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COMMON SYSTEMS
MISCELLANEOUS CIRCUIT
TRUNK FRAME
AUTOMATIC NUMBER IDENTIFICATION - TYPE B
CROSSBAR NO. 1 OR PANEL OFFICE

CHANGES

A. Changed and Added Functions

A.01 Provides an outpulser seizure failure peg count relay.

B. Changes in Apparatus

B.01 Added

FS14 - App Fig. 12

D. Description of Changes

D.1 A pulse repeating relay, OSF-, is added per FS14 and App Fig. 12 to lengthen and repeat a ground to:

(a) Operate a traffic register over the OSF- lead, to record an outpulser seizure failure.

(b) Operate a plant or traffic register over the BSF- lead when option Q is specified. This lead must be closed by the B1 relay in the miscellaneous circuit trouble ticketer frame to provide a peg count of a simultaneous trunk seizure failure and an all outpulsers busy.

D.2 Information Note 302 is changed to add a 3-6.24 second interrupter timing interval for trunk accessing of an outpulser.

D.3 Circuit Notes 102, 104, CAD 1 and CAD 4 are changed to reflect item D.01 changes.

F. Changes in CD Section

F.1 In SECTION II, add 10:

10. OUTPULSER SEIZURE FAILURE PEG COUNT RELAY - FS14

10.01 When App Fig. 12 is specified for a No. 1 crossbar office in this circuit, an OSF- relay is provided for each trunk subgroup to repeat a ground from an ANI-B trunk time-out to operate a traffic register. When option Q is also provided, another ground is repeated to operate a plant register located on the trouble ticketer frame when there is also a simultaneous all outpulsers busy condition. The OSF- relay is much faster to operate than release in order to lengthen the relatively short pulses from the trunks. The OSF- diode and OSF- resistor aid in the slow-release of the relay.

10.02 The trunk time-out information can be used by either traffic or plant maintenance to determine whether traffic conditions justify additional outpulsers.

F.02 In SECTION III, 2.01 Relays, add:

Designation	Meaning
OSF-	Outpulser Seizure Failure

F.3 In 4. CONNECTING CIRCUITS, add:

(x) Traffic Register Circuit (Crossbar No. 1) - SD-25317-01 or SD-25942-01.

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DEPT 5245

WE DEPT 2583)-WCR-GWC-VK

COMMON SYSTEMS
MISCELLANEOUS CIRCUIT
TRUNK FRAME
AUTOMATIC NUMBER IDENTIFICATION - TYPE B
CROSSBAR NO. 1 OR PANEL OFFICE

CHANGES

B. Changes in Apparatus

B.1	Superseded	Superseded By
	A Jack 238A - FS4, App Fig. 8	A Jack 238AM - FS4, App Fig. 8
	B Jack 238A - FS5, App Fig. 8	B Jack 238AM - FS5, App Fig. 8
	RC Jack 238A - FS6, App Fig. 8	RC Jack 238AM - FS6, App Fig. 8
	A1, B1 Tel Jacks 223A - FS3 App Fig. 8	A1, B1 Tel Jacks 223AM - FS3, App Fig. 8
	FA Lamp 2G - FS9, App Fig. 6	FA Lamp A2 - FS9, App Fig. 6
	FC1, FC2 Lamps 2G - FS7, App Fig. 7	FC1, FC2 Lamps A2 - FS7, App Fig. 7
	AL Lamp 2Y - FS11, App Fig. 9	AL Lamp M1 - FS11, App Fig. 9

D. Description of Changes

D.1 Circuit Note 106 is revised to avoid confusion in providing Fig. 1, or connection to it, in panel office.

D.2 Circuit Note 104 shows the changes made in apparatus.

BELL TELEPHONE LABORATORIES, INCORPORATED

DEPT 5245-HNS

WE DEPT 367-WCR-EER-JCM

COMMON SYSTEMS
MISCELLANEOUS CIRCUIT
TRUNK FRAME
AUTOMATIC NUMBER IDENTIFICATION - TYPE B
CROSSBAR NO. 1 OR PANEL OFFICE

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SECTION I - GENERAL DESCRIPTION

1. PURPOSE OF CIRCUIT

1.01 This circuit is designed for use in panel and crossbar No. 1 offices arranged for automatic number identification. It provides the miscellaneous apparatus mounted on the trunk frame, and includes time-out control relays, trunk test circuit connector relays, a frame line between frames, a frame test battery, a spare jack, a remote control jack for the Outpulser Identifier Test Circuit, a talking battery filter, a talking battery filter fuse alarm, a 48-volt fuse alarm, and a ground removal test time-out alarm.

