

11

PBX SYSTEMS
NO. 701B, 701PK, 711B, OR 711PK
MISCELLANEOUS ALARM CIRCUIT

CHANGES

D. Description of Changes

- D.1 Leads MJ, MN, B, DF, L, WCT, WCR, and CAP are added for connection to the 850A PBX.
- D.2 Option ZH was rated Mfr Disc. Option ZI was added to change the circuit for lighting the aisle pilot lamp when the rotary out-trunk switch alarm circuit, Fig. 12, is used. The change was made on Issue 26B of the drawing, but reference to this change was inadvertently omitted from the ECN and CD associated with Issue 26B.

F. Changes in CD Section

- F.1 In SECTION III, 4., add in 4.01:
(am) PICTUREPHONE[Ⓢ] Fuse, Alarm, and Emergency Transfer Circuit - SD-1E179-01.

BELL TELEPHONE LABORATORIES, INCORPORATED

DEPT 3223-RCL-FLS

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SECTION I - GENERAL DESCRIPTION

1. PURPOSE OF CIRCUIT

1.01 This circuit provides for visual (shelf and line-up pilot) and audible alarm signals at the PBX and, when required, will indicate two classes of alarms at the central office.

SECTION II - DETAILED DESCRIPTION

1. ALARM TRANSMITTAL

A. Class A Alarm

1.01 A class A alarm condition is transmitted by the operation of relay CAS as a result of a call blocked, common failure, or release magnet alarm or as a result of a blown ABS fuse or loss of commercial power.

Option Z, ZD

1.02 Relay CAS operated causes a class A alarm at the central office to indicate a major alarm at the PBX by removing battery and ground from leads WCR and WCT, respectively.

Option W, ZD

1.03 Relay CAS operated places a short circuit across leads WCT and WCR causing a class A alarm indicating at the central office or, with a 1 or 2 type telephone console, causes the night closing and alarm circuit to function.

Option A, ZD

1.04 With relay NC1 of the night closing and alarm circuit released and the PBX on day operation, lead NC1-2 is connected to lead NC1-3, lead NC1-5 is grounded and leads NC1-1, NC1-4, and NC1-6 are open. Relay CAS released, extends ground on lead NC1-5 to lead WCT, causing the night closing and alarm circuit to flash lamp AL and provide an audible alarm to the 1 or 2 type telephone console as an indication of the class A alarm condition.

1.05 With relay NC1 operated and the PBX on night operation, leads NC1-3 and NC1-5 are open, lead NC1-2 is connected to lead NC1-1, lead NC1-6 is grounded and lead NC1-4 is connected to lead WCR of the night closing and alarm circuit. Relay CAS released, removes battery from ground from leads NC1-4 and WCT respectively, causing a class A alarm condition at the central office.

Option ZG

1.06 Relay CAS operated, grounds leads R and MJ or DL (option ZF) or applies resistance battery to lead MJ or DL (option ZF) as a class A alarm indication.

B. Class B Alarm

1.07 A class B alarm condition is transmitted by the operation of relay PSS as a result of a permanent signal alarm or an all-finders-busy condition.

Option Z, ZD

1.08 Relay PSS operated causes a class B alarm at the central office to indicate a minor alarm at the PBX by reversing the polarity on battery and ground.

Option W, ZD

1.09 Relay PSS operated, places a 2500 ohm resistive bridge across leads WCT and WCR causing a class B alarm indication at the central office or, with a 1 or 2 type telephone console, causes the night closing and alarm circuit to function.

Option A, ZD

1.10 With relay NC1 of the night closing and alarm circuit released and the PBX on day operation, lead NC1-2 is connected to lead NC1-3, lead NC1-5 is grounded and leads NC1-1, NC1-4 and NC1-6 are open. Relay PSS operated, places a 2500 ohm resistive ground on lead WCT to the night closing and alarm circuit causing it to light lamp AL to the 1 or 2 type telephone console as an indication of the class B alarm condition.

