OUTGOING SENDER CONNECTOR SD-26057-01, SD-26059-01, OR SD-25587-01 AND OUTGOING SENDER LINK CIRCUIT SD-25734-01 OR SD-27628-01 TESTS

NO. 5 CROSSBAR OFFICES

1. GENERAL

1.01 This section describes a method of testing outgoing sender connector and outgoing sender link circuits associated with all of the various types of senders and trunks, LLP, and Automatic Intercept System (AIS) line circuits in No. 5 crossbar offices.

1.02 This section is reissued for the following reasons:

(a) To revise test procedures to include offices arranged with Electronic Translation System (ETS).

(b) To make minor changes as required.

Revision arrows have been used to emphasize the more significant changes. This reissue does not affect Equipment Test Lists.

1.03 The tests covered are:

1.04 Tests B through D apply to 2- and 4-wire offices; Tests A and E through L apply to 2-wire offices only.

1.05 ***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 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.

1.06 The manner of selecting some circuits and test conditions at the master test frame (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.

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

1.08 When the office is arranged for ETS, the distributors and scanner 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 section for the office arrangement.

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

1.09 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 scanning to be repeated on the FT lamp at the MTF trunk test circuit. As long as the TST bit is set in the trunk register, scanning will continue to be repeated on the lamp, 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.

1.10 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, DT, ORIG, ITDO, ITNP, OGT, INC, OR, SDR, IR, MISC, IAO, MLV, LT, IMS, PTT, TVT, ATNT, and IMT.

1.11 When making tests in No. 5 crossbar offices arranged with Electronic Translation System and test verification requires a completing marker trace output (teletype printout or data dump) to determine the data used to process a call, operate the TCPO key at the master test frame (MTF). The data dump received at the maintenance teletypewriters (TTY) may be in a ***raw*** form (binary or hexadecimal numbering system), formatted into decimal and written text, or a combination of

both. For additional information on data dumps and formats used, refer to Section 218-799-102.◀

2. APPARATUS

All Tests

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

Tests A, D, F, G

2.02 322A (make-busy) plugs as required.

Tests A, K

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

Tests B, C, I, J, L

2.04 32A test set.

Tests D, K

2.05 ▶67C test set or equivalent, equipped with one KS-6278 connecting clip (for checking the presence or absence of battery or ground).◀

Tests F, G

2.06 Patching cord, one P3F cord, 8 feet long, equipped with one 309 plug and one 310 plug (3P12H cord).

Tests F, G, H

2.07 Trunk test circuit, SD-25918-01.

Test H

2.08 Test set circuit for register and CAMA sender circuits (test set), SD-25676-01.

2.09 Testing cord, 20-conductor cord, 6 feet long, equipped with one KS-13875 plug and one KS-13895 plug (W20C cord) (for patching IRT jack to IRT connector on test set).

3. PREPARATION

STEP	ACTION	VERIFICATION
	All Tests	
	Note: Refer to ▶paragraphs 1.04 through 1.11.◀	
1	At MTF— Restore all keys and switches.	
2	Momentarily operate RL key.	All lamps extinguished.
	Tests B, C	
3a	If test is to be made in 4-wire office— Operate 4W key.	
4a	Select control digits as required.	
5	Select A_ through C_ digits for selection of a trunk group requiring the use of a sender.	
	Tests B, C, E	
6b	If allotted trunk groups are provided— Operate GPA or GPB key.	

STEP	ACTION	VERIFICATION
Tests B, C, E, I, J, L		
7	Select class of service and rate treatment as required.	
8	Select route advance as required.	
9c	▶If ETS provided— Operate PCS, PTS keys as required.◀	
Tests B, C, F, G		
10	Select E_ digit. ***Note:*** Omit D_ digit selection.	
Tests B, C, H, I, J, L		
11	Select ORIG class of test.	
12	Select line location.	
13	Select originating class of call.	

4. METHOD

STEP	ACTION	VERIFICATION
A. Marker Preference Chain Transfer and Alarm—Nonwire Spring Relay.		
3	Insert make-busy plugs into each SCMB_ jack for each marker of outgoing sender connector.	
TR and AR Keys Provided		
4	At outgoing sender connector frame— Note if TR key is normal or operated.	
5a	If TR key is operated— Restore TR key.	TR_ relays released.
6	Insulate 3T of MP0 relay.	CH, aisle pilot lamps lighted. Minor alarm sounds. TR, TR_ relays operated.
7	Remove insulator from MP0 relay.	
8	Momentarily operate AR key.	CH, aisle pilot lamps extinguished. Minor alarm silenced. TR, TR_ relays released.

