PBX SYSTEMS
NO. 756A
ATTENDANT TRUNK CIRCUIT

CHANGES

A. Changed and Added Functions

A.1 To provide means, auxiliary to attendant trunk 2, for establishing a talking connection between a PBX attendant and an idle, busy, or busy and camped-on station.

D. Description of Changes

D.1 On Sheet 1, Option F is added to Note 102.

D.2 On Sheet 1, Options E and F are added to the Option Index and to Note 104.

D.3 On Sheet 2, Options E and F are added.

D.4 On Sheet 2, ON lead is designated and lead BZ(0-2) is redesignated BZ1(0-2).

D.5 On Sheet 2, BZ1 relay contacts identified.

D.6 On Sheet 3, title of SC2 is changed and STMA relay redesignated SMTA.

D.7 On Sheet 4, App Fig. 1, option F is added to relay ON.

F. Changes in CD Sections

F.1 In SECTION II, change item 7 of the fourth sentence of 1.2 to read "(7) with R option operates relay RV to give reverse battery supervision on calls from dial tie trunks."

F.2 In SECTION II, change the first sentence of 1.4 to read "With the hold condition established on an incoming call, relays A,B,HD, SL, and, if R option is furnished, relay RV, are operated in the attendant trunk circuit."

F.3 In SECTION III, 3. CONNECTING CIRCUITS, add:

Busy Verification Auxiliary Trunk Circuit - SD-66911-01.

BELL TELEPHONE LABORATORIES, INCORPORATED

DEPT 5337-AELK-RAV
240HW

PBX SYSTEMS
NO. 756A
ATTENDANT TRUNK CIRCUIT

CHANGES

D. DESCRIPTION OF CIRCUIT CHANGES

D.1 When a central office trunk circuit and an attendant trunk circuit rings the attendant at the same time, the ringing supply is short circuited for the period of the machine ringing.

To prevent this, Option H is designated and noted Mfr. Disc. Option G is added to use the continuous ringing to ring the attendant and to use the machine ringing for the audible.

D.2 Circuit Notes 102 and 104 are revised to reflect Issue 12-B.

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DEPT. 5332-WVS-HFH-AR

PBX SYSTEMS
NO. 756A
ATTENDANT TRUNK CIRCUIT

TABLE OF CONTENTS

SECTION I - GENERAL DESCRIPTION

1. GENERAL METHOD OF OPERATION (SEE INFORMATION NOTE 301 BLOCK DIAGRAM)

1.1 When a PBX station or tie trunk dials 0, the marker will complete this call on a "Trunk Class" basis. "Trunk Class" means that no Junctor circuit is required for this call and only a single link path is completed from the calling line or tie trunk to the Attendant Trunk Circuit. When the calling station or tie trunk loop is extended thru the link crosspoints to the Attendants Trunk, the Attendants Trunk functions to provide a holding ground for both the calling line or tie trunk hold magnet and for the Attendant Trunk hold magnet.

1.2 When the Attendant Trunk is seized, cordless-operation, a visual and audible signal is operated at the Attendants equipment. The attendant operates the Pick Up Key associated with the incoming lamp signal and connects the attendants telephone to the Attendant Trunk. Once connected to the trunk, the attendant has the option of disconnecting or of placing the Attendants Trunk on "Hold". If the call is a request for a central office or "outside" telephone number the attendant puts the hold condition on the Attendant Trunk, and the calling line remains off-hook. The attendant disconnects from the Attendant Trunk and dials the desired "outside" telephone number over an idle 2-way C. O. Trunk. Having reached the desired "outside" telephone, the attendant then dials the number of the PBX line which is being held by the Attendants Trunk, on the "in end" of the 2-way C. O. Trunk, on a Dial Back basis. The Marker proceeds to set up a link from the "in end" of the C. O. Trunk to the PBX station disregarding the busy condition. The attendants trunk recognizes this double connection, and will respond by releasing. The connection is now complete from the calling PBX line through the 2-way C. O. Trunk to the "outside" telephone number, and the Attendant Trunk is restored to normal.

