

12

STEP-BY-STEP SYSTEMS
NO. 1, 350A or 355A
SUBSCRIBER RECORDING COMPLETING
TRUNK CIRCUIT
E&M LEAD SUPERVISION
WITH RECALL
WITH OR WITHOUT COIN CONTROL
WITH OR WITHOUT CLASS OF SERVICE TONE

Changes

B. Changes in Apparatus

B.1 Added

Diode R-OPT ZV- 446F Fig. 1

D. Description of Changes

- D.1 Option ZU is designated and rated "Standard".
- D.2 Option ZV is added and rated "Standard" for use with a 120 IPM repeater relay.
- D.3 Notes 102 and 103 are changed to reflect options ZU and ZV.
- D.4 Notes 115 & 116 are added.
- D.5 CAD Fig. 51 changed.

BELL TELEPHONE LABORATORIES, INCORPORATED

Dept 5245 GFC
WECO DEPT 2311-RWH-WEA

CIRCUIT DESCRIPTION

CD-32042-01
ISSUE-10D
APPENDIX-4AC
DWG. ISSUE-20AC

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CHANGES

D. Description of Changes

- D.1 Option ZS is rated Mfr. Disc. to allow Std. Fig. D to be used for both new Manufacture & Field Modifications to provide for the removal of Toll Grade Battery.
- D.2 Circuit Note 113 is rated Mfr. Disc. and is superseded by Note 114 to reflect the above changes.

BELL TELEPHONE LABORATORIES, INCORPORATED

Dept. 5152-HAW-FLS-WEA
HO-5245-HNS

STEP-BY-STEP SYSTEMS
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CHANGES

D. Description of Changes

- D.1 Option ZF, Figure A and Note 107 are rated MFR. DISC.
- D.2 Note 103 is revised.
- D.3 Replacement information is added to the title box.

BELL TELEPHONE LABORATORIES, INCORPORATED

DEPT 5245-LCB
WECO DEPT 5152-RTO-WEA

STEP-BY-STEP SYSTEMS
NO. 1, 350A OR 355A
SUBSCRIBER RECORDING COMPLETING
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E&M LEAD SUPERVISION
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CHANGES

D. Description of Changes

- D.1 Option ZT is added to Figures 1, 3 and 4 to clarify the use of leads "CODE 1" and "MR SUP-".
- D.2 Notes 102, 103 and 112 are revised reflecting the addition of option ZT.

BELL TELEPHONE LABORATORIES, INCORPORATED

DEPT 5245 LCB
WECO DEPT 5152-RTO-WEA

STEP-BY-STEP SYSTEMS
NO. 1, 350A OR 355A
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CHANGES

B. Changes in Apparatus

B.1 Added

TB lamp - 20A - ZS option - figure C

D. Description of Changes

D.1 Precise tone designations are added to notes 101 and 105 for figures 3 and 4.

D.2 Option ZQ is added to figures 3 and 4.

D.3 Notes 102 and 103 are revised and note 112 is added to explain option ZQ.

D.4 Option ZR is designated and option ZS is added in figure C.

D.5 Note 103 is revised and note 113 is added to explain figure D and options ZR and ZS in figure C.

F. Changes in CD Sections

F.1 In Section III - 4. Connection Circuits - add an * to (r) No. 355A Power Ringing Circuit - SD-80727-01*.

F.2 In Section III - 4. - Change (m) to read (m) No. 1 or 350A, Power Ringing Circuit - SD-80885-01*.

F.3 Add "*-typical" to Section III-4.

