TOLL SUBSCRIBER LINES (OPEN LOOP)

LINE TERMINATING EQUIPMENT

TELETYPEWRITER SWITCHBOARDS NOS. 3 AND 3A

1. GENERAL

1.01 This section describes tests of toll subscriber line (open loop) terminating equipment associated with the teletypewriter switchboards Nos. 3 and 3A. The tests are as follows:

(A) Line Terminating Equipment Associated with a 126B1 or 128A1 or 128C1 Station Set Using Test Trunk Circuit SD-70149-01

(B) Line Terminating Equipment Associated with a 126B1 or 128A1 or 128C1 Station Set Using Test Trunk Circuit SD-70029-01 or SD-70041-01

1.02 Tests (A) and (B) require two persons, one at the testboard and one at the switchboard, usually an operator.

1.03 In connection with test (B), the supervisory signals are received at the switchboard and therefore, a talking circuit between the switchboard and testboard should be established at the time this test is being made to check with the operator that the proper supervisory signals are received on the cord circuit.

2. APPARATUS

Test (A)

2.01 Test Trunk Circuit SD-70149-01.

Test (B)

2.02 Test Trunk Circuit SD-70029-01 or SD-70041-01.

Tests (A) and (B)

2.03 Toll Subscriber Line Test Circuit SD-70152-01.

2.04 P1B Cords equipped with No. 347A Plugs (J99211A-L7) (as required).

2.05 Splitting and Turnover Jack Circuit SD-62889-01, Fig. 5.

3. METHOD

(A) Line Terminating Equipment Associated with a 126B1 or 128A1 or 128C1 Station Set Using Test Trunk Circuit SD-70149-01

3.01 Connections: Communicate with the switchboard operator and request that the plug of the test trunk circuit be inserted into the jack of the toll subscriber line to be tested. The GUARD and SUPV lamps associated with the test trunk circuit at the testboard will light when the connection has been established. Connect the testboard teletypewriter to the TST jack of the test trunk circuit.

Note: Should a call be originated on the toll subscriber line which is under test, the SUPV lamp associated with the test trunk will flash and may be extinguished by momentary operation of the RCL RST key of the test trunk circuit.

3.02 Connect the TLX jack of the toll subscriber line test circuit to the TGEQ jack of the telegraph line circuit associated with the toll subscriber line under test, using a P1B cord. If the TGEQ jack is not within patching distance of the TLX jack, an interposition trunk to the telegraph line board should be used, using another P1B cord.

Note: If the toll subscriber line under test is equipped with a 128A1 station set being operated on a two-path polar basis the receiving line should be connected to the TLX jack due to the supervision taking place over the receiving line.

3.03 Station Ringing Test: Momentarily depress the RG key associated with the test trunk circuit. The STA lamp associated with the toll subscriber line test circuit at the testboard should light while the RG key is depressed.

3.04 Station Answer Test: Operate the 126B1 ON, 128A1 ON or 128C1 ON key, associated with the test circuit, depending upon the type station set used on the toll subscriber line under test. The SUPV lamp associated with the test trunk should flash. Momentarily operate the RCL RST key of the test trunk circuit. The associated SUPV lamp should be extinguished.

3.05 Receiving a Break Signal: Operate the BREAK key associated with the test circuit for about two seconds. The SUPV lamp associated with the test trunk circuit should remain extinguished. The testboard teletypewriter should run "open" for about two seconds.

3.06 Disconnect Test: Momentarily operate the DISC key associated with the test circuit. The SUPV lamp associated with the test trunk circuit should light.

3.07 Test of Calling-In (D and E) Relays - Lines Equipped With 126B1 or 128A1 Station Sets: Communicate with the switchboard operator and request that the plug of the test trunk circuit be removed from the jack of the toll subscriber line under test and when the associated line lamp flashes, to reinsert the plug of the test trunk circuit into the jack. The GUARD lamp of the test trunk circuit will be extinguished when the plug of the test trunk circuit has been removed. The SUPV lamp will flash and should be extinguished by the momentary operation of the RCL RST key.

