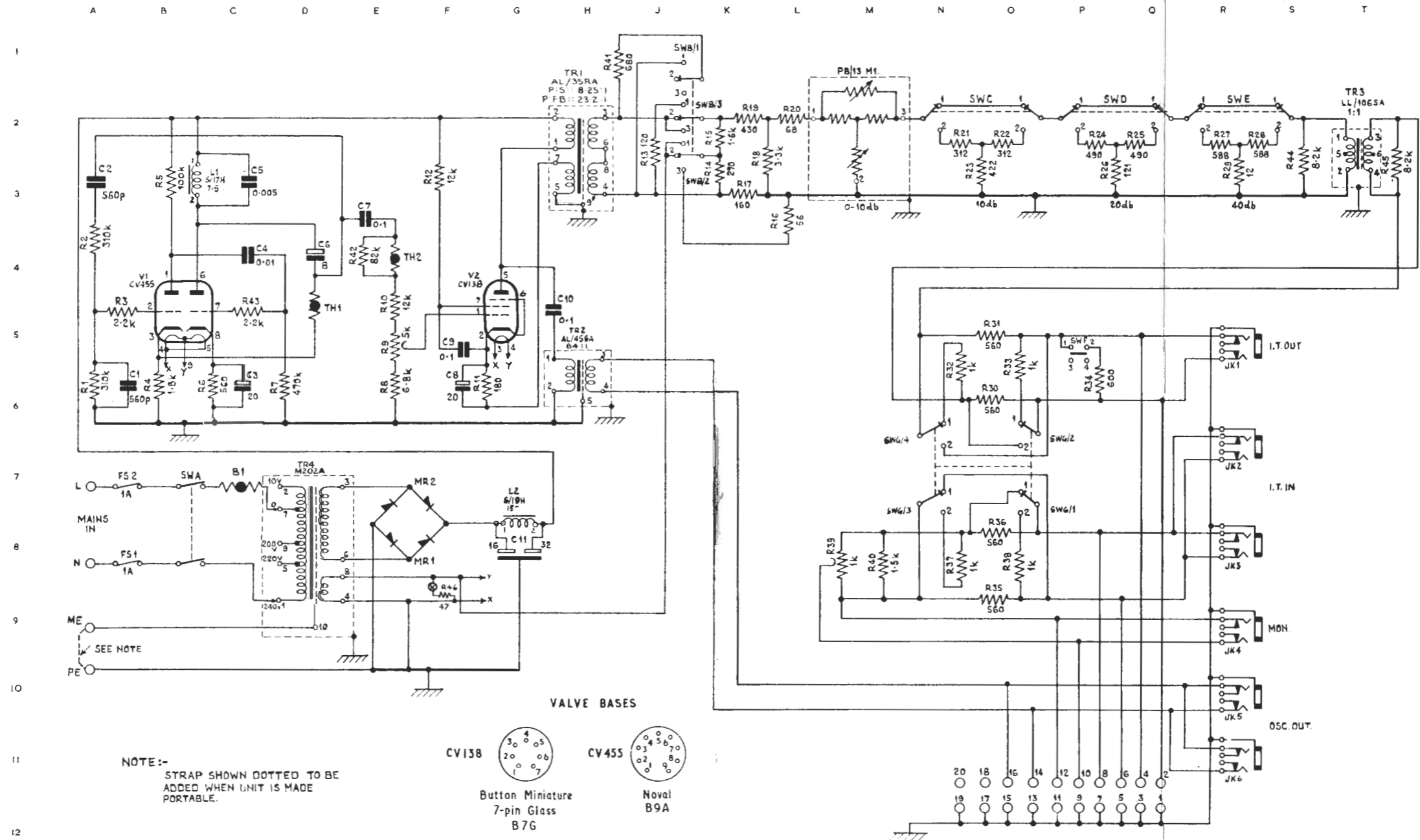
FIG. 30  
ISSUE 2  
(MAY 1966)

