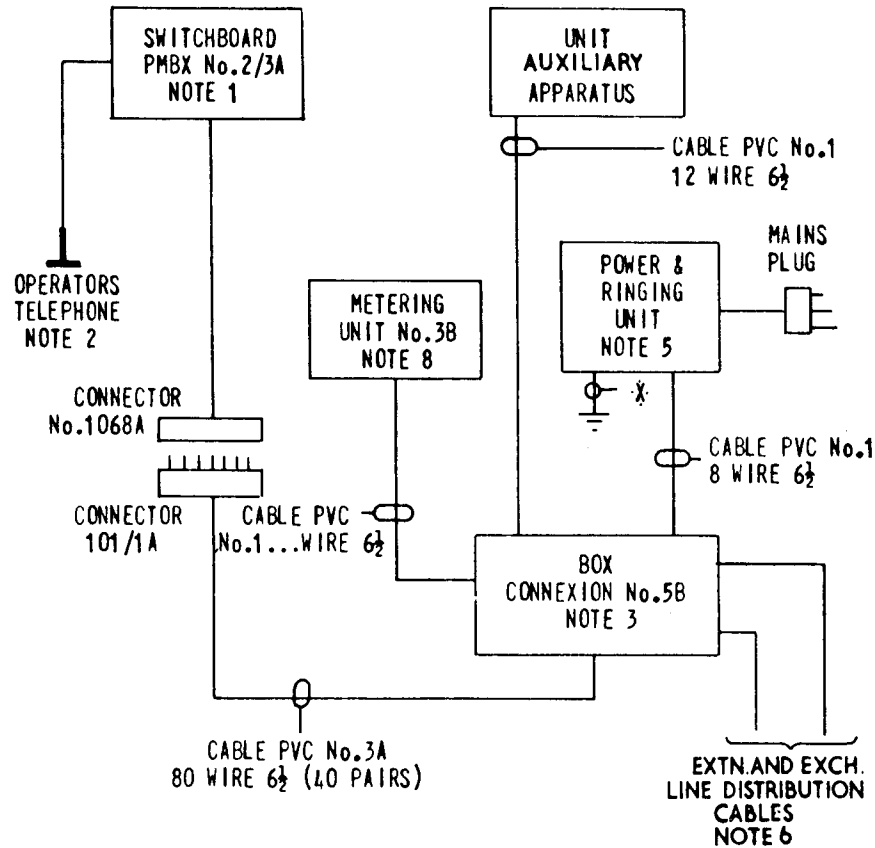


FIG. 1 TYPICAL INSTALLATION AND CABLING



* Wire Earthing No.9141 or 9142

P.O.
TELECOMMS.
HQRS.

PAPER:-W
CIRCULATION:
GENERAL

ISSUES	C	STORES SCHEDULE ADDED. TABLES RENUMBERED AND AMENDED. FIGS 2 & 3 AMENDED. OTHER MINOR AMENDMENTS.	21.10.69.
	B	NEW FORMAT.	4-7-66
	A	PANELS 1 & 7 REDRAWN. PANELS 2 & 3 TO SAT 164	21-11-63
		E.C.C. STEVENS S3	8-12-61

ISSUES	E	CHANGE-OVER CONTACT UNITS AMENDED. NOTE 5 AMENDED. MINOR AMENDMENTS.	24.6.80
		PAGES 1 TO 4 & 12 PHOTOCOPIED. NO AMENDMENT	1.9.77
	D	CHANGES TO OPERATORS TELE. CIRCUIT. MINOR AMENDMENTS. PAGES 9 & 10 MADE YELLOW. MADE 12 PAGES.	11.2.71

TABLE 1.

STORES SCHEDULE

ITEM	REFERENCE	PROVISION	REMARKS
Switchboard P.M.B.X. No. 2/3A.	SAM71640	} Per Installation	
Telephone No. 746...Grey. Cord Instrument No. 7/13 AT. Grey, 36" or 54" Rectifier Element No. 205. Switch No. 19B-1.	N846	} Per Installation if Required	} Operator's Telephone without Headset. See Figs. 2 & 3 Provided if U.A.A.96A is fitted. See Figs. 2 and 3
Telephone No. 740...Grey Headset No. 1 Grey. Plug No. 420 Grey with Cord 4/77AB 54". Jack No. 84C Grey. Cord Instrument No. 10/16 AT Grey 36" or 54" Part 1/DSP/1243 Part 23/DBU/372 Part 13/DBU/372 Rectifier Element No. 205. Part 1/DST/26	N840	} Per Installation if Required	} Operator's Telephone with Headset. See Figs. 4 and 5
Dial Automatic No. 25FA Clear. Cord Instrument No. 2/148E 8½".		} Per Installation if Required	} Provided if Inter-PBX Dialling Circuit is fitted. See Figs 3 and 5
Power Unit No. 100A/2	N700	} Per Installation without standby power	SEE NOTE 5
Power Equipment for standby arrangements	N2332	} Per Installation with standby power	See Note 5. For schedule of Equipment See Dgm N2332.
Box connexion No. 58. Connector No. 131/1A.		} Per Installation	
Equipment for subscribers private metering.	N1005	} As Required	See Note 8. For schedule of Equipment See Dgm. N1005
Unit Auxiliary Apparatus No. 96A.	N1113 N1127	} Per 2 wire Extension	} For terminating 2 wire Extension circuits.
Unit Auxiliary Apparatus No. 97.	N1116 N1140-N1143 N1147	} Per inter-PBX circuit as required	} For terminating Inter-PBX and Private Circuits A/WE and Genr Sig.

TABLE 1.

STORES SCHEDULE (CONTD)

ITEM	REFERENCE	PROVISION	REMARKS
Unit Auxiliary Apparatus No. 98.	N1117 N1144-N1146	Per Inter-PBX circuit As required	For terminating Private and Long Extension Circuits G/AC and G/BB Sig.
Unit Auxiliary Apparatus No. 99.	N1118 N1148		For Terminating Inter-PBX Earth and Loop dialling circuits.
Unit Auxiliary Apparatus No. 99A.	N1120 N1148		As U.A.A. 99 with additional loop Dialling out G/AC in facility.
Unit Auxiliary Apparatus No. 100.	N1119 N1149		For terminating Inter-PBX circuits SCDC Signalling.
Relay Set 1/SA7572. Relay Set 1/SA8299 and 2/SA8299	SAW75721 SAW82990 N762		For terminating Inter-PBX circuits 1VF signalling (SSAC13).
Equipment Signalling No.24/...			Rack for Mounting 1VF Signalling (SSAC13)

INSTALLATION NOTES (SEE FIG.1)

1. SWITCHBOARD P.M.B.X. No. 2/3A

The switchboard is supplied complete with the connector 1068A attached.

