American Telephone and Telegraph Company

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

SECTION P65.902
Appendix 4
Issue A, 10-15-43
Long Lines Department
Dist. Class 400AC-600AC

APPLIQUE CIRCUIT PER BSP SECTION P90.978

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 is covered by Section P90.978.

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

2. FUNCTIONS

2.01 The functions provided by this applique circuit, when used in conjunction with the selective receiving circuit, are described below. As described, the functions apply to the use of this applique arrangement with a regular and spare teletypewriter set. However, the same functions can be provided where only one teletypewriter set is involved, in which case the manual power transfer switch and one set of manual control keys are omitted.

(a) Receipt of the assigned 20 impulse station code will turn "ON" the power for a regular or spare teletypewriter set depending on the position of a manual power transfer switch and at the same time will close the external signal circuit. The signal circuit will remain closed until released by a nonlocking key. (The external signal arrangement may be provided by either the customer or the Telephone Company.)

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

(c) By operating a nonlocking key at either the regular or spare teletypewriter position, the attendant may turn "ON" the power for the regular or spare teletypewriter set (depending on the position of the manual power transfer switch) without closing the external signal circuit.

(d) When the power for the regular or spare teletypewriter set has been turned "ON" manually and a 20 impulse station code or a 20 impulse master connect code is received, the external signal circuit will be closed. The signal circuit will remain closed until opened by operation of a nonlocking key.

(e) When the power for a teletypewriter set is to be turned "OFF" it must be done manually.

2.02 In order that the attendant may shut off the teletypewriter motor to change paper, ribbons, etc., the power switch on the teletypewriter base is left operative.

3. EQUIPMENT ARRANGEMENT

3.01 Where a regular and a spare teletypewriter set are to be controlled, this applique circuit consists of a power transfer switch, a power control relay, a signal control relay, and 6 nonlocking keys for local manual control of the teletypewriter power and the signal. Where only one teletypewriter is to be controlled, the power transfer switch and 3 of the nonlocking keys are omitted.

4. CIRCUIT DESCRIPTION

4.01 Section P90.978, Figures 1, 2, B and C, are used where the regular and spare teletypewriter sets are to be controlled by this applique arrangement. Such an arrangement is described in the following paragraphs. Where only one teletypewriter set is to be controlled, Figures 1, 2 and A are used. The operation of the one set arrangement is not described herein because it is fundamentally the same as for the two set arrangement

4.02 Figure C shows the manual power transfer switch so operated as to permit control of power to the regular teletypewriter set, and Figure 1 shows the S.E.M. relays (A) and (B) released thereby disconnecting power from the teletypewriter set and external signal circuit.

4.03 Receipt of Station Code

(a) Upon receipt of the assigned 20 impulse station code by the selective receiving circuit (Fig. 1, P90.982), the (A) and (B) relays of that Figure will be operated due to the closure of Contacts 1-2 of the (A) selector.

The operating path for relay (A) is 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, Terminal 2 of the (A) terminal strip, to Terminal 6 of the (A) terminal strip, winding of relay (A), the (A) resistance, to the positive side of the power supply.

The operating path for relay (B) is 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 Terminals 2, 6 and 11 of the (A) terminal strip, winding of relay (B), the (B) resistance, to the positive side of the power supply.

(b) Relay (A) (Fig. 1, P90.982) operated, provides an operating path for the S.E.M. (A) relay. The operating path is from one side of the low voltage power supply on Terminal 20 of the (A) terminal strip, through the winding of the S.E.M. (A) relay, to Terminal 7 of the (A) terminal strip, through top Contacts 2-1 of relay (A) (P90.982, Fig. 1), to Terminals 8 and 13 of the (A) terminal strip, to the opposite side of the low voltage power supply on Terminal 19 of the (A) terminal strip. S.E.M. (A) relay operates.

(c) The S.E.M. (A) relay operated, will close a signal circuit with one set of its contacts. The relay locks up through its other set of contacts, the closed contacts of the (A) and (A') nonlocking keys in series, to Terminals 8 and 13 of the (A) terminal strip, to the low voltage power supply on Terminal 19 of the (A) terminal strip. Operation

of either the (A) or (A') nonlocking key will cause the S.E.M. (A) relay to release, thereby opening the signal circuit and stopping the signal.

(d) Relay (B) (Fig. 1, P90.982) operated, provides an operating path for the S.E.M. (B) relay. The operating path is from one side of the low voltage power supply on Terminal 20 of the (A) terminal strip, through the winding of the S.E.M. (B) relay, to Terminal 12 of the (A) terminal strip, through top Contacts 2-1 of relay (B) (P90.982, Fig. 1), Terminal 13 of the (A) terminal strip, to the opposite side of the low voltage power supply on Terminal 19 of the (A) terminal strip. S.E.M. (B) relay operates.

(e) The S.E.M. (B) relay operated, will turn "ON," with one set of its contacts, the power for either the regular or spare teletypewriter set, depending on the position of the manual power transfer switch. The relay locks up through its other set of contacts, the closed contacts of the (C) and (C') nonlocking keys in series, to Terminals 8 and 13 of the (A) terminal strip, to the low voltage power supply on Terminal 19 of the (A) terminal strip. When the power for either the regular or spare teletypewriter set is to be turned "OFF" the (C) or (C') nonlocking key must be operated to release the S.E.M. (B) relay.

4.04 Receipt of Master Connect Code

Assume the circuit is again in the condition described in Paragraph 4.02; i.e., all relays released. Upon receipt of the 20 impulse master connect code by the selective receiving circuit, Contacts1-2 of the (A) selector (Fig. 1, P90.982) close at all stations and will perform the same functions as in Paragraph 4.03.

4.05 Manual Power Control

Assuming the relays to be released as in Paragraph 4.02, the power for the regular or spare teletypewriter set (depending on the position of the manual power transfer switch) may be turned "ON" manually without closing the signal circuit, by operating either the (B) or (B') nonlocking key thereby-causing the S.E.M. (B) relay to operate. The operating path is from one side of the low voltage power supply on Terminal 20 of the (A) terminal strip, through the winding of the S.E.M. (B) relay, the contacts of either the (B) or (B') nonlocking

key, to Terminals 8 and 13 of the (A) terminal strip, to the opposite side of the low voltage power supply on Terminal 19 of the (A) terminal strip. The S.E.M. (B) relay will lock up as in Paragraph 4.03 (e). When the power for either the regular or spare teletypewriter set is to be turned "OFF" the (C) or (C') nonlocking key must be operated to release the S.E.M. (B) relay.

5. INSTALLATION

5.01 The mounting and wiring of the equipment other than the external signal arrangement are shown in BSP sections in the P90 series. Section P31.130 covers information for installing remote signal bells in hazardous locations.

6. MAINTENANCE

6.01 All equipment associated with this circuit shall be maintained in accordance with the instructions contained in Bell System Practices. Section P31.130 covers special precautions to be observed in connection with the maintenance of remote signal bells in hazardous locations.

7. TESTING

7.01 Before placing this circuit in service, its correct operation, as described in this appendix 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 P90.978 (Drawing 21062-SD-105) Schematic
Section P90.979 (Drawing 21062-T- 107) Wiring
Section P90.976 (Drawing 21062-ED-105) Equipment

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