

CALL IDENTITY INDEXER SD-94809-01
TESTS USING MASTER TEST FRAME
NO. 5 CROSSBAR OFFICES
ARRANGED FOR AMA MAGNETIC TAPE RECORDING

1. GENERAL

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1.01 This section describes a method of testing call identity indexer SD-94809-01, in No. 5 crossbar offices arranged for AMA magnetic tape recording. Tests are also included that do not require use of the master test frame.

leads in different tens groups of trunks.

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1.02 The reason for reissuing this section is listed below. Revision arrows are used to emphasize the more significant changes. Equipment Test Lists are affected.

D. False Ground or Cross on DJ_ Leads in Same Tens Group:

This test checks the ability of the call identity indexer to signal the transverter to call in the trouble recorder when a false ground or cross is detected on DJ_ leads in the same tens group of trunks.

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(a) To revise Tests E, I.

E. False Cross in Tens and Units Relay Contacts:

This test checks the ability of the call identity indexer to signal the trunk control to call in the trouble recorder when a false cross is detected on contacts of the tens and units relays.

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1.03 The tests covered are:

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A. False Operation of TL_ Relays:

This test checks the ability of the call identity indexer to relay a signal to the transverter to call in the trouble recorder when more than one TL_ relay is operated in the call identity indexer.

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F. Trunk Identifying Leads:

This test checks for transpositions in the trunk identifying leads to the trunk control.

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B. False Cross on Trunk TC_ Lead:

This test checks the ability of the call identity indexer to relay a signal to the transverter to call in the trouble recorder when a false cross is detected on the trunk TC_ leads.

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G. Preference Relays—Operating and Lockout Features:

This test checks the order of preference and lockout features of the TA_, TB_, TL_, U_, UA_ relays.

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C. False Ground or Cross on DJ_ Leads in Different Tens Group:

This test checks the ability of the call identity indexer to signal the transverter to call in the trouble recorder when a false ground or cross is detected on DJ_

H. Trunk Control Timer Start Lead Check:

This test checks that the operation of the TA_ relay in the call identity indexer starts the overall timing feature in the associated trunk control.

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I. RP, TLI Lead Continuity

Check: This test checks for continuity of the RP_ and TLI leads between the call identity indexer and the associated trunk control. . . . 14

1.04 All tests except F require actions and verifications at the call identity indexer frame. Tests C, E, G, H, and I require actions and verifications at the associated trunk control frame.

1.05 Tests C, G, H, and I require all trunks associated with the call identity indexer to be removed from service. These tests should be performed during periods of light traffic since removal from service of a call identity indexer could result in an insufficient number of AMA trunks available for regular service calls.

1.06 Before performing tests requiring trunks to be made busy, verify that all trunks have restored to normal to prevent interference with calls in progress requiring timing entries.

1.07 Tests A through F will score the REC PC plant register. Test E will also score the traffic register associated with the trunk control TPC lead. Reporting of these register operations should be in accordance with local instructions.

1.08 Lettered Steps: A letter a, b, c, etc, added to a step number in Part 3 of this section indicates an action which may or may not be required depending on local conditions. The condition under which a lettered step or a series of steps should be made is given in the ACTION column, and all steps governed by the same condition are designated by the same letter within a test. Where a condition does not apply, all steps designated by that letter should be omitted.

1.09 The manner of selecting some circuits and test conditions at the MTF and its associated circuits varies depending on the apparatus options furnished with these circuits. Therefore, where variable means of selection are provided, precise instructions for the selection of circuits and test conditions are not given. Precise instructions for the use of these variable means are given in Section 218-106-301.

1.10 The location statement, at MTF—, is used to refer to all apparatus located on the four basic bays of the MTF.

2. APPARATUS**Tests A Through F**

2.01 Master test control circuit, SD-25800-01.

2.02 Trunk test circuit, SD-25918-01.

Test A

2.03 Testing cord, 893 cord, 3 feet long, equipped with two 360A tools (1W13A cord) and two 509B (relay winding connector) tools (for interconnecting winding terminals of wire-spring multicontact relays).

