

American Telephone and Telegraph Company

BELL SYSTEM PRACTICES SECTION P65.902
Teletypewriter and Manual Appendix 7
Telegraph Station and PBX Issue A, 6-1-52
Installation and Maintenance Long Lines Department
Dist. Class. 400AC-600AC

PLAN 14

APPLIQUE CIRCUIT PER BSP SECTION P91.949

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 with the selective receiving circuit shown in Section P90.982. The schematic drawing of this applique is covered in Section P91.949.

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

2. FUNCTIONS

2.01 This applique performs functions similar to those of the applique per P90.984, which this applique supersedes for new services, but the busy indications differ.

(a) Receipt of the assigned 20 impulse station code will operate a buzzer and turn "ON" the power of a teletypewriter at the called station. The buzzer will continue to operate until silenced by operation of a key, or until the 22 impulse master disconnect code for turning "OFF" the power is received.

(b) Receipt of the 20 impulse master connect code will perform simultaneously at all stations the functions given in (a) above.

(c) Receipt of the 22 impulse master disconnect code will turn "OFF" the power of the teletypewriter at each station. The buzzer will be silenced, if operating.

(d) The 21B3 indicator will:

1. Light steadily while codes are being dialed.
2. Flash at all stations during transmission of signals.
3. At all stations busy lamps will be lighted steadily during pauses in transmission.
4. If transmission takes place without any stations being called the busy lamps will be extinguished during pauses in transmission.
5. A clearing out signal (disconnect code) is required to restore the indicator at the opening of business or subsequent to an open line condition.

2.02 Manual power connect and disconnect keys are provided. A station started with the manual key is connected to the line.

2.03 The power switch on the teletypewriter base may be used by the attendant to prevent remote starting of the motor while paper and ribbons are being replaced.

3. EQUIPMENT ARRANGEMENT

3.01 The applique equipment is contained in a small apparatus cabinet.

3.02 Section P91.949 is arranged for use with a 15-type teletypewriter. The applique may be used with other teletypewriters as required.

4. CIRCUIT DESCRIPTION

4.01 The circuit covered by P91.949 is designed to work with the receiving selector on the 64C1 system, which is covered by P90.982. This arrangement provides means so that the attendant at a point having calling equipment may, by dialing the proper code, connect and disconnect the power to the teletypewriter set at a remote point. The lamp circuit is such that when a selecting code is being transmitted over the teletypewriter service, the busy lamp will remain lighted. After a station has been selected and teletypewriter signals are being transmitted to that point the busy lamp will follow the teletypewriter signals, remaining lit in case the sending operator hesitates, if transmitting by keyboard, or stops the transmitter distributor if that equipment is being employed. As soon as the transmission is over and the disconnect signal has been transmitted the busy lamp will be extinguished and will remain that way unless teletypewriter signals are transmitted over the circuit, in which case the busy lamp will again follow the teletypewriter signals but will not remain lit during pauses in the transmission of the teletypewriter signals.

4.02 Station Connect Code. When the attendant operates the calling equipment to connect the power supply to the teletypewriter at some point, the busy lamp will become energized since at that moment the dialing action permits the C and E relay in the 64C1 unit to release so that the locking circuit of the K relay is broken by lower contacts 4 and 5 of the C relay. The busy lamp is now energized since positive power is connected through top contacts 2 and 3 of the E relay, terminals 29 of the A terminal strip on P90.982 and 29 of the B terminal strip on P91.949 to one side of the 21B3 indicator. The other side of this indicator is connected through top contacts 5 and 6 of the K relay to the negative side of the power on terminal 22 of the B terminal strip on P91.949.

4.03 At the completion of dialing the 20 impulse station connect code, the 60-type selector in

the 64C1 selector system connects ground to terminal 2 of the B terminal strip P91.949 which is connected to the MB relay winding so that this relay operates and locks up through its top contacts 5 and 6, closed contacts of the E key, top contacts 1 and 2 of the DU relay and both bottom contacts 1 and 2 of the K relay, and top contacts 1 and 2 of the MB relay to ground. This relay operated connects power to the buzzer through its bottom contacts 1 and 2 and top contacts 1 and 2 of the BD relay. In addition, it connects power to the relay in Figure 2 through its top contacts 3 and 4.

