

RINGING INTERRUPTER AND ALARM CIRCUIT TESTS NO. 1 CROSSBAR OFFICES

1. GENERAL

1.01 This section describes a method of testing the ringing interrupter and alarm circuit for 8-party semiselective ringing auxiliary line circuits and reverting call trunks, SD-95674-01; and the ringing interrupter and alarm circuit for 10-party code ringing auxiliary line circuits, SD-25297-01 in No. 1 crossbar offices.

1.02 The tests and the features tested are:

(A) Interrupter Time Alarm: This test checks that an alarm will sound if the interrupter circuit is not functioning.

(B) 8-Party Semiselective Ringing Auxiliary Line Alarm: This test checks that an alarm will sound if there is a trouble ground on the PU lead, an open PU lead, an open ringing interrupter lead, an open ST lead or a falsely grounded ringing interrupter lead.

(C) Reverting Trunk Alarm: This test checks that an alarm will sound if there is a trouble ground on the PU lead, an open PU lead, an open ringing interrupter lead, an open ST lead or a falsely grounded ringing interrupter lead.

(D) 10-Party Code Ringing Auxiliary Line Alarm: This test checks that an alarm will sound if there is a trouble ground on the PU lead, an open PU lead, an open ringing interrupter lead, an open ST lead or a falsely grounded ringing interrupter lead.

(E) Transfer Key Alarm: This test checks that an alarm will sound if all keys are not connected to the common leads of the same interrupter circuit.

1.03 Tests (A), (B), (C) and (E) are made on the ringing interrupter and alarm circuit for use with 8-party semiselective ringing auxiliary line circuits and reverting call trunks.

1.04 Tests (D) and (E) are made on the ringing interrupter and alarm circuit for use with 10-party code ringing auxiliary line circuits.

1.05 These tests should be made preferably during periods of light traffic and should be completed as quickly as possible to avoid interference with service calls.

1.06 Lettered Steps: The letters a, b, c, etc., are added to a step number to indicate that the steps cover an action which may or may not be required, depending on local conditions. The conditions under which a lettered step or series of steps should be made are given in the action column, and all steps governed 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 for each item are covered in the indicated paragraphs.

	No. Required for Tests				
	(A)	(B)	(C)	(D)	(E)
Stop Watch (2.02)	1	1	1	1	-
No. 893 Cord (2.03)	-	1	1	1	-
Receiver (2.04)	-	1	1	1	-
Meter (2.05)	-	1	1	1	-
Lamp Cap Extractor (2.06)	-	-	-	-	1
Lamp Extractor (2.07)	-	-	-	-	1

2.02 KS-3008 Stop Watch or equivalent.

2.03 No. 893 Cord, 6 feet long, equipped with two No. 360A Tools (1W13B Cord), a No. 419A Tool and a KS-6278 Tool.

2.04 No. 716E (or the replaced No. 528) Receiver attached to a W2AB Cord equipped with two No. 360A Tools (2W21A Cord), a No. 411A Tool and a KS-6278 Tool.

