DIAL COIN ZONE TRUNK 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 dial coin zone trunk frame in No. 1 crossbar and panel offices.

1.02 This specification is being reissued to bring it into conformity with the general Plant Series numbering plan as a multinumber practice and to add a new BSP number 815-040-150. This specification last appeared under BSP 816-721-151 as Issue 5 and under AA388.057 as Issue 4 and Appendix 1.

Capacity

1.03 The capacity of the dial coin zone trunk frame is ten trunk units of one circuit each, and one coin alarm and time release unit of 2-circuit capacity.

Description

1.04 The function of the trunk circuit is to control a coin connection on zone traffic for which ten cents or more is required so that the call can be stopped, while partially completed, to allow an operator to obtain the proper initial deposit. It also performs several of the district and coin supervisory functions performed by these circuits on 5- or 10-cent overtime calls. The zone calls originated by coin lines will be routed to this outgoing trunk which is arranged to serve any of a maximum of four different zone calls. The trunk circuit will have appearances on the district or office multiple and will be selected in the same manner as any similar outgoing trunk in a panel or crossbar office. The sleeve leads of the different charge appearances are connected together so as to provide simultaneous busy conditions to all appearances. Discrimination between the trunk appearances, which correspond to charge rates, is accomplished by means of the tip lead at the time the trunk test is made. The tip is used in preference to the sleeve to avoid trunk hunting difficulties. Selections in the form of PCI pulses are passed through the trunk to the sender tandem office, the final heavy positive pulse alone being recognized by the trunk circuit. This pulse serves to connect the transmission circuit of the trunk to the calling subscriber and causes the trunk to indicate to the tandem sender that timing should be suspended; that is, it should await the trunk closure or disconnect signal from the trunk. This is necessary to prevent the tandem sender from timing out and releasing when excessive operator delays are encountered.

1.05 One set of answering and splitting jacks shall be furnished for each pair of charge conditions, namely 10 and 15, or 20 and 25, or 15 and 20, or 25 and 30 depending on the initial charge rate condition. The associated lamps are furnished for each charge condition. These jacks and the associated lamps are mounted in the face of the DSA switchboard as shown on ED-91391-01, in the face of the No. 3C switchboard as shown on ED-63016-01, or in the face of the No. 3CL switchboard as shown on ED-92115-01.

1.06 When the operator answers the initial signal, the trunk circuit removes the talking battery supply from the line and then automatically refunds the initial deposit to the calling subscriber. When the operator answers, the cord supervisory lamp is lighted and a distinctive tone is given the operator, the disappearance of which indicates the completion of the talking circuit. After obtaining the proper deposit, the operator disconnects, which allows the tandem office circuits to proceed with the establishment of the connection.

1.07 Provision is made to permit the operator to release the connection in the event that she is unsuccessful in obtaining the proper deposit from the calling subscriber for the initial interval.

1.08 The functions of charging and timing for the initial interval are similar to those of a coin district junctor circuit in a crossbar office. At the end of the 4-1/2 minutes of conversation, the deposit for the initial interval is automatically collected. At the end of 5 minutes, a flashing lamp signal appears at the A switchboard to inform the operator that the call is entering the overtime interval. When the operator answers the overtime signal, the trunk lamp is extinguished and the cord is connected. The operator is again provided with a distinctive tone, the disappearance of which indicates completion of the talking circuit. If at this time, the called party has not disconnected, a condition is set up which will

collect any coins remaining in the box when both the calling subscriber and the operator disconnect. This will insure proper disposition of any coin which the calling subscriber may have deposited in anticipation of overtime conversation. When disconnection occurs at any time during the initial 4-1/2 minutes of conversation, the trunk will immediately collect the deposit for the initial interval and release. If disconnection occurs before the called party answers, the trunk will release immediately without returning deposited coins. In such cases, the coins will be returned by the coin control or coin supervisory circuit which is called in by the district circuit for this purpose before the district circuit releases the connection to the calling line. No test will be made by the trunk circuit for the presence of coins or for removal of the ground signal by the coin box magnet, since the operator has supervised on coin deposits and the coin control or coin supervisory circuit will test for the removal of ground from the line when it is called in by the coin district.

