

SWITCHBOARD P.M.B.X. No.4/IA

SINGLE POSITION INSTALLATION

N 2231

PAGE 1 - 16

ISSUE A

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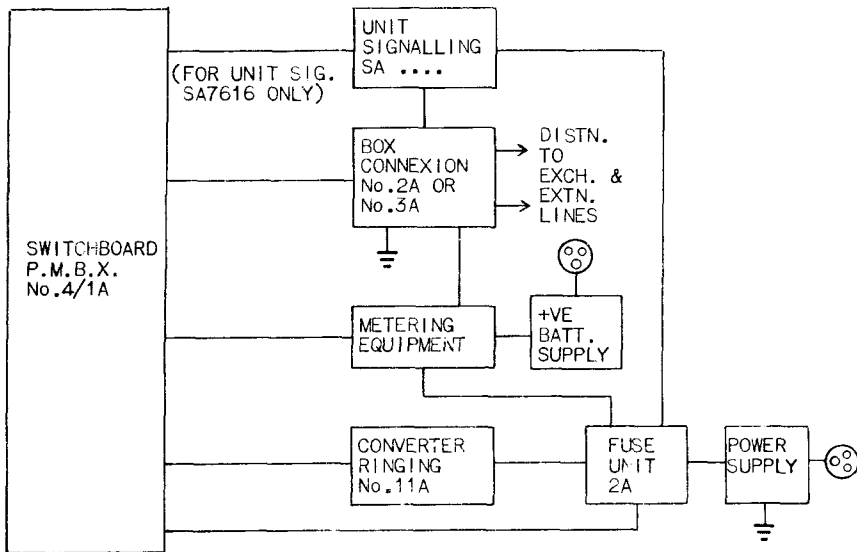
REFERENCES

DESCRIPTION OF SWITCHBOARD	E. I. TELES. P.B.X.
LIST OF MAIN COMPONENTS	N 2233
EXPLANATORY DIAGRAMS	N 2233
DIAGRAM NOTES	SA 7601 (COVERS SA 7601-9)
DIAGRAMS:- POSITION	SA 7601 SAW 76010 SAJ 76010
CORD CIRCUIT	SA 7602 SAW 76020 SAJ 76020
EXCH. LINES	SA 7603 SAW 76030 SAJ 76030
OPERATOR & MISC.	SA 7604 SAW 76040 SAJ 76040
AUDIBLE CLEAR	SA 7606 SAW 76060
EXTN. UNITS 1 & 2	SA 7607 SAW 76070
SIDE TONE SUPP.	SA 7609 SAW 76090
CONVERTER RINGING No. 11A	N 682
POWER UNIT No. 62A	N 670
77A	N 684
78A	N 685
RECTIFIER 61B	N 661
61C	N 661
61D	N 661
FUSE UNIT No. 2A	N 675
EXCH. LINE EQUIPMENTS (MOUNTED EXTERNAL TO SWBD.)	SA 7616 SAW 76160
EXTENSION TELEPHONES	N 806 (EARTH LOOP RECALL)
METERING	N 2250
FACE EQUIPMENT LAYOUT	DRG. ES 6283

P.O.E.D. S. BCH.			
ISSUES	A	SUPERSEDED FOR NEW WORK BY SPECIFICATION SH55. MADE YELLOW	7.1.1972
		<i>Edw. Miller</i> 5 3/2	12.5.67

PAPER:- Y
CIRCULATION:-
GENERAL

FIG. 1 BLOCK SCHEMATIC
(TYPICAL INSTALLATION).



INFORMATIVE NOTES

A. SWITCHBOARD

SWBD. PMBX No.4/1A is wired and equipped for 40 extensions; wired for 20 and with face equipment for 10 exchange lines, and wired for 10 with face equipment for 5 inter-swbd. circuits. The operators and miscellaneous relay set SA 7604 (which includes the side tone suppression unit SA 7609), and cord circuit relay sets are not despatched fitted in the switchboard and must be requisitioned separately. Normally 10 cord circuits are standard provision and 10 pairs of cords are fitted. When 11-15 cord circuits are authorised additional cords and pulley weights are required. The keys for cord circuits 11-15 are below the keyshelf and wired ready for raising into position when these circuits are equipped. Cabling into the switchboard is via the entry slot in the sides or rear or directly underneath.

B. EXCHANGE LINES

EXCHANGE LINE RELAY SETS ARE PROVIDED AS REQUIRED, FOR DETAILS OF THE METHOD OF PROVISION SEE PAGES 8 AND 9. EQUIPMENT FOR 12 EXCHANGE LINES CAN BE ACCOMMODATED WITHIN THE SWBD. WHERE MORE THAN 12 EXCHANGE LINES ARE REQUIRED UNITS SIGNALLING SA 7616 ARE ADDED AND MOUNTED EXTERNAL TO THE SWITCHBOARD.

C. EXTENSION LINES

ALL EXTENSION CIRCUITS ARE 2-WIRE PLUS AN EARTH FOR RECALL PURPOSES. ALTHOUGH THE SWITCHBOARD IS EQUIPPED FOR 40 EXTENSIONS THE CAPACITY CAN BE INCREASED TO 160 BY REQUISITIONING EXTENSION UNITS 1 OR 2. EACH EXTENSION UNIT Caters FOR 10 ADDITIONAL CIRCUITS.

D. POWER PLANT

THE TYPE OF POWER PLANT TO BE PROVIDED WILL DEPEND ON WHETHER THE INSTALLATION IS TO BE OPERATED FROM A POWER UNIT OR A FLOATED BATTERY AND THE LOAD REQUIRED. FOR DETAILS SEE PAGES 11 AND 12.

