

AUXILIARY SENDER FRAME EQUIPMENT DESIGN REQUIREMENTS NO. 1 CROSSBAR AND PANEL SYSTEMS

1. GENERAL

SCOPE

1.01 This specification, together with the supplementary information listed herein, covers the equipment design requirements for the framework, equipment, and circuits to be used in the engineering, manufacture, and installation of the auxiliary sender frame in a panel or a No. 1 crossbar office.

1.02 This specification is being reissued to add a new BSP division number 815-200-151, and to bring it into conformity with the general Plant Series plan.

CAPACITY

1.03 The auxiliary sender frame has a capacity of four auxiliary senders.

1.04 There are four to ten auxiliary senders in an auxiliary sender group. The auxiliary senders of a group shall be located on a minimum of two frames.

DESCRIPTION

1.05 The auxiliary sender frame consists of a bulb-angle-type framework, 11 feet 6 inches high and 2 feet 0-5/8 inch long, equipped as shown in Fig. 1. A frame with a 12-inch guardrail is used in panel offices and a 10-inch guardrail frame is used in No. 1 crossbar offices. One to four auxiliary senders may be mounted on the frame which has a fuse panel, a jack panel for the miscellaneous circuit, and a mounting plate for miscellaneous equipment at the top of the frame. The frame also has a frame designation strip which indicates the interrelation of the auxiliary senders and the auxiliary sender link switch units. Space is available on the upper portion of the frame for mounting the recycled area code reconstruction units and part of the equipment required for directory number outpulsing when these features are to be provided.

1.06 The auxiliary sender, shown in Fig. 2 is assembled as a unit 2 feet 2 inches high and 1 foot 11 inches long and contains

space for thirteen 2- by 23-inch mounting plates. The sender consists of a number of functional surface-wired units interconnected by a unit local cable which includes wiring for all options. Fig. 5 shows the relation of circuits within the auxiliary sender, and the relation of the auxiliary sender to other circuits.

1.07 To provide the feature for directory number outpulsing, additional relays are required in the existing auxiliary sender unit. In addition, a unit mounted in the upper section of the auxiliary sender frame and a unit containing local cabling and two subunits located remotely on a 23-inch relay rack are also required. It is recommended that a separate relay rack be provided for all of the units mounted at the remote location, and test jacks be made available near this location for remote control testing from the sender test frame.

1.08 The recycled area code reconstruction unit is a surface-wired unit consisting of relays, terminal strips, and networks mounted on a 2- by 23-inch mounting plate (see Fig. 3). One unit is required for each auxiliary sender when the reconstruction feature is to be provided. Four such units will mount in the upper section of the auxiliary sender frame. The unit local cable contains the battery and ground leads from the frame fuse panel and other leads between the reconstruction unit and the various relays in the auxiliary sender circuit. Also, to provide for reconstruction, an additional relay is required in the call indicator and MF pulse sequence and MF pulse timer unit of the auxiliary sender. This same relay will be used when providing the feature for outpulsing of the directory number.

1.09 The auxiliary sender supplements the dialing range of the subscriber sender and enables the subscriber to dial ten digits when required for direct distance dialing (calls to points outside of the subscriber's local numbering area). Called number information is multifrequency (MF) pulsed forward by the auxiliary sender to a crossbar tandem office or to a toll switching point when either is provided with centralized automatic message accounting equipment. The auxiliary sender can also MF pulse forward local area 7- or 8-digit calls.

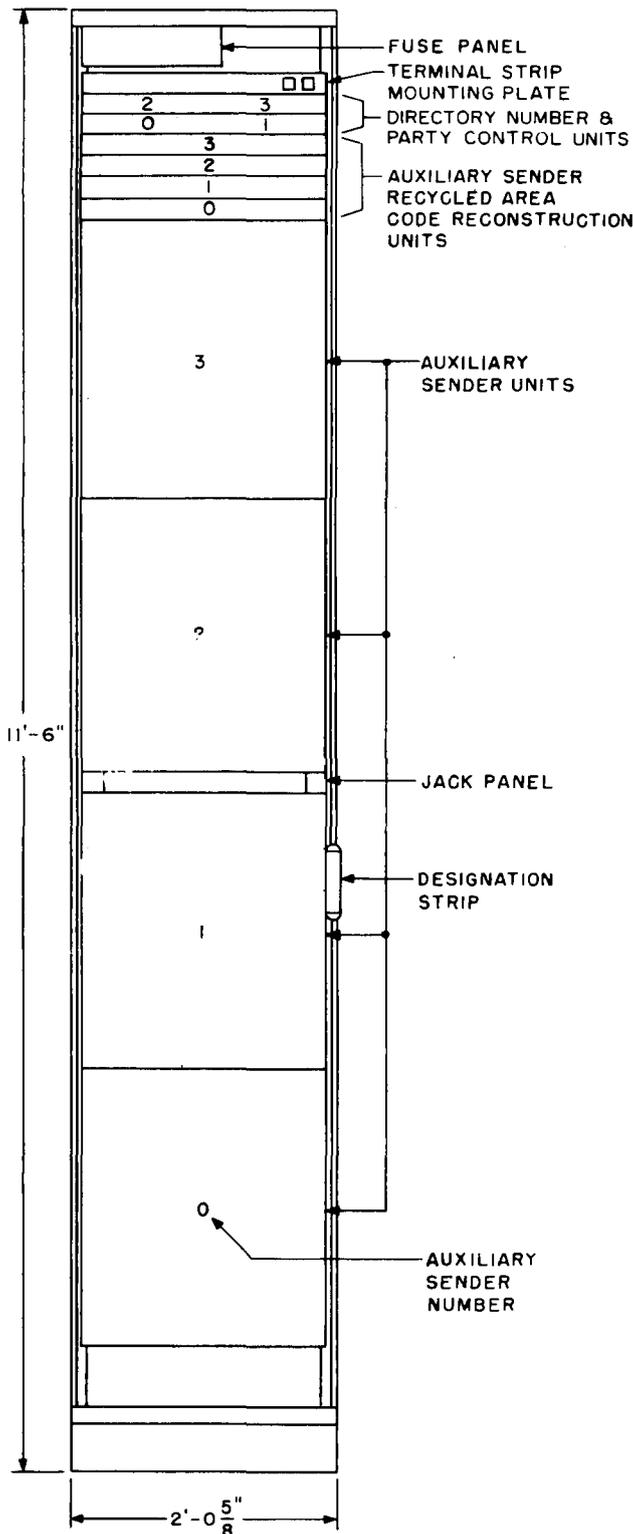


Fig. 1 - Auxiliary Sender Frame

1.10 For direct distance dialed calls, the subscriber dials an area code of the form XOX or XI_X prefixing the called number. The subscriber sender recognizes that an auxiliary sender is required if a 0 or 1 is registered as the second digit. However, to save holding time in the auxiliary sender, the subscriber sender waits until the seventh digit has been dialed before seizing an auxiliary sender. On 7- or 8-digit calls handled by the auxiliary sender, class information from the decoder or marker indicates the need for an auxiliary sender. Skip digit features are provided for 7- or 8- and 10-digit calls.