1.3 When the Attendant Trunk is seized, cord switchboard operations, an audible and visual signal is operated at the cord switchboard. The Attendant plugs a station cord into the jack associated with the visual signal and operates the talk key to connect the switchboard telephone circuit to the trunk.

2. GENERAL FUNCTIONS

2.1 To provide for terminating calls to the attendant, and to provide talking battery for the connection.

2.2 To hold the connection under control of the calling PBX line or trunk after the attendant disconnects, if desired.

2.3 To release automatically when the calling line is dialed back from a 2-way C. O. Trunk.

2.4 To provide for answering only incoming calls at a cord switchboard.

2.5 To provide supervision on incoming calls via dial repeating tie trunks.

SECTION II - DETAILED DESCRIPTION

1. INCOMING CALL (DIAL "0")

1.1 Seizure of Trunk (Options W & Y)

When the calling line or tie trunk dials 0, the marker is signaled to set up a connection from the calling line or tie trunk to the attendant trunk over a link. When the SMTA relay in the marker operates, it grounds one of the IT 05-07 leads toward the attendants trunk circuit. This ground is carried back to the line link and marker circuit where it operates the trunk hold magnet (THM) of the attendants trunk. The trunk hold magnet operated closes the crosspoints which extend the loop of the calling line or trunk to relay A. The loop operates relay A which (1) operates relay B (2) closes a circuit from lead FF of the power plant to lamp SL which flashes at 120 IPM, (3) with "Z" option operates relay NC in the attendants cord switchboard and (4) with "R" option prepares a path to operate relay RV.

Relay B operated (1) bridges the contacts of relay AC in both the T and R leads to keep relay A operated when relay AC operates, (2) completes a path for ringing tone from capacitor RT to the ring side of the trunk for audible ringing tone, (3) connects ground to one of the IT 00-02 and IT 05-07 leads to make the trunk busy to the marker, (4) closes machine ringing from lead R1 through break contacts on relays ON and HD to lead BZ to operate the audible signal in the attendants equipment, (5) prepares a locking path for relays ON and HD, (6) connects ground to lead HM to hold the trunk hold magnet THM, and (7) operates relay SL (relay SL is connected as a 100 ohm holding ground to lead S which holds the hold magnet of the calling line or trunk operated after the marker releases).

1.2 Attendant Answers Call

The attendant, in response to an audible signal and flashing SL lamp, operates the pickup key associated with the trunk. The pickup key operated connects ground to lead ACA to operate relay AC. Relay AC will remain operated as long as the pickup key is operated. Relay AC operated (1) connects the attendant equipment to the trunk via leads TT and TR, (2) with "S" option, prepares a path to operate relay SP in the attendants equipment, (3) prepares a path to operate relay HD, (4) connects ground to leads U and TR- toward the marker, (5) operates relay ON, (6) with "R" option, prepares a path to operate relay D and (7) with "R" option operates relay RV which reverses the battery and ground to cause a dial repeating the trunk to supervise relay ON.

Relay ON operated (1) locks operated to ground thru its own contacts and under control of relays HD and B, (2) opens the tone path from the RT capacitor to the ring of the trunk, (3) opens the R1 lead to silence the audible signal at the attendants equipment, and (4) transfers lamp SL from 120 IPM to steady battery. The calling station and the attendant, are now connected and transmission battery for the calling party is from the A relay.

1.3 Attendant Holds Call

If it is desired to place a hold condition on an attendants trunk, the attendant momentarily operates the hold key in the attendants equipment prior to releasing the pickup key. The hold key operated operates relay H in the attendants equipment which grounds lead HD to operate relay HD thru relay AC operated. Relay HD operated (1) with "S" option, operates relay SP in the attendants equipment, (2) with "R" option, operates relay D, (3) releases relay ON, (4) opens one of the operating paths of relay B, (5) prepares a path to operate relay TN over lead KO from the marker, (6) prepares a locking path for itself to remain locked to the sleeve thru contacts of relay TN normal after relay AC releases, (7) transfers the busy ground on one of leads IT 00-02 from relay B to relay HD, (8) transfers the SL lamp from steady battery to 30 IPM to indicate a holding condition, (9) opens lead R1 or BZ to prevent reoperation of the audible signal at the attendants equipment when relay ON releases and (10) opens the tone lead to the ring side of the trunk.

