

**EMERGENCY MANUAL CIRCUITS FOR MANUAL OPERATION
AND INTERCEPTION OF SUBSCRIBER LINES AND TRUNK CIRCUITS
OPERATION TESTS
USING DIAL HAND TEST SET
STEP-BY-STEP SYSTEMS**

1. GENERAL

1.01 This section describes methods of testing the operating features of SD-32065-01 (Type "A") which provides emergency service on a manual basis in No. 1, 350A, 355A, 360A, 35E97 or North Electric Co's. CX-1000 offices. It also covers SD-32093-01 (Type "B") which provides this service in No. 1, 350A, 355A, 360A, 32A32, 32A44, 35E97, 375A, 375B, 385A, 385B, 386A, 386B or North Electric Co's. CX30, CX60, CX100 or CX200 offices.

1.02 The tests are as follows:

- (A) Emergency Telephone and Cord Circuits.
- (B) Completing Cord and Telephone Circuits.
- (C) A, B, D, or A, B, C, D, Jacks with Completing Cords.
- (D) A, B, D, or A, B, C, D, Jacks with Emergency Cord, when Completing Cords are not Installed.
- (E) C and D Jacks of Incoming Trunks.
- (F) Emergency Manual Circuits.
- (G) Emergency Toll Circuits.
- (H) Local or Office Telephone Multiple.
- (I) Off Premise Circuits.
- (J) Radio Telephone Jacks.
- (K) Ringing Start Feature when the Ringing Power Plant is Arranged to Operate on a Start Stop Basis.
- (L) Emergency Battery.

1.03 Test (I) will require an assistant at the off premise station. Test (E) will require an assistant at the operator office, in those cases where the trunk is an incoming trunk from a switch level.

1.04 In making test (I) contact may be established between the assistant at the off premise station and the test man at the emergency board from the A or D jacks of the off premise circuit at the emergency position or by calling the office telephone from a regular subscriber set located at the off premise station.

1.05 Test (F) should be completed without delay in order to keep the subscriber's lines available for service calls. If it is noted that there is an attempt to

originate a call on a line under test, postpone the test until such time as the line is idle.

1.06 When tests involve the use of two way or outgoing trunks from selector levels, make all trunks preceding those which are associated with jacks in the emergency position busy in order to obtain access to the trunks wired through the emergency position.

1.07 When tests specify connecting to a D jack and the D jack is in one leg of a phantom pair, make sure that the phantom and both physical circuits are idle and then make the three circuits busy before connecting to the D jack.

1.08 Test K should be made during periods of light load in order that the ringing power plant may be seized when idle.

2. APPARATUS

Tests (A), (B), (H), (I), (J), and (K)

2.01 A D-81760 (or equivalent) dial hand test set equipped with a D-96823 hand locking slider.

Tests (B) and (C)

2.02 No. 508A tool.

Test (H)

2.03 A D-81763 (or equivalent) dial hand test set equipped with a D-96823 hand locking slider.

Tests (C) and (D)

2.04 A No. 258C or No. 258D plug.

Test (I)

2.05 A P3E cord 6 feet long, equipped with 2 No. 310 plugs (3P7A).

2.06 A W2CF cord, 1 foot long, equipped with a No. 310 plug on one end and a No. 360B and No. 360C tool on the other (2W17D) and two KS-6278 tools. Insulate the KS-6278 tools with No. 108 tools.

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2.07 A No. 528 receiver attached to a W2AB cord equipped with two No. 360A tools (2W21A cord) and two No. 411A tools.

Test (L)

2.08 A D.C. voltmeter having a 100 volt scale with a resistance of approximately 100 ohms per volt.

2.09 Two No. 893 cords 6 feet long, each equipped with 2 No. 360A tools (1W13B) two KS-6278 tools and two No. 364 tools.

2.10 A No. 19MW resistance (191 ohms and 920 ohms). (SD-32093-01 Only)

3. PREPARATION

Tests (A) to (J) Inclusive

3.01 Operate the BAT (battery) key on the fuse panel to the REG position.

Tests (B), (C), (E), (F), (G), (H) and (I) (SD-32065-01 Only)

3.02 Connect the operators telephone set to the OPR jack.

4. METHOD

(A) Emergency Telephone and Cord Circuits

4.01 Remove the receiver or hand set of the telephone set associated with the emergency cord.

4.02 Connect the emergency cord to a CALL jack. Dial an operator (See 1.06). Observe that the operator answers. Determine the trunk seized by watching the BY trunk lamp. If two BY lamps light simultaneously, when the operator answers verify the number of the trunk from the operator. Proceed as outlined in 4.03 or 4.04.

