

CENTRALIZED REPAIR SERVICE

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1. GENERAL INFORMATION

1.1 Description

1.11 The circuits tested by this section are:

- SD-99371-01 Dialer Circuit
- SD-99372-01 Announcement Control Circuit
- SD-99373-01 Dialer Connector Circuit
- SD-99374-01 Park-On Trunk Circuit

1.12 These circuits provide facilities for routing calls to a Repair Service Desk at a distant location or in the same building. This is achieved by the use of an Automatic Dialer which directs the call to one of three repair centers. An Announcement Circuit is arranged to advise the customer that his call is being processed.

1.2 Sequence of Operation: The tests of this section should be performed in the order in which they appear.

1.3 Test of Associate Equipment

1.31 The following circuits should be tested prior to making the tests of this section:

- SD-95281-01 HB 59 Sec. 410
- SD-95283-01 HB 59 Sec. 410
- SD-95959-01 HB 59 Sec. 411

1.32 If transfer circuits are associated with this system (ex. SD-95727 or SD-99434) the cabling must be run between the Park-On Trunks and the transfer circuits. The cabling must be checked and the transfer circuits must be tested prior to the tests of this section. The transfer keys at the transfer circuits associated with the Park-On Trunks must be in the normal position to apply the tests of this section.

1.4 Cross-Connections

1.41 The cross-connections for Dialer preference must be made prior to the tests of this section, refer to SD-99373 Note 401.

1.42 The cross-connections for the numbers dialed by the 42A Dialer should be made prior to the tests of this section.

1.43 When this system will be connected to subscriber line circuits (Automatic Dialer(s) provided), the connections between this system and the subscriber lines are to be made prior to the tests of paragraph 5.6. If the above connections cannot be made temporary connections are required to one subscriber line circuit prior to the tests of paragraph 5.6.

1.44 If N option per SD-99371 is provided, the cross-connections per Note 402 are not to be connected until after tests of this section.

2. RECORDS AND REQUIREMENTS

2.1 Records: The results of tests per this section shall be recorded on Form SD-4-1313 and summarized on Form SD-4-1315.

2.2 Requirements: Tests of this section are based upon the requirements of SD and CD information.

3. TEST EQUIPMENT

3.1 Test Sets

Amt	ITE	Description
1	4011	Misc. Trunk Test Set
1	4442A	Volt-Ohmmeter
1	9650	Operators Telephone Set
* 1	5392	8 Digit Dial Pulse Receiver
1	R-3314	Stop Watch

* This test set is required only if the Dialers are provided.

FUSE TABLE

UNIT	FUSE	QUANTITY ONE PER	TEST POINT
J-93016 CP " J-93016 CN	-48(A) -48(B) -48(C)	Dialer Dialer System	Term 41 TS(A) Term 51 TS(A) Term 41 TS(A)
J-93016 CM	-48	System	Term 31 T.S.
J-93016 CS or CR " " "	-48(A)* -48(B)* -48(A)** -48(B)**	Dialer 3 Connectors Dialer 3 Connectors	Term 41 TS(A) Term 51 TS(A) Term 42 TS(A) Term 52 TS(A)
J-93016 CT " "	-48(A) -48(B) -24(A)	Trunk System Trunk	Term 51 TS(A) Term 52 TS(A) Term 11 TS(A)

* Associated with Dialer 1

** Associated with Dialer 0 or Dialer 2

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| <p>5.2 <u>Announcement Set Check and Record</u></p> <p>5.21 Verify that the AC power splice wires in the Announcement Set are connected.</p> <p>5.22 Insert the plug from the ITE-9650 Operator's Telephone Set into the twin jacks (J3 and J4) on the front of the KS-16765 L2 Announcement Set.</p> <p>5.23 Operate and hold operated the S4 key to the DICTATE (non-locking) position. Verify that the recorder-reproducer drum rotates.</p> <p>5.24 Put a test announcement of approximately 12 seconds on the recorder-reproducer drum; to do this speak into the transmitter of the telephone and use the R-3314 Stop Watch to time the announcement. At the end of the announcement release the S4 key.</p> <p>5.25 Adjust the limit switch stop so that the record-reproduce head carriage assembly returns to the starting position after one complete announcement.</p> <p><u>NOTE:</u> Refer to BSP-514-210-200 for a procedure to adjust the limit switch stop.</p> <p>5.26 Operate the S4 key to the CHECK (locking) position, the test announcement is reproduced in the telephone set receiver. Check that the speech quality is intelligible.</p> | <p>5.27 After the entire announcement is heard, the STP relay operates and the record-reproduce head returns to its starting position. The STP relay releases and the announcement is repeated.</p> <p>5.28 Release the S4 key and verify that the record-reproduce head returns to the starting position.</p> <p>5.3 <u>Timing</u></p> <p><u>NOTE:</u> Use the R-3314 Stop Watch for all timer tests.</p> <p>5.31 <u>TM25 Timer SD-99374-01</u></p> <p>5.311 Block relay K in Park-On Trunk 0 operated.</p> <p>5.312 Manually operate relay L1 in Park-On Trunk 0 and observe lamp POF lights in approximately 25 seconds. Also observe that relays R0, AL and ALM lock operated and the office alarm sounds.</p> <p><u>NOTE:</u> To prevent repeated office alarm insulate contacts 1M and 2M of the ALM relay.</p> <p>5.313 Release relay L1.</p> <p>5.314 Momentarily operate the ALM RLS key and observe that relays AL, R0 and ALM release and lamp POF extinguishes.</p> <p>5.315 Release relay K in Park-On Trunk 0.</p> <p>5.316 Repeat steps 5.311 thru 5.315 for all equipped Park-On Trunks.</p> <p>5.32 <u>TM Timer SD-99372-01</u></p> <p>5.321 Block relay CT in the Announcement Control Circuit non-operated.</p> |
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TABLE A

