EMERGENCY TRANSFER CIRCUIT
DIAL TO MANUAL SERVICE
TESTS
NO. 5 CROSSBAR OFFICES

1. GENERAL

1.01 This section describes a method of testing the emergency transfer circuits used in No. 5 crossbar offices.

1.02 This section is reissued to add DIAL TO MANUAL SERVICE to the title. Since this reissue covers a general revision, the arrows ordinarily used to indicate the changes are omitted.

1.03 The tests and features tested are as follows:

A. Dial Incoming Call to Subscriber

This test checks that this circuit is seized on a dial incoming call, when the toll switchboard T (transfer) key is either operated or not operated. It also checks the continuity of the tip, ring and sleeve leads.

B. Manual Incoming Call to Subscriber - Idle Circuit

This test checks that this circuit is seized on a manual incoming call from the toll switchboard when the toll switchboard T key is operated. It also checks the continuity of the tip and ring leads.

C. Manual Incoming Call to Subscriber - Busy Circuit

This test checks that the toll switchboard operator can monitor on the circuit while it is busy on a dial call. It also checks that, with the toll switchboard T key operated, the operator can transfer the subscriber tip and ring to the toll switchboard tip and ring by operating the C key associated with the toll switchboard multiple.

D. Dial Outgoing Call from Subscriber - T Key Not Operated

This test checks that the subscriber will receive dial tone on an outgoing call when the toll switchboard T key is not operated.

E. Manual Outgoing Call from Subscriber - T key Operated

This test checks that the subscriber will seize this circuit and light the L (line) lamp at the toll switchboard when the toll switchboard T key is operated.

F. Ringing from Switchboard

G. Busy Conditions

H. Pad Control Features

1.04 An assistant at the relay rack frame is required for making tests A to C. A toll switchboard operator or an assistant at the toll switchboard is required for making tests A, E and F.

1.05 While making these tests, an subscriber line on which service should not be denied must be given emergency service in accordance with local practices.

1.06 Tests should preferably be made during periods of light traffic and should be completed as quickly as possible to avoid interference with outgoing or incoming subscriber calls. If it is noted at any time that a subscriber call is blocked by the equipment under test, the equipment should be restored to service so that the service call can be served.

1.07 Lettered Steps: The letter a or b is added to a step number to indicate that the step covers an action which may or may not be required, depending on the office arrangement. The conditions under which a lettered step or series of lettered steps should be followed are given in the action column; all steps affected by the same condition are designated by the same letter. Where a condition does not apply, the associated steps should be omitted.

2. APPARATUS

2.01 The apparatus required for each test is shown in the following list. The details of each item are covered in the indicated paragraphs.

Apparatus	Required for Tests A	B,C,F	D	E	G,H
Master Test Frame (2.02)	✓	-	-	-	-
Handset (2.03)	✓	✓	✓	✓	-
Operator Telephone Set	-	✓	-	✓	-
Test Receiver (2.04)	-	-	-	-	✓
Testing Cord (2.05)	-	-	-	✓	-

2.02 Master test control circuit J23255 (SD-25800-01).

Master test frame telephone, key and lamp circuit (SD-25744-01).

Master test frame voltmeter test circuit (SD-25792-01).

2.03 No. 1011G handset equipped with a No. 2W41A cord assembly consisting of a W2CJ cord, a No. 471A jack, a No. 360A tool, a No. 360B tool and two KS-6278 tools (used to monitor on tip and ring of circuit under test by connecting to tip and ring punchings of terminal strip on the unit).

2.04 Test receiver - No. 716E or No. 528 receiver attached to a W2AB cord, equipped with two No. 360A tools (2W21A cord) a KS-6278 tool and a No. 411A tool (for checking the presence or absence of battery or ground).

2.05 Testing Cord - No. 893 cord, 6 feet long, equipped with two No. 360A tools (1W13B cord), one KS-6278 tool and one No. 419A tool (used for ground start lines to ground a contact spring in the ring lead circuit).

3. METHOD

STEP	ACTION	VERIFICATION
	A. Dial Incoming Call to Subscriber	
1	At master test frame - Restore all keys	
2	Operate RL key momentarily	All lamps extinguished
3	Operate IC (OA, OB, OAT, or OBT) key to select office designation for circuit to be tested	
4	Operate A-, B-, C-, D- keys for line number	
5	Operate MTO or MT1 key to select a special marker	
6	Operate T, LT keys	
7	At relay rack frame - Block non-operated all T1 relays of circuits controlled by the T key at the toll switchboard	
8	At toll switchboard - Operate T key	T lamp lighted
9	At relay rack frame - Operate switch of handset to MON	
10	Connect handset to punchings 1 and 2 of terminal strip on unit	
11	At master test frame - Operate ST key momentarily	LT, MRL lamps lighted At voltmeter test panel - S lamp lighted
12	At relay rack frame - Operate switch of handset to TALK	At voltmeter test panel - S lamp extinguished
13	Remove the blocking tool from the T1 relay of circuit under test	At voltmeter test panel - S lamp remains extinguished At relay rack frame - T1, LS, D relays operated T relay not operated

STEP	ACTION	VERIFICATION
14	Operate switch of handset to MON	At voltmeter test panel - S lamp lighted
15	Operate RL key momentarily	All lamps extinguished
16	Repeat steps 11 and 12	
17	At relay rack frame - Disconnect handset	
18	Operate RL key momentarily	All lamps extinguished
19	At toll switchboard - Restore T key	
20	At relay rack frame - Remove the blocking tools from the T1 relays	

