NO. 8A ANNOUNCEMENT SYSTEM
RECORDED ANNOUNCEMENT FACILITIES
FOR CONNECTION TO LINE TERMINALS
GENERAL DESCRIPTIVE INFORMATION

1. GENERAL

1.01 The No. 8A Announcement System is a line terminal recorded announcement system designed for sponsor operation. The term sponsor as used in this section applies to either the telephone company or an outside customer. Announcements of public interest, such as prayer-of-the-day, stock quotations, gardening information, department store sales information, etc, can be made available to a calling party who dials a directory number. In many cases the announcement will also be coupled with an advertisement.

1.02 This section is reissued to include statements in 1.04 which clarify the usage of the system. Other minor revisions are made, as required.

1.03 Recorded announcements are provided by either the KS-16765 L1 announcement set or the KS-16534 recorder-reproducer or an approved equivalent. (See SD-95267-01.) A single-channel or a dual-channel arrangement can be provided using either one or two of these machines. Dual-channel operation should be employed where increased reliability is desired. The KS-16765 L1 announcement set is used where the requirement is a maximum of 20 announcement trunks. Where more than 20 announcement trunks are needed, the KS-16534 recorder-reproducer is employed. The KS-16534 recorder-reproducer is arranged for connection to a maximum of 100 announcement trunks.

1.04 The KS-16534 recorder-reproducer, ***a heavy-duty machine,*** is designed for 50,000 hours of continuous operation, a life expectancy of 5.8 years, before needing major maintenance. The KS-16765 L1 announcement set, ***a light-duty machine,*** is designed for about 10,000 hours of continuous operation before needing major maintenance. To have the same life expectancy of 5.8 years, ***the light-duty machine should run only 5 hours a day.*** Therefore, it is recommended that if a particular application will require ***more than 5-hours-a-day usage,*** a heavy-duty machine should be used to avoid premature maintenance problems.

1.05 Figure 1 illustrates arrangements employing the KS-16765 L1 announcement set. Either one (single channel) or two (dual channel) sets are used. The sets are desk-, shelf-, or wall-mounted on the sponsor's premises and may be controlled from a nearby location (also on sponsor's premises) with a 6-button type telephone set. The dual-channel arrangement also has a 3-position key for connection of either channel to the trunk or for manual announcements. The telephone set is used for dictating and checking the announcement and also for transmitting announcements manually in case of an emergency. The sponsor equipment is connected over a single pair to the distribution amplifier of the control and distributing circuit in the central office.

1.06 Figure 2 illustrates single-channel and dual-channel arrangements employing the KS-16534 recorder-reproducer. The recorder-reproducer, amplifier equipment, and associated control relays are located in the central office. The same line terminal trunk circuits are used with this announcement equipment as are used with the KS-16765 L1 announcement sets. Remote control equipment is located on the sponsor's premises and is connected to the equipment in the central office over two pairs where single-channel operation (one KS-16534 recorder-reproducer) is provided and three pairs for dual-channel operation (two KS-16534 recorder-reproducers). The dual-channel installation may be augmented by a single-channel KS-16534 recorder-reproducer where the ultimate in service continuity is required. These arrangements are illustrated in Fig. 2. Different distribution circuits are required for the KS-16765 L1 announcement set and the KS-16534 recorder-reproducer arrangements.

