

OUTGOING TRUNKS TO CALL INDICATOR OFFICES

1. GENERAL

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

2. TESTING METHOD

- 2.01 These circuits are tested from the test jacks of the associated trunk repeaters of the step-by-step office by the loop method.
- 2.02 The loops are established at the incoming call indicator office over one of the trunk circuits from which the equipment at the manual office has been disconnected and which is cross-connected to a spare subscriber's multiple jack.

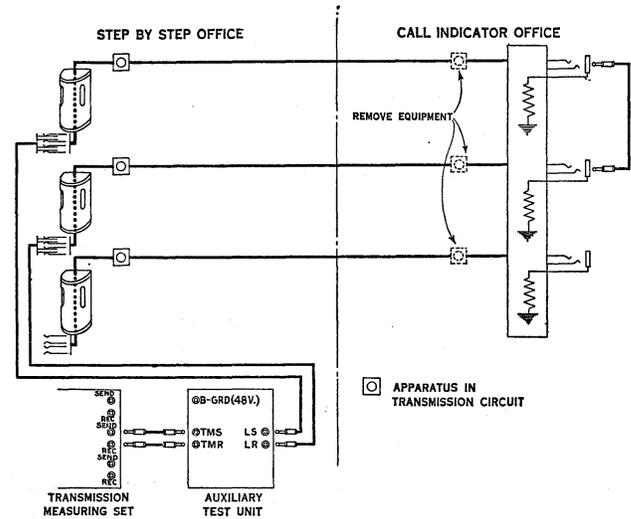


Figure 1

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 the 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 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 step-by-step office and the central office end (HMDF terminals 1-2) connected towards the call indicator 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 test.
- 2.06 Select three idle trunks and at the 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.

- 2.07 At the manual office MDF remove the heat coils and connect the cable terminals of

these trunks to three spare multiple jacks in the "B" switchboard.

Note: In connecting these trunks to the multiple jacks in the "B" switchboard, it will be necessary to pole the tip and ring conductors the same as is normal for working circuits. This poling may require connecting the trunk tip and ring conductors, respectively, to the ring and tip conductors of the "B" switchboard multiple jack circuits.

- 2.08 At the manual office IDF connect the sleeve terminals of the spare jacks to sleeve resistances of the value normally used on subscriber's multiple jacks.
- 2.09 At the "B" switchboard, remove the signal plugs from the spare multiple jacks at the positions on which the trunks of the group to be tested terminate.
- 2.10 At the 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).
- 2.11 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.
- 2.12 Connect the B-GRD (48V) jack of the auxiliary test unit to 48 volt battery and

SECTION K23.41

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.

- 2.13 Insert the No. 110 plugs of the two No. P3C cords in the LS and LR jacks of the auxiliary test unit.
- 2.14 Insert an operator's telephone set in the operator's telephone set jacks of the auxiliary test unit.
- 2.15 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

- 2.16 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.
- 2.17 At the manual office "B" switchboard, loop these trunks with a double-ended patching cord.
- 2.18 Measure the transmission loss.
- 2.19 Make triangulation measurements to determine the loss of each of the three trunks (less equipment at the manual office) as outlined in paragraphs 2.16 to 2.18, inclusive.
- 2.20 Select one of these trunks to be used as a test or standard trunk and restore the other two trunks to normal by reversing the procedure of paragraphs 2.06 to 2.09, 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 positions 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

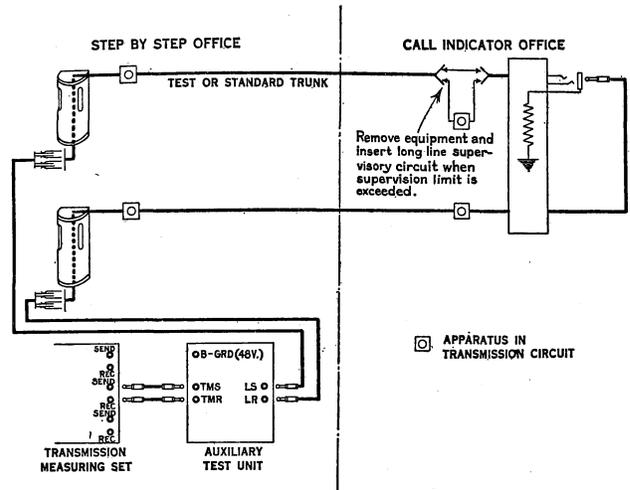


Figure 2

- 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.

If tests are made during a period of light traffic load the "make busy" keys at the "B" switchboard positions involved will be operated to "make busy" any trunks not appearing on certain "B" switchboard positions. Transmission tests may be made under these circuit conditions without disturbing the concentration or grouping arrangement, but when the No. 240-A plug connected to the LR jack of the auxiliary test unit is inserted in the repeater test jacks of any of these trunks, the sleeve lamp associated with the LR jack will light, indicating the circuit to be busy. This lamp may be disregarded, but before dialing, the tester should monitor on the trunk to determine that it is not busy. In these cases it will not be necessary to sweep the out trunk master switch.

- 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 spare multiple jack in the manual office "B" switchboard to which the standard trunk is connected.
- 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 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 2 of the auxiliary test unit to OPEN and removing the No. 240-A plug from the repeater test jack.
- Note: When the procedure of paragraph 2.31 has been completed the operator at the "B" switchboard will receive a disconnect signal and will remove the trunk cord from the jack to which the standard trunk is connected.
- 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 2.09, inclusive.

Note: Upon removing the No. 240-A plug from the repeater of the standard or test 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 2.19 to be used as a test or standard trunk for the purpose of testing the test or standard trunk of paragraph 2.20 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 manual office in accordance with the procedure of paragraphs 2.06 to 2.09, inclusive.
- 2.37 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 OPEN | Key 6 to BATT |
| Key 3 to MET | Key 12 to SL |
- 2.38 Remove the "make busy" tool from the associated repeater test jack of the new standard or test 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 2.34.
- 2.40 Proceed with the tests as outlined in paragraphs 2.25 to 2.31, inclusive.
- 2.41 Restore the standard or test trunk to normal by reversing the procedure of paragraphs 2.06 to 2.09, inclusive.

Note: Upon removing the No. 240-A plug from the repeater of the standard or test 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.