

**SENDER MAKE-BUSY FRAME**  
**EQUIPMENT DESIGN REQUIREMENTS**  
**NO. 1 CROSSBAR SYSTEM**

**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 sender make-busy frames in No. 1 crossbar offices.

**1.02** This specification is reissued:

(a) To provide information to identify coin lines with stuck coin troubles with ANI tones in accordance with SD-25076-01, Issue 58D.

(b) To rerate information for the route and rate verification circuit. The information provided is in accordance with SD-25076-01, Issue 57A.

(c) To provide information concerning the removal of some of the plant registers that were provided to implement the service results plan. The information provided is in accordance with SD-25076-01, Issue 56A.

(d) To provide information for operation of plant registers, and of count attempts and failures to handle number identification (central office) requests for PBX-AIOD-A1 or PBX-AIOD-A2 in accordance with SD-25076-01, Issue 54D; also, to provide information for operation with coin station sets arranged for dial-tone-first in accordance with SD-21697-01, Issue 13D.

**CAPACITY**

**1.03** The capacity of each of the sender make-busy frames covered herein is as follows:

	J27950			
	C	D	E	F
Sup Sdr MB Jacks	200	170	180	180
KP Sdr MB Jacks	40	30		20
Aux Sdr MB Jacks	40	40	40	40
Sub Sdr Grp MB Jacks	40	20	20	20
KP Sdr Grp MB Jacks	10	8		4
Coin Supv Cont Grp MB Jacks	8	8	8	
Sub Sdr Common Hold Jack	1	1	1	
Cont Trouble Regs	178	178	124	134
False Start Regs	78	78	44	34
Stuck Sdr Regs (KP Sdrs)	1	1		1
Waiting Assign. (Sub Sdrs)	1	1	1	1
Stuck Sdr Regs (Sub Sdrs)	20	17	18	18
Sub Sdr Load Reg	4	2	2	2
T-T Clg Sig to DP Conv Tbl Regs	20	17	18	18
Link Alm. Lamps	148	148	104	
Dialing and Interoffice Districts Calls-waiting Lamps	20	20	20	
Sub Sdr Load Reg Lamps	4	2	2	2
Link Load Ind Lamp	2	1	1	
KP Sdr Bsy Alm. Lamp	1	1		1
Coin Supv Bsy Alm. Lamp	1	1	1	1
Coin Supv Rls Alm. Lamp	1	1	1	1
Trk and Tie Lines	14	14	16	16

	J27950			
	C	D	E	F
Telephone	1	1	1	1
Dial			1	1
Aux Sig	1	1	1	1
Test Ckt			1	1
Test Trks — LTD			4	4
Coin Supv Jacks			20	
Perm Sig Jacks			40	80
PSH Trk Conc Ckt MB Jacks			4	8
Cn Supv Jk & Lp	20	20		20
Cn Line Ident Jk	1	1	1	1

### Description

**1.04** The various sender make-busy frames covered herein are single-sided single-bay steel structures 11 feet 6 inches high and 2 feet 4 inches long. Between the uprights the frame is arranged to mount a sheet-steel jack panel with two 8-1/2 inch panels accommodating the jacks, lamps, and keys for the circuits listed in 1.03. Associated equipment is mounted on an apparatus board and mounting plates.

**1.05** Sender make-busy frame J27950C is for use in offices where the subscriber senders are arranged for monitoring at the local "A" switchboard, and for subscriber senders per SD-27810-01.

**1.06** Sender make-busy frame J27950D is for use in offices where the subscriber senders are arranged for timed release (A&M Only) or automatic priming and where the permanent signal trunks and coin supervisory circuits are terminated at the local "A" switchboard.

**1.07** Sender make-busy frame J27950E is for use in offices without an "A" switchboard where the subscriber senders are arranged for timed release (A&M Only) or automatic priming. With this arrangement, jacks and lamps associated with permanent signal trunks, permanent signal trunk concentrating trunks, and coin supervisory circuits are located at the sender make-busy frame. Test

trunks from the local test desk and a test circuit are provided for use in testing subscriber lines on calls routed to permanent signal trunks that cannot be disposed of by the operator at the distant central "A" switchboard and for testing coin lines on calls that cannot be released by the coin supervisory controller circuits.

**1.08** Sender make-busy frame J27950F is for use in offices with a central "A" switchboard where the subscriber senders are arranged for timed release (A&M Only) or automatic priming. With this arrangement, jacks and lamps associated with permanent signal trunks are located at the sender make-busy frame. The permanent signal trunks are given access to the central "A" switchboard in the same building through concentrating trunks. Make-busy jacks and lamps are provided at the sender make-busy frame for use with the concentrating trunks. The permanent signal trunks in the office with the central "A" switchboard are used with concentrating circuits, the same as the permanent signal trunks in the distant office, rather than terminated directly at the central "A" switchboard for uniformity in operating practice. Test trunks from the local test desk and a test circuit are provided for use in testing subscriber lines on calls routed to permanent signal trunks that cannot be disposed by the attendant.

**1.09** The subscriber, keypulsing, and auxiliary sender make-busy jacks are used to remove a defective sender from service.

**1.10** In addition to the individual sender make-busy jacks, group-busy jacks are provided for both subscriber and keypulsing senders so that all senders in a link subgroup can be made busy in the event that trouble develops in the sender subgroup or associated equipment.

**1.11** The common hold jack is used to facilitate tracing subscriber sender link alarms.

**1.12** A telephone circuit similar to that furnished for all maintenance desks and frames is furnished with the sender make-busy frame. Key-ended trunk and tie line circuits are provided so that the attendant may transact necessary business with the various desks and switchboards in the office.

**1.13** In addition to the sender make-busy equipment, provision has been made for group-busy

jacks for coin supervisory controller circuits so that all the coin supervisory circuits appearing in the link subgroup can be made busy. Space has been provided on the sender make-busy frame for mounting the trouble registers of the line controller, the trouble and false start registers for subscriber sender controller, keypulsing sender controller and coin supervisory controller circuits, and stuck sender registers for subscriber, keypulsing, and auxiliary senders. Link alarm lamps are provided to indicate a trouble condition in the line link and controller circuits and in the subscriber sender link and controller circuits at a central point.

**1.14** Other miscellaneous features include:

- (a) a partial dial register and lamp indication per timed release sender group (A&M Only);
- (b) a load register lamp indication per subscriber sender group;
- (c) a load lamp indication for the subscriber sender link and controller circuits;
- (d) busy alarm lamp indications for keypulsing senders and coin supervisory circuits;
- (e) a release alarm lamp indication for coin supervisory circuits;
- (f) calls-waiting lamp indication for dialing and interoffice districts;
- (g) subscriber sender supervisory meters;
- (h) load register equipment for the TOUCH-TONE® calling part of subscriber sender subgroups partially converted for TOUCH-TONE calling; and
- (i) trouble registers for TOUCH-TONE calling signal to dial pulse converter circuit associated with subscriber sender subgroups partially converted for TOUCH-TONE calling.

**1.15** The common hold jack, link alarm lamps, and calls-waiting lamps, mentioned in 1.11, 1.13, and 1.14(f), respectively, are located on the controller trouble indicator when the controller trouble indicator is furnished rather than on the sender make-busy frame. Space has not been allocated for this equipment on sender make-busy frame J27950F since it is expected that a controller

trouble indicator will be provided along with sender make-busy frame J27950F because of the size of the installation.

