

SD-65680-0101 PBX NO. 507A OR 507B STATION LINE, TRUNK, CONNECTING, TELEPHONE, RINGING, BUZZER AND 2WAY RINGDOWN TIE TRUNK CIRCUITS
 155 11 120 C.D. ISS.

CIRCUIT NOTES:

FEATURE OR OPTION	FIGS. OR WIR.	PROVIDE	
		APP. OR WIR.	QUANTITY
BAT. FEED AND FIRST TRK. KEY CKT.	16		1 PER PBX
INTERMEDIATE TRK. KEY CKT.	507A 507B		1 PER PBX 3 PER PBX
LAST TRK. KEY AND CONNECTING CKT.	18		1 PER PBX
STATION LINE CKT.	507A 507B		7 PER PBX 12 PER PBX
ATTENDANTS KEY CKT.	5		1 PER PBX
TRK. SIG. CKT.	21		1 PER TRK.
RINGING AND AUXILIARY SIGNAL CIRCUIT	WITH HAND GENERATOR	E	1 PER PBX
	WITHOUT HAND GENERATOR	D	1 PER PBX
FUSE CKT. FOR USE WITH CENT. OFF. BAT. SUPPLY OR BLDG. BAT. SUPPLY WHEN BATS. ARE INACCESSIBLE FOR REPLACEMENT OF FUSES.	14		1 PER PBX
LINE REL.	IS NOT REQ.	A	
	IS MTD. INSIDE PBX	B	
	IS MTD. OUTSIDE PBX	C	
AUDIBLE SIGNAL	DC BUZZER	9	W
	AC OPERATED RINGER		
ATTENDANTS TELEPHONE SET	FOOT SWITCH REQUIRED	15	1 PER PBX
	FOOT SWITCH NOT REQUIRED		X
STATION LINE CKT. MODIFIED FOR USE WITH TIE TRK. CKT.	302 TYPE DIAL	8	Z
	SEE NOTE 106		Y
	500 TYPE DIAL	20	ZG
	SEE NOTES 105 AND 106		ZF
TIE TRK.	LOCKING	P	1 PER FIG. 10
	NON-LOCKING	Q	
AUX. LINE CKT. FOR USE WITH LINES EQPT. WITH TEL. RAIN DISPATCHING APP.	IS REQ.	13	N
	IS NOT REQ.		
INDIVIDUAL AUD. SIG. PROVIDED WITH TRAIN DISPATCHING OR CODE RINGING LINE.		19	
TEL. SET WITH 5 PICK-UP KEYS & ONE HOLD KEY WHEN TRK. LOOP EXCEEDS CAPABILITY OF PBX, AND FIVE TRUNKS OF PBX TO BE USED		M	

FIGS.	APP. OR WIRING
1	A Z ZD
2	B Y ZE
3	C X ZF
4	D W ZG
5	E V ZH
6	
7	T
8	S
9	R
10	Q
11	P
12	N
13	M
14	K
15	J
16	H
17	G
18	F
19	
20	E
21	
22	
	ZA
	ZB

CIRCUIT NOTE 101 CONT. ON SH-0105

13D DWG. ISS.
13D C.D. ISS.

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FIG. 9 DC OPERATED BUZZER

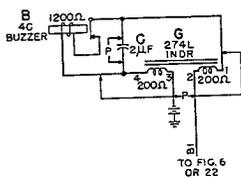


FIG. 14. FUSE CKT.

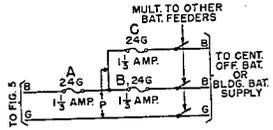


FIG. 15 AUD. SIG. FOOT SWITCH

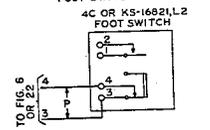


FIG. B LINE REL. MTD. INSIDE PBX

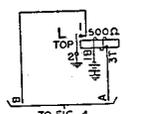


FIG. C LINE REL. MTD. OUTSIDE PBX

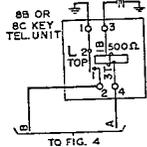


FIG. E HAND GEN. CKT.