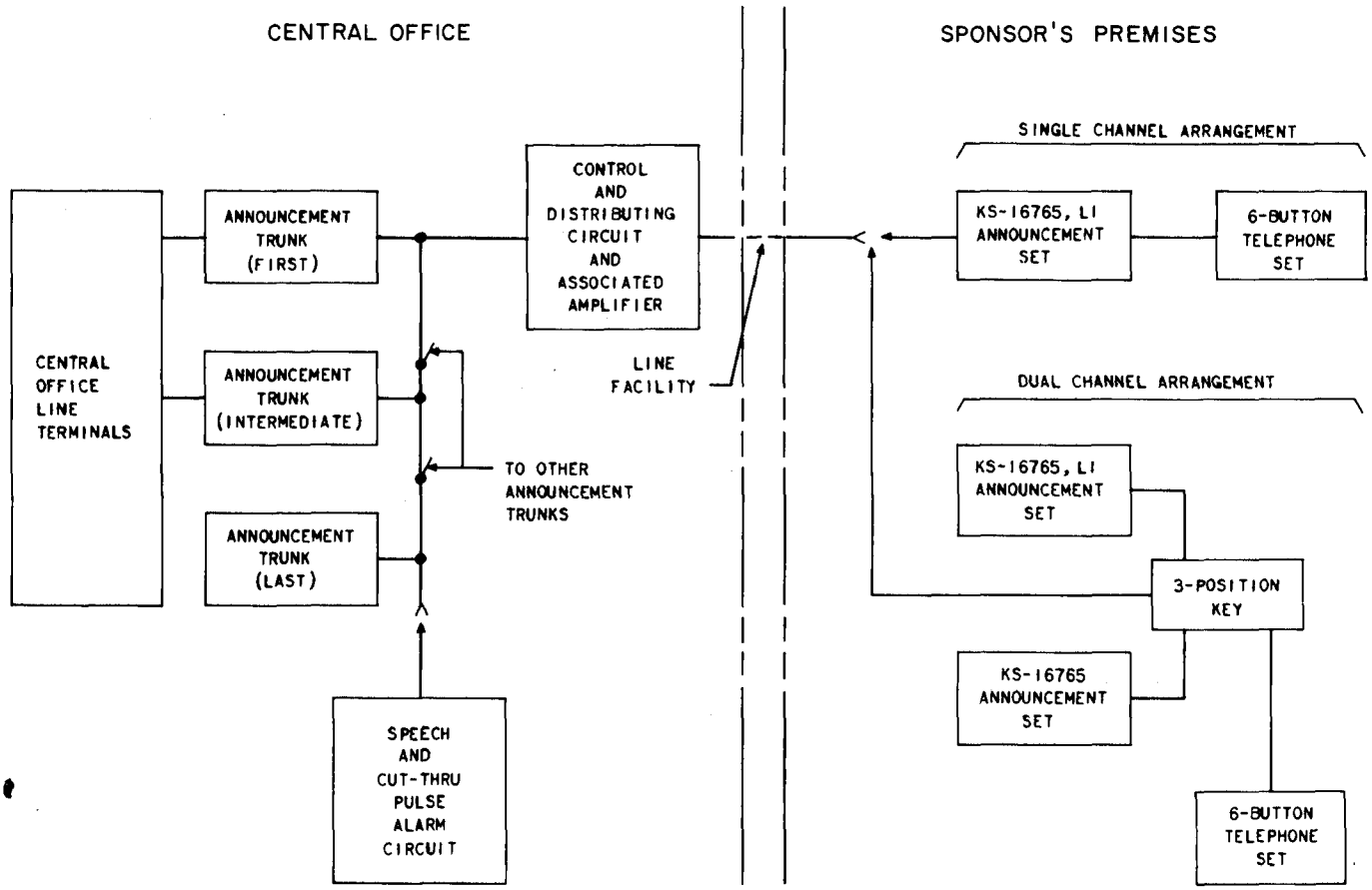

Fig. 1—No. 8A Announcement System—Operation With KS-16765 Announcement Set

1.07 An alarm circuit is provided on an optional basis with the single-channel or dual-channel KS-16765 L1 announcement set arrangements but is always provided for the KS-16534 recorder-reproducer arrangements.

1.08 The No. 8A Announcement System is suitable for line terminal use in step-by-step, panel, No. 1 crossbar, and No. 5 crossbar offices located in the same building as the announcement equipment. No subcentering arrangements are provided in this system.

2. ANNOUNCEMENT TRUNK CIRCUIT

2.01 The announcement trunk circuit routes the calling party to the announcement equipment. The trunk can be optionally arranged to delay cut-through to the announcement equipment until the beginning of the announcement cycle or to cut through immediately upon seizure. The delay feature is usually employed when the announcement is of short duration (15 to 20 seconds). If the announcement is of longer duration, ***barge-in*** during the announcement cycle is provided to cut the customer through immediately on any portion of the announcement. The announcement trunk circuit provides either one or two complete announcements to the calling customer.

2.02 The announcement trunk circuit is also arranged to trip ringing, establish a path to the announcement equipment, and transmit the recorded announcement to the calling customer.

