

PREPAYMENT CALL-OFFICE INSTALLATIONS (C.B. MANUAL AREAS)

Public Call-offices Plan No. 5A and Subscribers' D.E.L. Circuits

Circuit Description

1. General.—This Instruction describes the circuit operation of prepayment call-office installations in C.B. manual areas. The circuit arrangement is shown in Dgm. N 2406, and the type of coin-collecting box used is Box, Coin-collecting, No. 14..., Complete.

2. Incoming calls.—Special operation is not required to receive incoming calls; the equipment functions as on a direct exchange line.

3. Outgoing calls.—The exchange equipment of call-office lines is arranged to prevent loop-calling, and to make the calling signal dependent upon the insertion of the necessary coins. The modification consists of removing the earth from the A-wire or L1 at the cut-off relay (see Dgm. N 1186, Figs. 3 and 4).

★**4. Lifting of handset and insertion of coins.**—When the telephone handset is removed from its cradle and four pennies are inserted, an earth is extended to the exchange via L2, the 350-ohm (or 1000-ohm) resistor, coin-bar springs 4 and 5 (spring assembly 1), balance-arm springs 8 and 9 (spring assembly 2), 500-ohm winding of Coil, Bridging, No. 7C, gravity-switch springs 1 and 2, 17-ohm winding of the induction coil, and springs 13 and 14 of the refund spring-set (spring assembly 3). Springs 6 and 7 of the coin-bar spring-set remove the short-circuit from the 150-ohm polarized relay and the coin-box transmitter in series, and springs 1 and 2 place a 200-ohm non-inductive shunt across the receiver.

5. Operator answers.—The operator answers and the caller states the number required. Prior to the depression of button A, a balanced earth is applied to both lines via the 500-ohm coils of the Coil, Bridging, No. 7C.

6. Operation of the polarized relay.—The exchange call-office cord-circuits are arranged to reverse the tip and ring of the answering cord when the calling cord is inserted into a jack (see Dgm. N 1186, Fig. 1). This reversal causes the operation of the polarized relay, the contacts of which short-circuit the telephone transmitter. The caller is therefore unable to speak to the called subscriber until button A is depressed.

7. Called subscriber answers.—On hearing the called subscriber answer, the caller depresses button A. This action causes the money to be deposited in the

cash box, and also restores the coin-bar and balance-arm spring-sets to normal. The earth is removed from the circuit by coin-bar springs 4 and 5 and balance-arm springs 8 and 9. Coin-bar springs 1 and 2 remove the 200-ohm shunt from the receiver, and springs 6 and 7 place a short-circuit across the polarized relay and the coin-box transmitter. The relay releases and removes the short-circuit from the telephone transmitter.

8. Called subscriber busy.—If the required number is busy or unobtainable, the caller either receives busy tone or is advised to press button B. The caller then replaces the telephone handset and depresses button B, which causes the money to be returned via the refund chute and also operates the refund spring-set for a period of approximately seven seconds. Springs 13 and 14 of the refund spring-set disconnect L2, and springs 11 and 12 place an earth on L1 via the coil of the 2000-ohm relay. This relay operates to battery from the cord-circuit, and locks to an earth via its own contact. The other contact of the relay disconnects L1. A clear is given to the exchange, and the call-office circuit is disconnected until the operator withdraws the plug from the jack. The 2000-ohm relay then releases and restores the circuit to normal.

★**9. Calls outside the unit-fee area but controlled by local operator.**—The caller inserts the local fee to obtain the operator, states the number required and is then told to insert the extra fee. The operator checks the fee, coin-by-coin, by means of the coin-box transmitter which picks up the distinctive sounds of a penny striking a wire-gong once, a sixpence striking a bell-gong once or a shilling striking the same bell-gong twice. The calling plug is now used to obtain the wanted subscriber, and the call proceeds, as indicated in pars. 6, 7 and 8.

10. Calls controlled by trunk operator.—Having inserted the local fee to obtain the operator, the caller is told to press button B. After the seven seconds disconnection period, a connexion is set-up between the controlling exchange and the caller, via the B-position at the local exchange. The wanted subscriber is obtained before the caller is requested to insert the total fee, which the trunk operator checks, as described in par. 9. The caller is then told to press button A, and when this has been done, the operator connects the two subscribers. The polarized relay does not operate in this case.

11. **Emergency calls.**—Public call-offices which are accessible from the public highway are fitted with emergency press-buttons, the operation of which enables a caller to call the exchange without inserting money in the coin-box. The operation of the emergency calling button places an earth on L2 via a 50-ohm resistor. The application of this low-resistance earth operates a relay which is in series with the normal line relay (see Dgm. N 1186, Fig. 4). This relay connects an interrupted earth to the calling-lamp circuit, causing the lamp to flash and thus indicating that the call must receive prompt attention.

Reference:—None
(S1/2)

E N D