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STEP-BY-STEP SYSTEMS NO. 1, 350A, 355A, 356A, 360A, 35-E-97 AND NORTH ELECTRIC CO. CX. OFFICES INTERCEPTING TRUNK CIRCUIT FOR INTERCEPTING CALLS FROM CONNECTOR TERMINALS AND FROM SELECTOR LEVELS FOR USE WITH AN ANNOUNCEMENT MACHINE ANNOUNCEMENT SYSTEM NO. 7A

CHANGES

D. Description of Changes

D.1 Fig. 10 is added to provide connection to the Voice Alarm and Control Circuit, SD-27980-01.

D.2 Circuit Note 102 is changed to reflect the above change.

D.3 Connecting Information is added to Figs. 1, 2, 3, 4, 6 and 7 to show compatibility with Fig. 10.

F. Changes in Circuit Description

F.1 Under 4. CONNECTING CIRCUITS, add:

4.14 Voice Alarm and Control Circuit - SD-27980-01.

BELL TELEPHONE LABORATORIES, INCORPORATED

DEPT 5225-LCB
WECO DEPT 5152-FLS-WEA

STEP-BY-STEP SYSTEMS
NO. 1, 350A, 355A, 356A, 360A, 35E97
AND NORTH ELECTRIC CO. CX OFFICES
INTERCEPTING TRUNK CIRCUIT
FOR INTERCEPTING CALLS FROM
CONNECTOR TERMINALS
AND FROM SELECTOR LEVELS
FOR USE WITH AN ANNOUNCEMENT MACHINE
ANNOUNCEMENT SYSTEM NO. 7A

CHANGES

B. Changes in Apparatus

	Removed	Replaced by
B.1	T-Resistor 145A-383 Fig. 1,2,3,4 and 6	T-Resistor 221A-383 Fig. 1,2,3,4 and 6
	R-Resistor 145A-383 Fig. 1,2,3,4 and 6	R-Resistor 221A-383 Fig. 1,2,3,4 and 6

D. Description of Circuit Changes

D.1 Added Fig. 9, CADS 20 and 21.

D.2 Added Fig. 9 to Note 102.

D.3 Added Fig. 9 as connecting information on Fig. 1,2,3,4,6 and 7.

D.4 Added Note 208.

D.5 Added information to Note 104.

D.6 Added HMDF to CAD 5.

D.7 Rated Fig. 8 A&M only.

D.8 Rated CADS 16 and 17 A&M only.

D.9 Rated equipment Note 205 A&M only

D.10 Changed Note 207.

D.11 Changed the B resistor code on Fig. 3 from 145A to 18AR type to agree with manufacturing information.

D.12 Changed the code of the T and R resistors from 145A to 221A type.

D.13 In information Note 309, the T1 & R1 leads are rated (MFR DISC) and T2 and R2 leads are added.

D.14 Under supporting information equipment drawing ED-95034( ) is lined out, H400-107 added. Keysheet information added.

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STEP BY STEP SYSTEMS NO. 1, 350A, 355A, 356A, 360A, 35-E-97 AND NORTH ELECTRIC CO. CX. OFFICES INTERCEPTING TRUNK CIRCUIT FOR INTERCEPTING CALLS FROM CONNECTOR TERMINALS AND FROM SELECTOR LEVELS FOR USE WITH AN ANNOUNCEMENT MACHINE ANNOUNCEMENT SYSTEM NO. 7A

CHANGES

C. Changes in Circuit Requirements Other Than Those Caused by Changes in Apparatus

C.1 The contact pressure for the S (EA33) relay was formerly H.

C.2 Test Note 2 is added to the nonoperate requirements for the S (EA33) relay.

D. Description of Changes

D.1 Rate this circuit A&M Only for 350A offices.

D.2 To provide for a 3.2-ohm output instead of a 12-ohm output from the Amplifier Circuit, SD-95281-01, punching 15 is changed to punching 17 in CAD Fig. 16, and the T1 and R1 leads are changed to T2 and R2, respectively, in circuit Fig. 8 and CAD Fig. 16.

D.3 Note 102 is revised to furnish Fig. 8 on a one per Announcement Circuit instead of on a one per office basis.

D.4 In Fig. 7, connection is provided to the Auxiliary Trunk Circuit, SD-32500-01.

D.5 The Circuit Requirements Table was changed for the S (EA33) relay as stated in C. above.

F. Changes in Circuit Description

F.1 Change 10. to read:

10. TRUNK CIRCUIT - FIG. 7

10.1 When this circuit is seized by a connector or an Auxiliary Trunk Circuit, through the connector jacks, a ground on the ST lead operates the SL relay. This starts the announcement machine by connecting the ST lead to the ST1 lead through make contacts of the SL relay. When the connector or the Auxiliary Trunk Circuit releases, the ground is removed from the ST lead which restores the circuit to normal.