2.03 The announcement trunk circuit is designed to operate with a peg count register and an all-trunks-busy register.

2.04 The impedance of the trunk circuit at the central office line terminals is designed to meet return loss objectives for direct distance

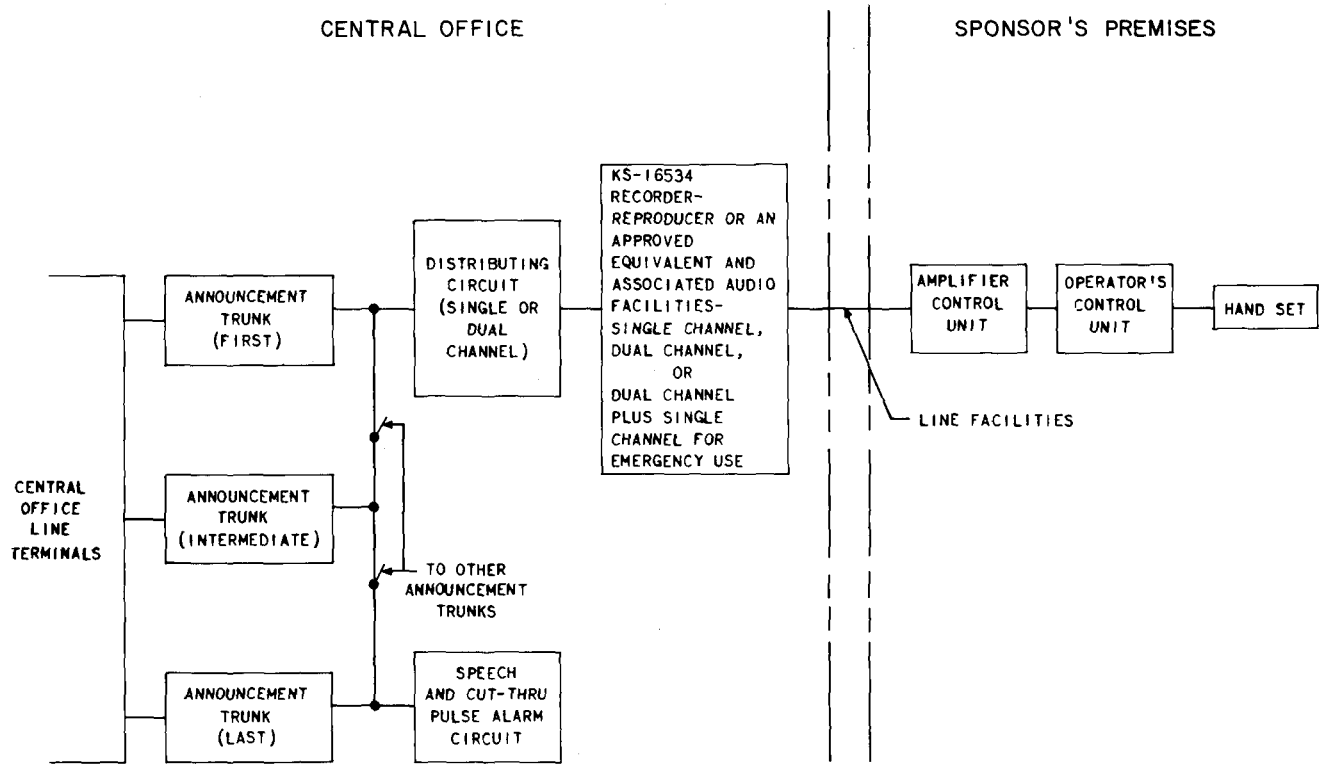

Fig. 2—No. 8A Announcement System—Operation With KS-16534 Recorder-Reproducer and Associated Audio Facilities

dialed connections and for repeatered connections in general.

2.05 Talk-through suppression between simultaneously connected customers is provided largely by low shunting internal output impedance of the amplifier output in conjunction with the series resistors in the tip and ring of the trunk circuit. Idle circuit terminating resistors are provided in the trunk circuit to maintain a constant transmission level regardless of the number of simultaneously connected customers.

3. SYSTEM ARRANGEMENT EMPLOYING KS-16765 L1 ANNOUNCEMENT SET

A. Control and Distributing Circuit

3.01 The purpose of the control and distributing circuit is to control and distribute signals from the announcement set and to amplify the recorded announcement to the proper level. Upon receipt of a call, the circuit converts the ***ground start*** signal from one of the associated trunk circuits to continuous ringing to start the announcement set at the customer's premises. Operation of the set results in ringing being tripped and a cut-through signal being sent to the announcement trunk. The receipt of the cut-through pulse also checks the continuity of the loop to the sponsor's location.

3.02 A timing circuit is provided to keep the alarm circuit from operating when the sponsor is in the process of recording and checking.