BELL TELEPHONE LABORATORIES, INCORPORATED

DEPT. 5225-LCB

WECo DEPT. 5152-RTO-WEA

STEP BY STEP SYSTEMS
 NO. 1, 350A OR 355A
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SEIZURE	4	<u>1. PURPOSE OF CIRCUIT</u>	
OPERATOR ANSWERS	4	1.01 This circuit provides a subscriber or alarm sender access to the toll operator over a simplex or composite signaling trunk. Operator controlled means are provided for ringback and coin control.	
<u>A. When Fig. 1 and 3 and Option W Are Provided (One Class of Service Tone)</u>	4	<u>SECTION II - DETAILED DESCRIPTION</u>	
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		1.01 When this circuit is seized at any multiple appearance, the bridge connected on leads T and R or T2 and R2 operates relays S,	

S1, and SR. Relay S connects ground to lead S (except when accessible to rotary out trunk switch. S1 removes ground and connects battery through lamp S to lead M, prepares a locking circuit for itself if the operator rings back with the receiver off the hook, and opens the idle line termination. SR connects a supplementary ground to lead S, disconnects ground from lead BR, connects ringing induction tone toward the calling subscriber, connects ground to lead MS, when provided, and partially prepares the operating and locking circuits of P1 and the operating circuit of A2.

1.02 Class of service indication is received over lead A from the selector or line switch multiple and consists of either open ground, direct ground, or resistance ground. If Fig. 3 or 4 is furnished, H operates to prepare the class of service tone indication and to ground lead IS or MS as required.

1.03 Positive transmission battery (option ZH) is furnished when this circuit is used with coin station sets arranged for dial tone first operation. Negative transmission battery (option ZG) is provided for other uses.

OPERATOR ANSWERS

A. Noncoin or Postpay Coin Access Only - Fig. 1 and 3, Option W

1.04 When the operator answers, ground is received over lead E from the signaling circuit, which operates A. Relay A opens the original operating circuit of SR, provides a supplementary ground to hold SR, operates A1 and A2, and closes, in part, the operating circuit of P1. Relay A2 operated closes in part the operating circuit of P and P1.

1.05 Relay A1 operated connects resistor G in multiple with the winding of A so that it will hold over momentary opens of the composite relay contacts due to line surge, opens lead MS, connects ground to lead A to the alarm sender and to lead B of the rotary line switch multiple, disconnects ringing induction tone from lead R and connects the lead through a make on H, if provided, to steady or interrupted tone. Relay A1 also opens the circuit to H, which is slow release, and holds tone on the trunk for an interval.

1.06 The operator may recheck the class of service tone by disconnecting and reconnecting. To recheck tone, the operator should remove the plug for at least 0.5 second to permit A2 to release and open the circuit to P1, thereby preventing a false ringback when reconnecting. Relays A and A1 release and reoperate, operating and releasing H, which again connects a spurt of class of service tone to the trunk.

COIN ACCESS ONLY

A. Initial Coin Returned Upon Operator Answer - Fig. 1, B, and 5 With Options ZA, ZB, ZC, and ZJ or ZK

1.07 When the operator answers, the circuit functions as in 1.04 through 1.06, except that when A1 operates, it closes ground through a break on EC and IN to operate CT and ground is maintained on lead MS by a break on EC.

1.08 Relay CT locks on its secondary winding to the sleeve, reverses the tip and ring to cause the coin box trunk to cut through, prepares the operating and locking circuits of EC and W, closes the break-contacts of EC through a make on CT and continuity contacts on W to the primary winding of W, and connects 60-ipm ground to the winding of IN.

1.09 When relay IN operates on the closed period of the interrupter, ground through a make on IN operates W which locks to CT. Relay W connects coin return battery through the lamp to front contacts on Z. The ground which operated relay W is also connected to both sides of the winding of Z, which does not operate. Approximately 0.5 second later, IN releases and opens ground from the winding of W, thereby removing the short on the primary winding of Z which permits it to operate from battery through its primary and secondary winding in series to ground through contacts of W and CT operated.

