ORIGINATING REGISTERS
DIAL PULSE OR "TOUCH-TONE"® CALLING SD-26040-01
TESTS USING OFFICE TEST FRAME TEST CIRCUIT SD-27633-01 (H-595-950)
NO. 5 CROSSBAR OFFICES

1. GENERAL

1.01 This section describes a method of testing dial pulse or TOUCH-TONE calling originating registers using the office test frame test circuit (OTF) SD-27633-01 (H-595-950) Issue 1 and the trouble indicator and connector circuit (TIC) SD-27634-01 in No. 5 crossbar offices.

1.02 This section is reissued for the following reasons:

(a) To revise Table A

(b) To add 1.04 with respect to use of the TIC MB key in unattended offices

(c) To revise Test D to provide a test of the information code 1-411

(d) To revise title of Test N

(e) To revise Tests O, P, Q, S, T, and U for timing

(f) To revise Test AB to provide a test of the originating register that is equipped to handle interchangeable codes but no pretranslators are provided

(g) To add Test AC to provide for testing toll diversion feature

(h) To include operation of CB key to prevent completion of test calls when desired

(i) To make minor changes as required.

Since this reissue covers a general revision, arrows ordinarily used to indicate changes have been omitted.

1.03 The tests covered are:

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A. Regular Call: This test checks the ability of the originating register to receive and record dial pulses from a noncoin or coin customer and, together with the information received on the dial tone connection, select and transmit to a marker at the end of dialing all information necessary for the satisfactory completion of a call. 5

B. DDD Call: This test checks the ability of the originating register to receive and record dial pulses and, together with the information received on the dial tone connection, select and transmit to a marker at the end of dialing all information necessary for the satisfactory completion of a DDD call. 6

C. 11X Service Codes: This test checks the ability of the originating register to operate correctly when a 11X service code is used and that the originating register recognizes that three digits are to be registered. 7

D. X11 Service Codes: This test checks the ability of the originating register to operate correctly when an X11 service code or a DDD information code is used. 8

E. Manual Call—Coin and Noncoin: This test checks the ability of the originating register to recognize a call from a manual customer and to treat the call as a call to zero operator without

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sending dial tone to the manual customer. 9

F. Zero Operator—Coin and Noncoin: This test checks the ability of the originating register to recognize a zero operator call. 10

G. 2-Party Test and Busy Tone: This test checks the originating register 2-party test features on a 2-party class of service that requires party test. It also checks that busy tone can be transmitted by the originating register. 11

H. Abandoned Call—Coin and Noncoin: This test checks the ability of the originating register to release on an abandoned call. If the register is arranged for coin service, the test also checks that the register coin return circuit operates properly. 12

I. Abandoned Call—DDD Call: This test checks the ability of the originating register to release on an abandoned DDD call. 13

J. Register Supervision: This test checks that the originating register marker connector furnishes a holding ground for the originating register supervisory relay. 14

K. B- Digit Translator: This test checks the ability of the originating register to determine, from the B digit dialed, the number of digits to be dialed. 15

L. Pretranslation: This test checks the ability of the originating register to receive signals from a pretranslator which indicate to the register the number of digits to expect. It also checks that the originating register recognizes the completion of dialing when that number of digits is received. 16

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M. Dial Tone: This test checks the ability of the originating register to: (1) Transmit dial tone. (2) Absorb a preliminary pulse. (3) Remove dial tone when a digit 2 through 9 is dialed for the A digit. (4) Remove dial tone when the access digit 1 is dialed. . . . 17

N. Dial Tone—Register Arranged for 11X Service Codes and Digit 1 Access Code Not Provided: This test checks that the originating register removes dial tone when the prefix 11 is dialed. 18

O. Permanent Signal Timing—Coin and Noncoin: This test checks the ability of the originating register permanent signal timing circuit to time out if the first digit is not dialed in the allotted time. If the originating register is arranged for coin service, it also checks that the coin return circuit of the register operates properly. 18

P. Partial Dial Timing—Coin and Noncoin: This test checks the ability of the originating register partial dial timing circuit to time out if the second digit is not dialed in the allotted time. If the originating register is arranged for coin service, it also checks that the call is set up to the partial dial route. 19

Q. Partial Dial Timing—DDD Call: This test checks the ability of the originating register partial dial timing circuit to time out properly on DDD calls. 20

R. Timing for Extra Digit to be Dialed: This test checks the ability of the originating register to allow the correct amount of time for the dialing of an extra digit on a call to an office having station digits or five numericals. 20

S. Register Timeout After Marker Seizure: This test checks the ability of the originating register to time out

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within the allotted time after marker seizure. 21

T. Timing During Pretranslation: This test checks that, from the time the originating register calls for a pretranslator until pretranslation is completed, the partial dial timing interval is not reduced. 22

U. Common Alarm Timing: This test checks the ability of the originating register to cause the common alarm circuit to operate properly in the allotted time. 23

V. Recycle of Timing: This test checks the ability of the originating register to recycle its timing circuit when the operation which is being timed is completed in the allotted time interval. . . . 23

W. Tip Party Manual Test: This test checks the ability of the TP1 relay in the originating register to operate over the register operate current flow test path. It also check that, if the TP1 relay fails to operate, the originating register is held off-normal. 25

X. Line Location, Class of Service, and Observed Call Information—Storing and Verification of Trouble Indicator and Connector Leads: This test checks the following: (1) Ability of the originating register to receive, store, and transmit line location, class of service, and observed call information from and to the marker. (2) That the trouble indicator receives the proper identifying information from the originating register and the originating register marker connector when the trouble indicator is seized by the marker. 25

Y. Digit 0 or 1 Access Code: This test checks the ability of the originating register to record digit 0 or 1 and operate correctly when an access code is used. 27

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Z. TOUCH-TONE Pulsing: This test checks the ability of the originating register to receive and record digits from a TOUCH-TONE customer. 27

AA. C- Digit Translator: This test checks the ability of the originating register to recognize that a call is either a DDD call or an NPA information call when an NNO code is dialed. . . . 28

AB. Interchangeable Codes: This test checks the ability of the originating register to operate correctly when an interchangeable code is dialed. (Refer to 1.05.) 29

AC. Toll Diversion: This test checks the ability of the originating register to recognize a call to a denied access toll route and to prevent completion of the call. 31

1.04 If the trouble indicator and connector circuit is not associated with the master alarm release key of the alarm sending circuit, the TIC MB key at TIC should be operated in unattended offices to prevent lamps from being lighted and generating heat sufficient to discolor and warp designating strips. A large number of lamps lighted could also result in lamp fuses operating and causing a major alarm.

