

TERMINATION OF 2-WIRE EXTENSION  
 ON SWITCHBOARD P.M.B.X. No. 2/4A

NOTES:

1. SEE DGM SA 7165 FOR CCT. AND TERM. BLOCK OF SWITCHBOARD.
2. U.A.A. No. 96A CAN ONLY BE PROVIDED ON EXTENSIONS 10-18 FOR CONNEXION OF THE U.A.A. SEE FIG. 3.
3. WHEN THE CONNEXION OF AN EXTENSION WITH A LINE LOOP RESISTANCE BETWEEN 500-850Ω IS PERMISSIBLE DISCONNECT STRAP D-L ON TERMINAL BLOCK IN SWBD AND PROVIDE AN ADDITIONAL WIRE BETWEEN D AND TAG 5 IN THE U.A.A. ANY SPARE CONDUCTOR IN THE CORD & CABLE PROVIDED FOR CONN. OF MISC. FACILITIES SHOULD BE USED FOR THIS PURPOSE.
4. A SEPARATE 2 WIRE CABLE SHOULD NORMALLY BE USED FOR CONNECTING BATTERY AND EARTH TO U.A.A.'(S). WHEN SEVERAL U.A.A.'S ARE PROVIDED THE BATTERY AND EARTH SHOULD BE TIED FROM UNIT TO UNIT BUT NOT MORE THAN 6 U.A.A.'S. SHOULD BE CONNECTED TO EACH 1 AMP. SUPPLY OF THE P.U. No. 62A. CABLE P.V.C. No. 1 8 WIRE / 8 SHOULD NORMALLY BE USED FOR CABLING THE REMAINING CONNEXIONS BETWEEN THE BOX. CONN. No. 5C. AND THE U.A.A. No. 96A.
5. THE STRAPS PROVIDED ON THE SOLDERED CONNEXION BLOCK SHOULD BE CHANGED FROM FIG. 3A TO 3B ON DIAGRAM SAW 71650 SHEET 2.
6. THE LONGITUDINAL CHOKE TO BE FITTED IN THE U.A.A. No. 96A AT P.B.X.'S WITH SUBSCRIBER'S PRIVATE METERING (S.P.M.). WHERE S.P.M. IS NOT PROVIDED THE METER PULSES MAY BE AUDIBLE AND IN THESE CASES THE LONGITUDINAL CHOKE SHOULD ALSO BE FITTED.
7. A WIRING FORM HAS BEEN PROVIDED IN THE U.A.A. No. 96A FOR THE CONNEXION OF THE LONGITUDINAL CHOKE INDUCTOR COIL 172A IS NOT PROVIDED WITH TAGS 1, 3, 6 & 8. THE WIRES SHOULD BE TERMINATED AS SHOWN IN FIG. 4 STRAPS SHOULD BE PROVIDED BETWEEN TAGS 1-8 & 3-6 WHEN A TRANSFORMER No. 50A IS FITTED.
8. WHERE A LONGITUDINAL CHOKE IS REQUIRED STRAPPING SHOULD BE PROVIDED ON THE STRIP, CONN No. 121A OF THE U.A.A. IN ACCORDANCE WITH FIG. 2B.
9. FOR CONNEXIONS TO THE OPERATOR'S TELEPHONE SEE DGM. N1104 FIGS. 2 OR 3 AS REQUIRED.

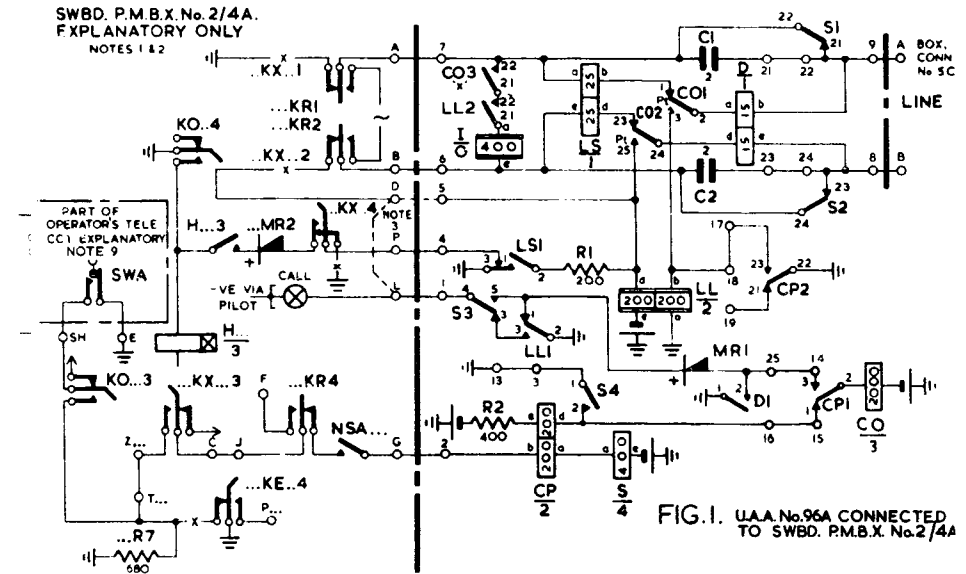


FIG. 1. U.A.A. No. 96A CONNECTED TO SWBD. P.M.B.X. No. 2/4A

CONNEXIONS ON STRIP, CONNEXION No. 121A IN U.A.A. No. 96A.