1.10 Relay Z operated operates CN, connects coin return battery through the contacts of CN to 4B and 4T of relay T1 if option ZJ is specified, or to 4B of relay T1 only (ring open) if option ZK is specified, prepares the circuit for shunting W down, closes contacts in multiple with break-contacts on EC to maintain the W shunting path when EC operates, and connects ground to lead MS. CN operated disconnects continuous ringing and generator ground from the contacts of T1, connects its operating ground through to operate T, opens the circuit for holding S1 operated, short circuits inductor R, and locks to T. Relay T operated provides a holding ground for SR to ensure returning the coin, disconnects the P2 winding of S from the calling line if Fig. C is provided, or P1 winding if Fig. D is provided, and connects the network consisting of capacitors D and E, inductor R, and resistor E to the calling line, operates TA, and connects the operating ground on CN and T to operate T1, and provides a holding path for S1 (if option ZA is furnished). Options ZA and ZB prevent the operator from getting an on-hook signal during coin control or collect operations. If option ZB is not furnished, S1 releases when T releases and the operator receives an on-hook signal. Relay T1 operated connects coin return battery through the contacts of CN to both sides of the line if option ZJ is specified, or to the tip side only (ring open) if option ZK is specified.

1.11 When IN operates approximately 0.5 second later, it connects ground to shunt down W which disconnects coin battery from the line, closes the operating circuit of EC, and transfers the holding circuit of Z from ground on CT to ground on the IN break-contact. Relay Z holds to the IN and discharges the line through capacitor C and resistor C. EC operated locks to CT, disconnects its ground from lead MS, and opens the operating circuits of W and CT. When IN releases approximately 0.5 second later, Z releases which disconnects the discharge path from the line, opens the operating ground circuit from CN, T, and T1, and removes ground from lead MS. However, T and CN do not release immediately but are held by T1 which holds T which, in turn, holds CN. When T1 releases, it recloses the tip and ring of the line to the transformer, disconnects the leads from the front contacts of CN from the discharge network, and opens the holding circuit of T. Relay T is slow releasing to hold the discharge network across the tip and ring of the calling line to reduce the potential which may be on the line. When T releases, it reconnects the transmitter battery supply through S to the calling line. Relay T released opens the locking circuit of CN which reconnects ringing current and ground to the make-contacts of T1, opens the short on inductor R, and recloses the operating and holding circuit for S1. During the time S1 is released, the operator is given an on-hook signal. Relay TA is slow release and holds the operating circuit of S1 open for an interval since, if the calling subscriber has disconnected, S may operate momentarily due to the charging of the line capacity. Relay TA also provides a motor start ground.

B. Initial Coin Retained - Fig. 1, B, and 7 or 5 With Options ZA, ZB, ZD, ZE

1.12 With Fig. 7, circuit operation is the same as 1.01 through 1.03 except that when A1 operates, it operates relay CT directly. CT locks on its secondary winding to the sleeve and reverses the tip and ring to cause the coin box trunk to cut through.

C. Fig. 1, 5, or 7 and A and Option ZE

1.13 Circuit operation is the same as 1.07 through 1.11 except that on-hook indication is maintained during return of initial coin.

PREPAY COIN AND NONCOIN - FIG. 4 AND 5 OR 7, OPTION V OR T, POSTPAY COIN AND NONCOIN (TWO CLASSES OF SERVICE TONES)

1.14 Where prepay coin, noncoin, or post-pay coin lines have access to this trunk, the class of service indication received over lead A from the selector or line switch multiple determines whether the circuit will function to reverse the tip and ring for prepay coin lines.

1.15 Relay E in Fig. 4 is a 2-step relay and will operate to close only its 4-5T and 4-5B contacts when a resistance ground is connected to lead A. It will operate completely through a direct ground. Ground from A1 operated, when the operator answers, is connected through contacts of E and, with option V, is closed to the CT winding when the coin class of service indication is a resistance ground. With T option, it is connected when the coin indication is a direct ground. The initial coin return feature is therefore only effective on calls originated by coin lines.

1.16 The circuit operation, except as described above, is as stated in 1.04 through 1.11 depending upon the type of line originating the call. As Fig. 5 or 7 is not required for postpay or noncoin lines, two classes of service tones can be obtained by using Fig. 4 alone where prepay lines are not used.

