EMERGENCY ANNOUNCEMENT SYSTEM

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1. GENERAL

1.01 This section discusses the features of the emergency announcement system which is designed to provide a recorded or live announcement to customers when they dial information, toll operators, or trunk routes which have been temporarily discontinued due to an emergency such as a facility failure.

1.02 The use of the emergency announcement system eliminates the temporary heavy load on operator facilities at panel, No. 1 crossbar, or No. 5 crossbar offices. The system remains inoperative until required. It is switched on under key control when an emergency arises.

1.03 The calling party, on dialing a number for which emergency announcement service is provided, is routed to a recorded announcement. The system when activated operates on the barge-in basis; i.e., the first calling party starts the announcement, and anyone calling while the first call is in progress will barge in on the recorded announcement without waiting for it to start over. The announcement is delivered continuously until all calling parties disconnect.

1.04 A calls waiting (CW) indication is provided at the control center when a call comes in on a system which is connected to the emergency announcement system or when live announcements are being made.

1.05 Emergency announcements are provided from the KS-16765, L2 announcement set(s); two arrangements are provided. One is a single system arrangement in which one set is furnished and only one message can be distributed at a time to the group of associated centers. BLDG keys on the building key and lamp case unit permit selecting the particular centers for the announcement. The other arrangement provides a maximum of three separate systems (A, B, C) and up to three announcement sets (1, 2, 3) which can be associated, changed and grouped in any desired combination by operation of appropriate pushbutton keys located on the multiple-system console.

1.06 Each of three announcement sets can supply a maximum of 400 line circuits, and each line circuit can supply a maximum of 1300 trunks from the balanced output circuits or 3000 trunks from the unbalanced output circuits.

1.07 The live announcement facilities are common to all three phases of circuit operation; therefore, no live announcements can be made while the dictating or checking function is taking place on any set.

1.08 The equipment is covered by specification J95415 (Section 801-603-154) and the following schematic drawings:

SD-95257-01	KS-16547, L1 Amplifier Circuit
SD-95281-01	KS-16754, L4 Amplifier Circuit
SD-95283-01	KS-16765, L2 Announcement Set
SD-95387-01	Line Circuit
SD-95388-01	Emergency Control Circuit
SD-95959-01	Voice Alarm Circuit

1.09 General transmission design considerations for announcement systems and a glossary of terms are found in Section 852-520-100. Other sections of interest are listed in Table A.

1.10 It has been customary to borrow a spare recorder-reproducer from the 3A or 6A announcement system for use in emergency announcements. This practice has been discontinued since permanent recorder-reproducers are available

TABLE A		
UNIT	TRANSMISSION DESIGN INFORMATION	LINE-UP AND MAINTENANCE PROCEDURES
KS-16547, L1 Amplifier	AB48.153.8	024-150-502
KS-16754, L1 Amplifier	AB48.155	024-176-200
KS-16765, L1 and L2 Announcement Sets	—	514-210-200 514-210-300

for use with emergency announcements. Modified 3A systems are not arranged to permit the loan of recorder-reproducers.

2. EQUIPMENT DESCRIPTION

2.01 A block diagram of the emergency announcement system is shown in Fig. 1. The control circuit, announcement circuit, and amplifier circuit are located in a central office arranged to distribute the announcement to a number of subcenters. In each of the subcenters, a line circuit is furnished which provides amplification and distribution facilities capable of delivering the announcement to switchboard trunks and to other trunk circuits associated with the switching equipment.

2.02 The emergency announcement equipment can be provided in either multiple or single arrangements. The equipment arrangement at the subcenters consists of relay-rack mounted line and amplifier equipment controlled by an emergency announcement key and lamp unit in the operating room. Two equipment arrangements are provided at the control center.

(a) ***A multiple-system arrangement*** consists of a control console and a building key and lamp case in the control center and relay-rack mounted equipment. A maximum of three relay-rack mounted KS-16765, L2 Announcement Sets may be associated with any one of a maximum of three systems of centers. A block diagram of this arrangement is shown in Fig. 2.

(b) ***A single-system arrangement*** consists of a control case and a building key and lamp case in the control center and relay-rack mounted equipment. A single relay-rack mounted KS-16765, L2 Announcement Set is associated with this system of centers. A block diagram of this arrangement is shown in Fig. 3.