ITEMS	QUANTITY	USE
SWITCHBOARD SWITCHBOARD PMBX No.4/1A RELAY SET SA 7604 HEADSET No.1 GREY PLUG No.420 GREY WITH CORD 4/77AB PART 2/SPO/24	1 1 1 1 3	OPERATOR'S & MISCELLANEOUS CCTS. } OPERATORS TELEPHONE INSTRUMENT. FIT WHEN MORE THAN 100 EXTNS. REQUIRED.
CORD CIRCUITS RELAY SETS 1/SA7602 RELAY SETS 1/SA7602	5 1 OR 2 AS RQD	10 CORD CIRCUITS (2 PER BASE) FOR EACH 2 ADDITIONAL CORD CIRCUITS AUTHORIZED ON A/N
RELAY SETS 2/SA7602	1 AS RQD	FOR AN ADDITIONAL CORD CIRCUIT AUTHORIZED ON A/N (1 PER BASE)
CORDS SWBD. No.391 GREEN	2 OR 4 AS RQD	FOR CORD CIRCUITS 11 & 15 (2 PER CIRCUIT)
CORDS SWBD. No.391 BLUE	2 AS RQD	FOR CORD CIRCUIT 12 (2 PER CIRCUIT)
CORDS SWBD. No.391 YELLOW	2 AS RQD	FOR CORD CIRCUIT 13 (2 PER CIRCUIT)
CORDS SWBD. No.391 BLACK	2 AS RQD	FOR CORD CIRCUIT 14 (2 PER CIRCUIT)
PLUGS SWBD. No.321 GREY	2-10 AS RQD	FOR CORD CIRCUITS 11-15 (2 PER CIRCUIT)
WEIGHTS PULLEY No.19A 6 OZ.	2-10 AS RQD	FOR CORD CIRCUITS 11-15 (2 PER CIRCUIT)
LAMPS No.2 45V	2 PER CCT. AS REQD	FOR CORD CIRCUITS 11-15
EXCHANGE LINES RELAY SETS 1/SA7603	AS RQD	FOR 2-12 EXCHANGE LINES SEE
RELAY SETS 2/SA7603	AS RQD	(PAGE 8 FOR METHOD OF PROVISION
UNITS SIG. SA7616	AS RQD	FOR EXCHANGE LINES 13-20 SEE PAGE 9
CAPS LAMP 76A OPAL	AS RQD	TO BE ENGRAVED WITH EXCHANGE LINE NUMBER SEE DRG ES 5283.
JACKS No.710 BR	ONE PER 10 CCTS AS RQD	}
JACK LAMP No.61/20	ONE PER 10 CCTS AS RQD	} FOR EXCHANGE LINES 11-20
COVER LAMP No.8/20	ONE PER 10 CCTS AS RQD	}
CAPS LAMP No.76A OPAL	ONE PER CCT AS RQD	}
LAMPS No.2 45V	ONE PER CCT AS RQD	}
CAPS LAMP No.76A LIGHT GREY	AS RQD	DUMMIES FOR SPARE POSITIONS
EXTENSIONS TELEPHONES No.706...COLR. PART 3/DBU/263	1	}
SWITCH 5A-3.	1	} PER EXTN. LINE
P.M.B.X. No.4 EXTN. UNITS No.1	1 AS RQD	} 10 EXTN.CCTS PER ITEM LH PANEL FOR CCTS 40-49, 60-69 ETC.
P.M.B.X. No.4 EXTN. UNITS No.2	1 AS RQD	} 10 EXTN.CCTS PER ITEM RH PANEL FOR CCTS 50-59, 70-79 ETC.
LAMP No.2 45V	1 AS RQD	} 1 PER EXTN.CCT. 40-159
KITS No.133/4-15	1 AS RQD	} CAPS LAMP No.76A OPAL, ENGRAVED IN KITS OF TEN (EG. 133/7 ENGRAVED 70-79).
RINGING SUPPLY CONVERTER RINGING No.11A	1	RINGING GENERATOR
METERING SEE DGM N 2250		

ITEMS	QUANTITY	USE
POWER SUPPLY FUSE UNIT No.2A POWER UNIT No.62A OR POWER UNIT No.77A OR POWER UNIT No.78A BATTERY SECONDARY No.16 RECTIFIER No.61.. CELLS SECY. No.21/... OR CELLS SECY.No.22/...	1 1 1 1 2 1 24	POWER DISTRIBUTION)) INSTALLATIONS OPERATED) FROM MAINS POWER UNIT) (SEE PAGE 11 AND 12))) INSTALLATION OPERATED FROM) FLOATED BATTERY) (SEE PAGE 11 AND 12)
DISTRIBUTION BOX CONN. No.2A OR BOX CONN. No.3A MOUNTING D 92221	1 OR MORE 1 OR MORE OR 1	IN BLOCK WIRED BUILDING IN NON BLOCK WIRED BUILDING IF GROWTH TO MULTIPLE INSTAL- LATION ENVISAGED
CABLE & WIRE CABLE PVC No.1 41w/6½ CABLE PVC No.1 21w/6½ 12w/6½ 6w/6½ 4w/6½ 2w/6½	AS RQD AS RQD AS RQD AS RQD AS RQD AS RQD	EXTENSION CCTS. SWBD. TO DISTN INTER SWBD.CCTS.SWBD. TO DISTN EXCHANGE LINES SWBD. TO DISTN. INTER SWBD CCTS. U/S TO DISTN. RINGING SUPPLY FUSE ALARM. FUSE UNIT TO SWBD. FUSE-UNIT TO C.R. IIA
WIRE COPPER SOFT 3/20 WIRE PVC No.1 4w/6½ No.1 5w/6½ No.1 2w/6½ CABLE PVC 250V OR 660VSQ.IN.		EARTHING)) JUMPERING EXCH. LINE R/S TO) EXCH. JACKS.)) JUMPERING IN DISTRIBUTION) POWER DISTRIBUTION SEE) PAGES 11 AND 12.
CONNECTOR R/S TESTING CONNECTOR 1032A	2	FOR R/S MAINTENANCE 2 PER INSTALLATION TO PERMIT R/S TO OPERATE WHEN JACKED OUT OF SWBD.
INTER PBX LINES UNIT SIG SA...	AS RQD	SEE RELEVANT N DIAGRAM AND INSTALLATION NOTES
PART 2/DJA/18 LAMP JACKS 1/DJA/13 LAMPS No.2/45V LAMP CAPS No.76A OPAL	1 1 1 1)) PER CIRCUIT (CCTS 6-10) AS REQUIRED))
AUDIBLE CLEAR SUB UNIT SA 7606 RELAY 16790	1 1)) WHERE AUTHORISED ON A/N)
TRANSMITTER CUT OFF SWITCH 5A	1	WHERE AUTHORISED ON A/N
WHERE NO DIALLING RQD. PLATE MOUNTING No.5A	1	TO REPLACE DIAL MOUNTING AND PLATE MOUNTING 5B FITTED
SPARE DIAL DIAL MOUNTING No.22A INCOMPLETE DIAL 21 LA GREY PART 1/DCC/631 MISCELLANEOUS	1 1 1 1)) FOR REPLACEMENT BY OPERATOR.)
FRAME NOTICE No.25 GREY	1	V.I.F. TO REPLACE FRAMES NOTICE No.38A FITTED.
PEGS No.15 GREY	AS RQD	FOR SPARE JACKS