1.11 Ten-Digit Call: The subscriber sender is connected to the auxiliary sender through the auxiliary sender link. After the seventh digit has been dialed into the subscriber sender, the subscriber sender seizes the auxiliary sender link. The auxiliary sender link connects 13 leads to the subscriber sender and 12 leads to the auxiliary sender. (See Fig. 4.) The eighth digit is dialed into the subscriber sender. The ninth and tenth digits are dialed into and registered in the auxiliary sender. The auxiliary sender then signals the subscriber sender that dialing has been completed.

1.12 After this signal has been received, the subscriber sender attempts call indicator trunk test. If the remote incoming trunk is normal, the auxiliary sender signals the remote office incoming trunks to have a remote sender attached. If the remote trunk is off-normal when the subscriber sender attempts the call-indicator trunk test, the subscriber sender is given an overflow signal. The remote trunk signals the auxiliary sender that a sender is attached. When the auxiliary sender receives this signal, it assigns the call indicator loop back to the subscriber sender and simultaneously permits the completion of trunk test in the subscriber sender. The subscriber sender then PCI pulses the eight digits it has stored to the auxiliary sender. The auxiliary sender MF pulses forward the KP (gate opener) signal to the remote sender while the first digit is being received from the subscriber sender. While each succeeding digit is being received by the auxiliary sender, the previous digit is MF pulsed forward to the remote sender. After all digits have been MF pulsed forward, the auxiliary sender MF pulses forward an ST (start to release) signal. The auxiliary sender signals the subscriber sender to cut through and disconnect. The release of the subscriber sender releases the auxiliary sender and the connection through the auxiliary sender link.

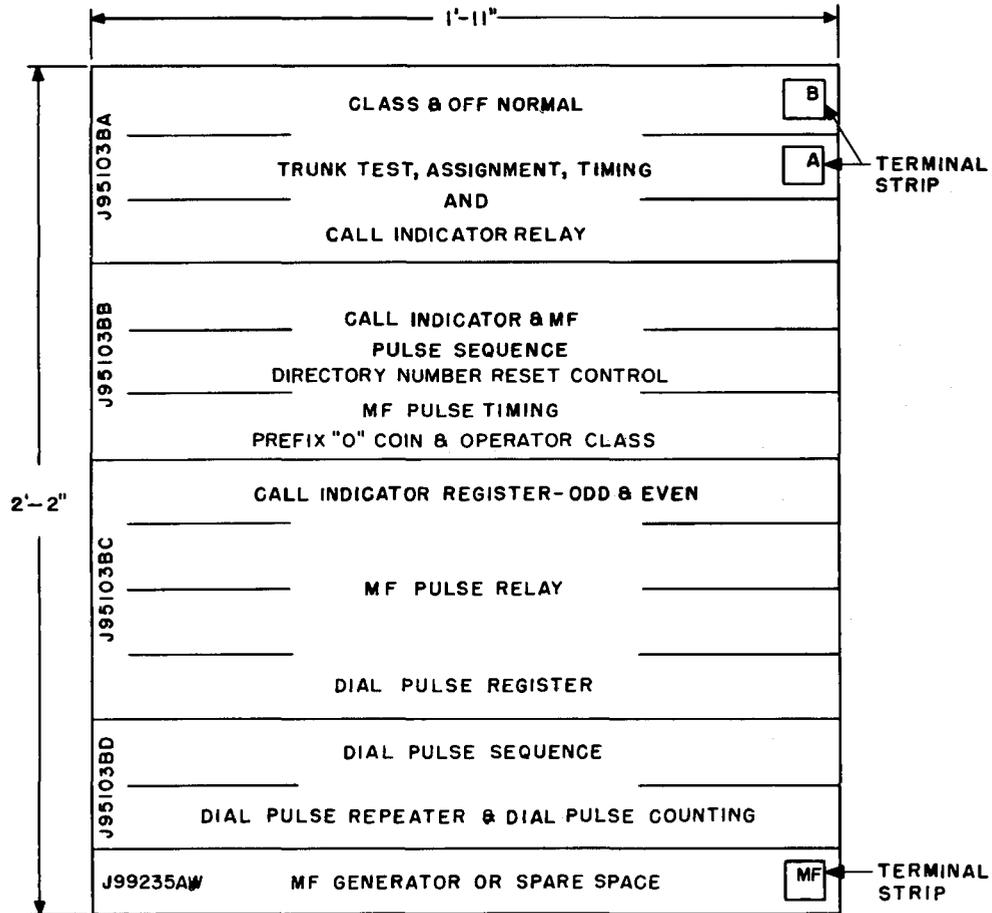


Fig. 2 - Auxiliary Sender Unit

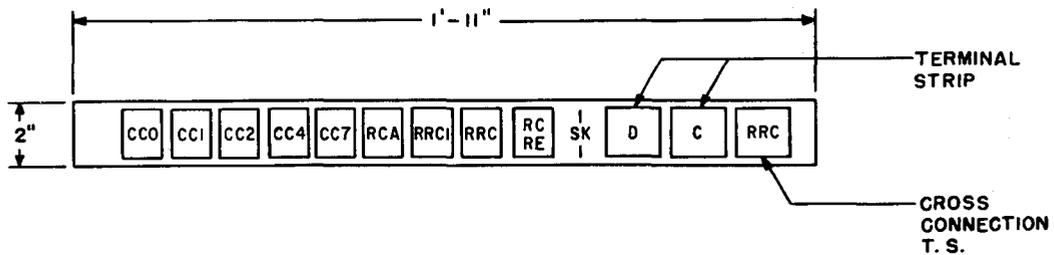


Fig. 3 - Auxiliary Sender Recycled Area Code Reconstruction Unit

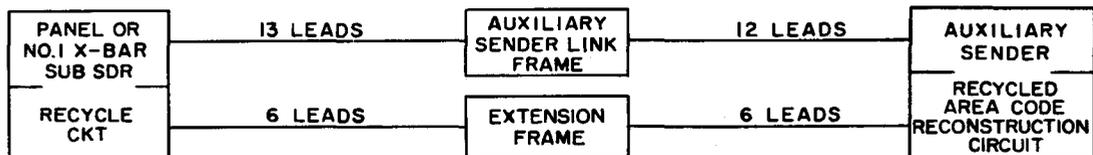


Fig. 4 - Relation of the Auxiliary Sender, the Auxiliary Sender Link, the Auxiliary Sender Link Extension, and the Panel and No. 1 Cross-bar Subscriber Senders and Recycle Circuits

