TESTS AND INSPECTIONS AT TIME OF INSTALLATION
755A PBX

1. GENERAL

1.01 This section covers tests and inspections that are required when the PBX is installed.

1.02 This section is reissued to clarify portions of the tests covered in the previous issue and to include additional testing information. Since this issue covers a general revision, arrows ordinarily used to indicate changes have been omitted.

1.03 The completed installation should be inspected in accordance with the requirements covered in the general installation practices.

1.04 Assistance is required when making the tests covered in (D), (E), (G), and (H). Two persons are required at the PBX when making tests (D) and (G) and the assistance of a test deskman is required when making tests (E), (G), and (H).

1.05 When required to make tests (E), (G), and (H) in an area which is not equipped with test bureau facilities, arrangements for assistance in making these tests may be arranged for with the Traffic Department management.

1.06 The ground return feeder arrangement should not be used in connection with new installations or when additions or changes in existing PBX facilities are involved, unless authorized by specific local instructions.

2. TOOLS

2.01 Dial Hand Test Set No. 1011B, or equivalent.

2.02 One W1U Cord, or equivalent.

2.03 Weston model 280 Voltammeter having voltage scales of 60, 30, and 3 volts and current scales of 15, 3, and 0.3 amperes and equipped with cords, or equivalent.

3. INSPECTION OF CROSS-CONNECTING TERMINAL

3.01 The terminal box should be firmly mounted.

3.02 The connecting blocks and fanning strips or binding post chamber should be firmly mounted and properly stenciled.

3.03 The cross-connections and wire to stations should be neatly dressed, and all connections should be properly terminated.

3.04 The interior of the terminal should be clean and free from spare wire and wire clippings, and the nuts on spare terminal lugs should be turned down finger tight.

4. INSPECTION OF CABLES

4.01 The cables should be securely fastened to the wall or ceiling when run on the surface, and they should be properly protected with two layers of friction tape where they may come in contact with the PBX or where they pass around such obstacles as gas pipe, electric light conduit, metal work, and foreign telephone, telegraph, and signal conductors, if minimum required separations can not otherwise be obtained.

5. INSPECTION OF PBX

5.01 The PBX should stand level.

5.02 The interior of the cabinet should be clean and free from wire clippings, solder splashes, etc., and the exterior should present a neat appearance without unsightly scratches or other defects.

5.03 The entering cable should be properly fastened to the form supports.

5.04 The terminal lugs and terminal strips should be free from wire clippings and loose bits of solder, and the individual cable conductors should be carried through the proper fanning holes and be properly terminated.

5.05 The flexible local power cables and inter-cell connectors should be properly connected to the storage battery terminals, and the connections on the charging resistors should be tight.

5.06 Each of the white battery charge indictors should be at the top of its cage.

5.07 All relay covers should be in place.

5.08 The proper fuse should be in place in each of the working circuits.

5.09 The spare fuse container should be equipped with the proper fuses.

5.10 The SD drawings and CD sheets should be complete and filed in the drawing container.

6. RELAY TESTS

6.01 No mechanical adjustment or electrical tests are required to be made on the relays in the PBX at the time of installation if no operating failures occur during operational tests. If it is necessary to test or readjust any relays, the requirements for the particular relays involved should be met.

7. TEST FOR CROSS WITH FOREIGN GROUND

7.01 When a metallic return central office battery supply is employed, ascertain by the following test that the PBX battery is free of foreign ground.

7.02 Disconnect the positive and negative charging conductors at a convenient place such as the cross-connecting terminal or terminal strip "B" in the PBX.

7.03 Connect the (—) terminal of the voltmeter to the (—) terminal of the PBX battery. Then, connect the (+) terminal of the voltmeter to a local ground such as a water pipe. Note that the needle of the voltmeter is not deflected.

7.04 Disconnect the voltmeter and reconnect the charging conductors.

8. CIRCUIT OPERATION TESTS

(A) Battery Charging Tests

8.01 Connect the meter cords to the 3-ampere scale of the ammeter. Connect the (+) terminal of the ammeter to the top post of the charge fuse holder and the (—) terminal of the ammeter to the bottom post of the charge fuse holder.

8.02 Remove the charge fuse.

8.03 Operate the CC relay in the charge-discharge circuit if it is nonoperated. The ammeter should indicate a charging rate in the order of 100 milliamperes. Release the CC relay. The ammeter should indicate a charging rate of between 350 and 500 milliamperes, which is usually the proper charging rate for the PBX. A method for operating and releasing the armature of the CC relay is provided in 8.04.

8.04 The CC relay may be operated and released, as required, in the following manner:

(a) To operate the relay, operate the armature of the relay manually.

(b) To release the relay, depress the L button on a key telephone set and remove the hand set from its mounting. The hand set should be left off the mounting during the test to prevent the relay from reoperating.

8.05 Replace the fuse in the charge fuse holder and disconnect the ammeter.

(B) Alarm Tests

8.06 The alarm circuit should be tested in accordance with 550-550-500.

(C) Link and Link Allotter Tests

8.07 Link and link allotter circuits should be tested in accordance with 550-550-590.

(D) Station Line Tests

8.08 When making these tests, an assistant will be required to perform certain operations at each station while the tester remains at the PBX cabinet to observe that the equipment functions properly and to direct the assistant.

8.09 The tester should establish a connection to any idle keyless station line except the one at which the assistant is located, by connecting the dial hand test set, with its switch in the MON position, to the T and R terminals on terminal strip A or B; care being taken that the cord tips do not touch adjacent terminals.

