

SUBSCRIBER LINE OVERFLOW REGISTER CROSS CONNECTIONS NO. 1 CROSSBAR OFFICES

1. GENERAL

1.01 This section covers the method of cross-connecting subscriber line overflow registers (cross-connection type) in No. 1 crossbar offices. It also covers a method of checking these cross-connections.

1.02 The cross-connection type subscriber line overflow register operates after the terminating marker tests the sleeve of the line to which the register is cross-connected and finds the line busy. In the case of terminal hunting groups other than allotted P.B.X. groups, the register is connected to the last line and the register operates if the marker finds all lines of the group busy. For an allotted P.B.X. group two registers are used, one on each number group containing lines of the group and one of the registers is operated after all lines are tested and found busy.

1.03 The register readings should be recorded before and after the tests are made and these readings should be forwarded in accordance with local instructions.

1.04 The cross-connections and tests covered herein should preferably be made during periods of light traffic to minimize interference with service.

1.05 When the cross-connections are checked as covered in Part 4, the services of an assistant at the traffic register rack or at the traffic register relay rack will be advantageous.

2. APPARATUS

2.01 No. 32A test set.

2.02 No. 325C plugs (make busy) as required.

2.03 Two No. 893 cords, each 6 feet long, equipped with No. 360A tools (1W13B cord) and two No. 365 tools.

2.04 No. 508A tool (armature blocking tool).

2.05 No. 528 receiver attached to a W2AB cord equipped with No. 360A tools (2W21A cord), one No. 365 tool and one No. 411A tool.

2.06 Brown, red, black, green and white No. 22 gauge type K cross-connection wire as required. (Used at block relay frame).

3. METHOD OF MAKING CROSS-CONNECTIONS

3.01 The CT, SOF and MR leads of the subscriber line overflow register circuits are wired to punchings on a vertical terminal strip on the traffic register distributing frame. Corresponding leads from the number group connector circuits are wired to punchings on the same terminal strip. Cross-connect the CT, SOF and MR punchings of a spare overflow register circuit to the corresponding punchings of the number group connector containing the line on which it is desired to record the number of times the line tests busy to incoming calls. In case overflow readings are to be taken on an allotted P.B.X. group, two overflow register circuits will be required, one for each number group containing lines of the group.

3.02 The register circuit is wired to ALS and ANS punchings on the horizontal strip of the line distributing frame. For example, assume line 0507 is to be checked for overflow. Disconnect the lead between the S punchings for line 0507 at the vertical and horizontal terminal strips of the line distributing frame. Turn back the ends of the S jumper at both ends to facilitate re-connecting the sleeve when the overflow register is to be disconnected. Do not change the M lead.

3.03 The subscriber line overflow register circuit is wired to the ANF and ALF punchings located on the AUX terminal strip at the block relay frame. Remove the lead between NF 0507 and the XF, HF, TF or RF punching at the XF, HF, TF or RF terminal strip and connect it to the ANF punching of the assigned register circuit. Then run a lead from the associated ALF punching to the XF, HF, TF or RF punching from which the lead was removed.

3.04 On the horizontal terminal strip of the line distributing frame, cross-connect the S punching of the line to the ALS punching of the assigned register circuit. On the vertical terminal strip, cross-connect the S punching of the line to the ANS punching of the register circuit.

4. METHOD OF CHECKING REGISTER CROSS-CONNECTIONS

Preparation

4.01 Prepare the terminating trouble indicator frame for a test to the line to which the register is cross-connected.

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- 4.02 Plug the No. 32A test set into remote control jack F on the line link frame.

Individual Lines

- 4.03 Make sure that the line to which the register is cross-connected is idle.

4.04 Operate the white button of the No. 32A test set to cause the terminating trouble indicator frame to direct a call to the line. Check that the register did not operate. Operate the red button of the test set to restore the trouble indicator to normal.

- 4.05 Make the line busy by inserting a No. 325C plug into the vertical unit jack of the primary line switch for the line to which the register is connected.

Caution: With the plug in the vertical unit jack make sure that no crosspoints on the vertical unit were closed when the holding armature operated.

Do not keep the No. 325C plug in the vertical unit jack any longer than necessary to perform the following test because the subscriber will be unable to originate or receive calls while the plug is in the jack.

- 4.06 Originate another call to the line as in 4.04. Then remove the No. 325C plug from the vertical unit jack. Make sure that the register has operated.

Terminal Hunting Lines Other Than Allotted P.B.X. Groups

- 4.07 Proceed as in 4.01 to 4.04, inclusive.

4.08 Make busy the last line of the P.B.X. (to which the register is cross-connected) as in 4.05.

- 4.09 Originate a call to the last line of the P.B.X. as in 4.06.

Allotted P.B.X. Groups - Manual Test

4.10 Station the assistant at the traffic register relay rack, where he can observe relay operation and assist with the test. Make sure that the line to which the register under test is cross-connected is idle.

4.11 ANF and ALF Leads: At the block relay frame, apply ground to the ANF lead of the line to which the register is cross-connected by means of a No. 893 cord connected to the proper NF punching on the NF terminal strip. Check that the S relay of

the register circuit is operated. By means of the test receiver, check that the associated HF or XF punching on the HF or XF terminal strip is grounded. Remove ground from the NF punching and check that the S relay releases and that the HF or XF punching is not grounded.

4.12 ALS Lead: At the horizontal terminal strip of the line distributing frame, apply ground to the ALS lead by means of a No. 893 cord connected to the proper S punching. Check that the SL relay of the register circuit is operated. Keep the ALS lead grounded during the test of the remaining leads.

Note: With the ALS lead grounded, the line associated with the overflow register is made busy.

4.13 ANS Lead: Block the S relay of the register circuit operated. By means of the test receiver, check that the associated S punching on the vertical terminal strip of the line distributing frame is grounded. Remove the blocking tool from the S relay. Check that the S punching is not grounded.

4.14 SOF and MR Leads: At the traffic register distributing frame, apply ground to the SOF lead by means of a No. 893 cord connected to the SOF punching for the number group. Manually operate the S relay of the register circuit. Check that the OF relay operates and the S relay holds operated. Then momentarily ground the MR punching for the number group. Check that the register operated once. Remove ground from the SOF lead and check that the OF and S relays release.

4.15 CT Lead: At the traffic register distributing frame, apply ground to the CT lead by means of a No. 893 cord connected to the CT punching for the number group. Check that the CT relay of the register circuit is operated. Remove ground from the CT punching and check that the CT relay releases.

4.16 After all leads have been checked, remove ground from the ALS lead and check that the SL relay releases.

4.17 Repeat 4.10 to 4.16 inclusive for the other line to which an overflow register is cross-connected.

Allotted P.B.X. Groups - Operation Test

4.18 If it should be necessary to make an overall operation test of the registers in connection with a marker, arrange with the Traffic Department for a satisfactory time to make the test, since all lines of the P.B.X. group will be made busy during the test.

4.19 To test for non-operation of the registers, make busy all except one line of the P.B.X. by inserting No. 325C plugs into the vertical unit jacks of the primary line switches. Direct several calls to the P.B.X. as covered in 4.01 to 4.04 inclusive. Check that the registers did not operate.

4.20 Make busy all lines of the P.B.X. Originate several calls to the P.B.X. Check that the increase in readings of the two registers is not less than the number of calls.

4.21 Remove the busy conditions from the P.B.X. lines.

5. REPORTS

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

5.02 The register readings should be noted before and after the tests are made and these readings should be forwarded in accordance with local instructions.



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