A.C. TEST BAY AC/55: BLOCK SCHEMATIC

COMPONENT TABLE: FIG. 3I

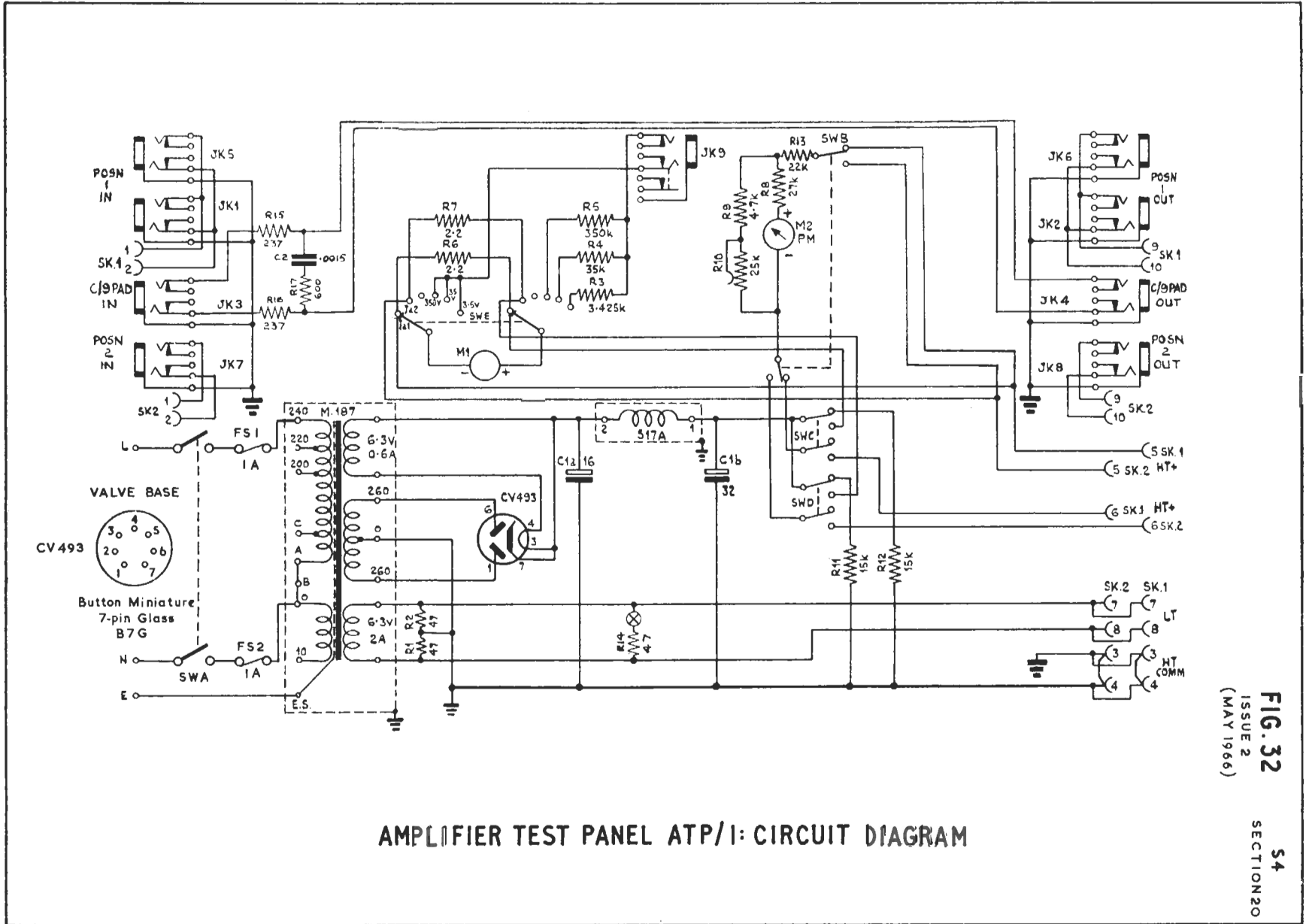
Comp.	Loc.	Type	Tolerance per cent	Comp.	Loc.	Type	Tolerance per cent
B1	C7	S.T.C. Brimistor C23	1	R24	P2	Erie 109	2
C1	B6	T.C.C. CSM20N	1	R25	Q2	Erie 109	2
C2	A3	T.C.C. CSM20N	1	R26	Q3	Erie 109	2
C3	C6	T.C.C. SCE70B/PVC	+50 -20	R27	R3	Erie 109	2
C4	C4	T.C.C. CP32N/PVC	25	R28	S3	Erie 109	2
C5	C3	Hunt B815	20	R29	R3	Painton P406	1
C6	D4	Plessey CE808/1	+50 -20	R30	O6	Erie 109	2
C7	E4	T.C.C. CP37N/PVC	20	R31	O5	Erie 109	2
C8	F6	T.C.C. SCE70B/PVC	+50 -20	R32	H6	Erie 109	2
C9	G5	T.C.C. CP37N/PVC	20	R33	O6	Erie 109	2
C10	H5	T.C.C. CP37N/PVC	20	R34	P6	Erie 108	2
C11	G8	Plessey CE911/1	+50 -20	R35	O9	Erie 109	2
L1	C3	S/17H		R36	O8	Erie 109	2
L2	G8	S/17H		R37	H9	Erie 109	2
