REVERTIVE PULSE INCOMING REGISTER SD-25565-01
TANDEM OPERATION
TESTS USING TEST SET SD-25676-01 (J24756B)
NO. 5 CROSSBAR OFFICES

1. GENERAL

1.01 This section presents a method for testing tandem revertive pulse incoming registers using the test circuit for register and CAMA sender circuits SD-25988-01 and the test set circuit for register and CAMA sender circuits (test set) SD-25676-01.

1.02 This section is reissued for the following reasons:

(a) To add SD reference to title

(b) To revise Test A to provide for new TCA lead in marker groups arranged for interchangeable code calling

(c) To make minor changes as required.

This reissue does not affect Equipment Test Lists.

1.03 The tests covered are:

1.04 Tests A through K are performed with the test set located at the master test frame (MTF). For trouble locating purposes, the test set may be located at the register frame and the operated or released ON relay in the register under test should be substituted for the verification of the lighted or extinguished IRON lamps, respectively.

1.05 When tests are made at the register frame or to avoid duplicate trouble records, release the ITRR key at the MTF.

1.06 If the office is equipped with both automatic monitor and incoming register test circuits, the STT/STM key of the automatic monitor should be restored before starting any tests using the incoming register test circuit. If the STT/STM key of the automatic monitor is operated while a test by the incoming register test circuit is in progress, the circuit will release as if the RL key has been operated.

1.07 ▶Test G requires that the RB2 relay in a register group-busy circuit be blocked operated. This will produce register group-busy timing conditions. The test should be performed during periods of light traffic.

1.08 If all other registers in the group become busy during this test, the traffic register associated with the GB lead will score. Refer to local instructions for recording these register operations.◀

1.09 *Lettered Steps:* A letter a, b, c, etc, added to a step number in Part 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.

1.10 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.

1.11 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 J

2.01 Master test control circuit SD-25800-01.

2.02 Test circuit for register and CAMA sender circuits SD-25988-01.

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

2.04 ▶Testing cord assembly, 20-conductor cord, 6 feet long (W20C cord) (for connecting test set circuit for register and CAMA sender circuits IRT jack to test circuit for register and CAMA sender circuits IRT jack).◀

2.05 322A (make-busy) plug.

Tests A, K

2.06 Testing cord, 6 feet long, equipped with two 360A tools (1W13B) and two KS-6278 connecting clips (for terminal interconnections and connecting ground to terminals).

▶Tests B, G, I◀

2.07 KS-3008 stopwatch or equivalent.

▶Tests G, I, K

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

3. PREPARATION

3.01 Determine from local office records the OB (office brush) and OG (office group) selections which correspond to the office codes that are cross-connected in the register.

3.01 Select full selectors office codes which include digits 0 through 4 for OB selections and digits 0 through 9 for OG selections. Record codes under corresponding heading in Table A so that OB0 and OG0 will be used in test call 1; OB1 and OG1 will be used in test call 2, etc.

3.02 If the register is equipped for ten codes or less, repeat the use of the available codes to complete the OB and OG columns of Table A.

3.03 If the register is equipped for more than ten codes, select codes so that digits 0 through 9 are used in each of the A, B, and C columns of Table A.

3.04 Select straightforward and service codes which include digits 0 through 4 for OB selections and digits 0 through 9 for OG selections along with associated A, B, and C digits. Record in Table B.

3.05 Select an office code from Table A. Record the code for OB and OG selections in Table C for test calls 1 through 3. Use the same OB selection for test calls 6 and 7 and OG selection for test calls 4 and 5.

3.06 If the register is equipped for ten or more codes, record the unequipped OB selection for test call 5 and the unequipped OG selection for test call 6.

3.07 If the register is equipped for ten codes or less, record the unequipped OG selection for test call 7.

3. PREPARATION (Cont)

STEP	ACTION	VERIFICATION
Tests A Through J		
1	At MTF— Insert make-busy plug into IRMB jack associated with register under test.	
2	Select incoming register.	
3	Select trunk class.	
4	At test set— Connect IRT jack to IRT jack of test circuit for register and CAMA sender circuits.	
5	Operate RP key.	
6	Set L switch to OFF.	

4. METHOD

STEP	ACTION	VERIFICATION
A. Registration—All Selections		
7	At MTF— Operate ITRR key.	
8	At test set— Momentarily operate STT key.	RR lamp lighted. At MTF— IRT, IRON lamps lighted.
9	At test set— Key selections for test call 1 as indicated in Table A.	
10	Operate SF-IA key.	IA-OF lamp momentarily lighted. RR lamp extinguished.