INSTALLATION NOTES

1. SWITCHBOARD:GENERAL

THE SWITCHBOARD SHOULD BE SITED TAKING INTO ACCOUNT THE FOLLOWING:-

- (A) MAINTENANCE ACCESS TO THE REAR OF THE SWBD.
- (B) CABLING ACCESS VIA FLOOR CHASES OR TROUGHING WITH CAPPING.
- (C) FLOOR LOADING.
- (D) POSSIBLE GROWTH TO A MULTIPLE INSTALLATION.

NOTE. THE FRONT OF THE KEYSHELF MAY BE LOWERED TO REDUCE THE DEPTH OF SWBD. TO PASS THROUGH NARROW DOORWAYS, FOR DETAILS SEE E.1.

2. ANCILLARY EQUIPMENT:GENERAL

THE SMALLER ANCILLARY EQUIPMENT HAS BEEN DESIGNED FOR WALL MOUNTING AND LARGER ITEMS AS FREE STANDING. ALL THE ITEMS CAN BE ASSOCIATED TOGETHER OR SEPARATED IN GROUPS DEPENDENT ON THE ACCOMMODATION AVAILABLE.

CARE SHOULD BE TAKEN TO ENSURE THAT THE SITING OF THE ANCILLARY EQUIPMENT DOES NOT DETRACT FROM THE APPEARANCE OF THE INSTALLATION, MAINTENANCE ACCESS TO THE EQUIPMENT SHOULD NOT BE OVERLOOKED. THE CHASSIS OF ALL UNITS IRRESPECTIVE OF LOCATION SHALL BE BONDED TO EARTH POTENTIAL. A GOOD EARTH SHOULD BE PROVIDED FOR P.O. USE.

3. SWITCHBOARD

IN THE SWITCHBOARD PROVIDE STRAPS CL1-CL4, CL2-CL5, CL3-CL6, CL7-CL10 AND BZ1-BZ2 IN ACCORDANCE WITH DIAGRAM SAW70610.

IF NON-THROUGH CLEARING HAS BEEN AUTHORISED PROVIDE STRAPS U6-U8 AND U56-U58 IN R/S SA7602.

IN CB AREAS WITH NO DIALLING CIRCUITS TO P.A.B.Xs REMOVE DIAL AND PLATE MOUNTING 5B AND FIT PLATE MOUNTING 5A. THE 2 WIRES TO THE DIAL MOUNTING SHOULD BE CONNECTED TOGETHER, INSULATED AND TIED BACK INTO THE FORM.

WHERE A FRAME NOTICE N.25 GREY IS AUTHORISED THE FRAME NOTICE N.38A SHOULD BE RECOVERED.

FUSES ARE SUPPLIED WITH THE SWITCHBOARD FOR EXCHANGE LINES, CORD CIRCUITS ETC; AND THE VALUE SPECIFIED ON THE RELATIVE SA DIAGRAM SHOULD BE FITTED ON THE FUSE PANEL AS SHOWN IN TABLE 6.

DETAILS OF THE LAYOUT OF SWITCHBOARD EQUIPMENT AND STRIP CONNEXION ALLOCATION IS SHOWN ON PAGES 14-16 AND FACE EQUIPMENT ON PAGE 10.

4. EXTENSIONS

ALL EXTENSION INSTRUMENTS SHOULD BE CONNECTED IN ACCORDANCE WITH N806 AND ARRANGED FOR "EARTH LOOP RECALL".

THE GROWTH OF EXTENSION FACE EQUIPMENT CAPACITY TO 80 LINES IS OBTAINED BY INSERTION OF EXTENSION UNITS N1 AND 2 AND REMOVAL OF SPACING STRIPS. INCREASE FROM 80 TO 160 LINES IS OBTAINED IN A SIMILAR MANNER WITH REARRANGEMENT OF SPACING STRIPS; FOR DETAILS OF SPACING STRIPS SEE N2233. (SEE ALSO PAGE 6 FOR CABLING ACCESS DETAILS).

THE STRIPS CONNEXION ATTACHED TO THE EXTENSION UNITS ARE POSITIONED IN THE TOP OF THE SWITCHBOARD AS SHOWN ON PAGE 10.

THE BATTERY (VIA PILOT) AND EARTH CONNEXION LEADS ASSOCIATED WITH THE JACKS SHOULD BE CONNECTED TO THE PANEL TERMINAL STRIP AS DETAILED ON SAW76010. LAMPS N2 45V AND KITS N133/..... (LAMP CAPS) ARE FITTED AS REQUIRED ON THE ADDITIONAL FACE EQUIPMENT LAMP STRIPS.

5. INTER-PBX. LINES

WHEN AN INTERSWITCHBOARD CIRCUIT IS REQUIRED REFERENCE SHOULD BE MADE TO THE RELATIVE DIAGRAM FOR THE PARTICULARS OF METHOD OF CONNEXION. WHERE MORE THAN 5 INTERSWBD. CIRCUITS ARE REQUIRED ADDITIONAL JACKS AND LAMP JACKS SHOULD BE FITTED TO THE EXISTING WIRING UP TO A MAXIMUM OF 10.