RINGBACK

1.17 If the toll operator desires to ring back the calling subscriber, the toll operator operates the ringing key which causes the incoming trunk at the toll switchboard to send a momentary on-hook pulse which allows A to release and operate P. At the termination of the pulse, A reoperates and closes ground through makes on P and A2 to operate P1 which locks to SR. P1 operates TA which provides a locking circuit for S1, if operated, operates T, and connects 120-ipm ground to the rotary magnet of selector A which steps under control of the interrupter. Relay T operated disconnects the P2 winding of S from the transformer, connects the supplementary ground to hold TA, connects the network consisting of capacitors D and E, resistor E, and inductor R to the tip and ring of the line, and connects its operating ground to operate T1. Relay T1 operated disconnects the transformer and capacitor A from the line, connects continuous ringing and ringing ground through the network described above and the tip and ring of the line, and holds T operated. Relay T1 is sufficiently slow in operating to permit the network to discharge any potential on the line before ringing current is connected to the line, thereby reducing acoustic shock. The network serves to reduce the harmonics of the ringing current so that the minimum disturbance possible will occur in the receiver at the calling station if it is off-hook.

1.18 Relay T will remain operated until selector A has been stepped to terminal 4 where ground will be connected to resistor A to shunt down P1. Relay P1 released closes the releasing circuit of selector A through its off-normal springs, opens 120-ipm ground from the ROT magnet, and opens the operating circuit of T and T1. Relay T will not release since it is being held by T1. Relay T1 released disconnects ringing current from the above described network and recloses the

transformer and capacitor A to the calling subscriber line. Relay T is slow release and holds the network across the line in order to provide a discharge path for any potential that may be on the line due to ringing current. When relay T releases, it re-connects S across capacitor A to the line for talking battery supply.

COIN CONTROL

1.19 When this circuit is accessible to coin lines, Fig. 5 or Fig. 7 is provided which provides means for collecting or returning the coin at the calling station. When a coin control selector is dialed to the terminals associated with this trunk or the Trunk Coin Control Circuit is seized by the operator, ground is connected over lead CO to operate CN, T, and T1 in cascade. These relays then function as described under 1.07 through 1.13 to provide for connecting coin battery to the calling line and to provide a discharge network to reduce acoustic shock.

DISCONNECT

1.20 When the calling subscriber disconnects or the alarm sender releases, S releases and releases S1. S1 released disconnects battery and connects ground to lead M to give the toll operator an on-hook signal. No other action takes place in this circuit until the toll operator disconnects. If the toll operator disconnects first, the circuit is held when A releases by ground from S through a break-contact on A to hold SR. When the toll operator disconnects, ground is removed from lead E by the signaling circuit and A releases. If the subscriber has disconnected, SR will release which will momentarily operate P through a make on SR. However, since A will not reoperate within the releasing time of SR and P, P1 will not operate and lock to reset ringing. When SR releases, it removes ground from lead S, re-connects ground to lead BR, and permits the preceding switches to release, thereby restoring the circuit to normal.

2. OPERATION WHEN THE COIN CONTROL TRUNK CIRCUIT IS USED - OPTION ZF

SEIZURE

2.01 When this circuit is seized at any multiple appearance, the bridge connected on leads T and R or T2 and R2 operates relay S which connects ground to lead S except when seized from a rotary out trunk switch. Relay S operates S1 and SR. Relay S1 removes ground, connects battery through lamp S to lead M, and operates P. Relay P opens lead N to the coin control trunk. Relay SR connects a supplementary ground to lead S, disconnects ground from lead BR, connects ground to lead MS, when provided, and connects ringing induction tone toward the calling subscriber

over lead K to lead R via the coin control trunk.

2.02 Class of service indication is received over lead A from the coin control trunk and consists of either open ground, direct ground, or resistance ground. If Fig. 3 or 4 is furnished, H operates to prepare the class of service tone indication and to ground lead IS or MS, as required.

2.03 Positive transmission battery (option ZH) is furnished when this circuit is used with coin station sets arranged for dial tone first operation. Negative transmission battery (option ZG) is provided for other uses.

