

EMERGENCY ALARM SYSTEMS
WITH OR WITHOUT CODE SIGNALING
INCLUDING AUTOMATIC FIRE-DETECTION FEATURE
EQUIPMENT DESIGN REQUIREMENTS
COMMON SYSTEMS

1. GENERAL

SCOPE

1.01 This specification, together with the supplementary information listed herein, covers the equipment design requirements for an emergency alarm system with code signaling and provision for connecting to automatic fire detection equipment; for use in central offices as a means of summoning assistance in case of an emergency. This specification also covers the equipment design requirements for central control equipment for the noncode signaling, multizone system covered in J98303. The requirements for the noncode signaling, multizone systems employing lamp cabinets and the single zone systems are covered in J98303. The automatic fire-detection feature employing 1A fire-detection wire (A&M Only) is covered in J98302. The automatic fire-detection feature employing commercial fire detecting equipment is covered in EM789.

1.02 This specification is reissued to incorporate previous appendix changes.

CAPACITY

1.03 The code signaling, multizone system is available in two capacities: (1) 30 code sending devices and 20 code sounding devices maximum, and (2) 50 code sending devices and 40 code sounding devices maximum. A code sending device is required per zone. Since there is a code sending device for each zone, the small and large units will take care of 30 and 50 zones, respectively. The noncode signaling multizone system covered in J98303 is available in one capacity of five zones and six sounding devices, maximum. A single-zone system covered in J98303 is also available. The sounding devices for both the code signaling and

noncode signaling multizone systems are distributed as required throughout the building without regard to the zoning. The single-zone system employs a pair of ringers for sounding an alarm.

DESCRIPTION—CODE SIGNALING, MULTIZONE SYSTEM

General

1.04 The code signaling, multizone system consists of a number of horns and gongs employed as code sounding devices, distributed throughout the area served and actuated by code-signal sending devices. The operation of a remote control type of code sending device is started by the opening of one of the series-connected electric switches, known as station boxes, or by the operation of the fire detection equipment associated with the zone. The alarm may also be operated directly from a code signal sending device without remote control, this procedure being required in zones where the remote control feature is not furnished. There is a code signal sending device for each zone. When the alarm circuit is operated in a particular zone, the code signal sending device sends out a distinctive code which is sounded in all parts of the building. The area served by the equipment is divided into zones, each zone being assigned a 2- or 3-digit number, the first digit or digits usually indicating the floor and the last the location on the floor. The shape of the building and arrangement of walls or partitions, in general, control the size and number of zones.

Zone Layout

1.05 As previously stated, the shape of the building and arrangement of walls or partitions control the size and number of zones. A zone comprises a definite open room area not divided by walls or partitions to which a code is assigned for the

purpose of directing assistance in case of an alarm. Large rooms are generally divided into two or three zones in order to direct aid to a more restricted area, thus permitting quicker response. Distributing frame areas separated from other equipment by partitions are usually assigned a separate zone. Where the distributing frames are not isolated by partitions they may be included in zones with other equipment.

Numbering of Zones

1.06 Two Digit: The codes or zone numbers are arbitrarily assigned and may be one, two, or three digit. The codes of a 2-digit system are generally assigned so that the first digit indicates the floor and the second digit the zone area or specific location on the floor on which the alarm was originated. An arbitrary code is used for the basement. See Table A.

TABLE A

| ILLUSTRATIVE CODES FOR 2-DIGIT SYSTEM | |
|---------------------------------------|----------------------------|
| CODE | LOCATION |
| 7 | Basement — Power Room |
| 1-1 | 1st Floor — North Section |
| 1-2 | 1st Floor — East Section |
| 1-3 | 1st Floor — South Section |
| 1-4 | 1st Floor — West Section |
| 2-1 | 2nd Floor — North Section |
| 2-2 | 2nd Floor — East Section |
| 3-1 | 3rd Floor — Operating Room |

1.07 Three Digit: A building of more than nine floors is set up on a 3-digit code basis. In this case, arbitrary codes are used for the tenth and twentieth floors. In the 3-digit system illustrated, 10 has been arbitrarily used to designate the naught for the second digit on the tenth and twentieth floors. See Table B.

1.08 Location on Floor: The zones on adjacent floors have as nearly the same zone division and numbering as practicable in order that the last digit of any code will cover a corresponding section of the building on all floors. This, of course, facilitates recognition of code signals and quickens the response to them.