INSTALLATION NOTES (CONTD.)

6. DISTRIBUTION

BOX CONNEXION №2A OR 3A SHOULD NORMALLY BE USED FOR DISTRIBUTION AND TO PROVIDE A TESTING POINT.
FOR BLOCK WIRED BUILDINGS A BOX CONNEXION №2A WITH NO JUMPERING SHOULD BE PROVIDED FOR UP TO 50 EXTENSIONS AND 10 EXCHANGE LINES.
FOR NON-BLOCK WIRED BUILDINGS A BOX CONNEXION №3A WITH JUMPERING SHOULD BE PROVIDED FOR UP TO 50 EXTENSIONS AND 10 EXCHANGE LINES.
ADDITIONAL BOXES CONNEXION SHOULD BE PROVIDED AS REQUIRED.
IF IT IS ENVISAGED THAT THE INSTALLATION WILL BECOME A MULTIPLE INSTALLATION A MOUNTING D92221 SHOULD BE PROVIDED INITIALLY, SEE SD136 FOR DETAILS.
IN BLOCK WIRED BUILDINGS THE EARTH FOR RECALL PURPOSES IS NORMALLY OBTAINED FROM THE BLOCK WIRING DISTRIBUTION, FOR NON-BLOCK WIRED BUILDINGS THE EARTH IS OBTAINED FROM THE BOX CONNEXION. THE P.O. EARTH TO THE POWER UNIT/RECTIFIER MUST NOT BE TAKEN VIA DISTN. CABLING.

7. POWER SUPPLY

THE SWITCHBOARD IS NORMALLY OPERATED FROM A MAINS CONNECTED POWER UNIT PROVIDING 50V DC. WHEN AUTHORISED A FLOATED BATTERY IS PROVIDED.
FOR DETAILS OF POWER EQUIPMENT SEE PAGES 11 AND 12.
THE CONVERTER RINGING OPERATES FROM THE 50V DC SOURCE.

8. AUDIBLE CLEAR

WHEN AUTHORISED SUB UNIT SA7606 AND RELAY 16790 SHOULD BE FITTED IN R/S SA7604 OPERATORS AND MISCELLANEOUS RELAY SET.
THE WIRING WHICH IS PROVIDED SHOULD BE CONNECTED IN ACCORDANCE WITH SAW76060 AND SAW76040 FIG.8.

9. CABLING AND WIRING

ALL CABLE SKINNERS FEEDING CONNEXION STRIPS SHALL BE TAKEN VIA THE SLOTS IN THE STRIPS. THE FANNING STRIP HOLES AND CASTELLATED PORTIONS OF THE STRIPS ARE FOR JUMPERS ONLY. FOR CONVENIENCE OF WIRING THE STRIPS IN THE BOTTOM MAY BE REMOVED. SUFFICIENT SPARE SHOULD BE LEFT TO ALLOW THE STRIPS TO BE REMOVED FOR SUBSEQUENT ADDITIONAL CABLING AND MAINTENANCE. THE EXTN. CONNEXION STRIPS MAY BE HINGED UPWARDS THROUGH 90° BY REMOVING THE SCREW IN EACH END OF THE REAR MOST SUPPORTING MEMBER.
WHEN EXTNS. 100-159 ARE FITTED THE FOREMOST BAR SHOULD BE MOVED IN TO SUPPORT THE CONNEXION STRIPS AND 3 PARTS 2/SPO/24
FITTED IN THE TOP ANGLE IRON MEMBER BEHIND PANEL 2 TO SUPPORT THE CABLE FORMS.

DISTRIBUTION (SEE INSTALLATION NOTES)

FIG. 2A. TYPICAL LAYOUT IN BLOCK WIRED BUILDING USING BOX CONNEXION NO. 2A.

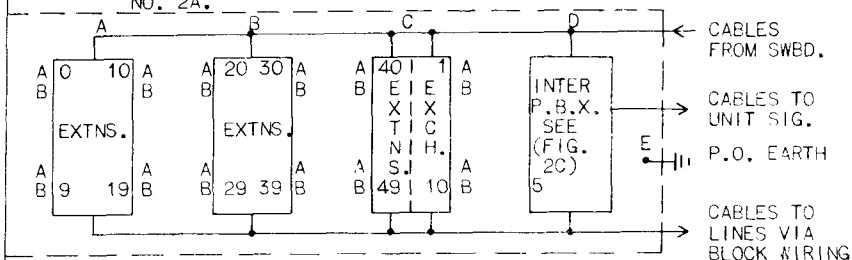


FIG. 2B. TYPICAL LAYOUT IN NON BLOCK WIRED BUILDING USING BOX CONNEXION NO. 3A.

