

OUTGOING TRUNKS TO STEP-BY-STEP OFFICES

1. GENERAL

- 1.01 This section covers the detailed methods to be followed in making transmission tests on outgoing trunks to step-by-step offices. This method also applies to inter-step-by-step tandem trunks.
- 1.02 Reference should be made to Section K20.01 for general testing methods and to Section K20.11 for testing apparatus requirements.

2. TESTING METHODS

- 2.01 These circuits are tested from the test jacks of the associated trunk repeaters of the outgoing step-by-step office by the loop methods.
- 2.02 The loops are established at the incoming step-by-step office over one of the trunk circuits from which the equipment has been disconnected at the incoming office and which is crossconnected to a vacant connector terminal.

Preliminary Tests and Connections

- 2.03 Determine the loss of a test or standard trunk as outlined in paragraphs 2.04 to 2.19, inclusive.
- 2.04 Where a test or standard trunk plus the equipment of the outgoing office is of such resistance as not to permit the normal signaling of the circuit, a long line supervisory circuit should be inserted in the trunk for this purpose. The supervisory circuit may be picked up at any convenient location, preferably the incoming step-by-step office and connected to the test or standard trunk at the HMDF. The subscriber's end (HMDF terminals 3-4) should be connected towards the outgoing step-by-step office and the central office end (HMDF terminals 1-2) connected towards the incoming step-by-step office. It will be necessary in the computations to allow for the transmission loss of the supervisory circuit.
- 2.05 Figure 1 shows schematically the connections for the preliminary test.
- 2.06 Select three idle trunks and at the outgoing step-by-step office insert "make busy" tools in the test jacks of the associated trunk repeaters.

Note: Where out trunk switches are provided sweep the master switch having access to the trunks selected, to pick up any disengaged plungers.

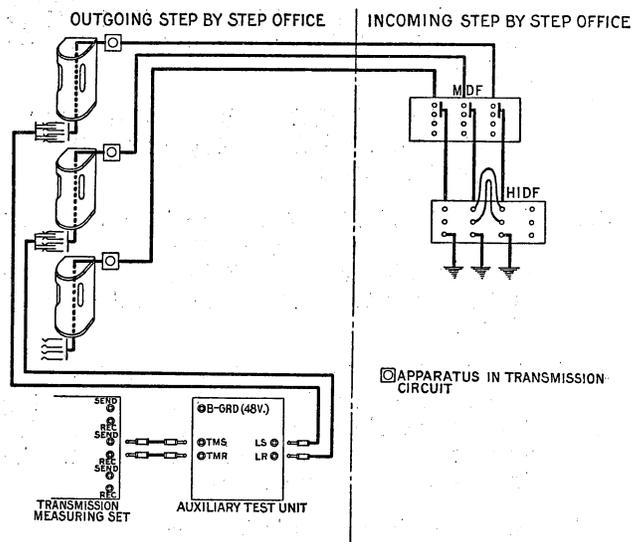


Figure 1

- 2.07 At the incoming step-by-step office MDF remove the heat coils and connect the cable terminals of these trunks to three vacant connector terminals.
 - 2.08 At the HMDF remove the tip, ring and sleeve intercepting lines from the terminals of the vacant connectors selected above and connect the sleeve terminals of the connector circuits to ground.
 - 2.09 At the outgoing step-by-step office provide three regular double-ended patching cords equipped with 110 type plugs and two No. P3C cords each equipped with a No. 110 plug and a No. 240-A plug (No. 4 Terminal Open).
 - 2.10 Connect the TMS and TMR jacks of the auxiliary test unit respectively to the sending and receiving jacks of the transmission measuring set, using two regular patching cords.
 - 2.11 Connect the B-GRD (48V) jack of the auxiliary test unit to 48 volt battery and ground (battery on tip and ground on sleeve), using a regular patching cord.
- Note: This battery and ground may be obtained from any source convenient to the location of the testing apparatus, preferably a nearby BATT jack.
- 2.12 Insert the No. 110 plugs of the No. P3C cords in the LS and LR jacks of the auxiliary test unit.

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- 2.13 Insert an operator's telephone set in the operator's telephone set jacks of the auxiliary test unit.
- 2.14 Operate the following keys of the auxiliary test unit to the positions specified. Keys not mentioned should remain in the normal position.

Key 1 to HOLD Key 4 to MET
 Key 2 to HOLD Key 12 to SL
 Key 3 to MET

- 2.15 Insert the No. 240-A plugs of the No. P3C cords connected to the LS and LR jacks of the auxiliary test unit into the repeater test jacks of two of the three trunks chosen above.

- 2.16 At the incoming step-by-step office loop these trunks at the HIDF by connecting the tip and ring terminals of the respective vacant connector circuits to which the trunks are connected.

- 2.17 Measure the transmission loss.

Note: This is the loss of two trunks less the equipment at the incoming step-by-step office.

- 2.18 Make triangulation measurements to determine the loss of each of the three trunks (less equipment at the incoming end), as outlined in paragraphs 2.15 to 2.17, inclusive.

- 2.19 Select one of these trunks to be used as a test or standard trunk and replace the sleeve ground of the vacant connector terminal to which the trunk is connected at the HIDF by a sleeve resistance of the value normally used on working circuits.

- 2.20 Restore the other two trunks to normal by reversing the procedure of paragraphs 2.06 and 2.08, inclusive.