Tests B, C, D

2.04 Testing cord, 893 cord, 3 feet long, equipped with two 360A tools (1W13A cord) and two 624B (terminal connector) tools (for interconnecting terminal strip terminals arranged for solderless wrapped connections).

Tests B, D

2.05 32A test set.

Test E

2.06 Testing cord, 893 cord, 3 feet long, equipped with two 360A tools (1W13A cord), one 651A (contact connector holder) tool, one 639A (contact connector) tool, and one 624B (terminal connector) tool (for interconnecting fixed contacts of wire-spring relays and terminal strip terminals arranged for solderless wrapped connections).

Test G

2.07 Two testing cords, 893 cords, 3 feet long, each equipped with two 360A tools (1W13A cords) one KS-6278 connecting clip and one 624A (terminal connector) tool (for connecting ground to winding terminals of wire-spring relays).

Tests C, H

2.08 67C test set or equivalent, for use in testing for presence or absence of battery or ground.

Tests C, G, H

2.09 Blocking and insulating tools, as required.
Use tools and apply, as covered in Section 069-020-801.

All Tests, Except F

2.10 322A (make-busy) plugs as required.

Note: Refer to paragraphs 1.09 and 1.10.

2.11 When making test connections to relays and other apparatus listed in this section, use as covered in Section 069-131-811.

3. PREPARATION**STEP****ACTION****VERIFICATION****Tests A Through F**

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|-----|---------------------------------------------------------------------------------|--|
| 1 | At MTF—
Select marker. | |
| 2 | Select trunk in position 00 in call identity indexer under test. | |
| 3 | Operate GPA/GPB key as required when trunk selected is in an allotted subgroup. | |
| 4 | Select route advance. | |
| 5 | Select AMA class of service and rate treatment as required. | |
| 6 | Operate TTL, TLK keys. | |
| 7 | Select A_, B_, C_ digits to direct call to trunk circuit selected for test. | |
| 8a | If outgoing trunk is selected for test—
Select OGT class of test. | |
| 9a | Select class of call and translator indication as required. | |
| 10b | If intraoffice trunk is selected for test—
Select IAO class of test. | |
| 11b | Select ringing combination. | |

Tests A Through E

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|----|--------------------------|--|
| 12 | Operate NTFS, NTTS keys. | |
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STEP	ACTION	VERIFICATION
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4. METHOD

STEP	ACTION	VERIFICATION
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A. False Operation of TL_ Relays

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| 13 | Remove from service all trunks in first and second tens group of call identity indexer under test. (Refer to paragraph 1.06.) | |
| 14 | At call identity indexer under test—
Interconnect T winding terminal of TL0, T winding terminal of TL1 relays. | |
| 15 | At MTF—
Momentarily operate ST key. | AS, IE, T4, T7, U4, U7 lamps lighted.
RN_ lamp lighted corresponding to number of trunk control associated with call identity indexer under test.
Trouble record taken.
TV, XTKK, XTC, XTL designations perforated. |
| 16 | Momentarily operate RL key. | All lamps extinguished. |
| 17 | At call identity indexer frame—
Remove test connection from TL_ relays. | |
| 18 | At MTF—
Restore all keys and switches not required in next test. | |
| 19 | Restore to service all trunks made busy for this test. | |

B. False Cross on Trunk TC_ Lead

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|----|--------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 13 | Remove from service all trunks in first tens group of call identity indexer under test. (Refer to paragraph 1.06.) | |
| 14 | At call identity indexer under test—
Interconnect terminals 13, 23 on terminal strip TL0. | |
| 15 | At MTF—
Momentarily operate ST key. | AS, IE lamps lighted.
T_ U_ lamps lighted (2/5) corresponding to tens, units digit of number assigned to selected trunk in call identity indexer.
RN_ lamp lighted corresponding to number of trunk control associated with call identity indexer under test.
Trouble record taken.
XU, XTKK, XTC designations perforated. |