1.05 An interchangeable code represents both a working office code in the home area and a working foreign area code. Where pretranslators are provided, the dialing of an interchangeable code will result in the pretranslator grounding the CMB lead to the originating register.

1.06 In the following tests, actions and/or verifications away from the main test locations are required at:

Test E—Line link frame and switchboard

Test F—Switchboard

Test G—Completing marker

Test J—Completing marker and originating register

Tests O, P, S—Relay rack frame

Test T—Originating register and relay rack frame

Tests R, U, V, W—Originating register

Test X—Line link frame and dial tone marker

Test Z—Line link frame

1.07 During Test H, the traffic register associated with the APD lead will operate twice. During Test I, the traffic registers associated with the APD and FAPD leads will operate once. During Test Q, the traffic register associated with the FAPD lead will operate once. Local instructions should be followed with respect to recording and reporting these traffic register operations.

1.08 ***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.

2. APPARATUS

All Tests Except W

2.01 Patching cords, P3D cords, 6 feet long, equipped with two 309 plugs (3P3A cord) as required.

Tests E, V, X, Z

2.02 Patching cord, P3E cord, 6 feet long, equipped with two 310 plugs (3P7A) cord.

Tests E, X, Z

2.03 Patching cord, P3U cord, 7 feet long, equipped with one 310 plug and one 351A plug (3P27B cord).

Tests J, O, P, T Through X

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

Tests O Through U, AB

2.05 KS-3008 stopwatch or equivalent.

Tests U, V

2.06 32A test set.

Test V

2.07 1011G dial hand test set (handset), equipped with 2W38A cord assembly consisting of a W2CK cord, 471A jack, and 310 plug.

Tests W, X

2.08 322A make-busy plug.

Test X

2.09 Testing cord, 893 cord, 6 feet long, equipped with two 360A tools (1W13B cord), one KS-6278 connecting clip, and one 624A (relay winding connector) tool.

Test Z

2.10 TOUCH-TONE set, equipped with 2W42A cord assembly consisting of a W2DL cord and 310 plug.

3. PREPARATION

STEP	ACTION	VERIFICATION
All Tests Except W		
1	At OTF— Restore all keys and switches.	All lamps extinguished.
2	At TIC— Momentarily operate RLS key.	All lamps extinguished.
3	At jack, lamp, and key circuit— Patch OR jack in MB2 jack field to ORMB- jack of register to be tested.	
4	Patch 0 to 9 jacks as required in MB1 jack field to ORMB- jacks associated with registers located on same trunk link frame as register under test.	
5	At OTF— Operate FS- key to select trunk link frame of register under test.	
6a	If pulsing slower than 18 pps is required— Operate 10 PPS key.	
7	Operate MKR- key to select dial tone marker.	
Tests A Through D, J, K, L, R, X Through AC		
8	Operate MKR- key to select completing marker. ***Note:*** When both dial tone and completing markers are selected, both must be the same, even or odd.	

4. METHOD

STEP	ACTION	VERIFICATION
A. Regular Call		
9	Operate 7D key.	
10b	If noncoin class of service is used— Operate CL- key to select class of service having access to route selected.	
11b	Operate OTL key.	
12c	If coin class of service is used— Operate COTL key.	

STEP	ACTION	VERIFICATION
13c	Momentarily operate CN key.	CN lamp lighted.
14	Set A- through G- DIAL switches to select outgoing route and numericals to be used in test.	
15	Operate ST key.	OS lamp lighted. Dial tone heard.
16	After dial tone is heard— Operate MCB, CB keys.	When dialing is completed— ED lamp lighted. AT TIC— A- through G- lamps lighted corresponding to setting of DIAL switches. ***Note:*** TF lamp will be lighted because of TM1 timeout caused by operated CB key and does not indicate on actual failure of the test.
17	At OTF— Restore ST, MCB, CB keys.	OS, ED lamps extinguished. If coin class of service is used— CR or CC lamp momentarily lighted. CN lamp extinguished.
18	At TIC— Momentarily operate RLS key.	All lamps extinguished.
19	Repeat Steps 13c through 18 using office codes and numericals for test calls until each usable numerical is employed for each dialable digit.	
20	Restore all keys and switches not required in next test.	
21	At jack, lamp, and key circuit— Remove patching cords from 0 to 9, OR, ORMB- jacks.	
B. DDD Call		
9	Operate OTL key.	
10	Operate CL- key to select noncoin class of service.	
11	Set A- through K- DIAL switches for an X0X or X1X code and numericals.	
12	Operate ST key.	OS lamp lighted. Dial tone heard.

STEP	ACTION	VERIFICATION
13	After dial tone is heard— Operate MCB, CB keys.	After dialing is completed— ED lamp lighted. At TIC— A- through K- lamps lighted corresponding to setting of DIAL switches.
14	At OTF— Restore ST, MCB, CB keys.	OS, ED lamps extinguished.
15	At TIC— Momentarily operate RLS key.	All lamps extinguished.
16	Repeat Steps 11 through 15 utilizing all working combinations of X0X, X1X codes and all numericals in D- through K- DIAL switches.	
17	Restore all keys and switches not required in next test.	
18	At jack, lamp, and key circuit— Remove patching cords from 0 to 9, OR, ORMB- jacks.	