B. Manual Incoming Call to Subscriber - Idle Circuit

1	At relay rack frame - Operate switch of handset to MON	
2	Connect handset to punchings 1 and 2 of terminal strip on unit	
3	Block T1 relay operated	D, T relays operated
4	At toll switchboard - Insert plug of operator telephone set into position jacks	
5	Operate TALK key of an idle cord	
6	When circuit is idle - Insert front cord plug into jack of line to be tested	BSY (busy) lamp lighted Cord supervisory lamp lighted At relay rack frame - BY relay operated
7	At relay rack frame - Operate switch of handset to TALK	At toll switchboard - Cord supervisory lamp extinguished
8	Disconnect handset	At toll switchboard - Cord supervisory lamp lighted
9	At toll switchboard - Remove front cord plug from jack	
10	Restore TALK key	
11	Remove operator telephone set from jack	
12	At relay rack frame - Remove blocking tool from T1 relay	

C. Manual Incoming Call to Subscriber - Busy Circuit

1	At relay rack frame - Operate switch of handset to MON	
2	Connect handset to punchings 1 and 2 of terminal strip on unit	
3	When circuit to be tested is idle - First block T1 relay operated, then block LS relay operated	D relay operated At toll switchboard - BSY lamp lighted

STEP	ACTION	VERIFICATION
4	At toll switchboard - Insert plug of operator telephone set into position jacks	
5	Operate TALK key of an idle cord	
6	Insert front cord plug into jack of line to be tested	Cord supervisory lamp lighted At relay rack frame - S1 relay operated
7	At relay rack frame - Operate switch of handset to TALK	At relay rack frame and toll switchboard - Dial tone heard
8	At toll switchboard - Operate C key associated with line under test	Dial tone not heard At relay rack frame - T relay operated At toll switchboard - Cord supervisory lamp extinguished
9	At relay rack frame - Operate the switch of handset to MON and restore to TALK several times	At toll switchboard - Cord supervisory lamp flashes
10	Disconnect handset	At toll switchboard - Cord supervisory lamp lighted
11	At toll switchboard - Remove front cord plug from jack	Cord supervisory lamp extinguished
12	Restore TALK key	
13	Remove plug of operator telephone set from position jacks	
14	Restore C key	
15	At relay rack frame - First remove blocking tool from LS relay and then from T1 relay	

D. Dial Outgoing Call from Subscriber - T Key Not Operated

1	At relay rack frame - Operate switch of handset to MON	
2	Connect handset to punchings 1 and 2 of terminal strip on unit	
3	When line is idle - Operate switch of handset to TALK	Dial tone heard
4	Disconnect handset	

E. Manual Outgoing Call from Subscriber - T Key Operated

1	At relay rack frame - Operate switch of handset to MON	
2	Connect handset to punchings 1 and 2 of terminal strip on unit	
3	Block T1 relay operated	T relay operated

STEP	ACTION	VERIFICATION
4a	If the circuit is arranged for ground start - When the circuit is idle - Operate switch of handset to TALK	Ll relay not operated
5a	Ground 2B of R relay	BY relay operated At toll switchboard - L (line) lamp lighted
6b	If circuit is arranged for loop start - When circuit is idle - Operate switch of handset to TALK	BY relay operated At toll switchboard - L (line) lamp lighted
7	Remove blocking tool from Tl relay	T relay remains operated
8	At toll switchboard - Insert plug of operator telephone set into position jacks	
9	Operate TALK key of an idle cord	
10	Insert plug of front cord into line jack	L lamp extinguished BSY lamp lighted
11a	If the circuit is arranged for ground start - At relay rack frame - Remove testing cord from R relay	Ll relay remains operated
12	At toll switchboard - Disconnect	Circuits arranged for ground start At toll switchboard - BSY lamp extinguished At relay rack frame - Dial tone heard Circuits arranged for loop start At toll switchboard - BSY lamp extinguished L lamp lighted
13	Disconnect handset	At switchboard - L lamp extinguished, if lighted

F. Ringing From Toll Switchboard

1	At relay rack frame - Block T relay non-operated	
2	Block D relay operated	At toll switchboard - BSY lamp lighted
3	Insulate 3T and 3B of S relay	
4	Operate switch of handset to MON	
5	Connect handset to 1T and 1B of T relay	
6	At toll switchboard - Insert plug of operator telephone set into position jacks	
7	Operate TALK key of an idle cord	
8	Insert front cord plug into jack of line to be tested	Cord supervisory lamp lighted

STEP	ACTION	VERIFICATION
9	Operate RING key	At relay rack frame - Ringing heard
10	Release RING key	
11	Restore TALK key	
12	Remove front cord plug from jack	
13	Remove operator telephone set from position jacks	
14	At relay rack frame - Disconnect handset	
15	Remove insulators from S relay	
16	Remove blocking tools from D, T relays	At toll switchboard - BSY lamp extinguished

G. Busy Conditions

1	At relay rack frame - Block T relay non-operated	
2	First block T1 relay operated, then block LS relay operated	D relay operated Ground on punching 6 of terminal strip on unit
3	Remove blocking tool from LS relay	Battery on punching 6
4	Block C1 relay operated	Ground on punching 6
5	Remove blocking tool from C1 relay	
6	Block BY relay operated	Ground on punching 6
7	First remove blocking tool from BY relay and then from T1 relay	

H. Pad Control Features

1	Block BY relay operated	Battery on 1 and 6 terminals of T repeat coil
2	Remove blocking tool from BY relay	No battery on 1 and 6 terminals of T repeat coil