2.05 KS-14510 (or the replaced M9B) Volt-ohm-milliammeter equipped with one test prod and one test clip lead.

2.06 No. 319B Lamp Cap Extractor.

2.07 No. 553A Lamp Extractor.

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3. METHOD

<u>STEP</u>	<u>ACTION</u>	<u>VERIFICATION</u>
<u>(A) Interrupter Time Alarm</u>		
1	Block operated C relay.	After 28 to 58 seconds - ITA lamp lights. Green aisle pilot lamp lights. Green main aisle pilot lamp lights. Major alarm sounds.
2	Remove blocking tool from C relay.	All lamps extinguished. Major alarm silenced.
3	Operate A and B keys.	
4a	If C key is provided - Operate C key.	
5	Repeat Steps 1 and 2 on second interrupter circuit.	
6	Restore all keys.	
<u>(B) 8-Party Semiselective Ringing Auxiliary Line Alarm</u>		
1	Block operated C relay.	
2	At A terminal strip - Ground upper 2 terminal.	LPU lamp lights. Green aisle pilot lamp lights. Green main aisle pilot lamp lights. Major alarm sounds.
3	Remove blocking tool from C relay.	All lamps extinguished. Major alarm silenced.
4	Remove ground from upper 2 terminal.	
5	At A terminal strip - Ground upper 3 terminal.	After 28 to 58 seconds - LTA lamp for circuit one lights. Green aisle pilot lamp lights. Green main aisle pilot lamp lights. Major alarm sounds.
6	Remove ground from upper 3 terminal.	All lamps extinguished. Major alarms silenced.
7a	If more than 100 auxiliary line circuits are provided - At A terminal strip - Ground upper 4 terminal.	After 28 to 58 seconds - LTA lamp for second circuit lights. Green aisle pilot lamp lights. Green main aisle pilot lamp lights. Major alarm sounds.
8a	Remove ground from upper 4 terminal.	All lamps extinguished. Major alarm silenced.

<u>STEP</u>	<u>ACTION</u>	<u>VERIFICATION</u>
9	At A terminal strip - Using receiver connect 48V battery to upper 2 terminal.	After 28 to 58 seconds - STL lamp lights. Green aisle pilot lamp lights. Green main aisle pilot lamp lights. Major alarm sounds.
10	Remove 48V battery from upper 2 terminal.	All lamps extinguished. Major alarm silenced.
11	Ground positive terminal of meter. <u>Note:</u> In Steps 12 through 15b the green aisle and main aisle pilot lamps light, the major alarm sounds and the meter reads between 95 and 115 milliamperes momen- tarily.	
12	At A terminal strip connect meter to - Upper 6 terminal momentarily.	1LR1 lamp lights momentarily.
13	Upper 7 terminal momentarily.	1LR2 lamp lights momentarily.
14b	If more than 50 auxiliary line circuits are provided - At A terminal strip connect meter to - Upper 8 terminal momentarily.	2LR1 lamp lights momentarily.
15b	Upper 9 terminal momentarily.	2LR2 lamp lights momentarily.
16	Operate A and B keys.	
17c	If C key is provided - Operate C key.	
18	Repeat Steps 1 through 15b on second interrupter circuit.	
19	Restore all keys. <u>Note:</u> In Steps 20a through 35d the green aisle and main aisle pilot lamps light, the major alarm sounds and the meter reads between 95 and 115 milliamperes momen- tarily.	
20a	If more than 100 auxiliary line circuits are provided - At ringing interrupter terminal strip con- nect meter to - Upper 1 terminal momentarily.	At first circuit - 5TR1 lamp lights momentarily.
21a	Upper 2 terminal momentarily.	5TR2 lamp lights momentarily.
22a	Upper 3 terminal momentarily.	2TR1 lamp lights momentarily.
23a	Upper 4 terminal momentarily.	2TR2 lamp lights momentarily.
24a	Upper 5 terminal momentarily.	2BR1 lamp lights momentarily.

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<u>STEP</u>	<u>ACTION</u>	<u>VERIFICATION</u>
25a	Upper 6 terminal momentarily.	2BR2 lamp lights momentarily.
26a	Upper 7 terminal momentarily.	5BR1 lamp lights momentarily.
27a	Upper 8 terminal momentarily.	5BR2 lamp lights momentarily.
28d	If more than 250 auxiliary line circuits are provided - At ringing interrupter terminal strip connect meter to - Lower 1 terminal momentarily.	At second interrupter circuit - 5TR1 lamp lights momentarily.
29d	Lower 2 terminal momentarily.	5TR2 lamp lights momentarily.
30d	Lower 3 terminal momentarily.	2TR1 lamp lights momentarily.
31d	Lower 4 terminal momentarily.	2TR2 lamp lights momentarily.
32d	Lower 5 terminal momentarily.	2BR1 lamp lights momentarily.
33d	Lower 6 terminal momentarily.	2BR2 lamp lights momentarily.
34d	Lower 7 terminal momentarily.	5BR1 lamp lights momentarily.
35d	Lower 8 terminal momentarily.	5BR2 lamp lights momentarily.
36	Connect meter to 4T of LPA relay momentarily.	Meter reads between 95 and 115 milliamperes momentarily.
37	Connect meter to 2T of D2 relay of first circuit momentarily.	Meter reads between 95 and 115 milliamperes momentarily.
38a	If more than 100 auxiliary line circuits are provided - Connect meter to 2T of D2 relay of second circuit momentarily.	Meter reads between 95 and 115 milliamperes momentarily.
39	Connect meter to 3T of T2 relay momentarily.	Meter reads between 95 and 115 milliamperes momentarily.
40	Connect meter to 1B of STL relay momentarily.	Meter reads between 95 and 115 milliamperes momentarily.
41	Remove ground from positive terminal of meter.	