TABLE B

| ILLUSTRATIVE CODES FOR 3-DIGIT SYSTEM | |
|---------------------------------------|----------------------------|
| CODE | LOCATION |
| 7 | Basement — Power Room |
| 1-1 | 1st Floor — North Section |
| 2-4 | 2nd Floor — West Section |
| 9-2 | 9th Floor — East Section |
| 1-10-1 | 10th Floor — North Section |
| 1-9-3 | 19th Floor — South Section |
| 2-10-4 | 20th Floor — West Section |
| 2-3-2 | 23rd Floor — East Section |

Timing of Code Signals

1.09 In sending a code the sounding of each signal is 1/2 second duration with 1/2 second silent period between signals of a given digit, 2 seconds silent period between digits of a given code, and 5-3/4 seconds silent period between the end of one code and the start of its repeat. The completion of the sounding of a complete code is known as a cycle, the sending device operating through four cycles (that is, three repeats of the code) before automatically stopping. There is a 1-second minimum silent period before the sending device sends the first signal. Thus a code 1-4 requires 42-1/2 seconds to complete its four rounds and a code of 4-9-2 would require 88-1/4 seconds to complete four rounds. It is accordingly advisable to use codes with the smallest digits practicable to permit as prompt a response as possible to an alarm.

Code Sending Equipment

1.10 The system is decentralized; that is, the code signal sending device for each zone is located in its respective zone area. All code sending devices are wired in series through a bay of common control and supervisory equipment located at a central point. A series loop is run from each remote control type sending device through all of the normally closed electric switches or station boxes in the particular zone, the sending device not generally serving as a station box except to bring in a second alarm or for testing the system. When the fire detection feature per J98302 (A&M Only) is specified, the contacts of a pair of fire detection relays per fire detection wire loop are also connected in series to this loop. These relays release when an open occurs in the fire detection

wire loop connected in series with their windings. When the fire detection feature per EM789 is specified, normally provided once per zone, the alarm contacts in the commercial fire detection equipment are connected in series with the station box loop or directly to the code sending device if station boxes are not provided. A manually operated code sending device (without remote control) is also available for use in operating rooms where the automatic fire detection feature is not provided, the alarm being sent in directly from the sending device. The code signal sending devices are spring-driven and key-wound. Fig. 1 shows a sending device in its casing.

Code Sounding Equipment

1.11 The opening of any zone loop by the operation of a station box or the fire detection feature brings a code alarm sounded by means of 48-volt vibrating horns and single stroke gongs. The

sounding devices are furnished and located as required in the various zones. The horns have a double shutter arrangement in the projectors for controlling the volume of the sound and are generally used throughout the building as in terminal and power rooms and corridors. However, single stroke gongs are employed as sounding devices in such locations as operating rooms in order to cause minimum disturbance. Six-inch diameter gongs are generally furnished, 8- and 10-inch sizes also being available. The larger the diameter the lower the tone of the gong. The 6-inch size of gong is available in normal or in softened tone, each being employed where best adapted. Gongs are also used in other locations where horns would be objectionable such as rest rooms or building superintendent's quarters.

1.12 The sounding devices are in general located away from windows to avoid disturbance to adjacent properties. The horns are provided as

