STATION SYSTEMS
F-50682 TELEPHONE SET
PRIVATE LINE STATION CIRCUIT
2-WIRE OR 4-WIRE
ARRANGED FOR LOOP OR SIMPLEX RINGING

Drawing for SD-69226-01 has been converted from 4- by 7-inch handbook size to 8-1/2 by 11-inch handbook size. This CD will no longer be printed in 4- by 7-inch handbook size.

BELL TELEPHONE LABORATORIES, INCORPORATED

DEPT 5113-WFBW-LHA

STATION SYSTEMS
F-50682 TELEPHONE SET
PRIVATE LINE STATION CIRCUIT
2-WIRE OR 4-WIRE
ARRANGED FOR LOOP OR SIMPLEX RINGING

1. PURPOSE OF CIRCUIT

To provide telephone service on a private line basis for the Ground Observer Corps on calls to the filter center, and to other observers on the same private line.

2. FUNCTIONS

2.1 Provide two-way talking on either a 2-wire or a four wire bases.

2.2 Provide local battery talking by means of 3 dry cells.

2.3 Provide for signalling other stations and the filter center by means of a hand generator.

2.4 Provide an incoming call signal by means of a bell in the set.

2.5 Provide outgoing and incoming signalling, on either a loop basis on the transmitting loop or simplexed on the transmitting pair.

3. CONNECTING CIRCUITS

3.1 Two and four wire private line circuits.

4. DESCRIPTION OF OPERATION

The set as wired in the shop is arranged for use on a two wire line. Transmission is provided through the (T1) induction coil with battery feed through the (L2) retard coil. The transmitter is always connected across the primary of the induction coil to provide a circuit termination but the battery is connected only when the push-to-talk switch is operated.

As furnished, the bell is connected across the loop for loop ringing. It is bridged by the (C3) condenser in series with the induction coil. The purpose of the condenser is to provide the necessary impedance at 20 cycles to permit the bell to ring. The number of bells that can be rung over a loop in parallel under these conditions will depend on loop resistance and other factors.

When the hand generator is operated the ringer and induction coil are disconnected and ringing current is sent out on the line. The set should always be grounded by connecting terminal 6 to ground, as directed in note 101, to prevent possible shock while ringing from a simultaneous incoming ring or foreign voltage through either the case or the generator handle.

The (RV1) resistor is provided to prevent acoustic shock due to incoming ringing and other causes.

The changes required in the set to convert it from two wire to four wire or from loop ringing to simplex ringing or both are shown by the dotted or dashed lines and by the table of connections.

All connection changes are made on or between the two inner rows of terminals on the terminal strips.

With simplex ringing, the grounded bell (or generator) is connected to the tip and ring in parallel through the mid-point of the (L1) retard coil.

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