CROSS-CONNECTIONS ON TS(A)	RELAY OPERATES
term 35 to term 45	T1
term 35 to term 55	T2
term 35 to term 16	T3

- 5.322 Operate the ST relay in the Announcement Control Circuit and verify that lamp CT lights in approximately 6 seconds. Also observe that relays AF, CTA and ALM lock operated.
- 5.323 Release the ST relay.
- 5.324 Operate the TBL RLS key and observe that the CT lamp extinguishes and relays AF, CTA and ALM release.
- 5.325 Remove the block from relay CT.
- 5.326 Insulate the 8M contact of relay CT in the Announcement Control Circuit.
- 5.327 Operate the ST relay and observe that lamp CT lights in approximately 18 seconds. Also observe that relays CT1 and ALM operate.
- 5.328 Release the ST relay, the CT1 relay releases. Operate the TBL RLS key and observe that lamp CT extinguishes and relay ALM releases.
- 5.329 Remove the insulator from 8M of the CT relay.
- 5.33 TMR Timer SD-99371-01
- 5.331 Insulate 10M of relay SD in Dialer Circuit 0, this prevents the 42A Dialer from operating.
- 5.332 Manually operate relay SD in Dialer Circuit 0 and observe that lamp DLR lights in approximately 15 seconds. Also observe that relays TM1, TM2 and ALM operate.
- 5.333 Release relay SD and observe that relay TM1 releases.
- 5.334 Momentarily operate the ALM RLS key and observe relays TM2 and ALM release and lamp DLR extinguishes.
- 5.335 Remove the insulation from 10M of the SD relay.
- 5.336 Repeat steps 5.331 then 5.335 for all equipped Dialers.
- 5.4 Number Control SD-99371-01
- 5.41 Option II - Day of the Week Dialer selection.
- 5.411 Verify that the SELECT SW is in the CLK position and TRIP SW on Clock #1 is normal.
- 5.412 Momentarily apply the cross-connections of Table A one at a time, then operate the DAY OF WEEK switch and verify that the appropriate T- Relay operates.

- 5.42 Option R - Same Number Selection verify that relay T1 is locked operated.
- 5.43 Options Q and V - Two Different Number Selection.
- 5.431 Verify that the SELECT SW is in the CLK position and the TRIP SW on Clock #1 is normal.
- 5.432 Verify that relay T2 is operated and relay TR2 in each Dialer is operated.
- 5.433 Operate the TRIP SW on Clock #1, verify that relay T2 releases and relay T1 operates. Also verify that the TR2 relay releases and the TR1 relay operates in each Dialer Circuit.
- 5.44 Options M and V - Three Different Number Selection.
- 5.441 Verify that the SELECT SW is in the CLK position and the TRIP SW on both clocks are in the normal position.
- 5.442 Verify that the T3 relay is operated and the TR3 relay in each Dialer Circuit is operated.
- 5.443 Momentarily operate the TRIP SW on Clock #1, Relay T3 momentarily releases and relay T1 momentarily operates. Also, in each Dialer Circuit the TR3 relay momentarily releases and the TR1 relay momentarily operates.
- 5.444 Momentarily operate the TRIP SW on Clock #2, relay T3 momentarily releases and relay T2 momentarily operates. Also, in each Dialer Circuit the TR3 relay momentarily releases and the TR2 relay momentarily operates.
- 5.45 Options L and W - Dedicated Trunk Selection (Two Possible Numbers)
- 5.451 Verify that the SELECT SW is in the CLK position.
- 5.452 Verify that relay T1 is operated and the TR1 relay in each Dialer Circuit is operated.

