TOLL SYSTEMS
"O" & "ON" CARRIER
REMOTE ALARM RELEASE CIRCUIT

CHANGES

C. CHANGES IN CIRCUIT REQUIREMENTS OTHER THAN THOSE APPLYING TO ADDED OR REMOVED APPARATUS

C.1 Additional data provided for CR relay.

C.2 Test note for RS relay changed.

D. DESCRIPTION OF CIRCUIT CHANGES

D.1 R6 and R7 designations were changed.

D.2 Designations were added in Figure 2, (T1, R1).

All other headings under Changes, no change.

1. PURPOSE OF CIRCUIT

1.1 This circuit provides a method of releasing the "O" and "ON" alarm circuit at an unattended terminal.

2. WORKING LIMITS

2.1 None.

3. FUNCTIONS

3.1 Provides a method of connecting a 1000-cycle signal receiver to the "O" and "ON" 4W(REC) or 2W voice frequency connecting circuits when the alarm circuit is operated.

3.11 Provides a ground to release the alarm circuit at an unattended terminal when a 1000 -20 cycle tone, with a duration of 20 seconds, is received.

3.12 Provides voltage dropping resistors so that the 24-volt filament circuit may be connected to a 48-volt supply when 24-volt filament battery is not available.

4. CONNECTING CIRCUITS

4.1 "O" and "ON" Carrier Telephone Application Schematic - SD95150-01.

4.2 1000-Cycle Signal Receiving Circuit - SD55392-01.

DESCRIPTION OF OPERATION

5. GENERAL

This circuit provides a means of releasing the alarm circuit at an unattended "O" or "ON" terminal. When the alarm is actuated a 1000-cycle signal receiver is connected to the carrier voice frequency connecting circuit. When a 1000 -20 cycle tone is sent over the carrier channel, the 1000-cycle receiver will operate. If it is held operated for 20-25 seconds, the alarm circuit will release and the system is restored to normal.

6. CONNECTING RELAY AND RESTORE SYSTEM RELAY

When the alarm circuit of the "O" and "ON" Carrier is operated, 48 volts is applied to one side of the (CR) relay. When the (CR) relay operates, a 1000-cycle signal receiver is bridged across the 4W(REC) or 2W voice frequency connecting circuit of the "O" and "ON" terminal. The 1000-cycle signal receiver is usually bridged on channel No. 1. However any channel may be used if cross-talk considerations indicate that an alarm restore signal on one system may falsely restore an alarm on an adjacent system.

When the trouble has been cleared, a 1000 -20 cycle tone will operate the 1000-cycle signal receiver. If "Q" Option has been provided, in the 1000-cycle signal receiving circuit, this will ground the (SG) lead. Ground on the (SG) lead will close the operating path of the (RS) relay. Since the (RS) relay is a slow acting thermal relay, ground must be maintained for 25 seconds to insure operation.

Operation of the (RS) relay applies a ground to terminal 25 of the "O" and "ON" alarm circuit which will restore the alarm circuit. Restoration of the alarm circuit, removes the 48 volts from the (CR) relay which releases in 295 - 585 milliseconds. The 1000-cycle signal receiver is then removed from the line and the channel is restored to normal.

6.1 Auxiliary Relay

Figure 5 is provided for use only with "ON" systems. The "A" relay provides a means of grounding six "R" leads to release an "ON" carrier system.

6.2 Filament Supply Circuit

The 1000-cycle signal receiver requires a 24-volt filament battery which may not be available at the unattended terminal. By means of Figure 3 or 4, the receiver may be operated from a 48-volt supply. When the 48 volt supply is not regulated, Figure 3 should be provided and the 1000-cycle signal receiver should be connected for nonregulated battery operation. When the 48-volt supply is regulated, Figure 4 should be provided and the 1000-cycle signal receiver connected for regulated battery operation.

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