**1.16** Since the functions of the sender make-busy frame are closely associated with the originating sender test frame and the number of senders to be served by each is the same, the make-busy frame shall be located in the maintenance center adjacent to its corresponding sender test frame as shown on Floor Plan Data Section 9.9, Sheet 3.

**2. SUPPLEMENTARY INFORMATION**

816-000-000—No. 1 Crossbar System Index  
 J25551—816-040-150, 817-060-150—End Guard, Aisle Pilot Lamps and DPTS Supports, Fuse Record Book and Holder, and Spare Fuse Mountings  
 J25552—816-017-150, 817-037-150—Frame Lighting (Incandescent Type) and Appliance Outlets  
 J85505—Central Office Lighting—Fluorescent Type  
 J93016—Relay Rack Mounted Equipment for Traffic and Maintenance Desks and Frames  
 Floor Plan Data—Section 9.2, Sheet 5

**3. DRAWINGS**

WE J drawings listed should be ordered by referring to the prefix and base number and requesting the highest suffix dash (—) number.

**Keysheet**

SD-25000-01—Crossbar Office No. 1

**Framework**

ED-25020-01—Miscellaneous Mounting Details and Cable Brackets  
 ED-25025-01—Fuse Panel Assembly  
 ED-90002-01—Flush Panels  
 ED-90382-01—Key Mountings  
 ED-91710-01—Frame Assembly  
 ED-91720-01—Jack, Key, and Lamp Panel Assembly  
 ED-99053-01—Jack, Key, and Lamp Panel Details

**Equipment**

ED-92867-01—Miscellaneous Relay Rack Equipment  
 J27950C-( )—Equipment of Frame  
 J27950D-( )—Equipment of Frame—Timed Release or Automatic Priming Senders With a

	WIRE	EQUIP	NOTES
Local "A" Switchboard			
J27950E-( )—Equipment of Frame—Timed Release or Automatic Priming Senders Without "A" Switchboard	4	0	C
J27950F-( )—Equipment of Frame—Timed Release or Automatic Priming Senders With a Central "A" Switchboard	2	0	5.01
J27950G-( )—Plant Register Magnetic Counter Unit	1	0	5.06
<b>Wiring and Cabling</b>			
ED-25172-11	1	0	5.02
&-12—Switchboard Cabling Details			
ED-25346-14—Method of Running Power	20	0	5.02
&-15—Feeders			
ED-25407-01—Local Cable	40	0	A
ED-25445-01—Local Cable—Timed Release or Automatic Priming Senders Without "A" Switchboard	30	0	A
ED-26516-01—Local Cable—Timed Balance or Automatic Priming Senders With a Central "A" Switchboard	200	0	D & 5.03
<b>4. EQUIPMENT</b>			
<b><i>J27950C—AT&amp;T Co Std—Sender Make-busy Frame—Sender Monitoring Subscriber Sender</i></b>			
Equipment—J27950C-( )			
Local Cable—ED-25407-01	40	0	5.03
<b>List 4</b> —Wiring and equipment per SD-25076-01, Fig. 33 required in addition to list 5 for one additional sender supervisory meter circuit. (See 5.12.)			
<b>List 5</b> —Framework, assembly, wiring, and common equipment for one sender make-busy frame—sender monitor subscriber senders.			
	WIRE	EQUIP	NOTES
Framework, ED-91710-01, G3		1	
Fuse Panel, ED-25025-01, Item 8		1	
Jk, Key, and Lamp Panel, ED-91720-01, G2, G5, or G6		1	5.13
Misc Ckts for Sdr MB Frame, SD-25076-01:			
Misc Ckts, Fig. 10, 15, 18, & 25	1	1	
Lamp Bat. Ckt, Fig. 12 (Sub and KP Sdrs)	14	0	5.05
Sub Sdr Load Reg Ckt, Fig. 19	4	0	C
KP Stuck Sdr Rel Ckt, Fig. 3	2	0	5.01
KP Sdr Stuck Sdr Ringer Ckt, Fig. 4	1	0	5.06
Stuck Sdr Reg Ckt, Fig. 40 (KP Sdrs) Waiting Assign. Reg. Ckt, Fig. 40 (Sub Sdrs)	1	0	5.02
Stuck Sdr Reg Ckt, Fig. 40 (Sub Sdrs)	20	0	5.02
False Start Reg Ckt, Fig. 40 (Sub Sdr Lk)	40	0	A
False Start Reg Ckt, Fig. 41 (KP Sdr and Coin Supv Cont)	30	0	A
Sdr MB Jk Ckt, Fig. 11 (Sub Sdrs)	200	0	5.03
Sdr MB Jk Ckt, Fig. 11 & 13 (KP Sdrs)	40	0	5.03
Group MB Ckt, Fig. 34 (Supv Sdr)	20	0	5.04
Group MB Ckt, Fig. 2 (KP Sdr)	10	0	5.04
Group MB Ckt, Fig. 2 (Coin Supv Cont)	8	0	5.04
Line Cont Tbl Reg Ckt, Fig. 8	100	0	B
Sub Sdr Cont, Coin Supv Cont, or KP Cont, Tbl Reg Ckt, Fig. 8	70	0	B
Busy Alm. Ckt, Fig. 16 (KP Sdr)	1	0	5.06
Busy Alm. Ckt, Fig. 16 (Coin Supv Cont)	1	0	
Coin Supv Rls Alm. Ckt, Fig. 20	1	0	5.06
LK Alm. Lamp Ckt, Fig. 21	140	0	5.07
Calls-waiting Lamp Ckt, Fig. 27	20	0	5.07
Load Ind Ckt, Fig. 29 (Sub Sdr)	2	0	5.07
Sdr Supv Meter Ckt, Fig. 33	1	0	5.12
Rev Call Trk Tbl Alm. Ckt, Fig. 36	1	0	

	WIRE	EQUIP	NOTES
Common Hold Jk Ckt, SD-25522-01:			
Jk and Lamp Ckt, Fig. 1 & 2	1	0	5.07
Aux Rel Ckt, Fig. 3	4	0	5.07
Sdr MB Frame Tel Key and Lamp Ckt, SD-95524-01:			
Tel Ckt, Fig. 1, A & D	1	1	5.11
Trk Key With Holding Feature, Fig. 2	7	0	5.08
Trk Key for Tie Lines, Etc, Fig. 3	12	0	5.08
Aux Sig Ckt, SD-96410-01:			
Buz Key Ckt, Fig. 14	1	1	5.09
Bell or Buz Ckt, Fig. 5, W or X App	1	0	5.09
Coin Supv Jk & Lp SD-25076-01:			
Fig. 56	20	0	

- List 6**—Equipment per SD-95524-01, Fig. 2 required in addition to list 5 for one trunk circuit with holding feature. (See 5.08.)
- List 7**—Equipment per SD-95524-01, Fig. 2 required in addition to list 5 for one trunk, key, and lamp circuit arranged for two local station lines, tie lines, or other trunks not requiring the holding feature. (See 5.08.)
- List 8**—A&M Only—Wiring and equipment required in addition to list 5 when sender make-busy frame serves subscriber senders that are arranged to handle direct distance dialing calls in conjunction with auxiliary senders. (See 5.15.)

