ANNOUNCEMENT SUPPLY EQUIPMENT
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 the manufacture and installation of announcement desks No. 1 and 1B and associated announcement supply equipment.

1.02 This specification is reissued:

(a) To rate this specification and its associated J codes A&M Only since the announcement desk No. 1 and 1B are replaced by the No. 4A time announcement system as the standard announcement system. This change is per development letter 6563 dated 7/5/53.

(b) To rate Mfr Disc. the following J codes due to no demand: J95403A, F, J, L, N, P, R, T, X, and AB.

(c) To make minor no-record changes.

DESCRIPTION

1.03 Announcement desks No. 1 and 1B are designed for use as centralized bureaus for furnishing time-of-day service by means of time announcements by an operator every quarter minute, over a system of announcement supply circuits to any central office in an area which may be manual, panel, or step-by-step or any combination of these.

1.04 Announcement desk No. 1 is designed on the basis of using 1C clocks operated from office master clocks. Announcement desk No. 1B is designed on the basis of using synchronous motor driven electric clocks operated by a precision frequency current supplied over cable pairs from a central point in the Bell System or by regular 60-Hz commercial power supply. The No. 1B desk requires a different turret and desk relay rack unit than the No. 1 desk, and the volume of announcements are indicated to the operator by means of lamps instead of meters. Additional relay rack equipment is required when the clocks in the No. 1B desk are operated by precision frequency than when operated by regular 60-Hz supply.

1.05 Equipment associated with either of these systems is installed in the office in which the time bureau is located, designated the "desk office," and in offices in other buildings designated "terminating offices." In addition to this, equipment may be installed when required in "intermediate offices" for the purpose of extending the range of the circuits or to reduce the number of cable pairs between a desk office and a number of terminating offices.

1.06 The circuits and equipment for the announcement desks and associated announcement supply circuits permit distributing the time announcements over the entire system every quarter minute. The time announcement is amplified in the desk office by means of a 2-stage vacuum tube repeater, and is then distributed to all terminating offices and intermediate offices when required, in each of which the announcement and signal are further amplified by additional repeaters.

1.07 Where the installation of terminating equipment cannot be justified in central offices in outlying locations, the service may be furnished over regular interoffice cable pairs by means of tandem announcement trunks and terminating incoming equipment which may be located in manual tandem offices, tandem or 2-wire panel offices, or in step-by-step offices having interoffice trunk connections to the office where the calls originate.

1.08 In order to insure reliability of the service furnished, two complete supply systems designated "Circuit A" and "Circuit B" are provided together with facilities for quickly switching from one to the other. This is accomplished through the use of duplicate equipment with the exception

Fig. 1—Announcement Desk—No. 1B Turret Shown

of the outgoing distributing announcement supply circuits which are so arranged that a spare circuit may be readily used to replace one in trouble through the use of patching cords. In addition to this spare circuit the distributing circuits are provided with transfer keys which permit transferring the announcement service to spare trunk pairs in case the regular announcement trunk pairs fail.

Desk Office

1.09 The equipment located in the desk office consists of the turret used by the time operator, mounted upon a flat-top desk. This turret is generally located in a quiet room and cabled to two bays of 19-inch relay rack containing two desk units and the requisite number of outgoing