TABLE A

TEST CALL	SELECTIONS TO BE KEYED							TROUBLE RECORD PERFORATIONS						
	OB	OG	IB	IG	FB	FT	FU	A	B	C	D	E	F	G
1			0	0	0	0	1				0	0	0	1
2			1	1	1	1	0				2	6	1	0
3			2	2	2	2	3				5	2	2	3
4			3	3	3	3	2				7	8	3	2
5			4	0	4	4	5				8	4	4	5
6			1	2	1	5	7				3	1	5	7
7			0	3	0	6	8				1	5	6	8
8			2	1	2	7	9				4	7	7	9
9			3	0	3	8	6				6	3	8	6
10			4	3	4	9	4				9	9	9	4
11			0	2	0	2	0				1	0	2	0
12			1	3	1	3	1				3	6	3	1
13			2	0	2	0	2				4	2	0	2
14			3	1	3	1	3				6	8	1	3
15			4	2	4	2	4				9	4	2	4

STEP	ACTION	VERIFICATION
		At MTF— IRON lamp extinguished. Trouble record taken. Digits associated with test call 1 perforated. Designations perforated corresponding to trunk frame number, trunk number, and trunk class. ▶If office is arranged for interchangeable codes— TCA designation perforated. If marker group is arranged for 2-wire and 4-wire— 2W designation perforated.◀
11	At test set— Restore SF-IA key.	
12	Momentarily operate RL key.	All lamps extinguished.
13	Repeat Steps 8 through 12 for test calls 2 through 6 indicated in Table A, using each trunk class provided.	
14	Operate MAX key.	
15	At test set— Momentarily operate STT key.	RR lamp lighted. At MTF— IRT, IRON lamps lighted.
16	Key selections for test call 7 as indicated in Table A.	
17	At test set— Operate SF-IA key.	IA-OF lamp lighted. RR lamp extinguished. At MTF— IRON lamp extinguished. Trouble record taken. Digits associated with test call 7 perforated. Designations perforated corresponding to trunk frame number, trunk number, and trunk class. ▶If office is arranged for interchangeable codes— TCA designation perforated. If marker group is arranged for 2-wire and 4-wire— 2W designation perforated.◀
18	At test set— Restore SF-IA key.	IA-OF lamp extinguished.
19	Momentarily operate RL key.	All lamps extinguished.

STEP	ACTION	VERIFICATION
20	Repeat Steps 15 through 19 for test calls 8 through 15 as indicated in Table A.	
21	At MTF— Restore MAX, ITRR keys.	
22a	If STR relay is provided— At incoming register link frame— ***For nonwire-spring-relay type circuit*** Connect terminal 21 to 24 on F1 terminal strip. ***For wire-spring-relay type circuit*** Connect terminal 0 to 3 on B terminal strip for horizontal group 0.	
23a	Repeat Steps 8 through 11.	Trouble record taken. FT1, FT2, FT4, FT7 designations perforated.
24a	At test set— Momentarily operate RL key.	All lamps extinguished.
25	At MTF— Disconnect testing cord if not required in next test.	
26	Restore all keys and switches not required in next test.	
27	Disconnect test set from MTF if not required in next test.	

B. Registration—Straightforward and Services Codes

7	At MTF— Operate ITRR key.	
8	At test set— Momentarily operate STT key.	RR lamp lighted. At MTF— IRT, IRON lamps lighted.
9	At test set— Key selections for test call 1 as indicated in Table B.	
10	Momentarily operate (less than 1 second) SF-IA key.	RR lamp extinguished. At MTF— IRON lamp extinguished. Trouble record taken. Designations perforated corresponding to test call office.

STEP	ACTION	VERIFICATION

TABLE B

TEST CALL	SELECTIONS TO BE KEYED		TROUBLE RECORD PERFORATIONS		
	OB	OG	A	B	C
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

11	At test set— Momentarily operate RL key.	All lamps extinguished.
12	Repeat Steps 8 and 9.	
13	Operate SF-IA key; ***start timing.***	In 3 to 5 seconds— RR lamp extinguished. At MTF— IRON lamp extinguished. Trouble record taken. Designations perforated corresponding to test call office code.
14	At test set— Restore SF-IA key.	
15	Momentarily operate RL key.	All lamps extinguished.
16	Repeat Steps 8 through 11 for test calls 2 through 10 as indicated in Table B.	
17	At MTF— Restore all keys and switches not required in next test.	
18	Disconnect test set from MTF if not required in next test.	