2.03 ***Multiple-System Control Console (Fig. 4):*** A console equipped with pushbutton keys is provided to house the control room equipment for the multiple system arrangement. The J95415J console may be equipped for two or three systems. For recorded announcements, each system is put into service by operating its RCDR ANN (recorder announcement) key. RCDR keys associate a particular system with any one of the announcement sets. A mechanical lockout provided with the RCDR keys prevents associating two announcement sets with the same system. A CHK (check) and DIC (dictate) key associated with each announcement set is provided for recording and checking recorded announcements. A voice failure in any system lights the ALM lamp and operates a buzzer which may be silenced by operating the common BUZZER RELEASE key. The RCDR OFF key disconnects all sets from the system. The SYS OFF key restores the RCDR ANN and LIVE ANN keys when no announcement is to be given. Each of the systems (building) may be switched to live announcement by operating a LIVE ANN (live announcement) key. A CW (calls waiting) lamp is provided to indicate to the attendant that a live announcement should be made. A set of TEL jacks is provided on the side of the console for recording and making live announcements.

2.04 ***Single-System Control Console (Fig. 5):*** An apparatus case equipped with keys and lamps per ED-95155-10 houses the control room equipment for the single-system arrangement. No RCDR keys are provided since only one announcement set is required. RCDR ANN, LIVE ANN, BUZZER RELEASE, CHK, and DIC keys and CW, ALARM, and DICTATE lamps, as described for the multiple system, are provided. TEL jacks are also provided.

2.05 ***The Subcenter Keys and Lamps Console (Fig. 6):*** This console provides keys and lamps for associating any center in a system with an announcement and is mounted in the control center.

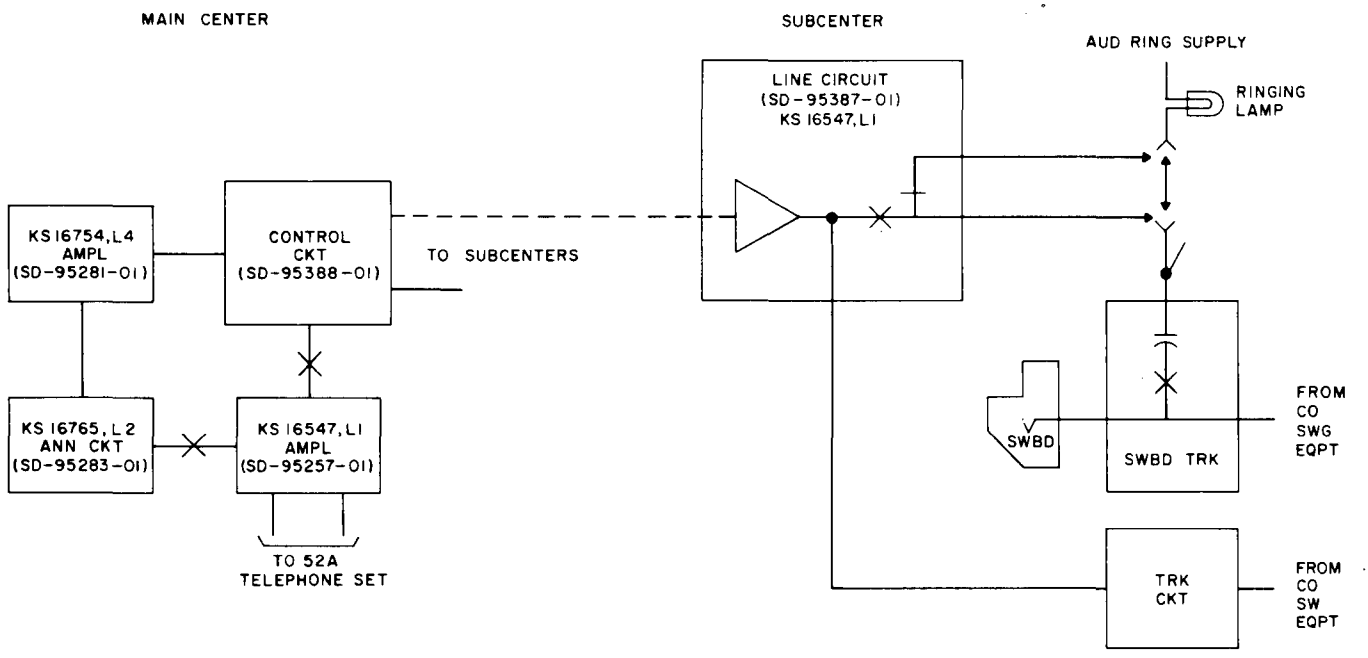

Fig. 1—Emergency Announcement System—Block Diagram

2.06 ***Connecting Trunks:*** In all of the trunks (such as those to the dial service assistance switchboard, toll switchboard, or to some similar service) which are to be arranged permanently for connection to the emergency announcement system, the announcement is supplied through the ringing tone capacitor. In addition, provision is made for connection to district or office multiple trunks for use when it is desired to reroute a group of trunks to the system for a special announcement.

