

**OUTGOING TRUNK CIRCUIT SD-27712-01
TO OFF-NET ACCESS LINE
TESTS USING TRUNK TEST CIRCUIT SD-25918-01
NO. 5 CROSSBAR OFFICES**

1. GENERAL

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1.01 This section describes a method of testing outgoing trunk circuit SD-27712-01 used for completion to off-net access line. This trunk is arranged for automatic message accounting and tandem completion. Called supervision is controlled by E and M lead signaling with the sender outpulsing on the M lead. Tests are performed using the master test control circuit SD-25800-01 and the trunk test circuit SD-25918-01 in No. 5 crossbar offices.

and polarity of originating tip and ring leads. (4) AMA initial, answer, and disconnect entries. **5**

1.02 The reasons for reissuing this section are listed below. Revision arrows are used to emphasize the more significant changes. Equipment Test Lists are not affected.

B. Supervision—Originating End Disconnect: This test checks the charge functions and release of the trunk when only the originating end disconnects. **6**

- (a) To add J option (removal of CH timing) to Tests A through C.
- (b) To add Call Data Transmitter features to Tests A through C, E, F, and K through M.
- (c) To add paragraphs 1.13, 1.14.
- (d) To make minor changes as required.

C. Supervision—Terminating End Disconnect: This test checks the charge functions and release of the trunk when only the terminating end disconnects. **7**

1.03 The tests covered are:

D. Cancel Disconnect Entry (ETS, LAMA-C, ~~CDT~~ not Provided): This test checks cancellation of a disconnect entry and release of the trunk if a disconnect entry is not made within 2 to 5 seconds after disconnect. **8**

SUBSCRIBER OUTGOING (SOG)

E. Noncharge Supervision: This test checks that a charge condition is not established when an answered call is held less than 2 seconds. **8**

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F. Reorder: This test checks that an overflow tone is returned to the originating end when a sender is unable to complete a call. **9**

A. Trunk Seizure and Release:

TANDEM OUTGOING (TOG)

The following subscriber outgoing features are tested: (1) Seizure of the trunk. (2) Continuity of originating and terminating supervisory leads. (3) Continuity

G. Trunk Seizure and Release:
The following tandem outgoing features are tested: (1) Seizure of the

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trunk. (2) Continuity of originating tip and ring leads.	10
H. Cross-Office Lockout: This test checks that the trunk may be locked out from the 17E testboard.	10
I. Call to Distant Office Test Line: This test checks the ability of the trunk to function with its associated dedicated auxiliary line circuit in a distant office.	11
J. Reorder: This test checks that an overflow tone is returned to the originating end when a sender is unable to complete a call.	11

MISCELLANEOUS

K. Trunk Busy From Master Test Frame: This test checks that the trunk may be made busy to service calls from the master test frame, yet available for test calls.	12
L. Trunk Busy From 17E Testboard: This test checks that the trunk may be made busy to service calls from the 17E testboard, yet available for test calls from the master test frame.	13
M. Universal Pad Control: This test checks the operation of the PC relay.	14
N. False-Busy and False-Idle Conditions: This test checks for continuity and crosses on F, BT, and FT leads.	14
1.04 Tests D and K require actions and verifications at the master test frame and the relay rack.	
1.05 Tests H and L require actions and verifications at the 17E testboard.	
1.06 Tests K and N require all trunks be made busy.	

1.07 Lettered Steps: A letter a, b, c, etc, added to a step number in Parts 3 and 4 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 series of lettered 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.

1.08 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.

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

1.10 When the office is arranged for LAMA-C or ETS, the distributors and scanners associated with the marker and trunk used in the test call must be in service or in a **maintenance-busy** condition—not in an **out-of-service** condition. To change a scanner or distributor from an **out-of-service** to a **maintenance-busy** condition, use the procedure given in the following sections for the office arrangement.

218-798-308—Taking LAMA-C Equipment Out-of-Service.

