

RING-UP RELAYS - TOLL LINE CIRCUITS  
NO. 10 OFFICE

1. GENERAL

- 1.01 This section provides for an alternating current (a-c.) flow test of the ring up relays in the toll line circuits in No. 10 offices.
- 1.02 This Issue, which replaces Issue A, has been revised to cover a change in the method employed for setting up the test current required in connection with the KI-1500 test set.
- 1.03 The tests are to be made on a one-man basis from the front of the switchboard, and should be performed during periods of light load.
- 1.04 A description of the No. KI-1500 test set is outlined in Division A700.

2. APPARATUS

- 2.01 No. KI-1500 Test Set, or equivalent.
- 2.02 No. L-3441 Cord.
- 2.03 No. P3E Cord equipped with one No. 110 Plug and one No. 257-A Plug.

Note: When testing No. 112 jacks, the No. 257-A plug may be modified by placing a collar over the sleeve. The length of this collar should be such that the No. 257-A plug will only enter the No. 112 jack far enough to make contact with the tip and ring springs of the jack.

3. TEST SET PREPARATION

- 3.01 Before using the KI-1500 test set care should be taken to see that the Ward Leonard Resistance (300 ohms) is in the generator supply leads. This may be either in a generator supply circuit per Drawing KI-1501, Fig. 3, or in case generator and generator ground supply is obtained from the switchboard ringing mains, the resistance in the set may be cut in by turning the switch designated RES to the terminal marked IN. When generator supply is obtained from the circuit KI-1501, Fig. 3, this switch should be turned to the terminal marked OUT.
- 3.02 Battery and ground may be obtained from the battery supply cord fasteners wired per Fig. 3 of circuit KI-1501, or from the battery and ground bus bars in the switchboard section. In the latter case a 1-1/3 ampere fuse should be placed in the circuit. A spare fuse post in the rear of the section may be used for this purpose.
- 3.03 When circuit KI-1501, Fig. 3, is provided, use the No. L-3441 cord and insert the 247-A plug, with the knurled side to the right, into the  $\pm$  G and BATT. & GRD jacks of

the test set and connect the cord conductors as follows; red to 24-V battery, white to ground, green to generator and blue to generator ground.

- 3.04 Set the SHUNT switch on the shunt indicated in the section of Division A400 covering No. 101 type relays. This section also gives the a-c. current values to be set up on the KI-1500 test set.

Note: The current values should be set up before connecting the set to the circuit to be tested.

- 3.05 The key designated CORD, which places battery through resistance on the sleeve of the TEST jack in order to operate the sleeve relays in the line circuit under test, should remain non-operated.
- 3.06 Operate the keys to the NON and TEST positions and set up the required a-c. "non-operate" value of the relay to be tested by means of the potentiometer slider marked NON.
- 3.07 Leave the TEST key operated, change the other key from the NON to OPR position set up the a-c. "operate" value for the relay to be tested by means of the slider marked OPR and release the TEST key.
- 3.08 Using a No. P3E cord, equipped with a No. 110 and No. 257-A plug patch the line to be tested to the TEST jack of the test set.

4. METHOD

- 4.01 Operate the key to NON position. Dial the digit 0 which by means of relays in the test circuit, applies the a-c. "non-operate" value to the No. 101 type relay for a period of approximately one second. The line lamp should not light.
- 4.02 Operate the key to OPR position and again dial 0. This applies the a-c. "operate" value to the relay for approximately one second. The line lamp should light and remain lighted until the 0 relay in the test circuit releases upon completion of the dialing operation. The line signal is automatically returned upon completion of the test.
- 4.03 In testing No. 101 type relays only one test should be made of the "non-operate" features as outlined above, and in case of failure, the cause should be investigated. Repetition of the tests may cause erroneous conclusions due to residual magnetism of the core of the relay under test caused by the magnetic flux set up by d-c. through the locking winding of the relay.

5. REPORTS

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