With "S" option, relay SP operated in the attendant equipment locks operated to ground over lead SP and holds relay HD operated until relay AC releases.

With "R" option, relay D holds relay HD operated until relay AC releases.

The attendant operates the release key which mechanically releases the pickup key. The pickup key released in turn releases relay AC. Relay AC released (1) removes ground from leads U- and TR-, (2) with "S" option, releases relay SP in the attendants equipment, (3) with "R" option, releases relay D (4) transfers relay HD from an operating path to a holding path to the sleeve lead and (5) disconnects the attendants equipment via leads TT and TR from the trunk and leaves the calling line connected to relay A. Relay ON released prepares a locking path for relay TN which operates at a later time.

1.4 Attendant Re-enters Held Call

With the hold condition established on an incoming call, relays A, B, HD, SL

and if "R" option is furnished relays RV and D are operated in the attendant trunk ckt. To re-enter the trunk the Attendant again operates the Pick-up Key, and relay AC operates as described in Paragraph 1.2. Relay AC operated bridges the attendant telephone set on to the T and R leads over leads TT and RT for a talking path. Relay AC operated releases relay HD. Relay HD released (1) operates relay ON from ground through operated relay AC (2) transfers lamps SL from 30 IPM to 120 IPM, and (3) disconnects the holding of relay RV. Relay ON operates to transfer lamps SL from 120 IPM to steady battery.

2. INTERCEPTION

2.1 Call Intercepted

If a station dials an unassigned station, a trunk code 8 which is not equipped a restricted station or a restricted dial repeating tie trunk which is denied access to two digit codes beginning with 8 and one or two digit codes beginning with 9, a restricted station or a restricted dial repeating tie trunk which is denied access to one or two digit codes beginning with 9 but which is allowed access to codes beginning with code 8, a register times out or a permanent signal condition exists, the marker will direct the call to an attendant trunk circuit over a link. When the SMTA relay in the marker operates ground is connected to one of the IT 00-02 leads causing relay TN to operate. Relay TN operated (1) prepares a path to flash lamps TL and (2) grounds lead HM to operate the attendant trunk hold magnet THM in the line, link and marker circuit. With the trunk hold magnet operated, the loop is extended to operate, relay A and the trunk functions as described in Paragraph 1.1 except (1) lamp TL will flash at 120 IPM and (2) relay TN locks operated under control of relays B and ON.

2.2 Attendant Answers An Intercepted Call

The attendant, in response to an audible signal and flashing SL and TL lamps, operates the pickup key associated with the trunk. Relays AC and ON operate and function as described in Paragraph 1.2 with the exception that relay ON transfers the ring of the trunk from ringing tone thru capacitor RT to low tone thru capacitor TN and opens the locking path of relay TN which starts to release. During the interval which relay ON is operated and before relay TN releases, the low tone heard by the attendant is a signal to the attendant that this is other than a call where a digit "0" was dialed. The low tone is removed when relay TN releases. Relay TN released extinguishes lamp TL.

2.3 Attendant Holds Intercepted Call

Holding an intercepted call is the same as described in Paragraph 1.3.

2.4 Attendant Re-enters Held Call

Re-entering a hold intercepted call is the same as described in Paragraph 1.4.

3. ATTENDANT ORIGINATED CALL

3.1 Outgoing Call by Attendant

When the attendant originated a call over the attendant trunk circuit, an idle trunk is selected from the lamp indication. The attendant operates a pickup key in the attendants equipment associated with the idle trunk. The pickup key operates grounds lead ACA to operate relay AC. Relay AC operated (1) operates relay ON, (2) prepares a path to operate relay OUT thru relay B normal when the marker operates the trunk hold magnet, (3) connects the attendants equipment to the trunk circuit via leads TT and TR, (4) prepares a path to operate relay HD, and (5) grounds leads U- and TR- to the line link and marker circuit as a signal to connect the attendant trunk to a register via a link.