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- 5.453 Momentarily operate relay PR, relay T1 momentarily releases and relay T2 momentarily operates. Also, in each Dialer Circuit the TR1 relay momentarily releases and the TR2 relay momentarily operates.
- 5.46 Options Q and W - Dedicated T unk Selection (Three Possible Numbers)
- 5.461 Verify that the SELECT SW is in the CLK position, the TRIP SW on Clock #1 is normal and relay PR is non-operated.
- 5.462 Verify that relay T1 is operated and the TR1 relay in each Dialer Circuit is operated.
- 5.463 Block relay PR operated and verify that relay T1 releases and relay T3 operates. Also, in each Dialer Circuit the TR1 relay releases and the TR3 relay operates.
- 5.464 Momentarily operate the TRIP SW on Clock #1, relay T3 momentarily releases and relay T2 momentarily operates.
- 5.465 Unblock relay PR.
- 5.47 Selector Switch Control
- Note: If R option is utilized, relay T1 will be locked operated.
- 5.471 Rotate the SELECT SW to position 3 and verify that relay T3 is operated and relay T1 and T2 are released.
- 5.472 Rotate the SELECT SW to position 2 and verify that relay T2 is operated and relays T1 and T3 are released.
- 5.473 Rotate the SELECT SW to position 1 and verify that relay T1 is operated and relays T2 and T3 are released.
- 5.5 Dialer Check
- 5.501 Using an ITE-9301 cord connect battery and ground to ITE-5392 8 Digit Dial Pulse Receiver; the 310 plug to the B/G jack, -48V to the tip and ground to the sleeve.
- 5.502 Using an ITE-9301 cord connect ITE-5392 to Dialer 0; the 310 plug to the PLS IN jack, tip to 6M of relay SD and ring to 12M of relay SD in Dialer 0.
- 5.503 Operate the power switch to the ON position. Operate the TR ACT-OFF-TR SIM switch to the TR SIM position. Momentarily operate the RESET key; hold the RESET key operated until all registers have been set to '0'.
- 5.504 Rotate the SELECT SW to position 1, if applicable.
- 5.505 Block relay DT in Dialer 0 operated.
- 5.506 Momentarily operate relay SD in Dialer 0, relay SD locks operated. Verify that ITE-5392 registers the desired number.
- 5.507 Remove the block from relay DT, verify relay SD releases.
- 5.508 Momentarily operate the RESET key on the ITE-5392; hold the RESET key operated until all registers on the ITE-5392 have been set to '0'.
- 5.509 Rotate the SELECT SW to position 2 and repeat steps 5.505 thru 5.508.
- 5.510 Rotate the SELECT SW to position 3 and repeat steps 5.505 thru 5.508.
- 5.511 Repeat steps 5.502 thru 5.510 for Dialer 1 and Dialer 2, if equipped.
- 5.512 Rotate the SELECT SW to the CLK position. Disconnect the ITE-5392.
- 5.6 Park-On Trunk - Announcement Control Circuit and Dialer Circuit provided.
- NOTE: In the following steps only selected relays are checked for normal functions. Refer to paragraph 6.1 for additional information if trouble is encountered.
- 5.601 Insulate 12M and ground 12 of relay SD in all equipped Dialers.
- 5.602 Connect the ITE-4011 to Park-On Trunk 0 according to the Setup Information of paragraph 4.
- NOTE: The following tests assume that the Subscriber Line Circuits have been connected to the Park-On Trunks. If a temporary Subscriber Line is utilized, it must be connected Tip conductor to term 52 and Ring conductor to term 42 TS(B) on the Park-On Trunk under test.
- 5.603 Operate the STO key and then the DB key on the ITE-4011; verify that the BY- relay associated with the preferred Dialer in the Dialer Connector operates and verify that relay SD in the preferred Dialer operates. After the Dialer has completed pulsing; verify that relay CT in the Park-On Trunk operates and the BY- relay in the Dialer Connector releases.