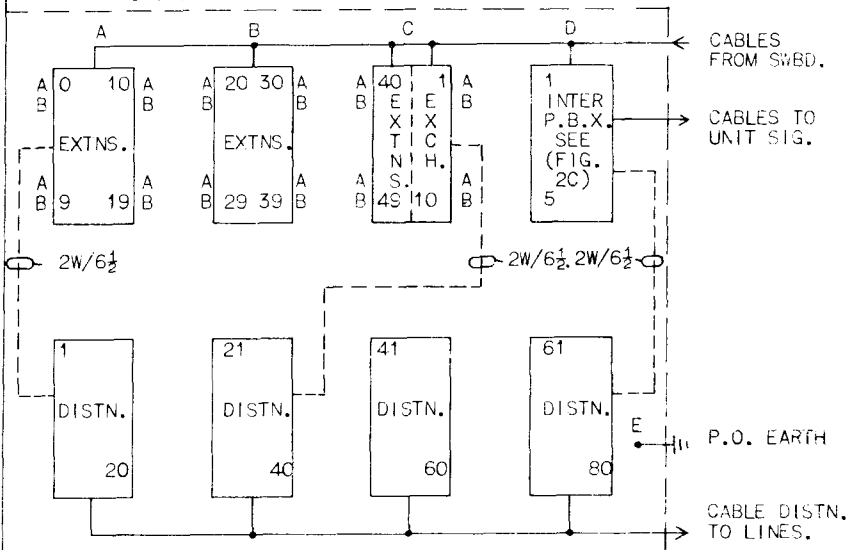


FIG. 2C. ALLOCATION OF TERMINATIONS IN BOX CONNEXION FOR INTER-P.B.X. CIRCUITS

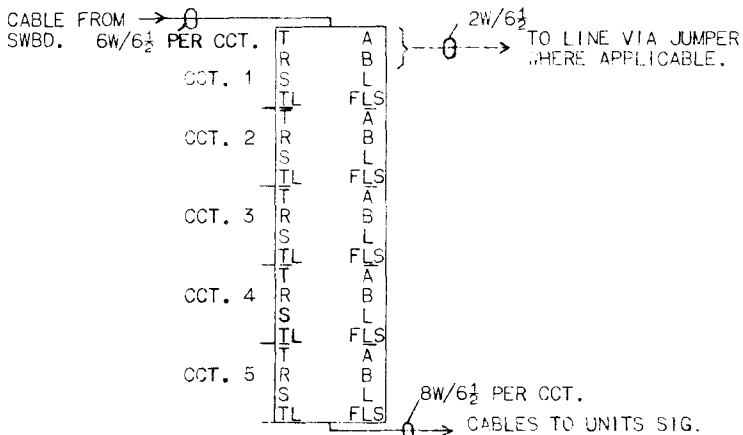
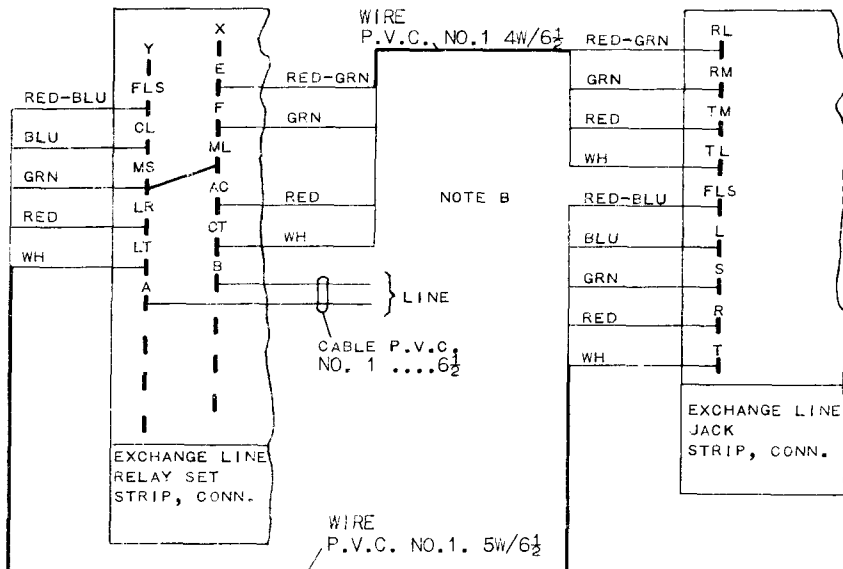


TABLE 2. METHOD OF INITIAL PROVISION FOR 1-12 EXCHANGE LINES
(RELAY SETS MOUNTED WITHIN THE POSITION)

NO. OF EXCHANGE LINES	RELAY SET REQUIRED		RELAY SET POSITION IN SWITCHBOARD	CCTS. EQUIPPED BY RELAY SETS.
	NO.	QTY.		
2	2/SA7603	1	1-3	1 AND 2
3	1/SA7603	1	1-3	1, 2 AND 3
4	2/SA7603	2	1-3, 4-6	1, 2, 4 AND 5
5	1/SA7603	1	1-3	1, 2 AND 3
	2/SA7603	1	4-6	4 AND 5
6	1/SA7603	2	1-3, 4-6	1-6
7	1/SA7603	1	1-3	1, 2 AND 3
	2/SA7603	2	4-6, 7-9	4 AND 5, 7 AND 8
8	1/SA7603	2	1-3, 4-6	1-3, 4-6
	2/SA7603	1	7-9	7 AND 8
9	1/SA7603	3	1-3, 4-6, 7-9	1-9
10	1/SA7603	2	1-3, 4-6	1-3, 4-6
	2/SA7603	2	7-9, 10-12	7 AND 8, 10 AND 11
11	1/SA7603	3	1-3, 4-6, 7-9	1-3, 4-6, 7-9
	2/SA7603	1	10-12	10 AND 11
12	1/SA7603	4	1-3, 4-6 7-9, 10-12	1-12