STEP	ACTION	VERIFICATION
16	Momentarily operate RL key.	All lamps extinguished.
17	Change trunk selection to select trunk in position 01 in call identity indexer under test.	
18	Repeat Steps 3 through 12, 15, 16.	
19	Change trunk selection to select trunk in position 00 in call identity indexer under test.	
20	Repeat Steps 3 through 12.	
	Note: Remaining tests should be performed at the call identity indexer frame using the 32A test set.	
21	At call identity indexer under test— Remove test connection from terminal 23, terminal strip TL0 and connect in turn to terminals 33, 43, 53, 14, 24, 34, 44, 54 on terminal strip TL0, repeating Steps 15 and 16 for each terminal connected.	
22	Remove test connection from terminal strip TL0.	
23	At MTF— Restore all keys and switches not required in next test.	
24	Restore to service all trunks made busy for this test.	
C. False Ground or Cross on DJ_ Leads in Different Tens Group		
13	Remove from service all trunks associated with call identity indexer under test. (Refer to paragraphs 1.05 and 1.06.)	
14	At call identity indexer under test— Interconnect terminals 11, 13 on terminal strip E.	
15	At MTF— Momentarily operate ST key.	AS, IE, T0, T1, U4, U7 lamps lighted. RN_ lamp lighted corresponding to number of trunk control associated with call identity indexer under test. Trouble record taken. XU designation perforated.
16	Momentarily operate RL key.	All lamps extinguished.

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STEP	ACTION	VERIFICATION
17	At call identity indexer under test— Remove test connection from terminal strip E.	
18	Insulate 11B of TB9 relay.	At associated trunk control— TL relay released.
19	At call identity indexer under test— Block nonoperated TL0 through TL9 relays.	
20	Insulate 6M of T0 through T9 relays.	
21	Test for battery at terminal strip B, terminal 27.	Battery absent.
22	Block operated T0, T9 relays.	
23	Test for battery at terminal strip B, terminal 27.	Battery present.
24	Remove blocking tools from T0, T9 relays.	
25	Block operated T1, T2 relays.	
26	Test for battery at terminal strip B, terminal 27.	Battery present.
27	Remove blocking tool from lowest numbered T_ relay.	
28	Block operated next higher numbered T_ relay.	
29	Test for battery at terminal strip B, terminal 27.	Battery present.
30	Repeat Steps 27 through 29 for each remaining T_ relay.	
31	Remove blocking tools from T8, T9, TL_ relays.	
32	Remove insulators from T0 through T9 relays.	
33	Remove insulator from TB9 relay.	At associated trunk control— TL relay operated.
34	At MTF— Restore all keys and switches not required in next test.	
35	Restore to service all trunks made busy for this test.	

STEP	ACTION	VERIFICATION
D. False Ground or Cross on DJ_ Leads in Same Tens Group		
13	Remove from service all trunks in first tens group of call identity indexer under test. (Refer to paragraph 1.06.)	
14	At call identity indexer under test— Interconnect terminals 11 (DJ0 lead), 21 (DJ1 lead) on terminal strip E.	
15	At MTF— Momentarily operate ST key.	AS, IE, T4, T7 lamps lighted. U_ lamps lighted (2/5) corresponding to highest numbered crossed DJ_ lead. RN_ lamp lighted corresponding to number of trunk control associated with call identity indexer under test. Trouble record taken. XU designation perforated.
16	Momentarily operate RL key.	All lamps extinguished.
	Note: Remaining tests should be performed at the call identity indexer frame using the 32A test set.	
17	At call identity indexer under test— Remove test connection from terminal 21, terminal strip E and connect in turn to terminals 31, 41, 51, 12, 22, 32, 42, 52 on terminal strip E, repeating Steps 15 and 16 for each terminal connected.	
18	Remove test connection from terminal strip E.	
19	At MTF— Restore all keys and switches not required in next test.	
20	Restore to service all trunks made busy for this test.	
E. False Cross in Tens and Units Relay Contacts		
13	Remove from service all trunks in first tens group of call identity indexer under test. (Refer to paragraph 1.06.)	
14	At call identity indexer under test— Interconnect 5F of T0 relay, terminal 47 of terminal strip B.	