C. 11X Service Codes

9	Operate OTL, 3D keys.	
10	Operate CL- key to select class of service desired.	
11	Set A-, B-, C- DIAL switches for working 11X route.	
12	Operate ST key.	OS lamp lighted. Dial tone heard.
13	After dial tone is heard— Operate MCB, CB keys.	After dialing is completed— ED lamp lighted. At TIC— A- lamp lighted corresponding to setting on C- DIAL switch.
14	At OTF— Restore ST, MCB, CB keys.	OS, ED lamps extinguished.
15	At TIC— Momentarily operate RLS key.	All lamps extinguished.
16	Repeat Steps 11 through 15 selecting all other working 11X codes.	

STEP	ACTION	VERIFICATION
17	Restore all keys and switches not required in next test.	
18	At jack, lamp, and key circuit— Remove patching cords from 0 to 9, OR, ORMB- jacks.	
D. X11 Service Codes		
9	Operate OTL, 3D keys.	
10	Operate CL- key to select class of service desired.	
11	Set A-, B-, C- DIAL switches to select working X11 code.	
12	Operate ST key.	OS lamp lighted. Dial tone heard.
13	After dial tone is heard— Operate MCB, CB keys.	After dialing is completed— ED lamp lighted. At TIC— A-, B-, C- lamps lighted corresponding to setting on DIAL switches.
14	At OTF— Restore ST, MCB, CB keys.	OS, ED lamps extinguished.
15	At TIC— Momentarily operate RLS key.	All lamps extinguished.
16	Repeat Steps 11 through 15 selecting all other working X11 codes.	
17b	If register is equipped to translate DDD information codes— Set PREL DIGIT switch to 1.	
18b	Set A-, B-, C- DIAL switches to 411.	
19b	Operate ST key.	OS lamp lighted. Dial tone heard.
20b	After dial tone is heard— Operate MCB, CB keys.	When dialing is completed— ED lamp lighted. At TIC— A- through C- lamps lighted corresponding to setting on DIAL switches.
21b	At OTF— Restore ST, MCB, CB, 3D keys.	OS, ED lamps extinguished.

STEP	ACTION	VERIFICATION
22b	At TIC— Momentarily operate RLS key.	All lamps extinguished.
23b	At OTF— Set A-, B-, C- DIAL switches to select a working foreign NPA code, set D-, E-, F- DIAL switches to 411.	
24b	Operate 6D key.	
25b	Operate ST key.	OS lamp lighted. Dial tone heard.
26b	After dial tone is heard— Operate MCB, CB keys.	When dialing is completed— ED lamp lighted. If NPA code is not an interchangeable code— At TIC— A- through F- lamps lighted corresponding to setting on DIAL switches. If NPA code is an interchangeable code— In 3 to 5 seconds after ED lamp lighted— At TIC— A- through F- lamps lighted corresponding to setting on DIAL switches.
27b	At OTF— Restore ST, MCB, CB keys.	OS, ED lamps extinguished.
28b	At TIC— Momentarily operate RLS key.	All lamps extinguished.
29	At OTF— Restore all keys and switches not required in next test.	
30	At jack, lamp, and key circuit— Remove patching cords from 0 to 9, OR, ORMB- jacks.	

E. Manual Call—Coin and Noncoin

8	At line link frame— Patch manual coin line link location to SP jack.	
9	At jack, lamp, and key circuit— Patch OTL jack to SP jack.	
10	At OTF— Operate OTLP key.	
11	Momentarily operate CN key.	CN lamp lighted.

STEP	ACTION	VERIFICATION
12	Operate ST key.	OS lamp lighted. Dial tone ***not*** heard. At switchboard— Operator answered. If trunk circuit provided coin control— At OTF— CR lamp momentarily lighted. CN lamp extinguished.
13b	If trunk circuit does not provide coin control— At OTF— Request operator to return coin.	CR lamp momentarily lighted. CN lamp extinguished.
14	Restore ST key.	All lamps extinguished.
15	At line link frame— Change patching cord to a manual noncoin line link location.	
16	At OTF— Operate ST key.	OS lamp lighted. Dial tone ***not*** heard. At switchboard— Operator answered.
17	Restore ST key.	OS lamp extinguished.
18	Restore all keys and switches not required in next test.	
19	At jack, lamp, and key circuit— Remove patching cords from OTL, SP, 0 to 9, OR, ORMB- jacks.	
20	At line link frame— Remove patching cord from SP jack and line link location.	

F. Zero Operator—Coin and Noncoin

8	Operate COTL, DIAL keys.	
9	Momentarily operate CN key.	CN lamp lighted.
10	Operate ST key.	OS lamp lighted. Dial tone heard.
11	Dial 0 on OTF dial.	At switchboard— Operator answered. At OTF— CR lamp momentarily lighted. CN lamp extinguished.

STEP	ACTION	VERIFICATION
12	Restore ST, COTL keys.	All lamps extinguished.
13	Operate OTL key.	
14	Operate CL- key for noncoin class of service.	
15	Operate ST key.	OS lamp lighted. Dial tone heard.
16	Dial 0 on OTF dial.	At switchboard— Operator answered.
17	At OTF— Restore ST key.	OS lamp extinguished.
18	Restore all keys and switches not required in next test.	
19	At jack, lamp, and key circuit— Remove patching cords from 0 to 9, OR, ORMB- jacks.	
G. 2-Party Test and Busy Tone		
8	Operate CL- key for 2-party class of service.	
9	Operate TTLD key.	
10	Operate OTL, 7D keys.	
11	Set A- through G- DIAL switches for intraoffice code and numericals of terminating test line.	
12	Operate ST key.	At TIC— Trouble indication of continuity failure. RP lamp lighted.
13	At OTF— Restore ST key.	
14	At TIC— Momentarily operate RLS key.	All lamps extinguished.
15	At OTF— Operate TP key.	
16	Operate ST key.	At TIC— Trouble indication of continuity failure. TP lamp lighted.
17	At OTF— Restore ST key.	