Connect as shown in Dgm. SAW 71640 the terminations on the switchboard connector are identified in Table 3

Check all relays to ensure that the armatures are correctly positioned on their knife edges before connecting power supply.

For circuit operation refer to Dgm. SA7164 together with diagram Notes SA7164

The rate book description for replaceable items are given in Table 1.

2. OPERATORS TELEPHONE:-

The apparatus to be provided is shown in Table 1.

Use Fig. 3 for installations where headset is not required.

Use Fig. 5 for installations where headset No. 1 is required.

N.B. At installations where operator's headset is used, the subscriber should be advised that clearing on operator to exchange calls requires the restoration of exchange key.

3. BOX CONNEXION No.5B

The box connexion is mounted on the brackets provided with it.

The power unit is mounted above the box connexion and coupled thereto.

U.A.A.s, if any, are mounted in a similar manner above the power unit. For details see E1, POWER, General, S 1051.

Select a position for mounting this assembly of units which is suited to local arrangements and maintenance access and which least detracts from the neat appearance of the installation.

The units should be fixed directly to the wall, without the aid of wall-boards unless the surface or construction of the wall makes this necessary.

Where the standard mounting arrangement cannot be followed, the power ventilation and chassis bonding requirements must be met.

The length of the cabling between the box connexion and the switch-board must not exceed 100 ft.

Dgms. SA 7164 and SAW 71640 should be requisitioned and stored under the clip fitting in the cover of the box connexion.

4. CABLING FROM BOX CONN. TO CONNECTOR

The conductors should be terminated on connector No. 101/1A by the method shown in Drg. SD113 and in accordance with the allocation given in Table 3. At the box connexion the conductors should be terminated on the soldered connexion points in accordance with Table 2.

5. POWER AND RINGING SUPPLIES

Power Units No. 100A/2 shall be ordered for all installations without stand by batteries. Requisitions for P.U.s No. 100A/2 will first be met by the provision of P.U.s No. 51A with separate Convertors Ringing No. 7, then later by the provision of P.U.s No. 51B and finally by either P.U.s No. 51B or P.U.s No. 100A/2. Power Units No. 51B (Dgm N699) consist of P.U.s No. 51A with Convertors Ringing No. 7 already fitted. Power Units 100A/2 include ringing convertors and are smaller than P.U.s 51B. From September 1971 requisitions may be marked P.U.s No. 100A/2 'ONLY' in circumstances where the smaller size is essential.

For installations requiring stand by batteries, provide equipment in accordance with E1, POWER, General S3351 and Dgm. N2332.

Ringin and battery leads are connected to the Box Connexion as indicated in Fig. 12.

It is important that an independant P.O. Earth be connected directly to the Power Unit or Rectifier using Wire Earthing No.9141 or 9142.

6. TERMINATION OF CIRCUITS

(i) Exchange lines, ensure that the 'A' wire and 'B' wire are not reversed.

(ii) Extension positions 1-12 may be used for the termination of 4 wire extns. and to be provided with 4 wire cables from box connexion.

For 4 wire extns. see explanatory circuit Fig. 5
Fig. 7

(iii) Extension positions 7-12 to be used for the termination of 4 wire extns., 2 wire extns. with U.A.A.s Inter-P.B.X. ccts., private ccts. etc. Connexions of extn. telephones for 4 wire and 2 wire working are shown on Dgm. N806

7. Additional audible alarm can be provided by connecting a bell or buzzer (See Dgm. N655 or 656) between terminal 'NA' and the battery terminal in the box connexion.

8. SUBSCRIBERS PRIVATE METERING

For installations requiring subscribers private S.T.O. metering facility:-

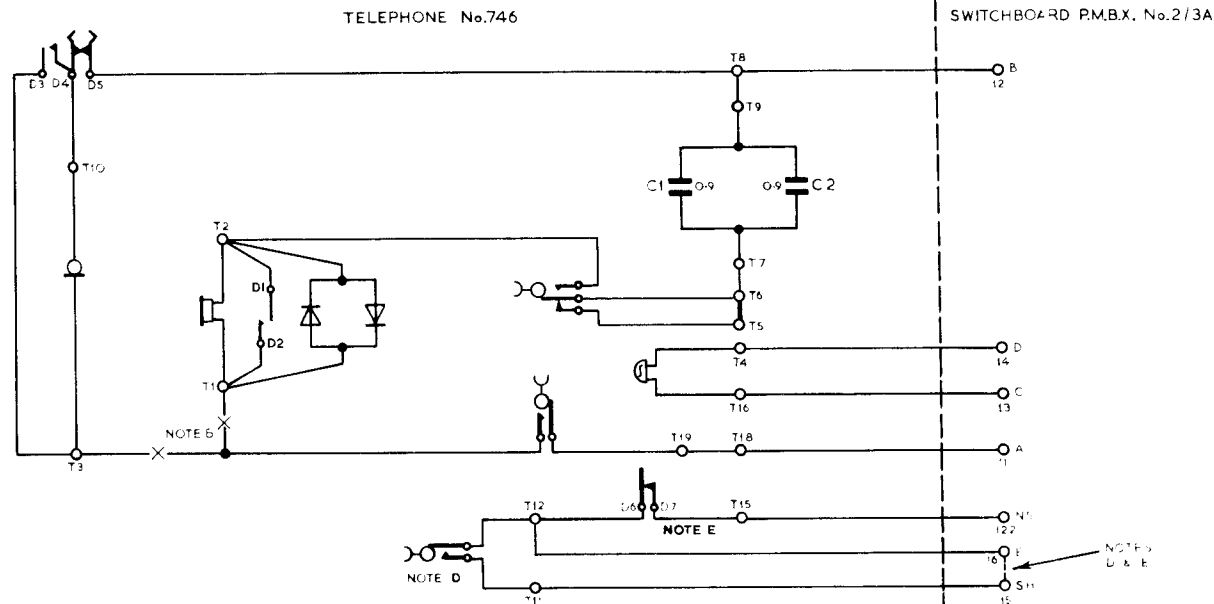
See Dgm. N1005 for all schemes.

