American Telephone and Telegraph Company

BELL SYSTEM PRACTICES
Teletypewriter and Manual
Telegraph Station and PBX
Installation and Maintenance

SECTION P65.902
Appendix 1
Issue C, 10-15-43
Long Lines Department
Dist. Class. 400AC-600AC

APPLIQUE CIRCUIT PER

BSP SECTION P90.990

TO BE USED IN CONJUNCTION WITH THE

SELECTIVE RECEIVING CIRCUIT

PER BSP SECTION P90.982

1. GENERAL

1.01 This appendix contains a description of an applique circuit to be used in conjunction with the selective receiving circuit shown in Section P90.982. The schematic drawing of this applique circuit is covered by Section P90.990.

1.02 This appendix supersedes Issue B. It is reissued to make various minor changes and bring it up to date.

1.03 The power for the operation of this applique circuit is obtained from the selective receiving circuit covered by Section P90.982.

1.04 Teletypewriters used in conjunction with this applique must be arranged per Sections P90.992 or P90.998.

2. FUNCTIONS

2.01 The functions provided by this applique circuit, when used in conjunction with the selective receiving circuit, are as follows:

(a) Upon receipt of the 22 impulse master disconnect code at stations equipped with this applique circuit, all teletypewriter equipment associated with this applique

circuit is deactivated so it can neither transmit teletypewriter signals to nor receive them from the line. In addition, a 15D-3 indicator is lighted at all such points to indicate this condition.

Note: This 15D-3 indicator should not be confused with the busy lamp (21A-3) shown in Section P90.982, which is used to indicate the circuit condition; i.e., circuit idle or busy.

(b) By means of various 20 impulse station codes, the calling office can select one station at a time. Upon receipt of its 20 impulse station code a station is connected to the teletypewriter circuit and the 15D-3 indicator at that point is extinguished. At the same time a buzzer is operated. This buzzer may be stopped by the operation of a nonlocking key.

(c) Upon receipt of the 24 impulse master connect code all stations are connected to the teletypewriter circuit and the 15D-3 indicators at all points are extinguished. In this condition the buzzer is not operated at any station.

3. EQUIPMENT ARRANGEMENT

3.01 This applique circuit, with the exception of the indicator, buzzer and key, is mounted in a Columbia Type "A" surface cabinet 6" x 6" with a walnut finish. The indicator, buzzer and key should be installed in a location suitable to the customer and usually on the teletypewriter table. (See Paragraph 5.01.)

4. CIRCUIT DESCRIPTION

4.01 The drawing in Section P90.990, shows all relays released. As a result the customer's teletypewriter equipment associated with this applique circuit is deactivated so that it can neither transmit teletypewriter signals to, nor receive them from the line, and the 15D-3 indicator will be lighted, indicating this condition:

The teletypewriter apparatus is deactivated in the following manner, assuming the external line-test key, where one is provided, to be in the "line" position:

(a) The transmitting mechanism is short circuited at top Contacts 1-2 of the (A) relay.

(b) The receiving mechanism is disabled by top Contacts 4-5 of the (A) relay short circuiting the armature and marking contact of the teletypewriter line relay, causing the receiving mechanism to receive a continuous marking signal.

4.02 Receipt of Station Code

(a) Upon receipt of the assigned 20 impulse station code by the selective receiving circuit, relay (B) will be operated due to the closure of the (A) selector Contacts 1-2 (P90.982), the path being from the negative side of the power supply on Terminal 22 of the (A) terminal strip, to Terminal 1 of the (A) terminal strip, through Contacts 1-2 of the (A) selector to Terminal 2 of the (A) terminal strip, the winding of the (B) relay, the (B) resistance to the positive side of the power supply on Terminal 23 of the (A) terminal strip.

(b) Relay (B) operated provides an operating path for the (A) relay from the negative side of the power supply on Terminal 22 of the (A) terminal strip through bottom Contacts 2-1 of the (B) relay, winding of the (A) relay, the (A) resistance to the positive side of the power supply on Terminal 23 of the (A) terminal strip.

(c) Relay (A) operates and locks up through its top Contacts 6-7 to the negative side of the power supply.

(d) Relay (B) now has a locking path through its top Contacts 1-2, bottom Contacts 6-7 of the (A) relay, break Contacts of the (A) nonlocking key to the negative side of the power supply.

(e) Relay (B) operated also provides an operating path for the (A) buzzer from one side of the low voltage supply on Terminal 19 of the (A) terminal strip, through top Contacts 3-4 of the (B) relay, operating winding of the (A) buzzer to the other side of the low voltage power supply on Terminal 20 of the (A) terminal strip.

