

COIN SUPERVISORY CIRCUIT TEST

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CONTENTS

- |  |   |
|--|---|
| 1. GENERAL INFORMATION                             | 9. NO COIN AT 4-1/2 MINUTES                   |
| 2. RECORDS AND REQUIREMENTS                        | 10. COIN AT 4-1/2 MINUTES RETEST AT 5 MINUTES |
| 3. TEST EQUIPMENT                                  | 11. TEST OF LT RELAY                          |
| 4. FUSING  | 12. TEST OF CB RELAY                          |
| 5. COIN COLLECTION AFTER SUBSCRIBER DISCONNECT     | 13. MAKE BUSY                                 |
| 6. COIN RETURN AFTER SUBSCRIBER DISCONNECT         | 14. ALARM TESTS                               |
| 7. OPERATOR COLLECT OF COIN ON "NO COIN CONDITION" | 15. COIN SUPERVISORY RELEASE CIRCUIT          |
| 8. STUCK COIN TEST                                 | 16. MISCELLANEOUS CIRCUITS                    |

1. GENERAL INFORMATION

1.1 Description

1.11 This section describes a method of testing the Coin Supervisory Circuits (SD's 25061-01, 25061-02 and 25444-01). The major operational features are tested, including circuits modified for Coin Service Improvement, Dial Tone First, using the Automatic District Junctor Test Circuit, SD-25158-01.

1.12 Coin Supervisory Circuits, SD-25061-02, working through a Coin Supervisory Concentrator and Trunk Circuit, SD-27153-01, test the operational features of the Concentrator.

1.13 Coin Supervisory Circuits equipped with Figure J or K and ZT wiring require connection to a Coin Service Applique Circuit, SD-27886-01.

1.14 The Coin Service Applique Circuit is tested as part of its associated Coin Supervisory Circuit. Prior to initiating tests of this section, verify that the Applique Circuit is properly fused.

1.2 Test Procedure

1.21 The coin supervisory circuits may be selected by direct preference during periods of light traffic. This may be accomplished by selecting a coin district junctor which has as its first preference the coin supervisory circuit which is to be tested.

1.22 The coin supervisory circuit under test is identified by the lighting of the coin locating lamps LO-39 (Fig. 9) or lamps SG- and SC- (Figs. 19 and 20 and option WG or Fig. 25 and option WF).

1.23 When the Coin Supervisory Concentrator and Trunk Circuit is used the lighted LO-5 lamps (on Concentrator) indicate which trunk circuit was selected for the test. During periods of light traffic, all trunk circuits (associated with a group of Coin Supervisory Circuits 0-9 or 10-19) can be tested by inserting a make busy plug into the make busy jack of a trunk circuit which has been tested and repeating the test.

CAUTION: MAXIMUM OF 3 TRUNK CIRCUITS ASSOCIATED WITH GROUP OF 10 COIN SUPERVISORY CIRCUITS, THEREFORE BUSY OUT TRUNK CIRCUITS ONLY LONG ENOUGH TO INSURE SEIZURE FOR TEST OF THE DESIRED TRUNK CIRCUIT.

1.24 The coin supervisory circuits not arranged for overtime coin collection are tested from the district junctor test frame and the coin supervisory position of the DSA switchboard when the switchboard is in the same building and from the district junctor test frame and the sender make busy frame, when the Central "A" switchboard is in a different building.

1.25 The coin supervisory circuits arranged for overtime coin collection are tested from the district junctor test frame and the coin overtime monitoring position.

- 1.26 The district junctor test frame talking circuit key CS, is used to establish a talking connection to the coin supervisory position at the DSA switchboard.
- 1.27 The district junctor test frame talking circuit key CO, is used to establish a talking connection to the coin overtime monitoring position.
- 1.28 A coin cord circuit at the switchboard position or the sender make busy test circuit at the sender make busy frame is used to apply coin control potential to the coin supervisory circuit jacks of the circuits under test.

2. RECORDS AND REQUIREMENTS

- 2.1 Records: Forms SD-4-1313 and SD-4-1315 are required for recording the results of these tests.
- 2.2 Requirements: The tests of this section must be applied to meet the equipment performance requirements per BSP-816-007-181.