TABLE 2 SWITCHBOARD APPARATUS SCHEDULE. SEE DGM SA 7164 FOR CIRCUIT CODE REFERENCES

ITEM	RATE BOOK TITLE
1AC, 2AC, 3AC	RELAY No.713
1CT, 2CT, 3CT	RELAY No.720
HA, HB, HC, HD, HE	RELAY No.719
1SA, 2SA, 3SA	RELAY No.721
1SB	RELAY No.15004
2SB, 3SB	RELAY No.15247
P	RELAY No.15005
NS	RELAY No.4919
LA, LB, LC, LD, LE	COIL, RETARD No.8444
EXCH. LINE CIRCUIT KEY	KEY No.1703
EXTN. LINE CIRCUIT KEY	KEY No.1704
OPERATOR SPEAK KEY	KEY No.1705
MISC. CIRCUIT KEY	KEY No.1706
1R1-3R1	RESISTOR, COIL No.36 - 200 Ω
R3	RESISTOR, COIL No.36 - 150 Ω
1R1-3R2 & R6	RESISTOR, COIL No.40 - 51 Ω
R4	RESISTOR, COIL No.40 - 1000 Ω
1R7-5R7	RESISTOR, COIL No.40 - 680 Ω
1R8-5R8	RESISTOR, COIL No.40 - 910 Ω
1R5-3R5	RESISTOR, CARBON No.156D - 200 K Ω
C1-C5	CAPACITOR, No.8004
1C6-3C6	CAPACITOR, PAPER No.7725
C9	CAPACITOR, ELECTROLYTIC No.3145
C7	CAPACITOR, ELECTROLYTIC No.3184
1MR1-3MR1	RECTIFIER-ELEMENTS No.1/12 AZ
1MR2-5MR2	RECTIFIER-ELEMENTS No.2N/12 AZ
CALL AND HOLD LAMPS	LAMP No.2 45V
BUZZER	BUZZER No.30A UNMOUNTED
EXCH. LINE DESIG. STRIP	STRIP, DESIGNATION No.36A
" " " LABEL	LABEL No.415
" " " COVER	STRIP, FLEXIBLE, No.26 CLEAR
EXTN. LINE DESIG. STRIP	STRIP, DESIGNATION No.37A
" " " LABEL	LABEL No.416
" " " COVER	STRIP, FLEXIBLE No.27 CLEAR
LAMP COVER STRIP	COVER, LAMP No.2A
LAMP LENS	CAP, LAMP No.76A CLEAR
KEY DUMMY (MISC. CCT. KEY)	KEY DUMMY No.4
COVER	COVER, SWBD. No.2 GREY
KEY HANDLE IVORY	HANDLE KEY No.18/16
" " " WITH BK. INSERT	" " No.18/16A
" " " WITH RED INSERT	" " No.18/16B
" " GREY WITH BK. INSERT	" " No.18/15A

SPARE

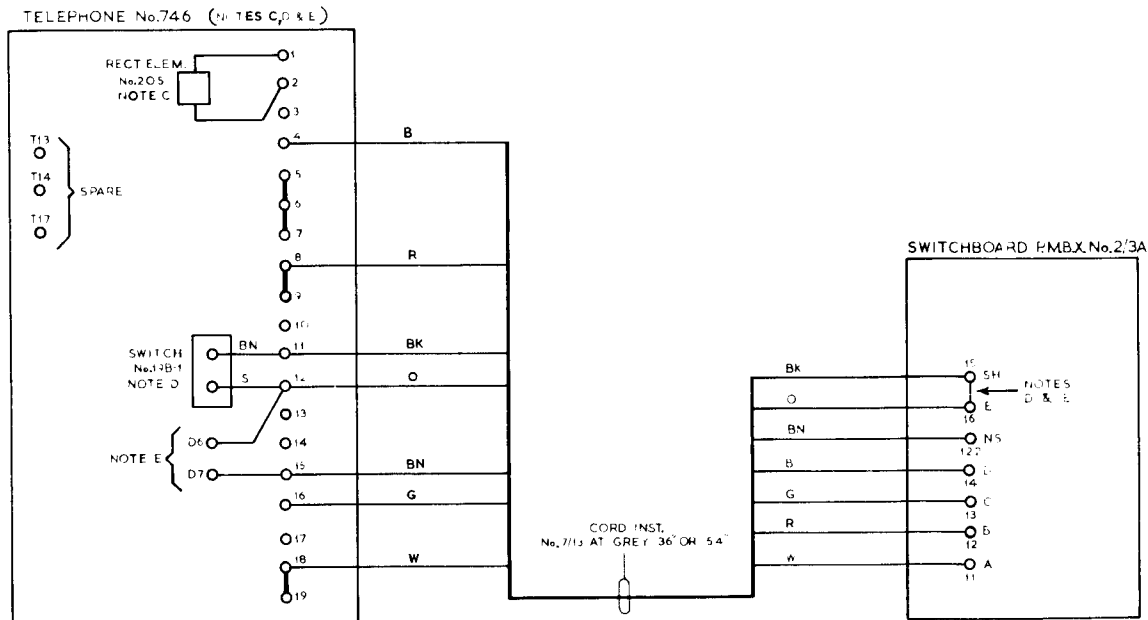
FIG. 2. OPERATORS TELEPHONE WITHOUT HEADSET



NOTES:—

- A. For apparatus required see table 1.
- B. Internal connexions of telephone No.746 not shown (see N846).
- C. Telephone No.746:—
Remove straps T4—T5 & T16—T17.
Provide Rectifier Element No.205 and connect as shown.
- D. When U.A.A.No.96 or 96A is fitted provide Switch No.19B-1 and connect as shown.
If fitted disconnect the strap between 15—16 on the Switchboard Terminal Block.
- E. When Inter-PBX dialling circuits are fitted change dial to, Dial Auto No.25 FA Clear and provide Cord Inst. 2/148E 8½" and connect additional contacts D6—D7 as shown. Strap 15—16 on the Switchboard Terminal Block when Note D does not apply.

