

## CORD CIRCUITS MANUAL TESTS 555, 556A AND 557A PBX

### 1. GENERAL

- 1.01 This section describes a method of making manual tests on the cord circuits of the 555, 556A, and 557A PBX.
- 1.02 This section is reissued to include the 557A-PBX. Since this reissue covers a general revision, the arrows ordinarily used to indicate changes have been omitted.
- 1.03 To avoid the effects of clicks when performing tests, the test receiver should be kept away from the ear.
- 1.04 Ground for these tests may be obtained by connection to the metal frame of the PBX.
- 1.05 Battery for these tests may be obtained by connection to the miscellaneous terminal strip at the bottom of the switchboard, unless otherwise noted in the test.

### 2. APPARATUS

#### Tests A, C, E, F, G, and H

- 2.01 Test receiver—No. 716E receiver attached to a W2AB cord equipped with two No. 360A tools (2W21A cord) and two KS-6278 tools.

#### Tests A, E, F, G, and H

- 2.02 Testing cords—Three W1U cords or equivalent.

#### Tests C, D, G, and H

- 2.03 Two spare station line circuits, each having its tip and ring terminals short-circuited.

**Note:** In the case of the 556A PBX with dial line circuits, block operated the CO relay of each of the two spare station lines and short-circuit the tip and ring of each line. If no spare line circuits are available, use two line circuits with the handset removed.

#### Tests A, C, and E

- 2.04 One spare station line circuit having its tip and ring contacts open.

**Note:** In the case of the 556A PBX with dial line circuit, block the CO relay operated.

#### Tests C and D

- 2.05 Attendant telephone set connected in the telephone set jacks of the PBX.

### 3. METHOD

#### A. Supervisory Relay Test

- 3.01 Using a W1U cord, connect ground to the sleeve of the STATION plug. Both cord supervisory lamps should light. Connect one clip of the test receiver to the tip of the STATION plug, and with the other clip, tap the ring of the STATION plug several times at the rate of approximately two times per second. Verify that the right cord lamp flashes satisfactorily.

**Note:** The flashing requirement of approximately two flashes per second is for maintenance purposes only, and in the event of a failure, the relay should be readjusted to meet this requirement.

- 3.02 Disconnect the W1U cord and the test receiver.
- 3.03 Plug the STATION cord into an idle station line jack. Verify that both supervisory lamps light.
- 3.04 Connect one clip of a W1U cord to the tip of the TRUNK & STATION plug, and with the other clip, tap the ring of this plug several times at the rate of about two times per second. Verify that the left cord lamp flashes satisfactorily. (See note in 3.01.)
- 3.05 Disconnect the station plug and W1U cord.

#### B. Ringing Key Test

- 3.06 Insert the plug of the TRUNK & STATION cord into the jack of a station located near enough for its bell to be heard, and operate the RING LEFT key. Verify that the station bell rings. Substitute the STATION plug for the TRUNK & STATION plug, and using the RING RIGHT key, repeat the test. Verify that the bell rings.

- 3.07 Remove the STATION plug from the jack.

#### C. Test of TALK & DIAL Keys—Make Contacts and Sequence

- 3.08 Operate the TALK & DIAL key. Sidetone should be heard in the attendant receiver. Insert the STATION plug into a short-circuited station line jack. A click should be heard in the attendant receiver. Insert the TRUNK & STATION plug into the other short-circuited jack. A click should be heard in the attendant receiver.

- 3.09 Remove the plugs from the jacks.

- 3.10 Insert the STATION plug into a spare station line jack having its tip and ring contacts open. Connect the test receiver across the tip and ring of the TRUNK & STATION plug. A click should be heard in the test receiver. Operate and restore the TALK & DIAL key slowly several times. No clicks should be heard in the test receiver.

- 3.11 Disconnect the station cord and test receiver.

#### D. Test of Cords for Noise and Cutout

- 3.12 Operate the TALK & DIAL key and insert the STATION plug into one station line jack having the tip and ring short-circuited. With the attendant receiver held near the ear to listen for clicks, pull the cord directly downward, and downward at an angle to the right and left. Shake the cord. Hold the plug in the jack with one hand and grasp the cord with the other hand about 4 inches from the plug. Move the cord about the plug with a cranking motion. Turn the plug around in the jack, so the jack springs make contact at all possible points on the tip and ring of the plug. No clicks or noise should be heard in the attendant receiver.