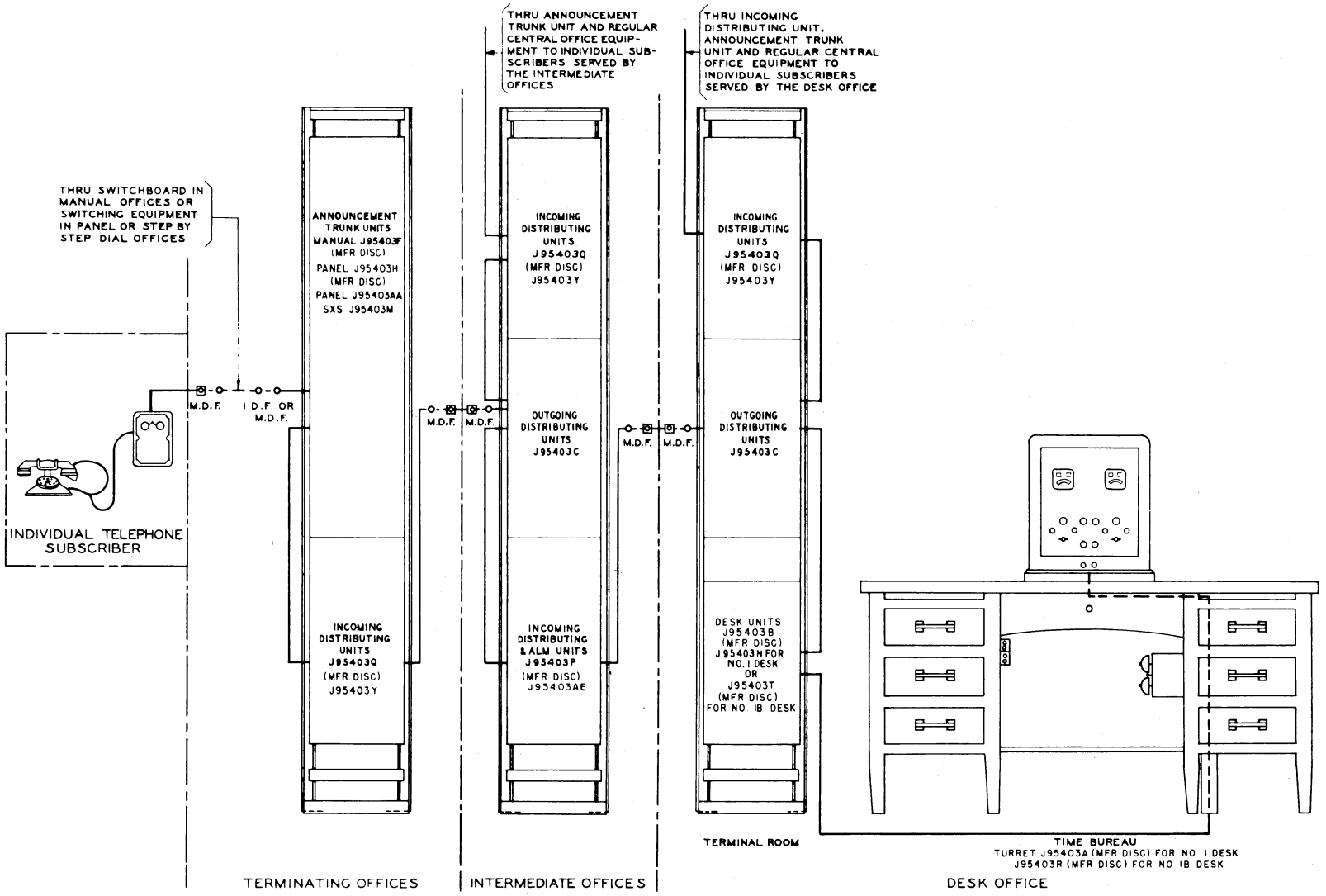

Fig. 2—Equipment Connecting Plan

distributing units. For giving announcement service to subscribers in the same central office area as the desk, an additional bay of terminating equipment will be required.

1.10 When the precision frequency is used, amplifiers are required to increase its power sufficiently to operate the clocks. These amplifiers are normally operated on 110-volt, 60-Hz commercial service. In order to avoid interruptions in case of a failure of the commercial power, battery driven ac converters are provided to operate the amplifiers. Provision is also made to operate the clocks directly on the commercial power in case of a failure in the precision frequency current supply.

1.11 The keys and lamps associated with the desk circuits are located in the turrets together with the clocks.

Intermediate Offices

1.12 Equipment at intermediate offices is mounted on the relay rack and consists of two intermediate incoming distributing and alarm units together with the necessary number of outgoing distributing units of the same type as are located in the desk office. This equipment also may usually be confined to one bay of 19-inch relay rack.

1.13 When the announcement service is not to be made available to the subscribers served by an intermediate office, the circuits are connected through the distributing frame to the intermediate equipment on the relay rack and thence to the terminating offices. With the exception of the necessary alarms and power supplies no other connection will be made to the intermediate central office circuits.

1.14 When intermediate office subscribers are to have access to the announcement service, the same equipment as for a terminating office should be provided in addition to the intermediate office equipment.

Terminating Office

1.15 In terminating offices all equipment is located on the relay rack and made up of duplicate incoming distributing and alarm units, together with the required number of announcement trunk units, arranged for use with either manual, panel, or step-by-step local or tandem equipment according to the type of office in which the terminating equipment is located. For the ordinary local installation, this equipment is located on one bay of 19-inch relay rack. The announcement circuits are connected through the distributing frame to regular central office circuits.

Power

1.16 In addition to the power equipment described under **Desk Office,** the power requirements include a source of 24-volt battery for talking, signaling, and filament lighting for the announcement supply circuits, the manual announcement trunks, and the circuits associated with the desk. For the dial announcement trunks, 48-volt battery is used. A 130-volt plate supply is needed for the vacuum tubes used in the announcement supply circuits and desk circuit. The 24-volt and 48-volt supply may be obtained from central office battery. Where a 130-volt supply is not available, it will be necessary to provide a separate plant in accordance with J86592.