3. TEST EQUIPMENT

3.1 Cords and Accessories

<u>Amt</u>	<u>Code</u>	<u>Description</u>	<u>With ITE</u>
As Req.	349A	Make Busy Plug	4023
As Req.	ITE-9650	Operator's Tel. Set	4023
1	R-1824	Pencil Lamp	4023
1	ITE-4442	Volt-Ohmmeter	
1	R-9572	Test Receiver	4023

4. FUSING

- 4.1 On shop wired and fused fuse panels, inspect the panel for missing or operated fuses. If a fuse is missing on operated, test the fuse terminal for the absence of low resistance ground. Clear any grounded condition and install the proper fuse. At the completion of these tests all fuse panels should be fully equipped with the proper fuses. These may be either the proper specified type or a dummy.
- 4.2 ITE-4442 Volt-Ohmmeter should be used to verify all potentials at fused terminals to insure that polarity and voltages are correct. Many errors are caused by the use of the R-9572 Test Receiver on potentials other than -48 volts. Handbook 100, TM0-4442, provides full instructions for the use of the volt-ohmmeter.

- 4.3 When the R-9572 Test Receiver is used, avoid placing it directly on the ear.
- 4.4 Install the correct fuses as indicated and listed in the circuit drawings and fuse panel designations one at a time. Verify that each fuse is associated with the correct circuit and is free from crosses with other unfused posts on the panel.

NOTE: For Paragraphs 5 to 12 select, by using keys PCR or PCS, a coin district junctor which has as its first choice, the coin supervisory circuit which is to be tested. Operate key REP if same district junctor is to be used for testing other coin control circuits.

5. COIN COLLECTION AFTER SUBSCRIBER DISCONNECT

- 5.1 Operate keys LC, CN-SUPV and HLD-CN. If coin supervisory circuit is modified for dial tone first, operate key DTF.
- 5.2 Operate and release key ST. The test proceeds as for a district junctor, the test switch advancing to position 19. The coin locating lamp and lamps CNT and CNR are lighted.
- 5.3 Restore key HLD-CN. The test switch restores to normal. All lamps are extinguished.
- 5.4 Restore keys DTF, LC and CN-SUPV.

6. COIN RETURN AFTER SUBSCRIBER DISCONNECT

- 6.1 Repeat the test described in Paragraphs 5.1 to 5.4 using key FC instead of key LC.

7. OPERATOR COLLECT OF COIN ON "NO COIN CONDITION"

- 7.1 Operate keys LC, CN-SUPV, HLD-CN and NO-CN. If coin supervisory circuit modified for dial tone first, operate key DTF.
- 7.2 Operate and release key ST. Lamps Coin-L and DCH light. In addition, with dial tone first lamps RP and RS light.
- 7.3 Operate key CS. Verify that lamp C at the switchboard or sender make busy frame is flashing.
- 7.4 Request that a cord be momentarily inserted into the release jack. Lamp C continues to flash.