B. Announcement Equipment

3.03 The KS-16765 L1 announcement set and a 6-button telephone set for control purposes are provided at the sponsor's premises. Power for operating the announcement set is obtained from the sponsor's nominal 115-volt, 60-cycle commercial supply. Where continuity of service is desired, two announcement sets are provided under control of a modified 6-button telephone set and an additional key unit for selection of the desired channel. A jack is provided for ***dubbing*** from an external speech source, such as a tape recorder in

both the single- and dual-channel arrangements. The KS-16765 L1 announcement set together with the No. 8A Announcement System permits an announcement length of approximately 5 seconds minimum to 2 minutes ◗(optional 3 minutes)◖ maximum.

C. Alarm Facilities

3.04 The alarm circuit is furnished on an optional basis. When provided, the circuit checks the operation of the cut-through pulse distribution relay. This relay, in operating, delivers cut-through pulses to the trunks. These pulses occur periodically within a specified time limit depending on the length of the announcement cycle. Failure of a pulse to appear within this time activates a major alarm in the central office.

3.05 The alarm circuit also checks for the presence of voice at the output of the amplifier. If voice is absent for greater than a specified time, a major alarm is activated in the central office. Under either alarm condition, busy tone will be returned to calling customers. If the alarm circuit is not furnished, voice failure will not be detected.

D. Method of Operation

3.06 When a customer dials the No. 8A Announcement System, the central office switching equipment connects to an idle announcement trunk. The announcement trunk grounds the start lead to the control and distributing circuit which, in turn, applies continuous ringing as a start signal to the KS-16765 L1 announcement set. The announcement places a bridge across the tip and ring which operates a tripping relay in the control and distributing circuit. The operation of the tripping relay results in the removal of ringing and the closure of the transmission path from the customer to the announcement set. At this time charging takes place. The customer is cut through either at the beginning of the announcement cycle or during any portion of the cycle if the trunk is arranged for ***barge-in*** operation. At the end of either one or two announcements, the trunk circuit opens the transmission path to the customer and returns on hook to the central office equipment.

E. Recording Procedure

Single Channel

3.07 To prepare the system for the record cycle, the DICTATE READY key on the key telephone set associated with the KS-16765 L1 announcement set is operated. To start the cycle, the DICTATE key is depressed. When the announcement set has finished erasing the previous announcement and is ready for recording, the DICTATE READY lamp lights. The new announcement is recorded by speaking into the handset transmitter. The DICTATE key is released when the announcement has been fully recorded. The announcement may be checked without being transmitted to the telephone line by operating the CHECK key. As long as the CHECK key is operated, the announcement will be reproduced in the telephone receiver. The announcement set is connected to the system by operating the ANNOUNCE key. The announcement may be monitored while being reproduced on the line by means of the handset receiver.

Dual Channel

3.08 Two DICTATE READY and CHECK keys are provided (one for each channel), but the DICTATE and LINE keys are used for both channels. Thus recording, checking, and monitoring of an announcement on either set of the dual-channel arrangement is performed in basically the same manner as described for the single-channel arrangement. Connection of a channel to the system is accomplished by means of a 3-position key. Operation of this key also disables the recording and checking functions for the channel which is connected to the telephone line.

F. Emergency Manual Announcements

Single Channel

3.09 To prepare the system for emergency manual announcing, the LINE key is operated. When the central office connects to an idle trunk, the ringer in the telephone set will be operated. The handset is then lifted, causing ringing to be tripped. The attendant delivers the announcement and then depresses the switchhook. If an incoming call is still present, the ringer will sound again and the same process is repeated. During periods when numerous calls are being handled, it is of course only necessary to depress the switchhook momentarily

instead of actually returning the handset to the ***cradle*** at the end of each announcement.

Dual Channel

3.10 Emergency manual announcements may be made with the dual-channel system in the same manner as described for single channel by operating the 3-position key to the LINE position and depressing the LINE key on the telephone set.

4. SYSTEM ARRANGEMENT EMPLOYING KS-16534 RECORDER-REPRODUCER AND ASSOCIATED AUDIO FACILITIES

A. Distributing Circuit

Single Channel

4.01 The distributing circuit provides means for connecting the trunk circuits to the announcement equipment and for distributing cut-through pulses to these trunks. The cut-through pulses are furnished by the announcement equipment. When an announcement trunk is seized, the trunk transmits a start signal to the announcement equipment. Upon receiving a cut-through pulse, the distributing circuit grounds the cut-through leads to the trunk circuits. The trunk circuit uses this ground to cut through to the announcement equipment (if the trunk is arranged to delay cut-through until the start of an announcement) and to count the number of announcements received.