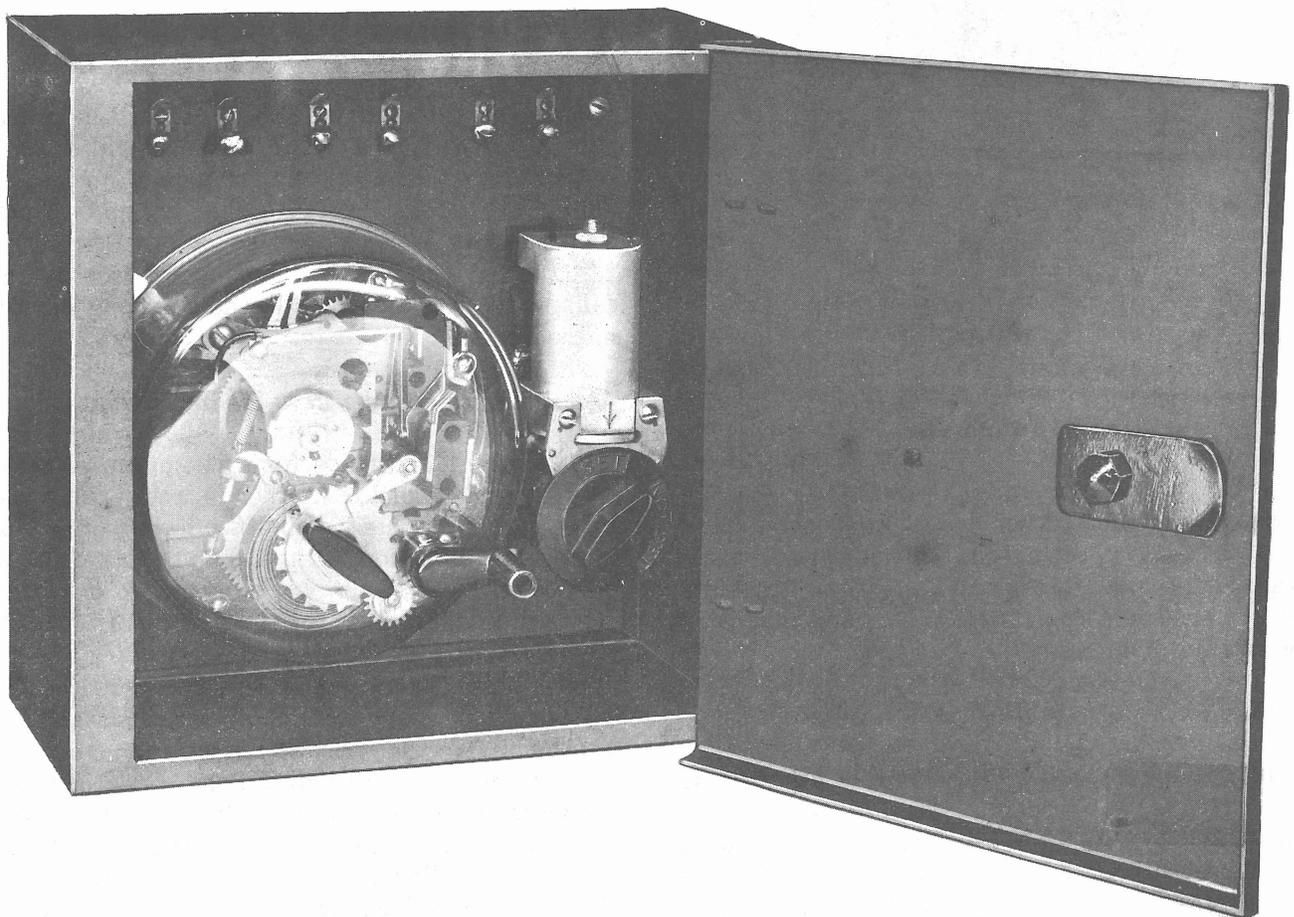


Fig. 1—Code Signal Sending Device With Remote Control

required with their projectors properly faced so that the sound will penetrate all desired parts of the building without interference from walls, partitions, ventilating ducts, etc.

Station Boxes

1.13 Type: The station boxes are fire alarm-type single-pole electric switches encased in metal housings as shown in Fig. 2. The station box is arranged so that a switch, when operated by pulling down a lipped lever to open the circuit, cannot be restored to its closed position without the aid of a key since the closing of the switch following its opening to send in an alarm might defeat the noninterfering feature of the system.

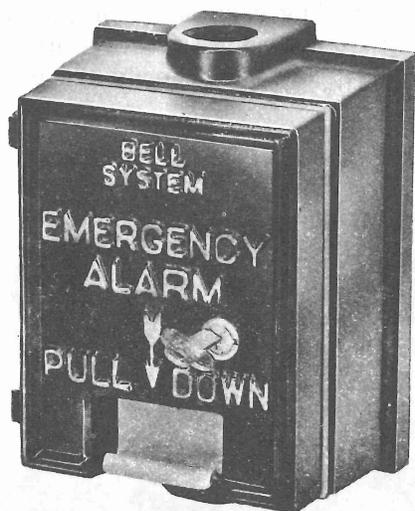


Fig. 2—Station Box

1.14 Location: Station boxes are located near doorways, at the end of the power board, near maintenance desk, and at other strategic locations as specified in order to be readily available for turning in an alarm.

Successional and Noninterfering Features

1.15 The emergency alarm circuit is designed so that the system is noninterfering and successional. Noninterfering means that should two or more alarms be sent in simultaneously or nearly so, one code signal sending device will actuate to send its code and automatically shut out all other code signal sending devices so that there

will be no overlapping of signals and resultant confusion in alarms. By successional it is meant that should two or more alarms be sent in simultaneously, or nearly so, one sending device will actuate to send its code immediately, the others waiting their turn and sending out their respective codes in succession, each code being repeated four times.

Central Control Equipment

1.16 Control Unit: The general test and control equipment required by the system, such as shown in Fig. 3, is designed to mount on a frame centrally located, the equipment being enclosed by metal casings mounted front and rear. The equipment is usually mounted on a bay of bulb-angle framework.

1.17 Auxiliary Alarms: A subscriber set is located on a panel directly above the unit casing and employed as a no battery alarm. A 7F bell is also mounted at this point to indicate a half run-down or nonreset condition of any of the code signal sending devices.

1.18 Manual Control Key: A master key is provided as a part of the central control equipment for the purpose of manually sending an arbitrary code to indicate that an emergency condition has been cleared or for other arbitrary signaling purposes. The closing of this switch causes the operation of all code sounding devices in the system.

Operating an Alarm in a Distant Office

1.19 Provision is made for sounding an alarm in a distant office in order to bring a response to an alarm originated in an office having protection of the fire detection feature, but not attended at all times. The circuits are arranged to provide a separate audible alarm in the distant office or to connect to a code or noncode emergency alarm system at that point. The separate audible alarm operates a pair of ringers. When connected into another emergency alarm system, the alarm at the distant point will indicate the office in which the alarm originated but not individual zones within the originating office. It is not generally desirable to connect a distant office emergency alarm into the emergency alarm system of an office having a large number of zones, due to the objection of alarming all floors of a large building for an