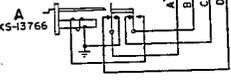


FIG. 21 TRK. SIG. CKT.

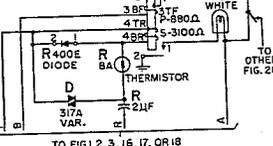
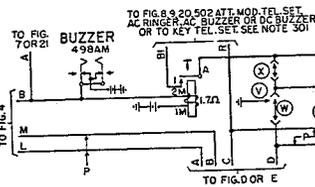


FIG. 6 (MFR DISC) RINGING AND AUXILIARY SIGNAL CONTROL CIRCUIT



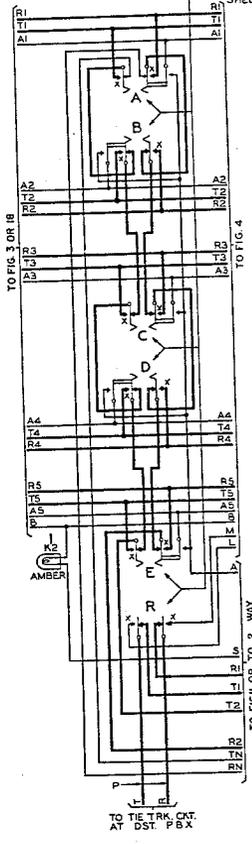
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13D DWG. ISS.
13D C.D. ISS.

101 (CONT.)

FEATURE OR OPTION	PROVIDE	
	FIGS. OR WIR.	QUANTITY

FIG. 10 STATION LINE CKT. MODIFIED FOR USE WITH THE TRK. CKT.



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FIG. 19 INDIVIDUAL AUDIBLE SIGNAL

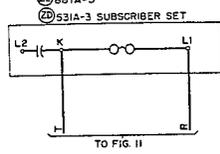


FIG. 13 AUX. LINE RELAY

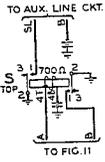


FIG. 12 (MFR DISC) INDIVIDUAL AUDIBLE SIGNAL

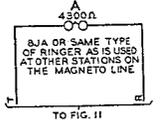
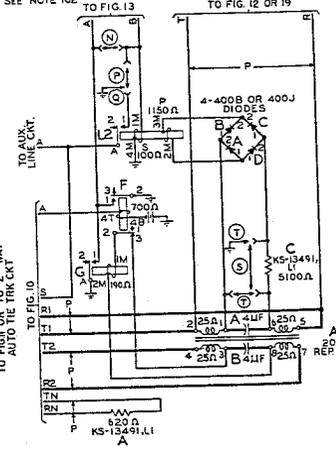


FIG. 11 TIE TRK. CKT. SEE NOTE 102



13D DWG. 15
13D C.D. 15

101 (CONT.)

FEATURE OR OPTION				PROVIDE		
				FIGS.	APP. OR WIR.	QUANTITY
P.BX. MODIFIED FOR TIE TRK. OPERATION	WHEN INCOMING RING IS THRU OR FROM	LOOP	MINIMUM RINGING VOLTAGE AT DISTANT P.BX. 60V. 75V. 95V.			
	BLOCKING CAPACITORS	LESS THAN	1200Ω 1700Ω 1950Ω		S	
	BY-PASSED CAPACITORS OR INDUCTOR OR RELAYED OR DIRECT	GREATER THAN	1190Ω 1690Ω 1940Ω		T	
	MAGNETO LINE 3 BAR GEN.	GREATER THAN	2000Ω 3000Ω 4000Ω		S	
	MAGNETO LINE 5 BAR GEN.	GREATER THAN	3000Ω 3600Ω		S	

