

INCOMING CONNECTORS AND INCOMING SELECTORS PULSING AND OPERATION TESTS 701A AND 711A PBX

1. GENERAL

1.01 This section, in conjunction with sections covering pulsing and operation tests of local connectors and selectors describes a method of making pulsing and operation tests on incoming connectors and incoming selectors in No. 701-A and No. 711-A P P X's. A method of preparing the tie line circuit is described so that the pulsing and operation tests may be made on the associated incoming switches.

1.02 The procedure described in this section applies to:

- (A) **Incoming Switches Associated with One-Way Repeating Tie Lines.**
- (B) **Incoming Switches Associated with Two-Way Repeating Tie Lines.**

1.03 The tests when conducted as routines should be made during periods when traffic is light as the tie line is made busy at both ends during the tests.

1.04 When a failure is encountered on any incoming switch the trouble should be cleared before the switch is restored to service. If this cannot be done the tie line should be removed from service 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. 136-B Tools.
- 2.03 No. 375-A Tools.

3. METHOD

(A) Incoming Switches Associated with One-Way Repeating Tie Lines

3.01 Connect the dial hand test set to the test jack of an idle switch having access to the tie lines associated with the switches under test. Operate the C button and dial the switch to the level on which the tie lines associated with the incoming switches under test are connected and note whether it rotates to the first tie line in the group. If this tie line is busy the switch will automatically rotate to the contacts of the first idle circuit, or if all tie lines in the group are busy the busy signal will be heard in the hand test set. In case the switch rotates over a terminal, record its number for subsequent testing when idle.

Note: In the case of a two digit rotary hunting selector, it will be necessary to dial the necessary two digits which will direct the switch to the first tie line of the group to which the incoming switches under test are connected.

3.02 Note the tie line to which the switch is connected. When the attendant at the distant P B X answers request that the plug be left in the tie line jack until a steady disconnect signal is received.

3.03 With the C button of the hand test set still operated insert a No. 375-A tool between springs 1 and 2 of the test jack and disconnect the hand test set. Note that the switch does not release.

3.04 Manually operate the C relay of the tie line circuit (when provided) and note that it remains operated. Then proceed as follows.

3.05 **Pulsing Test:** Make a pulsing test of the incoming switch in the same manner as for local switches.

3.06 **Incoming Connector Operation Test:** Make a connector operation test of the incoming switch in the same manner as for local connectors.

3.07 **Incoming Selector Operation Test:** Make a selector operation test on the incoming switch in the same manner as for local regular selectors.

3.08 Upon completing the test of the incoming switch, remove the No. 375-A tool from the test jack of the outgoing switch. This will cause the disconnect lamp of the distant attendant's cord circuit to burn steadily. Note that after a moment the switch releases due to the distant attendant disconnecting the cord circuit from the tie line jack. In case the distant attendant does not disconnect within a reasonable period of time, connect the hand test set to the test jack of the switch and operate the C button several times. This will flash the supervisory lamp on the distant attendant's cord circuit and when the attendant answers, advise that the test is completed and request that the cord be removed. When the attendant disconnects release the C button of the hand test set and note that the switch releases.

3.09 Proceed to test the remaining incoming switches in the group in the following manner.

3.10 **When the local switch used in reaching the tie line is a regular selector:** Connect the dial hand test set to the test jack and operate the C button. Dial the necessary digit which will connect the switch to the level on which the tie lines associated with the switches under test are connected. Should the switch stop on the contacts of a tie line other than the one previously tested proceed as in 3.02 to 3.08 inclusive.

3.11 Should the switch stop on the contacts of a tie line previously tested, remove the switch cover and step the switch to the next tie line by momentarily operating the off-normal lever. When the distant attendant answers proceed as in 3.02 to 3.08 inclusive.

3.12 Upon completion of the test replace the cover of the local switch.

3.13 **When the local switch used in reaching the tie line is a two digit rotary hunting selector:** 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 a tie line to which is connected an incoming switch that has not been tested. Proceed as in 3.02 to 3.08 inclusive.

3.14 **When the local switch used in reaching the tie line is a selector-conductor:** Proceed as in 3.01. Should the switch stop on the contacts of a tie line other than the one previously tested proceed as in 3.02 to 3.08 inclusive.

3.15 Should the switch stop on the contacts of a tie line previously tested, remove the switch cover. Hold the C button of the hand test set operated and short the sleeve and ground springs of the test jack with a No. 375-A tool and then block the F relay of the switch 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 tie line is busy. If busy rotate the shaft to the next contact. If the H relay is normal, operate the C button and note that the H relay operates and that the distant attendant answers. Proceed as in 3.02 to 3.08 inclusive.