- 3.13 Insert the TRUNK & STATION plug into the other station line jack having the tip and ring short-circuited. Repeat the test for the TRUNK & STATION cord, as described in 3.12.

- 3.14 Restore the TALK & DIAL key and remove plugs.

#### E. NIGHT & THRU DIAL Key Contacts and Cord Circuit Bridge Test

- 3.15 Insert the STATION plug into a spare station jack having its tip and ring open. Both cord circuit lamps should light. Operate the NIGHT & THRU DIAL key. Verify that the left cord lamp is extinguished.

- 3.16 Restore the key and remove the STATION plug.

- 3.17 Using W1U cords, connect battery to the tip and sleeve of the TRUNK & STATION plug. Connect one clip of the test receiver to ground, and tap the other clip to the ring of the TRUNK & STATION plug several times. Clicks should be heard in the test receiver. While still tapping, operate the NIGHT & THRU DIAL key. Clicks should no longer be heard in the test receiver.

- 3.18 Restore the key and disconnect the cords and test receiver.

#### F. Cord Test for Nonthrough Supervision Feature 555, 556A, or 557A PBX

- 3.19 Using a W1U cord, connect ground to the tip of the TRUNK & STATION plug. Connect one clip of the test receiver to battery and touch the other clip to the ring of the TRUNK & STATION plug. No click should be heard in the test receiver.

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3.20 Using another WIU cord, connect the sleeve of the TRUNK & STATION plug to the sleeve of the STATION plug of an idle cord circuit. Momentarily touch the free clip of the test receiver to the ring of the TRUNK & STATION plug. A click should be heard in the test receiver.

3.21 Hold the free clip of the test receiver on the ring of the STATION plug, and using a WIU cord, apply ground to the sleeve of the STATION plug. One click should be heard in the test receiver, but no series of clicks caused by self-interrupted relays should be heard. Remove the ground from the sleeve of the STATION plug. A click should be heard in the test receiver.

3.22 Disconnect the test equipment.

### G. Cord Test for Through Supervision (555 and 557A PBX Only)

3.23 Using a WIU cord, connect ground to the tip of the TRUNK & STATION plug. Connect one clip of the test receiver to battery and touch the other clip to the ring of the TRUNK & STATION plug. No click should be heard in the test receiver.

3.24 Using another WIU cord, connect the sleeve of the TRUNK & STATION plug to the sleeve of the STATION plug. Operate and restore the TALK & DIAL key. Momentarily touch the free clip of the test receiver to the ring of the TRUNK & STATION plug. A click should be heard in the test receiver.

3.25 Holding the free clip of the test receiver on the ring of the TRUNK & STATION plug, connect the STATION plug into a spare station line jack having its tip and ring short-circuited. Remove the STATION plug and tap the free clip of the test receiver to the ring of the TRUNK & STATION plug. No clicks should be heard in the test receiver.

3.26 Operate and restore the TALK & DIAL key and then momentarily touch the free clip of the test receiver to

the ring of the TRUNK & STATION plug. A click should be heard in the test receiver.

3.27 Disconnect the WIU cords and the test receiver.

### H. Cord Test for Automatic Discrimination (555 and 557A PBXs Only)

3.28 To test the circuit for through supervision on outgoing calls, the procedure in Test G should be followed.

3.29 To test the circuit for nonthrough supervision on incoming calls, proceed as follows. Using a WIU cord, connect ground to the tip of the TRUNK & STATION plug. Connect one clip of the test receiver to battery and momentarily touch the other clip to the ring of the TRUNK & STATION plug. No click should be heard in the test receiver.

3.30 Using another WIU cord, connect the sleeve of the TRUNK & STATION plug to the sleeve of the STATION plug of an idle cord circuit. Momentarily touch the free clip of the test receiver to the ring of the TRUNK & STATION plug. A click should be heard in the test receiver.

3.31 Using another WIU cord, connect ground to the sleeve of the STATION plug and operate and release the associated RING RIGHT key. Momentarily touch the free clip of the test receiver to the ring of the STATION plug. One click should be heard in the test receiver, but no series of clicks caused by self-interrupted relays should be received.

3.32 Momentarily touch the free clip of the test receiver to the ring of the TRUNK & STATION plug. A click should be heard in the test receiver.

3.33 Disconnect the WIU cord from the sleeve of the STATION plug and touch the free clip of the test receiver to the ring of the TRUNK & STATION plug. A click should be heard in the test receiver.

3.34 Disconnect the WIU cords and the test receiver.