FIG. 3. OPERATORS TELEPHONE WITHOUT HEADSET



SUPERSEDES PAGE 10
FOR NEW WORK

NOTES:—

- A. For apparatus required see Table 1.
- B. Internal connexions of Telephone No.740 not shown (see N840).
- C. Remove the gravity switch operating lever and restoring spring to make gravity springs permanently operated.
- D. Switchboard:—
Fit Jack No.84C grey in place of the dummy grommet on the base flange on the left-hand side of the switchboard. Wire Jack points to Switchboard Terminal Block (wiring already provided see Dgm. SAW 71640 sheet 1). Strap terminals 15-16 of block terminal.

E. Telephone No 740:—

See diagrams N840-848-849.

- Fit Part 1/DSP/1243 and Part 13/DBU/372 in position B.
- Fit Part 1/DST/26 and Part 23/DBU/372 in position C.
- Set latches B & C to setting 1.
- Set latches X & Y to setting 5.
- Remove straps T4-T5, T16-T17 & T17-T18.
- Connect Part 1/DSP/1243 as shown.
- Transfer red conductor of receiver from T1-T11.
- " blue " " Trans. " T3-T14.
- " " " dial " T2-T5.
- Provide and fit Rectifier Element No.205, connect as shown.

- F. When Inter-PBX dialling circuits are fitted change dial to Dial Auto No.25 FA Clear and provide Cord Inst.No.2/148E 8 1/2". Connect additional contacts D6-D7 as shown.

FIG.4. OPERATORS TELEPHONE CIRCUIT—WITH HEADSET (NOTE A)
TELEPHONE No.740.

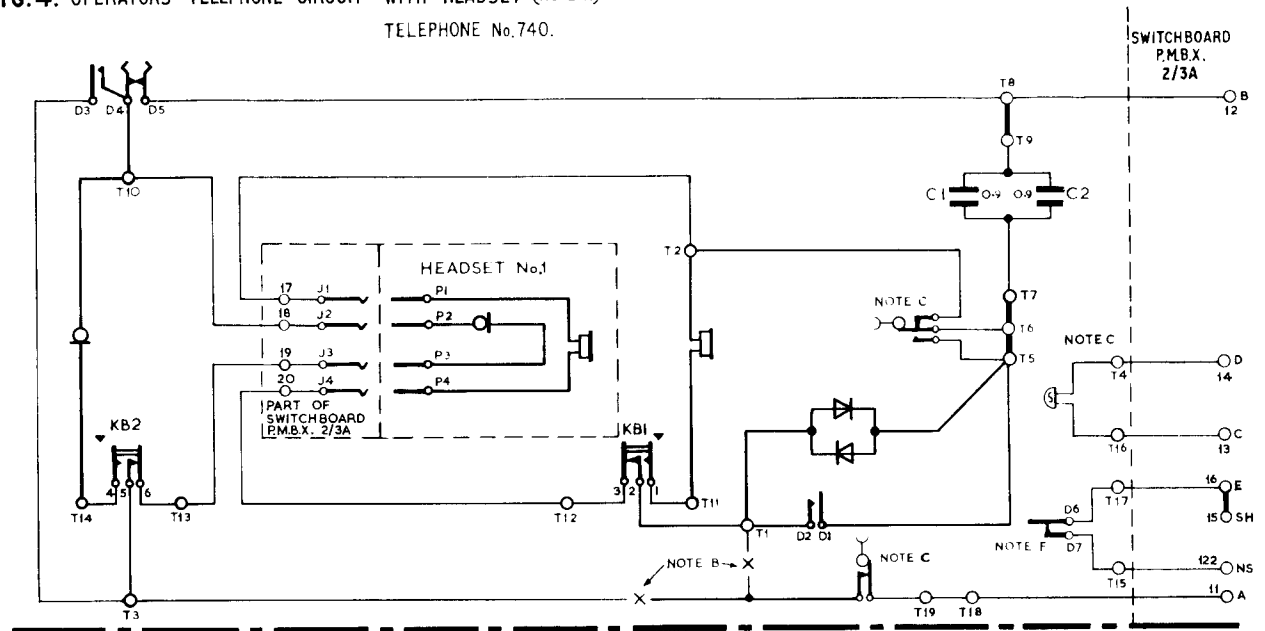
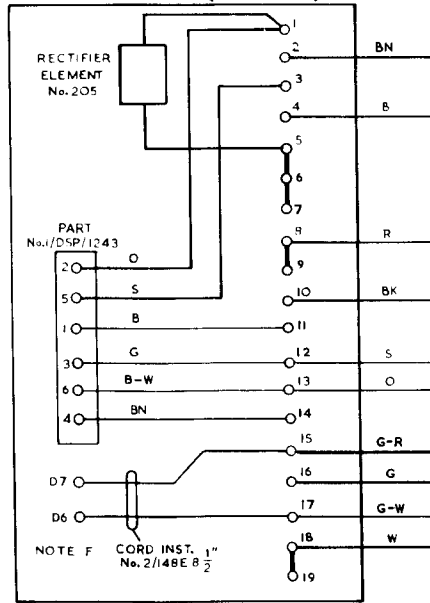
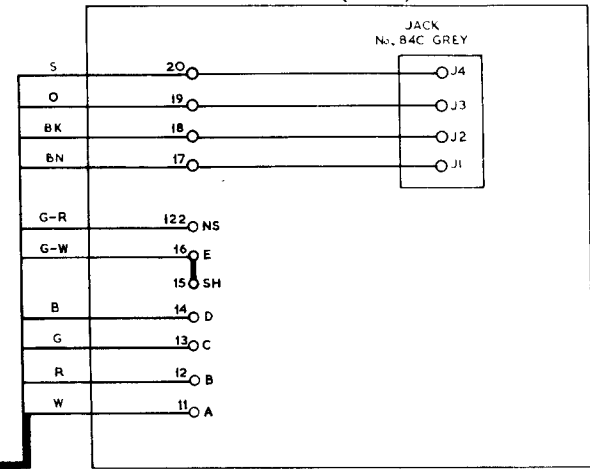