4.03 Circuits Arranged for Loop Signaling: Request the operator to stay on the connection. Remove the cord from the CALL jack and connect it to the D jack of the trunk seized. Check with the operator that the supervisory lamp is extinguished. Request the operator to disconnect when a disconnect signal is observed. Remove the cord from the D jack. Restore all trunks to service which were busied as covered by 1.06.

4.04 Circuits Arranged for Composite Signaling: If the trunk seized has an A, B, C, D jack group, request the operator to stay on the connection or if the trunk has an A, B, D jack group request the operator to disconnect and originate a call over a specified incoming or 2 way trunk to the emergency position. Remove the cord from the CALL jack and connect it to the C jack, of either the same trunk having the A, B, C, D jack group or the specified trunk on which the operator originates a call. Check with the op-

erator that the supervisory lamp is extinguished. Request the operator to disconnect when a disconnect signal is observed. Remove the cord from the C jack. Restore all trunks to service which were busied as covered by 1.06.

When a LINE Jack for Connection to Toll Line or Office is Provided

4.05 Connect the emergency cord to a LINE jack.

4.06 Replace the receiver or hand set of the telephone set on the switchhook.

4.07 Crank the hand generator and observe that the drop (SD-32065-01 Only) associated with the LINE jack operates or the lamp (SD-32093-01 Only) lights.

4.08 Remove the cord from the LINE jack and restore the drop, if equipped.

When a LINE Jack for Connection to Toll Line or Office is Not Provided

4.09 Connect the dial hand test set to the tip and ring of the emergency cord plug. Operate the C button of the test set.

4.10 Replace the receiver or hand set of the telephone set on the switchhook.

4.11 Crank the hand generator and observe that ringing tone is heard in the receiver.

4.12 Disconnect the dial hand test set.

(B) Completing Cord and Telephone Circuits

4.13 Connect a calling cord (red plug shell) to a CALL jack. Remove the operators handset unless an operator's headset is equipped. Operate the cord TALK and DIAL key to the DIAL position and dial the operator (See 1.06).

4.14 Operate the TALK and DIAL key to the TALK position. Determine the trunk seized by watching the BY trunk lamp. If two BY lamps light simultaneously, when the operator answers verify the number of the trunk from the operator. Request the operator to disconnect when a disconnect signal is observed.

4.15 Block the B relay operated, in order to ground the sleeve of the answering cord. Connect the answering cord (gray plug shell) to the A jack associated with the trunk seized. Observe that the cord circuit lamp lights. Remove the blocking tool from the B relay.

4.16 Operate the RING-ANS (ring answering) key for two or three seconds and observe that the cord circuit lamp is extin-

guished during ringing and that ringing is heard in the operators receiver.

4.17 Remove the answering cord from the A jack. Check that the operator answers. Restore all trunks to service, which were busied as covered by 1.06. Make tests outlined in 4.03 and 4.04.

When a LINE Jack for Connection to TOLL Line or Office is Provided

4.18 Connect the calling cord to a LINE jack. Ring on the connection as outlined in 4.19 or 4.20. When testing most cords ring as outlined in 4.19. However, test one cord by ringing with the hand generator as outlined in 4.20.

4.19 Operate the RING CALL key and observe that the drop (SD-32065-01 Only) associated with the LINE jack operates or the lamp (SD-32093-01 Only) lights.

4.20 Operate the HAND GEN (hand generator) key. Operate the RING CALL key and crank the hand generator. Observe that the LINE drop operator or the LINE lamp lights.

4.21 Restore the RING CALL key and the HAND GEN key, if it was operated. Remove the cord from the LINE jack and restore the drop if equipped.

When a LINE Jack for Connection to Toll Line or Office is Not Provided

4.22 Connect the dial hand test set to the tip and ring of the calling cord plug. Operate the C button of the test set.

4.23 Test the ringing circuit as outlined in 4.24 or 4.25. Test most cords by ringing as outlined in 4.24. However, test one cord by ringing as outlined in 4.25.