FIG. 3. INTERCONNECTION BETWEEN EXCH. LINE R/S AND EXCH. LINE JACKS IN SWITCHBOARD

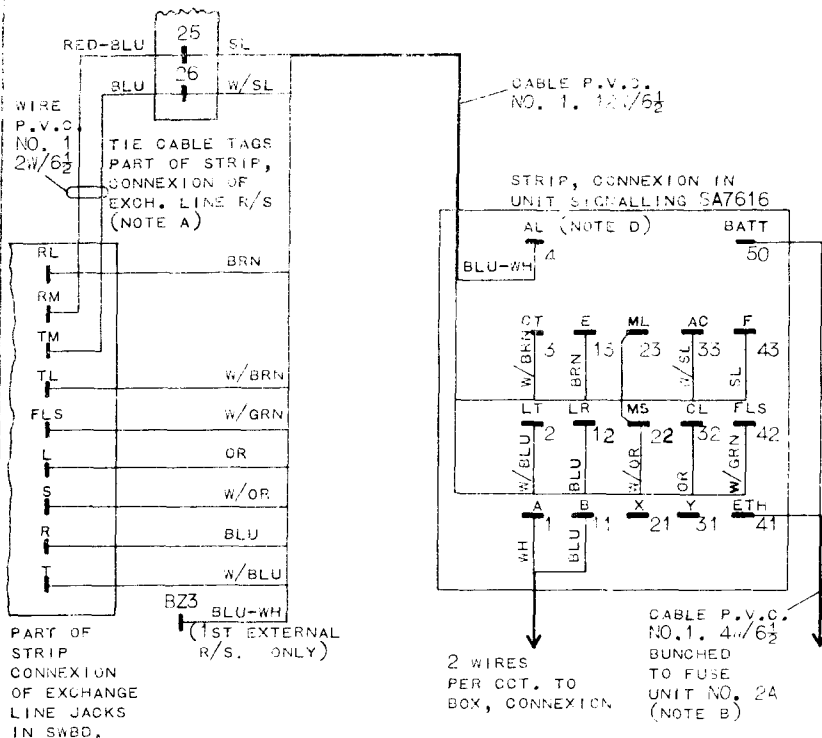


NOTES

- A. WHEN 11 OR 12 EXCHANGE LINES ARE REQUIRED ADDITIONAL FACE EQUIPMENT SHOULD BE PROVIDED AS DETAILED UNDER STORES.
- B. WHEN THE NUMBER OF EXCHANGE LINES IS INCREASED AFTER THE INITIAL PROVISION, REARRANGEMENTS SHOULD BE MADE IN ACCORDANCE WITH TABLE 2 OR LOCAL DISCRETION USED AND ADDITIONAL RELAY SETS PROVIDED TAKING ACCOUNT FUTURE REQUIREMENTS. REJUMPERING MAY BE NECESSARY TO SOME CCTS. BETWEEN THE EXCHANGE LINE RELAY SETS AND EXCHANGE LINE JACK STRIP CONNECTIONS IN THE SWITCHBOARD AND REALLOCATION OF THE LINE PAIRS IN THE BOX CONNECTION.

FIG. 4. PROVISION OF MORE THAN 12 EXCHANGE LINES.

IN ADDITION TO THE APPLICATION OF TABLE 2 AND FIG. 3, A UNIT SIGNALLING SA7616, (FOR EACH EXCHANGE LINE REQUIRED EXCEEDING 12) SHOULD BE PROVIDED. THESE EXCHANGE EQUIPMENTS SHOULD BE ASSOCIATED WITH THE OTHER WALL MOUNTED AUXILIARY EQUIPMENT.



ADDITIONAL STORES REQUIRED:- (NOTE C).

- UNIT SIGNALLING SA 7616
- CABLE P.V.C. NO. 1 4w/6 1/2 lb. (POWER SUPPLY)
- CABLE P.V.C. NO. 1 12w/6 1/2 lb. (SWBD. TO U.S.)
- CABLE P.V.C. NO. 1 ... 6 1/2 lb. (U.S. TO DISTN.)
- WIRE P.V.C. NO. 1 2w/6 1/2 lb. (SWBD JUMPER)

NOTES:-

- A. THE BREAK SPRINGS OF THE JACK ARE TAKEN VIA THE TIE CABLE TAGS TO AVOID RECABLING IF THE INSTALLATION IS EXTENDED TO A MULTIPLE SUITE. EXCHANGE LINE 13 TAGS SHOWN - FOR OTHER CIRCUITS TAGS 27 ONWARDS SHOULD BE USED.
- B. UP TO 4 CIRCUITS MAY BE COMMONED ON THIS SUPPLY CABLE WITH A ONE AMP FUSE IN THE FUSE UNIT NO. 2A. SEE PANEL 9 FOR FUSE UNIT NO. 2A DETAILS.
- C. THE ADDITIONAL FACE EQUIPMENT PROVIDED FOR 11-12 LINES COVERS UP TO A TOTAL OF 20 E/L. CAPS LAMP NO. 76A OPAL AND LAMPS NO. 2 45V TO BE PROVIDED PER CIRCUIT.
- D. 'AL' TAG TO BE COMMONED BETWEEN ALL EXTERNAL R/SETS.

POWER SUPPLY:- EQUIPMENT AT

A. POWER UNIT OPERATED INSTALLATIONS (+50V SUPPLY)

(I) WITHOUT UNITS SIGNALLING AND WITH UP TO 15 CORD CCTS. PROVIDE:-
POWER UNIT NO.62A (4 AMPS.)

OR (II) WITH UNITS SIGNALLING AND WITH UP TO 15 CORD CCTS. DETERMINE AS FOLLOWS:-
CURRENT PER CORD CIRCUIT = 0.25A
CURRENT PER SIG. UNIT = 0.25A (SIG. UNIT SA7616 NEGLECTED)
CURRENT FOR POSN. CCT. = 0.5A

E.G. † POSITION WITH 14 CORD CCTS. AND 5 UNITS SIGNALLING
(14 x 0.25) + (5 x 0.25) + 0.5 = 5.25A.

TABLE 3

PROVIDE FOR CURRENT UP TO	POWER UNIT
8 AMPS.	NO. 77A
12 AMPS.	NO. 78A

(III) RESERVE BATTERY (FOR EXCH. LINE SIGNALS UNDER VAINS FAILURE)
2 BATTERIES, SECONDARY NO.16(250 M.A.H.). (TRICKLE CHARGED FROM POWER UNIT).

(IV) FUSE UNIT NO. 2A & CONVERTER RINGING NO. 11A.

B. FLOATED BATTERY INSTALLATIONS (WHEN AUTHORISED).

(I) THE CURRENT REQUIRED SHOULD BE CALCULATED IN ALL THESE CASES AS IN A(II) ABOVE.

TABLE 4

PROVIDE FOR CURRENT UP TO	RECTIFIER NO.	CELLS SECONDARY NO. (24 OFF).
5 AMPS	61B	21/30
10 AMPS	61C	21/60
20 AMPS	61D	21/100

(II) FUSE UNIT NO. 2A & CONVERTER RINGING NO. 11A.