4.02 The distributing circuit also prevents a cut-through pulse from being connected to the trunk circuit under alarm conditions.

Dual Channel

4.03 The dual-channel distributing circuit performs the same functions as the single-channel distributing circuit. In addition, two sets of distributing relays with manual selection as well as automatic transfer are provided to increase reliability and facilitate maintenance. In the event of failure of one of the sets, the distributing circuit automatically upon the receipt of a signal from the alarm circuit transfers the standby recorder-reproducer to the line. This also transfers to the other set of distributing relays. Lamps are also provided to identify the ***on-line*** equipment.

B. Announcement Equipment

4.04 For installations requiring announcement equipment having a longer recording cycle or a substantially longer life expectancy than the KS-16765 L1 announcement set, the KS-16534 recorder-reproducer or an approved equivalent is employed. This equipment will provide an announcement cycle of 12 seconds to 4 minutes and is available in either single- or dual-channel arrangements; the dual-channel system employing two recorder-reproducers and associated amplifiers for increased reliability. In the event of failure of one of the channels feeding the load, automatic transfer to the other takes place. An additional single-channel KS-16534 recorder-reproducer arranged for manual transfer to the announcement system may be provided for maximum service continuity. This equipment, together with the associated control circuits, is rack mounted and located in the central office.

4.05 At the sponsor's premises is provided remote control equipment, consisting of an operator control unit and a wall-mounted amplifier control unit. The operator control unit is equipped with a handset, recording level indicating meter, switching keys, and signal lamps which are contained in a cabinet situated on the customer's desk or table.

4.06 A detailed description of the recorder-reproducer, including the procedures to be followed in recording and checking announcements, will be found in Section 951-530-100.

C. Alarm Facilities

Single Channel

4.07 The alarm circuit checks for the operation of the cut-through pulse distributing relays. If any fail to function properly, a major alarm is actuated in the central office.

4.08 The alarm circuit is also arranged to actuate a major alarm in the central office in the event of voice failure.

Dual Channel

4.09 If the cut-through pulse distributing relays do not function properly, the alarm circuit actuates a minor alarm in the central office. In addition, a transfer is made to the alternate

announcement channel. This causes the alternate set of cut-through pulse distribution relays to be activated. If the cut-through pulse failure continues to be experienced, major central office alarm is operated.

4.10 If a voice failure external to the announcement equipment is detected by the alarm circuit, a major alarm is actuated. If a voice failure occurs in the ***on-line*** channel, a minor alarm is actuated and transfer is automatically made to the standby channel. The system then functions essentially as a single-channel system.

4.11 Alarm lamp indications are provided at the KS-16534 recorder-reproducer as covered in Section 951-530-100 and at the alarm circuit. A busy signal is returned to the calling customer under major alarm conditions.

D. Method of Operation

Single Channel

4.12 When a customer is connected to an announcement trunk circuit, as previously described, the start lead to the distributing circuit is grounded from the trunk. This grounds the calls-waiting lead to the announcement machine to indicate that a call is waiting. Assuming the machine is idle, this starts the machine. Just before the start of the announcement, a pulse of short duration is sent from the machine to the distributing circuit which sends the pulse to the trunk. This pulse activates a counting arrangement in the trunk which gives the calling customer a predetermined number of announcements. After this, the start lead will be opened, the machine will stop, and the customer is disconnected from the announcement equipment. If the calling customer does not hang up, eventually dial tone will be received. If other calls have come in during the announcement period, the machine will continue to run until all calls have received the predetermined number of announcements. Calls coming in while the machine is running will cut in at a random point in the announcement if the trunk is arranged for ***barge-in.*** If the trunk is arranged to cut in only at the beginning of the announcement, the trunk will return audible ringing until the machine reaches the beginning of the announcement. Charging takes place after cut-through to the announcement.

Dual Channel

4.13 The dual-channel announcement system operates as previously described except in the event of failure of the ***on-line*** channel, there is automatic transfer to the standby machine.

5. MAINTENANCE FACILITIES

5.01 No special maintenance facilities will be required for the trunk, distributing, and control and distributing circuits of this system.