102. FIG. 11 MAY BE USED UNDER ANY OF THE FOLLOWING CONDITIONS:

TYPE OF SERVICE	CONNECTS TO
A RINGDOWN TIE TRK. USING DIRECT CONDUCTORS	ALL TYPES OF P.BX. RINGDOWN TIE TRK. CKTS.
B RINGDOWN TIE TRK. USING TOLL FACILITIES	TOLL SYSTEMS SIGNALING INTERMEDIATE RINGERS
C RAILROAD MESSAGE & PHANTOM CKTS. DERIVED FROM LINES EQUIPPED WITH TRAIN DISPATCHING SIG. APP.	FIG. 13 & AUX. LINE CKTS. ARR. FOR USE WITH LINES EQUIPPED WITH TRAIN DISPATCHING SIG. APP.
D FULL PERIOD TALKING SERVICE	TOLL SYSTEMS SIGNALING CKT. FOR FULL PERIOD TALKING SERVICE
E TOLL OR LOCAL SUBSCRIBER ON A 2 WAY RINGDOWN BASIS	TOLL OR LOCAL SYSTEMS RURAL SUBSCRIBERS CKT.
F TRK. TO A MAGNETO CENT. OFF. WHEN NIGHT CONN. IS NOT REQ.	MAGNETO CENT. OFF. SUBSCRIBERS LINE CKT.
G INDIVIDUAL OR PARTY MAGNETO STATION LINE CKT.	MAGNETO SUBSCRIBER LINE WITH 3 OR 5 BAR HAND GENS.
H AS A STATION ON A MAGNETO PARTY LINE	MAGNETO SUBSCRIBERS LINE WITH 3 OR 5 BAR HAND GENS.

(MFR 103) WHEN ATTENDANT'S TELEPHONE SET IS OF THE 302 TYPE MODIFY TEL. SET BY ADDING 378 VAR. AS SHOWN IN FIG. 8. WHEN TEL. SET RINGER IS TO BE USED AS AC AUX. AUD. SIG. THE "Y" 302E-3F OR "Z" 302E-3F TEL. SET SHALL BE MODIFIED BY REPLACING THE D3AL CORD WITH A D4AH CORD CONNECTED AS SHOWN, AND SPREADING THE CONDS APART SO THAT THE CLAPPER DOES NOT STRIKE THEM WHEN RING CURRENT IS APPLIED. WHEN THE DC BUZZER IS SPECIFIED, THE D3AL CORD SHALL BE MODIFIED BY TAPING THE ENDS OF THE YELLOW CONDUCTOR. THE RED LEAD WILL BE CONNECTED FROM "R" OF THE P.BX. TO "L1" OF THE TEL. SET, AND THE GREEN LEAD FROM "T" OF THE P.BX. TO "L2" OF THE TEL. SET.

CIRCUIT NOTES CONT. ON SH-0106.

			130	DWG. ISS.
			130	C.D. ISS.

104. RECORD OF FIGURES, WIRING AND APPARATUS CHANGES

CHANGED OR ISS	IF JOB RECORDS DO NOT SPECIFY	THIS OPTION HAS FURN.	SEE NOTE	USE IN CIRCUIT		
				STD	RAM	HD
4D	H	NONE	H			
5D			FIGS. 16, 17 & 18		FIGS. 1, 2 & 3	
5D			FIG. 19		FIG. 12	
6D	J OR K	K	J		K	
6D			FIG. 2C			
7B	F OR R	R	F		R	
9B			R		F	
9B	E	NONE	E			
10D			FIG. 21		FIG. 7	
10D			FIG. 22		FIG. 6	
10D			K		J	
10D	ZA, ZD OR ZC	ZA OR ZC	ZD		ZA, ZC	
10D	ZD OR ZE	ZD	ZE		ZD	
12D	TEL SETS		ZF		G	
12D			ZG		H	
12D					FIG. 8	
13D	COROS		D4BK-3		D4AS-3	
13D	DTIDES		400J		400B	
13D	FOOT SWITCHES		KS-1621L2		4C	
13D	KEY TEL UNITS		8C		8B	

105. WHEN ATTENDANT'S TEL SET IS OF THE 500 TYPE AND THE TEL SET RINGER IS USED AS AC AUX AUD 51G ADJUST RINGER VOLUME TO SUIT ATTENDANT. WHEN THE DC BUZZER IS SPECIFIED, THE YELLOW AND BLACK CONDUCTORS OF THE D4AS-3 OR D4BK-3 CORD ARE NOT USED, AND BOTH ENDS OF THESE CONDUCTORS SHOULD BE DISCONNECTED FROM THEIR TERMINALS AND TAPED.