Relay ON operated (1) connects battery to lead SL- to light the SL lamps steadily, (2) connects ground to one of leads IT 00-02 to make the trunk busy to the marker on subsequent calls, (3) opens the BZ lead to prevent the audible signal from sounding and (4) opens the audible ringing lead to the ring side of trunk.

In the process of connecting the trunk to a register, relay SMTA in the marker grounds one of leads IT 05-07 to operate the trunk hold magnet THM and relay OUT. Relay OUT operated (1) connects the sleeve lead to the HM lead so that the sleeve holding ground furnished by the register will hold the attendant trunk hold magnet operated after the marker removes ground from one of the IT 05-07 leads, (2) locks operated to the sleeve ground, (3) connects battery to lamps SL in place of relay ON and (4) opens the T & R leads to relay A to prevent its operation.

The attendant now hears PBX dial tone from the register and can dial the desired PBX station line. The marker will set up a connection to the line on a "Junctor Class" basis. When finally connected the junctor will supply holding ground on the sleeve and supply transmission battery to the called station.

3.2 Attendant Holds Call

To hold an attendants originated call, the attendant operates the hold key in turn operating relay H and HD as described in Paragraph 1.3. In addition relay HD connects a short circuit across the T and R leads of the trunk to hold the junctor when relay AC releases and also prepares a path to lock to lead HM when relay AC releases. Lead HM is connected to the sleeve lead by relay OUT which is grounded via the link by the junctor.

The attendant operates the release key which mechanically releases the pickup key in turn releasing relay AC. Relay AC released transfers the Tip and Ring from the attendants telephone circuit to the short prepared by relay OUT and HD operated. This short circuit is extended to the Junctor or tie trunk to which the Attendant Trunk is connected and under control of this short the connecting circuit supplies holding ground on the sleeve to hold the Attendant Trunk Hold Magnet in the Line Link and Marker circuit and relay HD over lead HM which is connected to the sleeve through relay OUT operated.

3.3 Attendant Re-enters Held Call

With the hold condition established on a call originated by the attendant, relays HD and OUT are operated in the trunk. To re-enter the trunk the attendant operates the pickup key associated with the trunk to operate relay AC as described in Paragraph 3.1. Relay AC operated (1) transfers the trunk T & R leads from the holding short formed by relays HD and OUT to the attendants equipment via leads TT and RT, and (2) releases relay HD. Relay HD released operates relay ON and transfers lamp SL from 30 IPM to 120 IPM. Relay ON operated transfers lamp SL from 120 IPM to steady battery.

3.4 Attendant Holds Before Dialing

When the attendant depresses the pick up key associated with an idle trunk a dial tone connection will be established as explained in Paragraph 3.1. Should the attendant depress the hold key the H relay in the attendant circuit and the HD relay in the trunk circuit will operate as explained in Paragraph 1.3. With "J" option, relay HD in operating will place the C diode in series with make contacts of the OUT relay and its own make contact across the tip and ring of the line as a holding bridge. Since this connection is to a D.P. register there will be battery on the ring side and ground on the tip. When the attendant releases from the circuit the polarity of the C diode will prevent current flow, releasing the L relay in the register circuit which will function to restore both circuits to normal.

3.5 Attendant Holds Call Before Called Party Answers

When the attendant depresses the pick up key of an idle trunk and receives dial tone as explained in Paragraph 3.1 the desired line may be called. After dialing, the marker will set up the call on a "Junctor type" basis. While the called station is on hook there is ground on the tip and battery on the ring from the junctor circuit. Should the attendant place the trunk on hold and release from the connection the C diode will prevent current flow causing the A relay in the Junctor to release which will function to restore both circuits to normal

4. DISCONNECTION

4.1 Calling Party Disconnects First (Incoming Call)

If the calling party disconnects before the attendant and the hold condition has not been established, no circuit action occurs in the trunk circuit because an inductor in the attendants equipment is connected across leads TT and TR to hold relay A operated.

4.2 Attendant Disconnects First (Incoming Call)

If the attendant disconnects first, and the hold condition has not been established, relay AC releases when the pickup key is released by operating the release key. Relay AC releasing (1) operates relay HD and (2) releases relay RV which reverses battery and ground to give disconnect supervision on a tie trunk.