- 5.604 Release the DB key on the ITE-4011, verify that relay CT in the Park-On Trunk releases.
- 5.605 If more than one Dialer is provided, operate the MB key for the preferred Dialer and repeat steps 5.603 and 5.604 checking that the relays associated with the second choice Dialer operate.
- 5.606 If three Dialers are provided operate the MB key for the second choice Dialer and repeat steps 5.603 and 5.604 checking that the relays associated with the last choice Dialer operate.
- 5.607 Release both Dialer MB keys, if operated.
- 5.608 With the DB key released, operate the DD-CW key on the ITE-4011. Connect the ITE-9650 Telephone Set to the TEL jacks on the ITE-4011. Block relay ST in the Announcement Control Circuit non-operated.
- 5.609 Block relay L1 in Park-On Trunk operated, verify ringing is heard in the Telephone Set.
- 5.610 After approximately 2 cycles of ringing remove the block from relay ST, verify that ringing ceases and the test announcement is heard.
- 5.611 After the test announcement ends, verify that Dial Tone is heard.
- 5.612 Remove the block from relay L1, verify that Dial Tone is no longer heard.
- 5.613 Momentarily operate relay R0, 120 IPM is momentarily heard in the telephone set.
- 5.614 Block relay ACT non-operated. Block relay ST in the Announcement Control Circuit non-operated.
- 5.615 Release the DD-CW key on the ITE-4011; then operate the DB key on the ITE-4011. Check for ground on term. 26 T.S.A (M lead), check for battery on term 44 T.S.A. (L lead), and check for ground on term 18 T.S.B. (KB2 lead) on Park-On Trunk 0; use ITE-4442A to make the checks.

- 5.616 Operate relay K; it locks operated. Check for the indications listed in Table 1 for the options equipped.

TABLE 1

Option	Check For	On Term.
L F,A F,A F,B	bat	44 T.S.A - L lead
	no grd	32 T.S.B - A lead
	no grd	36 T.S.A - L lead
	grd	47 T.S.B - U lead
	no grd	37 T.S.B - A lead
	no grd	27 T.S.B -AA lead

NOTE: A no grd check may give a resistance ground, an open, or battery as an indication.

- 5.617 Release the DB key on the ITE-4011. Unblock relays ACT and ST.
- 5.618 Disconnect the ITE-4011 from Park-On Trunk 0.
- 5.619 Repeat steps 5.602 thru 5.618 for all equipped Park-On Trunks.
- 5.620 After all Park-On Trunks have been tested, remove the insulator from 12M and the ground from 12 of relay SD in all equipped Dialers. Remove the insulators from 1M and 2M of the ALM relay.
- 5.7 Park-On Trunk - Announcement Control Circuit and Dialer Circuit not provided.
- 5.701 Connect the ITE-4011 to Park-On Trunk 0 according to the Setup Information of paragraph 4.
- 5.702 Operate the STO key and the DB key on the ITE-4011, check that relays L (E option), L1 and L2 in Park-On Trunk 0 operate. Also check for the indications listed in Table 2.

TABLE 2

Option	Check For	Term.
L	grd	26 T.S.A (M lead)
	grd	32 T.S.B (A lead)
	batt. or flashing bat.	44 T.S.A (L lead)
	batt.	31 T.S.A (B lead)
	grd	18 T.S.B (KB2 lead)
	grd	36 T.S.A (L lead)

NOTE: T.S.A. and T.S.B are in Park-On Trunk.

5.703 Momentarily ground term 24 T.S.A (K lead) in Park-On Trunk 0; verify that relay K locks operated. Also check for the indications listed in Table 3.

TABLE 3

Option	Check for	Term
L	no grd	36 T.S.A (L lead)
	batt	44 T.S.A (L lead)
F,A	no grd	32 T.S.B (A lead)
	grd	47 T.S.B (U lead)
F,A	no grd	37 T.S.B (A lead)
F,B	no grd	27 T.S.B (AA lead)

NOTE: A no grd check may give a resistance ground, an open or battery as an indication.