106. IN THE 500L-3 OR 500LR-3 ATTENDANT'S MANUAL TEST SET, AN APPARATUS BLWK IS USED IN PLACE OF THE DIAL, AND THE G LEAD IS CONNECTED TO THE "RAM" TERMINAL, INSTEAD OF TO THE "F" TERMINAL, AS IN DIAL SETS.

INFORMATION NOTES:

301. WHEN THE 1A KEY TEL SYSTEM IS TO BE USED FOR THE ATTENDANT OF THIS PBX, CONNECTIONS SHALL BE MADE AS FOLLOWS:

(MFR DISC)	TEL SET TO BE USED		SEE FIG.
	TEL SET WITH 5 PICK-UP KEYS & ONE HOLD KEY FOR USE WHEN TRX LOOP EXCEEDS CAPABILITY OF PBX	FIVE TRKS OF PBX TO BE USED	
	LESS THAN FIVE TRKS OF PBX TO BE USED		103
	TEL SET WITH 6 PICK-UP KEYS USED WITH 507B PBX TO ENABLE THE ATTENDANT TO ANSWER A TRX WHEN ALL THE CONNECTING CKTS ARE BUSY		101

(MFR DISC) 302. EXISTING WIRE IS SHOWN DOTTED. ADDED WIRE IS SHOWN SOLID.

303. WHEN THE DC OPERATED BUZZER IS USED THE RINGER IN THE 1A KEY TEL SYSTEM IS NOT USED. WHEN THE 1A KEY TEL SYSTEM RINGER IS TO BE USED AS THE AC AUX AUD SIGN., TEL SET SHALL BE MODIFIED FOR COMMON RINGER OPERATION.

304. THESE SETS SHALL BE EQUIPPED WITH A VARISTOR, AND THE GONGS SHALL BE SPREAD APART SO THAT THE CLAPPER DOES NOT STRIKE THEM WHEN RINGING CURRENT IS APPLIED.

HOLDING RANGES FOR VARISTOR HOLD CIRCUIT

TYPE OF CENTRAL OFFICE		MAX CENT. OFF. SUB. COND LOOP LIMIT	CENT. OFF MIN VOLTS	MAX TRK COND LOOP	
				OPT ZA, ZC	OPT ZB
MANUAL	NOS. 1, 1C, 1D 10 AND 11	635	20	200	450
		675	21	210	490
		785	20	305	600
		835	21	365	650
	1200	24	745	1050	
	WACH RING, NO. 11			*	*
	NO. 9C AND 12			220	450
PANEL		635	21	220	450
		785	24.5	355	600
		885, 1000, OR 1200	45	*	*
CROSSBAR	NO. 1 NO. 5	1200	45	1045	*
SXS		635, 735 OR 885	45	730	*
		735 OR 885	46	830	*
		1200	45	1000	*
		1300	46	1100	*

*NOT LIMITING.

13D	12D	11D	DWG. ISS.
13D	12D	11D	DWG. ISS.

BATTERY SUPPLY FEEDER CONDUCTOR RESISTANCE

MINIMUM VOLTAGE CENTRAL OFFICE OR BUILDING BATTERY	MINIMUM PBX VOLTAGE - FOUR OR MORE STATIONS											
	16	18	20	22	24	26	28	30	32	34		
18	13	-	-	-	-	-	-	-	-	-	-	-
20	26	12	-	-	-	-	-	-	-	-	-	-
21	34	18	5	-	-	-	-	-	-	-	-	-
22	40	24	10	-	-	-	-	-	-	-	-	-
23	47	30	16	5	-	-	-	-	-	-	-	-
24.5	57	39	24	12	2	-	-	-	-	-	-	-
31	100	77	59	44	31	20	11	3	-	-	-	-
32	108	84	65	49	36	25	15	7	-	-	-	-
40	162	131	106	88	72	56	46	36	27	19	-	-
44	190	155	130	108	90	74	61	50	40	31	-	-
45	196	161	135	113	94	79	65	54	44	35	-	-
47.5	213	176	148	125	106	89	75	63	52	43	-	-