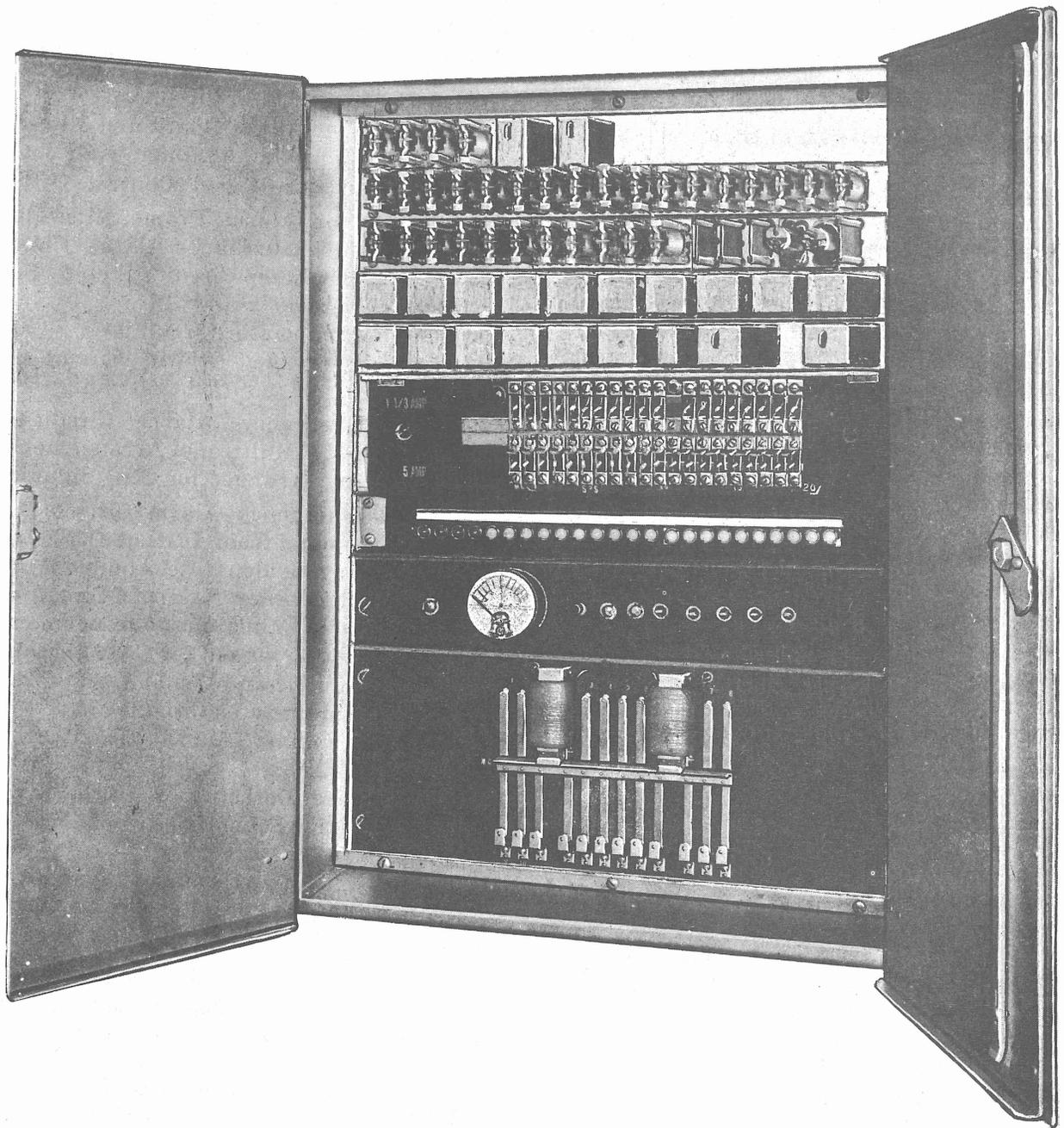


Fig. 3—Central Control Unit Equipment

emergency at a distant office. When a distant office alarm is connected to a coded emergency alarm system, a separate and distinctive code should be employed for the distant office alarm.

2. SUPPLEMENTARY INFORMATION

- 800-600-000—List of General Equipment Requirement Sections
- 801-000-000—Equipment Design and General Equipment Requirements and Engineering Information—Common Systems
- 800-614-151—Installing Emergency Alarm Systems Including Automatic Fire Detection Feature
- J23064—819-601-150—Relay Rack Frames—No. 5 Crossbar System
- J97025—801-006-155—Relay Rack—Angle Type
- J98302—801-601-154—A&M Only, Emergency Alarm System Automatic Fire Detection Feature
- J98303—801-601-155—Emergency Alarm System Without Code Signaling
- Floor Plan Data—Section 9.2, Sheet 9

3. DRAWINGS

WECO J drawings should be ordered by referring to the prefix and base number and requesting the current dash (—) number.