Relay HD is forced operated on disconnect to insure that the trunk will respond to "kick off" if the attendant fails to operate the hold key before disconnecting on calls where dialing back from a 2-way central office trunk is required. Relay HD operated (1) transfer the ground on one of the IT 00-02 lead from relay B to relay HD, (2) opens the BZ lead to keep the AND audible signal from sounding when relay ON releases, (3) connects 30 IPM to the SL lamps, (4) opens the tone lead to the ring of the trunk to prevent sending tone to the calling party when relay ON releases, (5) opens the TL lamp lead, (6) prepares its own locking circuit under control of relay B, and (7) releases relay ON.

4.3 Calling Party Disconnects After Attendant (Incoming Call)

When the calling party disconnects after the attendant has disconnected, the loop is open and relay A releases in turn releasing relay B. Relay B is slow to release to (1) opens the sleeve lead to release relay SL and removes the 100 ohm

holding ground from the sleeve to release the calling line hold magnet, (2) releases relay HD, (3) removes ground from lead HM to release the trunk hold magnet (4) removes ground from lead IT 05-07. Relay HD releases to (1) extinguish the SL lamp and (2) removes ground from one of the IT 00-02 leads to remove the busy condition on the trunk.

4.4 Disconnection of Attendant Originated Call

If the called party disconnects first on a call originated by the Attendant no circuit action takes place in the trunk because the Junctor circuit originating end is being held under control of the attendants telephone circuit which is bridged across the T and R leads over leads TT and RT through make contacts of AC. When the Attendant disconnects by restoring the Pick Up Key, ground is removed from lead ACA and relay AC releases. Relay AC released, releases relay ON, relay OUT is held locked up to the sleeve. Relay AC released removes the loop, from the A relay in the connected Junctor circuit which is a signal to the Junctor to release. When the Junctor releases, sleeve ground is removed and relay OUT releases. The trunk hold magnet is also released. Relay OUT released removes ground from the IT leads to remove the busy condition from the trunk. Relay OUT released also removes battery from lead SL to extinguish the lamp at the attendant position.

5. KICK OFF

If a PBX line is routed to an Attendant Trunk circuit, either by that line dialing 0 or by a restricted line attempting to dial 9, and desires to be connected to a central office subscriber, the Attendant must ascertain the identity of the calling line, as well as the outside telephone number desired. When the attendant has the forgoing information, the attendant places a hold condition on the Attendant Trunk. The attendant now selects an idle 2-way C. O. Trunk and dials the desired outside telephone number. When the called C. O. line answers, the Attendant informs this party of the call for them and asks them to wait. The attendant then puts a hold on the 2-way C. O. Trunk (central office end) and receives PBX dial tone from the PBX end of the 2-way C. O. Trunk. After operating the Dial Back Key momentarily, the attendant proceeds to dial the number of the PBX line that requested the outside connection.

The marker proceeds to set up a connection from the PBX end of the 2-way C. O. Trunk to the calling PBX line and in response to the Dial Back Key operation will set up this connection disregarding the busy condition of the line being held on the attendant trunk.

The camp on relay in the marker connect ground to the sleeve lead of the calling line and this ground via the link shunts down relay SL. Relay SL released completes the path via lead KO to operate relay TN from ground in the marker from the no test relay. Relay TN operated (1) locks operated and (2) releases relay B. Relay B released (1) releases the trunk hold magnet and (2) release relay TN. Relay TN released releases relay HD. When the trunk hold magnet released the loop to relay A was opened which caused relay A to release. With relays A and HD release the SL lamp is extinguished. The attendant trunk now is released and restored to normal.

6. OPERATION WITHOUT PBX ATTENDANT, INTERCOMMUNICATING SYSTEM ONLY X OPTION

If the PBX is used for intercommunicating purposes only, the attendant trunks are used only as holding trunks for calls to unassigned numbers or Permanent Signal Calls.

Seizure of the Attendant Trunk for this condition is as described in Paragraph 2.1 except that X option provides busy tone instead of audible ringing tone to the ring of the trunk.