1.11 With relay NC1 operated and the PBX on night operation, leads NC1-3 and NC1-5 are open, lead NC1-2 is connected to lead NC1-1, lead NC1-6 is grounded and lead NC1-4 is connected to lead WCR of the

night closing and alarm circuit. Relay PSS operated, reverses the polarity on leads WCT and NC1-4, causing a class B alarm indication at the central office.

Option ZG

1.12 Relay PSS operated, grounds G and grounds lead MN or F (option ZE) or applies resistance battery to lead MN or F (option ZF) as a class B alarm indication.

2. PERMANENT SIGNAL ALARMS (FIGS. 1, 3, 4 AND 5)

2.01 If a station line becomes permanently short-circuited, the ring side becomes grounded or, if the receiver is left off the switchhook, a selector or selector connector will ground lead PS and operate relay PS.

2.02 Relay PS operated:

- (a) Operates relay PU unless another permanent signal is in the process of being timed, in which case lead PU will be disconnected from ground at relay ST.
- (b) Partially completes the operating path for relay TO.

2.03 Relay PU operated:

- (a) Locks operated under control of relays TO and PS.
- (b) Grounds lead ST to operate relay ST to operate relay ST.
- (c) Opens lead PU.
- (d) Partially completes the operating path for relay TO.

2.04 Relay ST operated:

- (a) Removes ground from lead PU to prevent any other PU relay from operating until the time delay circuit is released.
- (b) Operates relay PST.

2.05 Relay PST operates after a delay of 20 to 30 minutes to ground lead TO, which completes the circuit for operating relay TO.

2.06 Relay TO operated:

- (a) Locks operated under control of relay PS.
- (b) Grounds lead PAP to light the permanent signal line-up pilot lamp.
- (c) Lights shelf lamp PS.
- (d) Opens lead TO.
- (e) Releases relay PU.
- (f) Grounds lead PSA to operate relay PSA.

2.07 Relay PSA operated:

- (a) Lights the PS lamp at the switchboard.
- (b) An alarm panel sounds the audible signal at the switchboard and alarm panel.
- (c) Operates relay PSS.

2.08 Relay PSS operated, transmits a class B alarm as described in part 1, section B. Class B Alarm.

2.09 Relay PU released, releases relay ST which:

- (a) Releases relay PST.
- (b) Connects ground to lead PU.

2.10 The timing circuit (relays ST and PST) is now available for another permanent signal timing operation.

2.11 When the permanent signal condition is removed, the selector or selector connector removes ground to release relay PS. Relay PS released releases relay TO.

2.12 Relay TO released:

- (a) Extinguishes the shelf lamp PS.
- (b) Extinguishes the line-up pilot lamp PS.
- (c) Releases relay PSA.

2.13 Relay PSA released:

- (a) Extinguishes the switchboard and alarm panel lamps PS.

(b) Silences the audible alarm if key PS is normal.

(c) Sounds the audible alarm as a warning to the switchboard and switchroom attendant to reset the PS alarm cutoff keys if the PS keys are operated.

(d) Releases relay PSS.

2.14 Relay PSS released, retires the class B alarm being transmitted to the central office.

2.15 If a quick check of the permanent signal is required, the momentary operation of key PS (Fig. 3) will connect ground to leads PU and TO. Ground on lead PU will operate relay PU in any shelf that has a relay PS operated and waiting for a permanent signal to be picked up and timed. As soon as relay PU operates, relay TO will operate and the permanent signal lamps and alarms will be connected without any timing interval.

3. PERMANENT SIGNAL ALARM (FIGS. 1 AND 9)

3.01 If Fig. 1 is connected to the 701A Miscellaneous Alarm Circuit, relay PS operates.

3.02 Relay PS operated:

(a) Operates relay PU unless another permanent signal is in the process of being timed, in which case lead PU will be disconnected from ground at relay ST.

(b) Connects battery to lead PS1.

(c) Partially completes an operating path for relay TO.

3.03 Battery on lead PS1 starts a timing relay which, after a delay of 20 to 30 minutes, operates a permanent signal alarm at the 701A.

