

CAMA SUSPENSION CIRCUIT SD-26017-01

TESTS

NO. 5 CROSSBAR OFFICES

1. GENERAL	PAGE
1.01 This section describes a method of making tests on the CAMA suspension circuit in No. 5 crossbar offices.	Electronic Translation System (ETS) and the CAMA feature is provided. 7
1.02 The reasons for reissuing this section are listed below. Since this reissue is a general revision, no revision arrows have been used to denote significant changes. This reissue affects Equipment Tests Lists.	
(a) To correct Test B to prevent the operation of a major alarm and the CMS-TBL lamp at the master test frame.	
(b) Test B.1 is added to include test procedures required when the No. 5 crossbar office is arranged with the Electronic Translation System (ETS) and the CAMA feature is provided.	
1.03 The tests covered are:	
A. Suspension: This test checks that the signal to suspend CAMA operation is originated when the abandon switchboard key is operated. It also checks that the audible and visual alarms which indicate that CAMA suspension is in operation are functioning.	3
B. Suspension Check: This test verifies that the check feature of the CAMA suspension circuit functions properly.	6
B.1 Suspension Check, ETS-CAMA Provided: This test verifies that the check feature of the CAMA suspension circuit functions properly when the No. 5 crossbar office is arranged with the	
	C. Major Alarm: This test checks that a major alarm will function if the standing tests, up-checks, or down-checks indicate a circuit trouble. 8
	D. Foreign Battery or Ground: This test checks that the FBG lamp lights if a false battery or ground is present on the T1 or R1 leads between the AS key of the control and alarm circuit and the CAMA suspension circuit when both the AS key and the switchboard are located in a building other than the building containing the No. 5 equipment. 9
	E. Power Failure Alarm: This test checks that the power failure lamp lights if the nongrounded power supply fails to function properly, when both the AS key and the switchboard are located in a building other than the building containing the No. 5 equipment. 10
	1.04 These tests should not be applied when the CAMA suspension circuit is in use.
	1.05 Caution: <i>If during these tests a major or minor alarm other than that caused by these tests is originated, the tests should immediately be discontinued and the proper persons notified that a normal alarm is sounding.</i>
	1.06 Test A requires action at the CAMA sender frames, action and verification at the master

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test frame, and verification in the switchboard room. Test A may require action in the switchboard room and verification at the control and alarm circuit.

- 1.07 Test B requires action at the CAMA sender and CAMA transverter frames.
- 1.08 Test B.1 requires action at the CAMA sender and the master test frame.
- 1.09 Test C requires action at the CAMA sender frames and verification at the master test frame.
- 1.10 Test D requires action at the master test frame.
- 1.10 **Lettered Steps:** A letter a, b, c, etc, added to a step number in Part 3 or 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 a 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.

2. APPARATUS

- 2.01 The apparatus required for each test is shown in Table A. The details of each item are covered in the paragraph indicated by the number in parentheses.
- 2.02 Testing cord, 893 cord, 6 feet long, equipped with two 360A tools (1W13B cord), one KS-6278 connecting clip, and one 624B (terminal connector) tool.
- 2.03 Blocking and insulating tools, as required. Use tools and apply, as covered in Section 069-020-801.
- 2.04 67C test set or equivalent, equipped with one KS-6278 connecting clip (for checking the presence or absence of battery or ground).
- 2.05 Testing cord, 893 cord, 3 feet long, equipped with two 360A tools (1W13A cord) and two KS-6278 connecting clips.

3. PREPARATION

STEP	ACTION	VERIFICATION
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Tests A, B, B.1 and C

- 1 At CAMA sender frames—
Block nonoperated TI3 relay of all CAMA senders.

TABLE A

APPARATUS	TESTS				
	A	B	C	D	E
258C (Dummy) Plug	1	—	—	1	—
Cord (2.02)	—	4	—	1	—
Tool (2.03)	✓	✓	✓	✓	✓
Jack, Lamp, and Key Circuit, SD-25762-01	1	—	1	—	—
Test Receiver (2.04)	1	1	—	—	—
Cord (2.05)	2	—	—	—	—

STEP	ACTION	VERIFICATION
4. METHOD		
A. Suspension		
2	At CAMA suspension circuit— Remove B fuse.	
3a	If AS key is located in switchboard room and switchboard room is in same building as No. 5 equipment— Operate AS key.	In switchboard room— AS lamp lights. In No. 5 CAMA office— Minor alarm sounds. At master test frame— CMS lamp lights. At CAMA suspension circuit— SUS0-3 relays operate. Ground present on terminals B13 through B16, B23 through B26, B33 through B35, B43 through B45.
4b	If AS key is located in switchboard room and switchboard room is not in same building as No. 5 equipment— Operate AS key.	In No. 5 CAMA office— Minor alarm sounds. At master test frame— CMS lamp lights. At CAMA suspension circuit— SUS0-3 relays operate. Ground present on terminals B13 through B16, B23 through B26, B33 through B35, B43 through B45.
5c	If AS key is located at master test frame— Operate AS key.	At control and alarm circuit— AS lamp lights. In No. 5 CAMA office— Minor alarm sounds. At master test frame— CMS lamp lights. At CAMA suspension circuit— SUS0-3 relays operate. Ground present on terminals B13 through B16, B23 through B26, B33 through B35, B43 through B45.
6	At master test frame— Operate CMS-AR key momentarily.	Minor alarm silenced.
7d	If loop signaling— At CAMA suspension circuit— Insert dummy plug into TST jack.	SUS0-3 relays remain operated.
8d	Remove dummy plug from TST jack.	
9	At master test frame or in switchboard room— Restore AS key.	In CAMA suspension circuit— SUS0-3 relays release.