Circuits

- SD-1A209-01—Master Scanner Circuit—ESS No. 1
- SD-15443-01—Annunciator Circuit
- SD-21205-01—Floor Alarm Board and Miscellaneous and Auxiliary Alarm Circuits in Panel Central Offices
- SD-25047-01—Floor Alarm Frame, Miscellaneous Auxiliary Alarm Circuit
- SD-31548-01—Pilot Lamp Circuit—Step-by-Step Systems
- SD-90202-01—Annunciator Circuit
- SD-90437-01—Emergency Alarm Circuit Arranged for Code Signaling
- SD-90560-01—Emergency Alarm Circuit—24 Volts Multizone Arrangement—Not Arranged for Code Signaling
- SD-90642-01—Emergency Alarm Circuit—Incoming from Distant Office and Having Separate Audible Alarm
- SD-96049-01—Emergency Alarm Circuit—48 Volts Multizone Arrangement—Not Arranged for Code Signaling

- SD-96188-01—Audible and Visual Alarm Circuit
- SD-96373-01—Annunciator Circuit
- SD-96446-01—Auxiliary Alarm Circuit No. 5 Crossbar
- SD-99375-01—Fire Detection Facilities Application Schematic

Assembly

- ED-90283-70—Shield Assemblies for Resistances and Resistance Lamps
- ED-90470-70—Lamp Signal Cabinet
- ED-90648-50—Casing for Code Signal Sending Device
- ED-90978-64—Casings for Central Control Units
- ED-91183-30—Relay Rack Framework
- ED-91205-50—Cable Brackets
- ED-91210-51—Cable Support and Miscellaneous Mounting Details
- ED-91221-50—Fuse Panel Adapters
- ED-91250-10—Central Control Mounting Unit
- ED-91423-71—End Guard
- ED-92166-01—Small Relay Casings for Zone, Audible, or Outgoing Alarm Units
- ED-97710-10—Shock Mounting for Alarm Panels

Equipment

- ED-92166-01—Equipment for Zone, Audible or Outgoing Alarm Units
- J28350A-()—Emergency Alarm Central Control Equipment Unit—20-Code Sounding, 30-Code Sending Device Capacity
- J28350B-()—Emergency Alarm Central Control Equipment Unit—40-Code Sounding, 50-Code Sending Device Capacity
- J28350C-()—Emergency Alarm Central Control Equipment Unit—24-Volt System—5-Zone, 6-Sounding Device Capacity
- J28350D-()—Emergency Alarm Central Control Equipment Unit—48-Volt System—5-Zone, 6-Sounding Device Capacity
- J28350F-()—Commercial Fire Detecting Equipment—Maintenance Alarm Equipment Unit—For Use With 24-Volt Emergency Alarm Systems
- J28350G-()—Commercial Fire Detecting Equipment—Maintenance Alarm Equipment Unit—For Use With 48-Volt Emergency Alarm Systems
- J28353F-()—Alarm Frame for No. 5 Crossbar Offices

Cabling and Miscellaneous

- ED-26037-01—Central Control Unit Cabling—Without Code Signaling—Crossbar No. 5 Offices
- ED-90702-30—Designation Cord and Holder for Lamp Signal Cabinet
- ED-90729-01—Zone Apparatus—Mounting and Designating
- ED-91128-50—Mounting Details
- ED-91251-01—Central Control Bay Local Cable—Systems With and Without Code Signaling
- ED-99994—Typical Methods of Running Conduit On, and Mounting Junction Boxes and Fire Detecting Devices From, Auxiliary Framework in Equipment Areas of Central Offices

4. EQUIPMENT

J28350A—AT&TCo Std—Emergency Alarm Central Control Equipment Unit—20-Code Sounding, 30-Code Sending Device Capacity

Equipment—J28350A-()
Local Cable—ED-91251-01, Fig. 1 (See 5.18)

List 1—Framework, assembly, wiring, and equipment of the central control equipment of an emergency alarm system of 20-code sounding, 30-code sending device maximum capacity.

| | WIRE | EQUIP | NOTES |
|-----------------------------------|------|--------|-------|
| Common Systems Emerg | | | |
| Alm Ckt, SD-90437-01: | | | |
| Sig Supervisory Ckt, Fig. 5 | 20 | As Req | |
| Timing Ckt, Fig. 6 | 1 | 1 | |
| Sig Control Ckt, Fig. 7 | 1 | 1 | |
| Test Jack Ckt, Fig. 8 | 3 | As Req | |
| Aux Sig Ckt, Fig. 9 | 1 | 1 | |
| Reset and Rewind Alm Ckt, Fig. 21 | 3 | As Req | |
| Line Supervisory Ckt, Fig. 11 | 1 | 1 | |
| No Bat. Alm Ckt, Fig. 12 | 1 | 1 | 5.23 |
| Fuse Alm Ckt, Fig. 15 | 1 | 1 | |
| Outgoing Alm Ckt, Fig. 17 | 1 | As Req | |
| Outgoing Alm Ckt (Ext | | | |

- Loop), Fig. 27 1 As Req
- Ventilating Fan Mult Cutoff Ckt, Fig. 28 1 As Req
- Connection to No. 1 ESS Office Alm Circuits, Fig. E 1 As Req

