

## TRUNKS AND TIE LINES FROM SELECTOR LEVELS OPERATION TESTS 701A AND 711A PBX

### 1. GENERAL

1.01 This section describes the method of testing the operating features of trunks and tie lines working from selector and selector-connector levels in a No. 701-A or a No. 711-A P B X to central offices and distant P B X 's. The tests covered are:

- (A) From Regular Selectors.
- (B) From Two Digit Rotary Hunting Selectors.
- (C) From Selector-Connectors.

1.02 This section is reissued to convert it to letter size and to incorporate material from the addendum in its proper location. In the process of this conversion, marginal arrows have been omitted.

1.03 This routine should be made from selector and selector-connector switches having direct access to the trunks and tie lines. Use a different switch each time, so that all trunks and tie lines will eventually be tested from all switches.

1.04 Any trunk or tie line on which a failure is encountered should be made busy until the trouble is cleared.

### 2. APPARATUS

- 2.01 Dial Hand Test Set equipped with a No. 2-CB Dial and a No. 240-A Plug.
- 2.02 No. 375-A Tools, as required.
- 2.03 No. 760 Cord.

### 3. METHOD

3.01 When measures must be taken to insure the continuous operation of the ringing machine during these tests, ground the generator start lead with the No. 760 cord.

#### (A) From Regulator Selectors

3.02 Remove the switch cover and connect the dial hand test set to the test jack of an idle selector and operate the C button. Dial the switch to the required level and note whether it rotates to the first trunk or tie line contacts. If this trunk or tie line is busy the switch will automatically rotate to the contacts of the first idle circuit. In case the switch rotates over a terminal record its number for subsequent testing when idle, or monitor on the switch that is connected to the trunk to make certain that the circuit is busy.

#### Trunks to Manual Central Office, P B X Attendant or Dial Tie Line to P B X Attendant

- 3.03 When the operator or attendant answers, check the number of the trunk or tie line with her.
- 3.04 On trunks to a manual central office request the operator to close the listening key for a moment and to note if the supervisory lamp flashes. Immediately release and operate the C button of the hand test set two or more times, and when the operator again answers ascertain if the supervisory lamp operated properly.
  - 3.04.1 If testing trunks equipped with Y-type relay, proceed as follows:
    - (a) After performing 3.04, request the operator or attendant to release on receiving the disconnect signal.
    - (b) Release the C button and listen for a click indicating the release. Note that the switch releases in approximately 2 seconds after the click is heard.
    - (c) Again dial the switch to the required level and proceed with 3.05.

3.05 With the C button of the hand test set still operated, rotate the selector to the next contact by momentarily operating the off-normal lever. Check the number of this trunk or tie line with the operator or attendant and on trunks to a manual central office, repeat the test described in 3.04.

3.06 When the last trunk or tie line on the level has been tested, momentarily operate the off-normal lever with the C button of the hand test set still operated and observe that the switch rotates to the 11th rotary position and that the busy signal is heard. Release the C button and observe that the selector releases.

#### Trunks to Panel Central Office

3.07 Dial tone should be heard. Dial the permanently made busy number in the panel office. Note that busy tone is heard.

3.07.1 If testing trunks equipped with Y-type relay, proceed as follows:

- (a) After performing 3.07, release the C button and observe that the switch releases in approximately 2 seconds.
- (b) Again dial the switch to the required level and proceed with 3.08.

3.08 Rotate the selector to the next contact by momentarily operating the off-normal lever and repeat the operations in 3.07 on each trunk, and the operation in 3.06 before releasing the switch from the last trunk on the level.

#### Trunks to Step-by-Step Central Office

3.09 Dial tone should be heard. Dial the connector multiple test line number in a non-reverse battery connector group in the step-by-step office. Note that a tone is heard in the receiver for approximately one second, followed by clicks in the receiver at the rate of one per second.

3.09.1 If testing trunks equipped with Y-type relays, proceed as follows:

- (a) After performing 3.09, release the C button and observe that the switch releases in approximately 2 seconds.
- (b) Again dial the switch to the required level and proceed with 3.10.

3.10 Rotate the selector to the next contact by momentarily operating the off-normal lever and repeat the operations in 3.09 and the operation in 3.06 before releasing the switch from the last trunk on the level.

Note: If a connector multiple test line number in a non-reverse battery connector group in the step-by-step office is not available, dial zero after dialing the selector to the proper level and note that the operator answers.