R1	A6	Erie 108	1	R38	O8	Erie 109	2
R2	A4	Erie 108	1	R39	M8		10
R3	B5	Erie 16	10	R40	M8	Erie 109	2
R4	B6	Erie 109	2	R41	J1	Erie 9	10
R5	B3	Erie 9	10	R42	E4	Erie 9	10
R6	C6	Erie 9	10	R43	C5	Erie 16	10
R7	D7	Erie 9	10	R44	S2	Erie 109	2
R8	F6	Erie 109	2	R45	T3	Erie 109	2
R9	E5			R46	F9	Painton P406	1
R10	E5	Erie 109	2	SWA	C8	N.S.F. 8373/B145	
R11	G6	Erie 9	10	SWB	K1	N.S.F. DM (S)	
R12	F3	Erie 9	10	SWC	O2	N.S.F. TL2 (S)	
R13	J3	Erie 9	10	SWD	Q2	N.S.F. TL2 (S)	
R14	K3	Erie 109	2	SWE	R2	N.S.F. TL2 (S)	
R15	K2	Erie 109	2	SWF	P5	Painton 310211	
R16	L4	Erie 9	10	SWG	O7	N.S.F. TG3 (S)	
R17	K3	Erie 109	2	TH1	D5	A5412/100	
R18	L3	Erie 109	2	TH2	E4	A2541/100	
R19	K2	Erie 109	2	TR1	H3	AL/35RA	
R20	L2	Erie 109	2	TR2	H6	AL/45SA	
R21	H2	Erie 109	2	TR3	T2	LL/106SA	
R22	O2	Erie 109	2	TR4	D8	M202A	
R23	O3	Erie 109	2				

