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CIRCUIT TESTS FOR SECRETARIAL ANSWERING SERVICE

557B PBX

This section describes a method of testing the operating features of the 557B PBX when used for telephone secretarial answering service.

1.02 This section is reissued to include tests to prevent unauthorized rotary or TOUCH-TONE® dialing on secretarial lines.

1.03 The tests covered are:

A. Attendant Telephone and Dial Circuits: This test checks the operating features of the attendant telephone, dial circuit, and position splitting key.

B. Cord Circuits: This test checks the operation of the intercept and dial cord and cord-ended station circuits.

C. Jack Test—Secretarial Line Circuit Arranged for Secrecy: This test checks the mechanical and electrical connections between the tip, ring, and sleeve of the jacks associated with secretarial line circuits arranged for secrecy.

D. Jack Test—Secretarial Line Arranged for Nonsecrecy, Central Office Trunk, Transfer, Conference, and Concentrator-Identifier: This test checks the mechanical and electrical connections between the tip, ring, and sleeve of the jacks associated with secretarial line circuits arranged for nonsecrecy; central office trunks; transfer circuits; and the conference circuit. This test also checks the secretarial line circuit jacks connected to concentrator-identifier equipment.

E. Conference Circuit: This test checks the continuity of the talking path of the conference circuit.

F. Line Circuits: This test checks the locking and nonlocking lamp feature of the secretarial line circuits.

G. Central Office Trunk: This test checks the operation of the central office trunk circuits.

H. Secretarial Lines—Dialing Restrictions—Rotary Dials: This test insures that unauthorized calls cannot be originated by attendants at switchboards or administrative stations using rotary dials when connected to secretarial lines.

I. Secretarial Lines—Dialing Restrictions—TOUCH-TONE Dials: This test insures that unauthorized calls cannot be originated by attendants at switchboards or administrative stations using TOUCH-TONE dials when connected to secretarial lines.

J. Fuse Alarm—Ringing and Battery Supply: This test checks the operation of the fuse alarm circuit, and the presence of central office ringing current and battery polarity.

K. Battery Cutoff—Auxiliary Signal and Position Grouping Circuits: This test checks the operation of the battery cutoff key, position grouping key, and auxiliary signal circuit.

1.04 The test receiver should be kept away from the ear to avoid the effect of clicks.

1.05 When performing Test G, false registration of the message register may be caused by ringing through message register trunks in step-by-step line switch offices. Local instruction should be followed for recording and reporting this false registration.

1.06 Battery for the tests in Part 3 of this section may be obtained from either of the distribution fuses designated A or B.

1.07 Ground for the tests in Part 3 of this section may be obtained from the ground terminal (210 terminal punching) located near the distribution fuses except for Tests G and L. Ground for Tests G and L may be obtained from central office ground.

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1.08 The rotary dial, TOUCH-TONE dial, and card-dialers are tested in accordance with the specific BSP section on dials (028-000-000).

1.09 To prevent ringing on the subscriber line when performing Step 1 of Test K, have test call from test desk made through a test shoe on the MDF.

1.10 Lettered Steps: A letter a, b, c, etc, added to a step number in Part 3 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 conditions 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

Tests A, B, C, D, G, and J

2.01 Test receiver, 716C receiver or equivalent, attached to a W2AB cord equipped with two 360A tools (2W21A cord) and two KS-6278 tools, or equivalent.

Tests A, C, D, E, and G

2.02 Test plug (No. 123B gauge), connected to a P3A cord equipped with either three KS-6870

connecting clips, or one 360A tool, one 360B tool, one 360C tool, and three KS-6278 connecting clips or equivalent.

Test B

2.03 258C plug or equivalent.

2.04 Testing cord, W1U, or equivalent.

Tests C, D, and F

2.05 Two testing cords, 893 cords, each equipped with two 360A tools (1W13B cord), one KS-6278 connecting clip, and one 419A tool or equivalent.