218-799-701—Taking ETS Equipment Out-of-Service

1.11 When the trunk under test is arranged for ETS, the first completed test call from the MTF will cause the TST bit to be set in the trunk register associated with the selected trunk, enabling trunk supervisory scanning to be repeated on the FT, CS, and S1 lamps at the MTF trunk test circuit. As long as the TST bit is set in the trunk register, supervision will continue to be repeated on the lamps, even on service calls. The TST bit will remain set in the trunk register until (1) a test call is made from the MTF to another trunk, or (2) the command **STOP:TRK TST** is entered at the maintenance TTY.

1.12 On issue 76D of SD-25800-01, a group of 18 "class of test" lamps was replaced by a single "start test" lamp designated STT. Since the designation given to the lamp is not specific, the lamp will not be called out in the section, as well as the 18 discontinued lamps, such as DT, ORIG, ITDO, ITNP, OGT, etc.

1.13 When CDT (calling data transmitter) billing system is provided in the office, this trunk may or may not handle billable calls. When it is arranged for billable calls, supervisory scan points will be assigned and supervision will be repeated from the scan points on test calls to the MTF by CS and S1 lamps.

1.14 When CDT is provided, there may be several configurations in the office—single controller, dual controller with the trunk assigned to one controller, or dual controller and the trunk is assigned to both controllers. When assigned to both controllers in a dual controller configuration, one test must be made to each controller to verify scan points for each controller.

2. APPARATUS

Tests A Through M

- 2.01 Master test control circuit, SD-25800-01.
- 2.02 Trunk test circuit, SD-25918-01.

3. PREPARATION

STEP	ACTION	VERIFICATION
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Tests A Through M

1	At master test frame (MTF)— Restore all keys; set all switches to OFF.	
2	Momentarily operate RL key.	All lamps extinguished.
3	Select marker under test.	
4	Select trunk to be tested.	
5	Operate TLK, FS, TS keys.	
6	Select route advance as required to select trunk group under test.	

Tests A Through D

- 2.03 KS-3008 stopwatch, or equivalent.

Tests D and N

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

Tests K and N

- 2.05 322A (make-busy) plugs as required.

Test M

- 2.06 67C test set, equipped with one KS-6278 connecting clip.

Test N

- 2.07 Oscillator J94730B (SD-95616-01), part of 1A fault locator test set J94730A.
- 2.08 Testing cord, 1WAK cord, 6 feet long, equipped with one 296 (banana-type) plug, one 360B tool, and one 624B tool.
- 2.09 Testing cord, 893 cord, 6 feet long, equipped with two 360A tools (1W13B cord), two KS-6278 connecting clips or one KS-6278 connecting clip and one 624B tool as required for connecting high resistance ground (HRG) to terminal strip terminal.

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STEP	ACTION	VERIFICATION
7a	If ETS provided— Operate PCS, PTS keys.	
Tests A Through F and K Through M		
8	Operate A_ through K_ as required to select route served by trunk under test.	
9	Select OGT class of test.	
10	Select originating class of call and LT3 translator indication.	
11	Operate EM key.	
12b	If office is equipped for traffic sampling and an AMA record is required— Operate SMPL key.	
13	Select class of service and rate treatment having access to trunk under test.	
◆Tests A Through C, E, F and K Through M		
14c	If trunk is to be tested for CDT— Operate CDTT key.	
15c	When trunk is assigned to CDT dual controllers, select controller— Operate CDC 0/1 key.	
16c	When a trouble record is to be taken from the CDT translator access (TA) circuit— Operate TREC key.	
17c	When the CDT controller operates with both shared and dedicated translator circuits and a particular translator circuit is to be used for the test— Operate TAD key to select dedicated TA circuit or operate TAS key to select shared TA circuit.	
	Note: When a TA circuit is not selected, the controller will select the next available TA circuit.◆	
Tests G, H, J		
18	Select TAN subclass of test.	TAN lamp lighted.