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STEP	ACTION	VERIFICATION
		At master test frame— CMS lamp extinguished.
10	At CAMA suspension circuit— Relace B fuse.	
11d	If loop signaling— Connect 1W13A cord from terminal 4 to terminal 1 of ST1 relay.	
12d	Connect 1W13A cord from terminal 4 to terminal 1 of SC2 relay.	
13	Insulate contact 3 of SC2 relay.	
14e	If E-M lead signaling— Insulate contact 1 make of E1 relay.	
15	Insulate contact 11 of SCA relay.	
16a	If AS key is located in switchboard room and switchboard room is in same building as No. 5 equipment— Operate AS key.	In No. 5 CAMA office— Minor alarm sounds. At CAMA suspension circuit— SUS0-3 relays operate. In switchboard room— OA tone bar sounds.
17b	If AS key is located in switchboard room and switchboard room is not in same building as No. 5 equipment— Operate AS key.	In No. 5 CAMA office— Minor alarm sounds. At CAMA suspension circuit— SUS0-3 relays operate. In switchboard room— OA tone bar sounds.
18c	If AS key is operated at master test frame— Operate AS key.	In No. 5 CAMA office— Minor alarm sounds. At CAMA Suspension circuit— SUS0-3 relays operate. In switchboard room— OA tone bar sounds.
19	At master test frame— Operate CMS-AR key momentarily.	Minor alarm silenced.
20d	If loop signaling— At CAMA suspension circuit— Insert dummy plug into TST jack.	SUS0-3 relays remain operated.
21d	Remove dummy plug from TST jack.	
22	At master test frame or in switchboard room— Restore AS key.	At CAMA suspension circuit— SUS0-3 relays release.

STEP	ACTION	VERIFICATION
23d	If loop signaling— At CAMA suspension circuit— Remove cords from ST1 and SC2 relays.	
24	Remove insulator from contact 3 of SC2 relay.	
25	Remove insulator from contact 11 of SCA relay.	
26e	If E-M signaling— Remove insulator from 1 make of E1 relay.	
27d	If loop signaling— Connect 1W13A cord from terminal 4 to terminal 1 of ST2 relay.	
28d	Connect 1W13A cord from terminal 4 to terminal 1 of SC1 relay.	
29	Insulate contact 3 of SC1 relay.	
30e	If E-M signaling— Insulate contact 12 make of E2 relay.	
31	Insulate contact 4 make of SCA relay.	
32a	If AS key is located in switchboard room and switchboard room is in same building as No. 5 equipment— Operate AS key.	In No. 5 CAMA office— Minor alarm sounds. At CAMA suspension circuit— SUS0-3 relays operate. In switchboard room— OA tone bar sounds.
33b	If AS key is located in switchboard room and switchboard room is not in same building as No. 5 equipment— Operate AS key.	In No. 5 CAMA office— Minor alarm sounds. At CAMA suspension circuit— SUS0-3 relays operate. In switchboard room— OA tone bar sounds.
34c	If AS key is located at master test frame— Operate AS key.	In No. 5 CAMA office— Minor alarm sounds. At CAMA suspension circuit— SUS0-3 relays operate. In switchboard room— OA tone bar sounds.
35	At master test frame— Operate CMS-AR key momentarily.	Minor alarm silenced.

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STEP	ACTION	VERIFICATION
36d	If loop signaling— At CAMA suspension circuit— Insert dummy plug into TST jack.	SUS0-3 relays remain operated.
37d	Remove dummy plug from TST jack.	
38	At master test frame or in switchboard room— Restore AS key.	At CAMA suspension circuit— SUS0-3 relays release.
39d	If loop signaling— At CAMA suspension circuit— Remove cords from ST1 and SC2 relays.	
40	Remove insulator from contact 3 of SC1 relay.	
41	Remove insulator from contact 4 make of SCA relay.	
42e	If E-M signaling— Remove insulator from contact 12 make of E2 relay.	
43	At CAMA sender frame— Remove blocking tools from TI3 relay of all CAMA senders.	
B. Suspension Check		
2	At CAMA transverter frames— Insulate contact 6 break of TI2 relay of all CAMA transverters.	
3	At CAMA suspension circuit— Check for absence of ground on terminal 18, 28, 37, 47 of terminal strip B.	Ground absent.
4	Connect ground to terminals 18, 28, 37, 47 of terminal strip B.	
5	Block nonoperated ALM relay.	
6	Block operated SUS0 relay.	Ground present on terminal 36 of terminal strip B. Ground absent from terminals 46, 17, 27 of terminal strip B.
7	Remove blocking tool from SUS0 relay.	
8	Block operated SUS1 relay.	Ground present on terminal 46 of terminal strip B. Ground absent from terminals 36, 17, 27 of terminal strip B.