3.04 Relay PU operated:

(a) Locks under control of relays PS and TO.

(b) Partially completes an operating path for relay TO.

(c) Operates relay ST.

3.05 Relay ST operated starts timing relay PST which operates after a delay of 20 to 30 minutes, grounding lead TO to operate relay TO.

3.06 Relay TC operated:

- (a) Locks under control of relay PS.
- (b) Lights the shelf lamp PS.
- (c) Releases relay FU.

3.07 When a permanent signal condition in paragraph 3.03 is removed, relay PS will release.

3.08 Relay PS released:

- (a) Releases relay TO, which extinguishes shelf lamp PS.
- (b) Removes battery from lead PS1 to release the timing relay PS1.

4. RELEASE MAGNET ALARM (FIGS, 2, 3, 4, 5, A AND B)

4.01 The primary winding of relay RM (Fig. A or B) supplies battery to the release magnets in the line finder, selector, selector connector, or connector circuits in a shelf, and this relay operates each time a release magnet on the associated shelf is operated.

4.02 Relay RM operated:

- (a) Grounds lead R to operate any connected traffic register.
- (b) Grounds lead RT to start the release magnet timing relay RT.
- (c) Prepares an operating path for relay RMI over lead G.

4.03 With normal operation, the release magnet of the switch is energized for only the time required for the switch to restore to normal and in this case, the release magnet timing relay RT does not have time to operate. If for any reason, the switch fails to restore to normal, relay RT will operate after a delay of 15 to 25 seconds.

4.04 Relay RT operated, grounds lead G to operate relay RMI.

4.05 Relay RMI operated:

- (a) Grounds leads RAP to light the line up pilot lamp RM (Fig. 4).
- (b) Grounds lead S to operate relay S (Fig. 3).
- (c) Locks operated under control of relay RM.
- (d) Opens lead RT to release relay RT to release relay RT.
- (e) Lights the shelf lamp RM.

4.06 Relay S operated:

- (a) Lights the switchboard and alarm panel lamps RM and sounds the audible alarms.
- (b) Operates relay CAS.

4.07 Relay CAS operated transmits a class A alarm as described in part 1, section A. Class A Alarm.

4.08 When the switch has been restored to normal, relay RM releases, which:

- (a) Releases relay RMI.
- (b) Extinguishes shelf lamp RM and removes ground from lead R.

4.09 Relay RM released:

- (a) Extinguishes the line-up pilot lamp.
- (b) Releases relay S.

4.10 Relay S released:

- (a) Releases relay CAS.
- (b) Extinguishes the switchboard and alarm panel lamps RM.
- (c) Retires the audible alarm if keys RM are normal.
- (d) Sounds the audible alarm as a warning to the switchboard and switchroom attendant to reset the RM keys if they are operated.

4.11 Relay CAS released retires the class A alarm being transmitted to the central office.

4.12 If Fig. 2 is connected to the 701A Miscellaneous Alarm Circuit relay RM operates which:

- (a) Connects ground to lead RLS to operate a dash-pot relay which operates after a time delay to ground lead G which operates relay RML.
- (b) Operates the traffic register if connected.

4.13 Relay RML operated:

- (a) Locks under control of relay RM.
- (b) Lights the shelf lamp RM.

4.14 If Fig. 2 is connected to the 701A Miscellaneous Alarm Circuit and the switch is restored to normal, relay RM releases.

4.15 Relay RM released:

- (a) Releases relay RLS in the 701 Alarm circuit.
- (b) Releases relay RML.
- (c) Extinguishes the shelf lamp RM.

4.16 If Fig. 2 is connected to the 740E Miscellaneous Alarm Circuit, the operation of relay RM operates the traffic register, and also grounds the C lead to operate a time delay relay in the above alarm circuit. Under normal operating conditions the time delay relay does not operate. However, should the RM relay remain operated due to a trouble condition, the time delay relay operates and places a ground on the B lead, thus operating the RML relay. Relay RML lights the RM lamp and switches its own holding path so it is under the control of relay RM only. When the trouble condition is cleared, relay RM releases, in turn releasing relay RML. The RM lamp is extinguishes and the connecting circuits are restored to normal.