BATTERY SUPPLY FEEDER CONDUCTOR RESISTANCE

MINIMUM VOLTAGE CENTRAL OFFICE OR BUILDING BATTERY	MINIMUM PBX VOLTAGE - THREE OR LESS STATIONS											
	16	18	20	22	24	26	28	30	32	34		
18	26	-	-	-	-	-	-	-	-	-	-	-
20	52	23	-	-	-	-	-	-	-	-	-	-
21	66	35	10	-	-	-	-	-	-	-	-	-
22	79	47	21	-	-	-	-	-	-	-	-	-
23	92	59	31	9	-	-	-	-	-	-	-	-
24.5	112	76	47	24	4	-	-	-	-	-	-	-
31	197	151	115	85	61	40	22	7	-	-	-	-
32	210	162	126	96	70	48	30	14	-	-	-	-
40	315	259	210	171	140	113	90	70	52	37	-	-
44	368	304	252	209	175	145	120	97	78	62	-	-
45	382	316	263	219	184	153	128	105	85	68	-	-
47.5	414	345	290	243	205	173	146	122	101	83	-	-

WHEN THE BATTERY SUPPLY FOR THIS CIRCUIT IS OBTAINED FROM THE BUILDING BATTERY SUPPLY THE FOLLOWING APPLIES:

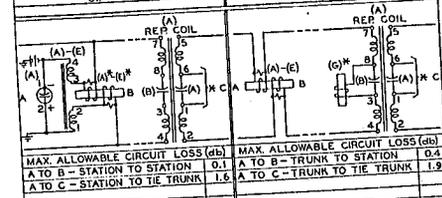
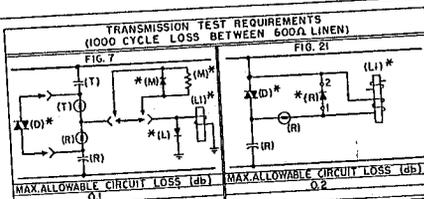
CURRENT DRAIN IN AMPERE HOURS PER BUSY HOUR *
20V.

DRAINS LIST 1 (FOR POWER PLANT)	BAT.	GRD.
DRAINS LIST 2 (FOR DISTRIBUTING EQPT.)	.0035	.0035
	.035	.035

* THESE DRAINS ARE PER STATION OR TIE LINE, AND ARE BASED ON A TRAFFIC ACTIVITY OF 200 CALL SECONDS PER STATION PER BUSY HOUR. FOR OTHER TRAFFIC ACTIVITY THE DRAINS WILL BE DIRECTLY PROPORTIONAL. THESE DRAINS ARE FOR A VOLTAGE AT THE PBX OF 20 VOLTS. FOR OTHER VOLTAGES THE DRAINS ARE DIRECTLY PROPORTIONAL.

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				13 D	DWG. ISS.
				13 D	C.D. ISS.



APPARATUS	DESIG.	CODE	MAX. LOSS	MIN. LOSS	REMARKS
CAPACITOR	A	KS-13541			SEE ELECT. CAP. TEST REQ.
CAPACITOR	A, B	4.1MF	19.6	12.5	
CAPACITOR	T, R	1MF	8.5	6.6	
CAPACITOR	R	2MF	13.7	11.7	FIG. 21
INDUCTOR	A-E	27A40	0.1		
RELAY	A-E	B104B	0.4		
REP. COIL	A	202A	1.5	0.6	
THERMISTORS	T, R	8A	0.2		

* INDICATES APPARATUS FOR WHICH INDIVIDUAL LOSSES ARE NOT REQ.

