

**TERMINATION OF INTER-SWBD. PRIVATE CCT.
OR INTER-SWBD. EXTN. ON PMBX. No.4**

N224-O
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SIGNALLING GROUP H. A/BB: B/W (AUTO. BAL. BATT.)

CIRCUIT OPERATION

OUTGOING CALL.

To ORIGINATE A CALL A CALLING PLUG IS INSERTED INTO THE JACK AND THE EARTH FROM THE AUXILIARY JACK SPRINGS OPERATES RELAY SJ. SJ4 DISCONNECTS THE EARTH FROM RELAY LA WHICH HAS BEEN CONNECTED TO THE A AND B LINES WITH THE CIRCUIT IN THE IDLE CONDITION. THIS EARTH IS REPLACED BY A BATTERY VIA MR3, RELAY LB AND SJ5 TO THE A AND B LINES. THIS BATTERY IS EXTENDED TO OPERATE AN EARTH CONNECTED CALLING RELAY AT THE DISTANT END AND RELAY LB IN SERIES. SJ2 EXTENDS THE EARTH FROM RESISTOR R4 TO OPERATE THE CORD CIRCUIT RELAY SC. INTERRUPTED RINGING FROM THE CORD CIRCUIT PASSES INTO THE UNIT SIGNALLING SA 7612 AS FAR AS CONTACTS B1 AND B2 BUT IS INEFFECTIVE AT THIS STAGE. SJ3 REMOVES THE TERMINATING IMPEDENCE OF R5 AND C4 FROM THE LINE. SJ6 OPERATES RELAY L0. L06 STEPS ON THE FLS EARTH IF FLS IS FITTED. L03 PREVENTS THE LIGHTING OF THE CALL LAMP WHEN RELAY B OPERATES LATER. WHEN THE DISTANT END ANSWERS THE EARTH CONNECTED AT THE DISTANT END IS REPLACED BY A BATTERY WHICH CAUSES RELAY LB TO RELEASE. MR3 PREVENTS RELAY LB HOLDING DUE TO ANY DIFFERENCE OF BATTERY POTENTIAL BETWEEN THE TWO ENDS OF THE CIRCUIT. RELAY LB RELEASING OPERATES RELAY B TO SJ1 EARTH. B1 AND B2 EXTEND THE CORD CIRCUIT RINGING TO RESISTOR R1 WHICH TRIPS THE RINGING. THE CORD CIRCUIT CALLING SUPERVISORY DARKENS AS FOR A NORMAL EXTENSION CALL.

INCOMING CALL.

A BATTERY IS RECEIVED ON THE A AND B LINES FROM THE DISTANT SWITCHBOARD. THIS OPERATES RELAY LA. MR2 PREVENTS A FALSE OPERATION OF RELAY LA WHICH COULD OCCUR IF A DIFFERENCE OF EARTH POTENTIALS EXISTS BETWEEN THE TWO ENDS OF THE CIRCUIT. LA1 OPERATES RELAY B. B6 LIGHTS THE CALL LAMP. B4 BUSIES THE BUSH OF THE JACK. B5 STEPS ON THE FLS EARTH IF FLS IS FITTED. B1 AND B2 EXTEND THE INTER - PBX CIRCUIT TO THE JACK TIP AND RING. THE CALL IS ANSWERED BY THE INSERTION OF AN ANSWERING PLUG IN THE JACK. WHEN THE PLUG IS INSERTED THE AUXILIARY MAKE SPRINGS ARE OPERATED AND RELAY SJ OPERATES. SJ4 RELEASES RELAY LA. SJ1 HOLDS RELAY B. SJ5 CONNECTS RELAY LB TO THE A AND B LINES. RELAY LB WILL NOT OPERATE AT THIS STAGE AS BATTERY IS APPLIED ON THE A AND B LINES BY THE DISTANT END OF THE CIRCUIT. SJ2 EXTENDS THE EARTH AT RESISTOR R4 TO OPERATE THE CORD CIRCUIT SUPERVISORY RELAY SA. SJ3 DISCONNECTS THE TERMINATING IMPEDENCE R5 AND C4. SJ6 OPERATES RELAY L0. L03 DISCONNECTS THE CALL LAMP. WITH THE PLUG INSERTED RESISTOR R1 IS EXTENDED TO THE CORD CIRCUIT SUPERVISORY RELAY LA WHICH OPERATES TO MAINTAIN THE ANSWER SUPERVISORY DARKENED.

CLEARING.