Note: The "make busy" tools should not be removed from the repeaters of these trunks until it has been determined that the equipment has been properly reconnected and the trunks are ready for service.

Testing Procedure

- 2.21 Figure 2 shows schematically the connections for the test.
- 2.22 Operate the following keys of the auxiliary test unit to the position specified. Keys not mentioned should remain in the normal position.

Key 1 to HOLD Key 4 to MET
 Key 2 to OPEN Key 6 to BATT
 Key 3 to MET Key 12 to SL

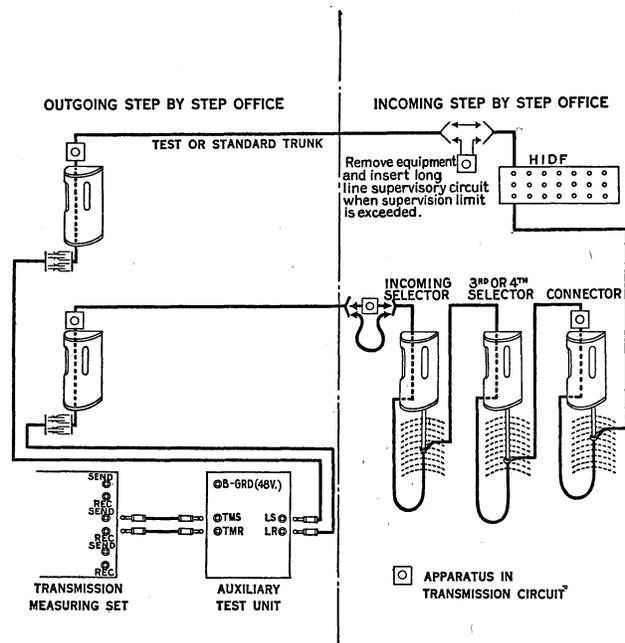


Figure 2

- 2.23 Insert the No. 240-A plug of the No. P3C cord connected to the LS jack of the auxiliary test unit into the test jack of the repeater associated with the test or standard trunk.
- 2.24 Insert the No. 240-A plug of the No. P3C cord connected to the LR jack of the auxiliary test unit into the test jack of a repeater associated with one of the trunks to be tested.
- 2.25 If the sleeve lamp of the auxiliary test unit associated with the LR jack does not light (indicating that the trunk is idle), operate key 6 to GRD.

Note: If the lamp lights (indicating that the trunk is busy), remove the plug and repeat until an idle trunk is found.

- 2.26 Where out trunk switches are provided, sweep the master switch having access to the trunk chosen for test to pick up any disengaged plungers.
- 2.27 Operate key 2 of the auxiliary test unit to TEST and dial the number of the vacant connector terminal to which the test or standard trunk is connected at the incoming step-by-step office.
- 2.28 Operate key 2 of the auxiliary test unit to HOLD.
- 2.29 Measure the transmission loss.

Note: This will be the loss of the trunk circuit under test, including the local connector circuit and the standard trunk circuit.

- 2.30 Measure the current supply from the repeater associated with the trunk connected to the LR jack of the auxiliary test unit while depressing key 10 to remove the holding bridge from the circuit.
- 2.31 Release the tested trunk by operating key 1 and key 2 of the auxiliary test unit to OPEN and removing the No. 240-A plug from the repeater test jack.
- 2.32 Repeat the above testing procedure for the remaining trunk circuits of the group.
- 2.33 Proceed as follows to test the standard or test trunk with its equipment connected in the circuit.
- 2.34 Restore the test or standard trunk to normal by reversing the procedure of paragraphs 2.06 to 2.08, inclusive.
- Note: Upon removing the No. 240-A plug from the repeater of the test or standard trunk, a "make busy" tool should be inserted in the test jack and remain inserted until it has been determined that the equipment has been properly reconnected and the trunk is ready for service.
- 2.35 Select one of the other trunks used in the triangulation measurements of paragraph 2.18 to be used as a test or standard trunk for the purpose of testing the test or standard trunk of paragraph 2.19, together with its equipment.
- 2.36 Insert a "make busy" tool in the repeater test jack associated with the trunk selected in paragraph 2.35 and remove the

equipment at the incoming step-by-step office in accordance with the procedure of paragraphs 2.06 to 2.08, inclusive.

- 2.37 Operate the following keys of the auxiliary test unit to the position specified. Keys not mentioned should remain in the normal position.

Key 1 to HOLD	Key 6 to BATT
Key 2 to OPEN	Key 12 to SL
Key 3 to MET	
Key 4 to MET	

- 2.38 Remove the "make busy" tool from the associated repeater test jack of the new test or standard trunk and insert the No. 240-A plug of the No. P3C cord connected to the LS jack of the auxiliary test unit.
- 2.39 Insert the No. 240-A plug of the No. P3C cord connected to the LR jack of the auxiliary test unit into the test jack of the repeater associated with the trunk of paragraph 2.35.
- 2.40 Proceed with the tests as outlined in paragraphs 2.25 to 2.31, inclusive.
- 2.41 Restore the test or standard trunk to normal by reversing the procedure of paragraphs 2.06 to 2.08, inclusive.

Note: Upon removing the No. 240-A plug from the repeater of the test or standard trunk, a "make busy" tool should be inserted in the test jack and remain inserted until it has been determined that the equipment has been properly reconnected and the trunk is ready for service.