(C) Reverting Trunk Alarm

1	Block operated C relay.	
2	At A terminal strip - Ground lower 2 terminal.	TPU lamp lights. Green aisle pilot lamp lights. Green main aisle pilot lamp lights. Major alarm sounds.
3	Remove blocking tool from C relay.	All lamps extinguished. Major alarm silenced.
4	Remove ground from lower 2 terminal.	

<u>STEP</u>	<u>ACTION</u>	<u>VERIFICATION</u>
5	At A terminal strip - Ground lower 3 terminal.	After 28 to 58 seconds - TTA lamp lights. Green aisle pilot lamp lights. Green main aisle pilot lamp lights. Major alarm sounds.
6	Remove ground from lower 3 terminal.	All lamps extinguished. Major alarm silenced.
7	At A terminal strip - Using receiver connect 48V battery to lower 2 terminal.	After 28 to 58 seconds - STT lamp lights. Green aisle pilot lamp lights. Green main aisle pilot lamp lights. Major alarm sounds.
8	Remove 48V battery from lower 2 terminal.	All lamps extinguished. Major alarm silenced.
9	Ground positive terminal of meter. <u>Note:</u> In Steps 10 through 13 the green aisle and main aisle pilot lamps light, the major alarm sounds and the meter reads between 95 and 115 milliamperes momen- tarily.	
10	At A terminal strip connect meter to - Lower 6 terminal momentarily.	OR1 lamp lights momentarily.
11	Lower 7 terminal momentarily.	TR1 lamp lights momentarily.
12	Lower 8 terminal momentarily.	OR2 lamp lights momentarily.
13	Lower 9 terminal momentarily.	TR2 lamp lights momentarily.
14	Operate A, B and C keys.	
15	Repeat Steps 1 through 13 on second inter- rupter circuit.	
16	Restore A, B and C keys.	
17	Connect meter to 1B of TPA relay momen- tarily.	Meter reads between 95 and 115 milliamperes momentarily.
18	Connect meter to 2T of TTA relay momen- tarily.	Meter reads between 95 and 115 milliamperes momentarily.
19	Connect meter to 3T of T2 relay momen- tarily.	Meter reads between 95 and 115 milliamperes momentarily.
20	Connect meter to 1B of STT relay momen- tarily.	Meter reads between 95 and 115 milliamperes momentarily.
21	Remove ground from positive terminal of meter.	