- 7.5 Restore key NO-CN.
- 7.6 Request that coin collect potential be applied to the circuit under test. Lamps CNT and CNR are lighted.
- 7.7 Restore key HLD-CN.
- 7.8 Request that the circuit be released. The test circuit restores to normal.
- 7.9 Restore keys LC, DTF, CN-SUPV and CS. All lamps are extinguished.
8. STUCK COIN TEST
- 8.1 Operate keys FC, HLD-CN, CN-SUPV and STK-CN. If coin supervisory circuits modified for dial tone first, operate key DTF.
- 8.2 Operate and release key ST. The coin locating lamp and lamps DCH, CNT and CNR are lighted.
- 8.3 Operate key CS. Verify that lamp C at the switchboard or sender make busy frame is lighted.
- 8.4 Momentarily operate key RCN and restore key STK-CN. Lamps CNT and CNR are extinguished.
- 8.5 Request that coin return potential be applied to the circuit under test. Lamps CNT and CNR are lighted.
- 8.6 Restore key HLD-CN. Request that the circuit be released. All lamps are extinguished.
- 8.7 Restore keys FC, DTF, CN-SUPV and CS.
- 8.8 To check the automatic collect or return feature following the disconnection of an operator having been called in as a result of a stuck coin, repeat the tests of Paragraphs 8.1 through 8.5.
- 8.81 Momentarily operate key RCN. Lamps CNT and CNR are extinguished.
- 8.82 Request that the circuit under test be released. Only lamp CNT lights on this test. If lamp CNR lights, it indicates a false potential on the ring side of the circuit. If the coin supervisory circuit is arranged for dial tone first, lamps CNT and CNR light. A false potential on the ring side is indicated by lamp FCP.
- 8.83 Operate key CA to advance the test circuit to normal.
- 8.84 Restore all keys to normal.
- 8.9 If recycle of coin disposal function is provided, SD-25061-01, option ZE, SD-25061-02, option ZX or SD-25444-01, option ZQ, verify that first and second trial traffic registers have scored.
9. NO COIN AT 4-1/2 MINUTES
- NOTE: This test is applied only on coin supervisory circuits arranged for overtime coin collection.
- 9.1 Operate keys LC, CN-SUPV, T, HLD-CN and NO-CN. If coin supervisory circuit is modified for dial tone first, operate key DTF.
- 9.2 Operate and release key ST. After 4-1/2 minutes the coin locating lamp is lighted.
- 9.3 Operate key CO. Verify that lamp OC at the overtime monitor position is flashing.
- 9.4 Restore key NO-CN and request that coin collect potential be applied to the circuit under test. Lamps CNT and CNR are lighted.
- 9.5 Restore keys HLD-CN and CO. The coin locating lamp and lamps CNT and CNR are extinguished. Lamp 2CHG is lighted. At the 5 minute interval, the coin locating lamp and lamps CNT and CNR re-light momentarily and the test circuit restores to normal.
- CAUTION: KEY HLD-CN SHOULD BE RESTORED WITHIN 25 SECONDS AFTER THE COIN LOCATING LAMP IN PARAGRAPH 9.2. IF LAMP TA LIGHTS BEFORE SATISFACTORY COMPLETION OF THE TEST, THE OPERATION OF KEY CA WILL RESTORE THE TEST CIRCUIT TO NORMAL.
- 9.6 Restore all keys to normal. All lamps are extinguished.
10. COIN AT 4-1/2 MINUTES RETEST AT 5 MINUTES
- 10.1 Operate keys T, LC, CN-SUPV and HLD-CN. If coin supervisory circuit is modified for dial tone first, operate key DTF.
- 10.2 Operate and release key ST. After 4-1/2 minutes the coin locating lamp and lamps CNT and CNR are lighted.
- 10.3 Immediately operate key NO-CN.
- 10.4 Restore and reoperate key HLD-CN. The coin locating lamp and lamps 1CHG, CNT and CNR are extinguished. Lamp 2CHG is lighted. The coin locating lamp

lights at the 5 minute interval. In addition, with dial tone first, lamp RP lights. (See CAUTION following Paragraph 9.5.)

10.5 Verify announcement or lamp indications as follows:

- (a) If announcement machine monitoring is provided, monitor the announcement by inserting a receiver equipped with a 310 plug into jack TR (Option VG) or operate key TR (Option XX) and monitor at frame telephone set.
- (b) Restore key TR if operated. Operate key CO. Verify lamp OC at the overtime monitor position is flashing at 120 IPM (announcement monitoring) or lighted steady (operator monitoring).

10.6 Request that a cord be inserted into the monitor jack, OC lamp is extinguished. Request that cord be removed, verify that lamp OC flashes.

10.7 Restore key NO-CN. Request that a cord again be momentarily inserted into the monitor jack. Verify that lamp OC is extinguished when cord is inserted and does not relight when cord is removed.

#### 10.8 Dial Tone First - Coin Supervisory Circuits

10.81 Restore key HLD-CN immediately. Lamp RP is extinguished. In approximately 20 seconds the coin locating lamp is momentarily extinguished. The coin location lamp and lamps CNT and CNR re-light momentarily and the test circuit restores to normal.

CAUTION: THIS TEST MUST BE COMPLETED BEFORE DSC CONTACT OF TEST TIMER HAS CLOSED AND REOPENED.