F.2 Under 4. CONNECTING CIRCUITS, add:

4.13 Auxiliary Trunk Circuit - SD-32500-01.

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DEPT 2363-NPS-RJJ

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STEP BY STEP SYSTEMS NO. 1, 350A, 355A, 356A, 360A, 35-E-97 AND NORTH ELECTRIC CO. CX. OFFICES INTERCEPTING TRUNK CIRCUIT FOR INTERCEPTING CALLS FROM CONNECTOR TERMINALS AND FROM SELECTOR LEVELS FOR USE WITH AN ANNOUNCEMENT MACHINE ANNOUNCEMENT SYSTEM NO. 7A

CHANGES

A. CHANGED AND ADDED FUNCTIONS

A.1 Provision is made to control the timing for automatic disconnect of the switch train and connector on calling party holds and to disable the timing circuit when this circuit is busy.

D. DESCRIPTION OF CIRCUIT CHANGES

D.1 In Figures A and 6 Options S and M, respectively, are added for use when automatic disconnect of connectors on calling party holds is required.

D.2 In Figures A and 6, Option Y is rated Mfr. Disc. replaced by Option N.

D.3 In Figure 2 the T or +, R or - and S or C leads are shown connecting to the Trunk Finder as well as to the Sel. Bank Mult. Ckt.

D.4 In Figure 8, the T, R, ST and ST1 leads are shown connecting to the Outgoing Trunk Circuit for Dial Coin Zone Service or to Outgoing Trunk Circuit - No. 1 with AMA in addition to Figures 1, 2, 3, 4, 6, or 7.

D.5 Note 102 is revised.

D.6 Reference to Options M, N, and S is added to Note 104 and Options Used table. Note 104 was previously shown as Note 103. A new Note 103 is added.

D.7 Note 105 was formerly shown as Note 104.

D.8 A new Note 301 is added. Notes 302 through 309 were formerly shown as Note 301 through 308.

1. PURPOSE OF CIRCUIT

1.1 This circuit provides a means of connecting calls, which have been placed to unassigned numbers or vacant selector levels, to an announcement machine. The machine provides a recorded announcement to the calling subscriber explaining the nature of the call.

2. WORKING LIMITS

Max. Ext. Ckt. Res. - 1500 ohms for Figure 2

Min. Ins. Res. 1500 ohms

3. FUNCTIONS

3.1 To trip ringing.

3.2 To connect the calling party to an announcement machine.

3.3 To start the announcement machine.

3.4 To indicate line seizure to toll selectors.

3.5 To hold the preceding switch train when required.

3.6 To maintain the connection until the calling party disconnects.

3.7 To prevent conversation between two parties simultaneously connected to the announcement machine.

3.8 In calls from TPL connectors to close the tip and ring leads when the line is rung.

3.9 To control the timing for automatic disconnect of coded line and release of switch train and connector on calling party holds and to disable the timing feature on regular intercepted calls.

4. CONNECTING CIRCUITS

When this circuit is listed on a key sheet, the connecting information thereon is to be followed.

4.01 Connector Bank Multiple Circuit - SD-32128-01.*

4.02 Selector Bank Multiple Circuit - SD-32128-01.*

Printed in U. S. A.

4.03 Announcement Machine (2A Telephone Answering Set).

4.04 Traffic Register Circuit - SD-30896-01.*

4.05 200 Pt. Connector - SD-33005-01.*

4.06 Intercepting Trunk Circuit - SD-31995-01.

4.07 Announcement Circuit - SD-95283-01.

4.08 Amplifier Circuit - SD-95281-01.

4.09 Switch Trouble Alm. Ckt. or Misc. Alm. Ckt. - SD-32045-01.

4.10 Outgoing Trunk Ckt. for Dial Coin Zone Service - No. 1 with AMA - SD-32317-01.

4.11 Outgoing Trunk Ckt. - No. 1 with AMA - SD-32204-01.

4.12 Trunk Finder Circuit - SD-31781-01, SD-31530-01, SD-33013-01, SD-31793-01.

*Typical

DESCRIPTION OF OPERATION

5. TRUNK CIRCUIT

5.1 Figure 1 with Figure A when this circuit is seized by a connector or a toll transmission or toll intermediate selector, ground on the sleeve lead "S" operates relay (S). When "Z" option is provided, the (R) vacuum tube conducts during the ringing cycle to trip ringing. The operation of relay (S) closes the circuit between leads "ST" and "ST1" to start the announcement machine and grounds lead TS1. When ground is removed from lead "S", relay (S) releases and the circuit is restored to normal. With Y or N option (S) also places ground on the "CT" lead to operate a register in the traffic register circuit.