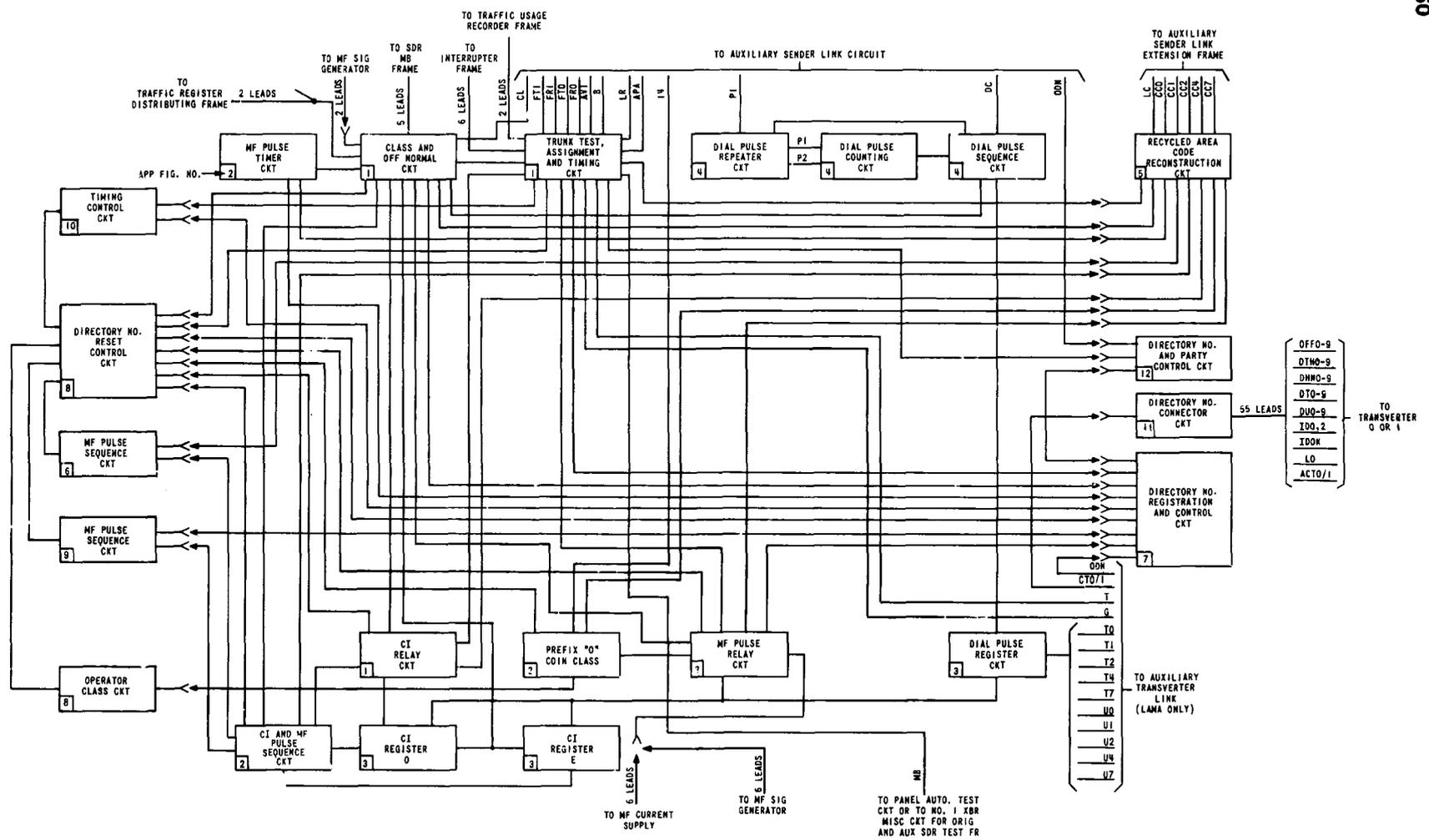


Fig. 5 - Relation of Circuits Within the Auxiliary Sender and Connections to Other Circuits

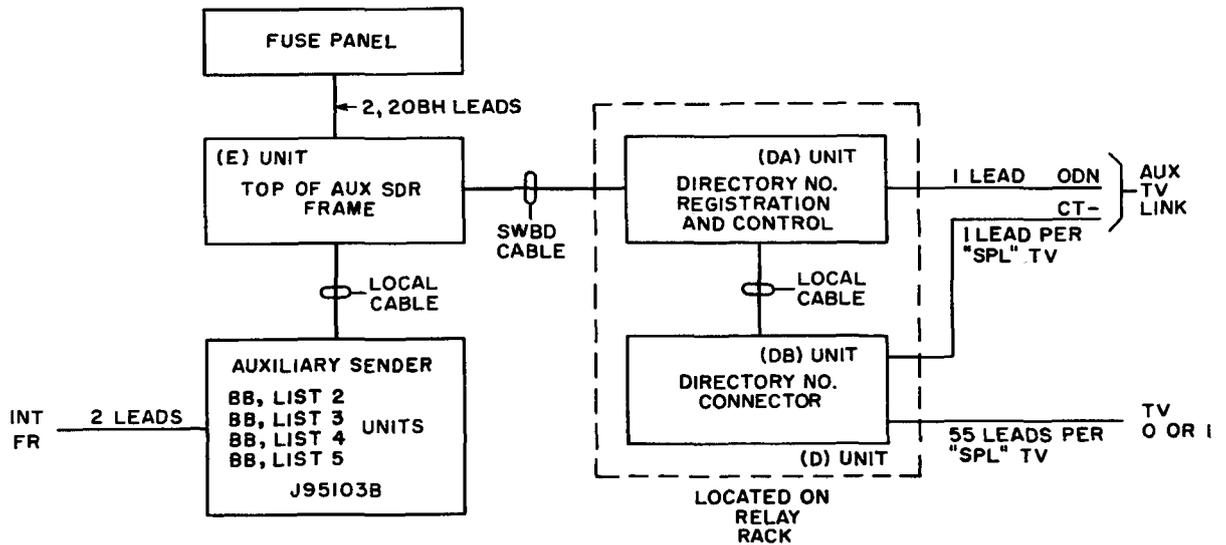


Fig. 6 - Cabling Diagram and Location of Units for Outpulsing Directory Number Feature