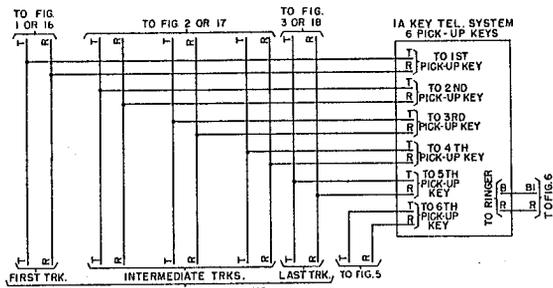
**ELECTROLYTIC CAPACITOR TEST REQUIREMENTS
(1000 CYCLE TEST, USING 73A TEST SET, BETWEEN 600H LINES)**

TEST CONNECTIONS		OVERALL LOSSES		REMARKS
TEST SET TERMINALS	CONNECT TO	TEST SET CONNECT TO	MIN. LOSS IN db	
CAP (A)	3-7	1-2	7.8	REMOVE BAT.

INDIVIDUAL APPARATUS LOSSES						
APPARATUS	DESIG.	CODE	TEST CONNECTIONS	REMARKS		
CAPACITOR	A	KS-13541	3-7	1-2	7.8	REMOVE BAT.

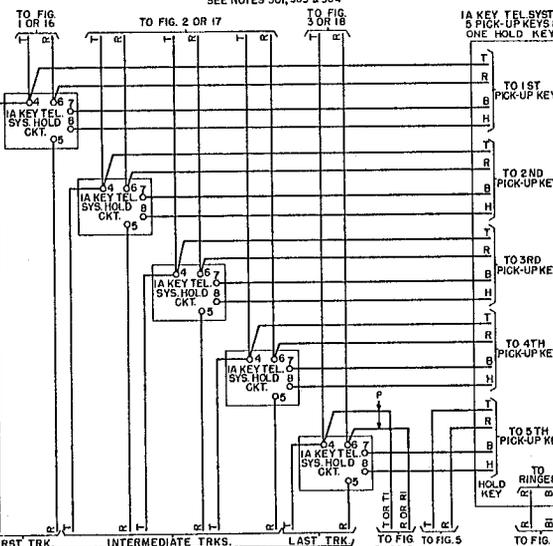
NOTES:
CAUTION DISCHARGE CAPACITORS IN ACCORDANCE WITH THE A200 SECTION B SP COVERING THE TESTING OF ELECTROLYTIC CAPACITORS. DO NOT SHORT CIRCUIT CAPACITORS.

FIG. 101 (MFR. DISC.)
 METHOD OF CONNECTING PBN TO TEL. SET WITH 6 PICK-UP KEYS
 SEE NOTES 301, 303 & 304



TO COMMON BAT. CENT. OFF. OR TO TWO WAY AUX. TRK. TO MAGNETO CENT. OFF. DIRECT OR THRU EMG. TRNS. KEY CKT.

FIG. 102 (MFR. DISC.)
 METHOD OF CONNECTING PBN TO TEL. SET WITH 5 PICK-UP KEYS AND ONE HOLD KEY WHEN 5 TRKS. ARE USED
 SEE NOTES 301, 303 & 304



TO COMMON BAT. CENT. OFF. OR TO TWO WAY AUX. TRK. TO MAGNETO CENT. OFF. DIRECT OR THRU EMG. TRNS. KEY CKT.

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		13 D	C. D. ISS.

FIG. 103 (MFR. DISC.)
 METHOD OF CONNECTING PBX TO TEL. SET WITH 5 PICK-UP KEYS
 AND ONE HOLD KEY WHEN 4 OR LESS TRKS. ARE USED
 SEE NOTES 301, 303 & 304