2.07 ***Power Equipment:*** The −24 and −48 volt central office battery is used to operate the emergency announcement system circuits. The KS-16765, L2 Announcement Sets and KS-16547, L1 Amplifier are operated from a commercial 115-volt ac supply. Each unit contains its own fuse.

2.08 ***The Control Circuit (SD-95388-01):*** The control circuit provides a means for controlling the recorded announcement and operating alarms in case of announcement failure. The circuit receives a start signal from the line circuit and provides a means for starting the announcement machine. It receives the recorded announcement from the announcement machine or an operator and delivers it to the calling party through the line circuit. In case of announcement failure, the alarm will light and this circuit, in conjunction with the voice and alarm circuit, will cause an office alarm to operate.

2.09 ***The Voice Alarm Circuit (SD-95959-01):*** The voice alarm circuit provides a means for determining when announcement failure occurs. The voice alarm circuit causes a relay in the control circuit to operate and actuate the central office alarm system.

2.10 ***The KS-16754, L4 Amplifier (SD-95281-01):*** This 0.5-watt transistor amplifier is used in the emergency announcement system to amplify the output from the announcement set.

2.11 ***The KS-16765, L2 Announcement Set (SD-95283-01):*** This announcement set provides facilities for magnetic recording and reproducing of audio frequency signals. It has a variable cycle feature which automatically adjusts the length of the cycle to correspond with the length of the announcement. The maximum recording time is 2 minutes. The set also provides a key, a twin jack, and a lamp to facilitate local control of recording and reproducing of announcements by means of a 52-type head telephone set.