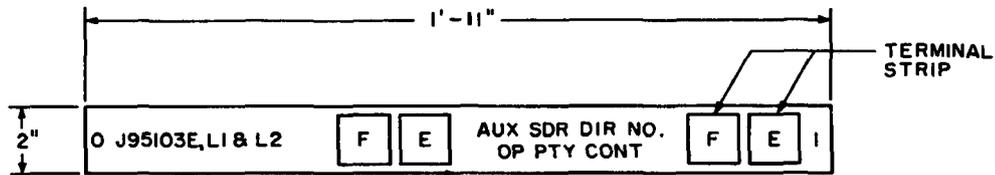


Fig. 7 - Auxiliary Sender Outpulsing Directory Number and Party Control Units for Four Auxiliary Sender Units on a Frame

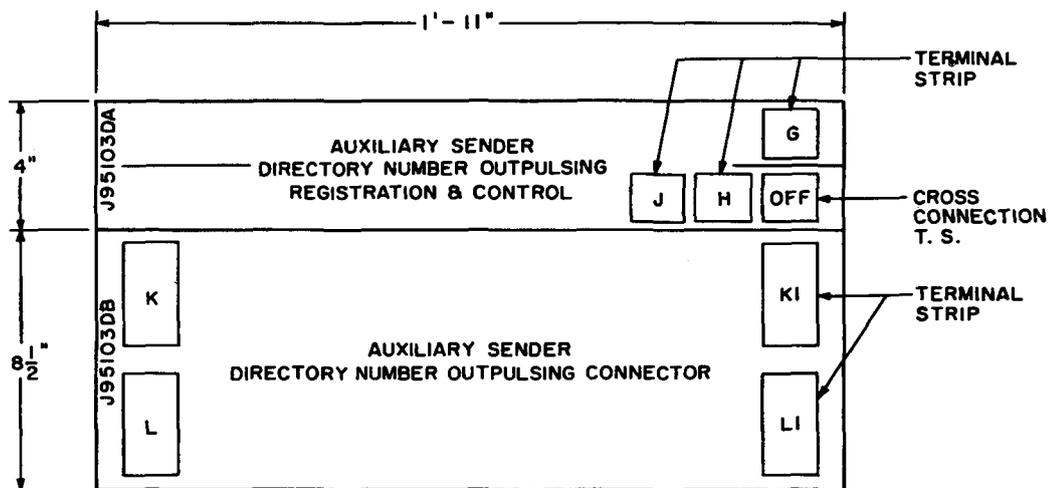


Fig. 8 - Auxiliary Sender Directory Number Registration and Control (Unit D) and Directory Number Connector (Unit E) Units

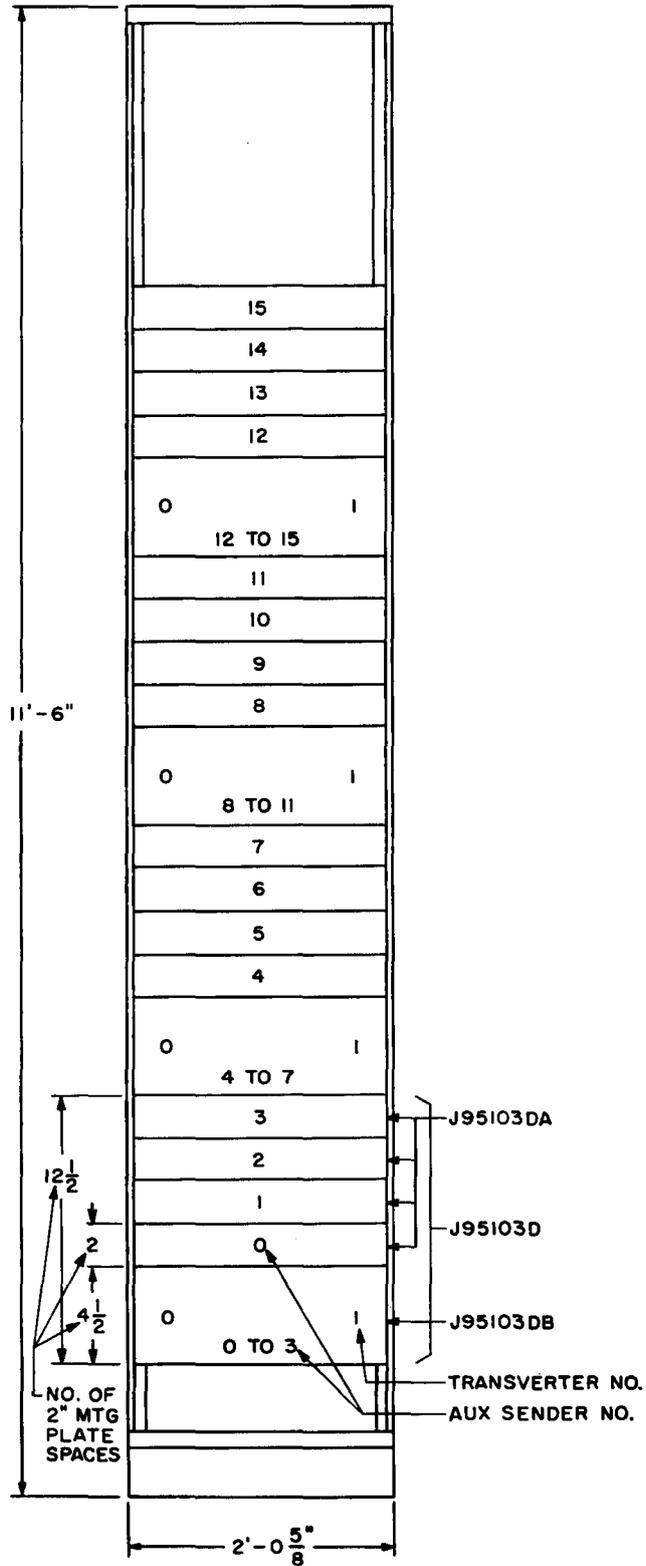


Fig. 9 - Typical Arrangement of Units on Miscellaneous Relay Rack for Auxiliary Sender Outpulsing Directory Number Feature

1.13 Seven- or Eight-Digit Call: Seizure of the auxiliary sender, trunk test, assignment, call indicator registration, and MF pulsing are similar to the 10-digit call. The principal differences are:

(1) the decision to seize an auxiliary sender must come from translation of the code in the marker or decoder, and (2) there is no dial pulse registration in the auxiliary sender.