LOCAL END CLEARING FIRST - THE OPERATOR REMOVES THE PLUG FROM THE JACK. RELAY SJ RELEASES. SJ5 DISCONNECTS RELAY LB. SJ4 RELEASED RECONNECTS RELAY LA TO REOPERATE A BATTERY CONNECTED RELAY AT THE DISTANT END AND THENCE GIVE A CLEAR. RELAY LA, WHICH OPERATES, IS HELD UNTIL THE DISTANT END CLEARS. LA1 HOLDS RELAY B AND WITH RELAY SJ RELEASED, RELAY L0 IS HELD VIA L03 AND B6. THE SLEEVE CIRCUIT IS MAINTAINED BUSY BY B4, THE CALL LAMP IS DISCONNECTED AT L03 AND THE FLS EARTH IS HELD SWITCHED UNTIL THE DISTANT END CLEARS.

<p>P.O.E.D. S. BCH.</p> <p>PAPER :- RED CIRCULATION:- SPECIAL</p>	<p>ISSUE</p>	<p><i>11.3.66</i></p>
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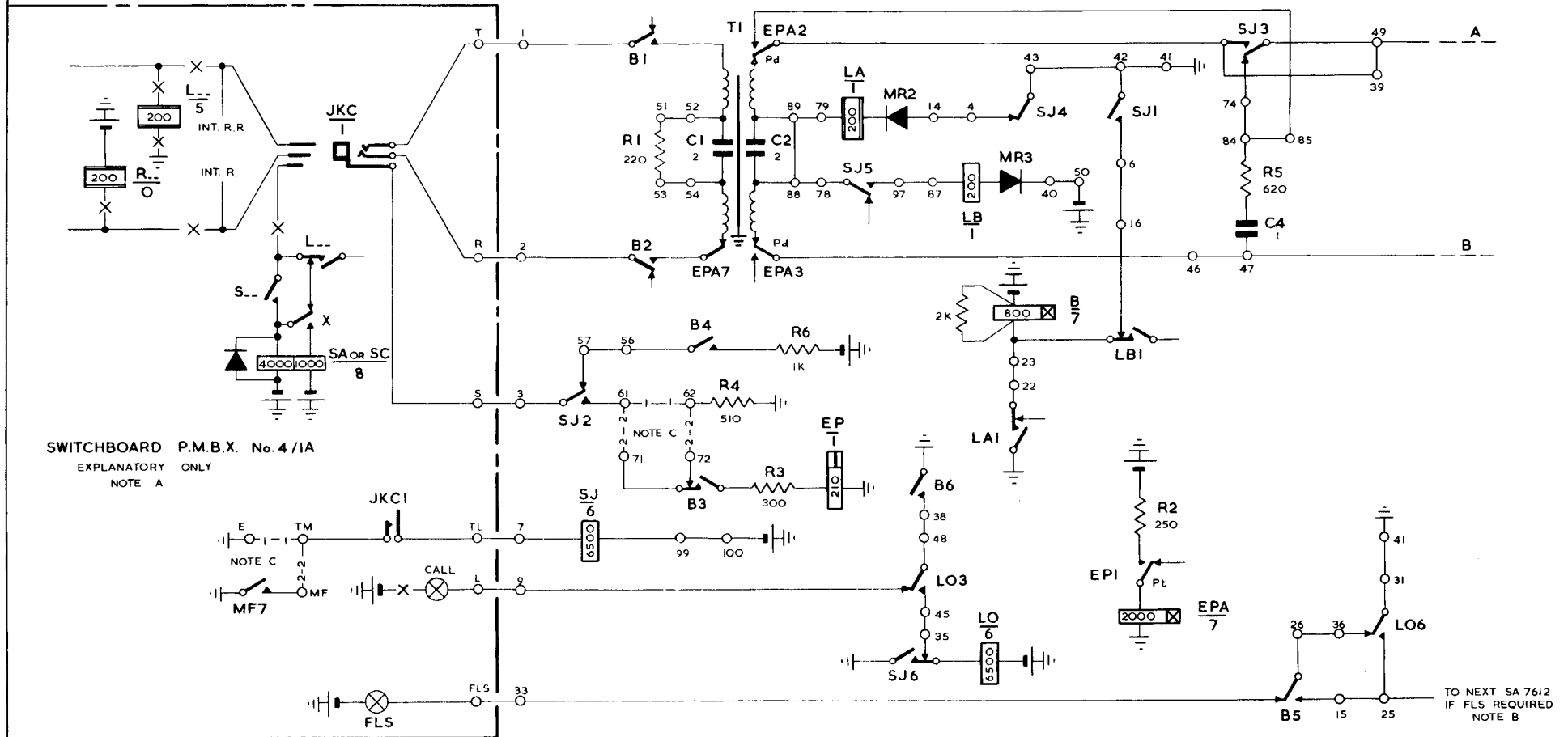
DISTANT END CLEARING - A CLEAR IS GIVEN WHEN THE BATTERY ON THE A AND B LINES IS REPLACED BY AN EARTH TO OPERATE RELAY LB. LB1 RELEASES RELAY B. B1 AND B2 RELEASES THE CORD CIRCUIT SUPERVISORY RELAY ON EXTENSION TO INTER-PBX CIRCUIT CALLS, OR EXCHANGE LINE SUPERVISORY RELAY ON EXCHANGE CALLS, TO GIVE A CLEAR ON THE APPROPRIATE CORD CIRCUIT SUPERVISORY. THE OPERATOR REMOVES THE PLUG AND RELAYS SJ AND L0 RELEASE. SJ5 RELEASES RELAY LB AND SJ4 RESTORES THE CIRCUIT TO RECEIVE AN INCOMING CALL.

