STEP-BY-STEP SYSTEM
NO. 355A
AUXILIARY LINE CIRCUIT
FOR OPERATING SUBSCRIBER'S REGISTER

CHANGES

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

C.1 On Issue 6-D the code number of the (A) relay was inadvertently changed from R1644 to R1664. It is now corrected to be R1644.

D. DESCRIPTION OF CIRCUIT CHANGES

D.1 The rating is changed from "A.T.& T.Co. Standard" to "Mfr. Disc." due to the abandonment of the immediate charge feature (Figs. 2 and 4) and since this circuit is now replaced by SD-32082-01.

D.2 Prior to this issue the replacement note read: "Figs. 1 and 3 replaced by SD-31876-01, except for additions."

D.3 Reference to ED-30625-01 and J33013S is added.

All other headings, no change.

BELL TELEPHONE LABORATORIES, INC.

DEPT. 3440-CMD-EWO-F3

STEP-BY-STEP SYSTEMS
NO. 355A
AUXILIARY LINE CIRCUIT
FOR OPERATING SUBSCRIBER'S REGISTER

CHANGES

D. DESCRIPTION OF CIRCUIT CHANGES

D.1 Fig. 58 is revised to slow line circuit terminal strip and cabling out of function - "shown on C.D.F. cross-connection drawing", to permit use of regular line circuit termination.

BELL TELEPHONE LABORATORIES, INC.

DEPT. 3310-BP-RLL:ES

STEP BY STEP SYSTEM
NO. 355A
AUXILIARY LINE CIRCUIT
FOR OPERATING SUBSCRIBER'S REGISTER

CHANGES

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

C.1 The former adjustments for the (P) relays have been designated "Adjustment A" and are superseded by added adjustments designated "Adjustment B".

C.2 "Test Wdg." column of the circuit requirements for the (P) relays formerly was shown as "P/S".

D. DESCRIPTION OF CIRCUIT CHANGES

D.1 Working limits formerly specified "Max. Ext. Ckt. Loop - Sub. Line - 1000Ω".

D.2 New working limits are added specifying a limit for both "ADJ A" and "ADJ B" using both 45V. and 48V. minimum voltage.

D.3 Voltage range is changed from 45-50V to 45-52V.

2. WORKING LIMITS

	(P) Relay Supv. 45V Min.		48V Min.	
	ADJ A	ADJ B	ADJ A	ADJ B
2.1 Maximum external circuit loop	1000Ω	1400Ω	1115Ω	1500Ω

2.2 Minimum insulation resistance 15,000 ohms.

4. CONNECTING CIRCUITS

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

4.1 Subscriber's line.

4.2 Subscriber line circuit less connector multiple. SD-31777-01.

4.3 Connector circuit. SD-31832-01 (Typical).

4.4 Interrupter relay circuit. SD-31868-01.

All other headings, no change.

BELL TELEPHONE LABORATORIES, INC.

DEPT. 3310-WSI-RLL-B

STEP-BY-STEP SYSTEM
NO. 355A
AUXILIARY LINE CIRCUIT
FOR OPERATING SUBSCRIBER'S REGISTER

CHANGES

B. CHANGES IN APPARATUS

B.1 Superseded	Superseded By
(P) 206GG Relay Figures 1 & 3 Option Z	(P) 280H Relay Figures 1 & 3 Option Y

C. CHANGES IN CIRCUIT REQUIREMENTS OTHER THAN THOSE APPLYING TO ADDED OR REMOVED APPAPATUS

C.1 Prior to this issue the soak value for the (P) relays was 130 ma.

C.2 Test Note 4 is removed. It read: "A negative sign (-) preceding a current value indicates that this current shall flow in a direction opposite to the direction of the circuit operating current".

D. DESCRIPTION OF CIRCUIT CHANGES

D.1 The use of the 206GG relay is rated Mfr. Disc. and superseded by the 280H relay to provide polarized relays with improved adjustment stability.

D.2 Options used table and Note 104 is added.

D.3 Reference to Figure 4 in Note 103 is removed as Figure 4 was furnished on Issue 1 as standard.

E. CHANGES IN TRANSMISSION REQUIREMENTS

E.1 Reference to the added 280H relay is added to the test table.

All other headings, no change.

BELL TELEPHONE LABORATORIES, INC.

DEPT. 3310-MHK-RLL-AK

STEP-BY-STEP SYSTEM
NO. 355A
AUXILIARY LINE CIRCUIT
FOR OPERATING SUBSCRIBER'S REGISTER

CHANGES

D. DESCRIPTION OF CIRCUIT CHANGES

D.1 Figs. 1 and 3 are rated "A & M Only."

D.2 Note 103 is added.

All other headings, No change.

BELL TELEPHONE LABORATORIES, INC.