SUBDIVISIONS OF EQUIPMENT AND DETAILED INDEX

EQUIPMENT CODE	RATING OF UNIT	TITLE	EQUIPMENT DRAWING	CIRCUIT DRAWING
J95403C	A&M Only	Outgoing Distributing Announcement Supply Units	J95403C-( )	SD-90257-01
J95403K	A&M Only	Announcement Trunk Unit for Use on Mulitiple of Distant Office Selectors in Panel Offices	J95403K-( )	SD-21734-01
J95403M	A&M Only	Announcement Trunk Unit for Step-by-Step Offices — For Use in Offices Having Distributing Equipment	J95403M-( )	ES-360028 SD-31362-01 SD-31518-01
J95403W	A&M Only	Announcement Trunk Unit for Step-by-Step Offices — For Use in Offices Not Having Distributing Equipment	J95403W-( )	ES-360028 SD-31518-01 SD-31700-01
J95403Y	A&M Only	Incoming Distributing and Alarm Unit for Terminating Offices — Announcement Supply	J95403Y-( )	SD-90260-01
J95403AA	A&M Only	Announcement Trunk Unit for Use in Panel and Crossbar Offices	J95403AA-( )	SD-21452-01
J95403AC	A&M Only	Incoming Distribution and Alarm Unit for Terminating Offices — Announcement Supply — Arranged for 48-Volt Battery Supply	J95403AC-( )	SD-95459-01 SD-95460-01
J95403AD	A&M Only	Incoming Announcement Trunk Unit — Crossbar No. 5 — Receiver-On-Hook Supervision After Announcement Minimum Interval of 1 or 2 Minutes	J95403AD-( )	SD-25952-01
J95403AE	A&M Only	Incoming Distributing and Alarm Unit for Intermediate Offices	J95403AE-( )	SD-90256-01
J95403AF	A&M Only	Repeater Panel — Announcement Supply — 24-Volt or 48-Volt Filament Supply — For Use in Desk, Intermediate, or Terminating Offices	J95403AF-( )	SD-90253-01 SD-90256-01 SD-90260-01 SD-90400-01 SD-90400-02 SD-95459-01 SD-95460-01 SD-96042-01

Circuit Schematic Index

CIRCUIT DRAWING	J95403 EQPT CODE
ES-360028	M,W
SD-21452-01	AA
SD-21734-01	K
SD-25952-01	AD
SD-31362-01	M
SD-31518-01	M, W
SD-31700-01	W
SD-90253-01	AF
SD-90256-01	AE, AF
SD-90257-01	C
SD-90260-01	Y, AF
SD-90400-01	AF
SD-90400-02	AF
SD-95459-01	AC, AF
SD-95460-01	AC, AF
SD-96042-01	AF

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
J38304—814-675-150—Office Alarm Equipment—Step-by-Step and 702A PBX
J86592—802-751-151—130-Volt Power Plant
J93001—801-006-153—Relay Rack Units—Framework and Cabling
J99208—801-009-155—Lamp Annunciator Cabinet for Central Offices
X-67063—Shop Testing Requirements for Repeaters
Floor Plan Data—Section 7.2, Sheet 31—No. 1 Desk
Section 7.2, Sheet 42—No. 1B Desk

3. DRAWINGS

For additional drawings forming a part of this specification, see listings under Subdivisions of Equipment and Detailed Index.

Circuits

ES-223264—Desks—Method of Grounding
SD-80550-01—Power Supply Circuit
SD-90426-01—Keysheet—No. 1 Desk
SD-96157-01—Keysheet—No. 1B Desk

Framework

ED-65149-01—Turret—Cover Assembly—No. 1 Desk
ED-90002-10—Flush Panels
ED-90050-01—Turret—Base and Front Panel Assembly—No. 1 Desk
ED-90185-01—Repeating Coil Mounting Bars
ED-90273-70—Adapter Details for Mounting 19-Inch Units on 23-1/2 Inch Relay Rack Bays
ED-90392-01—Turret—Panel Assembly and Details—No. 1 Desk
ED-90395-( )—Relay Rack Unit Assembly—181 or Similar Type Terminal Strips
ED-90528-01—Framework for Mounting 204 Type Selectors on 19-Inch Relay Rack
ED-90581-01—Jack Box Assembly
ED-90782-01—Relay Rack Unit—Assembly
ED-91243-01—Turret Assembly—No. 1B Desk
ED-92646-70—Relay Rack Key Mounting Assembly
ES-376960—Turret—Adapter Details—No. 1 Desk

Equipment

ED-90447-01—Location of No. 1 Turret and Miscellaneous Equipment
ED-90505-01—Announcement Desk No. 1—Typical Relay Rack Equipment
ED-91245-01—Announcement Supply 1B—Typical Relay Rack Equipment
ED-91246-01—Location of No. 1B Turret and Miscellaneous Equipment

Cabling

ED-91600-01—Relay Rack Unit Cabling Plan—Vertical Wiring—224-Type Terminal Strips
ED-91601-01—Relay Rack Unit Cabling Plan—Horizontal Wiring—224-Type Terminal Strips

4. EQUIPMENT

J95403C—A&M Only—Outgoing Distributing Announcement Supply Units—19-Inch Mounting Plates

Equipment—J95403C-( )

List 1—Framework, assembly, wiring, and equipment for one unit, containing ten outgoing

announcement supply circuits and two distributing circuits.