FIG. 7A. POWER UNIT OPERATED

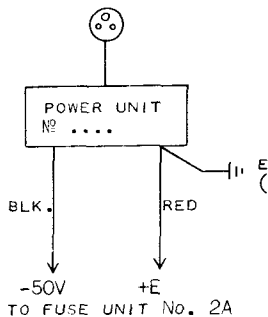


TABLE 5A. P.U. TO FUSE UNIT CABLING.

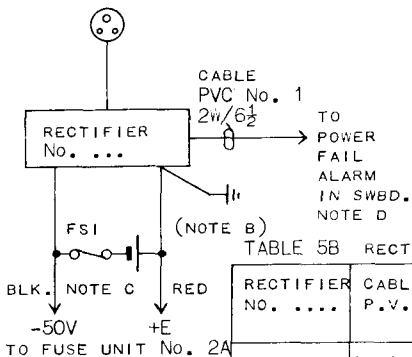
P.U. No.	CABLE 250V OR 660V P.V.C.	MAX. DISTANCE TO FUSE UNIT	SOCKET SOLDERING ON FUSE UNIT
62A	0.007SQ.IN.	17 YDS.	No. 5D
77A	0.04 SQ.IN.	50 YDS.	No. 5D
78A	0.06 SQ.IN.	50 YDS.	No. 6D

NOTES:-

A. INSERT STRAP MF2 TO E ON SWBD. MISC. STRIP, CONN. FOR POWER FAIL ALARM.

B. P.O. EARTH TO BE INDEPENDENT OF MAINS EARTH MUST BE WIRE COPPER SOFT 3/20 DIRECT TO POWER UNIT RECTIFIER, NOT TO BE TAKEN VIA ANY OTHER CABLING.

FIG. 7B. FLOATED BATTERY OPERATED



NOTES:-

C. PROVIDE FUSE MOUNTING No. 157A ADJACENT TO BATTERY RACK TO BE CONSTRUCTED LOCALLY.

D. CONNECT CABLE TO ALARM 1 AND 3 IN RECT. & EARTH ON ALARM 3 AND TO MF1 & MF2 IN SWBD. MISC. STRIP CONN. FOR POWER FAIL ALARM.

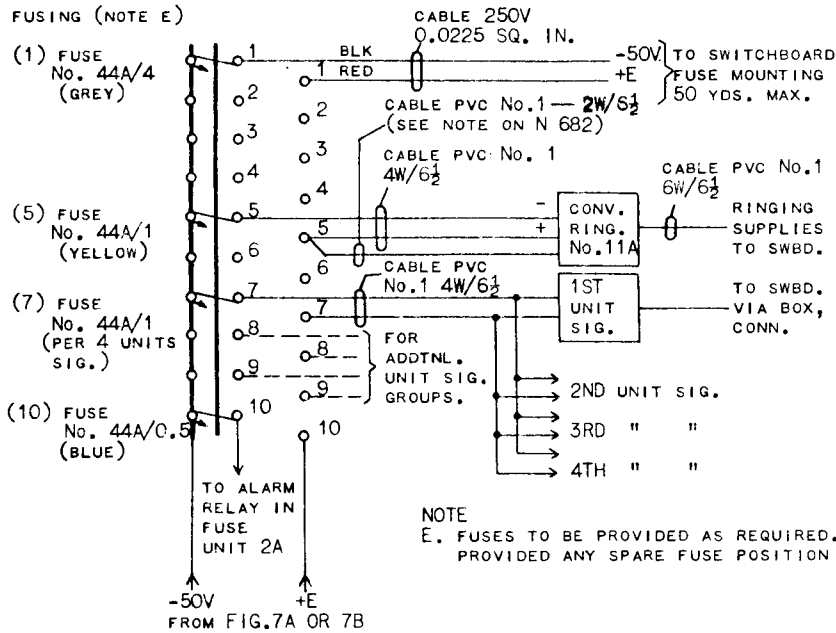
TABLE 5B RECTIFIER & BATTERY TO FUSE UNIT CABLING

RECTIFIER No.	CABLE 250V P.V.C.	MAX DISTANCE TO FUSE UNIT	SOCKET SOLDERING ON F.U.2A	FSI IN FIG. 7B FUSE No.
61B	0.01 SQ.IN.	26 YDS.	No. 5D	57/5
61C	0.04 SQ.IN.	50 YDS.	No. 5D	57/10
61D	0.06 SQ.IN.	50 YDS.	No. 6D	57/15

POWER SUPPLY - CABLING AND DISTRIBUTION (CONTD.)

FIG. 8. FUSE UNIT No. 2A, CABLING & DISTRIBUTION

FUSING (NOTE E)



NOTE
E. FUSES TO BE PROVIDED AS REQUIRED. WHERE MORE THAN 12 UNITS SIG.
PROVIDED ANY SPARE FUSE POSITION MAY BE USED.

SWITCHBOARD FUSE PANEL - FUSE ALLOCATION AND VALUE

TABLE 6

SWBD. FUSE No.	USE	FUSE No.	COLOUR	REMARKS
1-12	EXCH LINES 1-12	44A/0.5	LIGHT BROWN	1 FUSE/CCT 1 FUSE/2 CCTS I.E. PER R/S 1/SA 7602 IN POSN. } FUSE No.44A/1 FOR EACH R/S 1/SA 7602 IN POSN. } 11-12 AND 13-14 FUSE No.44A/0.5 FOR A } R/S 2/SA 7602 IN POSN. 11-12, 13-14 OR 15. 1 FUSE PER PANEL FIT WHEN AUDIBLE CLEAR PROVIDED
13-17	CORD CCTS 1-10	44A/1	YELLOW	
18	CORD CCTS 11 & 12	44A/1 OR 44A/0.5	YELLOW OR BLUE	
19	CORD CCTS 13 & 14	44A/1 OR 44A/0.5	YELLOW OR BLUE	
20	CORD CCT 15	44A/0.5	BLUE	
21-22	PILOTS	44A/1.5	RED	
23	OPERATORS CCT	44A/1	YELLOW	
24	AUD. CLEAR CCT	44A/0.5	BLUE	
25				
26	BATT. JACK	44A/3	BLACK	
27	CORD CCT (ODD	44A/0.5	BLUE	} FIT AS REQUIRED WHEN CORD CCT } METERING PROVIDED. } FIT FUSE No.44A/0.5 WHEN METERING IS } PROVIDED IN ACCORDANCE WITH N 2250. } FIT AT MAINS OPERATED INSTALLATIONS ONLY. } FIT WHEN METERING PROVIDED FOR 12, 24 OR } 48 (MAX.) M.U. No.3B RESPECTIVELY.
28	METERS (EVEN	44A/0.5	BLUE	
29	SPARE	-	-	
30	SPARE	-	-	
31	RES. BATT.	44A/0.5	BLUE	
32	POS. BATT.	44A/1 OR 44A/2 OR 44A/4	YELLOW OR PURPLE OR GREY	