1.09 The trunk circuit is provided with various time-out conditions. For example, if trunk closure is not received due to a trouble condition, the trunk times-out causing dial tone to be furnished again to the calling subscriber. If a disconnect or coin cycle is started and then not completed within a given interval, an alarm is given. The timed release feature is provided and is similar to that in crossbar district junctors. The only difference is that only the tandem and terminating equipment is released immediately if the operator has a cord in either the answering or splitting jack. The calling subscriber line is held so that the operator can supervise, collect or return coins, ring back, or talk.

Equipment Features

1.10 Dial Coin Zone Trunk Unit: The unit is 10 inches high and 2 feet 6-1/2 inches long and is made up of five 2- by 30-1/2-inch mounting plates on which are mounted relays, resistors, capacitors, and the terminal strips required for one circuit.

1.11 Dial Coin Zone Trunk Frame: This frame is 2 feet 8-1/8 inches long and 11 feet 6 inches high. A maximum of ten trunk units, a common unit, three jack panels, one or two 51A drives each equipped with one 1B timer per trunk, and a small frame local cable constitute a shipping unit. The coin alarm and timed release unit, the jack panels, and one 51A drive are mounted between the fourth and fifth trunk units. A second 51A drive will be mounted above the tenth trunk unit when there is a maximum of ten trunk units equipped in an office.

Floor Plan Arrangement

1.12 The preferred location of the dial coin zone trunk frame is near the MDF or DDF in panel offices or near the HMDF in crossbar offices.

1.13 Where it is necessary to locate these trunk frames in line with existing frames in panel offices, suitable junction details shall be provided in accordance with ED-25529-70.

2. SUPPLEMENTARY INFORMATION

815-000-000 - Panel Systems Index
816-000-000 - No. 1 Crossbar System Index
Floor Plan Data - Section 7.1, Sheet 36

3. DRAWINGS

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

Key Sheets

SD-21300-01 - Panel Link Equipment - Battery on the Cutoff Relay Offices
SD-21680-01 - Panel Link Equipment - Ground on the Cutoff Relay Offices
SD-25000-01 - Crossbar System No. 1
ES-262532 - Sender Selector Equipment - 3-digit Areas
ES-262647 - Sender Selector Equipment - 2- and 2-3-digit Areas
ES-262829 - Rotary Link Equipment - 3-digit Areas
ES-262849 - Rotary Link Equipment - 2- and 2-3-digit Areas

Circuit

SD-80929-01 - Power Supply Circuit - 22-volt AC Supply

Framework

ED-25028-50 - Unit Mounting Details
ED-25278-30 - Jack Panel
ED-25529-70 - Guard Rail Junction Details
ED-90273-01 - Adapter Details for Mounting Plates
ED-90335-01 - Fuseboard Miscellaneous Details
ED-91205-50 - Cable Brackets
ED-91710-01 - Frame Assembly

Equipment

ED-63016-01 - 3C Switchboard - Face Equipment
ED-81063-01 - Equipment and Assembly - 506A Plant - 22-volt AC Power Supply

ED-91391-01 - DSA Switchboard - Face Equipment
ED-91530-01 - Miscellaneous Relay Rack
ED-92115-01 - 3CL Switchboard Front Equipment
ED-99070-01 - Details for 506A Power Plant - 22-volt AC Supply
J99229A-( ) - Dial Coin Zone Trunk Frame
J99229B-( ) - Dial Coin Zone Trunk Unit
J99229C-( ) - Coin Alarm and Timed Release Unit

Wiring and Cabling

ED-27114-01 - Table of Wire Gauges and Type of Insulation
ED-91601-01 - Unit Local Cable
ED-91794-10 - Cabling for Dial Coin Zone Trunk Frame

4. EQUIPMENT

J99229A (A&M Only) - Dial Coin Zone Trunk Frame

Equipment - J99229A-( )
Local Cable - ED-91794-10

List 1 - Framework, assembly, wiring, and common equipment for one dial coin zone trunk frame (less trunk units and variable apparatus).