5. LINE FINDER GROUP ALARMS (FIGS. 3, 4 AND 5)

5.01 In any line finder group, when the start lead becomes permanently grounded or the chain circuit has a foreign potential on it, the group circuit connects ground to leads CAP and CFA to light the line-up pilot lamp COM and operate relay CFA.

5.02 Relay CFA operated:

- (a) Operates relay CAS to transmit a class A alarm to the central office as described in part 1, section A. Class A Alarms.
- (b) Lights the COM lamp at the switchboard and alarm panel.
- (c) Sounds the audible alarm at the switchboard and alarm panel.

5.03 When an all-finders-busy condition occurs in the line finder group, the group circuit starts to function and looks for ground on lead PUL. This ground will be provided by relay ST1 provided that no alarm is being timed in. The group circuit, in turn, grounds lead ST1 to operate relay ST1.

5.04 Relay ST1 operated:

- (a) Removes ground from lead PUL to prevent any other alarms from being timed in.
- (b) Operates relay TM which, after a delay of 15 to 30 seconds, grounds lead T01.

5.05 The group circuit upon receiving ground on lead T01, in turn:

- (a) Grounds lead PAP to light the line-up pilot lamp PS.
- (b) Grounds lead L1 to light the AFB lamp at the switchboard and alarm panel.
- (c) Grounds lead PSS to operate relay PSS which transmits a class B alarm to the central office as discussed in part 1, section B. Class B Alarms.
- (d) Removes ground from lead ST1 to release relay ST1.

5.06 Relay ST1 released:

- (a) Releases relay TM.
- (b) Grounds lead PUL so that another alarm may be timed in.

5.07 When a call block occurs in a line finder group, the group circuit is timed in as described in 5.03 through 5.06.

5.08 Once the group circuit is timed in, it:

- (a) Connects ground to lead CAP to light the line-up pilot lamp COM.

(b) With option S, grounds lead L to light the CB lamp at the attendant switchboard and at the alarm panel.

(c) With option Y, grounds lead L to operate relay CB which in turn lights the CB lamp and operates the audible signal at the attendant switchboard and at the alarm panel.

(d) Grounds lead CAS to operate relay CAS which functions as described in 4.07.

6. FUSE ALARM (FIG. 6)

6.01 When a 48 volt fuse on a switch shelf operates, relay FA is operated.

6.02 Relay FA operated:

(a) Lights lamp FA.

(b) Grounds lead CAP to light the line-up pilot lamp COM.

(c) Grounds lead B to operate relay FAI and lights lamp FR-FA.

(d) Or grounds lead B when the 701A Miscellaneous Alarm Circuit is used.

(e) Or puts battery on the SWFA lead to the 701A Miscellaneous Alarm Circuit.

6.03 Relay FAI operated, causes relay CFA to operate, which functions as described in 5.02. In case this figure is used with the 740E, PBX alarm circuits, the B lead is grounded, which actuates the 740E Alarm Circuit bringing in a visual and audible alarm.

6.04 An operated switchboard fuse connects battery to operate relay SA and to light lamp FA in the switchboard.

6.05 Relay SA operated grounds lead A to light lamp SWBD-FA and operates relay FAI at the alarm bay.

6.06 Relay FAI operated functions as described in 6.03.

6.07 A relay rack fuse alarm grounds lead B of Fig. 3 to operate relay FAI which functions as described in 6.03.

7. RINGING MACHING FAILURE ALARM

7.01 A failure in the ringing machine grounds lead F to operate relay RMF which:

(a) Lights the alarm panel lamp RMF.

(b) Lights the line-up pilot lamp CIM.

(c) Operates relay CFA which functions as described in 5.02.

8. POWER PLANT FAILURE

8.01 Failure of the power plant will connect ground to lead DF which causes relay PWR to operate.

8.02 Relay PWR operated:

(a) Lights alarm pilot lamp PWR.