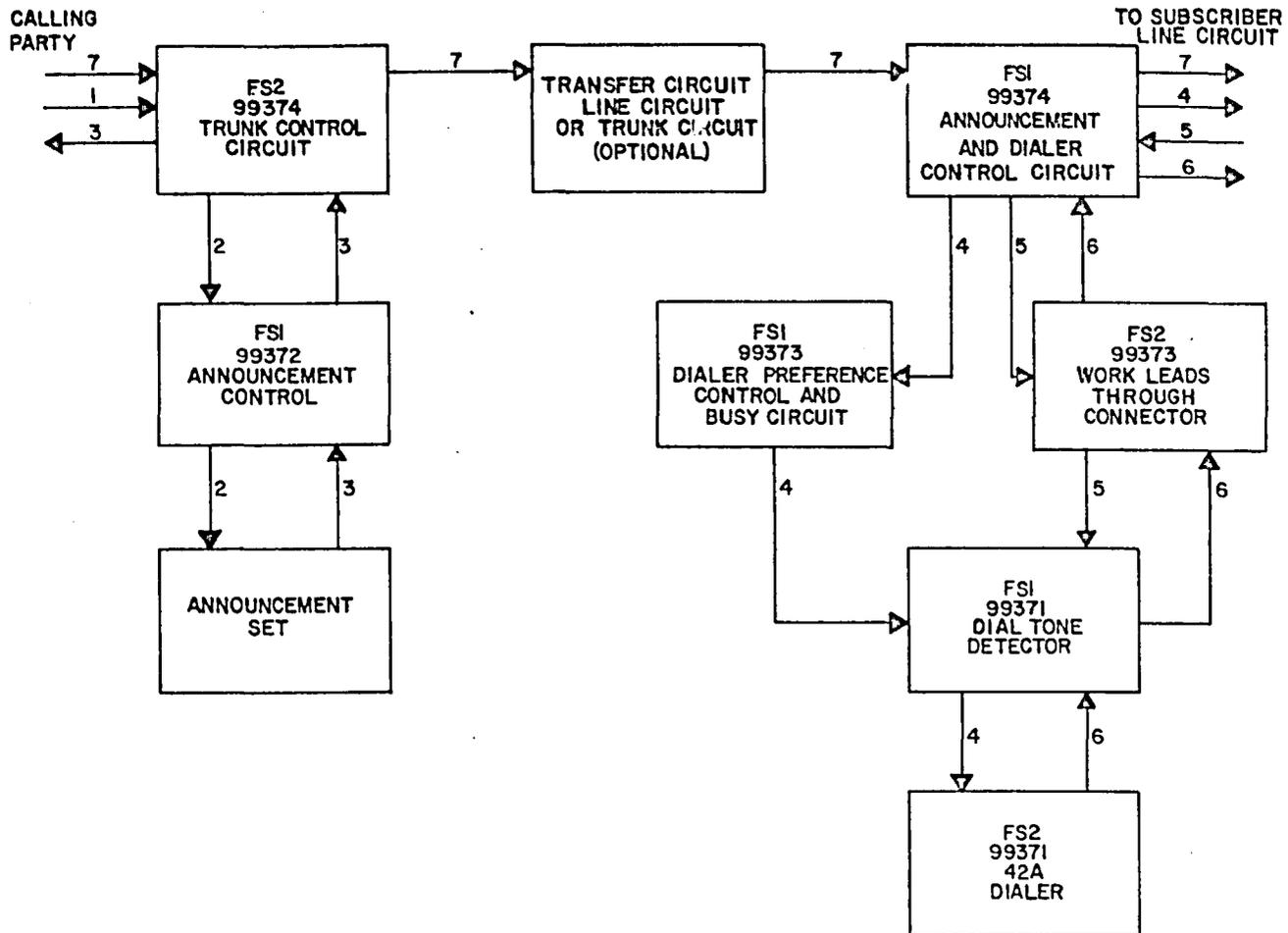
- 5.704 Connect the Telephone Set to the TEL jacks of the ITE-4011. Release the DB key and operate the DD-CW key on the ITE-4011.
- 5.705 Block relay L1 operated; verify that ringing is heard in the Telephone Set.
- 5.706 Momentarily operate relay K; relay K locks operated and ringing ceases.
- 5.707 Unblock relay L1; verify that relay K releases.

- 5.708 Momentarily operate relay R0; 120 IPM is momentarily heard.
- 5.709 Disconnect ITE-4011 from Park-On Trunk 0.
- 5.710 Repeat steps 5.701 thru 5.709 for all equipped Park-On Trunks.
- 5.711 Disconnect and secure all test equipment. Remove the insulators from 1M and 2M of the ALM relay.

6. TROUBLE SHOOTING GUIDE

- 6.1 Trunk Seizure - Announcement Control Circuit and Dialer Circuit provided.
- 6.11 BD1 and the associated Brief Description illustrates the normal functions of the circuits during seizure and use of this system.
- 6.12 When trouble is encountered BD1 and the Brief Description should be used to determine that part of the processing during which the failure occurred. Then refer to the appropriate CD and SD for detailed information.

BD1



SYSTEM OPERATION - SIMPLIFIED

BRIEF DESCRIPTION

1. Party requiring Repair Service seizes Trunk.
2. Announcement Circuit seized.
3. 12 sec. Announcement advising the calling party that his call is being processed.
4. Dialer connected to the Subscriber Line Circuit.
5. Dial Tone returned from Subscriber Line Circuit.
6. Dialer sends dial pulses corresponding to the repair service code.
7. Calling party connected to the Repair Service location.
8. Dialer and Announcement Control Circuit are released.

Manager, Engineering, Switching
Equipment and SXS P.E.C.C.