	Wire	Equip	See Notes
Framework, ED-91710-01, G1		1	
Jack, Key, and Lamp Panel, ED-25278-30, G2		3	
Outgoing Trunk Ckt to Sender Tandem For Dial Coin Zone Service, SD-96366-01:			
Charge Rate Indication Test Jack, Fig. 2, CR Jack Only	40	0	A
Test and Cutoff Jacks, Fig. 1, T and CO Jacks Only	10	0	A
Coin Alarm Lamp and Release Key, Fig. 3, CT Lamp and RL Key Only	2	1	
Misc Ckt, SD-96388-01, Fig. 1, 2, 3, 4, 5, & 6		1	D

List 2 - Equipment per SD-96366-01, Fig. 1, CO and T jack only, required in addition to list 1 for each trunk unit on the frame. (See note A.)

List 3 - Equipment per SD-96366-01, Fig. 2, CR jack only, required in addition to lists 1 and 2 for each charge rate indication for each trunk on the frame. (See note A.)

List 5 - Equipment per SD-96366-01, Fig. 7 required in addition to list 1 for each 1B charge timer. (See notes B and C.)

List 6 - Equipment per SD-96366-01, Fig. 3, CT lamp and RL key only, required in addition to list 1 when there are more than five trunks equipped on a frame.

List 7 - Wiring for ten and equipment for five trunk circuits for ringing and busy test ground per SD-96366-01, Fig. 11 and F required in addition to list 1 when answering and splitting jacks appear in No. 3C or 3CL switchboard. (See note E.)

List 8 - Equipment per SD-96366-01, Fig. 11 required in addition to list 7 where there are more than five trunks equipped on a frame.

Notes

A. The charge rate indication test jacks CR per SD-96366-01, Fig. 2, and the T and CO jacks per SD-96366-01, Fig. 1, are centrally located on the frame and wiring from them to the trunks is in the frame local cable. One CR jack shall be provided for each charge rate indication in each trunk. One T and CO jack shall be provided for each trunk equipped on the frame.

B. The 22-volt "AC" leads for the 51A drive motors, SD-96366-01, Fig. 6, shall be run by the installer as shown on the cabling details drawing listed herein. The leads from the 1B timers, SD-96366-01, Fig. 7, shall be run to trunks on the same frame by the installer with No. 24 gauge wire and to trunks on other frames in switchboard cable as shown on the cabling drawing.

C. When the initial or ultimate number of coin trunks in any office requires only one dial coin zone trunk frame, the second 51A drive equipped with 1B charge timers, as required, shall be provided and mounted above the tenth trunk unit. In this case, the even-numbered trunks shall be connected to the timers on the drive in the middle of the frame and the odd-numbered trunks connected to timers on the drive located at the top of the frame.

D. The wiring for the various figures of the miscellaneous circuit SD-96388-01 is not included in the frame local cable since switchboard cable connections are made direct to the apparatus involved.

E. Wiring per list 7 shall be included as part of the local cable in list 1 when the No. 3C or 3CL switchboard connection is required initially.

J99229B (A&M Only) - Dial Coin Zone Trunk Unit

Equipment - J99229B-( )
Local Cable - ED-91601-01

List 1 - Framework, assembly, wiring, and equipment for one outgoing trunk unit containing one dial coin zone trunk circuit.

	Wire	Equip	See Notes
Unit Mtg Details, ED-25028-50, G2		1	
Outgoing Trunk Ckt to Sender Tandem For Dial Coin Zone Service, SD-96366-01:			
Outgoing Dialing Coin Zone Trunk Ckt, Fig. 1 & D, Less CO and T Jacks	1	1	B, 5.01
"Fig. 1 "ZB" or "ZC" Options	1	1	E
Charge Rate Indication Ckt, Fig. 2, Less CR Jacks	4	1	A

List 2 - Equipment per SD-96366-01, Fig. 2, less CR jack, required in addition to list 1 for each additional charge rate indication. (See note A.)