5.2 Figure 1 with Figure B - When this circuit is seized by a toll transmission selector, ground on the control lead operates relay (S) on its primary winding. (S) operated locks itself to the sleeve lead and removes the 500 ohm battery on that lead. The operation of (S) closes the circuit to the announcement machine over the "ST" and "ST1" leads. When ground is removed from the control lead by the selector, (S) remains operated through its secondary winding. Removal of ground from the sleeve leads releases (S), and the circuit is restored to normal.

6. TRUNK CIRCUIT - Figure 2

6.1 When this circuit is seized by a local or toll preceding selector or a trunk finder, a circuit is closed between leads "T" and "R" operating relay (A). Relay (A) operated, operates relay (B). The operation of relay (B) removes the (S) resistance from the "S" lead with "X" option, grounds lead "S" to hold the preceding switch train, and closes the circuit between leads "ST" and "ST1" to start the announcement machine. If any further pulsing is received, relay (A) will release and operate in response to the pulses, but since relay (B), is slow-to-release, it will remain operated. When the calling party disconnects, relay (A) releases. After a short interval relay (B) releases and the circuit is restored to normal.

7. TRUNK CIRCUIT - Figure 3

7.1 When this circuit is seized by an intertoll selector, a simplex ground signal is connected to the "T" and "R" leads through retard coil (A) and resistances (A), (A1) and (B), and ground is connected to leads "S", operating relay (SL). Relay (SL) operated closes a circuit between leads "ST" and "ST1" to start the announcement machine. When the calling party disconnects, ground is removed from lead "S" allowing relay (SL) to release, restoring the circuit to normal.

8. TRUNK CIRCUIT - Figure 4

8.1 When this circuit is seized by a toll transmission or toll intermediate selector, ground on the sleeve lead "S" operates relay (S). The operation of relay (S) closes the circuit between leads "ST" and "ST1" to start the announcement machine. In addition, the operation of (S) places a 2600 ohm ground on the "C" lead through a back contact on the (C) relay and closes the operating path of the (C) relay. When the (C) relay operated, it places 1300 ohm battery on the "C" lead. The (S) relay is released when ground is removed from the "S" lead. The release of (S) restores the circuit to normal.

9. TRUNK CIRCUIT - Figure 6

When this circuit is seized by a TPL connector, the tip and ring leads are held open until ringing is begun. The (T) relay is operated over its secondary winding by ringing current and locks itself to the sleeve lead. (T) also operates (S) and closes the tip and ring leads to the tripping tube. (S) operates as described above to start the announcement machine and with "Y" or "N" option to operate a traffic register. (S) operated also grounds lead TS1. When the circuit is released, ground is removed from the sleeve lead. (T) releases and (T), in turn, releases (S).

10. TRUNK CIRCUIT - Figure 7

10.1 When this circuit is seized by a connector, through the connector jacks, R option a ground on the "ST" lead operates

the (SL) relay. With Q option, the SL relay is operated from a relay in the Switch Trouble Alarm Circuit or Misc. Alarm Circuit. This starts the announcement machine by connecting the "ST" lead to the "ST1" lead through make contacts of the (SL) relay. When the connector releases the ground is removed from the "ST" lead which restores the circuit to normal.

11. AUTOMATIC DISCONNECT OF CONNECTORS ON CALLING PARTY HOLDS

11.1 When connectors are arranged to automatically disconnect on calling party holds after a predetermined time and the connector group is furnished with intercept trunks, the timing for disconnect is under control of the intercept trunks and other trunks arranged to trip ringing without charging.

11.2 If the intercept trunks are idle when the calling party fails to replace his receiver on hook after the called party disconnects, a timing circuit is started from ground through a break contact on a relay in the Switch Trouble Alarm Circuit or Misc. Alarm.

11.3 If the intercept trunks are busy when the calling party fails to replace his receiver on hook after the called party disconnects, the timing circuit is disabled. In Figure A when the S relay operates or in Figure 6 when the T relay operates, ground over lead TS1 operates a relay in the Switch Trouble Alarm Circuit or Misc. Alarm Circuit to open the timing circuit.

12. MISCELLANEOUS

12.1 Resistances (T) and (R) are provided in each trunk to provide about 45 db between trunks to prevent crosstalk between trunks. These resistances also serve to reduce the level from the announcement machine to normal voice level, and to provide a termination for the machine.

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