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INTERMODULATION TEST OSCILLATOR ITO/I : CIRCUIT DIAGRAM

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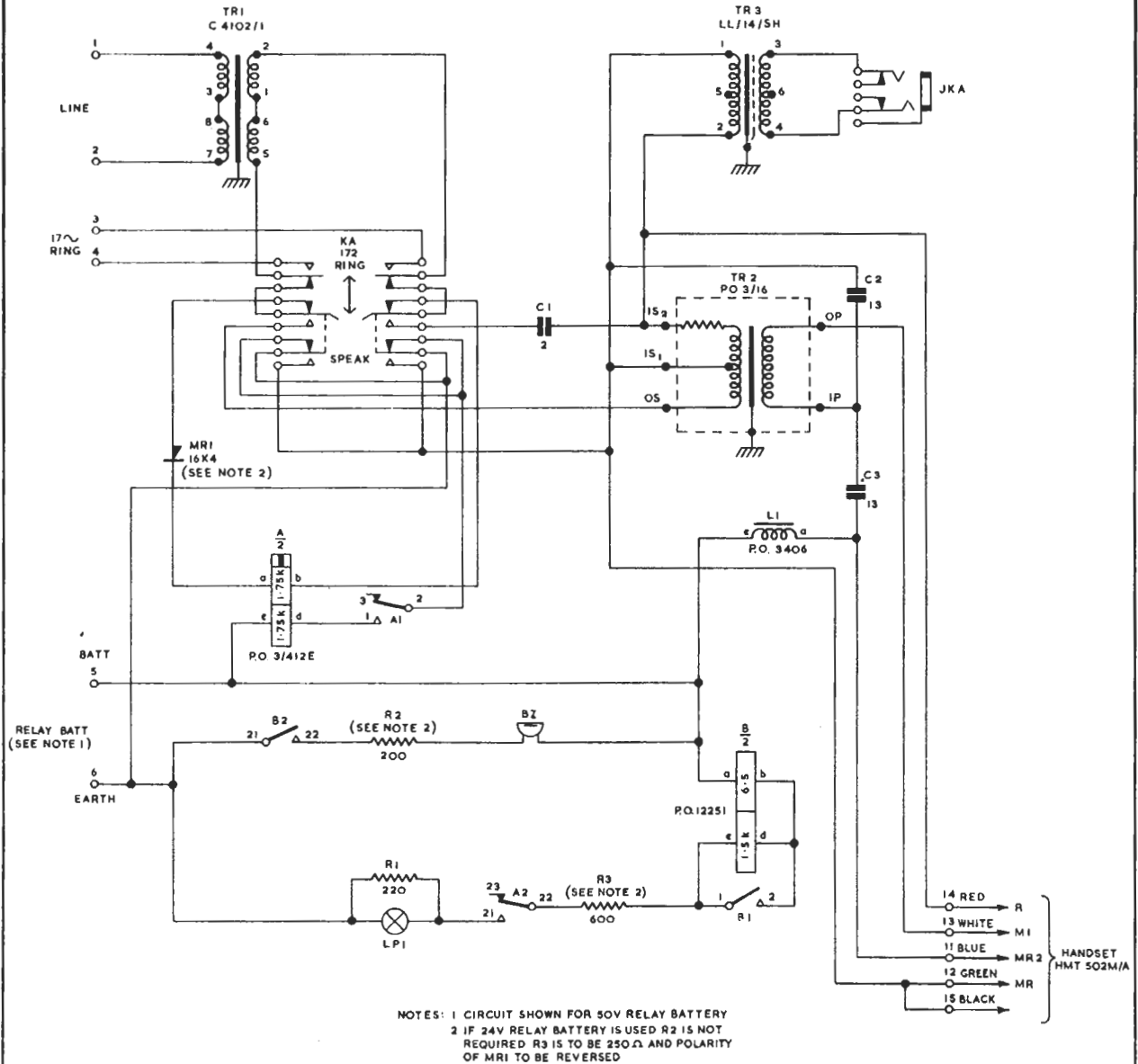