1.14 The subscriber sender signals the auxiliary sender if a station digit is registered in the subscriber sender. The auxiliary sender will then MF pulse forward the station digit as received. If this signal is not received from the subscriber sender, indicating there is no station digit registered, the subscriber sender will PCI pulse a zero to the auxiliary sender as the eighth digit. This is recognized in the auxiliary sender as a "false" zero and the auxiliary sender MF pulses forward the ST (start to release) pulse following the seventh digit.

1.15 Auxiliary senders may be arranged for operation with AMA equipment. They will then transmit the tens and units digits of the called number to the transverter through the auxiliary transverter link circuit. The auxiliary transverter link circuit will cancel timing in the auxiliary sender until the transverter has completed its functions.

1.16 In No. 1 crossbar offices, the subscriber sender and the sender make-busy frame must be modified to function with auxiliary senders. When 7-digit or skip-digit features are required, the originating marker, originating marker connector, and originating trouble indicator must also be modified. In panel offices, the subscriber sender, decoder, decoder connector, decoder test, trouble indicator, and sender make-busy frames must be modified to function with auxiliary senders.

1.17 In both panel and No. 1 crossbar offices, extensive additions to the originating sender test circuit and an MF receiver are required to test the auxiliary senders through the subscriber sender. An SDT sender test jack is provided at each auxiliary sender frame to permit remote control testing of auxiliary senders.

1.18 In buildings where a group of auxiliary senders serves subscriber senders in more than one test frame group, the test and removal from service of auxiliary senders will be under control of one sender test frame and one sender make-busy frame. These control points will be designated by the telephone company.

1.19 Stuck sender equipment consisting of a lamp per sender and a register and bell per office are provided on the sender

make-busy frame. An MB (make-busy) jack per sender and a CTR (cancel-timed release) key per sender are also provided on the sender make-busy frame. If a group of auxiliary senders serves subscriber senders in more than one test frame group, the full complement of MB jacks, CTR keys, and SS lamps will be located on the sender make-busy frame at the control point. Only the SS lamps will be provided on the other sender make-busy frames. However, space will be reserved initially on the sender make-busy frames for a full complement of MB jacks, CTR keys, and SS lamps, since these sender make-busy frames may serve their own groups of auxiliary senders at a later date.

1.20 Relay-rack mounted equipment (see Fig. 2) is required in offices where an MF current supply is not available.

J99235AW - Multifrequency Signal Generator Unit

1.21 Recycled Area Code Reconstruction: Under certain conditions, it is desirable to reconstruct a recycled area code and be able to pulse it forward to a CAMA point. When a sender has registered an area code, passed it to the code compressor, which in turn has returned a recycle signal with a compressed code digit, this digit will be stored in the recycle circuit and the area code wiped out. The office code and compressed code are registered, passed to the decoder or marker, and translated. If translation of these digits indicates that this call is not to be handled on a revertive or PCI basis but on a 10-digit MF basis, the sender will be instructed to call for an auxiliary sender for outpulsing purposes. The compressed code digit is passed to the auxiliary sender from the subscriber sender recycle circuit on a two-out-of-five basis. This will indicate to the auxiliary sender that this digit is to be translated back to the 3-digit code it represents and that this code is to be outpulsed prior to outpulsing the seven digits registered in the sender. In addition to providing the recycled area code reconstruction unit, one additional relay in the auxiliary sender is provided for this feature. The office must be equipped with the J95104 auxiliary sender link extension frame(s) and the subscriber sender recycle circuits must be modified.

1.22 Directory Number Outpulsing: This feature is added to the auxiliary senders when it is desired to outpulse the directory number from a No. 1 crossbar LAMA office to a central point. This arrangement serves both multiparty and nonmultiparty lines. When a seven- or ten-digit nonmultiparty line call is made, the called and calling number will be outpulsed to the CAMA office. The marker recognizing this type of call signals the subscriber sender for ODN (outpulse

directory number) operation. The auxiliary sender is seized and furnished the ODN signal. After completion of certain auxiliary sender functions, the subscriber sender attempts seizure of one of the two transverters that have been modified for ODN operation and designated as "special" transverters. The transverter connects to the auxiliary sender through the auxiliary transverter link frame. The transverter will not connect to a recorder on this type of call as no recording will be done on the local AMA tape. The transverter connects to the required translator where it obtains the calling line number and the office index. This information is passed to the auxiliary sender. In addition, the auxiliary sender will receive a signal indicating a satisfactory check by the transverter of calling number translation and registration or a different signal to indicate a failure of this check. Upon registration of this information, the identification signal and the calling number are MF

outputted to the distant point. The auxiliary sender is also used to complete the connection when assistance operator and emergency operator traffic is routed to a traffic service position (TSP). On emergency operator calls (0-0 code), a special start signal is outputted after the calling number. This priority signal to the TSP is also sent on identification failures and multiparty class on calls to emergency operator.

1.23 Universal Information 411: This feature is added to the auxiliary senders when it is desired to output 411 on a home numbering plan area toll information call and NPA411 on a foreign numbering plan area information call. On universal information calls the auxiliary sender receives a mark from the subscriber sender, screens for an 11 transmitted from the subscriber sender in the B and C digits, and cuts off MF outputting after 411 or NPA411 to the CAMA tandem.