STEP	ACTION	VERIFICATION
4. METHOD		

STEP	ACTION	VERIFICATION
SUBSCRIBER OUTGOING (SOG)		

A. Trunk Seizure and Release

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|-----|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 18 | Momentarily operate ST key. | <p>If LAMA-C provided—
S1 lamp lighted.</p> <p>If ETS provided—
FT, S1 lamps lighted.</p> <p>◆If CDTT key is operated—
S1 lamp lighted.◆
AS, E lamps lighted.
PK lamp not lighted.</p> <p>If SMPL key is operated, and LAMA-C,
◆CDT,◆ ETS <i>not</i> provided—
IE, RN, T, U lamps lighted.</p> |
| 19 | Operate ANS key; <i>start timing</i> . | <p>If ETS or LAMA-C provided—
CS lamp lighted.</p> <p>◆If CDTT key is operated—
CS lamp lighted.◆
High tone heard.</p> <p>If SMPL key is operated and LAMA-C, ETS,
◆CDT◆ <i>not</i> provided—
◆If K option is provided—◆
In 2 to 5 seconds—
AE lamp lighted.</p> <p>◆If J option is provided—
AE lamp lighted.◆</p> |
| 20 | Restore ANS, TLK keys. | <p>If ETS provided—
FT, CS, S1 lamps extinguished.</p> <p>If LAMA-C provided—
CS, S1 lamps extinguished.</p> <p>◆If CDTT key is operated—
S1, CS lamps extinguished.◆
High tone silenced.
AS, E lamps extinguished.</p> <p>If SMPL key is operated and LAMA-C, ETS,
◆CDT◆ <i>not</i> provided—
DE lamp lighted.</p> |
| 21 | Momentarily operate RL key. | All lamps extinguished. |
| 22d | If SMPL key is operated and LAMA-C, ETS,
◆CDT◆ <i>not</i> provided—
Restore SMPL key. | |

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STEP	ACTION	VERIFICATION
23d	Repeat Steps 18 through 21 to verify that no AMA record is made.	
24e	If no further tests are to be performed— Restore all keys; set all switches to OFF.	
B. Supervision—Originating End Disconnect		
18	Momentarily operate ST key.	If LAMA-C provided— S1 lamp lighted. If ETS provided— FT, S1 lamp lighted. ♦If CDTT key is operated— S1 lamp lighted.♦ AS, E lamps lighted. PK lamp not lighted. If SMPL key is operated, and LAMA-C, ETS, ♦CDT♦ <i>not</i> provided— IE, RN_, T_, U_ lamps lighted.
19	Operate ANS key; <i>start timing</i> .	If ETS or LAMA-C provided— CS lamp lighted. ♦If CDTT key is operated— CS lamp lighted.♦ High tone heard. If SMPL key is operated and LAMA-C, ETS, ♦or CDT♦ <i>not</i> provided— ♦If K option is provided—♦ In 2 to 5 seconds— AE lamp lighted. ♦If J option is provided— AE lamp lighted.♦
20	Restore TLK key.	If ETS provided— FT, CS, S1 lamps extinguished. If LAMA-C provided— CS, S1 lamps extinguished. ♦If CDTT key is operated— S1, CS lamp extinguished.♦ High tone silenced. AS, E, lamps extinguished. If SMPL key is operated and LAMA-C, ETS, ♦CDT♦ <i>not</i> provided— DE lamp lighted.
21	Momentarily operate RL key.	All lamps extinguished.
22d	If no further tests are to be performed— Restore all keys; set all switches to OFF.	

