

1 3

CROSSBAR SYSTEMS  
NO. 3  
OUTGOING PLUG-ENDED TRUNK  
CIRCUIT  
TO INFORMATION DESK  
LOOP SUPERVISION

TABLE OF CONTENTS	PAGE
<u>SECTION I - GENERAL DESCRIPTION</u> . . .	1
<u>1. PURPOSE OF CIRCUIT</u> . . . . .	1
<u>2. GENERAL DESCRIPTION OF OPERATION</u>	1
<u>SECTION II - DETAILED DESCRIPTION</u> . .	1
<u>1. NORMAL OPERATION - SC1</u> . . . . .	1
<u>2. TESTING</u> . . . . .	2
<u>3. MISCELLANEOUS</u> . . . . .	2
<u>SECTION III - REFERENCE DATA</u> . . . .	2
<u>1. WORKING LIMITS</u> . . . . .	2
<u>2. FUNCTIONAL DESIGNATIONS</u> . . . . .	2
<u>3. FUNCTIONS</u> . . . . .	2
<u>4. CONNECTING CIRCUITS</u> . . . . .	2
<u>5. MANUFACTURING TESTING REQUIREMENTS</u> . . . . .	3
<u>6. TAKING EQUIPMENT OUT OF SERVICE</u>	3

SECTION I - GENERAL DESCRIPTION1. PURPOSE OF CIRCUIT

1.01 This trunk circuit is used to connect a line to an information desk. The circuit is arranged for loop supervision.

2. GENERAL DESCRIPTION OF OPERATION

2.01 When seized, this trunk connects the calling customer to the information desk.

SECTION II - DETAILED DESCRIPTION1. NORMAL OPERATION - SC1

1.01 After the marker has determined that a trunk of this type is required, it

finds and selects an idle trunk in the following manner:

- (a) Ground supplied by the trunk over the FT lead indicates to the marker that at least one trunk in the required group on the associated trunk switch and connector circuit is idle.
- (b) Ground supplied by the marker is looped through the idle trunk on leads TG and TT and is directed by the marker connector, trunk block, and trunk group relays to operate one of 12 TT- relays.
- (c) Battery supplied by the marker and directed by the marker connector, trunk block, and TT- relay through lead TF, operates the F relay in the trunk.

## 1.02 The operation of relay F:

- (a) Operates the S1 relay.
- (b) Grounds the SW lead.
- (c) Transfers the incoming T and R leads from this circuit to the T1 and R1 leads, respectively.
- (d) Transfers the incoming S lead from this circuit to the SL lead.
- (e) Locks its own winding to the TF lead.
- (f) Grounds the JC lead.

## 1.03 The operation of relay S1:

- (a) Supplies a holding ground for later use on the S lead.
- (b) Operates the BY relay.
- (c) Opens the MB lead.
- (d) Provides its own lock path through a contact on the S relay.

## 1.04 The operation of relay BY:

- (a) Opens the loop through leads TT and TG.

- (b) Opens the FT lead.
- (c) Opens the F relay operating path.
- 1.05 When the marker has connected the line through the network to the trunk it:
  - (a) Tests the T and R leads for continuity.
  - (b) Tests the S lead for a false ground.
  - (c) If above tests are successful, it releases the F relay.
  - (d) Releases itself.
- 1.06 The release of relay F operates the S relay over the customers loop.
- 1.07 The operation of relay S:
  - (a) Provides a holding ground for the S1 relay.
  - (b) Closes the loop toward the information desk as an off-hook signal.
- 1.08 The off-hook signal alerts the information operator who answers the call and talks to the customer.
- 1.09 When the customer hangs up, the S relay releases.
- 1.10 The release of relay S:
  - (a) Replaces the off-hook signal with an on-hook signal toward the information desk.
  - (b) Releases the S1 relay.
- 1.11 The release of relay S1:
  - (a) Releases the channel between the line and trunk.
  - (b) Releases the BY relay.
- 1.12 The release of relay BY restores the trunk to its idle state.

## 2. TESTING

2.01 Testing of this trunk is performed by setting up a test connection to this trunk from a test line. Routine operations are performed from the test line to the information operator in the same manner as for a regular service call.

## 3. MISCELLANEOUS

- 3.01 Capacitors T and R are provided to isolate the incoming and outgoing circuits.
- 3.02 Network S is provided to protect the diodes in the line circuits.
- 3.03 Inductor A is provided to block the talking currents from the DC supervisory path.

## SECTION III - REFERENCE DATA

### 1. WORKING LIMITS

- 1.01 See the No. 3 crossbar keysheet for customer line supervision limits.

### 2. FUNCTIONAL DESIGNATIONS

#### 2.01 Relays

<u>Designation</u>	<u>Meaning</u>
BY	Busy
F	Frame
S	Subscriber
S1	Sleeve

### 3. FUNCTIONS

- 3.01 See SECTIONS I And II for functions of this circuit.

### 4. CONNECTING CIRCUITS

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

- (a) Trunk Switch and Connector Circuit - SD-26383-01.
- (b) Traffic Usage Recorder Circuit - SD-96494-01.
- (c) Test Circuit - SD-26411-01.
- (d) Incoming Trunk Circuit - Information Desk No. 2 - SD-90527-01.
- (e) Incoming Trunk Circuit - Information Desk No. 3, 4, 6A, and 6B - SD-90000-01.
- (f) Incoming Trunk Circuit - Information Desk No. 3A, 4A, 6C, and 6E - SD-96352-01.

(g) Incoming Trunk Circuit - Information  
Desk No. 3B, 4B, 6D, and 6F -  
SD-96355-01.

5. MANUFACTURING TESTING REQUIREMENTS

5.01 This circuit shall be capable of performing all the functions listed in this Circuit Description and meeting the requirements listed in the Circuit Requirements Tables.

6. TAKING EQUIPMENT OUT OF SERVICE

6.01 If it is desired to remove this trunk from service for trouble or other

reasons, the test circuit is arranged to ground the MB lead which operates the BY relay. This sets the trunk in the busy state.

6.02 The test circuit can ground the MB lead by either of the following methods:

- (a) Insertion of a make-busy plug in the associated TRK-MB jack.
- (b) Operation of the remote make-busy facilities if they are provided.

6.03 Removal of ground from the MB lead will restore this circuit to service.

BELL TELEPHONE LABORATORIES, INCORPORATED

DEPT 5245-LCB

WE DEPT 355-AJE-KLF-MH