(b) Lights the line-up pilot lamp COM.

(c) Transfers the battery supply for the audible signals from the ABS supply to another fuse.

(d) Operates relay CFA which functions as described in 5.02.

8.03 In the event that the power plant has a blown ABS fuse, the battery will be connected to the primary windings of relays PWR, CFA, and CAS. These relays operated function the same as described in 8.05, 5.02 and 4.07.

8.04 In the event that the power plant has a blown E fuse, ground on the DF lead will operate relay PWR.

8.05 Relay PWR operated:

(a) Lights the line-up pilot lamp COM.

(b) Lights the alarm panel lamp PWR.

(c) Operates relay CFA which functions as described in 5.02.

(d) The audible alarms will now be operated by battery over the ABS lead through the B diode.

9. AUDIBLE ALARM SIGNAL CUTOFF

9.01 As long as the battery cutoff key is normal (attended PBX), relay ACO is released, which connects the audible alarm signals to a battery supply. When the PBX is unattended and the battery cutoff key is operated, relay ACO operates, disconnecting the audible alarm signal from the battery supply.

10. MISCELLANEOUS

10.01 The audible alarm at the common alarm equipment may be silenced by operating the alarm cutoff key ACO. When this key is operated, a guard lamp ACO will be lighted.

10.02 Fig. 8 is an aisle pilot lamp for fuse alarms in a separate relay rack line-up.

10.03 Fig. 7 consists of a 7F buzzer and 522A key that is connected to Fig. 3 so that any common alarm will cause the buzzer to operate.

10.04 Fig. C consists of a 40 uf capacitor to enable the associated register to operate on a short pulse of relay RM. Register C limits the current through the contacts of relay RM during the charging time of capacitor A. Release of switches from terminal 1, level 1, does not hold relay RM long enough for a traffic register to operate.

11. AUTOMATIC NUMBER IDENTIFICATION ALARM (FIGS. 3, 4 AND 5)

11.01 When signaling failure or system failure occurs in the Automatic Number Identification circuit, leads CFA and CAP are grounded. Ground on lead CAP lights the line-up pilot lamp COM. Ground on lead CFA operates relay CFA.

11.02 Relay CFA operated:

(a) Operates relay CAS to transmit a class A alarm to the central office as described in part 1, section A. Class A Alarms.

(b) Lights the COM lamp at the switchboard and alarm panel.

(c) Sounds the audible alarm at the switchboard and alarm panel.

12. AUTOMATIC CALL THROUGH TEST SET ALARM (FIGS. 3 AND 11)

12.01 In the event that the call through the test set encounters a failure, leads TSA and TSP become grounded. These ground leads are extended through the jack access circuit for connection to the alarm circuit. Ground on the TSA lead will light the TST aisle pilot lamp for the call through the test set.

13. ROTARY OUT TRUNK SWITCH ALARM (FIG. 12)

13.01 When a trouble condition exists with a rotary out trunk switch, ground is connected to lead P operating relay RO.

13.02 Relay RO operated grounds lead RT energizing the release magnet timing relay RT in Fig. 3 and prepares a path for relay RO1. After approximately 15 to 25 seconds, relay RT will operate, grounding lead G, and operating relay RO1.

13.03 Relay RO1 operated:

- (a) Removes its operating path and locks operated under control of relay RO.
- (b) Connects the windings of relay RO in parallel, lighting the associated shelf lamp of the rotary out-trunk switches.
- (c) Grounds lead S, operating relay S which functions as described in SECTION II, paragraph 4.06.
- (d) Grounds lead RAP, lighting the line-up pilot lamp RM in Fig. 4.