Note: When no keyless station is available, establish a connection to a key station line in the above manner, and using a No. WIU cord, strap the L and G terminals of the key station circuit together.

8.10 Operate the CO2 and CO3 keys on the fuse panel to remove links 2 and 3 from service.

8.11 Operate the switch of the dial hand test set to the TALK position and dial the station at which the assistant is located. Audible ringing tone should be heard in the receiver during the ringing interval.

8.12 The assistant at the called station should ascertain that the bell rings properly before answering the call.

8.13 After answering the call the assistant and the tester should complete a talking test and the tester should inquire as to the results of the tests, from the assistant.

8.14 Restore the CO2 key to normal, operate the CO1 key, and repeat the procedure in 8.11 to 8.13.

8.15. Restore the CO3 key to normal, operate the CO2 key, and repeat the procedure in 8.11 to 8.13.

8.16 Upon completion of the above tests restore each CO key to its normal position.

8.17 Tests covered in 8.10 to 8.15 inclusive, should be conducted from each key and keyless station.

(E) Trunk Circuit Tests

8.18 At the time the trunk circuit tests are conducted, the usual talking, dialing, and other station tests covered in the Bell System Practices should also be made.

8.19 The following signal, operation, and holding tests should be made on each trunk at each key station.

8.20 Originate a call to the test desk. Advise the test deskman that ringing signal, talking, and holding tests are being conducted, and request a call on the trunk to be tested.

8.21 When the test deskman calls, note that the ringer operates properly. If a common ringer is provided, check its operation. Also, where trunk lamps are provided ascertain that they flash properly.

8.22 Depress the trunk button associated with the trunk on which the test deskman is calling and remove the hand set from its mounting. Note that ringing stops and that the associated trunk lamp ceases to flash and remains steadily lighted.

8.23 Make a talking test and request the test deskman to remain on the trunk to facilitate making a holding test.

8.24 Momentarily operate the H button of the station set; observe that the trunk button releases and that the talking connection has been opened.

8.25 Depress the L button of the station set. When local dial tone is heard in the receiver, reoperate the trunk button and ask the test deskman if the holding circuit functioned properly.

8.26 Request the test deskman to call on each of the other trunks and repeat the tests covered in 8.21 to 8.25 on each of the trunks.

(F) Emergency Transfer Key Tests

8.27 The following tests should be made from the station associated with the emergency transfer key.

8.28 Operate the emergency transfer key, remove the hand set from its mounting, and originate a call to the test deskman. When the test deskman answers, depress all buttons on the telephone set, one after the other, and observe that no interruption is caused by their operation.

8.29 Request a ring back on the trunk and replace the hand set on its mounting.

8.30 Observe that the station ringer functions properly on the recall. Remove the hand set from its mounting, request the test deskman to release the connection, and replace the hand set on its mounting. Leave the emergency key in the operated position.

8.31 At a nearby station that is not arranged for restricted service, depress the trunk button that is associated with the trunk which is connected to the emergency transfer key. Remove the hand set from its mounting and observe that no connection can be made to the trunk.

8.32 Replace the hand set on its mounting and restore the emergency transfer key to its normal position.

(G) Control Key Tests

8.33 The tester should locate himself at the control station and the assistant at a keyless station connected to the control key.

8.34 When ready to test, the assistant should dial the number of the station at which the control key is located. The tester should answer the call and request the assistant to stay on the connection.

8.35 The tester should then depress a trunk button and originate a call to the test desk. When the call is answered advise the test deskman that the assistant is at a keyless station and is being connected to the trunk; then operate the control key to the position associated with the keyless station being tested, hold it operated for about one second, and then release it. Remain on the connection until the test deskman and the assistant have started to proceed with the test. Then restore the hand set to its mounting to disconnect from the connection.

8.36 At the control station, depress another trunk button and remove the hand set from its mounting to ascertain that the control station has been released from the trunk connected to the keyless station. The operator should answer or dial tone should be heard.

8.37 The assistant, upon completion of the test at the keyless station, should inform the tester.

8.38 Repeat tests covered in 8.33 to 8.37 on each keyless station connected to the control key.

(H) Trunk Connection Tests

8.39 Call the test deskman in the usual manner. Instruct him to hold the connection to facilitate your making tests and inform him that you will advise him when the tests are completed. Leave the hand set off its mounting.

8.40 At another key station that is arranged for lockout or nonlockout service, depress the button of the trunk being tested, remove the hand set from its mounting, observe that the proper operation as given below is obtained, and restore the hand set to its mounting.

(a) If the station is arranged for lockout service, it should not be connected to the trunk. Busy tone should be heard in the receiver.

(b) If the station is arranged for nonlockout service, it should be connected to the trunk.

8.41 Test each of the key stations arranged for lockout and nonlockout service in accordance with 8.40.

8.42 Return to the station at which the call to the test deskman was originated and operate the hold button. Go to a nearby key station, depress the button of the trunk being tested, and remove the hand set from its mounting. Return to the original station, depress the button of the trunk being tested, and observe that the trunk functions in accordance with 8.40.

8.43 Inform the test deskman when the test is completed and restore the equipment to normal.

8.44 Conduct the tests covered in 8.39 to 8.43 on all the trunks.

8.45 Each key station that is arranged for restricted service should be tested by attempting to place a call on each trunk. When a trunk button is depressed and the hand set is removed from its mounting, the station should not be connected to the trunk. Busy tone should be heard in the receiver.