3.16 At the completion of the test remove the No. 375-A tool, restore the F relay and replace the switch cover.

(B) Incoming Switches Associated with Two-Way Repeating Tie Lines

3.17 Connect the dial hand test set to the test jack of an idle switch having access to the tie lines associated with the switches under test. Operate the C button and dial the necessary digit which will connect the switch to the level on which the tie lines associated with the switches under test are connected and then dial the necessary additional digits which will

extend the call to the test line number in the distant P B X. Note that the busy signal is heard in the dial hand test set. Note whether the local selector or selector-connector rotates to the first tie line in the group to which the incoming connectors under test are connected. If this tie line is busy the switch will automatically rotate to the contacts of the first idle circuit, or if all circuits are busy the busy signal will be heard in the hand test set. In case the switch rotates over a terminal, record its number for subsequent testing when idle.

Note: In the case of a two digit rotary hunting selector, it will be necessary to first dial the necessary two digits which will direct the switch to the first tie line of the group to which the incoming connectors under test are connected.

3.18 Note the tie line to which the switch is connected and with the C button of the hand test set still operated insert a No. 375-A tool between springs 1 and 2 of the test jack and disconnect the hand test set. Note that the switch does not release.

3.19 Block the CO relay of the tie line in a non-operated position, and, when provided, the CT relay in an operated position, using No. 136-B tools. Then proceed as follows.

3.20 **Pulsing Test:** Make a pulsing test of the incoming switch in the same manner as for local switches.

3.21 **Incoming Connector Operation Test:** Make a connector operation test of the incoming switch in the same manner as for local connectors.

3.22 **Incoming Selector Operation Test:** Make a selector operation test on the incoming switch in the same manner as for local regular selectors.

3.23 Upon completing the test of the incoming switch remove the No. 136-B tools from the relays in the tie line circuit and No. 375-A tool from the test jack of the outgoing switch and note that the switch releases.

3.24 Proceed to test the remaining tie lines in the group in the following manner.

3.25 **When the local switch used in reaching the tie line is a regular selector:** Connect the dial hand test set to the test jack and operate the C button. Dial the necessary digit which will connect the switch to the level on which the tie lines associated with the switches under test are connected. Should the switch stop on the contacts of a tie line other than one previously tested, dial the necessary additional digits which will extend the call to the test line number in the distant P B X. Note that the busy signal is heard in the dial hand test set and proceed as in 3.18 to 3.23 inclusive.

3.26 Should the outgoing switch stop on the contacts of a tie line previously tested, remove the switch cover and

step the switch to the next tie line by momentarily operating the off-normal lever. Dial the necessary additional digits which will extend the call to the test line number of the distant P B X. Note that the busy signal is heard in the dial hand test set and proceed as in 3.18 to 3.23 inclusive.

3.27 Upon completion of test replace the cover of the local switch.

3.28 **When the local switch used in reaching the tie line is a two digit rotary hunting selector:** 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 a tie line to which is connected an incoming switch that has not been tested and then dial the necessary additional digits which will extend the call to the test line number in the distant P B X. Note that busy tone is heard in the hand test set and proceed as in 3.18 to 3.23 inclusive.

3.29 **When the local switch used in reaching the tie line is a selector-connector:** Connect the dial hand test set to the test jack and operate the C button. Dial the necessary digit which will connect the switch to the level on which the tie lines associated with the switches under test are connected. Should the switch stop on the contacts of a tie line other than one previously tested, dial the necessary additional digits which will extend the call to the test line number of the distant P B X. Note that the busy signal is heard in the dial hand test set and proceed as in 3.18 to 3.23 inclusive. Should the switch stop on the contacts of a tie line previously tested remove the switch cover. Hold the C button of the hand test set operated and short the sleeve and ground springs of the test jack with a No. 375-A tool and then block the F relay of the switch 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 tie line is busy. If busy rotate the shaft to the next contact. If the H relay is normal, operate the C button and note that the H relay operates. Dial the necessary digits which will extend the call to the test line number in the distant P B X and note that the busy signal is heard in the dial hand test set. Proceed as in 3.18 to 3.22 inclusive.

3.30 At the completion of the test of the incoming switch remove the No. 136-B tools from the relays in the tie line circuit and restore the F relay of the outgoing switch. Remove the No. 375-A tool from the test jack and note that the switch releases. Replace the switch cover.

4. REPORTS

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