STEP	ACTION	VERIFICATION
18	At TIC— Momentarily operate RLS key.	All lamps extinguished.
19	At OTF— Operate ST key.	Dial tone heard. Dialing started.
20	After dial tone is heard— Restore TP key.	At TIC— Trouble indication of party mismatch. TP, RP lamps lighted. Busy tone heard from register.
21	At OTF— Restore ST key.	Busy tone silenced.
22	At TIC— Momentarily operate RLS key.	All lamps extinguished.
23	At OTF— Operate ST key.	Dial tone heard. Dialing started.
24	After dial tone is heard— Operate TP key.	At TIC— Trouble indication of party mismatch. TP, RP lamps lighted. Busy tone heard from register.
25	At OTF— Restore ST key.	Busy tone silenced.
26	At TIC— Momentarily operate RLS key.	All lamps extinguished.
27	At OTF— Restore all keys and switches not required in next test.	
28	At jack, lamp, and key circuit— Remove patching cords from 0 to 9, OR, ORMB- jacks.	

H. Abandoned Call—Coin and Noncoin

8	Operate DIAL, OTL keys.	
9	Operate CL- key for noncoin class of service.	
10	Operate ST key.	OS lamp lighted. Dial tone heard.
11	Dial a digit from 2 to 9 on OTF dial.	Dial tone silenced.
12	Operate DL key.	OS lamp extinguished.

STEP	ACTION	VERIFICATION
13	Restore ST, OTL, CL- keys.	
14	Operate COTL key.	
15	Momentarily operate CN key.	CN lamp lighted.
16	Operate ST key.	OS lamp lighted. Dial tone heard.
17	Dial a digit from 2 to 9 on OTF dial.	Dial tone silenced.
18	Operate DL key.	OS lamp extinguished. CR lamp momentarily lighted. CN lamp extinguished.
19	Restore ST key.	
20	Restore all keys and switches not required in next test.	
21	At jack, lamp, and key circuit— Remove patching cords from 0 to 9, OR, ORMB- jacks.	

I. Abandoned Call—DDD Call

8	Operate OTL, DIAL keys.	
9	Operate CL- key for class of service required.	
10b	If access code is required— Set PREL DIGIT switch to 1.	OS lamp lighted. Dial tone heard.
11	Operate ST key.	
12	Dial any working X0X or X1X code followed by any 6 digits.	Dial tone silenced.
13	Operate DL key.	OS lamp extinguished.
14	Restore ST key.	
15	Restore all keys and switches not required in next test.	
16	At jack, lamp, and key circuit— Remove patching cords from 0 to 9, OR, ORMB- jacks.	

STEP	ACTION	VERIFICATION
J. Register Supervision		
9	At completing marker used for test— Block nonoperated HTR relay.	
10	At register under test— Insulate 7B of BT relay.	
11	At OTF— Set A- through G- DIAL switches for intraoffice code and numericals of test line.	
12	Operate OTL, IAO, 7D keys.	
13	Operate CL- key for 2-party class of service.	
14	Operate ST key.	OS lamp lighted. Dial tone heard. After dialing is completed— ED lamp lighted. Call does not set up but dial tone is heard again.
15	Restore ST key.	OS, ED lamps extinguished. Dial tone silenced.
16	At register under test— Remove insulator from 7B of BT relay.	
17	At OTF— Operate ST key.	OS, ED lamps lighted. Dial tone heard.
18	After dial tone is heard— Operate MCB key.	Call completed to test line and tone heard.
19	Restore ST, MCB keys.	OS, ED lamps extinguished. Tone silenced.
20	At completing marker used for test— Remove blocking tool from HTR relay.	
21	At OTF— Restore all keys and switches not required in next test.	
22	At jack, lamp, and key circuit— Remove patching cords from 0 to 9, OR, ORMB- jacks.	

STEP	ACTION	VERIFICATION
K. B- Digit Translator		
9	Set A- through C- DIAL switches for any office code which gives a marker start after 7 digits.	
10	Set D- through G- DIAL switches for any digits.	
11	Operate OTL, 7D keys.	
12	Operate CL- key for noncoin class of service.	
13	Operate ST key.	OS lamp lighted. Dial tone heard.
14	After dial tone is heard— Operate MCB, CB keys.	After dialing is completed— ED lamp lighted. At TIC— A- through G-, LC-, LV-, and FAK or FBK lamps lighted for trunk route.
15	At OTF— Restore ST, MCB, CB keys.	OS, ED lamps extinguished.
16	At TIC— Momentarily operate RLS key.	All lamps extinguished.
17	Repeat Steps 9 through 16 using a different A, B, C code varying B digit until all B digits from 2 through 9 are used.	
18	At OTF— Set A- through K- DIAL switches for a 10-digit call. ***Note:*** Use an X0X code on the A-, B-, C- DIAL switches.	
19	Restore 7D key.	
20b	If access code is required— Set PREL DIGIT switch to 1.	
21	Operate ST key.	OS lamp lighted. Dial tone heard.
22	After dial tone is heard— Operate MCB, CB keys.	After dialing is completed— ED lamp lighted. At TIC— A- through K-, LC-, LV-, and FAK or FBK lamps lighted for trunk route.

STEP	ACTION	VERIFICATION
23	At OTF— Restore ST, MCB, CB keys.	OS, ED lamps extinguished.
24	At TIC— Momentarily operate RLS key.	All lamps extinguished.
25	Repeat Steps 21 through 24 substituting an X1X code on the A-, B-, C- DIAL switches.	
26	At OTF— Restore all keys and switches not required in next test.	
27	At jack, lamp, and key circuit— Remove patching cords from 0 to 9, OR, ORMB- jacks.	

L. Pretranslation

9	From local office records, determine setting of A-, B-, C- DIAL switches to cause pretranslator to signal register a "call marker after three digits" indication.	
10	At OTF— Operate OTL, 3D keys.	
11	Operate CL- key for noncoin class of service.	
12	Operate ST key.	OS lamp lighted. Dial tone heard.
13	After dial tone is heard— Operate MCB, CB keys.	After completion of dialing— ED lamp lighted. At TIC— A-, B-, C-, LC-, LV, and FAK or FBK lamps lighted for correct 3-digit route.
14	At OTF— Restore ST, MCB, CB keys.	OS, ED lamps extinguished.
15	At TIC— Momentarily operate RLS key.	All lamps extinguished.
16	At OTF— Set A- through K- DIAL switches as required to test for proper pretranslation under other conditions provided (7 digit, 10 digit, etc).	
17	Restore 3D key.	