7. OPERATION WITH A CORD SWITCHBOARD Z OPTION

7.1 Seizure of Trunk

Seizure of the trunk when a cord switchboard is provided is the same as described in Paragraphs 1.1 & 2.1 except that a call originated by dialing 0 results in a 120 IPM flashing Busy Lamp at the cord switchboard. A call which is intercepted results in both the Busy Lamp and Trunk Lamp flashing at 120 IPM at the cord switchboard.

7.2 Attendant Originated Call

No provision is made for the Attendant to originate calls over the Attendant Trunk from the cord switchboard.

7.3 Attendant Answers Incoming Call

The Attendant in response to the flashing Busy Lamp inserts a station cord into the Attendant Trunk Jack. A make contact on the tip jack spring closes ground over a lead to operate relay OUT.

Relay OUT transfers the trunk T & R leads from the winding of relay A to the switchboard. Relay A releases.

Relay OUT operated also operates relay ON and transfers the Busy Lamp lead BL from 120 IPM flashing battery to solid

battery resulting in a steadily lighted Busy Lamp.

T option causes the trunk to return supervision when answering a tie trunk.

Relay ON operated opens the A lead to silence the audible signal and close a circuit to hold itself independent of relay OUT.

7.4 Attendant Answers Intercepted Call

The Attendant responds to the flashing busy and Trunk Lamp signal by inserting a trunk cord into the Attendant Trunk jack. Circuit Action is as described in the preceding paragraph except that in addition to relay A releasing, relay TN is also released when relay ON operates. Relay TN released removes flashing battery from lead TL, resulting in a dark Trunk Lamp. The Busy Lamp remains steadily lighted from solid battery thru contacts of relay OUT operated.

7.5 Disconnection

If the calling line or trunk disconnects before the Attendant removes the plug from the trunk jack, no circuit action results in the trunk because relay OUT is still held from the operated jack spring ground.

If the Attendant removes the plug from the trunk jack before the calling party disconnects, relay OUT will release, returning the Tip & Ring of the trunk to the winding of relay A. Relay A reoperates to continue to hold slow release relay B.

Relay B held operated holds the trunk & calling line hold magnets operated. Relay ON holds the Busy Lamp steadily lighted and the audible signal silenced.

8. OPERATION WITH 6 BUTTON KEY TELEPHONE SET

When a 6 button key telephone set is used as an attendants equipment, the attendant trunk circuit functions as described in Paragraphs 1 to 5 with the following exceptions:

(a) The line lamp (L) in the 6 button set serves the same purpose as does the station lamp (SL).

(b) On a dial "0" or intercepted call, relay A furnished transmission battery for the 6 button set.

(c) On intercepted calls there will be no trunk lamp (TL) and only the burst of tone will identify the call.

(d) On an attendant originated call the junctor furnished the transmission battery for the 6 button set.

(e) There is no release key on the 6 button set, but a switchhook contact will open the circuit to the AC relay causing it to release when the handset is replaced.

9. MISCELLANEOUS

9.1 When the Attendants Operation of a 756A PBX is transferred to a 6 button key telephone set, the common ringer continues to ring on calls over central office and attendant trunks which do not appear on the 6 button key telephone set.

To prevent this Option N is added which provides for each BZ (buzzer) lead to be separate and to connect to relay contacts in the cordless position circuit.

Straps are added across the make and break contact of each BZ lead associated with a trunk appearance on the 6 button key telephone set. When the operations are transferred, the added relays in the cordless positions circuit operate and the BZ leads not strapped are opened. Only those BZ leads strapped will cause the common ringer to operate.

9.2 When direct station selection is provided for the attendant, Option M is required in the attendant trunk circuit.

Relay AC operated opens lead H1 to prevent the operation of relay H in the cordless position circuit when any of the keys in the direct station selection set are operated.

SECTION III - REFERENCE DATA

1. WORKING LIMITS

1.1 Lines

The maximum external circuit loop for relay A is 2370 ohms, minimum insulation resistance is 20,000 ohms.