STEP	ACTION	VERIFICATION
9	Operate TR key.	TR_ relays operated.
10	Insulate 3T of E0 relay.	CH, aisle pilot lamps lighted. Minor alarm sounds. TR relay operated. TR_ relays released.
11	Remove insulator from E0 relay.	
12	Momentarily operate AR key.	CH, aisle pilot lamps extinguished. Minor alarm silenced. TR relay released. TR_ relays operated.
13b	If TR key was normal at start of test— Restore TR key.	TR_ relays released.
14	At MTF— Remove make-busy plugs from SCMB_ jacks.	
MTR and AR Keys Provided		
15	At outgoing sender connector frame— Note if TR relay is operated or normal.	
16a	If TR relay is operated— Momentarily operate MTR key.	CH, aisle pilot lamps lighted. Minor alarm sounds. TR, TR_ relays released.
17a	Restore AR key.	CH, aisle pilot lamps extinguished. Minor alarm silenced.
18	Momentarily operate MTR key.	CH, aisle pilot lamps lighted. Minor alarm sounds. TR, TR_ relays operated.
19	Operate AR key.	CH, aisle pilot lamps extinguished. Minor alarm silenced.
20b	If TR relay was normal at start of test— Momentarily operate MTR key.	CH, aisle pilot lamps lighted. Minor alarm sounds. TR, TR_ relays released.
21b	Restore AR key.	CH, aisle pilot lamps extinguished. Minor alarm silenced.
22	At MTF— Remove make-busy plugs from SCMB_ jacks.	
B. Trunk Access To Senders		
14	Select marker.	

STEP	ACTION	VERIFICATION
15	Select trunk from trunk group.	
16	Select lowest numbered sender in subgroup A of type required by trunk group.	
17	Insert plug of 32A test set into RC jack.	
18	Operate BAT key.	
19	Momentarily operate ST (white) button of 32A test set.	SC_, SCSP_ lamps momentarily lighted corresponding to sender connector and position of sender in connector. Trouble record taken. FG_, TF_, LC_, LV_, FAK or FBK designations perforated corresponding to location of trunk on trunk link frame. FR_, CN_, S_ designations perforated corresponding to location of sender in sender connector.
20	Momentarily operate RLS (red) button of 32A test set.	
21	Repeat Steps 19 and 20 until each trunk in trunk group is tested with all senders in associated sender group.	
22	Remove plug of 32A test set from RC jack.	
23	Restore all keys and switches not required in next test.	

C. Sender Selection by Markers

14	Select trunk from trunk group.	
15	Select marker.	
16	Select lowest numbered sender in subgroup A of type required by trunk group.	
17	Insert plug of 32A test set into RC jack.	
18	Operate BAT key.	
19	Momentarily operate ST (white) button on 32A test set.	SC_, SCSP_, M_ lamps momentarily lighted corresponding to sender connector, position of sender in connector, and marker used in test. Trouble record taken. FG_, TF_, LC_, LV_, FAK or FBK designations perforated corresponding to location of trunk

STEP	ACTION	VERIFICATION
		on trunk link frame. FR_, CN_, S_ designations perforated corresponding to location of sender in sender connector. DR_ perforated corresponding to marker used in test.
20	Momentarily operate RLS (red) button of 32A test set.	
21	Repeat Steps 19, 20 for each sender in sender group.	
22	Repeat Steps 19, 20, 21 for each marker.	
23	Remove plug of 32A test set from RC jack.	
24	Restore all keys and switches not required in next test.	
D. False Continuity—MA Relay		
3	Insert make-busy plugs into each SCMB_ jack for each marker of sender connector under test.	At sender connector frame— No ground on contacts of relay in connector as follows: Nonwire-spring-type 8, 9 of MA relay. Wire-spring-type 1M of MA2 relay, 12M of MA1 relay.
4	Remove make-busy plugs from SCMB_ jacks.	
E. Intermarker Group Operation—Trunk Number Identification		
10	Select IMS class of test.	
11	Select marker.	
12	Select A_ through K_ digits for intermarker group trunk with subscriber-to-trunk routing.	
13	Select originating class of call and translator indication as required for intermarker group trunk group.	
14	Select trunk from intermarker group trunk group.	
15	Momentarily operate ST key.	CK, DIS1, LK2, MRL lamps lighted. Trouble record taken in called marker group. HT_, TT_, UT_ designations perforated on a