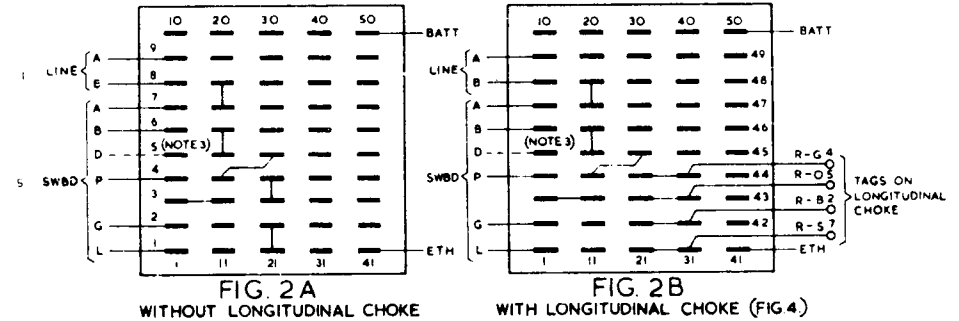


FIG. 2A  
 WITHOUT LONGITUDINAL CHOKE

FIG. 2B  
 WITH LONGITUDINAL CHOKE (FIG. 4)

PO TELECOMMS HQRS	ISSUE			
PAPER:-				
DISTRIBUTION:-	C	NEW FORMAT.	DRW ME/PDI. 2.1	19. 9. 80
	B	NOTE 3 ADDED. FIG. 3 AMENDMENTS.	H.M.A.	2. 6. 69

FIG. 3 CONNEXIONS FOR EXTENSIONS 10-18 WITH U.A.A. No. 96A (SEE ALSO NOTE 5)