FIG. 5. OPERATORS TELEPHONE CIRCUIT—WITH HEADSET No.1 (NOTE A)

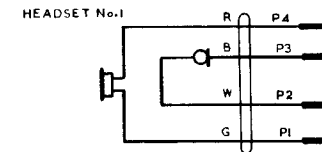
TELEPHONE No. 740 (NOTES C & E)



SWITCHBOARD P.M.B.X. 2/3A (NOTE E)



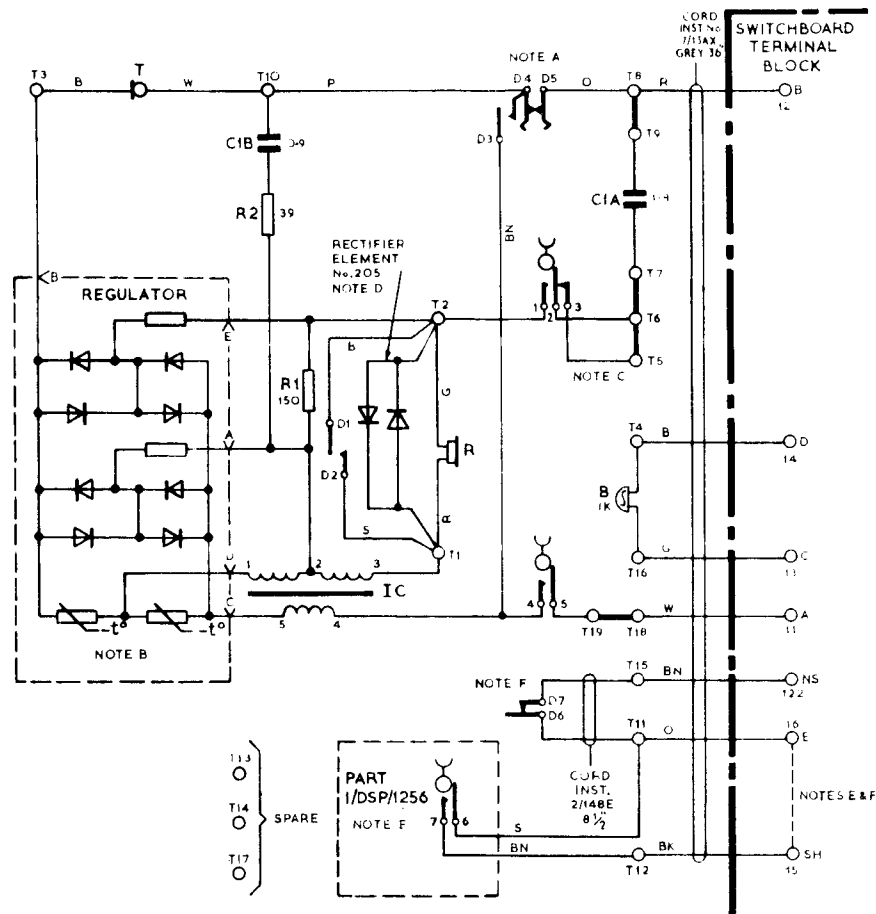
CORD INST. No.10/16 AT GREY 36" OR 54"



CORD No.4/77 AB 54" WITH PLUG No.420 GREY

SWITCHBOARD P.M.B.X. No. 2/3A.

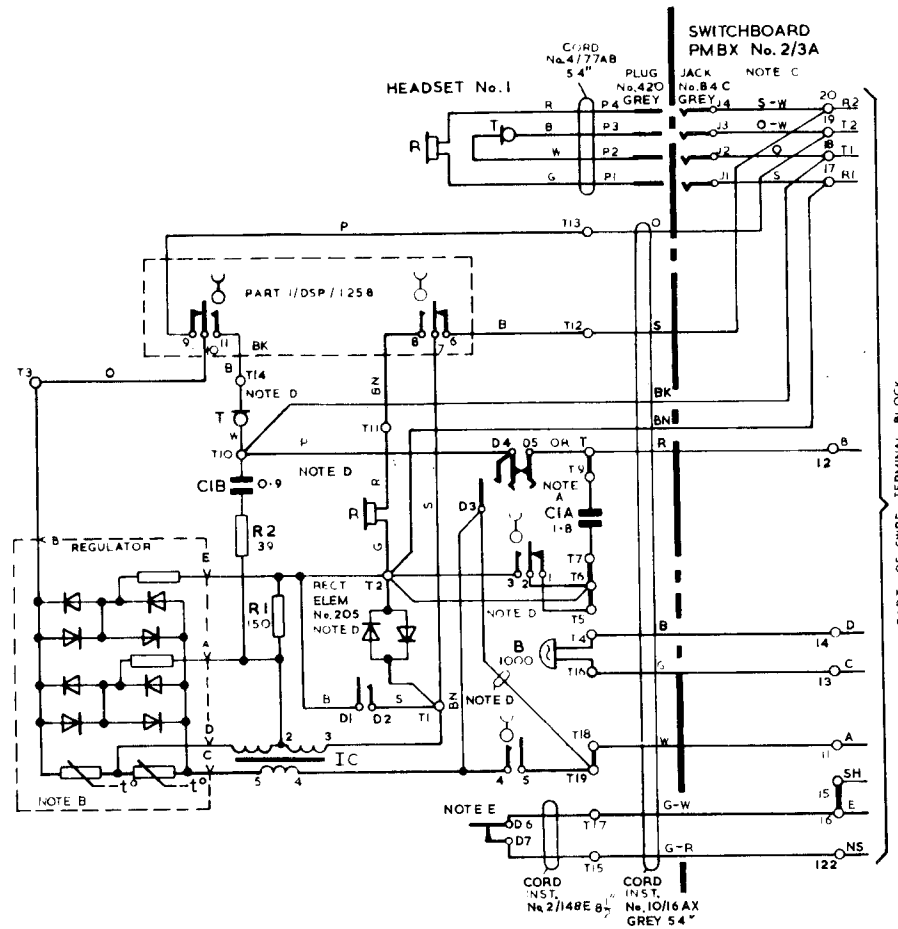
FIG. 6. OPERATOR'S TELEPHONE CIRCUIT WITHOUT HEADSET.



