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CIRCUIT DESCRIPTION

CD-32087-01
Issue 1
Appendix 3-D
Dwg. Issue 4-D

STEP BY STEP SYSTEMS
NO. 1, 350A or 355A
OUTGOING REPEATER CIRCUIT
BATTERY AND GROUND PULSING
LONG RANGE REVERSE BATTERY SUPERVISION
TYPE "B" TB SUPPLY

CHANGES

C. CHANGES IN CIRCUIT REQUIREMENTS OTHER
THAN THOSE APPLYING TO ADDED, SUPERSEDED
OR REMOVED APPARATUS

C.1 Note 1 is removed from Page 2 of the
Ckt. Req. Table. This note referred to
the (D) relay (223A) and read as follows:
"Test contact pressure springs 6T-7T and
6B-7B min. 35 grams.

All other headings, no change.

BELL TELEPHONE LABORATORIES, INCORPORATED

DEPT. 2315-JML-RCD-F9

HS1

**CIRCUIT DESCRIPTION
SWITCHING SYSTEMS DEVELOPMENT DEPARTMENT**

**CD-32087-01
Issue 1
Appendix 2-D
Dwg. Issue 3-D**

**STEP BY STEP SYSTEMS
NO. 1, 350A OR 355A
OUTGOING REPEATER CIRCUIT
BATTERY AND GROUND PULSING
LONG RANGE REVERSE BATTERY SUPERVISION
TYPE "B" TB SUPPLY**

CHANGES

D. DESCRIPTION OF CIRCUIT CHANGES

D.1 Cross connection Fig. 55 is changed to show two 5-point terminal strips instead of one 9-point strip, since the 9-point strip is not available.

All other headings, no change.

BELL TELEPHONE LABORATORIES, INCORPORATED

DEPT. 2325-RDN-EWO-RDN-VP

Printed in U.S.A.

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HSB

CIRCUIT DESCRIPTION
SWITCHING SYSTEMS DEVELOPMENT DEPARTMENT

CD-32067-01
Issue 1
Appendix 1-D
Dwg. Issue 2-D

STEP BY STEP SYSTEMS
NO. 1, 350A OR 355A
OUTGOING REPEATER CIRCUIT
BATTERY AND GROUND PULSING
LONG RANGE REVERSE BATTERY SUPERVISION
TYPE "B" TB SUPPLY

CHANGES

D. DESCRIPTION OF CIRCUIT CHANGES

**D.1 Note 102 is revised to change the
cable lengths to which the compensating**

**resistances apply in order to facilitate
the operation of the E23 Repeaters
pulse relays with this circuit.**

D.2 Note 301 is added.

All other headings, no change.

BELL TELEPHONE LABORATORIES, INCORPORATED

DEPT. 2353-JPD-EWO-JS

STEP-BY-STEP SYSTEMS
NO. 1, 350A, or 355A
OUTGOING REPEATER CIRCUIT
BATTERY AND GROUND PULSING
LONG RANGE REVERSE BATTERY SUPERVISION
TYPE "B" TB SUPPLY

1. PURPOSE OF CIRCUIT

1.1 This circuit is for use as an outgoing repeater circuit to repeat dial pulses and reverse battery supervision. This circuit provides repeating coil transmission.

2. WORKING LIMITS

TRUNK

<u>Supervision</u>	<u>Incoming</u>	<u>Outgoing</u>
Max.Ext.Ckt.Res.	2,375	8,000
Min.Ins. Res.	30,000	30,000

For Pulsing See Keysheets

3. FUNCTIONS

- 3.1 To ground the sleeve to hold the associated switches in the same office in their operated position and to make this circuit busy.
- 3.2 To provide for all trunks busy registration.
- 3.3 To repeat pulses received towards the called office using battery-ground pulsing.
- 3.4 To repeat reversed battery supervision received towards the calling end.
- 3.5 To restore to normal when the calling station disconnects.

4. CONNECTING CIRCUITS

Where this circuit is shown on a key sheet, the connecting information thereon shall be followed. The following circuits are typical.

- 4.1 Local Selector - SD-30200-01.
- 4.2 Traffic Register Ckt. - SD-30896-01.
- 4.3 Inc. By-link Trk. in Distant Office - SD-25581-01.

4.4 Rotary Out. Trunk Switch - SD-30868-01.

4.5 Trunk Auxiliary Circuit - SD-32032-01.

4.6 Sel. Bank Mult. Ckt. - SD-32123-01.

DESCRIPTION OF OPERATION

5. SEIZURE

5.1 When this circuit is seized the (A) relay operates operating (B) and closing the loop towards the called end through the repeating coil and winding of (E). Relay (B) operated,

(1) Removes ground from the "BR" lead to the all trunks busy register.

(2) Grounds the sleeve lead, to hold the preceding selectors operated and make the circuit test busy.

(3) Prepares a circuit for the operation of (C) during pulsing.

The current flowing in the winding of (E) at this time is in the non-operate direction and the relay does not operate.

6. PULSING

When the loop is opened at the beginning of pulsing a digit the (A) relay releases opening the loop towards the called end and operating (C) which disconnects the repeating coil and winding of the (E) relay from the trunk conductors and substitutes battery and ground through padding resistances. When (A) reoperates at the end of the first pulse, it closes this battery and ground through the padding resistances towards the called end and the battery and ground is supplied in such a way as to aid the battery and ground of the distant office to quickly reoperate the (A) relay in the distant office. (A) on successive pulses of the digit interrupts this increased current. (C) and (B) being slow to release remain operated during the pulsing of the digit.

HS 7

After the digit is completed (A) remains operated and after an interval (C) releases reconnecting the bridge through the repeating coil and winding of (E) to the trunk and disconnecting the battery and ground through the padding resistances. (C) in releasing, first changes from battery and ground through the padding resistances, to ground through the 350 ohm resistance, winding of the (E) relay and one winding of the repeating coil and then changes to the loop circuit through the repeating coil windings and (E) relay winding removing the 350 ohm ground. This is to prevent false operation of (E) from the battery and ground through the padding resistances. During this interval the distant (A) relay is held over one winding only.

7. CALLED PARTY ANSWERS

When the called party answers, the current is reversed through the winding of (E), which operates, in turn operating (D).

This reverses the current supplied towards the calling station; and also opens the circuit for (C) so that any momentary release of (A) cannot operate (C). When the called party disconnects the current in the winding of the (E) relay is again restored to normal releasing (E) and in turn (D), restoring the current towards the calling end to normal.

8. DISCONNECT

When the called party disconnects (A) releases, opening the circuit towards the called station and opening the circuit to the slow release (B) relay. If (D) is normal, (C) operates. When (B) releases, (C) and (D) restore to normal if operated. The operation of (C) at this time performs no useful function. (B) released also removes ground from the sleeve lead to release the selectors in this office and to make this circuit available for the next call.

BELL TELEPHONE LABORATORIES, INC.

DEPT. 3030-GE-RLL-A2