Tests H and I

2.06 Two testing cords, 1W13B cord (893 cord equipped with two 360A tools), four KS-6278 connecting clips, one 768A relay blocking tool and one 1014A handset (dial hand test set).

Test J

2.07 Testing cord, W1AF cord, equipped with two KS-6278 connecting clips or equivalent.

3. METHOD

STEP	ACTION	VERIFICATION
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A. Attendant Telephone and Dial Circuits

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|---|--|-------------------------------|
| 1 | At switchboard—
Insert test plug into idle trunk jack. | |
| 2 | Connect sleeve clip of test plug to tip of intercept and dial cord unit number 1. | |
| 3 | Operate TALK key of intercept and dial cord unit number 1 to TALK position. | |
| 4 | Connect one clip of test receiver to ground. | |
| 5 | At intercept and dial cord unit number 1—
Momentarily touch other clip of test receiver to ring of cord plug. | Click heard in test receiver. |

STEP	ACTION	VERIFICATION
6	At switchboard— Operate position split key to the YES position.	
7	At intercept and dial cord unit number 1— Connect clip of test receiver to ring of cord plug.	Click heard in test receiver when clip is connected.
8	At switchboard— Restore position split key to the NO position.	
9	At switchboard— Dial or key digit 0.	If rotary dial provided— Clicks heard in test receiver. If TOUCH-TONE dial provided— Tone heard in test receiver.
10	At intercept and dial cord unit number 1— Using W1U cord, ground sleeve of cord plug.	
11	At switchboard— Operate position split key to the YES position.	
12	At switchboard— Insert plug of attendant telephone set into left set of telephone set jacks.	At attendant telephone set— Sidetone heard in receiver.
13	At switchboard— Remove test plug and receiver from trunk jack.	If cord and telephone circuits are arranged to give tone— At attendant telephone set— Tone heard in receiver.
14	At switchboard— Restore position split key to the NO position.	At attendant telephone set— No sidetone heard in receiver.
15	At switchboard— Remove plug of attendant telephone set from telephone set jacks.	
16	At switchboard— Insert plug of attendant telephone set into right set of telephone set jacks.	At attendant telephone set— Sidetone heard in receiver.
17	At switchboard— Remove plug of attendant telephone set from telephone set jacks.	
18	Remove ground from sleeve of cord plug.	

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STEP	ACTION	VERIFICATION
B. Cord Circuits		
Intercept and Dial Cord		
1	At intercept and dial cord unit selected for test— Using W1U cord, connect sleeve and tip together.	
2	Connect one clip of test receiver to ground.	
3	At intercept and dial cord unit under test— Momentarily touch other clip of test receiver to ring of cord plug.	Click heard in test receiver.
4a	If intercept and dial cord unit selected for test is wired to transfer jack— At transfer jack associated with intercept and dial cord unit under test— Insert 258C plug into transfer jack.	
5a	At intercept and dial cord unit under test— Momentarily touch other clip of test receiver to ring of cord plug.	Lighter click heard in test receiver than click heard in Step 3.
6	At intercept and dial cord unit under test— Disconnect W1U cord from tip and sleeve of cord plug.	
7	At test receiver— Remove clip from ground connection.	
Cord-Ended Station		
8	At idle cord-ended station unit selected for test— Momentarily operate TALK-RING key to RING position.	At station associated with cord-ended station unit selected for test— Ringing heard.
9	At station associated with cord-ended station unit under test— Remove handset from switchhook.	At cord-ended station unit under test— Line and supervisory lamp lighted.
10	Operate TALK-RING key to TALK position.	Line and supervisory lamp extinguished. Conversation satisfactory between switchboard telephone set and station.
11	At cord-ended station unit under test— Insert cord plug into idle central office trunk jack.	Dial tone or central office operator heard.

STEP	ACTION	VERIFICATION
12	At cord-ended station unit under test— Restore TALK-RING key.	Line and supervisory lamp remain extinguished.
13	At station associated with cord-ended station unit under test— Replace handset on switchhook.	Line and supervisory lamp lighted.
14	At cord-ended station unit under test— Remove cord plug from central office trunk jack.	Line and supervisory lamp extinguished.