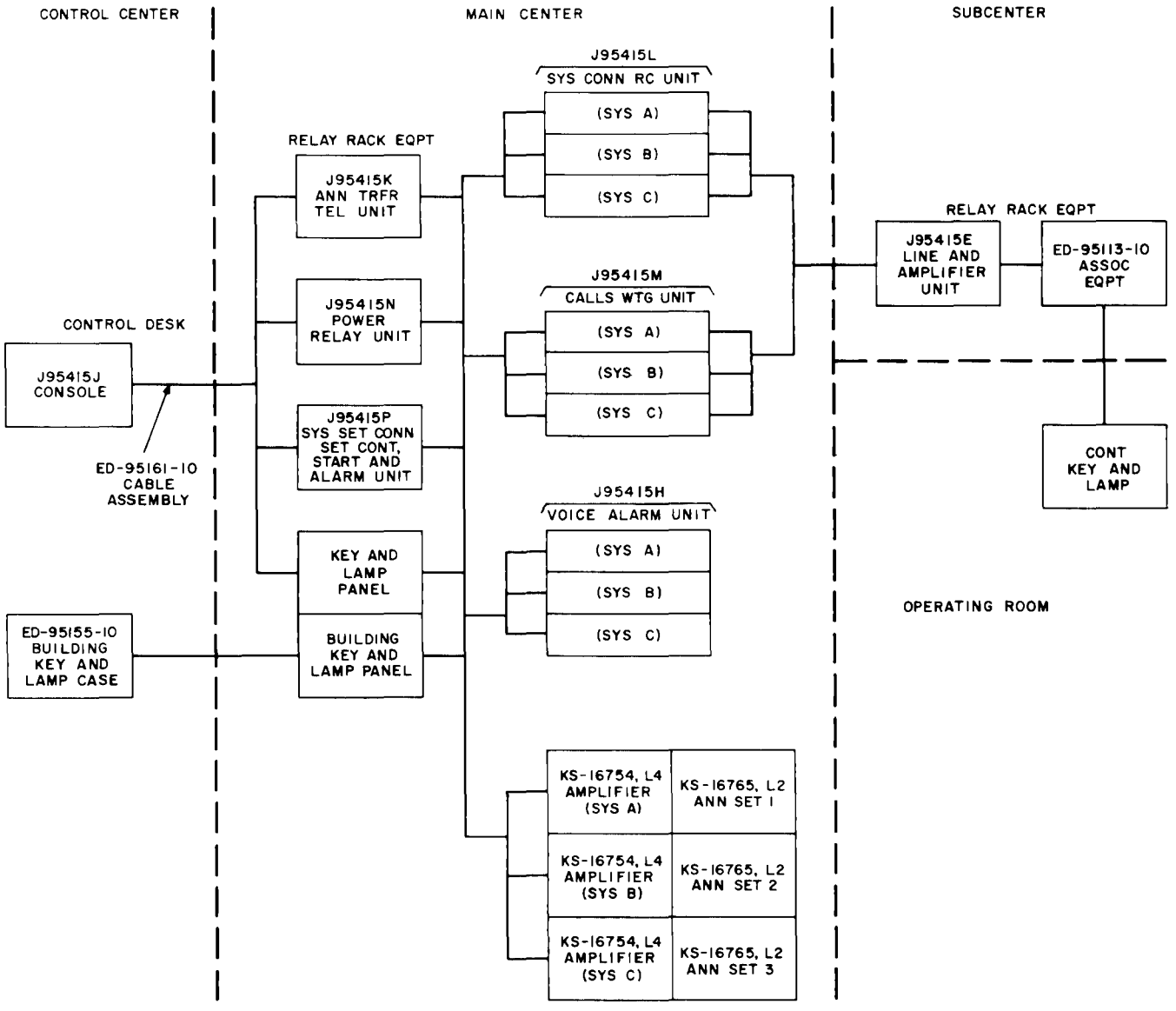

Fig. 2—Three-System Emergency Announcement Equipment

2.12 ***The Line Circuit (SD-95387-01):*** The line circuit is used as an emergency announcement line and amplifier circuit for controlling the connection of emergency announcements to various types of trunks.

2.13 ***The KS-16547, L1 Amplifier (SD-95257-01):*** This amplifier is used to provide amplification of audio frequency signals at the line circuit and at the control center when live announcement is used or when dictating into the announcement sets.

3. TRANSMISSION DESIGN

3.01 A simplified transmission diagram is shown in Fig. 7.

3.02 When live announcements are being made, the gain of the KS-16547, L1 amplifier in the control circuit should be adjusted to produce a reading of 0 vu on the volume indicator. This corresponds to a bus voltage of 0.55 volt and to a level of −10 vu into each connected 600-ohm trunk circuit.

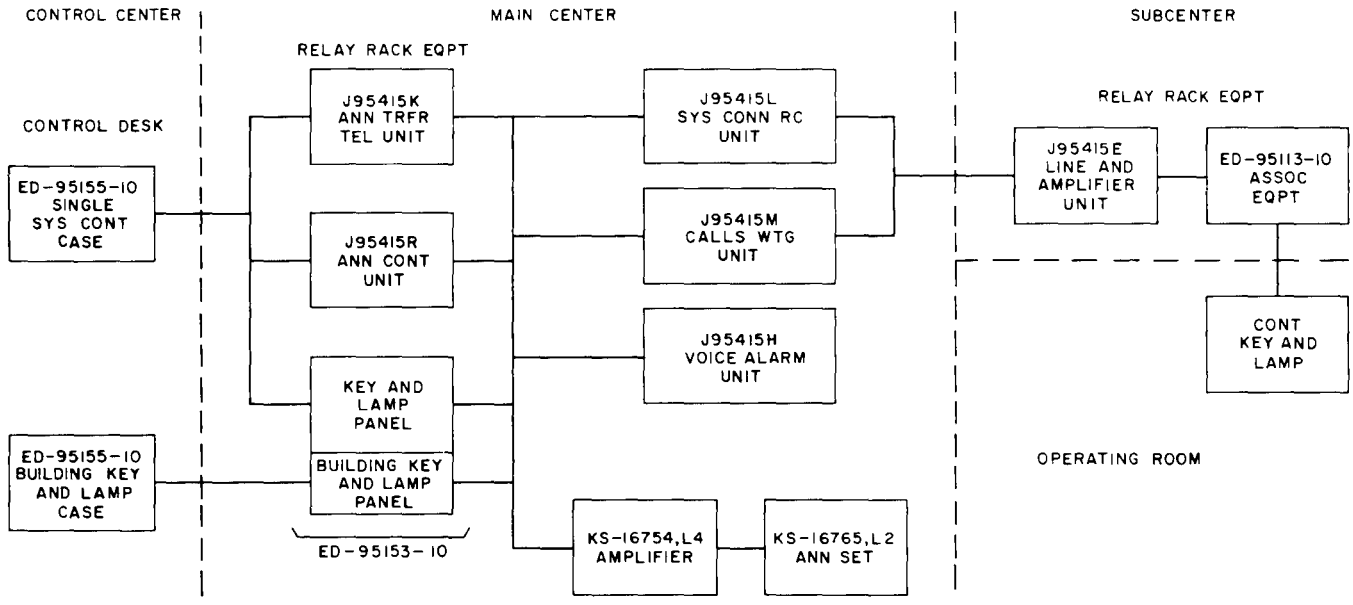

Fig. 3—Single-System Emergency Announcement Equipment

3.03 When making a recording, first adjust the KS-16547, L1 amplifier as described in 3.02 and then switch to the input of one of the KS-16765, L2 Announcement Sets and repeat the announcement.