J28350B—AT&TCo Std—Emergency Alarm Central Control Equipment Unit—40-Code Sounding, 50-Code Sending Device Capacity

Equipment—J28350B-()
Local Cable—ED-91251-01, Fig. 3 (See 5.18)

List 1—Framework, assembly, wiring, and equipment of the central control equipment of an emergency alarm system of 40-code sounding, 50-code sending device maximum capacity.

| | WIRE | EQUIP | NOTES |
|---|------|--------|-------|
| Common System Emerg | | | |
| Alm Ckt, SD-90437-01: | | | |
| Sig Supervisory Ckt, Fig. 5 | 40 | As Req | |
| Timing Ckt, Fig. 6 | 1 | 1 | |
| Sig Control Ckt, Fig. 7 | 1 | 1 | |
| Test Jack Ckt, Fig. 8 | 5 | As Req | |
| Aux Sig Ckt, Fig. 9 | 1 | 1 | |
| Reset and Rewind Alm Ckt, Fig. 21 | 5 | As Req | |
| Line Supervisory Ckt, Fig. 11 | 1 | 1 | |
| No Bat. Alm Ckt, Fig. 12 | 1 | 1 | 5.23 |
| Fuse Alm Ckt, Fig. 15 | 1 | 1 | |
| Outgoing Alm Ckt, Fig. 17 | 1 | As Req | |
| Outgoing Alm Ckt (Ext Loop), Fig. 27 | 1 | As Req | |
| Ventilating Fan Mult Cutoff Ckt, Fig. 28 | 1 | As Req | |
| Connection to No. 1 ESS Office Alm Circuits, Fig. E | 1 | As Req | |

J28350C—AT&TCo Std—Emergency Alarm Central Control Equipment Unit—24-Volt System—5-Zone, 6-Sounding Device Capacity

Equipment—J28350C-()
Local Cable—ED-91251-01, Fig. 3 (See 5.18)

List 1—Framework, assembly, wiring, and equipment of the central control unit of a 24-volt emergency alarm system of 5-zone, 6-sounding device maximum capacity.

| | WIRE | EQUIP | NOTES |
|--|------|--------|-------|
| Common Systems Emerg Alm Ckt, SD-90560-01: | | | |
| Sig Supervisory Ckt, Fig. 4 | 6 | As Req | |
| Aux Sig and No Bat. Alm Ckt, Fig. 6 | 1 | 1 | 5.23 |
| Sig Control Ckt, Fig. 8 | 1 | 1 | |
| Zone Alm Ckt, Fig. 12 | 5 | As Req | |
| Zone Sig Lamp Ckt, Fig. 7 | 5 | As Req | |
| Rel Supervisory Ckt, Fig. 8A | 1 | 1 | |
| Operating Room Sig Silencing Ckt, Fig. 10 | 2 | As Req | |
| Alm Silencing Ckt, Fig. 11 | 5 | As Req | |
| Alm Silencing Key Ckt, Fig. 11A | 1 | 1 | |
| Outgoing Alm Ckt, Fig. 5 | 1 | As Req | |
| Outgoing Alm Ckt (Ext Loop), Fig. 13 | 1 | As Req | |

J28350D—AT&T Co Std—Emergency Alarm Central Control Equipment Unit—48-Volt System—5-Zone, 6-Sounding Device Capacity

Equipment—J28350D-()
Local Cable—ED-91251-01, Fig. 3 (See 5.18)

List 1—Framework, assembly, wiring, and equipment of the central control unit of a 48-volt emergency alarm system of 5-zone, 6-sounding device maximum capacity. (See Notes A and B.)

| | WIRE | EQUIP |
|-----------------------------|------|--------|
| Emerg Alm Ckt, SD-96049-01: | | |
| Sig Supervisory Ckt, Fig. 4 | 6 | As Req |
| Sig Control Ckt, Fig. 8 | 1 | 1 |
| Zone Alm Ckt, Fig. 15 | 5 | As Req |
| Zone Sig Lamp Ckt, Fig. 7 | 5 | As Req |
| Rel Supervisory Ckt, | | |

| | WIRE | EQUIP |
|---|------|--------|
| Fig. 8A | 1 | 1 |
| Operating Room Sig Silencing Ckt, Fig. 10 | 2 | As Req |
| Alm Silencing Ckt, Fig. 11 | 5 | As Req |
| Alm Silencing Key Ckt, Fig. 11A | 1 | 1 |
| Outgoing Alm Ckt, Fig. 5 | 1 | As Req |
| Mult Ventilating Fan Control Ckt, Fig. 21 | 5 | As Req |
| Outgoing Alm Ckt (Ext Loop), Fig. 16 | 1 | As Req |

List 3—Assembly, wiring, and equipment for one auxiliary signal and no battery alarm circuit per SD-96049-01, Fig. 6 and W option for use in offices other than No. 5 crossbar. (See 5.23.)

List 4—Assembly, wiring, and equipment for one auxiliary signal and no battery alarm circuit per SD-96049-01, Fig. 6 and V option for use in No. 5 crossbar offices. (See 5.23.)