	WIRE	EQUIP	NOTES
Key Mounting Assembly: ED-92646-70, G2		1	
Supply Ckt: SD-90257-01, Fig. 1	10	As Spec.	A
Distributing Ckt: SD-90257-01, Fig. 2	2	2	
Circuit Control Ckt: SD-90257-01, Fig. 3	1	1	B
Transfer Ckt: SD-90257-01, Fig. 4	9	As Spec.	A,C

Notes

A. This unit may be equipped for ten supply circuits. Of these circuits, nine are to be used for regular service while the remaining one is a spare circuit to be used only to replace, by means of keys and patching jacks, one of the working circuits which it is desired to remove from service. One P2B patching cord (green), 3 feet long, equipped with two 110 plugs, will be used for this purpose.

B. The CO key shall be provided with a red handle.

C. The TRNS key shall be provided with a white handle.

J95403K—A&M Only—Announcement Trunk Unit for Use on Multiple of Distant Office Selectors in Panel Offices—19-Inch Mounting Plates

Equipment—J95403K-( )

List 1—Framework, assembly, wiring, and equipment for one unit, containing ten announcement trunk circuits for use on multiple of tandem district or office selectors in panel offices.

	WIRE	EQUIP	NOTES
Mounting Bars: ED-90185-01, Fig. 2		1	
Tandem Announcement Trunk Ckt: SD-21734-01, X, Y, A, B, D, E, F, L, and M Wiring	10	0	A

List 2—Equipment required in addition to list 1 for one tandem announcement trunk circuit per SD-21734-01.

Note

A. The local cable for this unit shall be wired universally for use in connections supervised by an operator, or otherwise, and for any combination of X, Y, A, B, D, E, and F wiring which may be necessary, as determined by the tandem trunk loss plus the losses of the tandem and local office loops. These wiring options shall be connected as directed by the telephone company at the time of installation.

J95403M—A&M Only—Announcement Trunk Unit for Step-by-Step Offices—For Use in Offices Having Distributing Equipment—19-Inch Mounting Plates

Equipment—J95403M-( )

List 1—Framework, assembly, wiring, and equipment for one unit, containing five announcement trunk circuits.

	WIRE	EQUIP	NOTES
Framework for Mounting 204-Type Selectors: ED-90528-01		1	
SXS Announcement Trunk Ckt: SD-31362-01	5	0	A
Switch Trouble Alarm Ckt: SD-31518-01, Fig. 1	1	As Spec.	B
Misc Alarm Ckt: ES-360028, Fig. 20	1	As Spec.	B

List 2—Equipment required in addition to list 1 for one step-by-step announcement trunk circuit per SD-31362-01 with Y option.

Notes

A. These trunk circuits are arranged to absorb a varying number of digits depending on the position where they are connected into the step-by-step circuits. The telephone company shall specify the number of digits to be absorbed by this equipment and the unit will be furnished with the F and G leads connected to the bank terminals corresponding to the number of digits to be absorbed and with succeeding terminals on the banks strapped to the terminals on

which the F and G leads, respectively, are terminated.

B. Two switch trouble alarm circuits, SD-31518-01 and ES-360028, are listed for use as part of this unit. The former should be specified where pilot lamps are in use and ES-360028 where the ceiling lamp alarm system has been installed. Of the equipment shown in Fig. 1 of SD-31518-01 and Fig. 20 of ES-360028, only the A or C resistor, RLS relay, and RLS and PS lamps shall be mounted on the unit.

J95403W—A&M Only—Announcement Trunk Unit for Step-by-Step Offices—For Use in Offices Not Having Distributing Equipment—19-Inch Mounting Plates

Equipment—J95403W-( )

List 1—Framework, assembly, wiring, and equipment for one unit, containing five announcement trunk circuits.

	WIRE	EQUIP	NOTES
Framework for Mounting 204 Type Selectors: ED-90528-01		1	
SXS Announcement Trunk Ckts: SD-31700-01	5	0	A
Switch Trouble Alarm Ckt: SD-31518-01, Fig. 1	1	As Spec.	B
Misc Alarm Ckt: ES-360028, Fig. 20	1	As Spec.	B

List 2—Equipment required in addition to list 1 for one step-by-step announcement trunk circuit per SD-31700-01.