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<u>STEP</u>	<u>ACTION</u>	<u>VERIFICATION</u>
<u>(D) 10-Party Code Ringing Auxiliary Line Alarm</u>		
1	At ringing interrupter and alarm terminal strip - Ground upper 15 terminal.	
2	Block operated F relay.	PU lamp lights. Green aisle pilot lamp lights. Green main aisle pilot lamp lights. Major alarm sounds.
3	Remove ground from upper 15 terminal.	All lamps extinguished. Major alarm silenced.
4	Remove blocking tool from F relay.	
5a	If TD relay is provided - At ringing interrupter and alarm terminal strip - Ground upper 16 terminal.	After 28 to 58 seconds - LTA lamp for circuit one lights. Green aisle pilot lamp lights. Green main aisle pilot lamp lights. Major alarm sounds.
6b	If TD relay is not provided - At ringing interrupter and alarm terminal strip - Ground upper 16 terminal.	After 28 to 58 seconds - TA lamp lights. Green aisle pilot lamp lights. Green main aisle pilot lamp lights. Major alarm sounds.
7	Remove ground from upper 16 terminal.	All lamps extinguished. Major alarm silenced.
8c	If TD relay is provided and more than 200 auxiliary line circuits are provided - At ringing interrupter and alarm terminal strip - Ground upper 12 terminal.	After 28 to 58 seconds - LTA lamp for circuit two lights. Green aisle pilot lamp lights. Green main aisle pilot lamp lights. Major alarm sounds.
9c	Remove ground from upper 12 terminal.	All lamps extinguished. Major alarm silenced.
10	At ringing interrupter and alarm terminal strip - Using receiver connect 48V battery to upper 15 terminal.	After 28 to 58 seconds - TA lamp lights. Green aisle pilot lamp lights. Green main aisle pilot lamp lights. Major alarm sounds.
11	Remove 48V battery from upper 15 terminal.	All lamps extinguished. Major alarm silenced.

<u>STEP</u>	<u>ACTION</u>	<u>VERIFICATION</u>
12	Ground positive terminal of meter.	
	<u>Note:</u> In Steps 13 through 17 the green aisle and main aisle pilot lamps light, the major alarm sounds and the meter reads between 95 and 115 milliamperes momentarily.	
13	At ringing interrupter and alarm terminal strip connect meter to - Upper 1 terminal momentarily.	C1 lamp lights momentarily.
14	Upper 2 terminal momentarily.	C2 lamp lights momentarily.
15	Upper 3 terminal momentarily.	C3 lamp lights momentarily.
16	Upper 4 terminal momentarily.	C4 lamp lights momentarily.
17	Upper 5 terminal momentarily	C5 lamp lights momentarily.
18	Operate A and B keys.	
19	Repeat Steps 1 through 17 on second interrupter circuit.	
20	Restore A and B keys.	
	<u>Note:</u> In Steps 21d through 61g the green aisle and main aisle pilot lamps light, the major alarm sounds and the meter reads between 95 and 115 milliamperes momentarily.	
21d	If interrupter relays with three upper and three lower contacts are provided - At A terminal strip connect meter to - Upper 1 terminal momentarily.	At first circuit - C1T lamp lights momentarily.
22d	Upper 2 terminal momentarily.	C2T lamp lights momentarily.
23d	Upper 3 terminal momentarily.	C3T lamp lights momentarily.
24d	Upper 4 terminal momentarily.	C4T lamp lights momentarily.
25d	Upper 5 terminal momentarily.	C5T lamp lights momentarily.
26d	Upper 6 terminal momentarily.	C1B lamp lights momentarily.
27d	Upper 7 terminal momentarily.	C2B lamp lights momentarily.
28d	Upper 8 terminal momentarily.	C3B lamp lights momentarily.
29d	Upper 9 terminal momentarily.	C4B lamp lights momentarily.
30d	Upper 10 terminal momentarily.	C5B lamp lights momentarily.
31e	If second set of interrupter relays with three upper and three lower contacts are provided - At A terminal strip connect meter to - Upper 11 terminal momentarily.	At second circuit - C1T lamp lights momentarily.