OPERATOR ANSWERS

A. When Fig. 1 and 3 and Option W Are Provided (One Class of Service Tone)

2.04 When the operator answers, ground is received over lead E from the signaling circuit which operates A. Relay A opens the original operating circuit of SR, provides a supplementary ground to hold SR, operates A1, and grounds lead G to alert the coin control trunk for possible operation later in the call. Relay A1 operated connects resistor G in multiple with the winding of A so that it will hold over momentary opens of the composite relay contacts due to line surges, opens lead MS, connects ground to lead A to the alarm sender and to lead B of the rotary line switch multiple, disconnects ringing induction tone from lead R, and connects the lead through a make on H, if provided, to steady or interrupted tone. Relay A1 also opens the circuit to H which is slow release and holds tone on the trunk for an interval. The operator may restart the class of service tone by disconnecting and reconnecting. To restart tone, the operator should remove the plug for at least 0.5 second to permit A2 to release and open the circuit to P1, thereby preventing a false ringback when reconnecting. Relays A and A1 release and operate, operating and releasing H which again connects a spurt of class of service tone to the trunk.

B. When Fig. 1 and 4 and Option W Are Required (Two Classes of Service Tones)

2.05 The operation is the same as described in 2.04, except relay E is provided. Relay E in Fig. 4 is a 2-step relay and will operate to close only its 4-5T and 4-5B contacts when a resistance ground is connected to lead A. It will operate completely to a direct ground. Its purpose is to connect one of two classes of service tones to lead R via lead K and the coin control trunk.

C. When Fig. 1 and 5 or 7 and A or B Are Provided

2.06 Inband coin operation eliminates the need of Fig. 5 or 7 and A or B. All coin operations (return of initial coin and operator coin control) are handled by the coin control trunk circuit. Option ZE must be removed to block the operation of Fig. 5 or 7 and A or B.

CCIN CCNTROL

A. Return of Initial Coin, If Required, and Operator Coin Control

2.07 If return of the initial deposit is required, the associated coin control trunk will perform this operation. No operation takes place in this trunk.

2.08 Normal coin operation is handled under control of the operator. If the operator needs to dispose of the coins at the calling station, the coin collect or return key is operated, depending upon what function is required. The operation of these keys causes lead E to be opened by an on-hook signal or wink for approximately 0.1 second. The wink signal releases relays A and A1. SR holds over the wink interval. Relay A released removes ground from lead G. This alerts the coin control trunk. At the end of the on-hook signal or wink, A reoperates, thereby reoperating A1 and regrounding lead G. This causes the coin control trunk to function further. At a designated time after the completion of the wink signal, the switchboard trunk sends either a coin collect or return ac inband tone over the T and R leads to the coin control trunk. The coin control trunk functions to apply the proper coin potential to the customer line and, if the customer is off-hook, puts a holding bridge on this circuit to hold S.

2.09 The application of coin potential continues under control of the operator. When the coin disposal interval is finished, the coin control trunk releases and removes the holding bridge from this circuit.

RERING

2.10 When the operator wishes to rering the calling station, she operates the rering key. This causes lead E to be opened by an on-hook signal or wink for approximately 0.1 second. The wink signal releases relays A and A1. Relay SR holds over the wink interval. Relay A released removes ground from lead G. This alerts the coin control trunk. At the end of the on-hook signal, A reoperates thereby reoperating A1 and regrounding lead G. This causes the coin control trunk to function further. At a designated time after the completion of the wink signal, the switchboard trunk sends a ringback ac inband tone over the T and R leads to the coin control trunk. The coin

control trunk functions to apply ringback voltage to the customer line and, if the customer is off-hook, puts a holding bridge on this circuit to hold S.

2.11 The application of ringing voltage continues under control of the operator. When the ringback interval is finished, the coin control trunk releases and removes the holding bridge from this circuit if one was applied.