STEP	ACTION	VERIFICATION
		2-out-of-5 code basis in accordance with trunk number of trunk under test. TI, SRT designations perforated.
16	Momentarily operate RL key.	CK, DIS1, LK2, MRL lamps extinguished.
17	Repeat Steps 15, 16, using each trunk in trunk group.	
18	Repeat Steps 15, 16, 17, using each trunk group.	
19	Restore all keys and switches not required in next test.	
F. CAMA Incoming Trunk Access To CAMA Senders		
11	Insert make-busy plug into OGT-MB jack of CAMA incoming trunk.	
12	Patch CAMA TST jack to OGT-T jack of trunk selected in Step 11.	
13	Select ITNP class of test.	
14	Select CAMA0 or CAMA1 incoming class of call for tandem or toll supervision, respectively.	
15	Operate ANY POS, KY, TLK keys.	
16	Select A_ through C_ digits to select required code.	
17	Momentarily operate ST key.	DIS1, MRL, CK2 lamps lighted. Trouble record taken. FG_, TF_, LC_, LV_, FAK or FBK designations perforated corresponding to location of trunk on trunk link frame. HT_, TT_, UT_ designations perforated corresponding to trunk number of selected trunk. FR_, CN_, S_ designations perforated corresponding to location of sender in sender connector.
18	Momentarily operate RL key.	All lamps extinguished.
19	Remove patching cord from OGT-T and CAMA TST jacks.	
20	Remove make-busy plug from OGT-MB jack.	

STEP	ACTION	VERIFICATION
21	Repeat Steps 11 through 20, using each CAMA incoming trunk.	
22	Restore all keys and switches not required in next test.	
G. CAMA Intermarker Group Operation—Trunk Number Identification		
11	Insert make-busy plug into OGT-MB jack of CAMA intermarker group trunk.	
12	Patch CAMA TST jack to OGT-T jack of trunk selected in Step 11.	
13	Select IMT class of test.	
14	Select CAMA0 or CAMA1 class of call with tandem or toll supervision, respectively.	
15	Select trunk link frame.	
16	Select trunk number.	
17	Select marker.	
18	Operate ANY POS, TCB, TLK keys.	
19	Select A_ through C_ digits for a route requiring a CAMA intermarker group trunk.	
20	Momentarily operate ST key.	BT, CK2 lamps lighted. Trouble record taken. FG_, TF_, LC_, LV_, FAK or FBK designations perforated corresponding to location of trunk on trunk link frame. HT_, TT_, UT_ designations perforated corresponding to trunk number of selected trunk. FR_, CN_, S_ designations perforated corresponding to location of sender in sender connector.
21	Momentarily operate RL key.	All lamps extinguished.
22	Remove patching cord from OGT-T, CAMA TST jacks.	
23	Remove make-busy plug from OGT-MB jack.	
24	Repeat Steps 11 through 23 using each CAMA intermarker group trunk.	

STEP	ACTION	VERIFICATION
25	Restore all keys and switches not required in next test.	
	H. CAMA Junctor Operation—Trunk Number Identification	
14	Patch IRT jack to IRT connector on test set.	
15	At test set— Set L switch to OFF.	
16	At MTF— Operate SDR, CAM0, TLK keys.	CAMA lamp lighted.
17	Select CAMA sender.	
18	Select class of service requiring use of CAMA junctor.	
19	Select marker.	
20	Select CAMA position.	
21	Set MF switch to MPT.	
22	Select CAMA junctor.	
23	Select A_ through K_ digits to select called number.	
24	Momentarily operate ST key.	CK2, POSC lamps lighted. At test set— P lamp lighted.
25	Key calling number.	P lamp extinguished. At MTF— DIS1, MRL lamps lighted. Trouble record taken. HT_, TT_, UT_ designations perforated on a 2-out-of-5 code basis corresponding to trunk number of selected CAMA junctor. FG_, TF_ designations perforated corresponding to trunk link frame number for "bunched" overflow appearance. TI, SRT, CAMS designations perforated.
26	Momentarily operate RL key.	All lamps extinguished.
27	Repeat Steps 22 through 26, selecting a different junctor until each CAMA junctor has been selected.	

STEP	ACTION	VERIFICATION
28	Remove testing cord from IRT jack and connector.	
29	Restore all keys and switches not required in next test.	

I. LLP Line Access to Senders

14	Select A_ through G_ digits for a line route having access to line circuit.	
15	▶Select LLP line circuit to be used in test.◀	
16	Select marker.	
17	Select lowest numbered sender in subgroup A or B of type required for line circuit group.	
18	Operate REC key.	
19c	▶If ETS provided and CM dump is required—Operate TCP0 key. ***Note:*** See paragraph 1.11.◀	
20	Insert plug of 32A test set into RC jack.	
21	Operate BAT key.	
22	Momentarily operate ST (white) button of 32A test set.	SC_, SCSP_ lamps momentarily lighted corresponding to sender connector and position of sender in connector. Trouble record taken. FTT_, FUT_, VGT_, HGT_, VFT_ designations perforated corresponding to location of line circuit used in test. OSG_, SSA/SSB, OS_ designations perforated.
23	Momentarily operate RLS (red) button of 32A test set.	
24	Repeat Steps 22, 23, using each line circuit in group and all senders in associated sender group.	
25	Remove plug of 32A test set from RC jack.	
26	Restore all keys and switches not required in next test.	