4.04 The indicator lamp will remain burning until teletypewriter signals are transmitted over the teletypewriter service causing the C and E relays in the selector unit to be operated. One side of this lamp will now be connected to the armature of the PR receiving relay in the selector unit through the top contacts 1 and 2 of the E relay so that this lamp will follow the teletypewriter signals and is so polarized that it will be excited during the time that this receiving relay is on its marking side so that in the case transmission is stopped for any reason the lamp will burn continuously, indicating that the circuit is busy.

4.05 Master Connect Code. Receipt of the 20 impulse master connect code will cause the same action at all receiving stations simultaneously.

4.06 Disconnect Code. At the conclusion of the transmission of traffic the attendant will dial the assigned 22 impulse disconnect code which connects ground to the winding of the DU relay causing it to operate and lock up through its bottom contacts 4 and 5, top contacts 1 and 2 of the MB relay to ground and in addition through bottom contacts 1 and 2 of the K relay to ground. Relay DU operated opens the locking path of the MB relay by means of top contacts 1 and 2 of the DU relay, causing the MB relay to release. In addition, this relay operated connects the armature of the PR relay in the 64C1 selector set through to bottom contacts 6 and 7 to the grid of the A vacuum tube. The battery is also connected by means of top contacts 3 and 4 of the DU relay to the winding of the 60-type selector in the receiving selector unit so that it

steps off its top contact. When the teletypewriter service closes due to the release of the dial key or by the attendant dialing the teletypewriter signal 1, positive battery is connected from the armature of the PR relay, through resistance R5, bottom contacts 6 and 7 of the DU relay to the grid of the A vacuum tube causing its plate circuit to become conducting so that the F relay operates, which in turn connects battery to the windings of the C and E relay causing them to operate, thus removing the 60-type selector from the circuit.

*4.07 As soon as the C and E relays are operated ground will be connected through lower contacts 4 and 5 of the C relay, top contacts 6 and 7 of the DU relay in the applique circuit to the winding of the K relay causing it to operate and lock up through its bottom contacts 3 and 4 and bottom contacts 4 and 5 of the C relay in the selector circuit to ground. Relay K operated by means of its top transfer contacts 4, 5 and 6 reverse the polarity of the power supply to the indicator lamp causing it to be extinguished on a marking signal. In addition, the operation of the K relay, by means of its bottom contacts 1 and 2, opens the locking path of the DU relay so that it will release provided the MB relay has fallen down.

*4.08 Clearing Out Signal. It should be noted that when power is turned on the K relay in the applique circuit will be released so that at the start of business after all stations have turned on their power, the control office should send a disconnect signal in order that the busy signals will be extinguished. The same procedure is required following an open line condition.

5. INSTALLATION

5.01 Wiring of the equipment is shown in Section P91.949.1. Equipment arrangements are shown on Drawing 22750-ED-129.

5.02 The applique apparatus cabinet may be mounted with the associated selective receiving circuit.

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*Indicates change

5.03 The manual control keys and the busy indicator are mounted on the teletypewriter table.

6. MAINTENANCE

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

7. TESTING

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

7.02 When testing this applique circuit with the portable calling circuit covered in Paragraph 7 of P65.902, it is necessary that the dial contacts be closed at the completion of dialing any of the assigned codes.

7.03 Since all assigned codes are of an even number of digits, the dial contacts will be closed at the completion of dialing if the contacts are closed at the start of dialing.

7.04 Before dialing a code, check with the teletypewriter meter or other suitable means to insure that the contacts are closed. If the contacts are closed, proceed to dial the complete code. If the contacts are open, dial the digit 1 (which will close the contacts) followed by the complete code.

8. REFERENCES

8.01 This applique is covered by the following Bell System Practice Sections and Drawings:

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|---------------------------------|-------------|
| Section P91.949 (22750-SD-33) | - Schematic |
| Section P91.949.1 (22750-T-113) | - Wiring |
| 22750-ED-129) | - Equipment |

8.02 A complete list of Bell System Practice Sections and drawings covering the 64C1 selective receiving unit is contained in Section P65.902.1