	WIRE	EQUIP	NOTES
Misc Ckt for Sdr MB Frame, SD-25076-01:			
Aux Sdr MB Jk and Cancel Timed Rls Key, Fig. 43	40	0	
Aux Sdr Stuck Sdr Bell, Fig. 46	1	1	
Aux Sdr Stuck Sdr Reg and All-senders-busy Lamp, Fig. 47	4	0	

- List 9**—A&M Only—Equipment per SD-25076-01, Fig. 43, 46, and 47 required in addition to list 8 for each group of ten or less auxiliary

senders served by the sender make-busy frame (auxiliary sender groups 0 through 3 only). (See 5.14.)

- List 10**—A&M Only—Wiring required in addition to list 5 for each sender make-busy frame to provide auxiliary sender stuck sender lamp circuits (auxiliary sender groups 0 through 3 only). (See 5.14.)

	WIRE	EQUIP	NOTES
Aux Sdr Stuck Sdr Lamp SD-25076-01, Fig. 44	40	0	5.14

- List 11**—A&M Only—Equipment per SD-25076-01, Fig. 44 required in addition to list 10 for each group of ten or less auxiliary senders served by the sender make-busy frame (auxiliary sender groups 0 through 3 only).
- List 12**—A&M Only—Equipment per SD-25076-01, Fig. 49 required in addition to list 5 to provide trouble registration for TOUCH-TONE calling signal to dial pulse converter circuits associated with subscriber sender subgroups partially converted for TOUCH-TONE calling or for each subgroup of senders per SD-27810-01. (See 5.17.)
- List 14**—Wiring and equipment required per SD-25522-01, Fig. 3, Z option only, when auxiliary subscriber sender link frames are added and common hold jack circuit is located on the sender make-busy frame.
- List 15**—Wiring and equipment required per SD-25076-01, Fig. 8 and Fig. 40 for each auxiliary subscriber sender link frame and SD-25076-01. Fig. 21 for each auxiliary subscriber sender link frame added in an office not employing a controller trouble indicator. (See Note E.)
- List 17**—Wiring and equipment per SD-25076-01, Fig. 39 required in addition to list 5 for subscriber senders per SD-27810-01.
- List 18**—Wiring and equipment for ten Fig. 11 and 13 per SD-25076-01 required in addition to list 5 for each subgroup of senders per SD-27810-01 added to an office.
- List 20**—Equipment per SD-25076-01, Fig. 43 and 44 required in addition to list 8 for the auxiliary senders in each auxiliary sender group (auxiliary sender groups four through seven only). (See Note F.)
- List 21**—Equipment and wiring per SD-25076-01,

Fig. 47 required in addition to list 8 for each of the auxiliary sender groups four through seven.

**List 22**—Equipment required in addition to list 5 to provide two plant registers per SD-25076-01, Fig. 52 (OM2F, TM2F-0) and two plant registers per SD-25076-01, Fig. 53 (OMC, TMC-O).

**List 23**—Equipment required in addition to list 22 for each additional plant register per SD-25076-01, Fig. 52 required. (See 5.18.)

**List 24**—Equipment required in addition to list 22 for each additional plant register per SD-25076-01, Fig. 53 required. (See 5.18)

**List 25**—Equipment required in addition to list 7 to provide plant registers for the PBX-AIOD-A1 or A2 System per SD-25076-01, Fig. 54.

**List 26**—Wiring and equipment per SD-25076-01, Fig. 55 required in addition to list 5 to identify coin lines with stuck coin troubles with ANI tones (maximum of one per frame). See General Notes 5.20.

**List 27**—Equipment per SD-25076-01, Fig. 56 required in addition to list 26 for each coin supervisory circuit (maximum of 20 per frame).

### Notes

A. The false start register circuits shall be equipped as follows:

One per subscriber sender link frame

One per keypulsing sender controller circuit

One per coin supervisory controller circuit furnished in a marker group

Space has been provided for:

40 circuits for subscriber sender link frames

10 circuits for keypulsing sender controller circuits

20 circuits for coin supervisory controller circuits

B. One trouble register shall be furnished for each of the line controller, subscriber sender link frame, coin supervisory controller, and keypulsing sender controller circuits in a marker

group. These trouble registers are cabled directly from the power distributing terminal strips on the frames to the trouble registers on the make-busy frame. The registers are furnished as required. Space has been provided for the following:

100 circuits for line controller circuits

40 circuits for subscriber sender link frames

10 circuits for keypulsing sender controller circuits

20 circuits for coin supervisory controller circuits

The wiring for the battery and ground leads for the line controller registers and the battery leads for the other controller registers shall be included in the frame local cable.

C. One subscriber sender load register circuit per SD-25076-01, Fig. 19 shall be furnished for either rotary dial or TOUCH-TONE subscriber sender groups per marker group. An additional load register circuit can be furnished per marker group for TOUCH-TONE sender load when subscriber sender subgroups are partially converted for TOUCH-TONE calling. If list 9 has not been provided in the office, the lamp mounting of list 9 which equips the all-senders-busy lamps of Fig. 47 must be provided in order to equip the laws of the additional Fig. 19.

D. The maximum number of subscriber sender make-busy jack circuits per SD-25076-01, Fig. 11 will be reduced by 40 for each set of sender supervisory meters per SD-25076-01, Fig. 33 that is mounted in the unequipped jack field reserved for these circuits.

E. A maximum of four auxiliary subscriber sender link frames can be provided per office.

F. Equipment per list 20 shall be located on the first or second sender make-busy frame in space specified by the telephone company and wired by the installation force.

**J27950D—AT&T Co Std—Sender Make-busy Frame—Timed Release or Automatic Priming Subscriber Senders With a Local "A" Switchboard**

Equipment—J27950D-( )  
Local Cable—ED-25407-01

**List 5**—Wiring and equipment per SD-25076-01, Fig. 33 required in addition to list 7 for each additional sender supervisory meter circuit. (See 5.12.)

**List 7**—Framework, assembly, wiring, and common equipment for one sender make-busy frame for use with senders arranged for automatic priming in offices with a local "A" switchboard.