STEP	ACTION	VERIFICATION
C. Supervision—Terminating End Disconnect		
18	Momentarily operate ST key.	If ETS provided— FT, S1 lamps lighed. If LAMA-C provided— S1 lamp lighted. ♦If CDTT key is operated— S1 lamp lighted.♦ AS, E lamps lighted. PK lamp not lighted. If SMPL key is operated and LAMA-C, ETS, ♦CDT♦ not provided— IE, RN, T, U lamps lighted.
19d	If improved testing of CS relay is provided— Momentarily operate SK key.	
20	Operate ANS key; <i>starting timing</i> .	If ETS or LAMA-C provided— CS lamp lighted. ♦If CDTT key is operated— CS lamp lighted.♦ High tone heard. If SMPL key is operated and LAMA-C, ETS, ♦CDT♦ not provided— ♦If K option is provided—♦ In 2 to 5 seconds— AE lamp lighted. ♦If J option is provided— AE lamp lighted.♦
21d	If improved testing of CS relay is provided— Momentarily operate CSR key.	OGT-CS lamp momentarily extinguished. If ETS or LAMA-C provided— CS lamp momentarily extinguished.
22	In 2 minutes— Restore ANS key; <i>start timing</i> .	If ETS or LAMA-C provided— CS lamp extinguished. ♦If CDTT key is operated— CS lamp extinguished.♦ High tone silenced. In 13 to 32 seconds— E, AS lamps extinguished. If ETS provided— FT, S1 lamps extinguished. If LAMA-C provided— S1 lamp extinguished. ♦If CDTT key is operated— S1 lamp extinguished.♦ If SMPL key is operated and LAMA-C, ETS, ♦CDT♦ not provided— In 13 to 32 seconds— DE lamp lighted.

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STEP	ACTION	VERIFICATION
23	Momentarily operate RL key.	All lamps extinguished.
24e	If no further tests are to be performed— Restore all keys; set all switches to OFF.	
D. Cancel Disconnect Entry (ETS, LAMA-C, ♦CDT♦ not Provided)		
14	Momentarily operate ST key.	AS, E lamps lighted. PK lamp not lighted. If SMPL key is operated— IE, RN_, T_, U_ lamps lighted.
15	Operate ANS key.	High tone heard. If SMPL key is operated— AE lamp lighted. At relay rack— MA relay operated associated with trunk under test.
16	Insulate 7B of S2 relay associated with trunk under test.	
17	At MTF— Restore ANS, TLK keys simultaneously; <i>start timing.</i>	High tone silenced. AS, E lamps extinguished. If SMPL key is operated— DE lamp <i>not</i> lighted. At relay rack— In 2 to 5 seconds— TR relay operated. MA relay released.
18	Remove insulator from S2 relay.	
19	At MTF— Momentarily operate RL key.	All lamps extinguished.
20c	If no further tests are to be performed— Restore all keys; set all switches to OFF.	
E. Noncharge Supervision		
18	Operate ANS key.	
19	Momentarily operate ST key, <i>start timing.</i>	If ETS provided— CS, FT, S1 lamps lighted. If LAMA-C provided— CS, S1 lamps lighted. ♦If CDTT key is operated— S1, CS lamps lighted.♦ AE, E lamps lighted. PK lamp not lighted.

STEP	ACTION	VERIFICATION
		High tone heard. If SMPL key is operated and LAMA-C, ETS, ◆CDT◆ <i>not</i> provided— IE, RN, T, U lamps lighted.
20	In 1-1/2 to 2 seconds— Restore TLK, ANS keys simultaneously.	If ETS provided— FT, CS, S1 lamps extinguished. If LAMA-C provided— CS, S1 lamps extinguished. ◆If CDTT key is operated— S1, CS lamps extinguished.◆ High tone silenced. AS, E lamps extinguished. If SMPL key is operated and LAMA-C, ETS, ◆CDT◆ <i>not</i> provided— AE, DE lamps <i>not</i> lighted.
21	Momentarily operate RL key.	All lamps extinguished.
22d	If no further tests are to be performed— Restore all keys; set all switches to OFF.	
F. Reorder		
18	Operate ROT key.	
19	Momentarily operate ST key.	If ETS provided— FT, S1 lamps lighted. If LAMA-C provided— S1 lamp lighted. ◆If CDTT key is operated— S1 lamp lighted.◆ AS lamp lighted. Overflow tone heard.
20	Restore TLK key.	If ETS provided— FT, S1 lamps extinguished. If LAMA-C provided— S1 lamp extinguished. ◆If CDTT key is operated— S1 lamp extinguished.◆ AS lamp extinguished. Overflow tone silenced.
21	Momentarily operate RL key.	All lamps extinguished.
22d	If no further tests are to be performed— Restore all keys; set all switches to OFF.	