STEP	ACTION	VERIFICATION
C. Minimum Interdigital Time Test		
7	At MTF— Operate ITRR key.	
8	At test set— Momentarily operate STT key.	RR lamp lighted. At MTF— IRT, IRON lamps lighted.
9	At test set— Key OB and OG selections for a test call indicated in Table A.	
10	At MTF— Operate FOT key.	
11	At test set— Operate and hold key 3 for IB selection for test call selected in Step 9.	P lamp flashes once, then lights steadily.
12	Release key 3.	P lamp extinguished.
13	Operate and hold key 2 for FB selection for test call selected in Step 9.	P lamp flashes once, then lights steadily.
14	Release key 2.	P lamp extinguished.
15	Key digit 3 for FU selection for test call selected in Step 9.	P lamp momentarily lighted. RR lamp extinguished. At MTF— IRON lamp extinguished. Trouble record taken. Designations perforated corresponding to called number 7723.
16	Restore all keys and switches not required in next test.	
17	Disconnect test set from MTF if not required in next test.	
D. Telltale During Office Group Selection		
7	Momentarily operate STT key.	RR lamp lighted. At MTF— IRT, IRON lamps lighted.
8	At test set— Key OB selection for a test call indicated in Table A.	

STEP	ACTION	VERIFICATION
9	Operate SF-IA key.	▶IA-OF lamp lighted. At MTF— IRON lamp remains lighted.◀
10	At test set— After 2 seconds— Restore SF-IA key.	IA-OF, RR lamps extinguished. At MTF— IRON lamp extinguished.
11	At test set— Momentarily operate RL key.	All lamps extinguished.
12	At MTF— Restore all keys and switches not required in next test.	
13	Disconnect test set from MTF if not required in next test.	

E. Telltale During Incoming Brush Selection

7	Momentarily operate STT key.	RR lamp lighted. At MTF— IRT, IRON lamps lighted.
8	At test set— Key OB and OG selections for a test call indicated in Table A.	
9	Operate SF-IA key.	IA-OF lamp momentarily lighted. RR lamp extinguished. At MTF— IRON lamp extinguished.
10	At test set— Restore SF-IA key.	
11	Momentarily operate RL key.	All lamps extinguished. At MTF— Trouble record ***not*** taken.
12	Restore all keys and switches not required in next test.	
13	Disconnect test set from MTF if not required in next test.	

F. Unused Selections

7	At MTF— Operate MAX key.	

STEP	ACTION	VERIFICATION
8	At test set— Momentarily operate STT key.	RR lamp lighted. At MTF— IRT, IRON lamps lighted.
9	At test set— Key selections for test call 1 indicated in Table C.	IA-OF lamp momentarily lighted. RR lamp extinguished. At MTF— IRON lamp extinguished.
10	At test set— Momentarily operate RL key.	All lamps extinguished.
11	Repeat Steps 8 through 10 for all selections in test call 1 through 3 indicated in Table C.	
12a	If register is equipped for ten or more codes— Repeat Steps 8 through 10 for all selections in test call 4 through 6 indicated in Table C.	
13b	If register is equipped for ten or less codes— Repeat Steps 8 through 10 for test call 7.	

TABLE C

TEST CALL		SELECTIONS TO BE KEYED						IA-OF LAMP MOMENTARILY LIGHTED DURING
		OB	OG	IB	IG	FB	FT	
1	Overstep IB			5 thru 9	2	2		FB selection
2	Overstep IG			2	4 thru 9	2		FB selection
3	Overstep FB			2	2	5 thru 9	2	FB selection
4	Overstep OB	4 thru 9		2				IB selection
5	Unequipped OB			2				IB selection
6	Unequipped OG			2				IB selection
7	Unequipped OG			2				IB selection