	WIRE	EQUIP	NOTES
			Fig. 11 & 13 (KP Sdrs) 30 0 5.03
			Group MB Ckt, Fig. 34 (Sub Sdr) 20 0 5.04
			Group MB Ckt, Fig. 2 (KP Sdr) 8 0 5.04
			Group MB Ckt, Fig. 2 (Coin Supv Cont) 8 0
			Line Cont Tbl Reg Ckt, Fig. 8 100 0 B
			Sub Sdr Cont, Coin Supv Cont, or KP Sdr Cont, Tbl Reg Ckt, Fig. 8 70 0 B
			Busy Alm. Ckt, Fig. 16 (KP Sdr) 1 0 5.06
			Busy Alm. Ckt, Fig. 16 (Coin Supv Cont) 1 1
			Coin Supv Rls Alm. Ckt, Fig. 20 1 0 5.06
			Lk Alm. Lamp Ckt, Fig. 21 140 0 5.07
			Calls-waiting Lamp Ckt, Fig. 27 20 0 5.07
			Load Ind Ckt, Fig. 29 1 0 5.07
			Sdr Supv Meter Ckt, Fig. 33 1 0 5.12
			Sub Sdr Group Pref Chain Alm. Fig. 35 1 1
			Rev Call Trk Tbl Alm. Ckt, Fig. 36 1 0
			Delayed Alm. Ckt, Fig. 39 1 1
			Common Hold Jk Ckt, SD-25522-01:
			Jk and Lamp Ckt, Fig. 1 & 2 1 0 5.07
			Aux Rel Ckt, Fig. 3 4 0 5.07
			Sdr MB Frame Tel Ckt, SD-95524-01:
			Tel Ckt, Fig. 1, A & D 1 1 5.11
			Trk Key With Holding Feature, Fig. 2 7 0 5.08
			Trk Key for Tie Lines, Etc, Fig. 3 12 0 5.08
			Aux Sig Ckt, SD-96410-01:
			Buz Key Ckt, Fig. 14 1 1 5.09
			Bell or Buzz Ckt, Fig. 5, W or X App 1 0 5.09
			Coin Supv Jk & Lp SD-25076-01, Fig. 56 20 0
Framework, ED-91710-01, G3		1	
Fuse Panel, ED-25025-01, Item 8		1	
Jk, Key, and Lamp Panel, ED-91720-01, G2, G5, or G6		1	5.13
Misc Ckt for Sdr MB Frame, SD-25076-01:			
Misc Ckts, Fig. 10, 15, 18, & 25	1	1	
Fig. 19	2	1	5.16
Lamp Bat. Ckt, Fig. 12 (Sub and KP Sdrs)	12	0	5.05
KP Sdr Stuck Sdr Rel Ckt, Fig. 3	2	0	5.01
KP Sdr Stuck Sdr Ringer Ckt, Fig. 4	1	0	5.06
Stuck Sdr Reg Ckt, Fig. 40 (KP Sdrs)	1	0	5.02
Waiting Assign. Reg Ckt, Fig. 40 (Sub Sdrs)	1	0	5.02
Stuck Sdr Reg Ckt, Fig. 40 (Sub Sdrs)	17	0	5.02
False Start Reg Ckt, Fig. 40 (Sub Sdr Lk)	40	0	A
False Start Reg Ckt, Fig. 41 (KP Sdr and Coin Supv Cont)	30	0	A
Sdr MB Jk Ckt, Fig. 11 & 13 (Sub Sdrs)	170	0	5.03
Sdr MB Jk Ckt,			5.19

**List 8**—Equipment per SD-95524-01, Fig. 2 required in addition to list 7 for one trunk circuit with holding feature. (See 5.08.)

**List 9**—Equipment per SD-95524-01, Fig. 2 required in addition to list 7 for one trunk, key, and lamp circuit arranged for two local station lines, tie lines, or other trunks not requiring the holding feature. (See 5.08.)

**List 10**—A&M Only—Wiring and equipment required in addition to list 7 when sender make-busy frame serves subscriber senders that are arranged to handle direct distance dialing calls in conjunction with auxiliary senders. (See 5.15.)

	WIRE	EQUIP	NOTES
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Misc Ckt for Sdr MB

Frame, SD-25076-01:

Aux Sdr MB Jk and Cancel

Timed Rls Key, Fig. 43

40	0	
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Aux Sdr Stuck Sdr Bell,  
Fig. 46

1	1	
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Aux Sdr Stuck Sdr Reg and

All-senders-busy Lamp,

Fig. 47

4	0	
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**List 11**—A&M Only—Equipment per SD-25076-01, Fig. 43, 46, and 47 required in addition to list 10 for each group of ten or less auxiliary senders served by the sender make-busy frame (auxiliary sender groups 0 through 3 only). (See 5.14.)

**List 12**—A&M Only—Wiring required in addition to list 1 or 5 for each sender make-busy frame to provide auxiliary sender stuck sender lamp circuits (auxiliary sender groups 0 through 3 only). See 5.14.)

	WIRE	EQUIP	NOTES
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Aux Sdr Stuck Sdr Lamp

SD-25076-01. Fig. 44

40	0	5.14
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**List 13**—A&M Only—Equipment per SD-25076-01, Fig. 44 required in addition to list 10 for each group of ten or less auxiliary senders served by the sender make-busy frame (auxiliary sender groups 0 through 3 only).

**List 14**—Equipment per SD-25076-01, Fig. 49 required in addition to list 7 to provide trouble registration for TOUCH-TONE calling signal to dial pulse converter circuits associated with subscriber sender subgroups, partially converted for TOUCH-TONE calling or for each subgroup of senders per SD-27810-01. (See 5.17.)

**List 16**—Wiring and equipment required per SD-25522-01, Fig. 3, Z option only, when auxiliary subscriber sender link frames are added and common hold jack circuit is located on the sender make-busy frame.

**List 17**—Wiring and equipment required per SD-25076-01, Fig. 8 and 40, for each auxiliary subscriber sender link frame and SD-25076-01, Fig. 21 for each auxiliary subscriber sender link frame added in an office not employing a controller trouble indicator. (See Note D.)

**List 19**—Wiring and equipment for ten Fig. 11 and 13 per SD-25076-01, required in addition to list 7 for each subgroup of senders per SD-27810-01.

**List 21**—Equipment per SD-25076-01, Fig. 43 and 44 required in addition to list 10 for the auxiliary senders in each auxiliary sender group (auxiliary sender groups four through seven only). (See Note E.)

**List 22**—Wiring and equipment per SD-25076-01, Fig. 47 required in addition to list 10 for each of the auxiliary sender groups four through seven.

**List 23**—Equipment required in addition to list 7 to provide two plant registers per SD-25076-01, Fig. 52 (OM2F, TM2F-0) and two plant registers per SD-25076-01, Fig. 53 (OMC, TMC-0).

**List 24**—Equipment required in addition to list 23 for each additional plant register per SD-25076-01, Fig. 52 required. (See Note 5.18.)

**List 25**—Equipment required in addition to list 23 for each additional plant register per SD-25076-01, Fig. 53 required. (See 5.18.)

**List 26**—Equipment required in addition to list 7 to provide plant registers for the PBX-AIOD-A1 or A2 System per SD-25076-01, Fig. 54.

**List 27**—Wiring and equipment per SD-25076-01,

Fig. 55, required in addition to list 7 to identify coin lines with stuck coin troubles with ANI tones (maximum of one per frame). See General Note 5.20.

**List 28**—Equipment per SD-25076-01, Fig. 56, required in addition to list 27 for each coin supervisory circuit (maximum of 20 per frame).

**Notes**

A. The false start register circuits shall be equipped as follows:

- One per subscriber sender link frame
- One per keypulsing sender controller circuits
- One per coin supervisory controller circuits furnished in a marker group

Space has been provided for:

- 40 circuits for subscriber sender link frames
- 10 circuits for keypulsing sender controller circuits
- 20 circuits for coin supervisory controller circuits

B. One trouble register shall be furnished for each of the line controller, subscriber sender link frame, coin supervisory controller, and keypulsing sender controller circuits in a marker group. These trouble registers are cabled directly from the power distributing terminal strips on the frames to the trouble registers on the make-busy frame. The registers are furnished as required. Space has been provided for the following:

- 100 circuits for line controller circuits
- 40 circuits for subscriber sender link frames
- 10 circuits for keypulsing sender controller circuits
- 20 circuits for coin supervisory controller circuits

The wiring for the battery and ground leads for the line controller registers and the battery

leads for the other controller registers shall be included in the frame local cable.