SECTION III - REFERENCE DATA

1. WORKING LIMITS

1.01 None

2. FUNCTIONAL DESIGNATIONS

2.01 Relays

<u>Desig.</u>	<u>Meaning</u>	<u>Primary Function</u>
ACO	Alarm Cut-Off	To disable the audible alarm signal
APS	Auxiliary Power Supply	To respond to a trouble condition in a special power supply
CAS	Class A Signal	To transmit an indication of a major trouble condition
CB	Call Blocked	To respond to a call blocked condition

<u>Desig.</u>	<u>Meaning</u>	<u>Primary Function</u>	<u>Desig.</u>	<u>Meaning</u>	<u>Primary Function</u>
CFA	Common Failure Alarm	To provide indications of a common failure alarm	RO	Rotary	To recognize a stepping selector in the rotary out-trunk switch
FA	Fuse Alarm	To respond to an operated shelf fuse	RO1	Rotary Auxilliary	To indicate a failure of the rotary out-trunk switch
FA1	Fuse Alarm Auxilliary	To provide indications of a fuse alarm	RT	Release Timing	To time a release magnet alarm
PS	Permanent Signal	To recognize a permanent signal condition	S	Signal	To indicate a shelf release magnet failure
PSA	Permanent Signal Auxilliary	To provide indications of a permanent signal alarm	ST	Start	To start the permanent signal timing
PSS	Permanent Signal Signaling	To transmit a minor alarm	ST1	Start	To start a call blocked timing
PST	Permanent Signal Timing	To time a permanent signal condition	TO	Time Out	To recognize a permanent signal timing time out
PWR	Power	To respond to a trouble condition in the power plant			
PU	Pick-Up	To seize the common permanent signal timing circuit if available			
RM	Release Magnet	To recognize the operation of any release magnet on a shelf			
RMF	Ringling Machine Failure	To recognize a trouble condition in the power ringling circuit			
RML	Release Magnet Auxilliary	To indicate a release magnet failure			

3. FUNCTIONS

- 3.01 To give a permanent signal alarm when any of the station lines become permanently short-circuited or grounded on the ring side or when a receiver is left off the hook.
- 3.02 To provide for a visual permanent signal lamp per shelf.
- 3.03 To provide for a 20 to 30 minute delay for permanent signals.
- 3.04 To provide for a key to release the delayed timing on all permanent signals.
- 3.05 To give an alarm signal when any switch fails to restore to normal after its release magnet has been energized.
- 3.06 To provide for a release magnet peg count.

- 3.07 To provide for a visual release magnet alarm lamp per shelf.
- 3.08 To provide for a 15 to 25 second delay for release magnet alarms.
- 3.09 To recognize a line finder group grounded start lead or foreign potential on the chain circuit alarm and transmit a class A alarm to the central office.
- 3.10 To recognize a line finder group all-finders-busy alarm and provide a 15 to 30 second time delay and transmit a class B alarm to the central office.
- 3.11 To recognize a line finder group call block alarm and provide a 15 to 30 second time delay and transmit a class A alarm to the central office.
- 3.12 To provide an alarm unit that is common to all switch frames.
- 3.13 To provide for line-up aisle pilot lamps for alarms.
- 3.14 To give alarm signal when trouble occurs in the power ringing or charge and discharge circuits.
- 3.15 To extend the PEX alarms to the central office and to function on either a marginal or reversed battery alarm system at the central office.
- 3.16 To give an alarm when the ringing machine transfers due to a trouble.
- 3.17 To provide visual and audible alarm signals at the switchboard and alarm panel.
- 3.18 To provide an aisle pilot lamp for separate relay line-up fuse alarms.
- 3.19 To provide an audible signal on call block alarms with audible signal cutoff key.
- 3.20 To provide an audible alarm signal cutoff under control of the battery cutoff key.
- 3.21 To provide a means of transmitting an alarm indication to either a 5 or 6 type telephone console.
- 3.22 To provide alarm indication of automatic number identification equipment failure.
- 3.23 To provide alarm connections to the jack access circuit for the automatic call through test set.
- 3.24 To provide alarm connections for rotary out trunk switches.
4. CONNECTING CIRCUITS
- 4.01 When these circuits are listed on a keysheet, the connecting information thereon is to be followed.
- (a) Line Finder Circuit - SD-65901-01.
- (b) First Selector Circuit - SD-66359-01.
- (c) Second Selector Circuit - SD-66010-01.
- (d) Incoming Selector - SD-66360-01.
- (e) Hunting Connector - SD-66144-01.
- (f) Hunting Incoming Connector for Repeating Tie Trunks - Supplies Dial Tone - SD-66596-01.
- (g) Digit Absorbing Selector - SD-65900-01.
- (h) Incoming First Selector for Operation with Repeating Tie Trunk - Supplies Dial Tone - SD-66594-01.
- (i) 701A or 711A Miscellaneous Alarm Circuit - SD-66384-01.
- (j) Traffic Register Circuit - SD-65774-01.
- (k) Selector Connector - SD-65721-01.
- (l) Extension Alarm Circuit - SD-9544-01.
- (m) Power Ringing Circuit - SD-81337-01. (Typical)
- (n) Power Discharge Circuit - SD-80720-01. (Typical)