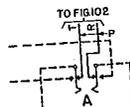
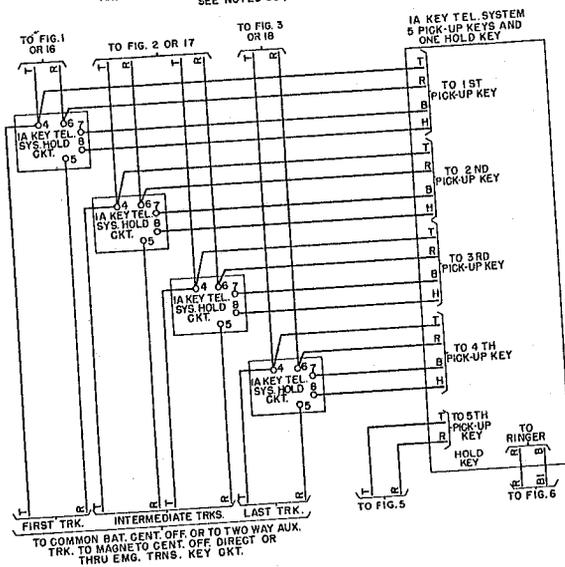


FIG. 104 (MFR. DISC.)
 MODIFICATION OF ATTENDANTS KEY CKT. (FIG. 5)
 SEE NOTES 301 & 302

SD-65680-0113 2 PAGES															CIRCUIT REQUIREMENTS															A
PBX NO. 507A OR 507B																														DWG. 155.
APPARATUS				MECH. REQ.				CIRCUIT PREPARATION				TEST SET		DIRECT CURRENT FLOW REQ.			REMARKS													
DESIG.	CODE	OPTION	CKT FIG.	RATING	BSP FIG.	CONT PRESS	ARM TRVL	BLOCK OR INSULATE	TEST CLIP DATA		TEST SET PREP	SEE TEST NOTE NO.	TEST WDG. FOR	TEST AFTER SOAK	TEST MA	READJ. MA	REMARKS													
															1															
															2															
															3															
															4															
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															10															
															11															
															12															
															13															
MAGNETS																														
B	4C		9																											
	BUZZER																													
RELAYS																														
A	B1048		3		3		30		1M	3M	REL	M	P/S	O	60	8.5	7.8	ADJ "B"												
B			18						1M	3M	REL	M	P/S	R	60	3.9	4.3													
C									1M	3M	TST	M	P/S	O	60	10.7	9.6	ADJ "A"												
D									1M	3M		M	P/S	R	60	5.8	6.2													
E																														
F	U735				132/132	H	47				T (F)	GRD				17.5	16.5													
G	B1136				11		30	3B (F)	1M (G)	2M (G)	B/G		O	17	4.4	4														
								3B (F)	1M (G)	2M (G)	B/G		R	17	1.9	2.1														
L	U6102				115/136	H	29				T (L)	GRD	6			12.3	11.7													
											T (L)	GRD	6			3.7	3.9													
L1	UA4				111/136	SPL	SPL		TR (L1)			BAT. 3/4/5		O		3.3	3.1	REL.												
									TR (L1)			BAT. 3/4/5		NO		2.1	2.3	ALONE OR CKT.												
									TR (L1)			BAT. 3/4/5		H		1.8	1.7	COMB. OF (L1)												
												AC	2/5		O	AC	AC	REL. & (L) VAR.												

TEST NOTES:

- THE 4C BUZZER SHALL BE TESTED AND READJUSTED TO OPERATE SATISFACTORILY IN THE CKT. WHEN THE (T) REL. IS BLOCKED OPERATED.
- TEST B READJUST (L) REL. IN CKT. COMB. FOR OPR. ON RING. CURRENT AS FOLLOWS:
 (A) BY MANUALLY RING FROM CENT. OFF. OR
 (B) BY APPLYING MIN. 95V (100-1200 RPM) RING CURRENT IN SERIES WITH ONE 135 RES. LAMP (OR EQUIVALENT) & 13000Ω. NON-IND. RES. TO THE TIP OF THE TRK. AT THE PBX. REPEAT TEST B TO THE RING OF THE TRK. AT THE PBX.
- ARMATURE TRAVEL 23 MAX.
- FRONT CONTACT MAKE - 6 READJUST, 4 TEST.
- KEY (A) OF ASSOC. TRK. KEY CKT. TO BE OPERATED WHEN MAKING ADJUSTMENTS.
- KEY (A) OF ASSOC. LINE CKT. TO BE OPERATED.
- ON ISSUE IOD ADJ. "A" IS SUPERSEDED BY ADJ. "B"

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