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STEP	ACTION	VERIFICATION
TANDEM OUTGOING (TOG)		
G. Trunk Seizure and Release		
19	Momentarily operate ST key.	If ETS provided— FT lamp lighted. AS, E lamps lighted.
20	Operate ANS key.	OGT-CS lamp lighted. High tone heard.
21	Restore TLK, ANS keys.	If ETS provided— FT lamp extinguished. AS, E, OGT-CS lamps extinguished. High tone silenced.
22	Momentarily operate RL key.	All lamps extinguished except TAN.
23d	If no further tests are to be performed— Restore all keys; set all switches to OFF.	TAN lamp extinguished.
H. Cross-Office Lockout		
19	Momentarily operate ST key.	If ETS provided— FT lamp lighted. AS, E lamps lighted.
20	Operate ANS key.	OGT-CS lamp lighted. High tone heard.
21	At 17E testboard— Insert plug of TST cord (knurled edge up) into TST jack associated with trunk under test.	
	Caution: Do not operate 3WO key at the 17E testboard since this will lock up the circuit. This circuit can only be released manually.	
22	Operate TALK key.	
23	Momentarily operate LOX key.	LO lamp associated with trunk under test lighted.
24	At MTF— Restore TLK, ANS keys.	If ETS provided— FT lamp extinguished. OGT-CS, AS, E lamps extinguished. At 17E testboard— LO lamp remains lighted.

STEP	ACTION	VERIFICATION
25	At MTF— Momentarily operate RL key.	All lamps extinguished except TAN. At 17E testboard— LO lamp remains lighted.
26	Momentarily operate RST key.	LO lamp extinguished.
27	Restore TALK key.	
28	Remove plug of TST cord from TST jack.	
29d	If no further tests are to be performed— At MTF— Restore all keys; set all switches to OFF.	TAN lamp extinguished.
I. Call to Distant Office Test Line		
8	Select A through F digits as required to select incoming trunk test line in distant office.	
9	Select MISC class of test.	
10	Select TAN subclass of test.	
11	Select originating class of call with LT3 translator indication.	
12	Operate KY key.	
13	Momentarily operate ST key.	If ETS provided— FT lamp lighted. AS lamp lighted. PK lamp not lighted. Tone heard, consistent with test line terminated to distant office.
		Note: If circuit under test uses inband-single frequency signaling, care should be exercised to ensure that the sound heard is <i>true busy tone</i> .
14	Momentarily operate RL key.	All lamps extinguished except TAN.
15c	If no further tests are to be performed— Restore all keys; set all switches to OFF.	TAN lamp extinguished.
J. Reorder		
19	Operate ROT key.	
20	Momentarily operate ST key.	If ETS provided— FT lamp lighted.

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STEP	ACTION	VERIFICATION
		AS lamp lighted. Overflow tone heard.
21	Restore TLK key.	If ETS provided— FT lamp extinguished. AS lamp extinguished. Overflow tone silenced.
22	Momentarily operate RL key.	All lamps extinguished except TAN.
23d	If no further tests are to be performed— Restore all keys; set all switches to OFF.	TAN lamp extinguished.
MISCELLANEOUS		
K. Trunk Busy From Master Test Frame		
18	Insert make-busy plugs into all MB jacks associated with trunks of the same route on same trunk link frame as trunk under test.	
19	Momentarily operate ST key.	TB lamp lighted.
20	Momentarily operate RL key.	All lamps extinguished.
21	Remove plug from MB jack associated with trunk under test.	
22	While circuit under test is idle— Momentarily operate ST key.	If ETS provided— FT, S1 lamps lighted. If LAMA-C provided— S1 lamp lighted. ♦If CDTT key is operated— S1 lamp lighted.♦ AS, E lamps lighted. If SMPL key is operated and LAMA-C, ETS, ♦CDT♦ <i>not</i> provided— IE, RN, T, U lamps lighted.
23	Momentarily operate RL key.	All lamps extinguished.
24	Insert make-busy plug into MB jack associated with trunk under test.	If ETS provided— FT lamp lighted.
25	Operate NTFS, NTTS keys.	
26	Momentarily operate ST key.	If ETS provided— S1 lamp lighted. If LAMA-C provided— S1 lamp lighted. ♦If CDTT key is operated— S1 lamp lighted.♦