AMPLIFIER TEST PANEL ATP/1: CIRCUIT DIAGRAM

FIG. 32  
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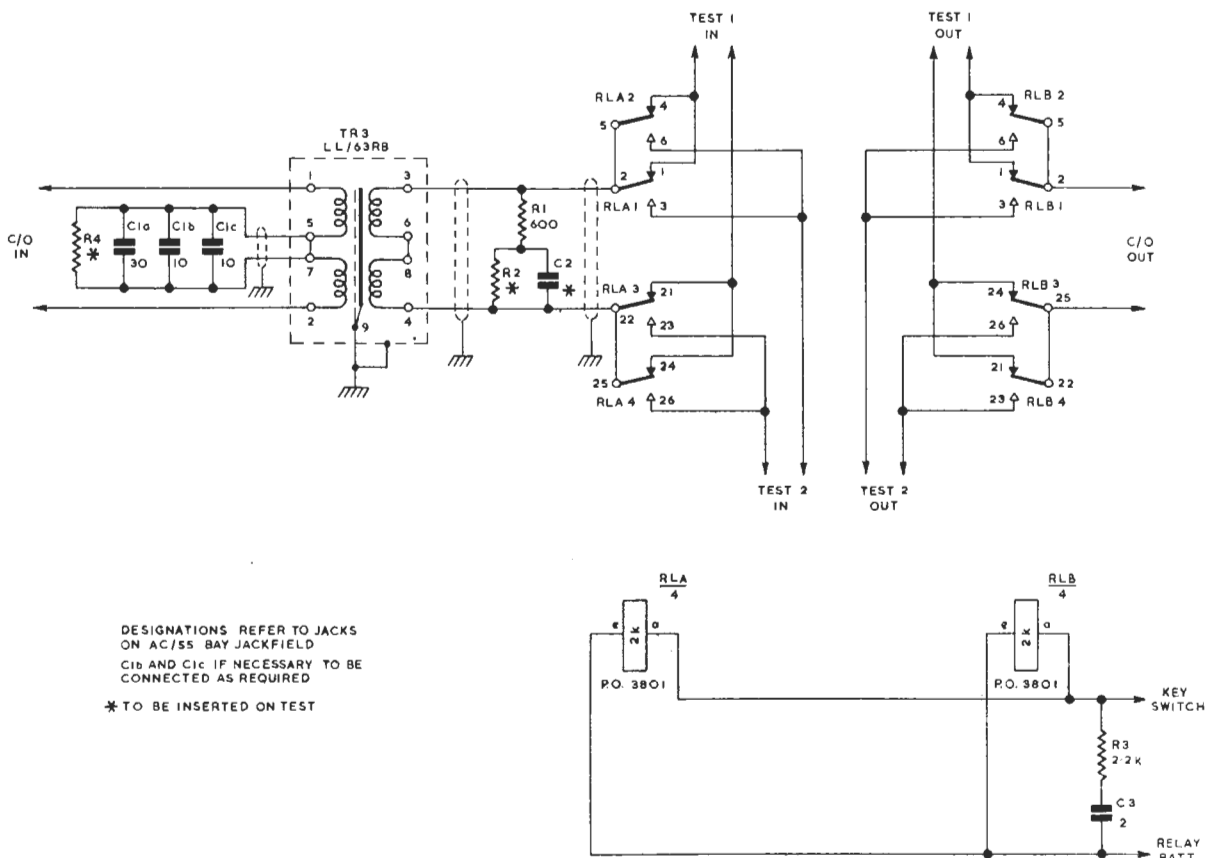
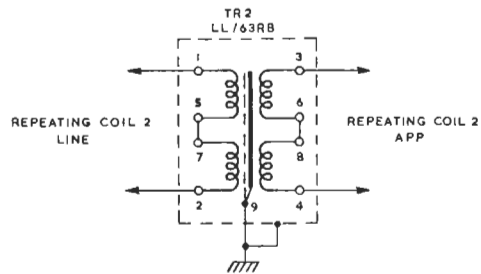
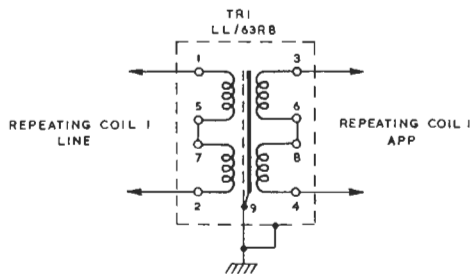
FIG. 33

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TELEPHONE PANEL TP/12: CIRCUIT DIAGRAM

FIG. 34



RELAY & REPEATING COIL PANEL RRC/1: CIRCUIT DIAGRAM

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