

## 110A KEY EQUIPMENT

### DESCRIPTION, INSTALLATION AND MAINTENANCE

#### 1.00 GENERAL

**1.01** This section was formerly Station Installation and Maintenance Section C53.437, Issue 1. Except for editorial changes and renumbering for inclusion in the Station Operations Manual, no other revisions have been made.

**1.02** This section covers the 110A key equipment which is designed for terminating telephoto channels. The 110A key equipment provides for the alternate use of transmitting and receiving pictures and talking over a 4-wire toll line.

#### 2.00 DESCRIPTION

**2.01** A main station at each 110A key equipment installation controls all switching from transmitting to receiving pictures or to talking by means of keys. Provision is made for extension stations which can be connected to the main station over local lines and to the telephoto-telephone channel.

##### Main Station

**2.02** The basic key box at the main station is a key unit per J53009A. For exceptionally large installations supplementary key units per J53009B may also be provided to increase the capacity of the station. Other equipment at the main station includes a push-to-talk handset, a G-type mounting, a subscriber set, and a buzzer.

##### Extension Station

**2.03** The equipment for each extension station consists of a push-to-talk handset, a G-type handset mounting, a ringing key, a subscriber set,

a 105-type apparatus box, and miscellaneous equipment units.

##### Monitoring

**2.04** Loudspeakers of the 100-type or monitoring headsets may be provided at main and extension stations for monitoring on the toll line.

**2.05** Fig. 1 illustrates a typical 110A key equipment arrangement.

#### 3.00 INSTALLATION

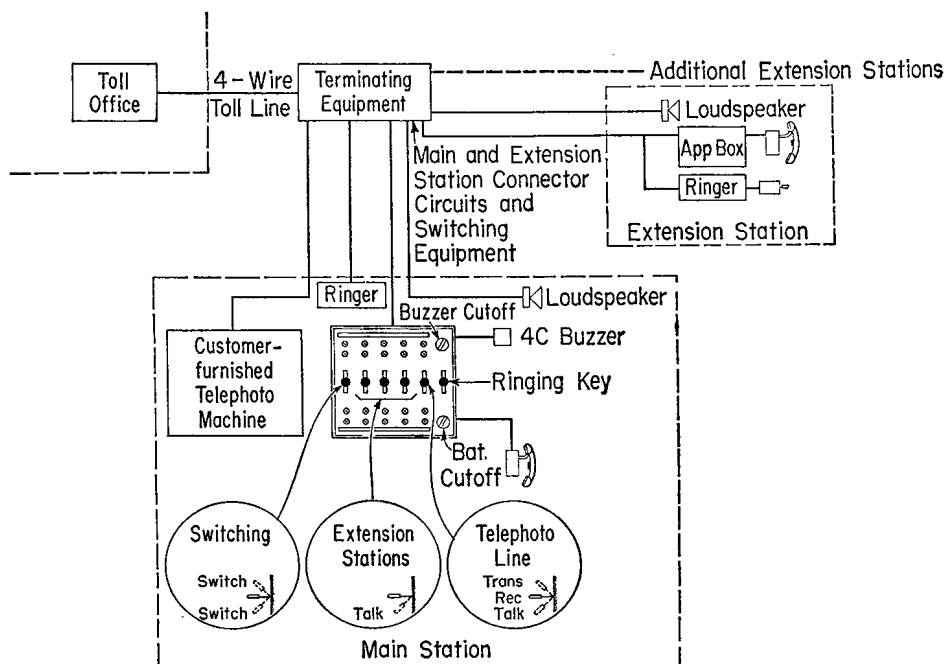
**3.01** Locate key boxes at main stations within easy reach of the attendant. Avoid mounting on light or unstable furniture.

**3.02** Handset mountings, subscriber sets, keys, etc, at main and extension stations shall be located and mounted as indicated in the C sections covering such equipment.

**3.03** Locate, mount, and wire amplifiers and loudspeakers as indicated in the C Section covering loudspeakers and amplifiers.