C. The maximum number of subscriber senders make-busy jack circuits per SD-25076-01, Fig. 11 and 13 will be reduced by 30 for each set of sender supervisory meters that is mounted in the unequipped jack field reserved for these circuits.

D. A maximum of four auxiliary subscriber sender link frames can be provided per office.

E. Equipment per list 21 shall be located on the first or second sender make-busy frame in space specified by the telephone company and wired by the installation force.

**J27950E—AT&T Co Std—Sender Make-busy Frame—Timed Release or Automatic Priming Subscribers Senders Without an "A" Switchboard**

Equipment—J27950E-( )  
Local Cable—ED-25445-01

**List 5**—Wiring and equipment per SD-25076-01, Fig. 33 required in addition to list 7 for each additional sender supervisory meter circuit. (See 5.12.)

**List 7**—Framework, assembly, wiring, and common equipment for one sender make-busy frame for use with senders, arranged for automatic priming in offices without an "A" switchboard.

	WIRE	EQUIP	NOTES
Framework, ED-91710-01, G3		1	
Fuse Panel, ED-25025-01, Item 4		1	
Jk, Key, and Lamp Panel, ED-91720-01, G3, G7, or G8		1	5.13
Misc Ckts for Sdr MB Frame, SD-25076-01:			
Misc Ckts, Fig. 10, 15, 25, & 26	1	1	
Fig. 5	2	1	5.16
Sub Sdr Lamp Bat. Ckt, Fig. 12	9	0	5.05
Stuck Sdr Reg Ckt, Fig. 40 (Sub Sdrs)	18	0	5.02
Waiting Assign. Reg Ckt, Fig. 40	1	0	5.02



	WIRE	EQUIP	NOTES
Aux Sdr Stuck Sdr Lamp, SD-25076-01, Fig. 44	40	0	5.14

**List 13**—A&M Only—Equipment per SD-25076-01, Fig. 44 required in addition to list 10 for each group of ten or less auxiliary senders served by the sender make-busy frame (auxiliary sender groups 0 through 3 only).

**List 14**—Equipment per SD-25076-01, Fig. 49 required in addition to list 7 to provide trouble registration for TOUCH-TONE calling signal to dial pulse converter circuits associated with subscriber sender subgroups partially converted for TOUCH-TONE calling or for each subgroup of senders per SD-27810-01. (See 5.17.)

**List 16**—Wiring and equipment required per SD-25522-01, Fig. 3, Z option only. When auxiliary subscriber sender link frames are added and common hold jack circuit is located on the sender make-busy frame.

**List 17**—Wiring and equipment required per SD-25076-01, Fig. 8 and 40 for each auxiliary subscriber sender link frame and SD-25076-01, Fig. 21, for each auxiliary subscriber sender link frame added in an office not employing a controller trouble indicator. (See Note R.)

**List 19**—Wiring and equipment for ten Fig. 11 and 13 per SD-25076-01 required in addition to list 7 for each subgroup of subscriber senders per SD-27810-01.

**List 21**—Equipment per SD-25076-01, Fig. 43 and 44 required in addition to list 10 for the auxiliary senders in each auxiliary sender group (auxiliary sender groups four through seven only). (See Note S.)

**List 22**—Wiring and equipment per SD-25076-01, Fig. 47 required in addition to list 10 for each of the auxiliary sender groups four through seven.

**List 23**—Equipment required in addition to list 7 to provide two plant registers per SD-25076-01, Fig. 52 (OM2F, TM2F-0) and two plant registers per SD-25076-01, Fig. 53 (OMC, TMC-0).

**List 24**—Equipment required in addition to list 23 for each additional plant register per SD-25076-01, Fig. 52 required. (See 5.18.)

**List 25**—Equipment required in addition to list 23 for each additional plant register per

SD-25076-01, Fig. 53 required. (See 5.18.)

**List 26**—Equipment required in addition to list 7 to provide plant registers for the PBX-AIOD—A1 or A2 System per SD-25076-01, Fig. 54.

**List 27**—Wiring and equipment per SD-25076-01, Fig. 55 required in addition to list 7 to identify coin lines with stuck coin troubles with ANI tone (maximum of one per frame). See General Note 5.20.

**Notes**

A. The false start register circuits shall be equipped as follows:

One per subscriber sender link frame

One per coin supervisory controller circuit furnished in a marker group

Space has been provided for:

20 circuits for subscriber sender line frames

20 circuits for coin supervisory controller circuits

B. One trouble register shall be furnished for each of the line controller, subscriber sender link frame, and coin supervisory controller circuits in a marker group. These trouble registers are cabled directly from the power distributing terminal strips on the frames to the trouble registers on the make-busy frame. The registers are furnished as required. Space has been provided for the following:

80 circuits for line controller circuits

20 circuits for subscriber sender link frames

20 circuits for coin supervisory controller circuits

The wiring for the battery and ground leads for the line controller registers and the battery leads for the other controller registers shall be included in the frame local cable.

C. A&M Only—One coin vacant code jack circuit shall be furnished for each coin vacant code trunk.

- D. A&M Only—One coin permanent signal jack circuit shall be furnished for each coin permanent signal trunk.
- E. One permanent signal jack circuit shall be furnished for each permanent signal trunk. The NC, PB, and C lamp strips shall be provided as required for noncoin, PBX, and coin service.
- F. The test trunk circuit relays per ED-91526-01, Fig. 20 shall be equipped in accordance with job requirements and located on the miscellaneous relay rack.
- G. Two 1/2 ampere fuses shall be located on the fuse bay for the coin control supply to test circuit SD-21697-01.
- H. Ordinarily the test battery supply for SD-21697-01 shall be obtained from the battery provided for the local test desk. When this battery is located in a dry battery cabinet, the resistance lamps and fuses shall be located on panels atop the cabinet in a manner covered on ED-90642-01. When the local test desk battery is located in the rear of the desk, the resistance lamps and fuses shall also be located there, on a battery tray, in accordance with ED-91379-01. In the absence of a local test desk, the test battery supply shall be obtained from battery equipment provided in the outgoing trunk test frame—jack bay as covered on ED-25409-01.
- J. Two 1-1/3 ampere fuses shall be provided on the fuse bay, one for 24-volt signal battery and one for 48-volt talking battery. Two 1/2-ampere fuses shall be provided on the fuse bay for the coin control supply.
- K. Provide Y apparatus when subscriber lines equipped with tube-type subscriber sets are to be tested. Also, provide W apparatus when coin voltage supply is not regulated between 116 and 20 volts and tube-type subscriber sets are to be tested.
- L. A&M Only—One coin ringer test jack circuit shall be furnished for each coin ringer test circuit.
- M. A&M Only—One coin test desk jack circuit shall be furnished for each coin test trunk to local test desk.
- N. Patching cords 3P12E will be furnished as required by the telephone company for use in patching test circuit SD-21697-01 and test trunk circuit SD-21698-01 to permanent signal holding trunks and coin supervisory circuits.
- O. The maximum number of subscriber sender make-busy jack circuits per SD-25076-01, Fig. 11 and 13 will be reduced by 30 for each additional set of sender supervisory meters per SD-25076-01, Fig. 33 that is mounted in the unequipped jack field reserved for these circuits.
- P. One permanent signal holding trunk concentrating circuit make-busy jack and lamp circuit shall be furnished for each permanent signal holding trunk concentrating circuit.
- Q. A timer circuit per SD-99304-01 (5A timer) shall be provided on the relay rack with one circuit equipped for use with the test circuit on the sender make-busy frame.
- R. A maximum of four auxiliary subscriber sender link frames can be provided per office.
- S. Equipment per list 21 shall be located on the first or second sender make-busy frame in space specified by the telephone company and wired by the installation force.
- T. Connect M wiring for operation with coin station sets arranged for dial-tone-first operation. Connect N wiring otherwise.