EXTN No.	CHANGES TO SWITCHBOARD TERMINAL BLOCK		CABLING BETWEEN BOX CONN No 5C AND THE U.A.A. No 96A (NOTE 4)			STRAPS TO BE PROVIDED ON STRIP CONN No 12/A	
	CORDAGE AND STRAPPING ALTERATIONS	TERMINAL BLOCK CONNEXIONS AFTER CHANGES HAVE BEEN MADE	BOX, CONN No 5C		U.A.A.	WITHOUT LONGITUDINAL CHOKE	WITH LONGITUDINAL CHOKE
			WIRE	TERMINAL	TAG NUMBER		
10	DISCONNECT STRAP 28-30		A } SWBD	B16	7	3-13	3-13
	" " " 31-32		B } SWBD	B17	6	14-25	14-25
	MOVE CORD FROM 28-33		L } SWBD	B18	1	15-16	15-16
	" " " 21-30		P } SWBD	B19	4	17-18	17-18
" " " 22-35		G } SWBD	B20	2	21-22	21-31	
" " " 28-29		D } SWBD	NOTE 3	NOTE 3	23-24	22-32	
PROVIDE STRAP 28-29		A } LINE	D1	9		23-33	
		B } LINE	D2	8		24-34	
		BATT. EARTH	D12	50			
			DE1	41			
11	DISCONNECT STRAP 13-15		A } SWBD	B21	7		
	" " " 16-17		B } SWBD	B22	6		
	MOVE CORD FROM 13-18		L } SWBD	B23	1		
	" " " 24-15		P } SWBD	B24	4		
" " " 25-20		G } SWBD	B25	2			
PROVIDE STRAP 13-14		D } SWBD	NOTE 3	NOTE 3		SEE EXTN No. 10	
		A } LINE	D3	9			
		B } LINE	D4	8			
		BATT. EARTH					
			NOTE 4				
			50	41			
12	DISCONNECT STRAP 93-95		A } SWBD	B26	7		
	" " " 96-97		B } SWBD	B27	6		
	MOVE CORD FROM 93-98		L } SWBD	B28	1		
	" " " 101-95		P } SWBD	B29	4		
" " " 102-100		G } SWBD	B30	2			
PROVIDE STRAP 93-94		D } SWBD	NOTE 3	NOTE 3		SEE EXTN No. 10	
		A } LINE	D5	9			
		B } LINE	D6	8			
		BATT. EARTH					
			NOTE 4				
			50	41			
13	DISCONNECT STRAP 108-110		A } SWBD	C1	7		
	" " " 111-112		B } SWBD	C2	6		
	MOVE CORD FROM 108-113		L } SWBD	C3	1		
	" " " 104-110		P } SWBD	C4	4		
" " " 105-115		G } SWBD	C5	2			
PROVIDE STRAP 108-109		D } SWBD	NOTE 3	NOTE 3		SEE EXTN No. 10	
		A } LINE	D7	9			
		B } LINE	D8	8			
		BATT. EARTH					
			NOTE 4				
			50	41			
14	DISCONNECT STRAP 118-120		A } SWBD	C6	7		
	" " " 121-122		B } SWBD	C7	6		
	MOVE CORD FROM 118-123		L } SWBD	C8	1		
	" " " 126-120		P } SWBD	C9	4		
" " " 127-125		G } SWBD	C10	2			
PROVIDE STRAP 118-119		D } SWBD	NOTE 3	NOTE 3		SEE EXTN No. 10	
		A } LINE	D9	9			
		B } LINE	D10	8			
		BATT. EARTH					
			NOTE 4				
			50	41			
15	DISCONNECT STRAP 133-135		A } SWBD	C11	7		
	" " " 136-137		B } SWBD	C12	6		
	MOVE CORD FROM 133-138		L } SWBD	C13	1		
	" " " 129-135		P } SWBD	C14	4		
" " " 130-140		G } SWBD	C15	2			
PROVIDE STRAP 133-134		D } SWBD	NOTE 3	NOTE 3		SEE EXTN No. 10	
		A } LINE	D16	9			
		B } LINE	D17	8			
		BATT. EARTH					
			NOTE 4				
			50	41			
16	DISCONNECT STRAP 143-145		A } SWBD	C16	7		
	" " " 146-147		B } SWBD	C17	6		
	MOVE CORD FROM 143-148		L } SWBD	C18	1		
	" " " 151-145		P } SWBD	C19	4		
" " " 152-150		G } SWBD	C20	2			
PROVIDE STRAP 143-144		D } SWBD	NOTE 3	NOTE 3		SEE EXTN No. 10	
		A } LINE	D18	9			
		B } LINE	D19	8			
		BATT. EARTH					
			NOTE 4				
			D13	50			
			DE2	41			
17	DISCONNECT STRAP 158-160		A } SWBD	C21	7		
	" " " 161-162		B } SWBD	C22	6		
	MOVE CORD FROM 158-163		L } SWBD	C23	1		
	" " " 154-160		P } SWBD	C24	4		
" " " 155-165		G } SWBD	C25	2			
PROVIDE STRAP 158-159		D } SWBD	NOTE 3	NOTE 3		SEE EXTN No. 10	
		A } LINE	D20	9			
		B } LINE	D21	8			
		BATT. EARTH					
			NOTE 4				
			50	41			
18	DISCONNECT STRAP 168-170		A } SWBD	C26	7		
	" " " 171-172		B } SWBD	C27	6		
	MOVE CORD FROM 168-173		L } SWBD	C28	1		
	" " " 176-170		P } SWBD	C29	4		
" " " 177-175		G } SWBD	C30	2			
PROVIDE STRAP 168-169		D } SWBD	NOTE 3	NOTE 3		SEE EXTN No. 10	
		A } LINE	D22	9			
		B } LINE	D23	8			
		BATT. EARTH					
			NOTE 4				
			50	41			

CIRCUIT OPERATION

EXTENSION TO EXTENSION CALL

DEPENDING ON THE LOOP RESISTANCE OF THE EXTN LINE, A CALLING SIGNAL CAN BE GIVEN AT THE SWITCHBOARD BY TWO METHODS.

1. EXTN LINE WITH A LOOP RESISTANCE LESS THAN 500Ω  
ETH VIA ...KX...1, ...KR1, 'A' LINE, U.A.A. (ALL RELAYS RLSED) EXTN TELE LOOP, U.A.A., B LINE, ...KR2, ...KX...2 TERM D, TERM L & EXTN CALL LAMP TO BATT.  
EXTN CALL LAMP LIGHTS.
2. EXTN LINE LOOP RESISTANCE 500-850Ω  
ETH VIA ...KX...1, ...KR1, 'A' LINE, U.A.A., EXTN TELE LOOP, B LINE, ...KR2, ...KX...2, TERM D, TAG 5 U.A.A., TO OPERATE RELAY LL TO BATT.  
LL1 LIGHTS EXTN CALL LAMP.