(f) Relay (A) operated also extinguishes the (A) indicator when Contacts 2-3 bottom of (A) relay open, and removes short circuits from the sending and receiving units of the teletypewriter equipment by the operation of its top break Contacts 4-5 and 1-2.

(g) The (A) buzzer may be stopped by operating the nonlocking key (A) since this opens the locking path of the (B) relay, permitting this relay to release and open the buzzer circuit.

(h) The customer may now send and receive traffic over the teletypewriter circuit.

4.03 Receipt of Master Connect Code

(a) Assume the circuit is again in the condition described in Paragraph 4.01; i.e., all relays released. Upon receipt of the assigned 24 impulse master connect code by the receiving selector, Contacts 1-4 of the (A) selector (P90.982) close at all stations, thus providing an operating path for the (C) relay from the negative side of the power supply on Terminal 22 of the (A) terminal strip, to Terminal 1 of the (A) terminal strip through Contacts 1-4 of the (A) selector, to Terminal 4 of the (A) terminal strip, the winding of the (C) relay, the (C) resistance to the positive side of the power supply on Terminal 23 of the (A) terminal strip.

(b) The (C) relay operates and provides an operating path for the (A) relay from the negative side of the power supply on Terminal 22, through bottom Contacts 1-2 of the (C) relay, winding of the (A) relay, the (A) resistance to the positive side of the power supply on Terminal 23 of the (A) terminal strip.

(c) Relay (A) operates and locks up as described in Paragraph 4.02 (c) and performs the functions described in Paragraph 4.02 (f). Since in this case the master connect code was employed the teletypewriter equipment at all points is now connected to the teletypewriter circuit.

(d) Since relay (C) does not have a locking circuit, it will release when Contacts 1-4 of selector (A) open, which occurs when the final digit of the calling code is received.

4.04 Receipt of Master Disconnect Code

(a) Upon receipt of the assigned 22 impulse master disconnect code by the selective receiving circuit, Contacts 1-3 of the (A) selector (P90.982) close at all stations, shorting the winding of the (A) relay, permitting it to release, thus disconnecting all teletypewriter equipment that is associated with this applique circuit, from the teletypewriter circuit.

(b) Release of the (A) relay causes the (A) indicator to light again.

(c) Release of the (A) relay will also release relay (B) which in turn will silence the buzzer operated in 4.02 (e) if this was not done manually with the nonlocking key (A).

5. INSTALLATION

5.01 The equipment comprising this applique circuit shall be installed in a location suitable to the customer in the same room with the teletypewriter equipment and adjacent to the cabinet housing the selective receiving circuit. The selective receiving circuit equipment and the applique equipment shall be mounted on the wall wherever practicable. One mounting board should be made up locally for this purpose. Refer to the installation information in Section P65.902. The key, buzzer and lamp shall be mounted at the teletypewriter position. The mounting and wiring of the equipment are shown on BSP's in the P90 series. Mounting screws are not furnished with the Columbia cabinet.

5.02 The teletypewriter associated with this applique circuit must be equipped with a line relay.

6. MAINTENANCE

6.01 All equipment associated with this circuit shall be maintained in accordance with the instructions contained in Bell System Practices.

6.02 When the instructions received from the testroom require that the customer's teletypewriter shall be connected direct to the line circuit during periods of selector trouble, proceed as follows:

(a) When an external line-test key is provided.

(1) Block relay (A) of the applique circuit to its operated position. This will remove the short circuits placed on the customer's teletypewriter equipment by Contacts 1-2 and 4-5 of the (A) relay. (See P90.990).

(2) Operate the line-test key to the "Line" position and the teletypewriter is connected to the line circuit.

(3) If it is found necessary to observe the operation of relay (A) to clear the trouble, open Leads "X" or "Y" and "U" or "V" to the applique circuit at the table terminal strip and remove the blocking tool. (See P90.992.)

(b) When the external line-test key is not provided.

(1) Disconnect the H. B. Jones plugs and sockets shown on Section P90.998. This will remove the short circuits placed on the teletypewriter equipment by the (A) relay in the applique circuit and connect the teletypewriter to the line circuit.

7. TESTING

7.01 Before placing this circuit in service, its correct operation, as described in this section, shall be checked in conjunction with the selective receiving circuit.

8. REFERENCES

8.01 This applique circuit is covered by the following BSP sections and drawings:

Section P90.990	(Drawing 20824-SD-124)	Schematic
Section P90.991	(Drawing 20824-T-131)	Wiring
No Section	(Drawing 20824-ED-131)	Equipment

8.02 A complete list of BSP sections and drawings concerning the 64C1 selector system will be found in Section P65.902.