DISCONNECT

2.12 When the calling subscriber disconnects or the alarm sender releases, S and S1 release. Relay S1 disconnects battery and connects ground to lead M to give the toll operator an on-hook signal. No other action takes place in this circuit until the toll operator disconnects.

2.13 If the toll operator disconnects first, the circuit is held by SR when A and A1 release. No further release action takes place until the customer disconnects.

2.14 When the toll operator disconnects, ground is removed from lead E by the signaling circuit and A and A1 release. Also, ground is removed from lead G by A. If the subscriber has disconnected, SR will release. SR released removes ground from lead S, reconnects ground to lead BR, and permits the preceding switches and the coin control trunk to release. The circuit is now restored to normal and ready for reseizure.

3. ALARM CONTROL AND SENDER CIRCUIT ACCESS

3.01 When this circuit is seized by an alarm sender circuit, S and S1 operate to transmit a seizure to the operator office. When the operator answers, A1 connects ground to lead A of the alarm sender circuit, causing it to function. Where coin and noncoin lines have access to the trunk, the initial coin return feature will not function since there is no class of service indication to operate E. Where only coin lines have access to this trunk, the circuit will function to return the initial coin. However, the reversal and coin battery are not applied to the alarm sender since the alarm sender tip and ring multiple is connected beyond relay T1.

4. IDLE CIRCUIT TERMINATION

4.01 With option J, a capacitor and series resistor are normally connected across the T and R leads and serve to terminate the line when used in connection with a telephone repeater. When a station is connected to this circuit and relays S and S1 operate, the termination, through G and resistor H, is opened.

5. FUSE FAILURE MAKE-BUSY RELAY CIRCUIT

FIG. 2 OR 6 AND OPTION Z0

5.01 Should the -48 volt supply fuse fail, relay MB releases, disconnecting ground from lead BR and connecting ground to the sleeve lead, making the trunk busy. When the trunk is made busy for test purposes by plugging into the test jack, ground is removed from relay ME. Relay MB releases and makes the trunk busy as before.

FIG. 6 WITH OPTION ZP

5.02 Should the +48 volt supply be interrupted, relay MBA will release, disconnecting ground from lead BR and connecting ground to the sleeve lead, making the trunk busy. In case the negative supply is interrupted, MB releases and the circuit functions as described in 5.01.

SECTION III - REFERENCE DATA

1. WORKING LIMITS

1.01 Supervision - Relay S

	<u>Indiv</u>	<u>2-Party & Coin</u>	<u>PBX</u>
Max. Ext Ckt Loop (ohms)	1500	1500	2170
Min Ins Res (ohms)	15,000	15,000	30,000
Max. Earth Pot. (volts)		±20	
Min Ext Ckt Res (ohms)			8270

2. FUNCTIONAL DESIGNATIONS

2.01 Relays

<u>Designation</u>	<u>Meaning</u>
A	Operator Answers
A1, A2	Operator Answers Auxiliary
CN	Coin
CT	Coin Box Trunk
E	Class of Service
EC	Coin Auxiliary (Prepay)
H	Hold
IN	Interrupter
MB	Make Busy
MBA	Make-Busy Auxiliary
P	Pulsing
P1	Pulsing Auxiliary
S	Supervisory
S1	Signaling
SR	Slow Release
T	Talk
T1, TA	Talk Auxiliary
W, Z	Timing

3. FUNCTIONS

3.01 When seized at any outgoing appearance, to make other appearances test busy and to hold the preceding circuit.

3.02 When seized, to signal the operator at the toll switchboard.

3.03 To hold the connection under control of the operator and subscriber.

3.04 When arranged for coin operation, to retain or return the initial coin deposit when the operator answers.

3.05 To provide access to the trunk for coin control when arranged for coin operation. Coin potentials are applied to the tip and ring (option ZJ) or tip only with ring open (option ZK).