STEP	ACTION	VERIFICATION
J. Sender Selection by Markers—LLP Mode		
14	Select marker.	
15	Select A_ through G_ digits for a line route having access to line circuit.	
16	⧫Select LLP line circuit to be used in test.⧫	
17	Select lowest numbered sender in subgroup A or B of type required for line circuit group.	
18	Operate REC key.	
19c	⧫If ETS provided and CM dump is required—Operate TCP0 key. ***Note:*** See paragraph 1.11.⧫	
20	Insert plug of 32A test set into RC jack.	
21	Operate BAT key.	
22	Momentarily operate ST (white) button of 32A test set.	SC_, SCSP_, M_ lamps momentarily lighted corresponding to sender connector, position of sender in connector, and marker used in test. Trouble record taken. FTT_, FUT_, VGT_, HGT_, VFT_ designations perforated corresponding to location of line circuit used in test. OSG_, SSA/SSB, OS_ designations perforated. DR_ designations perforated corresponding to marker used in test.
23	Momentarily operate RLS (red) button of 32A test set.	
24	Repeat Steps 22, 23, using each sender in sender group.	
25	Repeat Steps 22, 23, 24, using each combined or completing marker.	
26	Remove plug of 32A test set from RC jack.	
27	Restore all keys and switches not required in next test.	

STEP	ACTION	VERIFICATION
K. Sender Group Busy—LLP		
3	At outgoing sender link circuit— Insulate 12M of SB_ relay to be tested.	
4	Block operated SB_ relay to be tested.	Ground present on terminal strip terminals. (Refer to Table A.)
5	Remove insulator from 12M of SB_ relay.	Major alarm sounds. At sender group busy alarm control circuit— FSB lamp lighted.
6	At outgoing sender link circuit— Remove blocking tool from SB_ relay.	
7	At MTF— Momentarily operate FB-AR key.	Major alarm silenced. At sender group busy alarm control circuit— FSB lamp extinguished.
8	Repeat Steps 3 through 7 for all outsender link circuit SB_ relays.	
L. AIS Line Access to Senders		
14	Select A_ through G_ digits for a blank number marked for intercept.	
15	▶Select LLP line circuit to be used in test.◀	

TABLE A

TERMINAL STRIP (TS) TERMINAL NUMBER											
SB0	SB1	SB2	SB3	SB4	SB5	SB6	SB7	SB8	SB9	SB10	SB11
B11	B13	B15	B17	C11	C13	C15	C17	D11	D13	C15	D17
B12	B14	B16	B18	C12	C14	C16	C18	D12	D14	D16	D18
B21	B23	B25	B27	C21	C23	C25	C27	D21	D23	D25	D27
B22	B24	B26	B28	C22	C24	C26	C28	D22	D24	D26	D28
B31	B33	B35	B37	C31	C33	C35	C37	D31	D33	D35	D37
B32	B34	B36	B38	C32	C34	C36	C38	D32	D34	D36	D38
B41	B43	B45	B47	C41	C43	C45	C47	D41	D43	D45	D47
B42	B44	B46	B48	C42	C44	C46	C48	D42	D44	D46	D48
B51	B53	B55	B57	C51	C53	C55	C57	D51	D53	D55	D57
B52	B54	B56	B58	C52	C54	C56	C58	D52	D54	D56	D58

STEP	ACTION	VERIFICATION
16	Select marker.	
17	Operate REC key.	
18c	⧫If ETS provided and CM dump is required—Operate TCP0 key. ***Note:*** See paragraph 1.11.⧫	
19	Select lowest numbered sender in subgroup A or B of type required for line circuit group.	
20	Insert plug of 32A test set into RC jack.	
21	Operate BAT key.	
22	Momentarily operate ST (white) button of 32A test set.	SC_, SCSP_ lamps momentarily lighted corresponding to sender connector and position of sender in connector. Trouble record taken. FTT_, FUT_, VGT_, HGT_, VFT_ designations perforated corresponding to location of line circuit used in test. OSG_, SSA/SSB, OS_ designations perforated.
23	Momentarily operate RLS (red) button of 32A test set.	
24	Repeat Steps 22, 23, using each line circuit in group and each sender in associated sender group.	
25	Remove plug of 32A test set from RC jack.	
26	Restore all keys and switches.	