3.08 Operate the NO key associated with the test circuit. Under this condition the current applied to the D and E relays should be sufficient to cause them to operate, although a non-operate condition is applied to the terminal repeater. The line lamp associated with the toll subscriber line under test should flash at the switchboard and when the operator reconnects the test trunk, the GUARD lamp of the test trunk circuit at the testboard should light. Restore the NO key to normal.

Note: If the toll subscriber line under test is being operated on a two-path polar basis, it is necessary to temporarily open the circuit through the (N) resistance.

3.09 Operate Test of Calling-In (C) Relay - Lines Equipped With 128C1 Station Set: Restore the 128C1 ON key to normal. Communicate with the switchboard operator and request that the plug of the test trunk circuit be removed from the jack of the toll subscriber line under test and when the associated line lamp lights, to reinsert the plug of the test trunk circuit into the jack. The GUARD lamp of the test trunk circuit at the testboard will be extinguished when the plug of the test trunk circuit has been removed. The SUPV lamp will flash and should be extinguished by the momentary operation of the RCL RST key.

3.10 Operate the 128C1 ON key associated with the test circuit. The line lamp associated with the toll subscriber line under test should light at the switchboard and when the operator reconnects the test trunk the GUARD lamp of the test trunk circuit at the testboard should light.

3.11 Non-Operate Test of Calling-In (C) Relay for 128C1 Station Set: Operate the DISC key. The SUPV lamp will light. While the DISC key is still operated, operate the NO key. The SUPV lamp should remain lighted. Restore the DISC and NO keys to normal. The SUPV lamp will flash and should be extinguished by the momentary operation of the RCL RST key.

3.12 Break Test: Remove the connections between the TLX jack of toll subscriber test circuit and the TGEQ jack of the telegraph line circuit and connect the TLX jack to the TOL jack and the TGEQ jack to the ST jack, respectively, of a splitting and turnover jack circuit.

3.13 Insert the plug of the TEST cord of the position test circuit into the SL jack of the splitting and turnover jack circuit and operate the associated TEST key. Note the meter reading, which indicates the normal marking current.

3.14 For the 128A1 station set the meter should read positive, (to the right) approximately 40 to 80 mils; for the 126B1 set the meter should read negative, (to the left) approximately 40 to 80 mils; for the 128C1 set the meter should read negative, (to the left) approximately 10 mils.

3.15 Operate the BREAK key associated with the testboard teletypewriter. Note the meter reading.

3.16 For the 128A1 station set the meter should read negative, (to the left) approximately 10 to 15 mils; for the 126B1 set the meter should read positive, (to the right) approximately 0 to 15 mils; for the 128C1 set the meter should read negative, (to the left) approximately 20 mils.

Note: For the 128C1 station set the meter will fluctuate momentarily to 10 mils about once every 7 seconds during the time the BREAK key is held operated.

3.17 Disconnection: Remove the P1B cords from the TLX jack of the toll subscriber line test circuit, the TGEQ jack of the telegraph line circuit associated with the toll subscriber line under test and the splitting and turnover jack circuit. Remove the plug of the TEST cord from the SL jack and restore all keys to normal. If the connection is made through an interposition trunk this cord should also be removed.

3.18 Communicate with the switchboard operator and request that the plug of the test trunk circuit be removed from the jack of the toll subscriber line under test. The GUARD lamp of the test trunk circuit is extinguished. The SUPV lamp will flash and should be extinguished by momentary operation of the RCL RST key.

(B) Line Terminating Equipment Associated with a 126B1 or 128A1 or 128C1 Station Set Using Test Trunk Circuits SD-70029-01 or SD-70041-01

3.19 Connections: Connect the TLX jack of the toll subscriber line test circuit to the TGEQ jack of the telegraph line circuit associated with the toll subscriber line under test, using a P1B cord. If the TGEQ jack is not within patching distance of the TLX jack, an interposition trunk to

the telegraph line board should be used, using another P1B cord.

Note: If the toll subscriber line under test is equipped with a 128A1 station set being operated on a two-path polar basis the receiving line should be connected to the TLX jack due to the supervision taking place over the receiving line.

3.20 Communicate with the switchboard operator over the testing and two-way trunk circuit and request that the toll subscriber line to be tested be connected to the testing and two-way trunk circuit. Request the operator to ring the station.