Notes

A. These trunk circuits are arranged to absorb a varying number of digits depending on the position where they are connected into the step-by-step circuits. The telephone company shall specify the number of digits to be absorbed by this equipment, and the unit will be furnished with the F and G leads connected to the bank terminals corresponding to the number of digits to be absorbed and with succeeding terminals on the banks strapped to the terminals on which the F and G leads, respectively, are terminated.

B. Two switch trouble alarm circuits, SD-31518-01 and ES-360028, are listed for use as part of this unit. The former should be specified where pilot lamps are in use and ES-360028 where the ceiling lamps alarm system has been installed. Of the equipment shown in Fig. 1 of SD-31518-01 and Fig. 20 of ES-360028, only the A or C resistor, RLS relay, and RLS and PS lamps shall be mounted on the unit.

C. A, B, D, E, F, and Y wiring will be provided in all cases and removed by the installer as required. When required, X wiring will be placed by the installer.

J95403Y—A&M Only—Incoming Distributing and Alarm Unit for Terminating Offices—Announcement Supply—23-Inch Mounting Plates

Equipment—J95403Y-( )

List 1—Framework, assembly, wiring, and common equipment for one unit.

	WIRE	EQUIP	NOTES
Repeater Panel: J95403AF-( )		1	
Incoming Distg & Alarm Ckt: SD-90260-01, Fig. 1, Less Transformer A	1	1	
Transmission Test Ckt: SD-90260-01, Fig. 5, M Res Only	1	1	
Distg Ckt: SD-90260-01, Fig. 4	4	0	
Transfer Ckt To Provide Emergency Ann Trk: SD-90260-01, Fig. 6	1	0	
Lamp Ckt: SD-90260-01, Fig. 7	1	0	

List 2—Equipment per J95403AF required in addition to list 1 when transmission testing facilities are required for terminating offices.

List 3—94E transformer per SD-90260-01, Fig. 1, required in addition to list 1 when the trunk impedance at 1000 Hz is 1100 ohms or less.

List 4—94F transformer per SD-90260-01, Fig. 1, required in addition to list 1 when the trunk impedance at 1000 Hz is greater than the 1100 ohms.

List 5—Equipment per SD-90260-01, Fig. 6, and Z wiring and apparatus unless emergency trunk is a dial out trunk.

List 6—Equipment per SD-90260-01, Fig. 4, required in addition to list 1 for one distributing circuit.

List 7—Equipment per SD-90260-01, Fig. 7, required in addition to list 1 for one lamp circuit.

Notes

A. Wiring to be connected per SD-90260-01, Fig. 1, X wiring only required when used in dial offices.

B. Wiring to be connected per SD-90260-01, Fig. 6, W wiring only, when the emergency trunk is a dial out trunk.

J95403AA—A&M Only—Announcement Trunk Unit for Use in Panel and Crossbar Offices—23-Inch Mounting Plates

Equipment—J95403AA-( )

List 1—Framework, assembly, wiring, and common equipment for one unit of 10 announcement trunks.

	WIRE	EQUIP	NOTES
Announcement Trunk Ckt: SD-21452-01, Fig. 1, A & B	10	0	

List 2—Equipment per SD-21452-01, Fig. 1 and A required in addition to list 1 for one announcement trunk circuit arrangement for sending final heavy (+) PCI impulse.

List 3—Equipment per SD-21452-01, Fig. 1 and B required in addition to list 1 for one announcement trunk circuit not arranged for sending final heavy (+) PCI impulse.

J95403AC—A&M Only—Incoming Distribution and Alarm Unit for Terminating Offices—Announcement Supply—Arranged for 48-Volt Battery Supply—23-Inch Mounting Plates

Equipment—J95403AC-( )

List 1—Framework, assembly, wiring, and common equipment for one unit.

	WIRE	EQUIP	NOTES
Repeater Panel: J95403AF-( )		1	A
Terminating Inc Ckt: SD-95459-01, Fig. 1	1	1	
Switch Alm Ckt: SD-95459-01, Fig. 2	1	0	
Fig. 10 & 12	1	0	
Fig. 11	1	0	
CT & RV Distributing Ckt: SD-95459-01, Fig. 4, With X Wiring	2	0	
Transmission Test Ckt: SD-95459-01, Fig. 5, M Res Only	1	0	
Transfer Ckt: SD-95459-01, Fig. 6	1	0	
Lamp Ckt: SD-95459-01, Fig. 7	1	0	
Repeater & Line Alm Ckt: SD-95459-01, Fig. 8	1	0	
Repeater Ckt: SD-95460-01, Fig. 1, AA & AB Res & P Res Lamp Only	1	1	

List 2—Equipment per SD-95459-01, Fig. 2, required in addition to list 1 for one switch alarm circuit.