PROHIBITION.

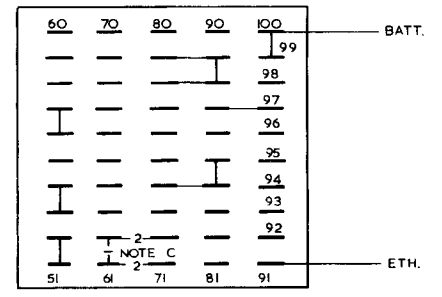
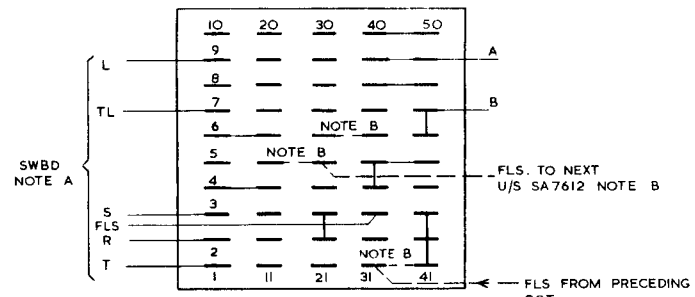
WHEN EXCHANGE PROHIBITION IS REQUIRED RELAY EP WITH RESISTOR R3 AND RESISTOR R4 ARE CONNECTED VIA B3 TO SJ2. ON INCOMING CALLS THE CORD CIRCUIT RELAY SA OPERATES TO THE EARTH AT RELAY EP. WHEN THE CORD CIRCUIT IS CONNECTED TO AN EXCHANGE LINE, AND AS RELAY B OPERATES ON ALL CALLS, THE CORD CIRCUIT SWITCHES TO THE THROUGH CLEARING CONDITION. THE OPERATION OF THE CORD CIRCUIT RELAY X CHANGES THE CORD CIRCUIT SLEEVE CONDITION FROM A 4000Ω TO AN 800Ω BATTERY. THE 800Ω CONDITION OPERATES RELAY EP. EP1 OPERATES RELAY EPA. EPA2 MAINTAINS THE IMPEDENCE R5 AND C4 ACROSS THE LINE PAIR, AND WITH EPA3 DISCONNECTS THE INTER-PBX CIRCUIT. A CLEAR IS GIVEN TO THE CORD CIRCUIT BY EPA7. RELAY EP IS HELD UNTIL THE PLUG IS REMOVED.

NOTE: UNDER NIGHT SERVICE CONDITIONS THE BATTERY IS SWITCHED OFF FROM THE CORD CIRCUIT RELAYS. TO MAINTAIN PROHIBITION UNDER NIGHT SERVICE THE OPERATE EARTH OF RELAY SJ IS DISCONNECTED AT MF7 RELEASED.

NOTE A



SWITCHBOARD P.M.B.X. No. 4 /IA
EXPLANATORY ONLY
NOTE A



NOTES:-

- A. FOR CABLING, JUMPERING (IF NECESSARY) AND SWBD. TERMINAL BLOCK ARRANGEMENT SEE N2231 OR N2232.
- B. WHEN FLS. IS REQUIRED STRAP 15-25 AND 26-36 ON ALL CCTS, ON 1ST CCT. OF GROUP; STRAP 31-41, WIRE 1ST CCT. 25-2ND CCT. 31, 2ND CCT. 25-3RD CCT. 31 ETC. WITH LOCAL WIRING.
- C. ON INTER-SWBD, EXT'NS. OR PRIVATE CCT. WHERE REMOVAL OF EXCHANGE PROHIBITION HAS BEEN AUTHORISED THE STRAPS 61-71 AND 62-72 ARE OMITTED AND STRAP 61-62 PROVIDED IN U/S SA 7612. IN THE SWBD. STRAP TM-E FOR CCT. WITHOUT PROHIBITION AND TM-MF FOR CCTS WITH PROHIBITION.