List 5—Equipment and wiring per SD-96049-01, Fig. 6F, required in addition to list 3 for use in ESS offices.

Notes

- Provide optional wiring as required.
- All equipment associated with incoming alarms per SD-96049-01, Fig. 7, 9, 11, and 15 shall be mounted on a miscellaneous basis.

J28350F—AT&T Co Std—Commercial Fire Detecting Equipment—Maintenance Alarm Equipment Unit—For Use With 24-Volt Emergency Alarm Systems

Equipment—J28350F-()

List 1—Assembly, equipment, and wiring per SD-99375-01, Fig. 1, for one maintenance alarm equipment unit for connecting commercial fire detecting equipment to the office maintenance alarm circuit.

Note

- Provide optional wiring as required.

J28350G—AT&T Co Std—Commercial Fire Detecting Equipment—Maintenance Alarm Equipment Unit—For Use With 48-Volt Emergency Alarm Systems

Equipment—J28350G-()

List 1—Assembly, equipment, and wiring per SD-99375-01, Fig. 2, less all options for one maintenance alarm equipment unit for connecting commercial fire detecting equipment to the office maintenance alarm circuit.

List 2—Equipment and wiring per SD-99375-01, Fig. 2, Z option only, required in addition to list 1 for connection to No. 5 crossbar alarm circuit.

List 3—Equipment and wiring per SD-99375-01, Fig. 2, Y option only required in addition to list 1 for connection to No. 1 ESS alarm circuit.

Note

A. Provide X option wiring when List 2 or 3 is not furnished.

Miscellaneous Equipment

KS-6918—6-Inch Single Stroke Soft Tone Bell
 KS-6919—6-Inch Single Stroke Bell
 KS-6920—8-Inch Single Stroke Bell
 KS-6921—10-Inch Single Stroke Bell
 KS-7228—6-Inch Vibrating Soft Tone Bell (24 Volt)
 KS-7752—6-Inch Vibrating Soft Tone Bell (48 Volt)
 KS-12037—Vibrating Signal Horn (L1, 24 Volt)
 KS-12037—Vibrating Signal Horn (L2, 48 Volt)
 KS-14231—Code Signal Sending Device With Remote Control
 KS-14232—Code Signal Sending Device Without Remote Control
 KS-19229—Station Box (L1 and L2 Surface Mounted)
 KS-19229—Station Box (L1 Flush Mounted)

5. GENERAL NOTES

Code Signal Sending Devices

5.01 A code signal sending device, with or without remote control, is required per zone and, in general, is located within the limits of or near the zone served. These devices shall be located, as specified by the telephone company, on a wall or column at a height of approximately 6 feet 2 inches

from the floor when remote control is provided and 4 feet 6 inches when it is not furnished, measured to the bottom of the casing.

5.02 In ordering code signal sending devices per KS-14231 and KS-14232, it is necessary to indicate the zone number for each item so that they may be equipped with the proper signal wheels in the factory.

5.03 When and as specified by the telephone company, the code signal sending device casings would be refinished by the installer to match as nearly as possible the red finish of the station boxes, using a good grade of brushing enamel obtained locally.

5.04 To modify a code sending device per KS-14232 to a remote control sending device per KS-14231, an auxiliary trip unit should be ordered from the manufacturer of the code sending devices stating the purpose for which it is to be used; that is, for replacement purposes or for conversion of a nonremote-control sender to a remote-control sender.

Station Boxes

5.05 Station boxes shall be furnished and located in each zone as specified by the telephone company. The boxes will mount on frame end guards, on the surface of walls or columns, or flush in walls or columns as required, and shall be located at a height of approximately 5 feet 0 inch from the floor measured to the center of the box. No station boxes are provided in zones employing manually controlled code signal sending devices (less remote control) per KS-14232.

Sounding Devices

5.06 Horns, gongs, and bells shall be located as specified by the telephone company. They shall, in general, be mounted approximately 2 feet 0 inches from the ceiling and kept out in the open away from ventilating ducts, etc, which might obstruct the sound. They are usually kept towards the interior of the building away from windows so as to minimize disturbance to adjacent properties. The horns shall point in the direction specified by the customer.

5.07 The pair of ringers provided in SD-90642-01, that are used as a separate audible alarm

for emergency alarms incoming from a distant office that are not to be connected to the office emergency alarm system, shall be located together, unless otherwise specified. The location will be assigned by the telephone company. They shall, in general, be mounted approximately 7 feet 0 inch from the floor measured to the bottom of the ringer.

Incoming Emergency Alarm From a Distant Office With and Without Separate Audible Alarm

5.08 The incoming alarm circuit relays of an emergency alarm circuit incoming from a distant office shall be located on the miscellaneous relay rack. The audible alarm circuit relays, provided in SD-90642-01, that are employed when the incoming emergency alarm is not to be connected to the office emergency alarm system, are mounted in a small casing that is provided in J98303, which shall be located where specified by the telephone company at a height of approximately 6 feet 2 inches from the floor measured to the bottom of the casing.