SERVICE	FROM SWBD.	TO BOX CONN 2A OR 3A	WIRE COLOUR	REMARKS
EXTENSIONS	T R	A B	WHITE } COLOUR }	CABLE PVC No.1 41W/6½ PER 20 CCTS. STRAP T TO TL AND R TO RL IN SWBD. STRIP CONNEXION (UNDER TOP OF SWBD.). PROVIDE JUMPERING IN BOX CONN. AS NECESSARY.
EXCHANGE (1 - 12)	A B	A B	WHITE } COLOUR }	CABLE PVC No.1 21W/6½ PER 10 CCTS. PROVIDE JUMPERING IN SWBD. IN ACCORDANCE WITH FIG. 3 FOR CCTS. 1 - 12. PROVIDE JUMPERING IN BOX CONN. AS NECESSARY
EXCHANGE (13 - ...)	T R S L FLS TL TM RM RL 2 TIE TAGS BZ3	DIRECT TO UNIT SIG. SA7616	SEE FIG. 4	CABLE PVC No. 1 12W/6½ PER CCT. FROM EXCH. LINE. JACKS STRIP CONNEXION SEE FIG. 4 FOR DETAILS OF CONNEXIONS.
EXCHANGE (13 - ...)	A B			CABLE PVC No. 1 2W/6½ TO UNIT SIG. SA7616 AS REQUIRED.
INTER-SWBD. OR PRIVATE CCTS	T R S L FLS TL	SEE FIG. 2C A SEE B FIG. 2C	(WHITE) (BLUE) (WHITE) (ORANGE) (WHITE) (GREEN) (WHITE) (BROWN)	CABLE PVC No. 1 6W/6½ PER CQT FROM SWBD. TO BOX CONN. AND 8W/6½ PER CQT.U.S. TO BOX CONN. JUMPER 2W/6½ LINE CONNEXION TO A & B OF CQT. TM IN SWITCHBOARD STRAPPED AS REQUIRED. SEE UNIT SIG. SA... APPLICATION DGM.
RING SUPPLIES	TO CONVTR. RING. TML 6 4 2 2 8 10			(8W ONLY)
FUSE ALARM	FA	FUSE UNIT No.2A ALARM CONTACT	BLUE & WHITE	CABLE PVC No.1 2W/6½ BUNCHED
POWER SUPPLY	-50V INPUT ON FUSE PANEL +E EARTH BAR	FUSE 1 E1	BLACK RED	AS SHOWN IN FIG. 8
RESERVE BATTERY (MAINS OPERATED INSTLNS.)	CONNECT THE TWO BATTERIES SEC.No.16 IN SERIES AND CONNECT TO WIRING PROVIDED (RED +, BLACK-)			
EARTH	TO BOX CONNEXION, RECTIFIER, POWER UNIT, FUSE UNIT ETC. AS APPLICABLE.			WIRE COPPER SOFT 3/20 EARTH TO BE INDEPENDENT OF MAINS EARTH.

NOTE :- FOR METERING CABLING SEE DGM. N 2250

FIG. 9. EQUIPMENT LAYOUT AND STRIP CONNEXION ALLOCATION (CONTD.)
(ALL FIGS. VIEWED FROM REAR OF SWITCHBOARD)

FIG. 9F. STRIP CONNEXION FOR COMMON AND MISCELLANEOUS SERVICES.

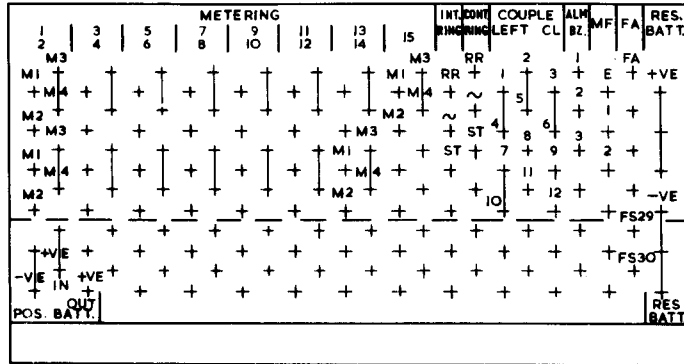


FIG. 9G. STRIP CONNEXION FOR KEYSENDER.

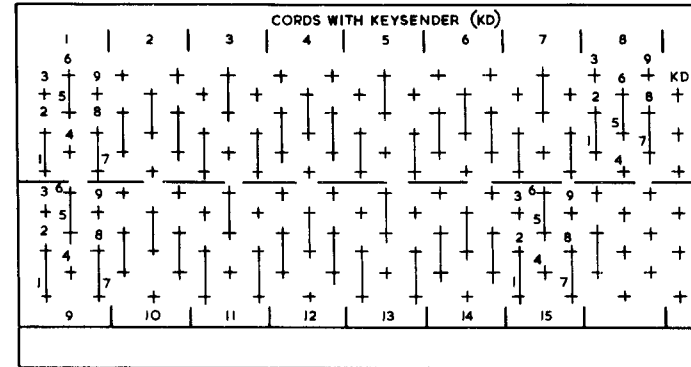


FIG. 9H. STRIPS CONNEXION FOR BATTERY AND EARTH SUPPLIES TO FACE EQUIPMENT.