#### Tie Lines to Incoming Selectors, or Incoming Connectors

3.11 Proceed as in 3.02 and then dial the station at the distant P B X for which arrangements have been previously made for someone to answer the necessary test calls. Note that the audible ringing signal is heard in the receiver. When the station answers ascertain that it is the correct one. Rotate the selector to the next contact by momentarily operating the off-normal lever and dial the station at the distant P B X over each tie line.

3.12 When the last tie line on the level has been tested proceed as in 3.06.

3.13 If the tie lines also appear in manual positions at the distant P B X, make the following test in addition to that described in 3.11. Dial the switch to the proper level and then dial zero. When the attendant at the distant P B X answers,

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check the number of the tie line with her. Repeat the test on each tie line, rotating the selector to the next contact by momentarily operating the off-normal lever. When the last tie line on the level has been tested, release the C button and observe that the selector releases.

3.14 Remove the No. 760 cord mentioned in 3.01, and replace the switch cover.

### (B) From Two Digit Rotary Hunting Selectors

3.15 Connect the dial hand test set to the test jack of an idle two digit rotary hunting selector and operate the C button. Dial the necessary two digits that will connect the switch to the first trunk or tie line of the group under test. If this trunk or tie line is busy the switch will automatically rotate to the contacts of the first idle circuit. In case the switch rotates over a terminal, record its number for subsequent testing when idle, or monitor on the switch that is connected to the trunk to make certain that the circuit is busy.

### Trunks to Manual Central Office, P B X Attendant or Dial Tie Line to P B X Attendant

3.16 When the operator or attendant answers, check the number of the trunk or tie line with her.

3.17 On trunks to a manual central office request the operator to close the listening key for a moment and to note if the supervisory lamp flashes. Immediately release and operate the C button of the hand test set two or more times and when the operator again answers ascertain if the supervisory lamp operated properly.

3.17.1 If testing trunks equipped with Y-type relays, proceed as follows:

- (a) After performing 3.17, request the operator or attendant to release on receiving the disconnect signal.
- (b) Release the C button and listen for a click indicating the release. Note that the switch releases in approximately 2 seconds after the click is heard.
- (c) Again dial the switch to the required level and proceed with 3.18.

3.18 Release the C button of the hand test set and when the switch releases again operate the C button and dial the necessary two digits that will connect the switch to the next idle trunk of the group under test. Proceed as in 3.16 and 3.17.

3.19 Repeat the operations described in 3.18 until all trunks in the group have been tested.

3.20 Operate the C button of the hand test set and dial the necessary two digits which will connect the switch to the first trunk or tie line of the group under test. Observe that the switch stops on this trunk or tie line. Hold the C button of the hand test set operated and insert a No. 375-A tool between springs 3 and 4 of the switch test jack. Release the C button and observe that the switch does not release. Disconnect the hand test set and connect it to another idle two digit rotary hunting selector. Operate the C button of the hand test set and dial the necessary two digits that will direct the switch to the trunk or tie line to which the first switch is connected. Note that the switch connects to this contact and that the busy signal is heard in the hand test set. Release both switches.

### Trunks to Panel Central Office

3.21 Dial tone should be heard. Dial the permanently made busy number in the panel office. Note that busy tone is heard.

3.21.1 If testing trunks equipped with Y-type relays, proceed as follows:

- (a) After performing 3.21 release the C button and observe that the switch releases in approximately 2 seconds.
- (b) Again dial the switch to the required level and proceed with 3.22.

3.22 Proceed as in 3.18, 3.19 and 3.20.

### Trunks to Step-by-Step Central Office

3.23 Dial tone should be heard. Dial the connector multiple test line number in a non-reverse battery connector group in the step-by-step office. Note that a tone is heard in the receiver for approximately one second, followed by clicks in the receiver at the rate of one per second.

3.23.1 If testing trunks equipped with Y-type relays, proceed as follows:

- (a) After performing 3.23, release the C button and observe that the switch releases in approximately 2 seconds.
- (b) Again dial switch to the required level and proceed with 3.24.

3.24 Proceed as in 3.18, 3.19 and 3.20.

Note: If a connector multiple test line number in a non-reverse battery connector group in the step-by-step office is not available, dial zero after dialing the switch to the proper terminal and note that the operator answers.

### Tie Lines to Incoming Selectors, or Incoming Connectors

3.25 Proceed as in 3.15 and then dial the station at the distant P B X for which arrangements have been previously made for someone to answer the necessary test calls. Note that the audible ringing signal is heard in the receiver. When the station answers ascertain that it is the correct one. Proceed as in 3.18 and 3.19 and dial the station at the distant P B X over each tie line. After all tie lines have been tested proceed to test the all tie lines busy signal as in 3.20.