***J27950F—AT&T Co Std—Sender Make-busy Frame—Timed Release or Automatic Priming Subscriber Senders With a Central "A" Switchboard***

Equipment—J27950F-( )  
Local Cable—ED-26516-01

***List 4***—Equipment per SD-25076-01, Fig. 33 required in addition to list 6 for a sender supervisory meter circuit. (See 5.12.)

***List 6***—Framework, assembly, wiring, and common equipment for one sender make-busy frame for use with senders arranged for automatic priming in offices served by a central "A" switchboard.

	WIRE	EQUIP	NOTES		WIRE	EQUIP	NOTES
Framework, ED-91710-01, G3		1		Group MB Ckt, Fig. 2			
Fuse Panel, ED-25025-01, Item 4		1		(Coin Supv Cont and KP Sdr Cont)	8	8	5.04
Jk, Key, and Lamp Panel, ED-91720-01, G3, G7, or G8		1		Line Cont Tbl Reg Ckt, Fig. 8	100	0	B
Misc Ckts for Sdr MB Frame, SD-25076-01:				Sub Sdr Cont Tbl Reg Ckt, Fig. 8	20	0	B
KP Sdr Stuck Sdr Rel, Fig. 3	1	0	5.06	Coin Supv Cont or KP Sdr Cont Tbl Reg Ckt, Fig. 8	10	0	B
KP Sdr Stuck Sdr Ringer, Fig. 4	1	0	5.06	Coin Supv Rls Alm. Ckt, Fig. 20	1	0	5.06
Misc Ckts, Fig. 10, 25, & 26	1	1		Sdr Supv Meter Ckt, Fig. 33	1	0	5.12
Fig. 19	2	1	5.16	Rev Call Trk Tbl Alm. Ckt, Fig. 36	1	0	
Sdrs Busy Alm. Rls Key, Fig. 15	1	0	5.06	Tst Jk and Sig Lamps for PSH Trks, Fig. 37	80	0	D
Busy Alm. Ckt, Fig. 16 (KP "A" Sdrs)	1	0	5.06	PSH Trk Conc Ckt, MB Jk, and Lamp Ckt, Fig. 38	8	0	C
Busy Alm. Ckt, Fig. 16 (Toll KP Sdrs)	1	0	5.06	Delayed Alm. Ckt, Fig. 39	1	1	
Busy Alm. Ckt, Fig. 16 (Coin Supv Cont)	1	0	5.06	Sdr MB Frame Tel Key and Lamp Ckt, SD-95524-01:			
Sub Sdr Lamp Bat. Ckt, Fig. 12	9	0	5.05	Tel Ckt, Fig. 1, A, & D	1	1	5.11
Stuck Sdr Reg Ckt, Fig. 40 (KP Sdrs)	1	0	5.02	Trk Key With Holding Feature, Fig. 2	8	0	5.08
Waiting Assign. Reg Ckt, Fig. 40	1	0	5.02	Trk Key for Tie Lines, etc, Fig. 3	16	0	5.08
Stuck Sdr (Sub Sdrs) Reg Ckt, Fig. 40				Tst Trk Ckt, SD-21698-01 (Less Rel Eqpt)	4	0	H,K F,G
(Subs Sdrs)	18	0	5.02	Tst Ckt, SD-21697-01, Fig. 1, B D, & F (Less W and Y App)	1	1	L,O
False Start Reg Ckt, Fig. 40 (Sub Sdr Lk)	20	0	A	Aux Sig Ckt, SD-96410-01:			
False Start Reg Ckt, Fig. 41 (Coin Supv Cont or KP Sdr Cont)	10	0	A	Buz Key Ckt, Fig. 14	1	1	5.09
Sdr MB Jk Ckt, Fig. 11 & 13 (Sub Sdr)	180	0	5.03, 5.19	Bell or Buz Ckt, Fig. 5	1	0	5.09
Sdr MB Jk Ckt, Fig. 11 & 13 (KP Sdrs)	20	0	5.03	Coin Supv Jk & Lp, SD-25076-01:			
Group MB Ckt, Fig. 34 (Sub Sdrs)	20	0	5.04	Fig. 56	20	0	

**List 7**—Equipment per SD-95524-01, Fig. 2 required in addition to list 6 for one trunk circuit with holding feature. (See 5.08.)

**List 8**—Equipment per SD-95524-01, Fig. 2 required in addition to list 6 for one trunk, key, and lamp circuit arranged for two local station lines, tie lines, or other trunks not requiring the holding feature. (See 5.08.)

**List 9**—A&M Only—Wiring and equipment required

in addition to list 6 when sender make-busy frame serves subscriber senders that are arranged to handle direct distance dialing calls in conjunction with auxiliary senders. (See 5.15.)

	WIRE	EQUIP	NOTES
Misc Ckt for Sdr MB Frame, SD-25076-01:			
Aux Sdr MB Jk and Cancel Timed Rls Key, Fig. 43	40	0	
Aux Sdr Stuck Sdr Bell, Fig. 46	1	1	
Aux Sdr Stuck Sdr Reg and All-senders-busy Lamp, Fig. 47	4	0	

**List 10**—A&M Only—Equipment per SD-25076-01, Fig. 43, 46, and 47 required in addition to list 9 for each group of ten or less auxiliary senders served by the sender make-busy frame (auxiliary sender groups 0 through 3 only). (See 5.14.)

**List 11**—A&M Only—Wiring required in addition to list 6 for each sender make-busy frame to provide auxiliary sender stuck sender lamp circuits (auxiliary sender groups 0 through 3 only). (See 5.14.)

	WIRE	EQUIP	NOTES
Aux Sdr Stuck Sdr Lamp, SD-25076-01: Fig. 44	40	0	5.14

**List 12**—A&M Only— Equipment per SD-25076-01, Fig. 44 required in addition to list 10 for each group of ten or less auxiliary senders served by the sender make-busy frame (auxiliary sender groups 0 through 3 only).

**List 13**—Equipment per SD-25076-01, Fig. 49 required in addition to list 6 to provide trouble registration for TOUCH-TONE calling signal to dial pulse converter circuits associated with subscriber sender subgroups partially converted for TOUCH-TONE calling or for each subgroup of senders per SD-27810-01. (See 5.17.)

**List 15**—Wiring and equipment required per

SD-25076-01, Fig. 8 and 40 for each auxiliary subscriber sender link frame. (See Note M.)

**List 17**—Wiring and equipment for ten Fig. 11 and 13 per SD-25076-01 required in addition to list 6 for each subgroup of subscriber senders per SD-27810-01.

**List 19**—Equipment per SD-25076-01, Fig. 43 and 44 required in addition to list 9 for the auxiliary senders in each auxiliary sender group (auxiliary sender groups four through seven only). (See Note N.)

**List 20**—Wiring and equipment per SD-25076-01, Fig. 47 required in addition to list 9 for each of the auxiliary sender groups four through seven.