List 4—Equipment per SD-95459-01, Fig. 4, required in addition to list 1 for one CT and RV distributing circuit.

List 5—Equipment per SD-95459-01, Fig. 5, required in addition to list 1 when transmission testing facilities are required (see Note 5.02).

List 6—Equipment per SD-95459-01, Fig. 6, required in addition to list 1 for one transfer circuit.
List 7—Equipment per SD-95459-01, Fig. 7, required in addition to list 1 for one lamp circuit.
List 8—Equipment per SD-95459-01, Fig. 8, required in addition to list 1 for one repeater and line alarm circuit.
List 10—Equipment per SD-95460-01, Fig. 2, required in addition to list 1 for one receiver circuit for repeater monitoring.
List 12—Equipment per SD-95459-01, Fig. 11, required in addition to list 1 when located in a step-by-step or toll office.

Note

A. The repeater panel used in this unit is self-contained, all of its outgoing leads being wired to a terminal strip on the rear of the panel. The wiring shown on SD-95460-01 external to the panel shall be included in the local cable.

J95403AD—A&M Only—Incoming Announcement Trunk Unit—Crossbar No. 5—Receiver-On-Hook Supervision After Announcement Minimum Interval of 1 or 2 Minutes—23-Inch Mounting Plates

Equipment—J95403AD-( )

List 1—Assembly, wiring, and common equipment for one single-circuit announcement trunk circuit per SD-25952-01, Fig. 1.

J95403AE—A&M Only—Incoming Distributing and Alarm Unit for Intermediate Offices—23-Inch Mounting Plates

Equipment—J95403AE-( )

List 1—Assembly, wiring, and equipment for one distributing and alarm unit per SD-90256-01, Fig. 1, with T apparatus and B wiring.
List 2—Equipment and wiring per SD-90256-01, Fig. 4, required in addition to list 1 when 24 or fewer associated inter-repeater trunks are required.

J95403AF—A&M Only—Repeater Panel—Announcement Supply—24-Volt or 48-Volt Filament Supply—For Use in Desk, Intermediate, or Terminating Offices

Equipment—J95403AF-( )

List 1—Assembly, wiring, and common equipment for one announcement supply repeater panel per intermediate or transmitting amplifier circuit, SD-90400-01, Fig. 1, or terminating amplifier circuit, SD-90400-02, Fig. 1, both with B, E, G, T, ZA, ZD, ZE, and ZG apparatus and B, ZE, and ZG wiring and repeater circuit, SD-95460-01, Fig. 1, with M, T, U, and W apparatus and U wiring.
List 2—Equipment and wiring per SD-90400-01, Fig. 1, T3 output transformer and FIL ALM lamp only required in addition to list 1 for 24-volt desk offices or 24-volt intermediate offices only.
List 3—Equipment and wiring per SD-90400-02, Fig. 1, T3 output transformer and FIL ALM lamp only required in addition to list 1 for 24-volt terminating offices only.
List 4—Equipment and wiring per SD-95460-01, Fig. 1, T3 output transformer, AA and AB resistors and FIL ALM lamp only required in addition to list 1 for 48-volt terminating offices only.
List 5—Equipment and wiring per SD-90253-01, Fig. 5; SD-90256-01, Fig. 3; SD-90260-01, Fig. 5; less M resistor SD-95459-01, Fig. 5, less M resistor; and SD-96042-01, Fig. 5 required in addition to list 1 for transmission testing (one list 5 per two panels).

Miscellaneous Equipment

Associated With Announcement Desk

4.01 ***Vacated Desk Alarm Circuit:***

SD-90253-01, Fig. 2)
ED-90447-01) For No. 1 Desk

SD-96042-01, Fig. 6)
ED-91246-01) For No. 1B Desk
ED-91245-01, Fig. A)

The vacated desk alarm circuit is required, in addition to the equipment in the apparatus cabinet to mount a subset either in the preferred position in the knee well of the desk, as shown on the

equipment drawings or in the position specified by the telephone company. Wiring to this subset must be run from the terminal strip in the turret as shown on the circuit cross-connections.

4.02 ***Operators Set Jacks:***

SD-90253-01, Fig. 1)
ED-90447-01) For No. 1 Desk

SD-96042-01, Fig. 2)
ED-91246-01) For No. 1B Desk

The jacks for the time operator headset shall be located in the left side of the knee well of the desk as shown on the equipment drawings and wired to the turret as shown on the circuit cross-connections.