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STEP	ACTION	VERIFICATION
15	At MTF— Momentarily operate ST key.	AS, IE, T4, T7, U4, U7 lamps lighted. RN_ lamp lighted corresponding to trunk control number associated with call identity indexer under test.
16	Operate ANS key.	OGT-CS lamp lighted. In 2 to 5 seconds— AE lamp lighted. Trouble record taken. XT1 designation perforated. Major alarm sounds.
17	At MTF— Momentarily operate RL key.	All lamps extinguished.
18	At trunk control frame— Momentarily operate AR key.	Major alarm silenced.
19	At call identity indexer under test— Remove test connection from T0 relay, terminal strip B.	
20	Interconnect 3F of T0 relay, terminal 17 of terminal strip B.	
21	Repeat Steps 15 through 19.	
22	Interconnect 4F of U0 relay, terminal 37 of terminal strip A.	
23	◆At MTF— Momentarily operate ST key.	AS, IE, T4, T7, U4, U7 lamps lighted. RN_ lamp lighted corresponding to trunk control number associated with call identity indexer under test.
24	Operate ANS key.	OGT-CS lamp lighted. In 2 to 5 seconds— AE lamp lighted. Trouble record taken. XU1 designation perforated. Major alarm sounds.
25	At MTF— Momentarily operate RL key.	All lamps extinguished.
26	At trunk control frame— Momentarily operate AR key.	Major alarm silenced.
27	At call identity indexer under test— Remove test connection from U0 relay, terminal strip A.	

STEP	ACTION	VERIFICATION
28	Interconnect 6F of U0 relay, 6F of U1 relay.	
29	At MTF— Momentarily operate ST key.	AS, IE, T4, T7, U4, U7 lamps lighted. RN_ lamp lighted corresponding to trunk control number associated with call identity indexer under test.
30	Operate ANS key.	OGT-CS lamp lighted. In 2 to 5 seconds— AE lamp lighted. Trouble record taken. XU1 designation perforated. Major alarm sounds.
31	At MTF— Momentarily operate RL key.	All lamps extinguished.
32	At trunk control frame— Momentarily operate AR key.	Major alarm silenced.♦
33	At call identity indexer under test— Remove test connection from U0, U1 relays.	
34	At MTF— Restore all keys and switches not required in next test.	
35	Restore to service all trunks made busy for this test.	

F. Trunk Identifying Leads

12	Operate FS, TS keys.	
13	Momentarily operate ST key.	AS, IE, lamps lighted. T_ U_ lamps lighted (2/5) corresponding to tens, units digit of number assigned to selected trunk in call identity indexer. RN_ lamp lighted corresponding to trunk control number associated with call identity indexer under test.
14	Momentarily operate RL key.	All lamps extinguished.
15	Change trunk selection to select trunk in next higher tens group in call identity indexer under test.	
16	Repeat Steps 3 through 14.	
17	Repeat Steps 15 and 16 for each remaining tens group in call identity indexer.	