**List 21**—Equipment required in addition to list 6 to provide two plant registers per SD-25076-01, Fig. 52 (OM2F, TM2F-0) and two plant registers per SD-25076-01, Fig. 53 (OMC, TMC-0).

**List 22**—Equipment required in addition to list 21 for each additional plant register per SD-25076-01, Fig. 52 required. (See 5.18.)

**List 23**—Equipment required in addition to list 21 for each additional plant register per SD-25076-01, Fig. 53 required. (See 5.18.)

**List 24**—Equipment required in addition to list 6 to provide plant registers for the PBX-AIOD—A1 or A2 System per SD-25076-01, Fig. 54.

**List 25**—Wiring and equipment per SD-25076-01, Fig. 55 required in addition to list 6 to identify coin lines with stuck coin troubles with ANI tone (maximum of one per frame). See General Note 5.20.

**List 26**—Equipment per SD-25076-01, Fig. 56, required in addition to list 25 for each coin supervisory circuit (maximum of 20 per frame).

### Notes

A. The false start register circuits shall be equipped as follows:

One per subscriber sender link frame

One per coin supervisory controller circuit

One per keypulsing sender controller circuit

Space has been provided for:

20 circuits for subscriber sender link frames

10 circuits for coin supervisory or keypulsing sender controller circuits

- B. One trouble register shall be furnished for each of the line controller, subscriber sender link frame, and coin supervisory controller circuits in a marker group. These trouble registers are cabled directly from the power distributing terminal strips on the frames to the trouble registers on the make-busy frame. The registers are furnished as required. Space has been provided for the following:

100 circuits for line controller circuits

20 circuits for subscriber sender link frames

10 circuits for coin supervisory or keypulsing sender controller circuits

The wiring for the battery and ground leads for the line controller registers and the battery leads for the other controller registers shall be included in the frame local cable.

- C. One permanent signal holding trunk concentrating circuit make-busy jack and lamp circuit shall be furnished for each permanent signal holding trunk concentrating circuit.
- D. One permanent signal jack circuit shall be furnished for each permanent signal trunk. The NC, PB, and C lamp strips shall be provided as required for noncoin, PBX, and coin service.
- E. The test trunk circuit relays per ED-91526-01, Fig. 20 shall be equipped in accordance with job requirements and located on the miscellaneous relay rack.
- F. Two 1/2-ampere fuses shall be located on the fuse bay for the coin control supply to test circuit SD-21697-01.
- G. Ordinarily the test battery supply for SD-21697-01 shall be obtained from the battery provided for the local test desk. When this battery is located in a dry battery cabinet, the resistance lamps and fuses shall be located on panels atop

the cabinet in a manner covered on ED-90642-01. When the local test desk battery is located in the rear of the desk, the resistance lamps and fuses shall also be located there, on a battery tray, in accordance with ED-91379-01. In the absence of a local test desk, the test battery supply shall be obtained from battery equipment provided in the jack bay of the outgoing trunk test frame as covered on ED-25409-01.

- I. Two 1-1/3 ampere fuses shall be provided on the fuse bay, one for 24-volt signal battery and one for 48-volt talking battery. Two 1/2-ampere fuses shall be provided on the fuse bay for the coin control supply.
- J. Provide Y apparatus when subscriber lines equipped with tube-type subscriber sets are to be tested. Also, provide W apparatus when coin voltage supply is not regulated between 116 and 120 volts and tube-type subscriber sets are to be tested.
- K. Patching cords 3P12E will be furnished as required by the telephone company for use in patching test circuit SD-21697-01 and test trunk circuit SD-21698-01 to permanent signal hold trunks.
- L. A timer circuit per SD-99304-01 (5A Timer) shall be provided on the relay rack with one circuit equipped for use with the test circuit on the sender make-busy frame.
- M. A maximum of four auxiliary subscriber sender link frames can be provided per office.
- N. Equipment per list 19 shall be located on the first or second sender make-busy frame in space specified by the telephone company and wired by the installation force.
- O. Connect M wiring for operation with coin station sets arranged for dial-tone-first operation. Connect N wiring otherwise.

***J27950G—AT&T Co Std—Plant Register Magnetic Counter Unit***

Equipment—J27950G-( )

***List 1***—Assembly, wiring, and equipment for one plant register magnetic counter unit arranged for ten magnetic counters and equipped

with one per SD-25076-01, Fig. 51. (See Note A.)

**List 2**—Wiring and equipment per SD-25076-01, Fig. 51 required in addition to list 1 for each additional magnetic counter (maximum of nine list 2). (See 5.18.)

**Note**

A. This unit is arranged to mount on 23-inch miscellaneous relay rack. All units should be located together on the same frame.

**5. GENERAL NOTES**

**5.01** One keypulsing stuck sender relay circuit per SD-25076-01, Fig. 3 shall be furnished for each 20 keypulsing sender make-busy jacks. The SS lead shall be run in the local cable to the position of the lower lamp strip of the pair with which it is associated. When the lamp strips are placed in position, the loop lead to the common strap of the upper lamp strip shall be added.

**5.02** The stuck sender and waiting assignment register circuits are furnished as follows:

(a) ***New Sender Make-busy Frames***

- (1) One stuck sender register circuit for each link subgroup of subscriber senders.
- (2) One stuck sender register circuit for each group of keypulsing senders.
- (3) One waiting assignment register circuit for each group of subscriber senders.

(b) ***Sender Make-busy Frames in Existing Offices***

- (1) Prior to Issue 13 of this specification, stuck sender and waiting assignment registers were furnished on the basis of one circuit of each type per group of senders. However, provision has now been made whereby one stuck sender register circuit may be furnished for each subscriber sender subgroup when specified by the telephone company.

**5.03** The sender make-busy jacks shall be furnished on the basis of one jack for each subscriber keypulsing or auxiliary sender. The ground to the sleeves of the make-busy jacks shall be run in

local cable, one lead per 40 jack circuits. Each lead shall be run from the fuse panel to the bottom jack strip of the group of four, and the loops to the remaining three strips will be furnished when the jacks are installed. The leads between the make-busy jacks and the senders are run in switchboard cable. One spare unnumbered jack mounting shall be provided as a receptacle for spare make-busy plugs. This mounting shall be located as shown on the equipment drawings.

**5.04** One group make-busy circuit shall be furnished for each subscriber sender subgroup, keypulsing sender subgroup, or coin supervisory subgroup.

**5.05** One subscriber sender lamp battery circuit shall be supplied for each 20 subscriber sender lamps. The battery leads shall be run in local cable from the fuse panel on the frame to the position of the lower-numbered lamp strip of the pair with which each lead is associated. When the subscriber sender make-busy jack and lamp strips are placed in position, the loop lead to the common strap on the upper lamp strip shall be added.

**5.06** One each of the following circuits per SD-25076-01 shall be equipped when keypulsing or coin supervisory circuits are provided.