SECTION II - DETAILED DESCRIPTION

1. TIME-OUT CONTROL RELAYS - FS1

1.01 The B and F relays operate on the back and front closures, respectively, of the TO interrupter. Alternate operation of the B and F relays alternately connects lead D to leads B and C of the trunk circuits. The trunks use these alternate closures for timing functions.

2. TRUNK TEST CONNECTOR RELAYS - FS2, OPTION 2, FS12, OPTION 10, AND FS13, OPTION 11

2.01 The frame relays (FR-) are provided to supply connecting leads from the outgoing trunks to the Automatic Trunk Test Circuit. The relays operate when the FR lead is grounded by a trunk in response to a signal from the test circuit, and are released when the ground is removed.

3. FRAME LINE BETWEEN FRAMES - FS3

3.01 Communication may be established between ANI frames by plugging operator telephone sets into the TEL jacks on the frames. Talking battery is supplied through the connecting circuit.

4. FRAME TEST BATTERY - FS4

4.01 Test terminals are furnished on the frame to supply 48-volt battery, direct ground, and high resistance ground for test purposes. Test battery jack A is provided to supply battery and direct ground for use with test sets.

5. SPARE JACK - FS5

5.01 Spare jack B is furnished for possible future requirements.

6. REMOTE CONTROL JACK - FS6

6.01 Control lead RC from the Outpulser Identifier Test Circuit (OIT) is brought out to the RC jack on the trunk frame. A 32A test set can be used for remote operation of the Automatic Trunk Test Circuit when key TT in the OIT CKT is operated.

7. TALKING BATTERY FILTER AND TALKING BATTERY FILTER FUSE ALARM - FS7 AND FS8

7.01 FS8 is provided to supply talking battery to the outgoing trunks. Inductors FCC1 and FCC2 and their associated bypass capacitors FC1 and FC2 provide sufficient reduction in noise arising in the battery supply. In addition, capacitors FC1 and FC2 provide a sufficiently low common impedance to keep crosstalk within permissible limits when the resistance of the associated wiring between capacitors and battery and ground does not exceed 0.02 ohm. A 20-amp alarm type fuse is furnished in series with each capacitor. The operation of the 20-amp fuse connects battery, through the 350-ohm ceramic coated resistor which is part of the fuse mounting housing, to lead B1 or B2 or FS7. This lights the FC1 or FC2 lamp in series with a low resistance relay in the alarm circuit and starts a major audible and visual alarm. Removal of the operated 20-amp fuse silences the alarm and extinguishes the lamp. Resistors FC1 and FC2 are furnished to prevent an open alarm lead if the FC1 or FC2 lamp is removed.

8. 48-VOLT FUSE ALARM - FS9 AND FS10

8.01 The operation of the 20-amp feeder fuse followed by the operation of the parallel 1-1/3 amp pilot fuse or the operation of any 1-1/3 amp or 1/4 amp circuit fuse supplies battery through the resistors and FA lamp in series with a relay to ground in the alarm circuit. This lights the FA lamp and starts a major audible and visual alarm. The lamp is extinguished and the alarm silenced when the operated fuse is removed.

8.02 The 20-amp feeder fuse must be replaced before the pilot fuse is replaced.

8.03 The 1075-ohm resistor is provided to prevent an open alarm lead if the FA lamp is removed. The 220-ohm resistors are provided to protect the alarm lead in case of a trouble ground.

9. GROUND REMOVAL TEST TIME-OUT ALARM - FS12

9.01 When a trunk times out while awaiting connection to an outpulser for making a ground removal test, it grounds the AL lead, operating the AL alarm relay. AL operated locks to the AR alarm release key, lights the AL lamp, and starts a minor audible and visual alarm. Subsequently, when the AR key is operated momentarily, the alarm is silenced and the circuit restores to normal. When the alarm transfer circuit is furnished, the alarm may be released from a remote location over lead LK.

9.02 The trunk time-out mentioned above may be caused by the unavailability of an outpulser due to heavy traffic conditions or by a trouble condition on one of the information leads between the trunk and outpulser.

SECTION III - REFERENCE DATA

1. WORKING LIMITS

None.