DEPT. 332

FK)
WLF) EN

STEP-BY-STEP SYSTEM
NO. 355A
AUXILIARY LINE CIRCUIT
FOR OPERATING SUBSCRIBER'S REGISTER

CHANGES

D. DESCRIPTION OF CIRCUIT CHANGES

D.1 Leads T and R to the connector multiple have been shown paired.

D.2 The circuit title has been changed. It formerly read

STEP-BY-STEP SYSTEM
355A DIAL OFFICE
AUXILIARY LINE CIRCUIT
FOR OPERATING SUBSCRIBER'S REGISTERS

E. CHANGES IN TRANSMISSION REQUIREMENTS

E.1 The transmission test requirements have been added.

All other headings, No change.

BELL TELEPHONE LABORATORIES, INC.

DEPT. 332

GNQ)
WLF) FN

STEP-BY-STEP SYSTEM
355A DIAL OFFICE
AUXILIARY LINE CIRCUIT
FOR OPERATING SUBSCRIBER REGISTERS

CHANGES

D. DESCRIPTION OF CIRCUIT CHANGES

D.1 Cross-connection figures 51 to 58 were added.

All other headings, No Change.

BELL TELEPHONE LABORATORIES, INC.

DEPT. 332

HOW)
WLF) GT

STEP-BY-STEP SYSTEM
355A DIAL OFFICE
AUXILIARY LINE CIRCUIT
FOR OPERATING SUBSCRIBER'S REGISTER

1. PURPOSE OF CIRCUIT

1.1 This circuit provides a line message register and a relay circuit for operating the register for use where the relay circuit is to be connected between the line and the line circuit. The relay circuit provides a delayed charge interval when Fig. 1 is furnished and can be used where ring back is required. With Fig. 2 these features are not provided.

2. WORKING LIMITS

2.1 Maximum external circuit loop 1,000 ohms.

2.2 Minimum installation resistance 15,000 ohms.

3. FUNCTIONS

3.1 On an outgoing call, when battery reverses to the subscriber, that is, when battery is on the tip and ground is on the ring, to operate the subscriber's register after a delay of one second minimum and two seconds maximum with the use of Fig. 1 or with a short delay with the use of Fig. 2.

3.2 To non-operate the register on all other conditions.

4. CONNECTING CIRCUITS

4.1 Subscriber's line.

4.2 Subscriber line circuit less connector multiple.

4.3 Connector circuit.

4.4 Interrupter relay circuit.

DESCRIPTION OF OPERATION

5. OUTGOING CALL FROM SUBSCRIBER (FIGS. 1 & 3)

Relay (P) is polarized so that when a subscriber's receiver is off the hook and battery is supplied on the ring and ground on the tip, that it will not operate. A charge condition is set up by reversing the battery and ground which operates relay (P).

Relay (P) closes a circuit to the int. relay circuit "A" lead through the secondary winding of relay (A). This causes a relay in the int. relay circuit to operate and start the motor. With the motor running interrupted ground is returned over the "A" lead. When the "A" lead is grounded relay (A) operates on its secondary winding sufficiently to close contacts 3B and 4B. The primary winding is shunted at this time by a ground through contacts 3B and 5B of relay (B) and contacts 3B and 4B of relay (A). When ground is removed from the "A" lead a circuit is closed from ground to both windings of relay (A) in series aiding which fully operates the relay. The "A" lead is closed to ground for approximately 1/2 second and opened for approximately 1/2 second. If relay (P) releases during the open period of the interrupter, relay (A) releases and prevents the operation of the register. When relay (P) remains operated until the "A" lead is again grounded, relay (B) operates from a ground on the "A" lead on its primary winding and locks to the sleeve on its secondary winding. Relay (A) is held operated during the interval that the "A" lead is grounded. When ground is removed from the "A" lead, relay (A) releases. With relay (A) released, and relay (B) operated, a circuit is closed to operate the message register. Relay (B) remains operated and relay (A) remains released until the connection is released.

6. OUTGOING CALL FROM SUBSCRIBER (FIGS. 2 & 4)

Relay (P) is polarized so that when a subscriber's receiver is off the hook and battery is supplied on the ring and ground on the tip, that it will not operate. A charge condition is set up by reversing the battery and ground which operates relay (P).

Relay (P) in operating closes a circuit for operating and holding the message register (MR) to the sleeve lead until the connection is released. The register (MR) is also locked thru its own contacts to the sleeve in order to avoid false registration in case the (P) relay releases and reoperates before the connection is released.

7. INCOMING CALL TO SUBSCRIBER (FIGS. 1 OR 2)

The (P) relay is not in the circuit on calls to the subscriber as the connector multiple is between the relay and the line.

BELL TELEPHONE LABORATORIES, INC.

DEPT. 332

GHD)
WLF) LE