STEP	ACTION	VERIFICATION
9	Remove blocking tool from SUS1 relay.	
10	Block operated SUS2 relay.	Ground present on terminal 17 of terminal strip B. Ground absent from terminals 46, 36, 27 of terminal strip B.
11	Remove blocking tool from SUS2 relay.	
12	Block operated SUS3 relay.	Ground present on terminal 27 of terminal strip B. Ground absent from terminals 36, 46, 17 of terminal strip B.
13	Remove blocking tool from SUS3 relay.	
14	Remove blocking tool from ALM relay.	
15	At CAMA transverter frames— Remove insulators from contact 6 of TI2 relay of all CAMA transverters.	
16	At CAMA sender frames— Remove blocking tools from TI3 relay of all CAMA senders.	
B.1 Suspension Check		
2	At MTF— Insert make-busy plug into PCTV-C (program controlled transverter for CAMA) jack associated with the first PCTV-C.	
3	At CAMA suspension circuit— Check for ground present on terminal 37 of terminal strip B.	Ground present.
4	Block nonoperated ALM relay.	
5	Block operated SUS0 relay.	Ground present on terminal 36 of terminal strip B.
6	Remove blocking tool from SUS0 relay.	
7	At MTF— Remove make-busy plug from PCTV-C associated with the first PCTV-C.	
8	Insert make-busy plug into PCTV-C jack associated with the second PCTV-C.	

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STEP	ACTION	VERIFICATION
9	At CAMA suspension circuit— Check for ground present on terminal 47 of terminal strip B.	Ground present.
10	Block operated SUS1 relay.	Ground present on terminal 46 of terminal strip B.
11	Remove blocking tool from SUS1 relay.	
12	Remove blocking tool from ALM relay.	
13	At MTF— Remove make-busy plug from PCTV-C associated with the second PCTV-C.	
14	At CAMA sender frames— Remove blocking tools from TI3 relay of all CAMA senders.	

C. Major Alarm

2	At CAMA suspension circuit— Block operated SUS0 relay.	In No. 5 CAMA office— Major alarm sounds. At master test frame— CMS-TBL lamp lights.
3	At CAMA suspension circuit— Remove blocking tool from SUS0 relay.	In No. 5 CAMA office— Major alarm silenced. At master test frame— CMS-TBL lamp extinguished.
4	Repeat Steps 2, 3 for relays SUS1 through SUS3.	
5	At CAMA suspension circuit— Insulate contacts 3 make, 4 make, 9 make, 11 make of SCA relay, 3 make of ALM relay.	
6	Block operated SCA relay.	ALM relay operates.
7	Remove blocking tool from SCA relay.	ALM relay releases.
8	Remove insulators from contacts 3 make, 4 make, 9 make, 11 make of SCA relay.	
9a	If loop signaling— Insulate contact 7 break of SCA relay.	
10a	Block nonoperated SCA relay.	
11a	Operate manually, hold SC1, SC2 relays.	CK relay releases. ALM relay operates.

STEP	ACTION	VERIFICATION
12a	Release SC1, SC2 relays.	CK relay operates. ALM relay releases.
13a	Release manually, hold ST1, ST2 relays.	STA relay releases. ALM relay operates.
14a	Remove hold on ST1, ST2 relays.	STA relay operates. ALM relay releases.
15a	Remove insulator from contact 7 break of SCA relay.	
16a	Remove blocking tool from SCA relay.	
17b	If E-M signaling— Block nonoperated SCA relay.	
18b	Insulate contact 7 break of SCA relay.	ALM relay operates.
19b	Remove insulator from contact 7 break of SCA relay.	ALM relay releases.
20b	Remove blocking tool from SCA relay.	
21	Remove insulator from contact 3 make of ALM relay.	
22	At CAMA sender frames— Remove blocking tools from TI3 relay at all CAMA senders.	

D. Foreign Battery or Ground

1	At CAMA suspension circuit— Connect ground to terminal 38 of terminal strip A.	
2	Operate FBG key momentarily.	FBG lamp lights.
3	At master test frame— Operate CMS-AR key momentarily.	At CAMA suspension circuit— FBG lamp extinguished.
4	At CAMA suspension circuit— Remove ground connection from terminal 38 of terminal strip A.	
5	Block nonoperated ALM relay.	
6	Insert dummy plug into TST jack.	
7	Connect frame test battery to terminal 4 of ST1 relay.	

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STEP	ACTION	VERIFICATION
8	Repeat Steps 2, 3.	
9	At CAMA suspension circuit— Remove connection from terminal 4 of ST1 relay.	
10	Remove dummy plug from TST jack.	
11	Remove blocking tool from ALM relay.	

E. Power Failure Alarm

1	At control and alarm circuit— Insulate contact 6 of CKS relay.	CKS relay releases. PF lamp lights. CK lamp extinguished.
2	Remove insulators from contact 6 of CKS relay.	CKS relay operates. PF lamp extinguished. CK lamp lights.