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<u>STEP</u>	<u>ACTION</u>	<u>VERIFICATION</u>
32e	Upper 12 terminal momentarily.	C2T lamp lights momentarily.
33e	Upper 13 terminal momentarily.	C3T lamp lights momentarily.
34e	Upper 14 terminal momentarily.	C4T lamp lights momentarily.
35e	Upper 15 terminal momentarily.	C5T lamp lights momentarily.
36e	Lower 1 terminal momentarily.	C1B lamp lights momentarily.
37e	Lower 2 terminal momentarily.	C2B lamp lights momentarily.
38e	Lower 3 terminal momentarily.	C3B lamp lights momentarily.
39e	Lower 4 terminal momentarily.	C4B lamp lights momentarily.
40e	Lower 5 terminal momentarily.	C5B lamp lights momentarily.
41f	If interrupter relays with six upper and six lower contacts are provided - At 10-party interrupter terminal strip connect meter to - Upper 1 terminal momentarily.	At first circuit - C1TT lamp lights momentarily.
42f	Upper 2 terminal momentarily.	C2TT lamp lights momentarily.
43f	Upper 3 terminal momentarily.	C3TT lamp lights momentarily.
44f	Upper 4 terminal momentarily.	C4TT lamp lights momentarily.
45f	Upper 5 terminal momentarily.	C5TT lamp lights momentarily.
46f	Upper 6 terminal momentarily.	C1T lamp lights momentarily.
47f	Upper 7 terminal momentarily.	C2T lamp lights momentarily.
48f	Upper 8 terminal momentarily.	C3T lamp lights momentarily.
49f	Upper 9 terminal momentarily.	C4T lamp lights momentarily.
50f	Upper 10 terminal momentarily.	C5T lamp lights momentarily.
51f	Upper 11 terminal momentarily.	C1B lamp lights momentarily.
52f	Upper 12 terminal momentarily.	C2B lamp lights momentarily.
53f	Upper 13 terminal momentarily.	C3B lamp lights momentarily.
54f	Upper 14 terminal momentarily.	C4B lamp lights momentarily.
55f	Upper 15 terminal momentarily.	C5B lamp lights momentarily.
56f	Lower 1 terminal momentarily.	C1BB lamp lights momentarily.
57f	Lower 2 terminal momentarily.	C2BB lamp lights momentarily.
58f	Lower 3 terminal momentarily.	C3BB lamp lights momentarily.
59f	Lower 4 terminal momentarily.	C4BB lamp lights momentarily.
60f	Lower 5 terminal momentarily.	C5BB lamp lights momentarily.

<u>STEP</u>	<u>ACTION</u>	<u>VERIFICATION</u>
61g	Is second set of interrupter relays with six upper and six lower contacts are provided - Repeat Steps 41f to 60f for second set of interrupter relays.	
62	Connect meter to 1B of P relay momentarily.	Meter reads between 95 and 115 milliamperes momentarily.
63a	If TD relay is provided - Connect meter to 2T of TD2 relay of first circuit momentarily.	Meter reads between 95 and 115 milliamperes momentarily.
64c	If TD relay is provided and more than 200 auxiliary line circuits are provided - Connect meter to 2T of TD2 relay of second circuit momentarily.	Meter reads between 95 and 115 milliamperes momentarily.
65	Connect meter to 2T of T2 relay momentarily.	Meter reads between 95 and 115 milliamperes momentarily.
66	Remove ground from positive terminal of meter.	

(E) Transfer Key Alarm

1	Operate A key.	K lamp lights. Green aisle pilot lamp lights. Green main aisle pilot lamp lights. Major alarm sounds.
2a	If C key is not provided - Operate B key.	All lamps extinguished. Major alarm silenced.
3b	If C key is provided - Operate B key.	All lamps remain lighted. Major alarm sounds.
4b	Operate C key.	All lamps extinguished. Major alarm retired.
5	Remove K lamp.	
6	Restore A key.	Green aisle pilot lamp lights. Green main aisle pilot lamp lights. Major alarm sounds.
7	Replace K lamp.	K lamp lights.
8a	If C key is not provided - Restore B key.	All lamps extinguished. Major alarm silenced.
9b	If C key is provided - Restore B key.	All lamps remain lighted. Major alarm sounds.
10b	Operate A key.	All lamps remain lighted. Major alarm sounds.
11b	Operate B key.	All lamps extinguished. Major alarm silenced.

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<u>STEP</u>	<u>ACTION</u>	<u>VERIFICATION</u>
12b	Restore A and C keys.	K lamp lights. Green aisle pilot lamp lights. Green main aisle pilot lamp lights. Major alarm sounds.
13b	Restore B key.	All lamps extinguished. Major alarm silenced.