3.26 If the tie lines also appear in manual positions at the distant P B X make the following test in addition to that described in 3.25. Dial the switch to the first idle contact in group under test and then dial zero. When the attendant at the distant P B X answers check the number of the tie line with her. Repeat the test on each tie line.

3.27 Remove the No. 760 cord mentioned in 3.01.

### (C) From Selector-Connectors

3.28 Remove the switch cover and connect the dial hand test set to the test jack of an idle selector-connector and operate the C button. Dial the switch to the required level and note whether it rotates to the first trunk or tie line contacts. If this trunk or tie line is busy the switch will automatically rotate to the contacts of the first idle circuit. In case the switch rotates over a terminal record its number for subsequent testing when idle, or monitor on the switch that is connected to the trunk to make certain that the circuit is busy.

### Trunks to Manual Central Office, P B X Attendant or Dial Tie Line to P B X Attendant

3.29 When the operator or attendant answers, check the number of the trunk or tie line with her.

3.30 On trunks to a manual central office request the operator to close the listening key for a moment and to note if the supervisory lamp flashes. Immediately release and operate the C button of the hand test set two or more times and when the operator again answers, ascertain if the supervisory lamp operated properly.

3.30.1 If testing trunks equipped with Y-type relays, proceed as follows:

- (a) After performing 3.30, request the operator or attendant to release on receiving the disconnect signal.
- (b) Release the C button and listen for a click indicating the release. Note that the switch releases in approximately 2 seconds after the click is heard.
- (c) Again dial switch to required level and proceed with 3.31.

3.31 With the C button of the hand test set still operated cross the sleeve and ground springs of the test jack with a No. 375-A tool and then block the F relay in an operated position. Release the C button of the hand test set and manually rotate the switch shaft to the next contact. The H relay will remain operated if the contact is busy or in trouble. Monitor on the connection to see that the line is actually busy. If the line is busy, rotate the shaft to the next contact. If the H relay is normal, operate the C button and observe that the H relay operates.

3.32 Proceed as in 3.29 and 3.30.

3.33 When the last trunk or tie line on the level has been tested, rotate the shaft to the 11th position and note that busy tone is heard in the receiver. Remove the No. 375-A

tool, disconnect the dial hand test set, restore the F relay to normal, and replace the switch cover.

#### Trunks to Panel Offices

3.34 Dial tone should be heard. Dial the permanently made busy number in the panel office. Note that busy tone is heard.

3.34.1 If testing trunks equipped with Y-type relays, proceed as follows:

- (a) After performing 3.34, release the C button and observe that the switch releases in approximately 2 seconds.
- (b) Again dial the switch to the required level and proceed with 3.35.

3.35 Proceed as in 3.31, 3.34 and 3.33.

#### Trunks to Step-by-Step Central Office

3.36 Dial tone should be heard. Dial the connector multiple test line number in a non-reverse battery connector group in the step-by-step office. Note that a tone is heard in the receiver for approximately one second, followed by clicks in the receiver at the rate of one per second.

3.36.1 If testing trunks equipped with Y-type relays, proceed as follows:

- (a) After performing 3.36, release the C button and observe that the switch releases in approximately 2 seconds.
- (b) Again dial the switch to the required level and proceed with 3.37.

3.37 Proceed as in 3.31, 3.36 and 3.33.

Note: If a connector multiple test line number in a non-reverse battery connector group in the step-by-step office is not available, dial zero after dialing the selector to the proper level and note that the operator answers.

#### Tie Lines to Incoming Selectors, or Incoming Connectors

3.38 Proceed as in 3.28 and then dial the station at the distant P B X for which arrangements have been previously made for someone to answer the necessary test calls. Note that the audible ringing signal is heard in the receiver. When the station answers ascertain that it is the correct one.

3.39 Proceed as in 3.31, 3.38 and 3.33 and dial the station at the distant office over each tie line.

3.40 If the tie lines also appear in manual positions at the distant P B X make the following test in addition to that described in 3.38. Dial the switch to the proper level and when the attendant at the distant P B X answers check the number of the tie line with her. Repeat the test on each tie line.

3.41 Remove the No. 760 cord mentioned in 3.01.

#### 4. REPORTS

4.01 The required record of this routine should be entered on the proper form.