STEP	ACTION	VERIFICATION
18	Operate -D key as required to test for proper translation.	
19b	If access code is required— Set PREL DIGIT switch to 1.	
20	Operate ST key.	OS lamp lighted. Dial tone heard.
21	After dial tone is heard— Operate MCB, CB keys.	At completion of dialing— ED lamp lighted. At TIC— A- through K- as required, LC-, LV-, and FAK or FBK lamps lighted for correct route selected.
22	At OTF— Restore ST, MCB, CB keys.	OS, ED lamps extinguished.
23	At TIC— Momentarily operate RLS key.	All lamps extinguished.
24	At OTF— Restore all keys and switches not required in next test.	
25	At jack, lamp, and key circuit— Remove patching cords from 0 to 9, OR, ORMB- jacks.	
M. Dial Tone		
8	Operate OTL, DIAL keys.	
9	Operate CL- key for noncoin class of service.	
10	Operate ST key.	OS lamp lighted. Dial tone heard.
11b	If office is not equipped for access digit 0 or 1— Dial digit 1 with OTF dial.	Dial tone not silenced.
12	Dial digit 2.	Dial tone silenced.
13	Restore ST key.	OS lamp extinguished.
14	Operate ST key.	OS lamp lighted. Dial tone heard.
15c	If office is equipped for access digit 0 or 1— Dial digit 1 with OTF dial.	Dial tone silenced.

STEP	ACTION	VERIFICATION
16	Restore ST key.	OS lamp extinguished.
17	Restore all keys and switches not required in next test.	
18	At jack, lamp, and key circuit— Remove patching cords from 0 to 9, OR, ORMB- jacks.	

N. Dial Tone—Register Arranged for 11X Service Codes and Digit 1 Access Code Not Provided

8	Operate OTL, DIAL keys.	
9	Operate CL- key for noncoin class of service.	
10	Operate ST key.	OS lamp lighted. Dial tone heard.
11	Dial digit 1 with OTF dial.	Dial tone not silenced.
12	Dial digit 1 again.	Dial tone silenced.
13	Restore ST key.	OS lamp extinguished.
14	Restore all keys and switches not required in next test.	
15	At jack, lamp, and key circuit— Remove patching cords from 0 to 9, OR, ORMB- jacks.	

O. Permanent Signal Timing—Coin and Noncoin

8	Operate OTL, DIAL keys.	
9	Operate CL- key for noncoin class of service.	
10	Operate ST key; ***start timing.***	OS lamp lighted. Dial tone heard. In 20 to 32 seconds— Call is set up to permanent signal route. Permanent signal tone heard.
11	Restore ST, OTL, CL- keys.	OS lamp extinguished. Permanent signal tone silenced.
12	Operate COTL key.	
13	Momentarily operate CN key.	CN lamp lighted.

STEP	ACTION	VERIFICATION
14	Operate ST key; ***start timing.***	OS lamp lighted. Dial tone heard. In 20 to 32 seconds— Call is set up to permanent signal route. CR lamp momentarily lighted. CN lamp extinguished. Permanent signal tone heard.
15	Restore ST key.	All lamps extinguished. Permanent signal tone silenced.
16	At relay rack frame— Block operated RB2 relay in originating register group busy circuit.	
17	Repeat Steps 13, 14, 15.	Timing is reduced to 10 to 16 seconds.
18	At relay rack frame— Remove blocking tool from RB2 relay.	
19	At OTF— Restore all keys and switches not required in next test.	
20	At jack, lamp, and key circuit— Remove patching cords from 0 to 9, OR, ORMB- jacks.	
P.	**Partial Dial Timing—Coin and Noncoin**	
8	Operate OTL, DIAL keys.	
9	Operate CL- key for noncoin class of service.	
10	Operate ST key.	OS lamp lighted. Dial tone heard.
11	Dial digit other than 0 or 1 with OTF dial; ***start timing.***	Dial tone silenced. In 20 to 32 seconds— Call is set up to partial dial route.
12	Restore ST, OTL, CL- keys.	OS lamp extinguished.
13	Operate COTL key.	
14	Momentarily operate CN key.	CN lamp lighted.
15	Operate ST key.	OS lamp lighted. Dial tone heard.
16	Dial digit other than 0 or 1; ***start timing.***	Dial tone silenced. In 20 to 32 seconds— Call is set up to partial dial route.

STEP	ACTION	VERIFICATION
		CR lamp momentarily lighted. CN lamp extinguished.
17	Restore ST key.	All lamps extinguished.
18	At relay rack frame— Block operated RB2 relay in the originating register group busy circuit.	
19	At OTF— Repeat Steps 14 through 17.	Timing is reduced to 5 to 8 seconds.
20	At relay rack frame— Remove blocking tool from RB2 relay.	
21	Restore all keys and switches not required in next test.	
22	At jack, lamp, and key circuit— Remove patching cords from 0 to 9, OR, ORMB- jacks.	
Q. Partial Dial Timing—DDD Call		
8	Operate OTL, DIAL keys.	
9	Operate CL- key for noncoin class of service.	
10	Operate ST key.	OS lamp lighted. Dial tone heard.
11	Dial access code if required and any working X0X or X1X code plus another digit; ***start timing.***	In 20 to 32 seconds— Call is set up to the partial dial route for DDD calls.
12	Restore ST key.	OS lamp extinguished.
13	Restore all keys and switches not required in next test.	
14	At jack, lamp, and key circuit— Remove patching cords from 0 to 9, OR, ORMB- jacks.	
R. Timing for Extra Digit to be Dialed		
9	Set A- through G- DIAL switches to select an office code and numericals that require station delay treatment.	
10	Operate OTL, 7D keys.	

