

STATION SYSTEMS
KEY TELEPHONE SYSTEM NO. 1A
ATTENDANT'S TELEPHONE AND KEY CIRCUIT
USING 101A KEY EQUIPMENT KEY UNIT

CHANGES

B. CHANGES IN APPARATUS

B.1 Added

53A Head Telephone Set

B.2 Superseded

Superseded by

Equip. Unit)	
ED-91929-01 G11 and)	32A Key Tel. Unit
ED-91929-01 G21)	

5H Type Dial

6A Dial

D. DESCRIPTION OF CIRCUIT CHANGES

D.1 The equipment units ED-91929-01, G11 and G12 option "W" are rated "Mfr. Disc." for use in this circuit and are superseded by the 32A key telephone unit option "U".

D.2 The 53A head telephone set has been added.

D.3 Options designation "R", "S" and "T" have been added to designate the 52A, 52D and 53A head telephone sets respectively.

D.4 The 5H type dial in Figs. A and F has been designated option "Q" and rated "Mfr. Disc." superseded by the 6A Dial option "P".

D.5 Note 103 is revised to show the requirement of option "U" on a somewhat more limited basis than option "W" formerly was used on.

D.6 Circuit designations have been removed from the apparatus on the 24A Key Telephone Unit.

- D.7 Note 107 is omitted. This note gave the value of a constant to be used for G2 lamps in a formula on the line and signalling circuit drawings. This formula has been changed so that this constant is no longer required.
- D.8 Note 203 is added.
- D.9 The key designations, codes, etc. where adjustments are required are listed on the circuit requirements table.

All other headings under Changes, No change.

1. PURPOSE OF CIRCUIT

- 1.1 To provide an attendant's telephone and key circuit for the 1A telephone system that will permit an attendant to pick up more than six lines which is the maximum number of lines which can now be picked up with the key telephone sets of this system.

2. WORKING LIMITS

- 2.1 None.

3. FUNCTIONS

- 3.1 Provides for answering or originating calls on lines of the 1A key telephone system.
- 3.2 Provides line and busy lamps for indicating incoming calls and busy conditions.
- 3.3 Provides for talking.
- 3.4 Provides for dialing.
- 3.5 Provides for holding (central office or PBX lines).
- 3.6 Provides for flashing (central office or PBX lines).
- 3.7 Provides for signalling (ringdown tie lines, station lines, private lines and intercommunicating lines).

4. CONNECTING CIRCUITS

When this circuit is listed on a key sheet, the connecting information thereon is to be followed:

- 4.1 Line and signalling circuits of the 1A key telephone system SD-69091-01 and SD-69136-01.
- 4.2 Telephone set circuit of the 1A key telephone system SD-69197-01.

DESCRIPTION OF OPERATION

5. ANSWERING OR ORIGINATING CALLS ON CENTRAL OFFICE OR PBX LINES. (USING FIGURE C)

5.1 On incoming calls the line and busy lamps light as an incoming signal. To answer a call the line key of Figure 1 associated with a Figure C is operated, which connects the line through to Figure 3. If a 402 type telephone set is used Figure 3 connects directly to the 402 type set. If a hangup type set Figure F or G or a head telephone set Figure A or B is used then the telephone set equipment unit Figure 4 is provided and Figure 3 connects to Figure 4. If the head telephone set Figure A or B is used and the head set is in the A and B jacks the circuit is conditioned for talking when the line key is operated. Also if Figure F or G or the 402 type telephone set is used the circuit is conditioned for talking when the hand set is removed from its mounting and the line key is operated.

5.2 Dialing

In the case of an outgoing call that requires dialing, the dial is operated in the usual manner.

5.3 Holding

When the key is operate the "H" lead will be closed to the ring lead toward the telephone set or the telephone set equipment unit in Figure 4. The hold key also operates the (SW) relay Figure 3 which opens the ring lead toward the telephone set or the telephone set equipment unit and locks operated under control of the line key and the switch contacts of the 402 type set or the hangup type set Figure F or G through the A and A1 leads. The "H" lead circuit is closed at the key before the "R" lead circuit is open at the (SW) relay to maintain a closed circuit toward the central office or PBX while the hold condition is being placed on the line. When the hold key is released no circuit function takes place. When the line key is released or when the handset is replaced on its mounting the (SW) relay will release restoring the circuit to normal.

- 5.4 Flash the central office or FBI operator the flash and ring key is operated. The operation of this key opens the line whenever the key is operated.

6. SIGNALLING ON RINGDOWN TIE LINES STATION LINES AND INTERCOMMUNICATING LINES. (Connection by Line Keys)

To signal on any of these lines the line busy key associated with the line must be operated. The flash and ring key is then operated which connects ground to the "S" lead in Figure E which controls a relay in the tie line or station line circuit or a buzzer in the intercommunicating line.

7. LAMPS

When the lamps are not connected in multiple with 51A lamps in key telephone sets the A3 lamps should be provided. The power supply for these lamps is 14-26 volts D.C. or 15-25 volts A.C.

When the lamps are connected in multiple with 51A lamps in key telephone sets the G2 lamps should be provided if the power supply is 9-11 volts A.C., the A3 lamps if the power supply is from an 8, 9, 10, 11 or 13 cell battery or the K2 lamp if the power supply is from a 23 cell battery.

When the K2 lamp is used, a 350 ohm resistance is connected in series with it as covered in note 106 on the drawing.

8. INTERCOMMUNICATING LINE CONNECTED TO TELEPHONE CIRCUIT WHEN ALL KEYS ARE NORMAL.

When the handset in Figure F or G or in the telephone set is removed from its mounting and all line keys are normal the telephone circuit will be connected to the intercommunicating circuit if provided. To signal the call party, the flash and ring key is operated which connects ground to the "S" lead which operates a buzzer associated with the intercommunicating line. The head telephone sets, Figures A and B should not be used under this condition since the attendants would normally be connected to the intercommunicating line

9. TRANSMITTER CURRENT LIMITING DEVICE ("U" OR "W" OPTION FIGURE 4)

The lamp in Figure 4 ("U" or "W" option) is a current limiting device and is used to prevent excessive current in the head telephone set transmitter. The condenser is used to minimize transmission losses. The varistor in "U" option protects the lamp from excessive currents from ringing on the line after the station answers.

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