SUBDIVISIONS OF EQUIPMENT AND DETAILED INDEX

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

<u>Equipment Code</u>	<u>Rating of Unit</u>	<u>Title</u>	<u>Equipment Drawing</u>	<u>Circuit Drawing</u>
J95103A	AT&TCo Std	Auxiliary Sender Frame	J95103A-()	SD-95867-01 SD-96479-01 SD-96491-01
J95103B	AT&TCo Std	Auxiliary Sender Unit	J95103B-()	SD-95867-01 SD-96479-01
J95103C	AT&TCo Std	Auxiliary Sender Recycled Area Code Reconstruction Unit	J95103C-()	SD-96479-01
J95103D	AT&TCo Std	Auxiliary Sender Directory Number Outputting Unit	J95103D-()	SD-96479-01
J95103E	AT&TCo Std	Auxiliary Sender Directory Number Outputting Party Control Unit	J95103E-()	SD-96479-01
J95103BA	AT&TCo Std	Class and Off-Normal Circuit, Trunk Test Timing and Assignment Circuit, and Call Indicator Relay Circuit	J95103BA-()	SD-96479-01
J95103BB	AT&TCo Std	Call Indicator and MF Pulse Sequence Circuit, and MF Pulse Timer Circuit	J95103BB-()	SD-96479-01
J95103BC	AT&TCo Std	Call Indicator Register, Odd-and Even Circuit, MF Pulse Relay Circuit, and Dial Pulse Register Circuit	J95103BC-()	SD-96479-01
J95103BD	AT&TCo Std	Dial Pulse Sequence Circuit, Dial Pulse Repeater Circuit, and Dial Pulse Counting Circuit	J95103BD-()	SD-96479-01

Equipment Code	Rating of Unit	Title	Equipment Drawing	Circuit Drawing
J95103DA	AT&TCo Std	Auxiliary Sender Directory Number Outpulsing Registration and Control Unit	J95103DA-()	SD-96479-01
J95103DB	AT&TCo Std	Auxiliary Sender Directory Number Outpulsing Connector Unit	J95103DB-()	SD-96479-01

CIRCUIT SCHEMATIC INDEX

Circuit Drawing
SD-95867-01
SD-96479-01

J95103
Equip Code
A, B
A, B, C, D, E,
BA, BB, BC,
BD, DA, DB
A

ED-27114-01 - Table of Wire Gauges and Type of Insulation
ED-92950-10 - Switchboard Cable Details - Auxiliary Sender Frame
ED-92950-11 - Switchboard Power Cable - Auxiliary Sender Frame

SD-96491-01

4. EQUIPMENT

2. SUPPLEMENTARY INFORMATION

J95103A (AT&TCo Std) - Auxiliary Sender Frame

815-000-000 - Panel Systems Index
816-000-000 - No. 1 Crossbar System Index
815-200-170, 816-500-170 - Auxiliary Sender Equipment for Direct Distance Dialing - Engineering Information
J25551 (816-040-150) - End Guards, Aisle Pilot Lamp and DPTS Supports, and Fuse Record Book and Holder
J25552 (816-017-150) - Frame Lighting and Appliance Outlets
J95104 (815-200-152, 816-425-150) - Auxiliary Sender Link and Auxiliary Sender Link Extension Frames
J95501 - Central Office Lighting Equipment Appliance Outlets and Miscellaneous Conduits
J95503 - Central Office Lighting Fluorescent Type
J98609 - Multifrequency Current Supply
J99235 - Equipment Units, Relay Rack Mounted, Common Systems
951-320-100 - Auxiliary Sender for Direct Distance Dialing - Descriptive Information
Floor Plan Data - Section 7.1, Sheet 41

Equipment - J95103A-()

List 1 - Framework, assembly, wiring, and common equipment for one 10-inch guardrail auxiliary sender frame less sender units.

See
Wire Equip Notes

Fuse Panel, ED-92925-01, Fig. 1			1	
Jack, Key, and Lamp Panel, ED-25278-30, G5			1	
Auxiliary Sender Circuit, SD-96479-01, Fig. 1 through 4	4	0		A
Miscellaneous Circuit, SD-96491-01: Fig. 1	1	1		A
Fig. 2	4	1		A
MF Signal Generator, SD-95867-01, Fig. 1	4	0		A

List 2 - Framework required in addition to list 1 for use in offices where a 1-foot 0-inch guardrail is required; omit framework specified in list 1.

List 3 - Equipment per SD-96491-01, Fig. 2 required in addition to list 1 for each of the second, third, or fourth sender test frames.

3. DRAWINGS

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

Keysheets

SD-21300-01 - Panel Systems - Battery Cut-Off Relay Office
SD-21680-01 - Panel Systems - Ground Cut-Off Relay Office
SD-25000-01 - No. 1 Crossbar System

Equipment

ED-25212-01 - Designation Cards
ED-25346-14 - Method of Running Power
ED-25346-15 - Feeders
ED-25346-16

Note

A. The frame local cable contains all multiple wiring between senders, the battery and ground leads from the frame fuse panel, the wiring from the terminal strips at the top of the frame to the senders, and the sender frame miscellaneous circuit wiring.

J95103B (AT&TCo Std) - Auxiliary Sender Unit

Equipment - J95103B-()

List 1 - Framework, assembly, wiring, and common equipment for one auxiliary sender unit which shall be made up from the coded functional surface-wired subunits shown in Table A.

	Wire	Equip	See Notes
Auxiliary Sender Circuit, SD-96479-01, Fig. 1 through 4	1	0	A,C
MF Signal Generator, SD-95867-01, Fig. 1	1	0	B

Notes

- A. The unit local cable contains all inter-unit wiring and all standard optional wiring for the circuit figures specified. Leads shall be looped at the positions of optional apparatus and connected in accordance with job requirements.
- B. One MF signal generator unit per J99235AW is required for each auxiliary sender unit in offices where an MF current supply is not available. This MF unit is always mounted at the bottom of the auxiliary sender unit. When a large number (over ten) of MF generator units is indicated for the ultimate requirements of a building, the telephone company should be requested to study the possibility of providing a building MF supply per J98609.
- C. When auxiliary senders function with local AMA equipment, an additional local cable is required. This cable consists of ten leads and will be sewed in the local cable provided in list 1.

J95103C (AT&TCo Std) - Auxiliary Sender Recycled Area Code Reconstruction Unit

Equipment - J95103C-()

List 1 - Assembly, wiring, and equipment per SD-96479-01, Fig. 5 for one recycled area code reconstruction unit. (See notes A and B and 5.10.)

Notes

- A. A maximum of four J95103C, List 1 units shall be mounted on an auxiliary sender frame. The first unit provided shall be installed in the first mounting-plate space above the position assigned to the fourth auxiliary sender on the frame. The units shall be numbered from 0 up on each frame and the lowest unit associated with auxiliary sender 0, the next lowest with 1, etc.

- B. The unit local cable contains the battery and ground leads between the frame fuse panel and terminal strip C, the wiring between the relays and condenser (Fig. 1, 2, 3, and 6) of the auxiliary sender unit (J95103B) and terminal strip D, and the wiring from cross-connection terminal strip RRC to the MF relays (Fig. 3).