STEP	ACTION	VERIFICATION
18	Change trunk selection to select trunk in units position 0 in any tens group.	
19	Repeat Steps 3 through 14.	
20	Change trunk selection to select in turn trunks assigned to units position 1 through 9 in any tens group, repeating Steps 3 through 14 for each trunk selected.	
21	Restore all keys and switches not required in next test.	
G. Preference Relays—Operating and Lockout Features		
1	Remove from service all trunks associated with call identity indexer under test. (Refer to paragraphs 1.05 and 1.06.)	
TA_ TB_ TL_ Relays		
2	At call identity indexer under test— Insulate 2B of T0 relay.	At associated trunk control— TL relay released.
3	Block nonoperated TM relay.	
4	At call identity indexer under test— Insulate 6M, 7M of T0 through T9 relays.	
5	Connect ground to 2U winding terminal of T0 relay.	T0, TA0, TB0, TL0 relays operated.
6	Connect ground to 2U winding terminal of T1 relay.	T1 relay operated. TA0, TB0, TL0 relays remain operated. TA1, TB1, TL1 relays <i>not</i> operated.
7	Remove ground from T0 relay.	T0, TA0, TB0, TL0 relays released. TA1, TB1, TL1 relays operated.
8	Connect ground to 2U winding terminal of T2 relay.	T2 relay operated. TA1, TB1, TL1 relays remain operated. TA2, TB2, TL2 relays <i>not</i> operated.
9	Remove ground from T1 relay.	T1, TA1, TB1, TL1 relays released. TA2, TB2, TL2 relays operated.
10	Connect ground to 2U winding terminal of T3 relay.	T3 relay operated. TA2, TB2, TL2 relays remain operated. TA3, TB3, TL3 relays <i>not</i> operated.
11	Remove ground from T2 relay.	T2, TA2, TB2, TL2 relays released. TA3, TB3, TL3 relays operated.

STEP	ACTION	VERIFICATION
12	Connect ground to 2U winding terminal of T4 relay.	T4 relay operated. TA3, TB3, TL3 relays remain operated. TA4, TB4, TL4 relays <i>not</i> operated.
13	Remove ground from T3 relay.	T3, TA3, TB3, TL3 relays released. TA4, TB4, TL4 relays operated.
14	Connect ground to 2U winding terminal of T5 relay.	T5 relay operated. TA4, TB4, TL4 relays remain operated. TA5, TB5, TL5 relays <i>not</i> operated.
15	Remove ground from T4 relay.	T4, TA4, TB4, TL4 relays released. TA5, TB5, TL5 relays operated.
16	Connect ground to 2U winding terminal of T6 relay.	T6 relay operated. TA5, TB5, TL5 relays remain operated. TA6, TB6, TL6 relays <i>not</i> operated.
17	Remove ground from T5 relay.	T5, TA5, TB5, TL5 relays released. TA6, TB6, TL6 relays operated.
18	Connect ground to 2U winding terminal of T7 relay.	T7 relay operated. TA6, TB6, TL6 relays remain operated. TA7, TB7, TL7 relays <i>not</i> operated.
19	Remove ground from T6 relay.	T6, TA6, TB6, TL6 relays released. TA7, TB7, TL7 relays operated.
20	Connect ground to 2U winding terminal of T8 relay.	T8 relay operated. TA7, TB7, TL7 relays remain operated. TA8, TB8, TL8 relays <i>not</i> operated.
21	Remove ground from T7 relay.	T7, TA7, TB7, TL7 relays released. TA8, TB8, TL8 relays operated.
22	Connect ground to 2U winding terminal of T9 relay.	T9 relay operated. TA8, TB8, TL8 relays remain operated. TA9, TB9, TL9 relays <i>not</i> operated.
23	Remove ground from T8 relay.	T8, TA8, TB8, TL8 relays released. TA9, TB9, TL9 relays operated.
24	Remove ground from T9 relay.	T9, TL9, TA9, TB9 relays released.
25	Remove insulators from T0 through T9 relays.	At associated trunk control— TL relay operated.

U_ UA_ Relays

- 26 At associated trunk control—
Block nonoperated IP relay.