##### Equipment Arrangement

**3.04** The apparatus associated with the 4-wire toll termination, the master station control circuit, and all common equipment is mounted on a unit occupying the space of four 19-inch mounting plates. The apparatus associated with each extension station connector circuit is mounted on one 1-3/4-inch mounting plate. These units are equipped with terminal strips for connecting incoming leads and they can be mounted on any standard relay rack or in metal apparatus cabinets.



**Fig. 1 — Typical 110A Key Equipment Arrangement**

The coils, resistances, etc, required at the extension stations are mounted on angle-type equipment units similar to those used in the 1A key telephone system. These units may be mounted in the 105-type apparatus box at the extension stations.

#### Power Supply

**3.05** The dc power supply for use with the 110A key equipment can be obtained from any one of the following sources:

- Local battery of 8 cells.
- Local battery of 10 cells.
- Local battery of 12 cells.
- Local battery of 17 or more up to 23 cells.
- Direct feeder from 24-volt central office battery.

#### Ringing Supply

**3.06** The 20-cycle ringing supply can be obtained from a local source, if available, or over cable pairs from the central office.

### 4.00 METHOD OF OPERATION

#### Operation of the Telephoto Line

**4.01** To originate a call over the telephoto line, line key No. 1 is operated downward, the handset is lifted from its mounting, and the ringing key is operated downward to the ring position. During talking over the telephoto line, line key No. 1 is always in the downward position.

**4.02** To receive a picture when using a 2-wire telephoto machine, the attendant will operate line key No. 1 to the normal position. To send a picture, he will operate this key to the upward position. However, with 4-wire telephoto machines, the upper position of line key No. 1 is not used. Switching from send to receive and vice versa is accomplished at the telephoto machines.

**4.03** Incoming calls on the telephoto line are indicated visually at the main station key box by an intermittent nonlocking line lamp. The ringer in the subscriber set furnishes the audible signal.

**4.04** The loudspeaker at the main station, if required, is connected to the telephoto line for monitoring purposes, but is disconnected from the line when the handset is removed from its mounting and the push-to-talk button of the handset is operated.

#### **Calls between Main and Extension Stations**

**4.05** To make a call from the main station to an extension station, the attendant will operate the extension line pickup key downward (generally wired to the lower operated positions of line key 2, 3, 4, or 5) and then will operate the ringing key. *To avoid ringing on the telephoto line, line key No. 1 must be either in the normal or upward position.*

**4.06** To originate a call from an extension station, the ringing key is operated and released. The lamp associated with this line lights at the key box, and the buzzer operates to indicate an incoming call. Operation of the pickup key at the main station extinguishes the lamp and silences the buzzer.

**4.07** Conference connections can be established between the main station and extension stations.

#### **Remote Switching of Telephoto Line**

**4.08** At some locations, one or more of the key positions in the key box may be assigned to connect one 4-wire line to another 4-wire line on a remote control basis. When one of these switching keys is operated, it will close a dc signaling channel to the toll office where relays will be operated to complete the transmission circuit between these two lines.

### **5.00 MAINTENANCE**

**5.01** All maintenance and routine tests shall be made under the direction of the toll testboard in accordance with local procedure. No changes, rearrangements, additions, or maintenance work shall be performed on any circuit or equipment without authorization from the toll testboard.

**5.02** Where dry cells are used for talking battery at extension stations, they should be scheduled for replacement on a 6-month basis.

**5.03** Maintain amplifiers, loudspeakers, keys, etc, as covered in other C Sections and PBX Installation and Maintenance Practices.

### **6.00 DRAWINGS**

The following list of drawings covers the 110A key equipment.

#### **Circuits**

SD-69160-01	Station Systems—Equipment Units
SD-69169-01	4-wire Toll Line Termination Arranged for Alternate Telephotograph or Telephone Service

#### **Equipment**

ED-69074-01	Key Box Assembly
ED-69198-01	Relay Units
ED-90782-01	Relay Rack Unit Framework Assembly
ED-91929-01	Equipment Units—Angle Type 1-3/4-in. wide
ED-91938-01	Equipment Units—Angle Type 3-1/2-in. wide