STEP	ACTION	VERIFICATION
14	Operate ST key; ***start timing.***	OS lamp lighted. Dial tone heard. In 20 to 32 seconds— Call is set up to permanent signal route. CR lamp momentarily lighted. CN lamp extinguished. Permanent signal tone heard.
15	Restore ST key.	All lamps extinguished. Permanent signal tone silenced.
16	At relay rack frame— Block operated RB2 relay in originating register group busy circuit.	
17	Repeat Steps 13, 14, 15.	Timing is reduced to 10 to 16 seconds.
18	At relay rack frame— Remove blocking tool from RB2 relay.	
19	At OTF— Restore all keys and switches not required in next test.	
20	At jack, lamp, and key circuit— Remove patching cords from 0 to 9, OR, ORMB- jacks.	
P.	**Partial Dial Timing—Coin and Noncoin**	
8	Operate OTL, DIAL keys.	
9	Operate CL- key for noncoin class of service.	
10	Operate ST key.	OS lamp lighted. Dial tone heard.
11	Dial digit other than 0 or 1 with OTF dial; ***start timing.***	Dial tone silenced. In 20 to 32 seconds— Call is set up to partial dial route.
12	Restore ST, OTL, CL- keys.	OS lamp extinguished.
13	Operate COTL key.	
14	Momentarily operate CN key.	CN lamp lighted.
15	Operate ST key.	OS lamp lighted. Dial tone heard.
16	Dial digit other than 0 or 1; ***start timing.***	Dial tone silenced. In 20 to 32 seconds— Call is set up to partial dial route.

STEP	ACTION	VERIFICATION
		CR lamp momentarily lighted. CN lamp extinguished.
17	Restore ST key.	All lamps extinguished.
18	At relay rack frame— Block operated RB2 relay in the originating register group busy circuit.	
19	At OTF— Repeat Steps 14 through 17.	Timing is reduced to 5 to 8 seconds.
20	At relay rack frame— Remove blocking tool from RB2 relay.	
21	Restore all keys and switches not required in next test.	
22	At jack, lamp, and key circuit— Remove patching cords from 0 to 9, OR, ORMB- jacks.	
Q. Partial Dial Timing—DDD Call		
8	Operate OTL, DIAL keys.	
9	Operate CL- key for noncoin class of service.	
10	Operate ST key.	OS lamp lighted. Dial tone heard.
11	Dial access code if required and any working X0X or X1X code plus another digit; ***start timing.***	In 20 to 32 seconds— Call is set up to the partial dial route for DDD calls.
12	Restore ST key.	OS lamp extinguished.
13	Restore all keys and switches not required in next test.	
14	At jack, lamp, and key circuit— Remove patching cords from 0 to 9, OR, ORMB- jacks.	
R. Timing for Extra Digit to be Dialed		
9	Set A- through G- DIAL switches to select an office code and numericals that require station delay treatment.	
10	Operate OTL, 7D keys.	

STEP	ACTION	VERIFICATION
11	Operate CL- key for noncoin class of service.	
12	Operate ST key.	OS lamp lighted. Dial tone heard.
13	After dial tone is heard— Operate MCB, CB keys; ***start timing*** after ED lamp lights.	When dialing is completed— ED lamp lighted. At register under test— If register is equipped with transistor digit timer— In 3 to 4 seconds— MST relay operated. If register is equipped with cold cathode tube digit timer— In 3 to 5 seconds— MST relay operated.
14	At OTF— Restore ST key.	OS, ED lamps extinguished.
15	At TIC— Momentarily operate RLS key.	All lamps extinguished.
16	At OTF— Restore all keys and switches not required in next test.	
17	At jack, lamp, and key circuit— Remove patching cords from 0 to 9, OR, ORMB- jacks.	

S. Register Timeout After Marker Seizure

8	Set A- through G- DIAL switches for any local test line.	
9	Operate OTL, 7D keys.	
10	Operate CL- key to select a 2-party class of service.	
11	Operate ST key.	OS lamp lighted. Dial tone heard.
12	After dial tone is heard— Operate TP key; ***start timing.***	At TIC— Trouble indication of party mismatch. TP, RP lamps lighted. Busy tone received from register. After 20 to 32 seconds— Dial tone heard again.

STEP	ACTION	VERIFICATION
13	At OTF— Restore ST key.	Dial tone silenced.
14	At TIC— Momentarily operate RLS key.	All lamps extinguished.
15	At OTF— Restore all keys and switches not required in next test.	
16	At jack, lamp, and key circuit— Remove patching cords from 0 to 9, OR, ORMB- jacks.	

T. Timing During Pretranslation

8	Operate OTL, DIAL keys.	
9	Operate CL- key for noncoin class of service.	
10	At register under test— Insulate 7B, 9B of PRL relay.	
11	At relay rack frame— Block operated RB2 relay in originating register group-busy circuit.	
12	At OTF— Operate ST key.	OS lamp lighted. Dial tone heard.
13	Dial A, B, C digits of a working code with OTF dial; ***start timing.***	Dial tone silenced. In 5 to 8 seconds— Call is routed to the partial dial route.
14	Restore ST key.	OS lamp extinguished.
15	At register under test— Remove insulators from 7B, 9B of PRL relay.	
16	At relay rack frame— Remove blocking tool from RB2 relay.	
17	At OTF— Restore all keys and switches not required in next test.	
18	At jack, lamp, and key circuit— Remove patching cords from 0 to 9, OR, ORMB- jacks.	