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STEP	ACTION	VERIFICATION
27	At call identity indexer under test— Connect ground to 1U winding terminal of U9 relay.	U9, UA9 relays operated.
28	Connect ground to 1U winding terminal of U8 relay.	U8 relay operated. UA8 relay <i>not</i> operated. U9, UA9 relays remain operated.
29	Remove ground from U9 relay.	U9, UA9 relays released. UA8 relay operated.
30	Connect ground to 1U winding terminal of U7 relay.	U7 relay operated. UA7 relay <i>not</i> operated. U8, UA8 relays remain operated.
31	Remove ground from U8 relay.	U8, UA8 relays released. UA7 relay operated.
32	Connect ground to 1U winding terminal of U6 relay.	U6 relay operated. UA6 relay <i>not</i> operated. U7, UA7 relays remain operated.
33	Remove ground from U7 relay.	U7, UA7 relays released. UA6 relay operated.
34	Connect ground to 1U winding terminal of U5 relay.	U5 relay operated. UA5 relay <i>not</i> operated. U6, UA6 relays remain operated.
35	Remove ground from U6 relay.	U6, UA6 relays released. UA5 relay operated.
36	Connect ground to 1U winding terminal of U4 relay.	U4 relay operated. UA4 relay <i>not</i> operated. U5, UA5 relays remain operated.
37	Remove ground from U5 relay.	U5, UA5 relays released. UA4 relay operated.
38	Connect ground to 1U winding terminal of U3 relay.	U3 relay operated. UA3 relay <i>not</i> operated. U4, UA4 relays remain operated.
39	Remove ground from U4 relay.	U4, UA4 relays released. UA3 relay operated.
40	Connect ground to 1U winding terminal of U2 relay.	U2 relay operated. UA2 relay <i>not</i> operated. U3, UA3 relays remain operated.
41	Remove ground from U3 relay.	U3, UA3 relays released. UA2 relay operated.

STEP	ACTION	VERIFICATION
42	Connect ground to 1U winding terminal of U1 relay.	U1 relay operated. UA1 relay <i>not</i> operated. U2, UA2 relays remain operated.
43	Remove ground from U2 relay.	U2, UA2 relays released. UA1 relay operated.
44	Connect ground to 1U winding terminal of U0 relay.	U0 relay operated. UA0 relay <i>not</i> operated. U1, UA1 relays remain operated.
45	Remove ground from U1 relay.	U1, UA1 relays released. UA0 relay operated.
46	Remove ground from U0 relay.	U0, UA0 relays released.
47	At associated trunk control— Remove blocking tool from IP, TM relays.	
48	Restore to service all trunks made busy for this test.	

H. Trunk Control Timer Start Lead Check

1	Remove from service all trunks associated with call identity indexer under test. (Refer to paragraphs 1.05 and 1.06.)	
2	At associated trunk control— Block nonoperated TBL relay.	
3	At call identity indexer under test— Block operated TA0 relay.	In 3.0 to 4.5 seconds— Major alarm sounds. At associated trunk control— TM1 relay operated.
4	At call identity indexer under test— Remove blocking tool from TA0 relay.	At associated trunk control— TM1 relay released.
5	Momentarily operate AR key.	Major alarm silenced.
6	Block nonoperated TM relay.	
7	At call identity indexer under test— Block operated TA1 relay.	
8	Test for ground on terminal strip B, terminal 57.	Ground present.
9	Remove blocking tool from TA1 relay.	

STEP	ACTION	VERIFICATION
10	Repeat Steps 7 through 9 substituting TA2 through TA9 relays for TA1.	
11	At associated trunk control— Remove blocking tools from TM, TBL relays.	
12	Restore to service all trunks made busy for this test.	
I. RP, TL1, Lead Continuity Check		
<i>Refer to paragraphs 1.05, 1.06.</i>		
1	Remove from service all trunks associated with call identity indexer under test.	
2	At call identity indexer under test— Block nonoperated TA0, TB0, TL0 relays.	
3	Block operated T0 relay.	At associated trunk control— TL relay released. RIP1 relay operated.
4	Block operated TL relay.	
5	At call identity indexer under test— Remove blocking tool from T0 relay.	T0 relay remains operated. At associated trunk control— RIP1 relay remains operated.
6	Remove blocking tool from TL relay.	RIP1 relay releases. At call identity indexer under test— T0 relay released.
7	At call identity indexer under test— Remove blocking tools, in the following order, from TA0, TB0, TL0 relays.	
8	Repeat Steps 2 through 7 substituting T1, TA1, TB1, TL1 through T9, TA9, TB9, TL9 relays for T0, TA0, TB0, TL0 relays.	
9	Restore to service all trunks made busy for this test.	