J95103D (AT&TCo Std) - Auxiliary Sender Directory Number Outpulsing Unit

Equipment - J95103D-()

List 1 - Assembly and local cable wiring for one auxiliary sender directory number outpulsing unit equipped with subunits as shown in Table B.

	Wire	Equip	See Notes
Auxiliary Sender Circuit, SD-96479-01, Fig. 7 & 11	4	0	A,B, 5.11, 5.12

Notes

- A. The unit local cable serves four auxiliary senders and provides connecting leads from terminal strips H and J of the J95103DA units to the contacts of the CTA- and CTB- relays of the J95103DB unit and also provides the multiple wiring of the CTA-/CTB- relay contacts.
- B. This unit shall be installed on available 23-inch relay rack space. When space considerations prevent use of this unit, the J95103DA and J95103DB units shall be ordered separately, as required, mounted in available relay rack space and loose wire and switch-board cable used for the required connections in lieu of the local cable provided with this unit.

J95103E (AT&TCo Std) - Auxiliary Sender Directory Number Outpulsing Party Control Unit

Equipment - J95103E-()

List 1 - Assembly, wiring, local cable, and equipment per SD-96479-01, Fig. 12 for one directory number outpulsing party control unit arranged to serve two auxiliary senders and equipped for one auxiliary sender. (See notes A, B, 5.11, and 5.12.)

Notes

- A. Two J95103E units will mount at the top section of the auxiliary sender frame directly below the mounting plate with the miscellaneous and MF terminal

strips. These two units will serve the four auxiliary senders on the frame. The lower of the two J95103E units shall be associated with the first two auxiliary senders on the frame. Each unit occupies the space of one 2- by 23-inch mounting plate.

- B. Local cables are provided for connecting the leads from the J95103E unit to the equipment in the auxiliary sender. Switchboard cable connects this unit to the J95103DA unit installed remotely on a relay rack in the office.

J95103BA (AT&TCo Std) - Class and Off-Normal Circuit, Trunk Test Timing and Assignment Circuit, and Call Indicator Relay Circuit

Equipment - J95103BA-()

- List 1 - Assembly, wiring, and equipment for one class and off-normal circuit, one trunk test timing and assignment circuit, and one call indicator relay circuit per SD-96479-01, Fig. 1.

- List 2 - Wiring and equipment required in addition to list 1 to provide the universal information feature per SD-96479-01, Fig. 13.

J95103BB (AT&TCo Std) - Call Indicator and MF Pulse Sequence Circuit, and MF Pulse Timer Circuit

Equipment - J95103BB-()

- List 1 - Assembly, wiring, and equipment for one call indicator and MF pulse sequence circuit and one MF pulse timer circuit per SD-96479-01, Fig. 2.

- List 2 - Wiring and equipment required in addition to list 1 to provide the recycled area code reconstruction feature and/or the outpulsing directory number feature, and/or the universal information feature, per SD-96479-01, Fig. 6.

- List 3 - Wiring and equipment required in addition to lists 1 and 2 to provide the outpulsing directory number feature, per SD-96479-01, Fig. 8.

- List 4 - Wiring and equipment required in addition to lists 1, 2, and 3 to provide the outpulsing directory number feature. Wiring and equipment required in addition to lists 1 and 2 to provide the universal information feature, per SD-96479-01, Fig. 9.

- List 5 - Wiring and equipment required in addition to lists 1, 2, 3, and 4 to provide the outpulsing directory number feature, per SD-96479-01, Fig. 10.

- List 6 - Wiring and equipment required in addition to lists 1, 2, 3, 4, and 5 to provide the emergency operator feature, per SD-96479-01, Fig. 14.

J95103BC (AT&TCo Std) - Call Indicator Register, Odd and Even Circuit, MF Pulse Relay Circuit, and Dial Pulse Register Circuit

Equipment - J95103BC-()

- List 1 - Assembly, wiring, and equipment for one call indicator register, odd and even circuit, one MF pulse relay circuit, and one dial pulse register circuit, per SD-96479-01, Fig. 3. (See notes A and B.)

Notes

- A. Wiring required in addition to list 1 when auxiliary sender is used with panel or No. 1 crossbar without automatic number identification per SD-96479-01, Fig. 3, "X" wiring.

- B. Wiring to be omitted when a special start pulse signal to the tandem sender on prefix "0" calls is required per SD-96479-01, Fig. 3, "K" wiring.

J95103BD (AT&TCo Std) - Dial Pulse Sequence Circuit, Dial Pulse Repeater Circuit, and Dial Pulse Counting Circuit

Equipment - J95103BD-()

- List 1 - Assembly, wiring, and equipment for one dial pulse sequence circuit, one dial pulse repeater circuit, and one dial pulse counting circuit per SD-96479-01, Fig. 4.

J95103DA (AT&TCo Std) - Auxiliary Sender Directory Number Outpulsing Registration and Control Unit

Equipment - J95103DA-()

- List 1 - Wiring, assembly, and equipment per SD-96479-01, Fig. 7 for one directory number outpulsing registration and control unit. See notes A, B, 5.11, and 5.12.

Notes

- A. This unit will normally be mounted with the J95103DB connector unit on the

J95103D unit and located on available 2 foot 0-5/8 inch relay rack. Four J95103DA units and one J95103DB unit serves four auxiliary senders.

- B. Switchboard cable is used to connect this unit to the J95103E unit located on the auxiliary sender frame.

J95103DB (AT&TCo Std) - Auxiliary Sender Directory Number Outpulsing Connector Unit

Equipment - J95103DB-()

List 1 - Wiring, assembly, horizontal strapping, and equipment per SD-96479-01 Fig. 11, for one directory number outpulsing connector unit arranged for four auxiliary senders and two transverters and equipped for one auxiliary sender and two transverters. See notes A, B, 5.11, and 5.12.

List 2 - Equipment required in addition to list 1 for each additional auxiliary sender (maximum three list 2 per list 1). See notes A, B, 5.11, and 5.12.

Notes

- A. This unit will normally be mounted with the J95103DA registration and control unit on the J95103D unit and located on available 2 foot 0-5/8 inch relay rack. Four J95103DA units and one J95103DB unit serve four auxiliary senders.
- B. The local cable supplied with the J95103D unit provides for the multiple wiring of the CTA-/CTB- relay contacts and for connecting this unit to the J and H terminal strips of the J95103DA units. When the J95103D unit is not provided, loose wire and switchboard cable is used to provide these connections.