1.2 Voltage Limits

45-52 Volts DC

2. FUNCTIONS

2.1 To recognize seizure by the calling line or tie trunk and to supply holding ground for the calling line or the trunk hold magnet under control of the calling party.

2.2 To make itself busy to the marker or subsequent calls.

2.3 To supply holding ground for the attendant trunk hold magnet under control of the calling party.

2.4 To cause an audible and visual signal to sound at the attendant position as a signal that the trunk has been seized.

2.5 To provide a means for the attendant to connect the Cordless Position Circuit to the trunk.

2.6 To silence the audible signal and change the visual signal from a fast flash to a steadily lighted lamp when the attendant is connected to the trunk.

2.7 To signal the Attendant with a short spurt of tone and a distinctive lamp signal if the call is other than a call where the calling line or tie trunk dials 0.

2.8 To supply audible ringing tone to the calling party until the Attendant answers.

2.9 To remove the audible ringing tone when the Attendant answers.

2.10 To supply transmission battery to the calling party.

2.11 To supervise the connection and recognize if the calling party disconnects when the Attendant is not connected and no hold has been established, and to signal this disconnect to the attendant.

2.12 To provide for holding the connection at the discretion of the Attendant after disconnect and to signal this Hold condition to the attendant.

2.13 To release itself (kick off) and extinguish the trunk lamp when the attendant dials back, over a 2-way C. O. Trunk to complete a call from an outside line to the line initiating the request on the Attendant Trunk.

2.14 To enable the attendant to originate a call to a PBX line and to hold this line after the connection is established if desired.

2.15 To return to normal when both the calling line and PBX attendant have disconnected and to free the calling line.

2.16 To hold itself busy as long as either the calling party remains off hook or the attendant remains connected.

2.17 To provide for operation with a cord switchboard.

2.18 To disconnect if the attendant places call on hold and releases from the circuit before dialing. ("J" option)

2.19 To disconnect if the attendant dials an extension and places the call on hold and releases before called party answers. ("J" option)

3. CONNECTING CIRCUITS

When this circuit is shown on a key sheet the connecting information thereon is to be followed.

Attendant Modular Console and Position

Cordless Positions Circuit - SD-65757-01
Cordless Position Circuit - SD-65751-01
Line Link & Marker Circuit - SD-65741-01
Alarm Transfer & Test Circuit - SD-65743-01
Power Supply Circuit - SD-81288-01

4. FUNCTIONAL DESIGNATIONS

The functional meanings of the designation of the operating elements of the Attendant Trunk are given to the following table.

Relays

DESIGNATION	B LOCATION	FUNCTIONAL MEANING
A	2A9	Line
AC	2E9	Attendant Connector
B	2G4	Slow Release Guard
HD	2E4	Hold
ON	2B2	Off Normal
OUT	2C2	Outgoing Call
SL	2E2	Sleeve
TN	2F4	Tone

5. MANUFACTURING TEST REQUIREMENTS

The Attendants Trunks shall be capable of performing all the service functions listed herein, and meeting the requirements shown in the circuit requirement tables.

6. TAKING EQUIPMENT OUT OF SERVICE

In order to make an Attendant Trunk busy it is necessary to ground the IT leads toward the Line Link and marker circuit. This can be accomplished as follows: Ascertain that no select magnet is operated, then insulate 11M of relay B and block relay B operated.

7. ALARM INFORMATION

7.1 Fuse Alarm

An operated fuse supplying an Attendand Trunk will result in a major alarm being transmitted to the Plant Service Center if Alarm Sending is provided, and in any case in a visual signal at the attendants position, and in the alarm transfer and test circuit.

Replace the operated fuse to silence the alarm and extinguish the alarm lamp.

SECTION IV - REASON FOR REISSUE

B. CHANGES IN APPARATUS

B.1 Added

1-KS15724,L2 Diode (C) - "J" option.

D. DESCRIPTION OF CIRCUIT CHANGES

D.1 Option K is designated and rated Mfr. Disc. It is superseded by "J" option which is added and provides the functions listed as 2.18 and 2.19.

BELL TELEPHONE LABORATORIES, INCORPORATED

DEPT. 5332-LLG-RDW-JP