4.03 ***Interrupter Circuit:***

SD-90253-01, Fig. E for No. 1 Desk
SD-96042-01, Fig. E for No. 1B Desk

When the time bureau is located in a panel dial office, a 149-, 160-, or 165-type interrupter is required for furnishing flashing pulses to the OS and OS1 lamps. If the necessary contacts are available on an interrupter already in the panel office, they may be used for this purpose. If not, it will be necessary to provide an interrupter and mount it on the miscellaneous interrupter frame.

4.04 ***Supervisor Signal Circuit:***

SD-90253-01, Fig. 4) For No. 1 Desk

SD-96042-01, Fig. 4)
ED-91245-01, Fig. A) For No. 1B Desk.

The supervisor signal lamp and buzzer will be located as specified by the telephone company. A 34 lamp socket equipped with a 4B red jewelled lamp cap should be used for mounting the lamp, and a 1B number plate engraved TIME should be associated with the lamp socket.

4.05 ***Power Supply Circuit, SD-80550-01, Fig. G—No. 1B Desk Only:*** The precision frequency amplifiers are normally operated by 110-volt ac 60-Hz commercial power. In case this power fails, the battery driven converter in the power supply circuit will automatically energize the amplifiers until the commercial power service is restored.

4.06 ***Power Transfer Circuit, SD-96043-01—No. 1B Desk Only:*** When the clocks are operated on precision frequency current, Fig. 1 and 3 will be used. Fig. 1 is divided in halves for equipment reasons. Each half will be arranged as shown in Fig. D on ED-91245-01 and located in the same relay rack bay as the associated desk circuit. When precision frequency is not available, the clocks will be operated on commercial power; Fig. 1, 2, and 4 will be used and the equipment arranged as described above. The keys and lamps are included in the desk circuit unit J95403T (Mfr Disc.).

4.07 ***Wall Clock Circuit, SD-90254-01—No. 1 Desk Only:*** Two wall clocks shall be located on the wall of the time bureau in the line of the operator's sight, as directed by the telephone company. These clocks shall not be mounted tightly against the wall, but shall be so mounted that there is a space of from 1 to 3 inches between the wall and the rear surfaces of the clocks. This is intended to aid in stabilizing the temperature at which the clocks operate, thereby improving their accuracy. Wiring shall be run as indicated on the circuit cross-connections. The leads shall be in cable, or wire in conduit as specified.

Associated With Announcement Supply Circuits

4.08 ***Switch Alarm Circuit, SD-90256-01, Fig 2, A, B, and C and SD-90260-01, Fig 2, A, B, and C:*** Wiring and apparatus for one switch alarm circuit shall be provided in each intermediate or terminating office. The SA relay associated with the switch alarm circuit shall be mounted in any available space on the relay rack, and wiring as shown on the circuit cross-connection diagram shall be run. In step-by-step intermediate and terminating offices, in addition to the SA relay, the SA1, RA, and LA relays shall be located on available space on the relay racks and wired as indicated by circuit and cross-connection diagrams.

4.09 ***RV and CT Multiplier Circuit per SD-90260-01, Fig. 3:*** The announcement supply unit for terminating incoming distribution and alarms is wired for connection to a maximum of 40 announcement trunk circuits. When more than this number of trunks is required to be multipled in one terminating office, it will be necessary to furnish apparatus and wiring for one

multiplier circuit per unit for each 80 additional trunks. It will be necessary to furnish one additional distributing circuit per Fig. 4 of SD-90260-01, per unit, for each 20 additional trunks. The relays associated with these circuits should be mounted in available space on the relay rack.

4.10 ***130-Volt Battery Supply:*** When a 130-volt plate supply is not available for the vacuum tubes in the announcement supply circuits and desk circuits, a separate power plant per J86592 will be provided for this purpose as required.

Associated With Announcement Trunk Circuits

4.11 ***Interrupters for Announcement Trunk Circuits for Panel Offices—SD-21666-01 or SD-21669-01:*** The announcement trunk circuit, SD-21452-01, when used in panel offices having senders arranged for final heavy (+) PCI pulse, requires connection to one 160- or 165-type interrupter as shown on miscellaneous interrupter circuit SD-21666-01. When this circuit is installed in areas not arranged for final heavy (+) PCI pulse, connection to two interrupters is required. Tandem announcement trunks per SD-21734-01 require connection to one 160- or 165-type interrupter. This condition is shown on SD-21666-01 for cases where the trunks are located in a local office, and on SD-21669-01 for cases where they are located in a tandem office. If contacts are available on existing interrupters having the proper time intervals, they may be used. If not, it will be necessary to furnish 165-type interrupters and wire to them from the unit as indicated on the circuit cross-connections.