- (a) KP stuck sender relay circuit per Fig. 3
- (b) KP stuck sender ringer circuit per Fig. 4
- (c) Sender busy alarm release key (ASB) per Fig. 15
- (d) Busy alarm relay and lamp (SB) per Fig. 16 for KP senders
- (e) Busy alarm relay and lamp (CB) per Fig. 16 for coin supervisory circuits
- (f) Coin supervisory release alarm circuit per Fig. 20 when coin supervisory circuits arranged for overtime coin collection and coin supervisory release circuit are provided
- (g) Coin supervisory jack circuit per Fig. 22

**5.07** Equipment per SD-25076-01, Fig. 21, 27, and 29 and SD-25522-01, Fig. 1, 2, and 3 shall be provided as outlined below as a part of

the sender make-busy frames only when the office does not employ a controller trouble indicator frame:

- (a) One link alarm lamp circuit per SD-25076-01, Fig. 21 for each subscriber sender link and controller circuit and for each line link and controller circuit. Space has been allocated for a maximum of 40 subscriber sender and link and 100 line link and controller circuits on frames per J27950C and J27950D and 20 and 80, respectively, for frames per J27950E.
  - (b) One calls-waiting lamp circuit per SD-25076-01, Fig. 27 for each dialing or interoffice district junctor unit served by a subscriber sender link frame.
  - (c) One load indicating circuit per SD-25076-01, Fig. 29.
  - (d) One each jack and lamp circuit per SD-25522-01, Fig. 1 and 2.
  - (e) One auxiliary relay circuit SD-25522-01. Fig. 3 for each ten subscriber sender link and controller circuits.
  - (f) Where there is no available space to mount the "B5" resistor (18-type), use the pigtail resistor in accordance with SD-25522-01 Y option.
- 5.08** The key-ended trunk circuits shall have the keys universally wired so that either a trunk circuit using one half the key or a trunk circuit using the whole key may be connected to any one of the keys. The trunks, tie lines, or local station lines to be used with the sender make-busy frame key and lamp circuits are covered in J93016 and are the same as those employed in other maintenance desks or frames and thus may be a part of a group of trunks, tie lines, etc, serving such desks or frames. The number and type of key and lamp circuits required should be specified by the telephone company.
- 5.09** The auxiliary signal night alarm bell or buzzer circuit shall be equipped as specified by the telephone company. Associated relays, etc. per J93016 (ED-92656-01), shall be equipped in accordance with job requirements and located on the miscellaneous relay rack.
- 5.10** The make-busy (322A) and common hold jack (298A) plugs should be furnished as specified

by the telephone company. An extra jack, designated SPARE H PLUG, is provided as a receptacle for the latter plug when not in use.

- 5.11** One 1/2-ampere HV fuse for the 105-volt  $\pm$  ringing supply and the associated resistance lamp shall be located on the fuse bay.
- 5.12** When specified by the telephone company, one sender supervisory meter circuit per SD-25076-01, Fig. 33 shall be furnished per common sender group. Provision is made on the frame equipment drawings for two groups, but wiring is provided for only one group. Circuit wiring and equipment for an additional group shall be provided when specified by the telephone company. The relays, etc, shall be mounted in the spaces reserved for this equipment. The preferred location for the meters is on the sides of jack panel, but on existing jobs, they may be mounted on the spare jack spaces if the customer so desires.
- 5.13** Jack key, and lamp panel ED-91720-01, Group 5, 6, 7, or 8 shall be specified when it is desired to mount sender supervisory meters on the sides of the panel. Drilling for the meters shall be provided for initial requirements only.
- 5.14** A group of auxiliary senders may serve subscriber senders that are associated with two separate sender make-busy frames. In this case, the make-busy jack (MB), the stuck sender lamp (SS), cancel priming key (CTR), all-senders-busy lamp (ASB), and stuck sender register (SS) shall be located on the sender make-busy frame specified by the telephone company. However, if the two sender make-busy frames are not adjacent or are in separate maintenance centers, it is essential for maintenance reasons that the stuck sender lamps (SS) be located on each sender make-busy frame.
- 5.15** The equipment for the auxiliary sender all-senders-busy circuit per SD-25076-01, Fig. 45 shall be mounted on the relay rack as near the sender make-busy frame as possible. This equipment is installer-wired and is shown on ED-92867-01.
- 5.16** Equipment per SD-25076-01, Fig. 5 or 19 shall be furnished for rotary dial or TOUCH-TONE subscriber sender group load. An additional Fig. 5 or 19 can be furnished for TOUCH-TONE sender load when subscriber sender

subgroups are partially converted in TOUCH-TONE calling.

**5.17** One TOUCH-TONE calling signal to dial pulse converter circuit trouble register per SD-25076-01, Fig. 49 shall be furnished for each subscriber sender subgroup, of ten or less senders, partially converted for TOUCH-TONE calling.

**5.18** Plant registers per SD-25076-01, Fig. 51, 52, and 53 shall be provided in accordance with the "Table of Connections for Registers and Associated Equipment" shown on SD-25076-01.

**5.19** When the TOUCH-TONE calling feature is provided for senders per SD-25012-01, the CTR keys should be wired per SD-25076-01, Fig. 48 instead of Fig. 13.

**5.20** Provide a 3P3C patching cord as required by the telephone company for the use in patching the coin line identification jack to the coin supervisory jack per SD-25076-01, Fig. 55 and 56 or 22, respectively.

**Wiring**

**Local Cable**

**5.21** Number 20 gauge type "AM" wire shall be used for the ringing leads and 22 gauge type "C" wire for the battery and ground leads. The remainder of the local cable shall be composed of 24 gauge type "C" wire with the exception of the wiring, under J27950E and J27950F, for the test circuit and LTD test trunks which shall be 22 gauge type "D" wire.

**List of A&M Only and Mfr Disc. Equipment**

EQUIPMENT	RATING	DETAILS LAST SHOWN IN ISSUE	REPLACING EQUIPMENT
J27950A	Mfr Disc.	6	J27950C
J27950B	Mfr Disc.	4	J27950C
J27950C,L1	Mfr Disc.	17	J27950C,L5

EQUIPMENT	RATING	DETAILS LAST SHOWN IN ISSUE	REPLACING EQUIPMENT
L2			L6
& L3	Mfr Disc.	17	& L7
L8	A&M Only	17	—
L9	A&M Only	17	—
L10	A&M Only	17	—
L11	A&M Only	17	—
L12	A&M Only	17	—
L13	Mfr Disc.	18	—
L16	Mfr Disc.	17	—
L19	Mfr Disc.	17	—
J27950D,L1	Mfr Disc.	17	J27950D,L4
L2			L8
& L3	Mfr Disc.	17	& L9
L4	Mfr Disc.	17	J27950D,L6
L6	Mfr Disc.	17	L7
L10	A&M Only	17	—
L11	A&M Only	17	—
L12	A&M Only	17	—
L13	A&M Only	17	—
L15	Mfr Disc.	18	—
L18 & L20	Mfr Disc.	17	—
J27950E,L1	Mfr Disc.	17	J27950E,L4
L2			L8
& L3	Mfr Disc.	17	& L9
L4	Mfr Disc.	17	L6
L6	Mfr Disc.	17	L7
L10	A&M Only	17	—
L11	A&M Only	17	—
L12	A&M Only	17	—
L13	A&M Only	17	—
L15	Mfr Disc.	18	—
L18 & L20	Mfr Disc.	17	—
J27950F,L1	Mfr Disc.	17	J27950F,L5
L2	Mfr Disc.	17	L7
& L3	Mfr Disc.	17	& L8
L5	Mfr Disc.	17	L6
L9	A&M Only	17	—
L10	A&M Only	17	—
L11	A&M Only	17	—
L12	A&M Only	17	—
L14	Mfr Disc.	18	—
L16 & L18	Mfr Disc.	17	—

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.

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