4.24 Operate the RING CALL key and observe that ringing tone is heard in the test set.

4.25 Operate the HAND GEN key. Operate the RING CALL key and crank the hand generator. Observe that ringing tone is heard in the test set.

4.26 Restore the RING CALL key and the HAND GEN key, if it was operated. Disconnect the dial hand test set.

(C) A, B and D or A, B, C and D Jacks with Completing Cords

4.27 Connect a calling cord to a CALL jack. Remove the operator's handset unless an operator's headset is provided. Operate the cord TALK and DIAL key to the DIAL position and dial the operator (See 1.06). Observe that the BY lamp lights. If two BY lamps light simultaneously, when the oper-

ator answers verify the number of the trunk from the operator.

4.28 Operate the TALK and DIAL key to the TALK position. Inform the operator that a test is being made, to watch for a disconnect lamp but to remain on the connection.

4.29 Block the B relay operated, in order to ground the sleeve of the answering cord. Connect the answering cord in the trunk A jack. Observe that the BY lamp remains lighted and that the talking connection is opened to the to the operator. Remove the blocking tool from the B relay.

4.30 Remove the calling cord from the CALL jack and connect it to the B jack. Remove the answering cord from the A jack. Request the operator to remain on the connection.

4.31 Remove the calling cord from the B jack and connect it to the D jack (See 1.07). Observe that the BY lamp is extinguished.

4.32 If there is a C jack in the jack group request the operator to remain on the Connection and proceed as outlined in 4.33. If there is no C jack in the jack group, request the operator to disconnect and proceed as outlined in 4.35.

4.33 Remove the calling cord from the D jack. Observe that the BY lamp lights.

4.34 Connect the answering cord in the C jack. Check that the operator is on the connection and request her to disconnect.

4.35 Remove the calling or answering cord from the jack to which it is connected and restore the TALK key.

4.36 Busy the jacks tested by inserting a No. 258C or D plug in the B jack.

4.37 Test the next group to A, B, D or A, B, C, D jacks as outlined above.

4.38 When the last idle trunk in an A, B, D or A, B, C, D jack group is seized for test, remove the make busy plugs from all B jacks.

4.39 After testing the last jack group, restore any trunks to service which were busied as covered by 1.06 or 1.07.

(D) A, B and D or A, B, C and D Jacks with Emergency Cord, when Completing Cords are not Installed

4.40 Remove the receiver or hand set of the telephone associated with the emergency cord. Connect the emergency cord to a CALL jack and dial the operator (See 1.06). Observe that the BY lamp lights. If two BY

lamps light simultaneously, when the operator answers verify the number of the trunk from the operator.

4.41 Inform the operator that a test is being made and to remain on the connection.

4.42 Remove the cord from the CALL jack and connect it to the B jack. Observe that the BY lamp remains lighted. Request the operator to remain on the connection.

4.43 Remove the cord from the B jack and connect it to the D jack (See 1.07). Observe that the BY lamp is extinguished.

4.44 If there is a C jack in the jack group request the operator to remain on the connection and proceed as outlined in 4.45. If there is no C jack in the jack group, request the operator to disconnect and proceed as outlined in 4.47.

4.45 Remove the cord from the D jack and observe that the BY lamp lights.

4.46 Connect the cord to the C jack. Check that the operator is on the connection and request her to disconnect.

4.47 Disconnect the cord from the jack and replace the receiver or hand set.

4.48 Busy the jacks tested by inserting a No. 258C or D plug in the B jack.

4.49 Test the next group of A, B, D or A, B, C, D jacks as outlined above.

4.50 When the last idle trunk in an A, B, D or A, B, C, D jack group is seized for test, remove the make busy plugs from all B jacks.

4.51 After testing the last jack group, restore any trunks to service which were busied as covered by 1.06 or 1.07.

(E) C and D Jacks of Incoming Trunks

4.52 Contact the distant office, which controls the incoming trunks, over an outgoing trunk or other telephone facilities between the two offices.