STEP	ACTION	VERIFICATION
14	At MTF— Restore all keys and switches not required in next test.	
15	Disconnect test set from MTF if not required in next test.	
	G. Overall Timeout	
7	At register circuit associated with test— Block nonoperated OVL relay.	
8	At test set— Momentarily operate STT key.	RR lamp lighted. At MTF— IRT, IRON lamps lighted.
9	At test set— Key OB selection for a test call indicated in Table A; ***start timing.***	P lamp momentarily lighted.
10	After 12 seconds— Key OG selection for the selected call; ***start timing.***	P lamp momentarily lighted.
11	After 12 seconds— Key IB selection for the selected call; ***start timing.***	P lamp momentarily lighted. At MTF— In 20 to 32 seconds— IRON lamp extinguished.
12	At test set— Momentarily operate RL key.	All lamps extinguished.
13	At register circuit under test— Remove blocking tool from OVL relay.	
14	At test set— Momentarily operate STT key; ***start timing.***	RR lamp lighted. At MTF— IRT, IRON lamps lighted. In 4 to 7 seconds— IRON lamp extinguished.
15	At test set— Momentarily operate RL key.	All lamps extinguished.
16	At group-busy circuit associated with register under test— Block operated RB2 relay.	
17	At test set— Momentarily operate STT key.	RR lamp lighted. At MTF— IRT, IRON lamps lighted.

STEP	ACTION	VERIFICATION
18	At test set— Key OB selection for a test call indicated in Table A; ***start timing.***	P lamp momentarily lighted. At MTF— In 4 to 7 seconds— IRON lamp extinguished.
19	At test set— Momentarily operate RL key.	All lamps extinguished.
20	At group-busy circuit associated with register under test— Remove blocking tool from RB2 relay.	
21	At MTF— Restore all keys and switches not required in next test.	
22	Disconnect test set from MTF if not required in next test.	
H. Link Release		
7	At register and CAMA sender circuit associated with test— Set TCL switch to OFF.	
8	At MTF— Operate ITRR key.	
9	At test set— Momentarily operate STT key.	At MTF— IRT, IRON lamps lighted. In 1 second— IRON lamp extinguished. Trouble record taken. LR-, FR-, CN-, RG-, ▶2W, TCA◀ designations perforated.
10	Restore all keys and switches not required in next test.	
11	Disconnect test set from MTF if not required in next test.	
I. Common Alarm Timing		
7	At register circuit associated with test— Block nonoperated OVL, TRL relays.	
8	Insulate 3B of M relay.	
9	At test set— Momentarily operate STT key.	RR lamp lighted. At MTF— IRT, IRON lamps lighted.

STEP	ACTION	VERIFICATION
10	At test set— Key selections for a test call indicated in Table A; ***start timing.***	P lamp lighted. At MTF— In 20 to 32 seconds— TO lamp lighted.
11	Remove make-busy plug from IRMB jack; ***start timing.***	In 10 to 15 seconds— R-S-TOA lamp lighted. ***Note:*** If R-S-TOA lamp is lighted in less than 10 seconds, repeat the test and assure that another circuit has not seized the common alarm circuit.
12	At register circuit associated with test— Remove blocking tools from OVL, TRL relays.	
13	Remove insulator from M relay.	
14	At test set— Momentarily operate RL key.	All lamps extinguished.
15	At MTF— Restore all keys and switches not required in next test.	
16	Disconnect test set from MTF if not required in next test.	

J. Trouble Release—IRBT Key Operated

7	At MTF— Operate IRBT key.	
8	At test set— Momentarily operate STT key.	RR lamp lighted. At MTF— IRT, IRON lamps lighted.
9	At test set— Key selections for a test call indicated in Table A.	
10	Operate SF-IA key.	IA-OF lamp momentarily lighted. RR lamp lighted. At MTF— IRT, IRON lamps lighted.
11	At test set— Restore SF-IA key.	
12	Momentarily operate RL key.	All lamps extinguished.

STEP	ACTION	VERIFICATION
13	At MTF— Restore all keys and switches not required in next test.	
14	Disconnect test set from MTF if not required in next test.	

K. Double-Connection

1	At MTF— Insert make-busy plug into IRMB jack associated with register used for test.	
2	Operate IRBT key.	
3	At register control unit associated with test— Connect ground to HM lead (terminal 51 for register 0 or terminal 221 for register 1).	H, RV3 relays operated.
4	Block nonoperated TRL relay.	
5	Manually operate ON relay.	In 1 second— TC1, TC2 relays operated. DCK relay ***not*** operated.
6	Release ON relay.	
7	Remove blocking tool from TRL relay.	
8	Disconnect ground from HM lead.	
9	Block operated H relay.	RV3 relay operated.
10	Manually operate ON relay.	DCK relay operated.
11	Release ON relay.	
12	At MTF— Restore IRBT key.	
14	Remove make-busy plug from IRMB jack.	