3.04 A new recording should be checked for accuracy and quality before being sent out over the system. This may be done by operating the appropriate CHK contacts and listening with the recording headset.

3.05 After a satisfactory recording is obtained, switch the announcement set to automatic announcement and adjust the gain of the associated KS-16754, L4 amplifier to obtain a reading of 0 vu on the volume indicator. The level delivered to each 600-ohm trunk will then be −10 vu.

3.06 After the control center has been lined up and is sending an anouncement over the trunks to the outlying offices, adjust the gain of the KS-16547, L1 amplifier at each outlying office to obtain a reading of 0 vu on a portable volume indicator connected to the terminals provided for that purpose. This adjustment should be made without any lines or trunks connected to the bus. The voltage on the bus will be 0.61 volt.

3.07 When the system is lined up in accordance with 3.06, the level into a single 600-ohm line connected to the balanced arrangement will be −11.5 vu. When the maximum load of 1300 lines is connected to the balanced outputs, the level will be −20 vu.

3.08 Levels for speech cannot be predicted with certainty on lines connected to the unbalanced arrangement because of variations in loss and frequency distortion in the connecting circuits. They will, however, be approximately the same as the levels in the balanced circuits.

3.09 If a 1000-cps tone is substituted for the speech and its level adjusted to produce a no load reading of 0 vu on the portable volume indicator, the level on a single 600-ohm line connected to the unbalanced arrangement will be about −15 dbm if the coupling capacitor is 0.02 mf or −9 dbm if the capacitor is 0.04 mf. When 3000 lines are connected through either 0.02- or 0.04-mf capacitors, the level will be about −21 dbm.

3.10 The number of lines connected to the circuit will vary from time to time. Lines connected to the balanced output have negligible effect on the levels delivered at unbalanced outputs and vice versa.

