PANEL SYSTEM
LOCAL TEST DESK NO. 12B
TEST LINE CIRCUIT
FROM CROSSBAR OFFICE SECONDARY
MULTIPLE AND FROM
PANEL OFFICE DISTRICT OR
OFFICE MULTIPLE

CHANGES

B. CHANGES IN APPARATUS

B.1	Superseded	Superseded By
	R765 relay	R161 relay
	E1896 relay	E1684 relay
	178AH relay	178BW relay

D. DESCRIPTION OF CIRCUIT CHANGES

D.1 The use of the R765, 178AH and E1896 relays is rated Mfr. Disc. to show realistic ratings for obsolescent apparatus.

D.2 Note 105 is added.

All other headings, no change.

BELL TELEPHONE LABORATORIES, INC.

DEPT. 3440-MMS-EWO-G9

PANEL SYSTEM
LOCAL TEST DESK NO. 12B
TEST LINE CIRCUIT
FROM CROSSBAR OFFICE SECONDARY MULTIPLE AND FROM PANEL OFFICE DISTRICT OR OFFICE MULTIPLE

CHANGES

D. DESCRIPTION OF CIRCUIT CHANGES

D.1 The cross connections have been changed.

All other headings, No change.

BELL TELEPHONE LABORATORIES, INC.

DEPT. 3340

KBS}
FJS}C

PANEL SYSTEM
LOCAL TEST DESK NO. 12B
TEST LINE CIRCUIT
FROM CROSSBAR OFFICE SECONDARY MULTIPLE AND FROM PANEL OFFICE DISTRICT OR OFFICE MULTIPLE

1. PURPOSE OF CIRCUIT

This circuit is designed to provide means for connecting subscribers lines, from Panel and Crossbar Offices, to the local test desk for test purposes.

2. WORKING LIMITS

2.1 (L) Relay

2.11 Maximum external circuit resistance, 1500 ohms.

2.12 Minimum insulation resistance, 10,000 ohms.

3. FUNCTIONS

3.1 Connects a subscriber's line to the test desk through the panel "district" or "office" multiple.

3.2 Connects a subscriber's line to the test desk through the crossbar office secondary multiple.

3.3 Provides supervision over the test line.

3.4 Prevents disconnection if the plug is removed from the jack until the disconnect key is operated.

3.5 Makes the trunk busy to incoming calls if the plug is inserted in the test jack without a signal being received.

3.6 Holds the trunk busy to incoming calls during the time the disconnect key is operated.

4. CONNECTING CIRCUITS

4.1 Office link and connector circuit, crossbar.

4.2 District selector circuit, panel.

4.3 Office selector circuit, panel.

4.4 Test circuit No. 12B local test desk.

4.5 Auxiliary signal circuit.

DESCRIPTION OF OPERATION

5.1 Incoming Call From Panel Office

When an outside trouble man dials the proper code, a circuit is completed thru the district or office selector circuit to the test line. The bridge across the line causes the operation of relay (L) which in turn causes the operation of relays (L1) and (L2). Relay (L1) operated grounds the "S" lead which holds the district or office selector in the cut thru position. Relay (L2) operated closes ground to the auxiliary signal circuit and connects lamps (SUP) and (BY) to battery thru interrupter (FL) causing these lamps to flash at each position of the test desk at which the test line is multipled.

5.2 Incoming Call From Crossbar Office

Under this condition the call is completed thru the office link and connector circuit of the crossbar office to the test line. The functions of the relays and lamps are the same as described under "Incoming Calls From Panel Offices." The grounding of the "S" lead under this condition holds the "Hold" magnets operated.

5.3 Answering Call - Panel or Crossbar

When the test desk man answers the call by inserting the plug of the test cord in the test line jack, relay (CO) operates over the sleeve. Relay (CO) operating, causes relay (H) to operate and opens the circuit to relay (L) causing its release. Relay (L) releasing causes relays (L1) and (L2) to release. Under this condition the lamps stop flashing, the red lamp remaining steadily lighted at each position as a busy signal while the white lamp is extinguished. Relay (H) operating, locks and connects ground to lead "S" of both Panel and Crossbar Office multiple and "S1" lead of crossbar office multiple for the purpose of holding the connection and maintaining a busy condition. Relay (L1) is slow release in order that it will keep ground on the "S" leads of both panel and crossbar office multiple until relay (H) operates. The required tests are then made by the test man at the local test desk.

5.4 Plug of Test Cord Removed From the Jack Without Disconnection - Panel or Crossbar

If the plug of the test cord is removed from the jack before the bridge is removed, relay (L) reoperates as soon as relay (CO) releases. Relay (L) operating, causes relays (L1) and (L2) to operate. Relay (L2) operating causes the white lamp to flash leaving the red lamp lighted steadily and connects ground to the auxiliary signal circuit. Relay (L1) operating, performs no useful function at this time because relay (H) is held operated thru its locking circuit and in turn is guarding the sleeve leads for either panel or crossbar calls. When the bridge is removed from the line, relays (L), (L1) and (L2) release leaving the red lamp lighted steadily and the white lamp extinguished.

5.5 Disconnection - "Panel" Call

If the plug of the test cord is withdrawn from the jack before the disconnect key is operated, the (CO) relay releases and when the disconnect key is operated, the (D) relay operates. The (D) relay operated, shunts the (H) relay down which causes the red lamp to be extinguished. When the disconnect key is released the (D) relay releases and ground is removed from the "S" lead causing the selector to disconnect. If the disconnect key is operated before the plug of the test cord is withdrawn from the jack, the (D) relay operates, shunting the (H) relay down. When the disconnect key is released ground is momentarily removed from the sleeve terminal as the (D) relay is slow in releasing thus allowing the selector to disconnect. The release of the (D) relay, reoperates the (H) relay and again puts a ground on the sleeve to make the circuit test busy. When the plug of the cord is withdrawn from the jack the (CO) relay releases. The disconnect key must then be reoperated causing the (D) relay to operate which releases the (H) relay. When the disconnect key is released, the (D) relay releases restoring the circuit to normal.

5.6 Disconnection - "Crossbar" Call

The operation of the (DIS) key under this condition performs the same functions as described under "Disconnection - Panel Call" with the exception that upon the release of the (H) relay, ground is removed from lead "S" causing the "hold" magnets to release. The (DIS) key operated also connects ground on lead "S1" holding the test line busy to incoming calls. The release of the (DIS) key removes the busy ground condition from the "S1" lead.

If the disconnect key is operated before the plug of the test cord is withdrawn from the jack, the relay action is the same as described in the preceding paragraph. With the (DIS) key operated, ground is removed from lead "S" of the "secondary office multiple" causing the "hold" magnets to release. The release of the (DIS) key causes relay (D) to release and relay (H) to re-operate which connects ground to leads "S" and "S1" to make the circuit test busy. Under this condition the circuit is restored to normal in the same manner as described in the preceding paragraph.

5.7 Test Line Make Busy - Panel and Crossbar

The test line is arranged so that it will be made busy to incoming calls if the plug is inserted in the jack when there is no incoming call. The busy lamp (BY) will be lighted. Removal of the plug and operation of the disconnect key will free the test line and put out the busy lamp.

BELL TELEPHONE LABORATORIES, INC.

DEPT. 332

EJ)
WLF) GK