10.82 Restore all keys to normal. All lamps are extinguished.

#### 10.9 Regular - Coin Supervisory Circuits

10.91 Restore HLD-CN key. Momentarily operate the CA key and release the coin supervisory circuit at the position.

10.92 Restore all keys to normal.

#### 11. TEST OF LT RELAY

##### 11.1 Operate Test

11.11 Operate keys LC, OLT and CN-SUPV. If coin supervisory circuit modified for dial tone first, operate key DTF.

11.12 Operate and release key ST. The coin locating lamp and lamp DN-LT are lighted. Lamps CNT and CNR are lighted momentarily.

11.13 Operate key CS. Verify that lamp C at the switchboard or sender make busy frame is flashing.

11.14 Request that coin supervisory circuit be released. Verify that lamp C at the switchboard or sender make busy frame is extinguished.

11.15 Restore keys CS and OLT. All lamps are extinguished.

11.16 Restore all keys to normal.

##### 11.2 Non-Operate Test

11.21 Repeat tests of Paragraphs 11.11 and 11.12 using key NOLT instead of key OLT.

11.22 Operate key CS. Verify that lamp C at the switchboard or sender make busy frame does not light.

11.23 Restore keys CS and NOLT. All lamps are extinguished.

11.24 Restore all keys to normal.

#### 12. TEST OF CB RELAY

##### 12.1 Operate Test

12.11 Operate keys LC, OCB, CN-SUPV and HLD-CN. If coin supervisory circuit modified for dial tone first, operate key DTF.

12.12 Operate and release key ST. The coin locating lamp and lamps CNT and CNR are lighted.

12.13 Operate key CS. Verify that lamp C at the switchboard or sender make busy frame does not light.

12.14 Restore keys CS and HLD-CN. The test circuit restores to normal. All lamps are extinguished.

12.15 Restore all keys to normal.

##### 12.2 Non-Operate Test

12.21 Repeat tests of Paragraphs 12.11 and 12.12 using key NOCB instead of key OCB.

12.22 Operate key CS. Verify that lamp C at the switchboard or sender make busy frame is flashing.

- 12.23 Request that the circuit under test be released. Lamp C at switchboard or sender make busy frame is extinguished.
- 12.24 Restore keys CS and HLD-CN. The test circuit restores to normal. All lamps are extinguished.
- 12.25 Restore all keys to normal.
13. MAKE BUSY
- 13.1 Insert a make busy plug into jack MB. The link and controller select circuit relay SB (associated with the supervisory circuit under test) operates. Remove the make busy plug.
- 13.2 Connect one side of a R-1824 pencil lamp to -48 volt battery and the other side to the SB lead (punching 31, SD-25061-01, 02, or punching 04, SD-25444 of T.S. on unit).
- 13.3 Operate and release the following relays in turn and observe that the lamp lights while the relay is operated: RL, B2, SP, TR, OS and R. (In addition, in SD-25444 circuits, operate relays SP1 and M1.)
- 13.4 Block relay TR normal and operate and release relays B1 and SC simultaneously. Verify the lamp lights. Release relay TR.
- 13.5 Block relay CC normal. Connect ground through pencil lamp to DC lead (punching 34, SD-25061-01, 02, or punching 20, SD-25444 of T.S. on unit). The lamp will light in series with the CC relay winding.
- 13.6 Manually operate relays B1 and B2. Relay TR operates and all three relays lock operated.
- 13.7 Manually operate relay RL. Relays RL, B1 and B2 lock operated and relay TR releases.
- 13.8 Remove ground from lead DC. All relays release. Remove block from relay CC.
14. ALARM TESTS
- 14.1 Block operated relay B1 of the coin supervisory circuit and observe that in a minimum 30 maximum 60 seconds lamp AL lights and time alarm sounds.
- 14.2 Extinguish lamp AL and silence alarm by inserting a make busy plug into jack MB. Remove make busy plug and alarm will recycle as in Paragraph 14.1.
- 14.3 Silence alarm by momentarily operating relay M in SD-25061-01, 02, or relay CO in SD-25444. Alarm will recycle as in Paragraph 14.1.
- 14.4 SD-25061-01
- 14.41 Silence alarm by momentarily operating relay OS.
- 14.42 Block relay OP operated and observe coin supervisory major alarm operates.
- 14.43 Operate relay OS; observe that it locks operated and major alarm is silenced.
- 14.44 Remove blocks from relays OP and B1. Circuit returns to normal.
- 14.5 SD-25061-02
- 14.51 Remove block from relay B1. Circuit returns to normal.
- 14.6 SD-25444-01
- 14.61 Release relay B1. Block operated relays SD and OP. Manually operate relay CC. The major alarm sounds and aisle pilot lamp lights. Release relay CC to retire the alarm.
- 14.62 Block operated relay CR. The major alarm operates again.
- 14.63 Check that the alarm is retired when relay M or M1 is momentarily operated.
- 14.64 Release relays SD, OP and CR. Circuit returns to normal.
15. COIN SUPERVISORY RELEASE CIRCUIT (SD-25310-01)
- NOTE: This circuit is used with coin supervisory circuits arranged for over-time coin collection.
- 15.1 Momentarily operate relay CB and check that (1) lamp CB at the sender make busy frame lights and the associated alarm sounds. Momentarily operate key ASB to retire the alarm and lamp. Lamp CC lights when key ASB is operated and remains lighted until the CC and pilot lamps light at the sender monitor position of the "A" switchboard. Momentarily operate key RL at the position and observe that the CC and pilot lamps are extinguished; (2) all CC and RL relays of the release circuit operate and 60 to 90 seconds later all RL relays release and 6 to 8 minutes after the RL relays release the CC relays release and the circuit restores to normal.