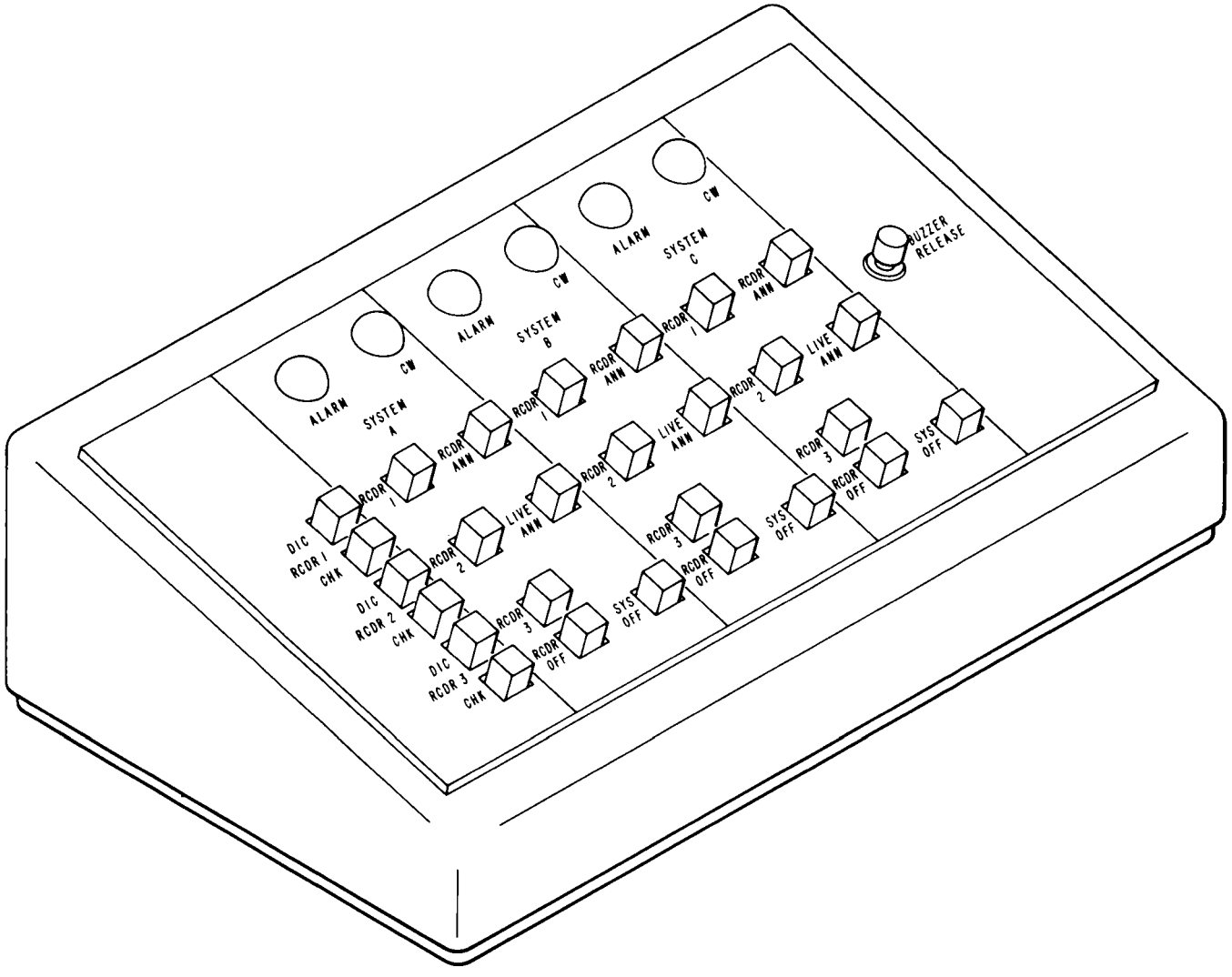

Fig. 4—Multiple-System Control Console

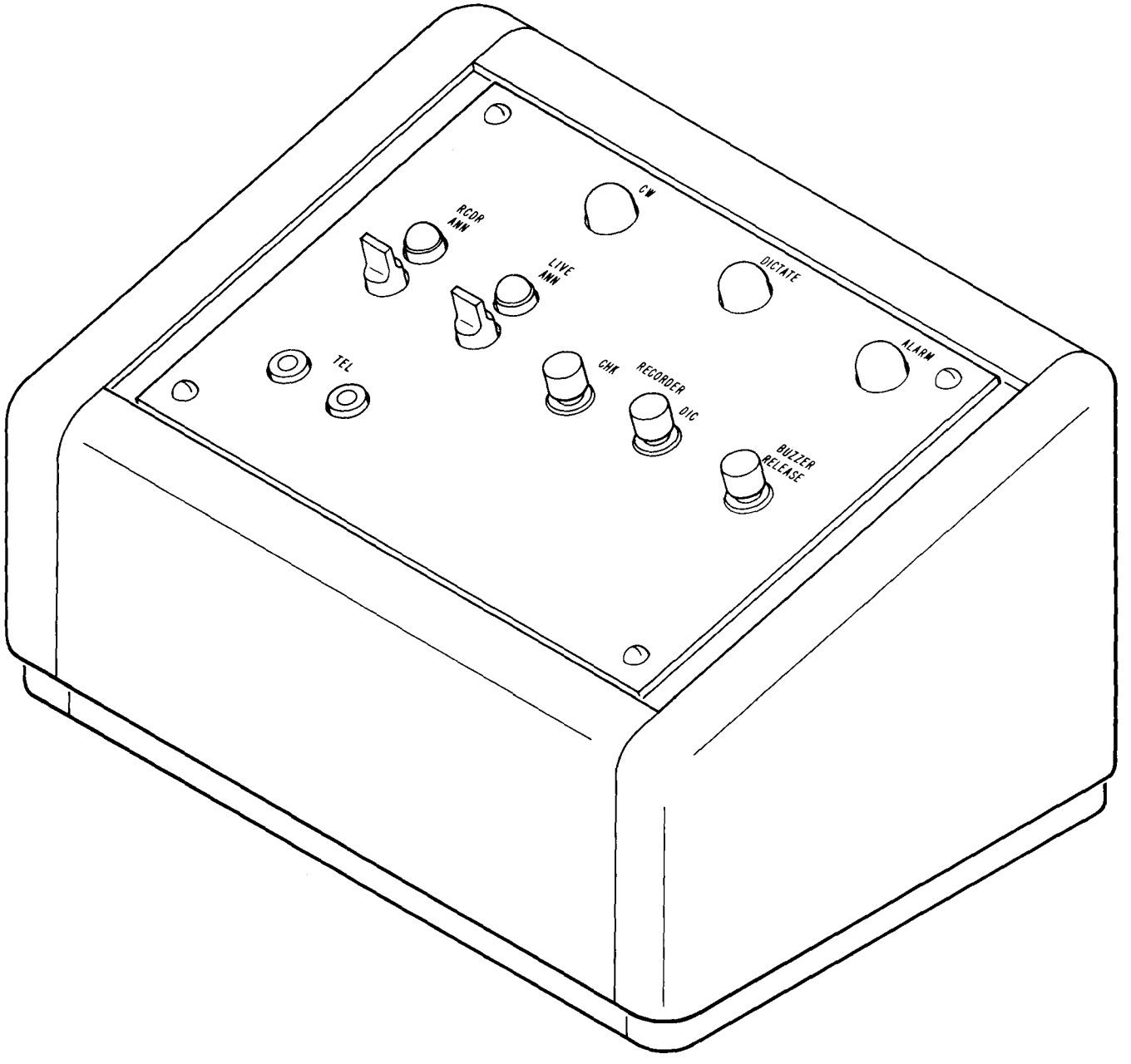