THE CALL IS ANSWERED BY OPERATING KEYS ...KX... & ...KO IN THE SAME CONN CCT & LIFTING THE OPERATOR'S HANDSET. ...KX...1 & ...KX...2 DISCONNECT THE CALLING SIGNAL & EXTEND EXTN TO CONN CCT. ETH VIA ...KE...4, ...KX...3, ...KR4, NSA..., TERM G, TAG 2 U.A.A., TO OPERATE RELAYS CP & S TO BATT. ETH VIA S4 CAUSES A BALANCING CURRENT TO FLOW IN THE d-e COIL OF RELAY CP WHICH NOW RELEASES. ETH VIA S4 & CP1 OPERATES RELAY CO. CO1 & CO2 SWITCH THE U.A.A. INTO THE DIVIDED FEED CONDITION. THE TRANSMISSION FEED FOR THE EXTN IS NOW SUPPLIED VIA RELAY LL. CONNEXION TO ANOTHER EXTN CAN BE MADE IN THE NORMAL WAY. WHEN THE EXTN RECALLS THE OPERATOR AN EARTHED LOOP IS APPLIED ON THE A&B WIRES TO THE U.A.A. DUE TO THE RESULTING UNBALANCED CURRENT BETWEEN THE TWO COILS OF RELAY D, THE RELAY OPERATES. D1 LIGHTS EXTN CALL LAMP. WHEN THE EXTN HANDSET IS REPLACED RELAY LL RELEASES. ETH VIA LL1 & S3 LIGHTS THE EXTN CALL LAMP TO GIVE A CLEARING SIGNAL. TO CALL AN EXTN VIA THE U.A.A. KEY ...KR IS OPERATED, ...KR1 & ...KR2 EXTEND RINGING THROUGH THE UNIT (ALL RELAYS RELEASED) TO RING THE EXTN. WHEN THE EXTN

ANSWERS, THE CALL LAMP WILL LIGHT & KEY ...KX... SHOULD BE OPERATED TO THE REQUIRED CONN CCT.

EXTENSION TO EXCHANGE CALL

WHEN THE OPERATOR EXTENDS AN EXTN TO AN EXCH LINE BY OPERATION OF THE SELECTED ...KE... KEY TO THE SAME CONN CCT; THE U.A.A. REMAINS IN THE DIVIDED FEED CONDITION AND THE TRANSMISSION FEED FOR THE EXTN IS VIA RELAY LL & THAT FOR THE OPERATOR BY THE PUBLIC EXCH WHEN THE OPERATOR RESTORES KEY KO... OR REPLACES THE HANDSET, THE FULL ETH APPLIED TO RELAYS CP & S IN SERIES IS REPLACED BY A 680Ω ETH VIA RESISTOR ...R7. (THE ETH VIA ...KE...4 WAS REMOVED WHEN KEY ...KE... WAS OPERATED.) THE RESULTING UNBALANCED CURRENT CAUSES DIFFERENTIALLY CONNECTED RELAY CP TO OPERATE. CP1 RELEASES RELAY CO. CP2 CONNECTS A SHORT-CIRCUIT ACROSS THE a-b COIL OF RELAY LL. CO1 & CO2 RELEASING CHANGES OVER THE EXTN TRANSMISSION FEED FROM THE U.A.A. TO THE PUBLIC EXCH. RELAYS LS & D ARE CONNECTED IN SERIES WITH THE EXCH LINE TO GIVE SUPERVISORY & RECALL SIGNALS RESPECTIVELY. RELAY LS OPERATES & RELAY D WILL OPERATE WHEN A RECALL SIGNAL IS APPLIED (SEE EXTN-EXTN CALL). LS1 HOLDS RELAY LL. RELAY LL NOW FUNCTIONS AS A RELIEF FOR RELAY LS. ETH VIA LL1 & S3 WILL GIVE A CLEARING SIGNAL WHEN THE EXTN HANDSET IS REPLACED. THE SHORT-CIRCUIT APPLIED TO RELAY LL BY CP2 MAKES THE RELAY SLOW TO RELEASE & PREVENTS THE EXTN CALL LAMP FLASHING ON THROUGH DJALLING TO THE PUBLIC EXCH. RETARD I & CO3<sup>∞</sup> ENSURE THAT CALLS TO THE PUBLIC EXCH ARE NOT RELEASED WHEN THE U.A.A. CHANGES FROM A DIVIDED TO A THROUGH TRANSMISSION FEED.

NIGHT SERVICE

WHEN THE NIGHT SERVICE KEY IS OPERATED RELAYS NSA & NSB IN THE SWITCHBOARD RELEASE. CONTACT NSA... PREVENTS THE OPERATION OF RELAY S IN THE U.A.A. WHEN AN EXTENSION IS CONNECTED THROUGH ON NIGHT SERVICE. S1 & S2 RELEASED CONNECT A SHORT CIRCUIT ACROSS RELAYS LS1 & D TO PROVIDE A THROUGH CCT TO THE PUBLIC EXCH.

FIG. 4. CONNEXION OF LONGITUDINAL CHOKE IN THE U.A.A. No.96A(NOTE 6)