NOTES:—

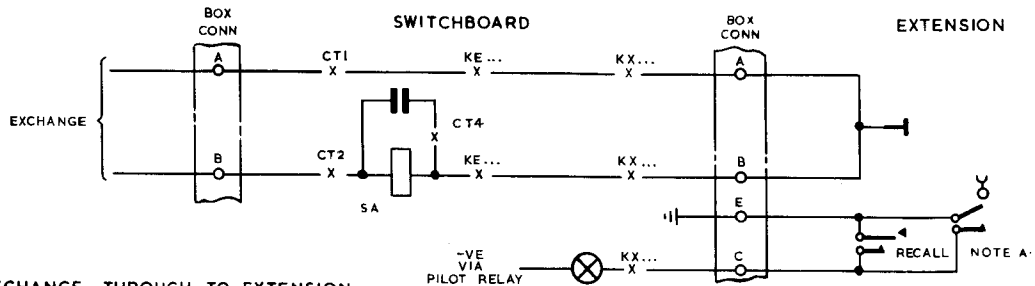
- A. CB Tele. has no dial. The pink and orange conductors are joined.
- B. When reversed in Jack the Regulator connects 'B', 'C' and 'D' together and is rendered inoperative.
- C. Remove Straps T5-T4, T17-T18 & T16-T17.
- D. Provide Rectifier Element No 205 between Terminals T1 & T2.
- E. When U.A.A. No.96 or 96A is fitted provide Part 1/DSP/1256 and connect as shown. If fitted disconnect the Strap between 15-16 on the Switchboard Terminal Block.
- F. When Inter-PBX Dialling circuit is fitted change Dial to Dial Auto No.25 FA Clear and provide Cord, Inst. No.2/148E 8 1/2" between D6-T11 and D7-T15. Strap 15-16 on the Switchboard Terminal Block when Note E does not apply.

FIG. 7. OPERATORS TELEPHONE CCT.
WITH HEADSET No.1.



NOTES:—

- A. CB Tele. Has no Dial. The Pink and Orange conductors are joined together.
- B. When reversed in jack the regulator connects 'B', 'C' & 'D' together and is rendered inoperative.
- C. Switchboard:—
Fit jack No.84C grey in place of the dummy grommet on the base flange on the left-hand side of the switchboard.
Wire Jack points to Swbd. Terminal Block (wiring already provided see Dgm SAW 71640 sheet 1). Strap terminals 15-16 of block terminal.
- D. Transfer red conductor of Rec. from T1 to T11. Transfer blue conductor of Trans. from T3 to T14. Provide strap T2-6. Remove straps T4-5, T15-16 and T17-18. Connect Terminals D3 and T19 using Cord, Inst.No.1/42E Brn 10 ½. Provide and fit Rect. Element No.205 across T1 and T2.
- E. When Inter-P.B.X. dialling circuit is fitted change Dial to Dial, Auto No. 25 FA clear and provide Cord, Inst.No. 2/148E, 8 ½ between D6 - T17 and D7 - T15.



NOTES:—

- A. SPRINGSET, AUXILIARY GRAVITY SWITCH SHOWN WITH HANDSET OFF.
- B. RELAY D IS DIFFERENTIALLY CONNECTED.
- C. CONTACTS OF RELAYS LL, LS & S ARE SHOWN IN OPERATED CONDITION.

FIG. 8 EXCHANGE THROUGH TO EXTENSION

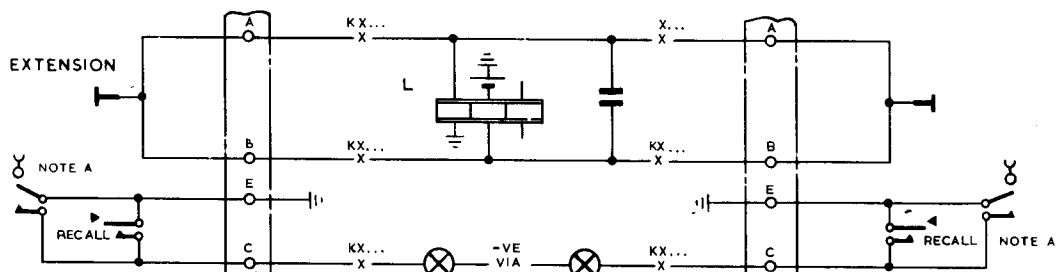


FIG. 9 EXTENSION THROUGH TO EXTENSION

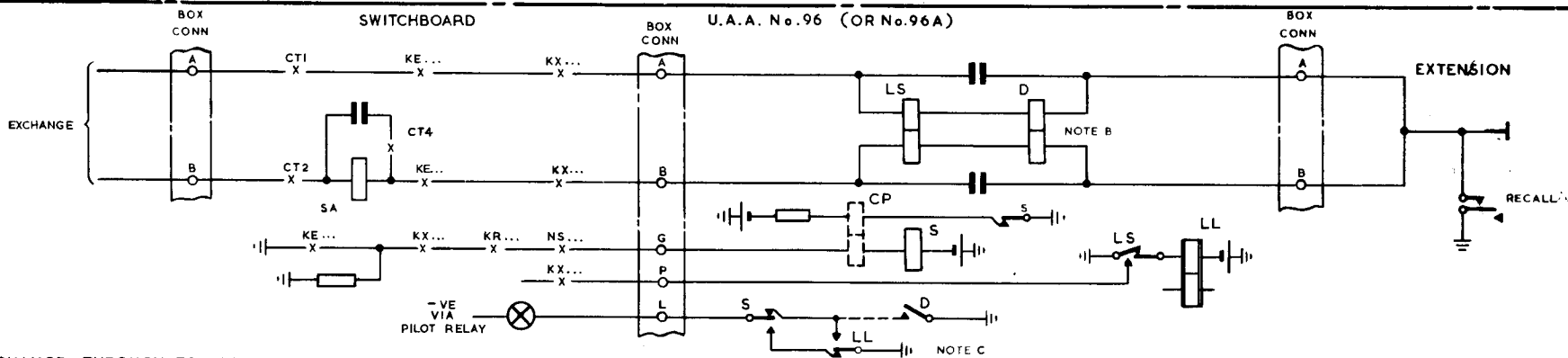


FIG. 10 EXCHANGE THROUGH TO EXTENSION WITH U.A.A.