C. Jack Test—Secretarial Line Circuit Arranged for Secrecy

1	At an idle secretarial line circuit arranged for secrecy— Block L relay nonoperated.	
2	At secretarial line circuit under test— Using 893 testing cord, connect battery to contact 5B of L relay.	
3	At secretarial line circuit under test— Using 893 testing cord, connect ground to contact 5T of L relay.	
4	At secretarial line circuit under test— Insert test plug into jack.	
5	At test receiver— Connect clips of test receiver to tip and ring of test plug cord.	Click heard in test receiver.
6	At secretarial line jack under test— Grasp test plug and cord at plug end, and while applying a sideward pressure away from the center of the jack, rotate plug and cord through a complete circle with a cranking motion sufficient to take up the play between the jack and plug.	At test receiver— No cutouts heard.
7	At secretarial line jack under test— Remove test plug from jack.	
8	Remove battery from contact 5B of L relay.	
9	Remove ground from contact 5T of L relay.	
10	Remove blocking tool from L relay.	

STEP	ACTION	VERIFICATION
11	Connect clip (see Step 10) of test receiver to sleeve of test plug cord.	
12	Repeat Step 6.	
13	At switchboard— Remove test plug from jack.	
14	At circuit associated with jack selected for test— Disconnect 893 testing cord from battery on the ring toward the jack.	
15	At circuit associated with jack selected for test— Disconnect 893 testing cord from battery on the tip toward the jack.	
16	At PBX distributing frame— Reconnect tip and ring of circuit associated with jack selected for test.	
E. Conference Circuit		
1	At switchboard— Insert plug of attendant telephone set into right set of telephone set jacks.	
2	At switchboard— Insert plug of an intercept and dial cord unit into one jack of the conference circuit.	
3	Operate key of intercept and dial cord unit to TALK position.	At attendant telephone set— Sidetone heard.
4	At switchboard— Insert test plug into other conference jack.	
5	Momentarily short the tip and ring of test plug cord.	At attendant telephone set— Click heard each time tip and ring leads of test plug cord are shorted together.
6	At switchboard— Interchange the intercept and dial cord plug with the test plug in the conference circuit jacks.	
7	Repeat Step 5.	
8	At switchboard— Remove test plug from jack.	

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STEP	ACTION	VERIFICATION
9	Remove intercept and dial cord plug from jack.	
10	Restore TALK key of intercept and dial cord unit.	

F. Line Circuits

Line Circuit With Nonlocking Line Lamp Arranged for Secrecy

1	At idle line circuit selected for test— Using 893 testing cord, connect battery to winding terminal 8BR of L relay.	
2	At idle line circuit selected for test— Using 893 testing cord, connect ground to winding terminal 8TR of L relay.	L relay operated.
3	At switchboard— Insert plug of intercept and dial cord into jack associated with lighted line lamp.	Line and panel lamps extinguished. Buzzer silenced.
4	At line circuit under test— Remove testing cord from L relay.	L relay remains operated.
5	At switchboard— Remove plug of intercept and dial cord from jack.	At line circuit under test— L relay released.

Line Circuit With Locked-In Line Lamp Without Secrecy

6	Repeat Steps 1 and 2.	
7	At switchboard— Momentarily insert plug of an intercept and dial cord into jack associated with lighted line lamp.	Line and panel lamps extinguished. Buzzer silenced. At line circuit under test— L relay released.

Line Circuit With Locked-In Line Lamp With Secrecy

8	Repeat Steps 1 and 2.	
9	At line circuit under test— Momentarily remove testing cord from winding terminal 8BR of L relay.	At switchboard— Line and panel lamps remain lighted. Buzzer continues to sound.
10	At switchboard— Insert plug of an intercept and dial cord into jack associated with lighted line lamp.	Line and panel lamps extinguished. Buzzer silenced.

