

TOLL SYSTEMS
TOLL TEST BOARD NO. 5
TWO-WAY RINGDOWN TRUNK OR DIAL
TRUNK CIRCUIT TO OFFICES
FOR USE WHERE TRUNKS ARE MULTIPLIED

CHANGES

D. DESCRIPTION OF CIRCUIT CHANGES

- D.1 "W" wiring was added for use on an optional basis with "Z" wiring to provide for either battery or ground on the sleeve of the test board jacks. "Z" wiring was formerly a part of Figure B.
- D.2 Circuit Note 118 was added.

All other headings under "Changes", no change.

1. PURPOSE OF CIRCUIT

- 1.1 This circuit is used to terminate a two-way ringdown trunk in toll test board No. 4 or No. 5 and is arranged for multiple jacks at toll test and telegraph positions.
- 1.2 This circuit is used to furnish a trunk to a machine switching office over which the attendant at the toll test board positions may dial machine switching subscribers or be called by them.

2. WORKING LIMITS

- 2.1 This circuit functions with a rated external sleeve resistance of 113 ohms at the test board positions.

3. FUNCTIONS

- 3.1 This circuit will receive incoming ringing current and light the lamp or lamps associated with the answering jacks.
- 3.2 Outgoing, this circuit functions as a direct line over which the test board attendant may ring or dial depending upon whether the distant termination is a similar ringdown trunk or a line circuit in a machine switching office.

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4. CONNECTING CIRCUITS

4.1 As a ringdown trunk

4.11 Connecting cord or testing cord at toll test board positions.

4.12 Testing cord at telegraph positions.

4.13 The distant termination may be any trunk having similar traffic.

4.2 As a trunk to machine switching

4.21 Connecting cord arranged for dialing.

DESCRIPTION OF OPERATION

5. RINGDOWN TRUNK

5.1 Incoming Call

On an incoming call ring relay (RU) operates and locks up through the back contact of relay (SR) to battery. Bridged across the primary winding of relay (RU) are the lamps which light and remain lighted as long as relay (RU) is locked up.

5.2 Answering at the toll test board

When the plug of the connecting cord or testing cord is inserted in the jacks in the test board, relay (S) operates. When relay (S) operates, it operates relay (SR) which opens the locking circuit of relay (RU) causing it to release and extinguish the lamps. The secondary winding of relay (RU) is also opened by the operation of relay (S).

5.3 Answering at Telegraph Position

When the looping plug of a test cord or telephone cord is inserted in a jack at the telegraph position, relay (S) operates from battery supplied through resistance (S). The operation is thereafter similar to that described in paragraph 5.2.

5.4 Outgoing Call

On an outgoing call, when the plug of a testing cord, connecting, or telegraph test circuit is inserted in the jacks, relay (S) operates and operates relay (SR) thus opening the locking and operating windings of relay (RU), to prevent its operation on the outgoing ring. The distant end of the trunk is signalled by the operation of the ringing key in the cord circuit.

6. TRUNK TO MACHINE SWITCHING OFFICE

6.1 Outgoing Calls

A call is originated at the toll test board by plugging up with the calling or right hand cord of the connecting cord and dialing the subscriber's number. Battery or ground supplied by the sleeve of the connecting cord operates relay (S) and opens the bridge, across the T and R conductors, formed by the secondary winding of relay (RU) and condenser (A).

6.2 Incoming Calls

On incoming calls, relay (RU) operates from ringing current, locking up under control of relay (SR), and lights the lamps. When the call is answered relay (S) operates, causes the operation of relay (SR), thus extinguishing the lamps and releasing relay (RU). The operation of relay (S) also opens the bridge, across the tip and ring conductors, formed by the secondary winding of relay (RU) and condenser (A). Ringing is tripped by the direct current bridge in the connecting cord circuit.

BELL TELEPHONE LABORATORIES, INC.

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