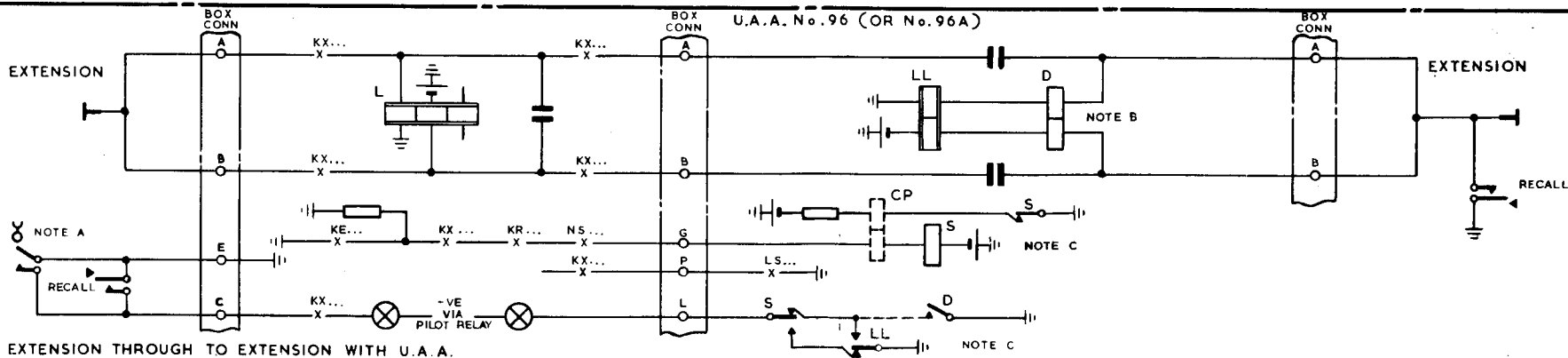


FIG. 11 EXTENSION THROUGH TO EXTENSION WITH U.A.A.

SWITCHBOARD P.M.B.X. No. 2/3A

TABLE 3
TERMINATION OF 80 WIRE CABLE IN
BOX, CONNEXION No. 5B (NOTE A)

WIRE	COLOUR	TEAM	WIRE	COLOUR	TEAM
1	W	A1	41	Y	B23
2	B	A2	42	B	B28
3	W	A3	43	Y	B4
4	O	A4	44	O	B5
5	W	A5	45	Y	B9
6	G	A6	46	G	B10
7	W	A13	47	Y	B14
8	BN	A14	48	BN	B15
9	W	A16	49	Y	B19
10	S	A17	50	S	B20
11	W	A19	51	Y	B24
12	B-W	A20	52	B-W	B25
13	W	A22	53	Y	B29
14	B-O	A23	54	B-O	B30
15	W	A25	55	Y	D24
16	B-G	A26	56	B-G	D25
17	W	A28	57	Y	D26
18	B-BN	A29	58	B-BN	D27
19	W	B1	59	Y	A9
20	B-S	B2	60	B-S	A10
21	W	B6	61	Y	A11
22	O-W	B7	62	O-W	A12
23	W	B11	63	Y	D28
24	O-G	B12	64	O-G	D29
25	W	B16	65	Y	D30
26	O-BN	B17	66	O-BN	D15
27	W	B21	67	Y	
28	O-S	B22	68	O-S	
29	W	B26	69	Y	
30	G-W	B27	70	G-W	
31	W	A15	71	Y	
32	G-BN	A18	72	G-BN	
33	W	A21	73	Y	
34	G-S	A24	74	G-S	
35	W	A27	75	Y	
36	BN-W	A30	76	BN-W	
37	W	B3	77	Y	
38	BN-S	B8	78	BN-S	
39	W	B13	79	Y	
40	S-W	B18	80	S-W	

SPARE (NOT CONNECTED)

NOTE

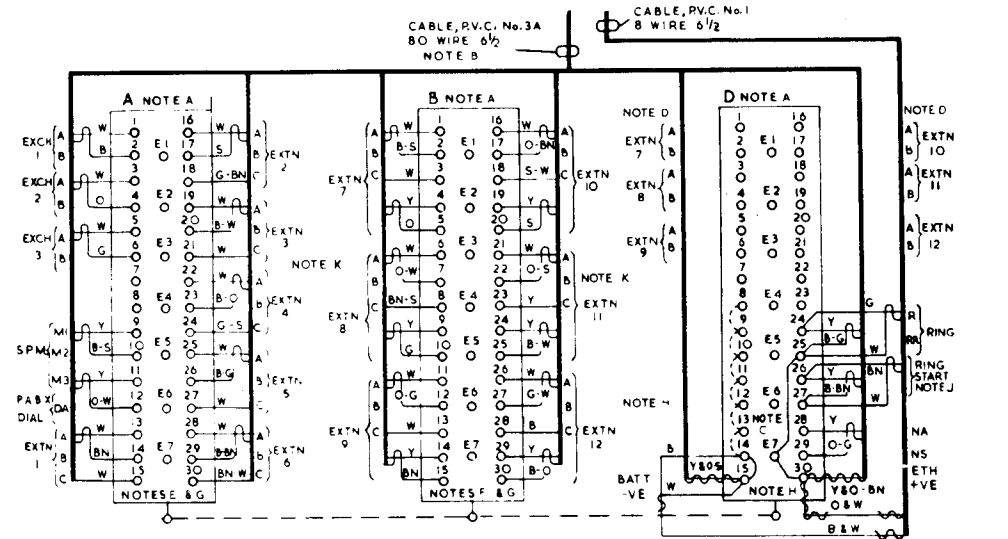
A LOOSE TIES SHOULD BE USED AND NOT A CABLE FORM AS THE WIRES ARE NOT TERMINATED IN A COLOUR CODE SEQUENCE THROUGHOUT

TABLE 4
TERMINATION OF CORD AND CABLE ON
SWITCHBOARD CONNECTORS (NOTE A)