Fig. 5—Single-System Control Console

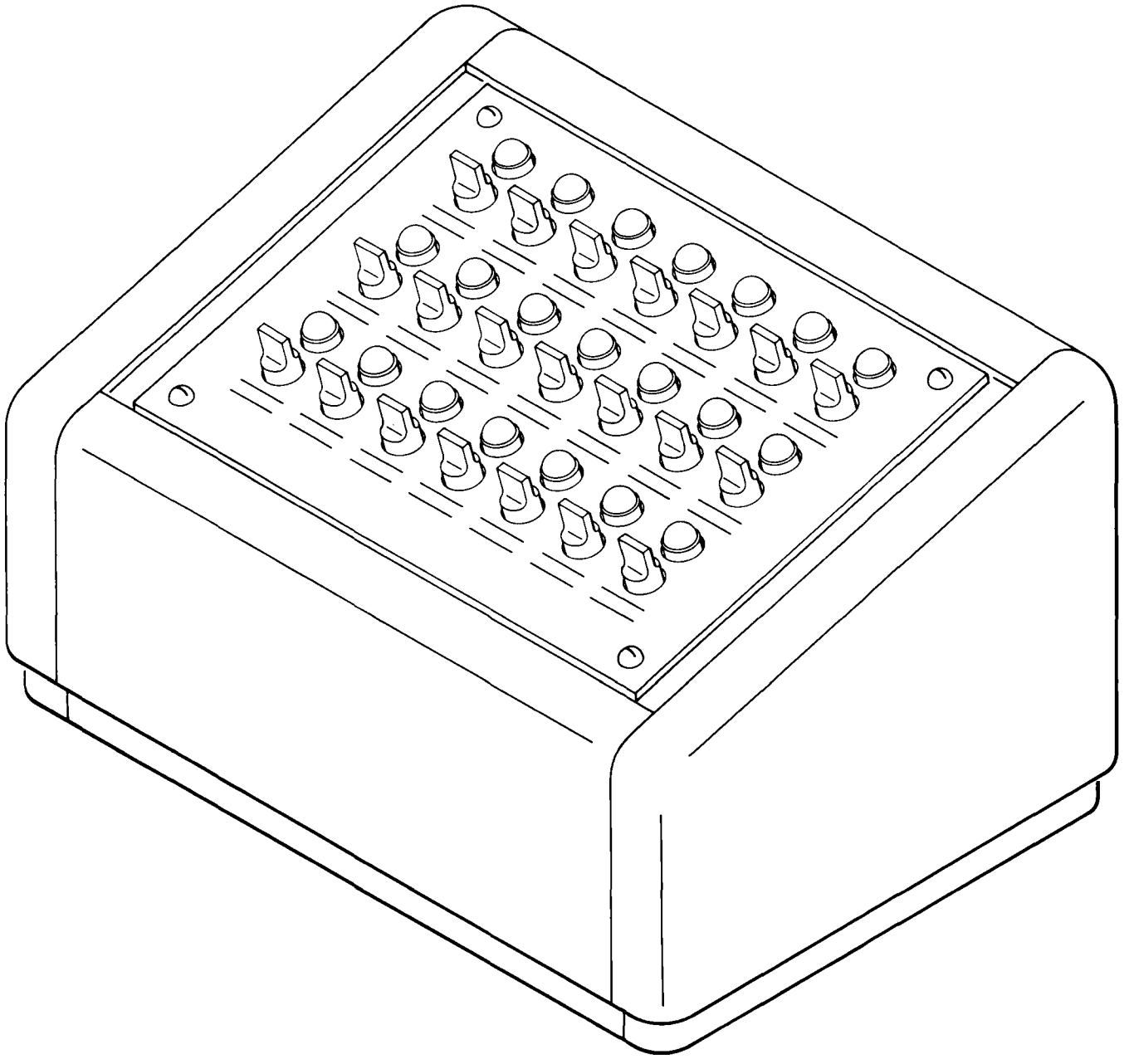

Fig. 6—Subcenter Keys and Lamps Console