STEP	ACTION	VERIFICATION
		AS, E, lamps lighted. PK lamp not lighted. If SMPL key is operated and LAMA-C, ETS, ◆CDT◆ not provided— IE, RN, T, U lamps lighted.
27	Momentarily operate RL key.	If ETS provided— FT lamp remains lighted. All lamps extinguished.
28	Remove plug from MB jack associated with trunk under test.	If ETS provided— FT lamp extinguished.
29d	If no further tests are to be performed— Restore all keys; set all switches to OFF.	
L. Trunk Busy From 17E Testbord		
18	At 17E testboard— Insert plug of TST cord (knurled edge up) into TST jack associated with trunk under test. <i>Caution: Do not operate 3WO key at the 17E testboard since this will lock up the circuit. This circuit can only be released manually.</i>	
19	Operate TALK key.	
20	Momentarily operate LO key.	LO lamp associated with trunk under test lighted.
21	At MTF— Momentarily operate ST key.	TB lamp lighted. PK lamp not lighted. At 17E testboard— LO lamp remains lighted.
22	At MTF— Momentarily operate RL key.	All lamps extinguished.
23	Operate NTFS, NTTS keys.	
24	Momentarily operate ST key.	If ETS provided— FT, S1 lamps lighted. If LAMA-C provided— S1 lamp lighted. ◆If CDTT key is operated— S1 lamp lighted.◆ AS, E lamps lighted. PK lamp not lighted. If SMPL key is operated and ETS, LAMA-C,

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STEP	ACTION	VERIFICATION
		<p>◆CDT◆ <i>not</i> provided— IE, RN, T, U lamps lighted. At 17E testboard— LO lamp remains lighted.</p>
25	Momentarily operate RST key.	LO lamp extinguished.
26	Restore TALK key.	
27	Remove plug of TST cord from TST jack.	
28	At MTF— Momentarily operate RL key.	All lamps extinguished.
29d	If no further tests are to be performed— Restore all keys; set all switches to OFF.	

M. Universal Pad Control

18	Operate 2WD key.	
19	Momentarily operate ST key.	<p>If ETS provided— FT, S1 lamps lighted. If LAMA-C provided— S1 lamp lighted. ◆If CDTT key is operated— S1 lamp lighted.◆ AS, E lamps lighted. PK lamp not lighted. If SMPL key is operated and ETS, LAMA-C, ◆CDT◆ <i>not</i> provided— IE, RN, T, U lamps lighted. At relay rack— PC relay associated with trunk under test operated. At main distributing frame— Ground present at ESC terminal associated with trunk under test.</p>
20	At MTF— Momentarily operate RL key.	<p>All lamps extinguished. At relay rack— PC relay released.</p>
21d	If no further tests are to be performed— Restore all keys; set all switches to OFF.	

N. False-Busy and False-Idle Conditions

1	At relay rack— Connect power to 1A fault locator.	
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STEP	ACTION	VERIFICATION
2	At 1A fault locator— Operate W-T switch to W.	
3	Operate HR-LRT switch to HR.	Whistle heard.
4	Connect test cord from WT jack of fault locator to terminal 45 of terminal strip A associated with trunk under test.	Whistle not heard.
5	While circuit being tested is idle— Block nonoperated MA, E relays.	
6	Block operated D relay.	
7	At MTF— Insert make-busy plugs into all MB jacks of idle trunks of the same unit on the same trunk link frame as trunk under test.	At relay rack— Whistle heard when last trunk of same route is made busy.
8	Momentarily remove blocking tool from D relay.	Whistle not heard while blocking tool was momentarily removed.
9	At MTF— Remove plugs.	
10	Connect HRG terminal to terminal 55 of terminal strip A associated with trunk under test.	
11	Disconnect test cord from terminal 45 of terminal strip A and connect to terminal 15 of terminal strip A.	
12	Remove blocking tools from MA, E, D relays.	Whistle not heard.
13	Remove test connections from terminals 15 and 55 of terminal strip A.	
14	Remove power to 1A fault locator.	