CONNECTOR POINT NOTE D	SWBD TERM. No.	CORD & CABLE COLOUR (NOTE B)	USED FOR	CONNECTOR POINT NOTE D	SWBD TERM. No.	CORD & CABLE COLOUR (NOTE B)	USED FOR
1	94	W	A) EXCH LINE 1	41	53	Y	C) EXTN 11
2	95	B	B) EXCH LINE 1	42	58	B	C) EXTN 12
3	96	W	A) EXCH LINE 2	43	5	Y	CONTROL EXTN 7 NOTE C
4	97	O	B) EXCH LINE 2	44	6	O	CONTROL EXTN 8 NOTE C
5	100	W	A) EXCH LINE 3	45	7	Y	CONTROL EXTN 9 NOTE C
6	101	G	B) EXCH LINE 3	46	8	G	CONTROL EXTN 10 NOTE C
7	104	W	A) EXTN 1	47	9	Y	CONTROL EXTN 11 NOTE C
8	105	BN	B) EXTN 1	48	10	BN	CONTROL EXTN 12 NOTE C
9	107	W	A) EXTN 2	49	21	Y	CONTROL EXTN 12 NOTE C
10	108	S	B) EXTN 2	50	22	S	CONTROL EXTN 12 NOTE C
11	110	W	A) EXTN 3	51	23	Y	CONTROL EXTN 12 NOTE C
12	111	B-W	B) EXTN 3	52	24	B-W	CONTROL EXTN 12 NOTE C
13	113	W	A) EXTN 4	53	25	Y	CONTROL EXTN 12 NOTE C
14	114	B-O	B) EXTN 4	54	26	B-O	CONTROL EXTN 12 NOTE C
15	116	W	A) EXTN 5	55	27	Y	RA) RINGING
16	117	B-G	B) EXTN 5	56	28	B-G	RB) RINGING
17	119	W	A) EXTN 6	57	29	Y	RC) RINGING START
18	120	B-BN	B) EXTN 6	58	30	B-BN	RD) RINGING START
19	31	W	A) EXTN 7	59	1	Y	M1) STD METERS
20	32	B-S	B) EXTN 7	60	2	B-S	M2) METERS
21	36	W	A) EXTN 8	61	3	Y	M3) STD METER
22	37	O-W	B) EXTN 8	62	4	O-W	DA) P.A.B.X. DIAL
23	41	W	A) EXTN 9	63	61	Y	N.A)
24	42	O-G	B) EXTN 9	64	122	O-G	N.S)
25	46	W	A) EXTN 10	65	92	Y	EARTH
26	47	O-BN	B) EXTN 10	66		O-BN	BATTERY
27	51	W	A) EXTN 11	67	93	Y	BATTERY
28	52	O-S	B) EXTN 11	68		O-S	BATTERY
29	56	W	A) EXTN 12				
30	57	G-W	B) EXTN 12				
31	106	W	C) EXTN 1				
32	109	G-BN	C) EXTN 2				
33	112	W	C) EXTN 3				
34	115	G-S	C) EXTN 4				
35	118	W	C) EXTN 5				
36	121	BN-W	C) EXTN 6				
37	33	W	C) EXTN 7				
38	38	BN-S	C) EXTN 8				
39	43	W	C) EXTN 9				
40	48	S-W	C) EXTN 10				

NOTES:-
A WIRES 69-80 IN THE CABLE ARE NOT USED.
B CORD PAIRS ARE SLEEVED TO ASSIST IDENTIFICATION.
C THESE CONDUCTORS ARE PROVIDED FOR USE WITH U.A.A. AND ARE CONNECTED TO SPARE OR EARTHED TERMINALS AS SHOWN.
D CONNECTOR POINTS 1-40 ARE PROVIDED IN THE WHITE & 41-68 (NUMBERED 1-28) IN THE YELLOW MOULDING OF THE CONN. 1011A FOR THE METHOD OF TERMINATING THE CABLE ON CONNECTOR SEE DRG. 50 113

FIG.12. CABLING BOX, CONNEXION No.5B



NOTES

- TO ASSIST INSTALLATION THE TERMINAL BLOCKS IN THE BOX, CONN. No.5B HAVE BEEN DESIGNATED A, B AND D.
- TERMINATED ON THE SOLDERED CONNEXIONS OF THE BOX, CONN No. 5B.
- A SLEEVED BTC STRAP TO BE PROVIDED BETWEEN TERMINALS D25-E7-D30.
- TERMINALS 1-6 & 16-21 ON BLOCK 'D' TO BE USED FOR THE CONNEXION OF INCOMING LINES TO U.A.A. (S).
- EXTN. SIGNALLING EARTHS ON BLOCK 'A' ALLOCATED AS FOLLOWS:- EXTN.1-E7, EXTN.2-E1, EXTN.3-E2, EXTN.4-E4, EXTN.5-E5, EXTN.6-E6.
- EXTN. SIGNALLING EARTHS ON BLOCK 'B' ALLOCATED AS FOLLOWS:- EXTN.7-E1, EXTN.8-E4, EXTN.9-E6, EXTN.10-E2, EXTN.11-E5, EXTN.12-E7.
- ON ALL SPARE EXTN. CCTS THE 'C' TERMINAL SHOULD BE CONNECTED TO THE EARTH TERMINALS AS SHOWN IN NOTES E & F.
- ON POWER UNIT No.51A THE -VE IS CONNECTED TO THE BUNCHED B&W PAIR AND THE +VE TO THE BUNCHED O&W PAIR AND STRAP D14-D15 PROVIDED. WHEN A POWER UNIT No.52A WHICH HAS TWO SEPARATE D.C. OUTPUTS IS USED THE 'W' WIRE OF THE B&W PAIR IS CONNECTED TO OUTPUT 1 AND THE 'B' WIRE TO OUTPUT 2. THE O&W PAIR IS BUNCHED AND CONNECTED TO THE +VE STRAPS SHOULD BE PROVIDED BETWEEN TERMINALS D8-14 AND THE STRAP BETWEEN D14-15 OMITTED. TERMINALS D8-13 AND EARTH TERMINALS D, E1-6 USED FOR THE CONNEXION OF BATT AND EARTH TO U.A.A. (S).
- ONLY USED WHEN CONVERTOR RINGING No.10A IS FITTED.
- EXTN. C WIRES USE SPLIT PAIRS.