STEP	ACTION	VERIFICATION
U. Common Alarm Timing		
8	Operate OTL, 7D keys.	
9	Operate CL- key for noncoin class of service.	
10	Set A- through G- DIAL switches for any local office code and four numericals.	
11	At register under test— Block nonoperated MST relay.	
12	Insert plug of 32A test set into RC jack.	
13	Momentarily operate white (ST) button on 32A test set.	ON1, BS relays operated.
14	After BS relay operates— Block operated SR relay; ***start timing.***	At jack, lamp, and key circuit— In 20 to 32 seconds— TO lamp associated with register lighted.
15	At register under test— Momentarily operate red (RL) button on 32A test set.	
16	Remove plug of 32A test set from RC jack.	
17	At jack, lamp, and key circuit— Remove patching cord from ORMB- jack of register under test; ***start timing.***	In 10 to 16 seconds— R-S-TOA lamp lighted. Major alarm sounds.
18	Reinsert patching cord into the ORMB- jack of register under test.	R-S-TOA lamp extinguished. Major alarm silenced.
19	At register under test— Remove blocking tools from MST, SR relays.	
20	At OTF— Restore all keys and switches not required in next test.	
21	At jack, lamp, and key circuit— Remove patching cords from 0 to 9, OR, ORMB- jacks.	
V. Recycle of Timing		
8	Operate OTL, DL keys.	
9	Operate CL- key for noncoin class of service.	

STEP	ACTION	VERIFICATION
10	At jack, lamp, and key circuit— Patch DL jack to SP jack.	
11	At frame of register under test— Insert plug of handset into SP jack.	
12	Insert plug of 32A test set into RC jack.	
13	Momentarily operate white (ST) button on 32A test set. ***Note:*** Proceed to next step within 20 seconds to prevent register timeout.	At register under test— TMA relay operated.
14	Dial A digit on handset. ***Note:*** Proceed to next step within 20 seconds to prevent register timeout.	TMA relay released and then reoperated.
15	Dial B digit on handset. ***Note:*** Proceed to next step within 20 seconds to prevent register timeout.	TMA relay released and then reoperated.
16	Dial C digit on handset.	TMA relay released and then reoperated. TMB relay ***not*** operated.
17	Momentarily operate red (RL) button on 32A test set.	TMA relay released.
18b	If register is arranged for coin service without coin test— Block nonoperated CR1 relay.	
19b	At OTF— Operate COTL key.	
20b	Restore CL- key.	
21b	Momentarily operate CN key.	
22b	At frame of register under test— Momentarily operate white (ST) button on 32A test set.	
23b	At register under test— Manually operate TM relay.	TMA relay operated. TMB relay ***not*** operated.
24b	Remove blocking tool from CR1 relay.	TMA relay remains operated.

STEP	ACTION	VERIFICATION
25b	At frame of register under test— Momentarily operate red (RL) button on 32A test set.	TMA relay released.
26	Remove plug of 32A test set from RC jack.	
27	Remove plug of handset from SP jack.	
28	At jack, lamp, and key circuit— Remove patching cords from DL, SP, 0 to 9, OR, ORMB- jacks.	
29	At OTF— Restore all keys and switches not required in next test.	
W. Tip Party Manual Test		
1	At jack, lamp, and key circuit— Insert make-busy plug in ORMB- jack of register under test.	
2	At register under test— Block operated 2P relay.	
3	Block nonoperated TP1 relay.	
4	Manually operate ON1 relay.	ON1 relay remains operated. ON, RL relays operated.
5	Remove blocking tool from TP1 relay.	TP1 relay operated— ON1, ON, RL, TP1 relays released.
6	Manually operate ON1 relay.	TP1 relay operated while ON1 relay is manually operated.
7	Remove blocking tool from 2P relay.	
8	At jack, lamp, and key circuit— Remove plug from ORMB- jack.	
X. Line Location, Class of Service, and Observed Call Information—Storing and Verification of Trouble Indicator and Connector Leads		
9	Set A- through G- DIAL switches for any A, B, C code and any test line number.	
10	Operate OTLP, 7D keys.	
11	At jack, lamp, and key circuit— Patch OTL jack to SP jack.	

STEP	ACTION	VERIFICATION
12	Insert make-busy plug into M-D-MB jack associated with dial tone marker used for test.	
13	At dial tone marker used for test— Block nonoperated OBS2 relay.	
14	Connect ground to 1U winding terminal of OBS2 relay.	
15	At line link frame— Patch SP jack to a line link location.	
16	At OTF— Operate ST key.	OS lamp lighted. Dial tone heard.
17	After dial tone is heard— Operate MCB, CB keys.	When dialing is completed— ED lamp lighted. At TIC— FU-, VG-, HG-, VF-, CT-, CU-, OBS lamps lighted corresponding to line location used for test.
18	At OTF— Restore ST, MCB, CB keys.	OS, ED lamps extinguished.
19	At TIC— Momentarily operate RLS key.	All lamps extinguished.
20	Repeat Steps 15 through 19. Change patching cord on line link frame until all different combinations of frame units, vertical and horizontal groups, vertical files, and class of service tens and units are used.	
21	At OTF— Restore all keys and switches not required in next test.	
22	At line link frame— Remove patching cord from SP jack, line link vertical.	
23	At dial tone marker used for test— Remove blocking tool from OBS2 relay.	
24	Remove test connection from OBS2 relay.	
25	At jack, lamp, and key circuit— Remove patching cord from OTL, SP, 0 to 9, OR, ORMB- jacks.	

STEP	ACTION	VERIFICATION
26	Remove make-busy plug from M-D-MB jack associated with dial tone marker used for test.	
Y. Digit 0 or 1 Access Code		
9	Set PREL DIGIT switch to 1.	
10	Set A- through G- DIAL switches to select any outgoing route and any number for test.	
11	Operate 7D, OTL keys.	
12	Operate CL- key for noncoin class of service.	
13	Operate ST key.	OS lamp lighted. Dial tone heard.
14	After dial tone is heard— Operate MCB, CB keys.	When dialing is completed— ED lamp lighted. At TIC— LT1 lamp lighted. A- through G- lamps lighted corresponding to setting of DIAL switches.
15	At OTF— Restore ST, MCB, CB keys.	OS, ED lamps extinguished.
16	At TIC— Momentarily operate RLS key.	All lamps extinguished.
17	Repeat Steps 14 through 16 changing setting of PREL DIGIT switch to 0.	LT2 lamp lighted instead of LT1 lamp.
18	At OTF— Restore all keys and switches not required in next test.	
19	At jack, lamp, and key circuit— Remove patching cords from 0 to 9, OR, ORMB- jacks.	
Z. TOUCH-TONE Pulsing		
9	At line link frame— Patch customer line vertical to SP jack.	
10	At jack, lamp, and key circuit— Patch OTL jack to SP jack.	
11	At OTF— Operate OTLP, 7D, DL keys.	

