

STEP BY STEP SYSTEMS
NO. 355A, 356A, 360A OR 35-E-97
MISCELLANEOUS ALARM CIRCUIT
FOR MESSAGE RATE TRUNKS
AUXILIARY LINE CIRCUITS
LINE AND TRUNK FINDERS
AND PREPAYMENT COIN BOX TRUNKS

CHANGES

- D.1 Option N is designated and rated standard and option Q is added and rated standard. Option Q allows connection to aisle pilot relays when used on a once-per-aisle basis.
- D.2 References to options N and Q are added to notes 102 and 103 and the Options Used Index. Note 105 is added.
- D.3 Connecting information is added to Fig. 1. References are added to notes 103 and 104. Note 106 is added.
- D.4 A distribution code number is added to the title box.
- D.5 Changed Figs. 52 & 54 to reflect the above changes.

Changes in CD Sections

F.1 Add the following to Connecting Circuits:

- 4.11 Miscellaneous Interrupter Circuit for MR Trunk with Delayed Charge Interval - SD-35007-01.
- 4.12 Timing Circuit for use with +65 Volt Dry Cell Alarm Circuit - SD-35008-01

BELL TELEPHONE LABORATORIES, INCORPORATED

Dept 5245-HNS
WECO Dept 5152-JMS-WEA

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CHANGES

B. Changes in Apparatus

B.1 Added

1-18AC (D)
500 Ohm Resistor
(S Option)

D. Description of Changes

D.1 Options R and S are added to the circuit on this issue in Fig. 2. Prior to Issue 15D, option R was part of the circuit and option S was not shown.

D.2 Notes 102, 103, and 104 are revised to cover the above additions.

F. Changes in CD Sections

F.1 Under 4. CONNECTING CIRCUITS, add:

4.10 Office Alarm Circuit - H61496-01.*

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DEPT 5641-WCB-RMW

44
2A

CIRCUIT DESCRIPTION

CD-31978-01
Issue 4-D
Appendix 3-B
Dwg. Issue 14-B

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CHANGES

- C. CHANGES IN CIRCUIT REQUIREMENTS OTHER
THAN THOSE APPLYING TO ADDED OR REMOVED
APPARATUS
- C.1 The armature travel for the Y295(MR1)
relay is changed from 49 to 44.
- C.2 Test Note 3 on page 2 of CRT is added.
- All other headings, no change.

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DEPT. 2335-MKD-FEB-LA

CIRCUIT DESCRIPTION

CD-31978-01
Issue 4-D
App. 2-D
Dwg. Issue 13-D

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CHANGES

D. DESCRIPTION OF CIRCUIT CHANGES

D.1 The rating of this circuit for 356A
offices is changed to A&M Only since
it is expected that there will be no further
demand for new 356A dial offices.

All other headings, no change.

BELL TELEPHONE LABORATORIES, INCORPORATED

DEPT. 2336-JPD-RCD-KY

STEP BY STEP SYSTEMS
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MISCELLANEOUS ALARM CIRCUIT
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CHANGES

D. DESCRIPTION OF CIRCUIT CHANGES

D.1 In the last item of circuit Note 103
"except 22 point" was "except 12
point," "355A" was "555A," under Figs. was
1, 2 and under Quantity "1 per FR" was
"1 per off."

D.2 In Fig. 2, ALM Only was added to
leads "B" & "A."

D.3 In the title box the equipment abbrevi-
ation was "(CB ALM) or (MR ALM)."

D.4 "TRK" was removed from connecting in-
formation at "M" lead in Fig. 2.

All other headings, no change.

BELL TELEPHONE LABORATORIES, INCORPORATED

DEPT. 2315-ASD-RCD-E2

STEP BY STEP SYSTEMS
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MISCELLANEOUS ALARM CIRCUIT
FOR MESSAGE RATE TRUNKS
AUXILIARY LINE CIRCUITS
LINE AND TRUNK FINDERS
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CHANGES

D. DESCRIPTION OF CIRCUIT CHANGES

D.1 Removed "TRUNK" from trunk finders in title and fig. 2 to permit use with both trunk and line finders.

D.2 In note 103 under "Feature or Option" the top item was "Prepay coin trunk message rate trk or aux line alarm timing and alarm ckt".