5. GENERAL NOTES

Equipment

5.01 The auxiliary sender frames should be located near their associated subscriber sender frames. A group of auxiliary sender frames should be located preferably in two separate lines. The frames of a group should not be placed with their wiring sides facing each other in No. 1 cross-bar offices.

5.02 In all cases, the sender frames shall be numbered from 0 up. Sender units shall also be numbered from 0 up on each frame. On partially equipped frames, the equipment shall begin at the bottom of the frame with sender 0.

5.03 Several timing features are incorporated in the auxiliary sender to prevent excessive holding time in the auxiliary sender and to release the call in the event of trouble conditions. These timing intervals are outlined in Section 951-320-100.

5.04 The TA interrupter contacts used with any one group of auxiliary senders shall be distributed evenly over a minimum of two interrupter frames. This will avoid the cancellation of timing in all the senders of a group in case of motor failure on any one interrupter frame.

5.05 Each auxiliary sender has two leads to the traffic usage recorder. One lead indicates a sender plugged busy, and the other lead indicates a sender busy for any reason.

5.06 One register per auxiliary sender group is provided at the traffic register rack for each of the following.

- (a) 10-digit call peg count
- (b) 7-digit call peg count
- (c) Peg count of partially dialed auxiliary sender calls of 7, 8, or 9 digits
- (d) Stuck auxiliary sender

5.07 Auxiliary sender frames are furnished with 10- or 12-inch guardrails and may be lined up with frames having other guardrail widths. The method of joining guardrails of different widths is covered in ED-25529-70.

5.08 A building MF supply per J98609, rather than individual MF generator units per sender, may be furnished in offices not equipped with an MF supply. This common supply is connected to a terminal strip at the top of each auxiliary sender frame, and local cable leads are provided for connection to the four senders on a frame.

5.09 The nature of the circuit in the auxiliary sender restricts the resistance of the "14," "CL," and "ODN," leads which extend from the subscriber sender through the auxiliary sender. The resistance of these leads must not exceed 10 ohms. The following table shows the maximum lengths of different size wire that may be used for the "14," "CL," and "ODN" leads.

<u>Size of Wire</u>	<u>Max Length</u>
24	350 feet
22	560 feet
20	925 feet

5.10 To provide the auxiliary sender with the recycled area code reconstruction feature, both J95103BB, List 2 and J95103C, List 1 must be furnished.

5.11 To equip the auxiliary senders with the feature for outpulsing the calling subscriber's directory number to a central point, the following equipment is required:

<u>Equipment</u>	<u>Location</u>
Aux Sdr Directory Number Outpulsing Party Control Unit - J95103E, List (as required)	Upper Section of Aux Sdr Fr
Aux Sdr CI & MF Pulse Seq & MF Pulse Timer Unit - J95103BB, Lists 2, 3, 4, 5	Aux Sdr
Aux Sdr Directory Number Outpulsing Unit - J95103D, List 1 equipped with: Aux Sdr Directory Number Outpulsing Connector Unit - J95103DB, List (as required)	Relay Rack
Aux Sdr Directory Number Outpulsing Registration & Control Unit - J95103DA, List 1	Relay Rack

5.12 Battery and ground leads from fuse panel to the J95103E unit between the J95103E unit and the J95103DA unit, and between the J95103DA and J95103DB units shall be 20 "BH" wire.

5.13 Replace the S-510 (CL-3) relay with an S47 relay. The S-510 relay is shown as "ZA" option, "Mfr Disc."

5.14 In order to provide the auxiliary sender with the universal information feature, both J95103BA, List 2 and J95103BB, Lists 2 and 4 must be furnished.

5.15 In order to provide the auxiliary sender with the emergency operator feature, the outpulsing directory number feature must be furnished (see 5.11) as well as J95103BB, List 6.

Wiring

5.16 The gauge and type of insulation for wire shall be in accordance with ED-27114-01.

5.17 J95103F through J95103Z, J95103AA through J95103AZ, J95103BE through J95103BZ, and J95103CA through J95103CZ, are unassigned.

Table A - Auxiliary Sender Unit - J95103B						
Subunits shall be equipped and connected as specified in this table to complete one auxiliary sender						
Unit				Quantity to be Provided		Description
Quantity	J Code	List No.	Fig.	Always	For Option Indicated	
1	J95103BA	1	1	1		Class and Off-Normal Circuit Trunk Test Timing and Assignment Circuit Call Indicator Relay Circuit
		2	13		1	Universal Information Circuit (See 5.14)
1	J95103BB	1	2	1		Call Indicator and MF Pulse Sequence Circuit MF Pulse Timing Circuit
		2	6		1	Recycled Area Code Reconstruction Circuit (See 5.10) and/or Directory Number Outpulsing Circuit (See 5.11) and/or Universal Information Circuit (See 5.14)
		3	8		1	Directory Number Outpulsing Circuit (See 5.11)

Table A - Auxiliary Sender Unit - J95103B (Cont)						
Subunits shall be equipped and connected as specified in this table to complete one auxiliary sender						
Unit			Fig.	Quantity to be Provided		Description
Quantity	J Code	List No.		Always	For Option Indicated	
1	J95103BB (Cont)	4	9		1	Directory Number Outpulsing Circuit (See 5.11) and/or Universal Information Circuit (See 5.14)
		5	10		1	Directory Number Outpulsing Circuit (See 5.11 & 5.13) and/or Reserved for Future Use
		6	14		1	Emergency Operator Circuit (See 5.15) and/or Reserved for Future Use
1	J95103BC	1	3	1		Call Indicator Register Circuit - Odd and Even MF Pulse Relay Circuit Dial Pulse Register Circuit
1	J95103BD	1	4	1		Dial Pulse Sequence Circuit Dial Pulse Counting Circuit Dial Pulse Repeater Circuit
1	J99235AW	(See Note B Under J99235AW)				MF Generator (for use in offices where an MF supply is not available)

Table B - Auxiliary Sender Directory Number Outpulsing Unit - J95103D				
Component equipment units shall be equipped and connected as follows:				
Unit		Quantity to be Provided		Description
J Code	List No.	Always	For Option Indicated	
J95103DB	1	1		Directory Number Outpulsing Connector Unit
	2		1 For Each Additional Auxiliary Sender Provided	
J95103DA	1	1	1 For Each Additional Auxiliary Sender Provided	Directory Number Outpulsing Registration and Control Unit

Bell Telephone Laboratories, Incorporated

Dept 2319