STEP	ACTION	VERIFICATION
12	Insert cord of TOUCH-TONE set into DL jack.	
13	Operate ST key.	OS lamp lighted. Dial tone heard.
14	After dial tone is heard— Operate MCB, CB keys.	
15	Key office code and called number.	At TIC— A- through G- lamps lighted to agree with number keyed.
16	At OTF— Restore ST, MCB, CB keys.	
17	At TIC— Momentarily operate RLS key.	All lamps extinguished.
18	Repeat Steps 13 through 17 until all digit registers have been tested.	
19	At OTF— Restore all keys and switches not required in next test.	
20	At jack, lamp, and key circuit— Remove patching cords from OTL, SP, 0 to 9, OR, ORMB- jacks.	
21	Remove cord of TOUCH-TONE set from DL jack.	
22	At line link frame— Remove patching cord from customer line vertical and SP jack.	
AA.	**C- Digit Translator**	
9	Set A-, B-, C- DIAL switches to select any working NNO code.	
10	Set D-, E-, F- DIAL switches to 411.	
11	Set PREL DIGIT switch to 1.	
12	Operate OTL, 6D keys.	
13	Operate CL- key to select class of service required.	
14	Operate ST key.	OS lamp lighted. Dial tone heard.

STEP	ACTION	VERIFICATION
15	After dial tone is heard— Operate MCB, CB keys.	After pulsing is completed— ED lamp lighted. At TIC— A- through F- lamps lighted corresponding to setting of DIAL switches.
16	At OTF— Restore ST, MCB, CB, 6D keys.	OS, ED lamps extinguished.
17	At TIC— Momentarily operate RLS key.	All lamps extinguished.
18	At OTF— Set D- through K- DIAL switches for any office code and numericals.	
19	Operate ST key.	OS lamp lighted. Dial tone heard.
20	After dial tone is heard— Operate MCB, CB keys.	After dialing is completed— ED lamp lighted. At TIC— A- through K- lamps lighted corresponding to setting of DIAL switches.
21	At OTF— Restore ST, MCB, CB keys.	OS, ED lamps extinguished.
22	At TIC— Momentarily operate RLS key.	All lamps extinguished.
23	At OTF— Restore all keys and switches not required in next test.	
24	At jack, lamp, and key circuit— Remove patching cords from 0 to 9, OR, ORMB- jacks.	

AB. Interchangeable Codes

Pretranslator Provided

9	Operate OTL keys.	
10	Operate CL- key to select class of service required.	
11	Set A-, B-, C- DIAL switches to select a working interchangeable code. (Refer to 1.05.)	

STEP	ACTION	VERIFICATION
12	Set D- through K- DIAL switches in accordance with Table A.	
13	Set PREL DIGIT switch in accordance with Table A.	
14	Operate -D key to agree with number of digits set on A- through K- DIAL switches.	
15	Operate ST key.	OS lamp lighted. Dial tone heard.
16	After dial tone is heard— Operate MCB, CB keys; ***start timing*** after ED lamp lights.	When dialing is completed— ED lamp lighted. At TIC— After time interval shown in Table A— A- through K- lamps lighted corresponding to setting of DIAL switches.
17	At OTF— Restore MCB, CB keys.	OS, ED lamps extinguished.
18	At TIC— Momentarily operate RLS key.	All lamps extinguished.
19	Repeat Steps 12 through 18 for Tests 2 through 4 of Table A.	

TABLE A

TEST NO.	PREL. DIGIT	DIAL SWITCHES							TIME INTERVAL BETWEEN LIGHTING OF ED LAMP AND LIGHTING OF TIC LAMPS	
		D-	E-	F-	G-	H-	J-	K-		
1	1	1	2	3	2				3 to 4 seconds	PRETRANSLATOR PROVIDED
2	1	4	1	1					3 to 4 seconds	
3	1	3	2	2	1	2	3	2	—	
4	OFF	1	2	3	2				—	
5	1	1	2	3	2				3 to 4 seconds	PRETRANSLATOR NOT PROVIDED
6	0	1	2	3	2				3 to 4 seconds	
7	1	4	1	1					3 to 4 seconds	
8	1	3	2	2	1	2	3	2	—	
9	0	3	2	2	1	2	3	2	—	
10	OFF	1	2	3	2				—	

STEP	ACTION	VERIFICATION
Pretranslator Not Provided		
20	Repeat Steps 12 through 18 for Tests 5 through 10 of Table A.	
All Tests		
21	Restore all keys and switches not required in next test.	
22	At jack, lamp, and key circuit— Remove patching cords from 0 to 9, OR, ORMB- jacks.	
AC. Toll Diversion		
9	Operate CL- key to select class of service for denied access to toll routes.	
10	Operate PREL DIGIT switch to position 0 or 1 as required.	
11	Set A- through K- DIAL switches to direct call to a route requiring toll diversion for the class of service selected.	
12	Operate OTL key.	
13	Operate ST key.	OS lamp lighted. Dial tone heard.
14	After dial tone is heard— Operate MCB, CB keys.	S lamp lighted. After ED lamp lighted— S lamp extinguished. At TIC— If digit 0 or 1 access code is provided— A- through G- lamps lighted corresponding to setting of D- through K- DIAL switches. If digit 0 or 1 access code is not provided— A- through K- lamps lighted corresponding to setting of A- through K- DIAL switches.
15	At OTF— Restore ST, MCB, CB keys.	OS, ED lamps extinguished.
16	At TIC— Momentarily operate RLS key.	All lamps extinguished.
17	At OTF— Restore all keys and switches.	

STEP	ACTION	VERIFICATION
18	At jack, lamp, and key circuit— Remove patching cords from 0 to 9, OR, ORMB- jacks.	