D.3 In note 104 the arrangement for the 360A C.D.O. was included with the top item.

All other headings under Changes, no change.

1. PURPOSE OF CIRCUIT

1.1 This circuit is used to provide interruptions for message register and coin trunk charging and to transfer finder alarms to aisle pilot and alarm control circuits.

2. WORKING LIMITS

2.1 None.

3. FUNCTIONS

3.1 Provides ground interruptions for message register and coin trunk charging.

3.2 Provides an alarm lamp and causes a minor alarm in case of grounded "A" or "RR" leads or failure to remove battery from "A" lead.

3.3 To transfer alarm conditions from the finder to the aisle pilot and alarm control circuits.

4. CONNECTING CIRCUITS

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

4.1 Trunk or auxiliary line circuit arranged to operate subscribers message register, SD-32082-01*.

4.2 Trunk finder circuit, SD-31530-01*

4.3 Power ringing circuit, SD-80884-01*.

4.4 Prepayment coin trunk circuit, SD-31592-02*.

4.5 Switch trouble alarm circuit or line and trunk finders, SD-31514-01, SD-32239-01.

4.6 Miscellaneous alarm circuit, (alarm control and aisle pilots) SD-32192-01

4.7 Miscellaneous alarm circuit - 360A, SD-31209-01.

4.8 Power shelf terminal block - 35-E-97, H-62707*.

4.9 Group and alarm relay circuit, SD-32194-011.

*Typical circuit

5. DESCRIPTION OF OPERATION

5.1 Pickup and alarm equipment for prepay coin trunks, or trunks arranged to operate subscriber registers.

5.11 Figs. 1 and A

When the trunk or auxiliary line circuit receives answering supervision, resistance battery operates the (MR) relay over the "A" lead in turn operating (MR1) which grounds lead "MS" to start the power ringing circuit, closes ground through the (MR) lamp to the "RLS" lead for timing and closes, the (INT) relay to the power ringing machine interrupter over lead "RR or CD". When the interrupter closes, (INT) operates and locks to the interrupter in turn connecting direct ground to the "A" lead which advances the trunk and holds operated (MR). When the interrupter cam opens, (INT) releases removing the ground from the "A" lead. The trunk maintains resistance battery on this lead, however, holding operated (MR) and (MR1). When ground is removed from lead "RR or CD" to release (INT), (MR) may release momentarily but (MR1) being slow releasing holds over this open period. When the interrupter again closes, (INT) reoperates and recloses ground to the "A" lead holding (MR) and advancing the trunk. Upon release of (INT) the trunk removes

battery from the "A" lead releasing (MR) and (MRL). Should other trunks advance into the delay charge position they in turn will maintain battery on the "A" lead causing the cycle to repeat as just described.

If, because of some trouble condition, the battery is not removed from the "A" lead or if the "A", or "CD or RR" lead becomes permanently grounded the maintenance of ground on the "RLS" lead will cause the minor alarm equipment to function. The (MR) lamp will be lighted indicating the source of the trouble.

5.12 Figs. 1 and B (360A only)

The operation with Figs. 1 and B is the same as with Figs. 1 and A except that the A, B and C relays operating from 60 IPM ground provide the interrupted ground which in Fig. A, is received over the "RR or CD" lead. Relay MRL in operating connects 60 IPM ground to operate A to close

5/6 top and 3/4 bottom. On the next open period, A operates fully on both windings in series, extending the 60 IPM lead to B which operates to close 5/6 top and 3/4 bottom. On the next open B operates fully, extending the 60 IPM lead to C, which operates on the next closed period, releasing A and B, locking to the 60 IPM ground and connecting ground to 6T (MRL). When MRL releases, A, B, and/or C, if operated, will release. Fig. B thus provides ground to 6T (MRL) for 1/2 second each 3 seconds.

5.2 Finder Alarm and Pilot Relay -
Figure 2

When ground is applied to lead "M" or "B", (TF) operates, which closes the "PL" lead, and grounds the "SL" lead to the alarm control circuit through the (C) resistance. This relay is always furnished when finders (other than 22 point) are provided, whether or not aisle pilot lamps are used.

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DEPT. 2315-ASD-RCD-DE