- 15.2 Momentarily reoperate relay CB to again start a cycle of the release circuit. During the 70 to 90 second period (before relay T4 operates) momentarily reoperate relay CB and observe that the release circuit does not recycle. During the 6 to 8 minute period momentarily operate relay CB and observe that the release circuit recycles, that is, timing is again started at the beginning with relay T1 operated.
- 15.3 Check that (1) relays T1 to T7 operated one at a time, connect ground to 8T spring of relay T7, and (2) relays T4 to T7 operated one at a time, connect ground to 5B spring of relay T7.
- 15.4 Check that the CC relay (or relays), when operated, operate relay NC of the associated coin supervisory circuits. Manually operate the CC relay of the coin supervisory circuits on this test to close the path to the NC relay. Check that the RL relay (or relays) when operated, operate relay RL of the associated coin supervisory circuits. Manually operate relay OW and connect ground to spring 3B (SC relay) of the coin supervisory circuits to complete the operate path of the RL relay.
16. MISCELLANEOUS CIRCUITS
- 16.1 Traffic Register Peg Count Test
- 16.11 Using the R-9572 test receiver, momentarily ground punchings 28, 29 and 30 of T.S. (B) at the coin supervisory unit. At the traffic register circuit verify that the associated peg count registers have each registered once.
- 16.12 If option ZE, SD-25061-01; option ZX, SD-25061-02; or option ZQ, SD-25444-01, is provided, momentarily ground punching 14 and 24 (1st circuit on unit) or 18 and 28 (2nd circuit on unit) of T.S. CSI, at the traffic register circuit verify that the associated peg count registers score.
- 16.2 Identification of Coin Lines
- NOTE: Coin lines must be connected to the number network.
- 16.21 If circuits are arranged to identify coin lines by use of ANI tones, SD-25061-01, option ZH; SD-25061-02, option ZZ or SD-25444-01, option ZS, simulate a stuck coin condition using the office coin box line.
- 16.22 At the sender make busy frame, using a cord equipped with 309 plugs, patch jack CN to the jack associated with the lighted coin supervisory C lamp.
- 16.23 At the SMB frame insert the PS cord into jack TNE. At the trouble ticketer verify that a trouble ticket is printed with the following information:
- (a) Position 3 - 9 indicates a PS or coin trouble.
  - (b) Position 11 - Office number.
  - (c) Positions 12-15 - Directory number.
- 16.24 Restore coin box line, remove PS cord and patch cords at SMB frame.

*Lines Presented in Script Indicate  
New or Changed Information*

Manager, Crossbar Product Engineering  
Control Center

Reason for Reissue:  
To make changes to Paragraphs 10.5, 10.6  
and 10.7.