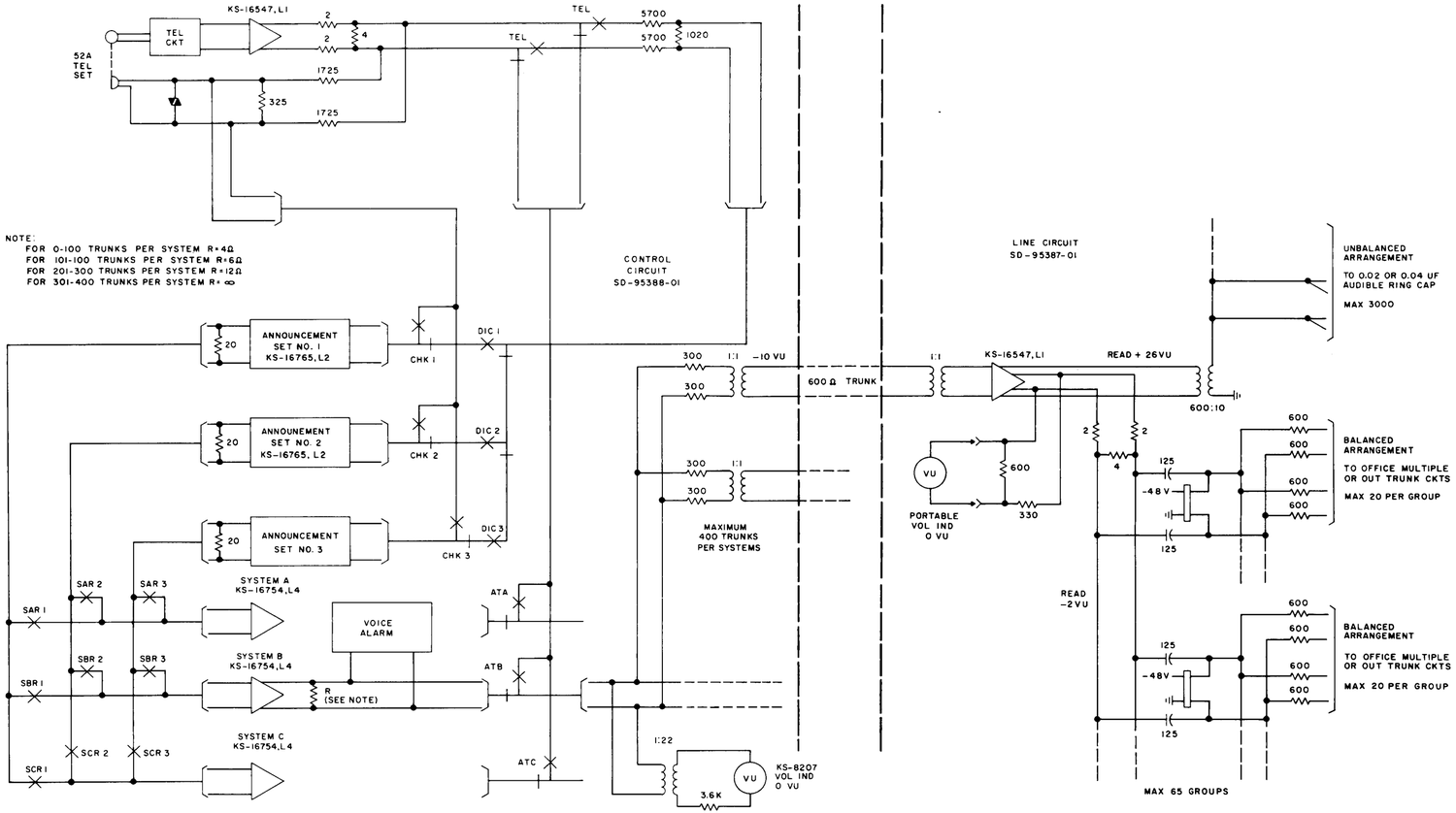

Fig. 7—Emergency Announcement System—Simplified Transmission Schematic