STEP	ACTION	VERIFICATION
11	At switchboard— Remove plug of intercept and dial cord from line jack.	
12	At line circuit under test— Remove testing cord from L relay.	L relay released.
G. Central Office Trunk		
1	At switchboard— Insert test plug into jack associated with idle central office trunk circuit selected for test.	
2	At switchboard— Connect one clip of test receiver to framework ground.	
3	At switchboard— Momentarily touch other clip of test receiver to tip and ring of test plug cord.	Clicks heard in test receiver. Note: A louder click should be heard when clip of test receiver is touched to ring lead of test plug cord.
4	At switchboard— Remove test plug from central office trunk jack.	
5	At switchboard— Originate test call to central office test desk over idle central office trunk selected for test.	
6	Request test desk to rering over trunk.	
7	At switchboard— Disconnect from central office trunk under test.	
8	Central office test desk rerings over trunk under test.	At switchboard— Central office trunk and panel lamps lighted. Audible signal sounds.
9	At switchboard— Insert plug of an intercept and dial cord into jack associated lighted trunk lamp.	Central office trunk and panel lamps extinguished. Audible signal silenced.
10	Operate intercept and dial cord key to TALK position.	Conversation between switchboard and test desk satisfactory.
11	At switchboard— Request test desk to disconnect.	

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STEP	ACTION	VERIFICATION
12	At switchboard— Remove plug of intercept and dial cord from trunk jack.	

H. Secretarial Lines—Dialing Restrictions—Rotary Dials

STEP	ACTION	VERIFICATION
1	Wire and equip a spare secretarial line relay and jack circuit per Fig. 2 and Fig. 10 of SD-65729-01 to be used with a central office trunk.	A separate test line is necessary for each 557B PBX position.
2	Using the 1W13B cords, cross connect the secretarial test line to one of the central office trunks at the distributing frame or cross connection terminal. Connect tip to tip and ring to ring.	
3	Using the 768A blocking tool, block the T relay nonoperated of the central office trunk being used for testing.	The same central office trunk can be used for all tests if cross connection cords are of sufficient length to reach each secretarial test line.
4	Connect the 1014A handset to an outgoing central office trunk or line (do not use the central office trunk used with the dial test circuit).	Receive dial tone.
5	Dial the telephone number assigned to the central office trunk used with the dial test circuit.	Secretarial dial test circuit line lamp lights only during ringing cycles. On the first incoming call the common buzzer operates and associated panel lamp lights. Bridged central office trunk lamp dark.
6	Answer the secretarial test circuit using the right hand attendant telephone set. Plug the lowest number intercept and dial cord in the test circuit jack. Operate the TALK key to TALK position.	Secretarial test line lamp dark. Buzzer silenced and panel lamp extinguished only during a ringing cycle.
7	Talking path is cut thru to the attendant.	Short burst of zip tone at cut thru (ZA option) or steady tone is removed (ZB option) on the attendant telephone circuit.
8	Disconnect the 1014A handset. Attendant dials a digit (any digit).	Attendant receives dial tone. Dial tone should not be broken.
9a	Attendant inserts a punched card in the card dialer and outputs.	Dial tone should not be broken. If dial tone is interrupted by dialing, verify