Miscellaneous Connecting Circuits

4.12 The following equipment and circuits are required for connection to the various announcement desk, supply, and trunk circuits. Where these circuits are already available in an office, they may be used. Otherwise, it will be necessary to furnish them as required.

Manual Systems—Peg Count Circuit SD-12846-01, Fig. 2

Step-by-Step Systems—Switch Trouble Alarm Circuit, SD-30197-01, Fig. 38 and 38-A

Step-by-Step System—Traffic Register Circuit, SD-31109-01

5. GENERAL NOTES

5.01 In order to insure reliable service over this system under all conditions, two circuits, designated A and B, will always be furnished.

5.02 The T meter and M key, used for transmission test, and shown on SD-90253-01, Fig. 5 for No. 1 desks or SD-96042-01, Fig. 5 for No. 1B desks, for desk offices, on SD-90256-01, Fig. 3, for intermediate offices and SD-90260-01, Fig. 5 or SD-95459-01, Fig. 5 for terminating offices, are covered as J95403AF. This equipment shall be furnished on one of the two desk units, two intermediate or two terminating units, respectively, in a particular office.

5.03 Connection as indicated on the various circuits shall be made to the annunciator alarm circuit in manual offices, to the aisle pilot and audible alarm circuits in step-by-step offices, and to the floor alarm board fuse and time alarm or miscellaneous alarm circuits in panel offices. These circuits are included in the standard alarm equipment provided in these offices as covered in the specifications listed herein.

5.04 The time operators positional equipment shall be located on a flat-top desk of the chief operator type. If the switchboard cable enters through a slot in the floor beneath the desk, a 1-inch conduit should be provided and located as shown on ED-90447-01 for No. 1 desk and ED-91246-01 for No. 1B desk. The switchboard cable shall be run through the conduit and up through the inside of one pedestal, preferably the right, to the rear of the drawers, then through a suitable hole in the top of the desk, through the cable hole in the turret and there terminated on the terminal strips.

5.05 In installing this equipment, care should be taken to ensure that the filament battery supply for the repeaters is taken from a quiet bus bar, as any noise in these circuits is immediately transferred to the talking circuits.

5.06 A 1-inch pad, 8 inches square, of the Faultless Rubber Company grade 40 sponge rubber, or an approved equivalent, should be used with each desk stand. The desk stand will be placed on this pad in order to reduce the possibility of the mechanical transmission of noise to the transmitter.

5.07 Where 110-volt ac commercial power supply is required, it shall be obtained from the floor distributing panel Fourteen gauge armored cable shall be used when it can be run on cable racks or in a concealed location. In exposed locations such as along side walls or ceilings, 110-volt supplies shall be run in rigid conduit.

5.08 ***Modification of Existing No. 1 Desk Jobs:*** Existing No. 1 time bureaus may be arranged for the new No. 1B desk synchronous motor driven electric clocks and precision frequency operation by modifying the desk equipment on a job basis. It will be necessary to replace the existing turret with the new turret and to modify the desk circuit to operate with the new clock circuit. In addition to these changes, it will be necessary to provide additional miscellaneous equipment for the new clock circuits, power transfer circuit, precision frequency amplifier circuits, power supply circuits, and clock synchronizing circuit, as required.

List of A&M Only and Mfr Disc. Equipment

The following 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.

EQUIPMENT	RATING	DETAILS LAST SHOWN IN ISSUE	REPLACING EQUIPMENT
J95403A	Mfr Disc.	8	—
J95403B	Mfr Disc.	4	J95403N
J95403C	A&M Only	8	—
J95403D	Mfr Disc.	4	J95403P
J95403E	Mfr Disc.	4	J95403Q
J95403F	Mfr Disc.	8	—
J95403G	Mfr Disc.	4	J95403M
J95403H	Mfr Disc.	6	J95403AA
J95403J	Mfr Disc.	8	—
J95403K	A&M Only	8	—
J95403L	Mfr Disc.	8	—
J95403M	A&M Only	8	—
J95403N	Mfr Disc.	8	—
J95403P	Mfr Disc.	8	—
J95403Q	Mfr Disc.	6	J95403Y
J95403R	Mfr Disc.	8	—
J95403S	Mfr Disc.	6	—
J95403T	Mfr Disc.	8	—
J95403W	A&M Only	8	—
J95403X	Mfr Disc.	8	—
J95403Y	A&M Only	8	—
J95403AA	A&M Only	8	—
J95403AB	Mfr Disc.	8	—
J95403AC	A&M Only	8	—
L3	Mfr Disc.	7	—
L9	Mfr Disc.	7	—
L11	Mfr Disc.	8	—
J95403AD	A&M Only	8	—
L2	Mfr Disc.	8	—
J95403AE	A&M Only	8	—
J95403AF	A&M Only	8	—

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