- (o) Relay Rack or Apparatus Cabinet Fuse Alarm Circuit - SD-65779-01.
- (p) Idle Trunk Indicating Circuit - SD-65783-01.
- (q) 552A, 552B, 552D or 552E Auxiliary Signal, Battery Cutoff, Buzzer, Fuse Alarm, and Night Alarm Circuit - SD-65786-01.
- (r) No. 605A Fuse, Night, and Power Alarm Circuit - SD-66426-01.
- (s) 701B Battery Cutoff Circuit - SD-65773-01.
- (t) Control Circuit, Group Alerting System - SD-95883-01.
- (u) Order Turret No. 6 or 6A Tone, Alarm and Register Circuit - SD-66642-01.
- (v) No. 608A Auxiliary Signal Fuse Alarm, Battery Cutoff, and Miscellaneous Circuit - SD-65722-01.
- (w) Auxiliary Trunk for Use with Telephone Consoles - SD-65725-01.
- (x) Trunk Finder Circuit - SD-65906-01.
- (y) 740 Alarm Circuit - SD-65660-01.
- (z) Station Message Register Pulse Circuit - SD-66915-01.
- (aa) Station Message Register Surcharge Circuit - SD-66922-01.
- (ab) No. 5B and 6B Type Consoles - SD-66927-01.
- (ac) Automatic Number Identification Circuit - SD-1E007-01.
- (ad) Jack Access Circuit for Automatic Call Through Test Set - SD-32523-01.
- (ae) Audible and Visual Alarm - SD-96188-01.

- (af) No. 5 Crossbar Alarm - SD-25671-01.
- (ag) No. 608D Auxiliary Signal, Fuse Alarm Battery Cut-Off and Miscellaneous Circuit - SD-67039-01.
- (ah) Rotary Out Trunk Circuit - SD-30868-01.
- (ai) Rotary Out Trunk Circuit - SD-30891-01.
- (aj) 701B Call Distribution Circuit - SD-65811-01 or SD-65829-01.
- (ak) Crossbar Link and Controller for TOUCH-TONE Conversion - SD-5E053-01.
- (al) 3A ACD Tone, Alarm, Register, Ringing Leads and Flashing Circuit - SD-65973-01 or SD-5E049-01.

SECTION IV - REASONS FOR REISSUE

D. Description of Changes

- D.1 The rating of this circuit is changed from Standard to Manufacture Discontinued for the 701B and 711B PBXs.
- D.2 Connecting information is added for the following new leads:
 - (a) Leads L, Ll, CAS, CAP and CFA to the 701B PBX Call Distribution Circuits (SD-65811-01 and SD-65829-01).
 - (b) Lead CFA to Trunk Finder Circuit SD-65906-01.
 - (c) Lead MJ or DL to the 3A Automatic Call Distributor Tone, Alarm, Register, Ringing Leads and Flashing Circuit - SD-5E049-01.
 - (d) Lead ALM to the Crossbar Link and Controller Circuit for TOUCH-TONE Conversion SD-5E053-01.

BELL TELEPHONE LABORATORIES, INCORPORATED

DEPT 5152HW-RGL-WEA

DEPT 5337-RVL