List 3 - (A&M Only) - Equipment per SD-96366-01, Fig. E required in addition to list 1 when trunk is used with a 15-type DSA switchboard.

List 4 - Wiring and equipment per SD-96366-01, Fig. F, and "R" apparatus per SD-96366-01, Fig. 1, required in addition to list 1 when trunk is used with No. 3 or 3CL DSA switchboard. (See note C.)

List 5 - Equipment per SD-96366-01, Fig. F, "N" apparatus, required in addition to list 4 when earth potential at coin box is between ±8 to 20 volts. (See note D.)

Notes

A. One C and one T relay per SD-96366-01, Fig. 2 shall be furnished as required for each charge rate indication. They shall be equipped in order from left to right and shall be stamped with their charge rate indication as shown on the unit equipment drawing. The associated charge rate indication test jacks are mounted centrally above the fourth trunk unit and provided in J99229A.

B. Furnish "Y" option when the associated cord circuit requires a 34-ohm sleeve and "Z" option when the associated cord circuit requires a 500-ohm sleeve. Furnish "S" option and Fig. D to permit this circuit to be made busy by a trunk make-busy circuit. Furnish "T" option to arrange this circuit to send back audible ringing tone to the calling subscriber line while this circuit is awaiting the operator.

C. Wiring per list 4 shall be included as part of the local cable in list 1 when the No. 3 or 3CL switchboard connection is required initially.

D. When the earth potential at the coin box is less than ±8 volts, connect "Q" wiring.

E. Connect "ZC" wiring when automatic return of initial deposit is not required and omit ZB apparatus of list 1.

J99229C (A&M Only) - Coin Alarm and Timed Release Unit

Equipment - J99229C-( )
Local Cable - ED-91601-01

List 1 - Assembly, wiring, and equipment for alarm and release circuits common to one dialing coin zone trunk frame.

	Wire	Equip	Se No
Outgoing Trunk Ckt to Sender Tandem For Dial Coin Zone Service, SD-96366-01:			
Coin Alarm Ckt, Fig. 3, Less CT Lamp and RL Key	2	1	A, 5.01
Timed Release Ckt, Fig. 5	2	1	A, 5.01

List 2 - Equipment required in addition to list 1 for from five to ten dialing coin zone trunks SD-96366-01, Fig. 3, less CT lamp and RL key and Fig. 5.

Notes

A. The CT lamp and RL key associated with the coin alarm and timed release circuits are mounted on the jack panel directly below the relay equipment. Wiring from the terminal strips on the relay equipment plate to this equipment is furnished as part of the frame local cable furnished in J99229A.

B. The RB and RF interrupters shall be furnished per Fig. A or B depending on whether 1- to 2- or 2- to 4-minute timing interval for timed release is specified by the telephone company.

5. GENERAL NOTES

Equipment

5.01 In order to minimize service reaction in the event of a motor failure on the office interrupter frame in crossbar offices or miscellaneous interrupter frame in panel offices, two complete sets of interrupters shall be provided for use with coin trunks and each set mounted on separate frames, each frame served by a separate motor.

5.02 Coin trunk units shall be numbered from zero up throughout the office. Coin supervisory trunk frames shall be numbered from zero up in No. 1 crossbar offices and from one up in panel offices.

5.03 Drive location [Pos B on J99229A-( )] shall be equipped only when it is necessary to mount two 51A drives on any one frame. Drives and timers shall be located and trunks assigned to timers as shown in the following table:

TABLE A

Max No. of Trks	Drive and Timers on	Serving Trunks	Max No. of Trks	Drive and Timers On	Serving Trunks
10	1st Fr (Middle)	0,2,4,6, & 8	20	1st Fr	0-9
	1st Fr (Top)	1,3,5,7, & 9		2nd Fr	10-19
30	1st Fr	0-9 & 20-24	40	1st Fr	0-9 & 20-29
	2nd Fr	10-19 & 25-29		2nd Fr	10-19 & 30-39
50	1st Fr	0-9 & 20-29	60	1st Fr	0-9 & 20-29
	2nd Fr	10-19 & 30-39		2nd Fr	10-19 & 30-39
	5th Fr	40-49		5th Fr	40-49
				6th Fr	50-59
70	1st Fr	0-9 & 20-29	80	1st Fr	0-9 & 20-29
	2nd Fr	10-19 & 30-39		2nd Fr	10-19 & 30-39
	5th Fr	40-49 & 60-64		5th Fr	40-49 & 60-69
	6th Fr	50-59 & 65-69		6th Fr	50-59 & 70-79
90	1st Fr	0-9 & 20-29	100	1st Fr	0-9 & 20-29
	2nd Fr	10-19 & 30-39		2nd Fr	10-19 & 30-39
	5th Fr	40-49 & 60-69		5th Fr	40-49 & 60-69
	6th Fr	50-59 & 70-79		6th Fr	50-59 & 70-79
	9th Fr	80-89		9th Fr	80-89
				10th Fr	90-99
120	1st Fr	0-9 & 20-29	140	1st Fr	0-9 & 20-39
	2nd Fr	10-19 & 30-39		2nd Fr	10-19 & 30-39
	5th Fr	40-49 & 60-69		5th Fr	40-49 & 60-69
	6th Fr	50-59 & 70-79		6th Fr	50-59 & 70-79
	9th Fr	80-89 & 100-109		9th Fr	80-89 & 100-109
	10th Fr	90-99 & 110-119		10th Fr	90-99 & 110-119
				13th Fr	120-129
				14th Fr	130-139

5.04 The 22-volt ac supply for the 51A drives associated with the coin trunks may be obtained from existing power supply units if the capacity of the unit is large enough to accommodate this additional equipment and the telephone company so desires.

5.05 When a supply of 22-volts ac is not available, one 22-volt ac power supply unit per J86724C, List 10, shall be provided for each location in the building of dial coin zone trunk frames, and mounted on the miscellaneous relay rack. The associated alarm circuit per SD-80929-01, Fig. 3, and the associated fuse panel per ED-90426-01 shall be mounted on the miscellaneous relay rack by means of adapters per ED-90273-01 and ED-90335-01, respectively.

5.06 The ANS lamp and jack and the SPLIT jack per SD-96366-01, Fig. 8 or 9 and Fig. 4, or Fig. 12 or 13 and Fig. 4 shall be multipled as required in the face of the DSA switchboard or No. 3CL switchboard as shown on ED-91391-01 or ED-92115-01. The lamp multiple LPI relay per SD-96366-01, Fig. 10 is only required when more than eight appearances of the ANS lamp are required. This relay shall be mounted on the miscellaneous relay rack as shown on ED-91530-01, Fig. 6-A.

5.07 The telephone company shall specify the OGT test frame to be used in testing dial coin zone trunks when they are used in common by both panel and crossbar offices. In some cases, duplicate test and make-busy jacks may be furnished for each charge condition, due to the fact that they may be provided with the office multiple, in which case the unused jacks shall be permanently plugged out of service.

5.08 The telephone company shall also specify the traffic register rack and the location of the associated jumper wire on jobs where these trunks are used in common by both panel and crossbar offices.

Wiring

5.09 The unit local cable for the trunk unit contains the wiring for the trunk circuit per SD-96366-01, Fig. 1, and the charge rate indication circuit per SD-96366-01, Fig. 2. The unit local cable for the coin alarm and timed release unit contains the wiring for two coin alarm and two timed release circuits, respectively.

5.10 The frame local cable contains the wiring from the unit terminal strips to the jack, key, and lamp equipment located in the middle of the frame.

Switchboard Cable

5.11 In connection with the cabling of the jack and lamp leads from the trunk unit for cross connection to the A switchboard when 6-row terminal strips are used at the distributing frame, the cabling from a dialing coin zone trunk frame of ten trunks will be per strip. However, if 4-row terminal strips are used at the distributing frame, the cable shall be formed over two terminal strips.

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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
J99229A, L4	Mfr.Disc.	3	-
J99229A	A&M Only	4	-
J99229B	A&M Only	4	-
J99229C	A&M Only	4	-