STEP	ACTION	VERIFICATION
		the operation of the SA relay from sleeve ground on the test circuit.
10b	If intercept and dial cord selected for test is wired to a transfer jack— Restore the TALK key to normal.	Attendant telephone circuit silent.
11b	Plug the adjoining intercept and dial cord in the transfer jack of the intercept and dial cord being used for testing. Operate the TALK key to TALK position.	Attendant receives dial tone.
12b	Attendant dials a digit (any digit). <i>Note :</i> Some switching offices, such as crossbar or ESS, replace dial tone with an interrupted tone if after 15-20 seconds no digits have been dialed. To release from this permanent signal trunk, it is necessary to disconnect the intercept and dial cord plugged in the secretarial test circuit and repeat Steps 1 and 2. If permanent signal disconnects become excessive, establish a test circuit from the central office test desk.	Dial tone should not be broken. If dial tone is interrupted by dialing, verify that inductor A and transfer jack wiring is correct.
13	Remove intercept and dial cord from transfer jack and return TALK key to normal.	Attendant telephone circuit silent.
14	Attendant selects administrative station cord. Momentarily operate TALK-RING key to RING position.	At station associated with cord-ended station unit selected for test— Ringing heard.
15	At station used for testing— Remove handset from switchhook.	At PBX— Supervisory lamp lights on associated administrative station cord.
16	Attendant operates TALK-RING key to TALK position.	Supervisory lamp extinguished. Conversation satisfactory.
17	Attendant plugs cord of administrative station in the transfer jack being used for testing. Operates TALK-RING key to normal.	Administrative station hears dial tone.
18	Administrative station dials a digit.	Dial tone should not be interrupted.
19	Station hangs up.	At PBX— Supervisory lamp lights.
20	Attendant removes administrative cord from transfer jack.	Supervisory lamp extinguished.

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STEP	ACTION	VERIFICATION
21	Attendant removes intercept and dial cord from secretarial test line.	
22	Repeat Steps 4-21 using successive numbered intercept and dial cords, transfer jacks, and administrative stations until each has been individually tested from an attendant at each 557B PBX position.	
23	Remove cross connects (2-1W13B cords).	
24	Remove blocking tools (1-768A blocking tool).	

I. Secretarial Lines—Dialing Restrictions—TOUCH-TONE Dials

STEP	ACTION	VERIFICATION
1	Wire and equip a spare secretarial line relay and jack circuit per Fig. 2 and Fig. 10 of SD-65729-01 to be used with a central office trunk equipped with TOUCH-TONE dialing provisions.	A separate test is necessary for each 557B PBX position.
2	Using the 1W13B cords, cross connect the secretarial test line to one of the central office trunks at the distributing frame or cross connecting terminal. Connect tip to tip and ring to ring.	
3	Using the 768A block tool block the T relay nonoperated of the central office trunk being used for testing.	The same central office trunk can be used for all tests if cross connection cords are of sufficient test line.
4	Connect the 1014A handset to an outgoing central office trunk or line. (Do not use the central office trunk used with the dial test circuit.)	Receive dial tone.
5	Dial the telephone number assigned to the central office trunk used with the dial test circuit.	Secretarial dial test circuit line lamp lights only during ringing cycles. On the first incoming ring the common buzzer operates and the associated panel lamp lights. Bridged central office trunk lamp dark.
6	Answer the secretarial test circuit using the right hand attendant telephone set. Plug the lowest number intercept and dial cord in the test circuit jack— Operate the TALK key forward.	Secretarial test lamp dark— Buzzer silenced— Panel lamp extinguished only during a ringing cycle.

STEP	ACTION	VERIFICATION
7	Talking path is cut thru to attendant.	Short burst of zip tone at cut thru (ZA Option) or steady tone is removed (ZB Option) on the attendants telephone circuit.
8	Disconnect the 1014A handset.	Attendant receives dial tone.
9	Attendant dials a digit (any digit).	Dial tone should not be broken.
10a	Attendant inserts a punched card in the card dialer and outpulses.	Dial tone should not be broken. If dial tone is interrupted by dialing, verify the operation of the SA relay from sleeve ground of the test circuit.
11b	If intercept and dial cord selected for test is wired to a transfer jack— Restore the TALK key to normal.	Attendant telephone circuit silent.
12b	Plug the adjoining intercept and dial cord in the transfer jack of the intercept and dial cord being used for testing. Operate the TALK key forward.	Attendant receives dial tone.
13b	Attendant dials a digit (any digit). <i>Note:</i> Some switching offices, such as crossbar or ESS replace dial tone with an interrupted tone if after 15-20 seconds no digits have been dialed. To release from this permanent signal trunk, it is necessary to disconnect the intercept and dial cord plugged in the secretarial test circuit and repeat Steps 1 and 2. If permanent signal disconnects become excessive, establish a test circuit from the central office test desk.	Dial tone should not be broken. If dial tone is interrupted by dialing— Verify that the ZE Option is provided.
14	Remove intercept and dial cord from transfer jack and return TALK key to normal.	Attendant telephone circuit silent.
15	At attendant select administrative station cord— Momentarily operate TALK-RING key to RING position.	At station associated with cord-ended station unit selected for test. Ringing heard.
16	At station used for testing— Remove handset from switchhook.	At PBX— Supervisory lamp lights on associated administrative station cord.
17	Attendant operates TALK-RING key to TALK position.	Supervisory lamp extinguished. Conversation satisfactory.