2. FUNCTIONAL DESIGNATIONS

2.01 Relays

Designation	Meaning
AL	Alarm - Brings in ground removal test time-out alarm
B(0-2)	Back - Provides alternate closures of lead D to leads B and C
F(0-2)	Front - Provides alternate closures of lead D to leads B and C
FR(0-2)	Frame - Provides connecting leads from trunks to the Automatic Trunk Test Circuit

2.02 Jacks

Designation	Meaning
A	48-volt Battery
B	Spare
RC	Remote Control
TEL	Telephone

2.03 Lamps

Designation	Meaning
AL	Alarm (ground removal test time-out)
FA	Fuse Alarm
FC1	Filter Fuse Alarm - First
FC2	Filter Fuse Alarm - Second

3. FUNCTIONS

3.01 Provides time-out control relays.

3.02 Provides connecting leads from the trunks on the same frame to the Automatic Trunk Test Circuit.

3.03 Provides a frame line between ANI frames.

3.04 Provides a frame test battery.

3.05 Provides a spare jack for future requirements.

3.06 Provides a remote control jack for the Automatic Trunk Test Circuit.

3.07 Provides a talking battery filter.

3.08 Starts a major audible and visual alarm when a filter fuse or circuit fuse operates.

3.09 Starts a minor audible and visual alarm when a trunk times out on ground removal test.

4. CONNECTING CIRCUITS

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

(a) Outgoing Trunk Circuit, MF Pulsing (Panel) - SD-21972-01.

(b) Outgoing Trunk Circuit, PCI Pulsing (Panel) - SD-21974-01.

(c) Outgoing Trunk Circuit, MF Pulsing (Crossbar No. 1) - SD-26209-01.

(d) Outgoing Trunk Circuit, PCI Pulsing (Crossbar No. 1) - SD-26210-01.

(e) Outpulser Identifier Test Circuit - SD-95815-01.

(f) Oscillator Circuit - SD-95827-01.

(g) Local Frame Line Circuit (Crossbar No. 1 and Panel - BCO) - SD-96379-01.

(h) Local Frame Line Circuit (Panel - GCO) - ES-20360-01.

(i) Aisle Pilot Circuit (Crossbar No. 1) - SD-25087-01.

(j) Floor Alarm Board Miscellaneous and Auxiliary Alarm Circuit (Panel - BCO) - SD-21203-01.

(k) Miscellaneous Alarm Circuit (Panel - GCO) - SD-20241-01 (typical).

(l) Audible Alarm Circuit for Floor Alarm Board (Panel) - SD-21819-01.

(m) Alarm Transfer Circuit (Crossbar No. 1) - SD-25885-01.

(n) Alarm Transfer Circuit (Panel - BCO) - SD-20733-01.

(o) Alarm Transfer Circuit (Panel - GCO) - SD-20736-01.

(p) Automatic Trunk Test Circuit - SD-95889-01.

(q) Outpulser Connector - SD-95890-01.

(r) Outgoing Trunk Circuit - Special Toll or Operator Assistance - Coin (Panel) - SD-21981-01.

(s) Outgoing Trunk Circuit - Special Toll or Cperator Assistance - Noncoin (Panel) - SD-21982-01.

(t) Outgoing Trunk Circuit - MF Pulsing - ANI - Operator Assistance or Special Toll - Noncoin - High Low or E&M Lead Supervision (Crossbar No. 1) - SD-27813-01.

(u) Outgoing Trunk Circuit - MF Pulsing - ANI - Operator Assistance or Special Toll - Coin - High Low or E&M Lead Supervision (Crossbar No. 1) - SD-27814-01.

(v) Outgoing Trunk Circuit - MF Pulsing - ANI - Special Toll and Operator Assistance - Coin - Loop or E&M Lead Signaling (Panel) - SD-21991-01.

(w) Outgoing Trunk Circuit - MF Pulsing - ANI Special Toll and Operator Assistance - Noncoin - Loop or E&M Lead Signaling (Panel) - SD-21992-01.

5. MANUFACTURING TESTING REQUIREMENTS

5.01 This circuit shall perform all service functions specified in this circuit description and shall meet all the standards of the Circuit Requirements Table and the Electrolytic Capacitor Test Requirements Table. It also shall function under the test conditions listed below.

5.02 All tests shall be made with the test voltage between -45 to -50 volts.

SECTION IV - REASONS FOR REISSUE

B. Changes in Apparatus (Components)

B.1 Removed

Entire App Fig. 12

Relays { FR9, FR10, FR11 } Code AF24, App Fig. 12

D. Description of Changes

D.1 Option R is added in FS12 to permit testing panel E&M lead trunks with use of App Fig. 10.

D.2 App Fig. 12 is unnecessary as a result of adding option R, and is removed on a no-record basis as no equipment containing App Fig. 12 has been manufactured.

D.3 CAD 5 and sheet 9 are canceled.

D.4 CAD 3 is amended to include option R and leads E&M.

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