3.06 To provide means for the operator to ring back on an established connection.

3.07 To provide motor start when required.

3.08 To provide for class of service tones.

3.09 To provide ringing induction tone to the calling subscriber until the operator answers.

3.10 To provide type B talking battery.

3.11 To provide switchhook supervision to the operator.

3.12 To provide means for making trunk tests and for busying the trunk.

3.13 To provide for group busy registration.

3.14 To provide fuse failure make-busy and group busy registration when required.

3.15 To provide for operation with non-coin lines, coin lines, or both.

3.16 To provide an idle circuit termination for telephone repeaters.

3.17 To provide positive (option ZH) or negative (option ZG) talk battery. Positive transmission battery is furnished when this trunk is arranged to work with coin station sets arranged for dial tone first operation; otherwise, furnish negative talk battery.

4. CONNECTING CIRCUITS

4.01 When this circuit is listed on a keysheet, the connecting information thereon shall be followed.

(a) Composite Sets and Repeating Coils Circuit - SD-95004-01.

- (b) Composite Signaling Circuit Type B With Complete Set and Phantom Coil Group - SD-95032-01.
- (c) Composite Signaling Circuit Type E - SD-95028-01 (typical).
- (d) Simplex Signaling Circuit - SD-95051-01.
- (e) Trunk Coin Control Circuit - SD-95031-01.
- (f) No. 350A 4-Wire Selector Circuit - SD-31933-01.
- (g) No. 1 and 350A Subscriber Line With Rotary Line Switch - SD-31259-01.
- (h) No. 1 and 350A 60- and 120-IPM Interrupter and Alarm Circuit - SE-31606-01.
- (i) No. 350A Traffic Register Circuit - SD-31109-01.
- (j) No. 350A Coin Control Selector - SD-30232-01.
- (k) No. 1 and 350A Miscellaneous Tone and Tone Alarm Circuit - SD-31521-01.
- (l) Coin Control Supply - SD-80594-03.
- (m) Distributing and Control Ringing Supply - SD-80885-01.
- (n) No. 1, 350A, and 355A Tone Interrupter Circuit - SD-31825-01.
- (o) No. 355A 4-Wire Selector - SD-31733-01 (typical).
- (p) No. 355A Alarm Control and Sender Circuit - SD-32193-01.
- (q) No. 355A Subscriber Line With Rotary Line Switch - SD-31898-01.
- (r) No. 355A Power Ring Circuit - SD-80727-01.
- (s) No. 355A Power Coin Control Circuit - SD-80634-01.
- (t) No. 355A Miscellaneous Alarm Circuit - Registers - SD-31976-01.
- (u) No. 355A Miscellaneous Alarm Circuit - Key Circuit - SD-31974-01.
- (v) No. 1 and 355A Coin Control Selector - SD-31853-01.
- (w) Toll Switchboard No. 3 or 3C Toll Switching Trunk - SD-55381-01.
- (x) Application Schematic for V2 Telephone Repeaters - SD-64903-01.
- (y) Intercepting Trunk - SD-31771-01.
- (z) Rotary Out Trunk Switch Circuit - SD-30868-01.
- (aa) No. 1 Traffic Register Circuit - SD-30896-01.
- (ab) No. 1 Step-by-Step, 3- or 4-Wire Selector Circuit - SD-30200-01 (typical).
- (ac) No. 355A Trunk or Connector Alternating Relay Circuit - SD-32063-01.
- (ad) No. 1, 350A, and 355A Coin Control Trunk Circuit - SD-32288-01.

5. MANUFACTURING TESTING REQUIREMENTS

5.01 This trunk shall be capable of performing all the service functions specified in the circuit description and meeting all the requirements of the Circuit Requirements Tables.

SECTION IV - REASONS FOR REISSUE

E. Description of Changes

D.1 Option ZK is deleted from wiring between 2E of relay Z and 1T of relay CN and is added to wiring between 2B of relay Z and 3B of relay CN. This places the coin control potential on the tip side of the line and opens the ring conductor, as originally intended when this option was introduced on the previous issue.

BELL TELEPHONE LABORATORIES, INCORPORATED

DEPT 5223-HEM-MR