5.09 The fuses for the audible alarm and incoming alarm circuits shall be located on the miscellaneous fuse bay.

5.10 The lamp associated with each incoming alarm circuit from a distant office shall be located in the floor alarm frame, a lamp signal cabinet, or where specified by the telephone company. Where a separate lamp signal cabinet per ED-90470-70 is required, it shall be located where specified by the telephone company at a height of approximately 6 feet 6 inches from the floor measured to the bottom of the cabinet.

Outgoing Emergency Alarm to a Distant Office

5.11 The outgoing emergency alarm circuit relays in a multizone coded emergency alarm system are located in the central control casing.

5.12 The associated fuse and signal lamp are located in the central control casing.

Equipment Units

5.13 The common systems emergency alarm system central control unit equipment drawings apply in crossbar offices except for modifications covered on the bay equipment drawings listed herein.

No. 5 Crossbar Offices

5.14 The front and rear horizontal baffles, as covered in J28353F for emergency alarm systems installed in No. 5 crossbar offices, shall be shipped separately. The horizontal baffles will be located at the top and bottom of the central control unit.

5.15 The zone wiring from the wire termination panel shall be run in No. 14 gauge flame-retarding wire, per KS-5482-01, up the left-hand side of the bay, facing the rear, to the cable troughs and distributed to various pieces of zone apparatus such as horns, gongs, station boxes, etc, as specified by the telephone company.

Automatic Fire Detection Feature

5.16 The use of the automatic fire detection feature (1A Fire Detection Wire), provided in J98302 has been rated A&M Only and has been replaced by commercial fire detection equipment as covered in EM789.

5.17 The application of commercial fire detection equipment that is connected to the office emergency alarm system shall be limited to central office equipment areas, power rooms, operating rooms, and similar service effecting areas.

Bay Local Cable

5.18 The bay of central control equipment shall have its local cable made up of No. 20 gauge type AM or BH wire.

Zone Wiring

5.19 Wiring between code signal sending devices, station boxes, code sounding devices, and the bay of central control equipment shall be No. 14 gauge flame-retarding wire per KS-5482-01 sewed to the underside of cable racks.

5.20 Wiring between the lamp signal cabinets for incoming alarm circuit lamps, the bay of central control equipment, audible alarm relay casings, miscellaneous relay rack, distributing frame, and miscellaneous fuseboard, etc, shall be run with No. 20 gauge type AM or BH wire in switchboard cable as required. The pair of leads from the outgoing alarm circuit to the distributing frame shall be similarly run.

5.21 In order to terminate the two No. 14 gauge leads of the station box loop on the DP relay in the incoming alarm circuit from a distant office, splice short pieces of red No. 20 gauge type AM or BH wire on to the ends, the splices to be made on the skimmers.

Power

5.22 48-Volt Battery—Code System: The 48-volt signal battery and ground supply leads for an installation of 1 through 40 code sounding devices shall be No. 0 flame-retarding wire per KS-5482-01 run directly from the battery control board in the power room to the bay of central control equipment. This supply shall be taken through a 100-ampere fuse with the associated alarm fuse stud connected to the major fuse alarm similar to the other fuses.

5.23 Ringing: The ringing leads required for the no battery alarm circuit and the audible alarm circuit, when specified for receiving an alarm incoming from a distant office, shall be run in No. 20 gauge type AM wire in separate switchboard cables from the nearest continuous ringing supply. For No. 5 crossbar system, the ringing leads required for the no battery alarm circuit and the audible alarm circuit shall be fused on individual fuse posts on the fuse panel.

Rigid Conduit

5.24 Quality: All conduit shall conform to the requirements covered in KS-5351, Engineering Requirements for Rigid Conduit.

5.25 Fittings: All conduit fittings used to connect rigid conduit shall be of the threadless type

unless otherwise specified and shall conform to the requirements covered in KS-5351.

Grounding Central Control Bay

5.26 The central control bay shall be treated the same as a relay rack bay and grounded in the manner set up in the framework specification employed.

Shock Mounting

5.27 Details for shock mounting alarm panels ED-90648-50, ED-90517-70, and ED-96188-34 are available per ED-97710-10 when required.

List of A&M Only and Mfr Disc. Equipment

| EQUIPMENT | RATING | DETAILS LAST COVERED IN ISSUE | REPLACING EQUIPMENT |
|------------|-----------|--|------------------------|
| J28350A,L2 | Mfr Disc. | 2 | J28350A,L1 |
| J28350B,L2 | Mfr Disc. | 2 | J28350B,L1 |
| J28350C,L2 | Mfr Disc. | 2 | J28350C,L1 |
| J28350D,L2 | Mfr Disc. | 2 | J28350D,L1 |
| J28350E | Mfr Disc. | 3 | J28350D,L1, L4 |

The above equipment has been replaced as indicated. Where A&M Only items appear, the issue numbers shown are those of the issue in which the rating was first applied.

Bell Telephone Laboratories, Incorporated

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