

**EXTENSION LINES  
RELAY, JACK AND LAMP CIRCUIT TESTS  
550B, 550C, 550SC, 551A, 551B, 551D AND 555 PBX**

1. GENERAL

1.01 This section describes a method of testing extension line circuits of the Nos. 550-B, 550-C, 550-SC, 551-A, 551-B, 551-D, and 555 PBX's.

1.02 This section is reissued to include Nos. 551-D and 555 PBX's in the extension line circuit tests. This is a general revision of the section, and therefore, arrows usually employed to indicate changes have been omitted.

1.03 The tests covered are:

- (A) Test of Line Lamp (Without Line Relay).
- (B) Test of Line Lamp and Line Relay.
- (C) Test of Extension Line Jack for Cut-Outs.
- (D) Test of Break Contacts of Extension Line Jack and Sleeve Circuit.
- (E) Test of Lamp Sockets for Battery Crosses.

1.04 In order to avoid the effects of resultant clicks when performing tests with a test receiver, the receiver should be kept away from the ear.

1.05 Ground for these tests may be established by connection to the metal cam of a cord circuit key of Nos. 550-B, 550-C, 550-SC, 551-A, 551-B and 551-D PBX's, or by connection to the metal framework of the No. 555 PBX.

1.06 When testing the two-party jack per station arrangement, used in telephone company business offices, make tests (A) and (B) on the ring jack only.

2. APPARATUS

- 2.01 No. 716E or No. 528 test receiver equipped with cords and clips (tests (A), (C), (D) and (E)).
- 2.02 No. W1U cord, or equivalent (tests (B), (C) and (D)).
- 2.03 Test Plug (123-B Gauge) equipped with a No. W3A cord or equivalent (tests (A), (B), (C) and (D)).
- 2.04 B2 lamp in a 38B lamp socket (test (B)).

3. METHOD

(A) Test of Line Lamp (Without Line Relay).

3.01 Connect the clip of the W3A cord which is connected to the test plug tip to one clip of the test receiver. Connect the other clip of the test receiver to ground.

3.02 Insert the test plug into the jack of the line under test just sufficiently for the tip of the plug to make contact with the ring spring of the jack. The associated line lamp should light with proper brilliancy. With the No. 551-D PBX, note that all line lamps in multiple with this lamp also light.

3.03 Remove the test plug from the jack and disconnect the test receiver.

(B) Test of Line Lamp and Line Relay

3.04 Connect the clip of the W3A cord which is connected to the test plug tip to one terminal of the 38B lamp socket. Connect the other terminal of the lamp socket to ground by means of the W1U cord.

3.05 Insert the test plug into the jack of the line under test just sufficiently for the tip of the plug to make contact with the ring spring of the jack. The associated line relay should operate, and the line lamp should light with proper brilliancy. With the No. 551-D PBX, note that all line lamps in multiple with this lamp also light.

3.06 Remove the test plug from the jack and disconnect the apparatus.

(C) Test of Extension Line Jack for Cut-Outs

3.07 When testing Nos. 550-B, 550-C, 550-SC, 551-A, 551-B and 551-D PBX's, connect the tip clip of the W3A cord to the tip of the back plug of an idle cord circuit, and connect the ring clip of the W3A cord to one clip of the test receiver. Connect the free clip of the test receiver to the sleeve of an idle back plug.

3.08 When testing the No. 555 PBX, connect the tip clip of the W3A cord to ground, and connect the ring clip of the W3A cord to one clip of the test receiver. Connect the free clip of the test receiver to the sleeve of the right plug of an idle cord circuit.

3.09 Short-circuit the extension line under test by means of the W1U cord, and insert the test plug into the line jack. Manipulate the test plug to determine whether the

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jack cuts out by grasping the plug at the cord end and, while applying a sideward pressure away from the center of rotation, rotating the plug through a complete circle with a cranking motion. Cut-outs will be indicated by clicks in the test receiver. Remove the test plug from the jack and the short circuit from the extension line.

3.10 Disconnect the apparatus.

### (D) Test of Break Contacts of Extension Line Jack and Sleeve Circuit

3.11 Short-circuit the tip and ring of the test plug by connecting together the tip and ring clips of the associated W3A cord. Connect the tip and ring clips of the W3A cord to one clip of the test receiver, and insert the test plug into the extension line jack.

3.12 When testing Nos. 550-B, 550-C, 550-SC, 551-A, 551-B, and 551-D PBX's, tap the free clip of the test receiver alternately to the tip and ring of an idle cord circuit plug. No clicks should be heard in the test receiver.

3.13 When testing the No. 555 PBX, connect ground to the sleeve of the right plug of an idle cord circuit using a W1U cord. Tap the free clip of the test receiver alternately to the tip and ring of the right plug of the idle cord circuit. No clicks should be heard in the test receiver.

3.14 Remove the W1U cord if used. Disconnect the test receiver clip from the tip and ring clips of the W3A cord.

3.15 When testing Nos. 550-B, 550-C, 550-SC, 551-A, 551-B, and 551-D PBX's connect one clip of the test receiver to the sleeve of an idle back plug. When testing the No. 555 PBX connect the test receiver clip to the sleeve of an idle right plug.

3.16 Tap the free clip of the test receiver to the clip of the W3A cord associated with the test plug sleeve. Clicks should be heard in the test receiver. With the No. 551-D PBX, note that clicks are also heard when the free clip of the test receiver is tapped to the sleeve of each multiple appearance of the line jack under test.

3.17 Remove the test plug from the jack.

3.18 With one clip of the test receiver still connected to the sleeve of the idle cord circuit plug, tap the free clip of the test receiver to the sleeve of the extension line jack. With the Nos. 550-B, 550-C, 550-SC, 551-A and 551-B PBX's, clicks should be heard. With the Nos. 551-D and 555 PBX's, no clicks should be heard. With the No. 551-D PBX, tap the sleeve of each multiple appearance of the line jack under test, and note that no clicks are heard.

3.19 Disconnect the test receiver.

### (E) Test of Lamp Sockets for Battery Crosses

3.20 When testing Nos. 550-B, 550-C, 550-SC, 551-A, 551-B, and 551-D PBX's, connect one clip of the test receiver to the tip of an idle back plug. When testing the No. 555 PBX, connect one clip of the test receiver to ground.

3.21 Tap the free clip of the test receiver to the metal frame of the extension line lamp cap. No clicks should be heard.

3.22 Disconnect the test receiver.

## 4. REPORTS

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