3.21 Station Ringing Test: The STA lamp associated with the test circuit at the testboard should light while the ringing is being applied.

3.22 Station Answer Test: Operate the 126B1 ON, 128A1 ON or 128C1 ON key, associated with the test circuit, depending upon the type station set used on the toll subscriber line under test. Communicate with the operator and verify that the supervisory lamp of the cord connected to the CALL TRK jack of the testing and two-way trunk circuit is extinguished.

3.23 Receiving a Break Signal: Operate the BREAK key associated with the test circuit for about two seconds. Verify with the operator that the cord supervisory lamp remains extinguished. The testboard teletypewriter should run "open" for about two seconds.

3.24 Disconnect Test: Momentarily operate the DISC key associated with the toll subscriber line test circuit. Communicate with the operator and verify that the cord supervisory lamp lights.

3.25 Test of Calling-In (D and E) Relays - Lines Equipped With 126B1 or 128A1 Station Sets: Communicate with the switchboard operator and request that the plug of the cord circuit be removed from the jack of the toll subscriber line under test and when the associated line lamp flashes, to reinsert the plug of the cord circuit into the jack.

3.26 Operate the NO key associated with the test circuit. Under this condition the current applied to the D and E relays should be sufficient to cause them to operate, although a non-operate condition is applied to the terminal repeater. Communicate with the operator and verify that the line lamp associated with the toll subscriber line under test, flashes. Restore the NO key to normal.

Note: If the toll subscriber line under test is being operated on a two-path polar basis, it is necessary to temporarily open the circuit through the (N) resistance.

3.27 Operate Test of Calling-In (C) Relay - Lines Equipped With 128C1 Station Set: Restore the 128C1 ON key to normal. Communicate with the switchboard operator and request that the plug of the cord circuit be removed from the jack of the toll subscriber line under test and when the associated line lamp lights, to reinsert the plug of the cord circuit into the jack.

3.28 Operate the 128C1 ON key associated with the test circuit. Communicate with the operator and verify that the line lamp associated with the toll subscriber line under test lights.

3.29 Non-Operate Test of Calling-In (C) Relay For 128C1 Station Set: Operate the DISC key. Communicate with the operator and verify that the cord supervisory lamp lights. While the DISC key is still operated, operate the NO key. Verify with the operator that the cord supervisory lamp remains lighted. Restore the DISC and NO keys to normal.

3.30 Break Test: Remove the connections between the TLX jack of toll subscriber test circuit and the TGEQ jack of the telegraph line circuit and connect the TLX jack to the TOL jack and the TGEQ jack to the ST jacks, respectively, of a splitting and turnover jack circuit.

3.31 Insert the plug of the TEST cord of the position test circuit into the SL jack of the splitting and turnover jack circuit and operate the associated TEST key. Note the meter reading, which indicates the normal marking current.

3.32 For the 128A1 station set the meter should read positive, (to the right) approximately 40 to 80 mils; for the 126B1 set the meter should read negative, (to the left) approximately 40 to 80 mils; for the 128C1 set the meter should read negative, (to the left) approximately 10 mils.

3.33 Operate the BREAK key associated with the testboard teletypewriter. Note the meter reading.

3.34 For the 128A1 station set the meter should read negative, (to the left) approximately 10 to 15 mils; for the 126B1 set the meter should read positive, (to the right) approximately 0 to 15 mils; for the 128C1 set the meter should read negative, (to the left) approximately 20 mils.

Note: For the 128C1 station set the meter will fluctuate momentarily to 10 mils about once every 7 seconds during the time the BREAK key is held operated.

3.35 Disconnection: Remove the P1B cords from the TLX jack of the toll subscriber line test circuit, the TGEQ jack of the telegraph line circuit associated with the toll subscriber line under test and the

splitting and turnover jack circuit. Remove the plug of the TEST cord from the SL jack and restore all keys to normal. If the connection is made through an interposition trunk this cord should also be removed.

3.36 Communicate with the switchboard operator and request that the connections to the testing and two-way trunk and toll subscriber line be removed. The connections to the testing and two-way trunk at the testboard should also be removed and all keys restored to normal.

4. REPORTS

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