4.53 Furnish the operator or test man at the distant office with the numbers of the trunks which have C and D jacks at the incoming end. Request the operator to originate calls from the outgoing jacks of these trunks or if the trunks are outgoing from switch levels, request the test men to set up test calls over the trunks from the switches.

4.54 When a BY lamp associated with a C jack lights, insert an answering cord or the emergency cord in the C jack. Observe that the BY lamp is extinguished.

4.55 Remove the receiver or handset of the operator's telephone unless an operator's headset is provided. Operate the TALK and DIAL key to the TALK position if an answering cord is used. Request the operator or test man to stay on the connection.

4.56 Remove the cord from the C jack and observe that the BY lamp lights. Connect the cord to the D jack (See 1.07) and observe that the BY lamp is extinguished.

4.57 Request the operator or test man to disconnect and call in on the next trunk group, which is equipped with a C and D jack at the incoming end.

4.58 Remove the cord from the D jack. Restore the TALK key and replace the receiver or handset.

4.59 Restore any trunks to service which were busied, as covered by 1.07.

(F) Emergency Manual Circuits

4.60 Dial the number of the emergency subscriber's line from the office telephone. If the line is busy discontinue the test until the line is idle. If the line is idle inform the subscriber, if the call is answered, that a test is being made and to disconnect.

4.61 Operate the EMG MAN (emergency manual) key. Again dial the number of the subscriber's line from the office telephone. Observe that the INCPT drop (SD-32065-01 Only) operates or the INCPT lamp (SD-32093-01 Only) lights.

4.62 Insert an answering cord or the emergency cord in the INCPT jack. Observe that ringing is tripped. If an answering cord is used observe that the cord lamp lights. Restore the drop (SD-32065-01 Only). Observe that the INCPT lamp is extinguished (SD-32093-01 Only).

4.63 Remove the cord from the INCPT jack and disconnect at the office telephone.

4.64 Short circuit the subscribers line at the line terminals on the distributing frame at which the subscriber's cable pair terminates. Observe that the SUB drop (SD-32065-01 Only) operates or the SUB lamp (SD-32093-01 Only) lights.

4.65 Operate the NA key (SD-32065-01 Only) momentarily and observe that the night alarm bell rings.

4.66 Insert an answering cord or the emergency cord in the SUB jack. Observe that the cord lamp lights if an answering cord is used or that the (B) relay of the emergency cord operates. Observe that the SUB lamp is extinguished (SD-32093-01 Only). Restore the drop (SD-32065-01 Only).

4.67 Remove the cord from the SUB jack and, the short circuit from the subscriber line. Restore the EMG MAN key.

(G) Emergency Toll Circuits

4.68 Connect either end of a completing cord or the emergency cord to the MON jack. Remove the receiver or handset of the operator's telephone unless an operator's headset is provided. If a completing cord is used operate the TALK and DIAL key to the TALK position.

4.69 If the line is busy discontinue the test. If the line is idle remove the cord from the MON jack and insert it in the LINE jack.

4.70 Operate the EMG TOLL (emergency toll) key. If the emergency cord is used crank the hand generator, with the receiver or handset replaced during ringing. If the completing cord is used operate the RING key for about two seconds. Observe that the line drop operates (SD-32065-01 Only) or the line lamp lights (SD-32093-01 Only). Request the operator to stay on the connection.

4.71 Operate the NA key (SD-32065-01 Only) momentarily and observe that the night alarm bell rings. Restore the drop.

4.72 Remove the cord from the LINE jack and insert it in the MON jack. Request the operator to disconnect.

4.73 Remove the cord from the MON jack and restore the EMG TOLL key.

(H) Local or Office Telephone Multiple

4.74 Connect a calling cord or the emergency cord to the CALL jack. If a calling cord is used operate the TALK and DIAL key to the TALK position. Remove the receiver or handset of the operator's telephone unless an operator's headset is provided. Observe that dial tone is heard. Remove the cord from the CALL jack.

4.75 Use a D-81763 dial hand test set and dial the office or local telephone number from an idle selector or connector or use a D-81760 dial hand test set and dial the number from a non-working equipped line terminal at the distributing frame.

4.76 If the local telephone circuit is dialed, observe that the LOC TEL drop (SD-32065-01 Only) operates or the lamp (SD-32093-01 Only) lights during the ringing interval.