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STEP	ACTION	VERIFICATION
18	Attendant plugs cord of administrative station in the transfer jack being used for testing. Operate TALK-RING key to normal.	Administrative station hears dial tone.
19	Administrative station dials a digit.	Dial tone should not be interrupted.
20	Station hangs up.	At PBX— Supervisory lamp lights.
21	Attendant removes administrative cord from transfer jack.	
22	Attendant removes intercept and dial cord from secretarial test line.	
23	Repeat Steps 4-22 using successive numbered intercept and dial cords, transfer jacks, and administrative stations until each has been individually tested from an attendant at each 557B PBX position.⚡	
24	Remove cross connects (2-1W13B cords).	
25	Remove blocking tool (1-768A blocking tool).⚡	

J. Fuse Alarm—Ringing and Battery Supply

Fuse Alarm

1	At switchboard— Using W1AF cord, connect equipment end of alarm type fuse designated A to alarm bus bar.	At switchboard— FA lamp lighted. Fuse alarm bell sounds. If PBX alarm is extended to central office— At central office— Major alarm sounds.
2	At switchboard— Operate FA key to OFF position.	FA lamp remains lighted. Fuse alarm bell silenced. If PBX alarm is extended to central office— At central office— Major alarm continues to sound.
3	At switchboard— Remove W1AF cord from fuse and alarm bus bar.	FA lamp extinguished. Fuse alarm bell sounds.
4	Restore FA key to ON position.	Fuse alarm bell silenced.

Ringing Supply

5	At switchboard— Momentarily operate FA key to OFF position.	Fuse alarm bell rings while FA key is operated to OFF position.
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STEP	ACTION	VERIFICATION
Battery Supply		
6	At switchboard— Connect one clip of test receiver to framework ground.	
7	Momentarily touch other clip of test receiver alternately to terminal punching 210 and equipment side of distribution fuse designated A.	Correct battery polarity indicated by click in test receiver when test receiver clip is touched to distribution fuse.
8	Disconnect test receiver.	

K. Battery Cutoff—Auxiliary Signal and Position Grouping Circuits

Note: The battery cutoff key should not be operated to the OFF position while connections are up at the switchboard.

1	Request central office test desk to ring on secretarial line (see 1.09).	Line and panel lamps lighted. Buzzer sounds. If secretarial line is provided with nonlocking lamp feature— Line and panel lamps lighted and extinguished as each ringing cycle is detected. Buzzer follows ringing cycle.
2	At switchboard— During an interval while a lamp is lighted, momentarily operate battery cutoff key to OFF position.	Line and panel lamps extinguished. Buzzer silenced.
3	At switchboard— Answer call on secretarial line using intercept and dial cord.	Conversation between switchboard and test desk satisfactory.
4	Request test desk to disconnect.	
5	At switchboard— Disconnect.	
6	Repeat Steps 1 through 5 for secretarial line in other panel.	

Position Grouping

7	At switchboard— Connect attendant telephone set to telephone set jacks in lower-numbered position to be grouped.	
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STEP	ACTION	VERIFICATION
8	At switchboard— Operate position grouping (POS GRP) key on each higher-numbered position to be grouped to the YES position.	
9	At switchboard— Operate a cord-ended station key to the TALK position.	At telephone set— Sidetone heard.
10	Repeat Steps 7 through 9 on each position grouped.	
11	Restore all keys to normal.	