4.77 Operate the NA key (SD-32065-01 Only) momentarily and observe that the night alarm bell rings.

4.78 Connect an answering cord or the emergency cord to the ANS jack. Observe

that ringing is tripped and if the local telephone was called that the lamp is extinguished (SD-32093-01 Only). Restore the drop (SD-32065-01 Only). If an answering cord is used observe that the cord lamp lights. Remove the cord from the ANS jack.

4.79 Disconnect the dial test set.

(I) Off Premise Circuits

4.80 Using a P3E cord at the emergency position, patch the B off premise jack to a B jack of an office trunk circuit.

4.81 Connect a W2CF cord to the A jack of the off premise circuit. Connect the D-81760 dial hand test set to connecting clips attached to the W2CF cord.

4.82 Check with the assistant at the off premise station that the buzzer operated and was silenced when the call was answered.

4.83 Request the assistant to disconnect, to originate a call to the operator office and then to come back on the connection to the emergency position.

4.84 The assistant at the off premise station shall proceed as follows: Replace the handset, operate the CALL OPR (call operator) key and again remove the handset. Inform the operator that a test is being made and request her to disconnect. Restore the CALL OPR key. Inform the test man at the emergency position that the test is completed.

4.85 Disconnect the P3E cord from the B jacks at the emergency position. Disconnect the W2CF cord and the dial hand test set from the A jack and connect the W2CF cord to the D jack of the off premise circuit.

4.86 With the No. 528 receiver connected to ground, check for battery on the tip of the cord. Connect the D-81760 dial hand test set to the connecting clips attached to the W2CF cord.

4.87 Check with the assistant at the off premise station that the buzzer operated and was silenced when the call was answered. Request the assistant to remain on the connection.

4.88 Operate the C button of the D-81760 dial hand test set. With the No. 528 receiver connected to ground, check for battery on the ring of the W2CF cord.

4.89 Release the C button of the dial hand test set. With the No. 528 receiver connected to battery, check for ground on the sleeve of the A jack of the off premise circuit.

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4.90 Request the assistant to disconnect and then to originate a call.

4.91 The assistant at the off premise station shall proceed as follows. Replace the handset, operate the CALL OPR key and again remove the handset. Check the talking circuit to the test man at the emergency position.

4.92 Request the assistant to remain on the connection and operate the C button of the dial hand test set. With the No. 528 receiver connected to ground, check for battery on the ring of the W2CF cord.

4.93 Request the assistant to disconnect and to restore the CALL OPR key. Remove the W2CF cord from the jack.

(J) Radio Telephone Jacks

4.94 Connect an answering cord or an emergency cord in the RADIO jack.

4.95 Connect a dial hand test set across the terminals on the connecting block at which the leads from the RADIO jack terminate in the office.

4.96 If an answering cord is used observe that the cord lamp lights.

4.97 If an emergency cord is used crank the hand generator with the C button of the test set operated. Observe that ringing is heard in the receiver.

4.98 Remove the cord from the RADIO jack and disconnect the dial hand test set.

4.99 Test the OW jack as outlined above for the RADIO jack.

(K) Ringing Start Feature when the Ringing Power Plant is Arranged to Operate on a Start Stop Basis

4.100 Connect the dial hand test set with the C button operated, to the tip and ring of the plug of a completing cord and operate the RING key of the cord.

4.101 If ringing tone is not heard in the dial hand test set proceed as outlined in 4.102. If ringing tone is heard, wait until it stops and then proceed as outlined in 4.102.

4.102 Operate the BAT key to the REG position. Observe that ringing tone is heard in the dial hand test set. Restore the BAT key.

4.103 Repeat the tests outlined in 4.101 and 4.102, in order to check that the ringing power plant is started from the operation of the BAT key instead of from some other source.

(L) Emergency Battery

4.104 Using two No. 893 cords connect the voltmeter (See 2.08) across the emergency battery fuses.

4.105 Operate the BAT TST (battery test) key, (SD-32065-01 Only) momentarily or connect the 191 ohm leg of the 19MN resistance momentarily in multiple with the voltmeter (SD-32093-01 Only) and observe that the voltmeter reading is not less than 42 volts.

4.106 Disconnect the No. 893 cords.

5. REPORTS

5.01 The required record of these tests should be entered on the proper form.