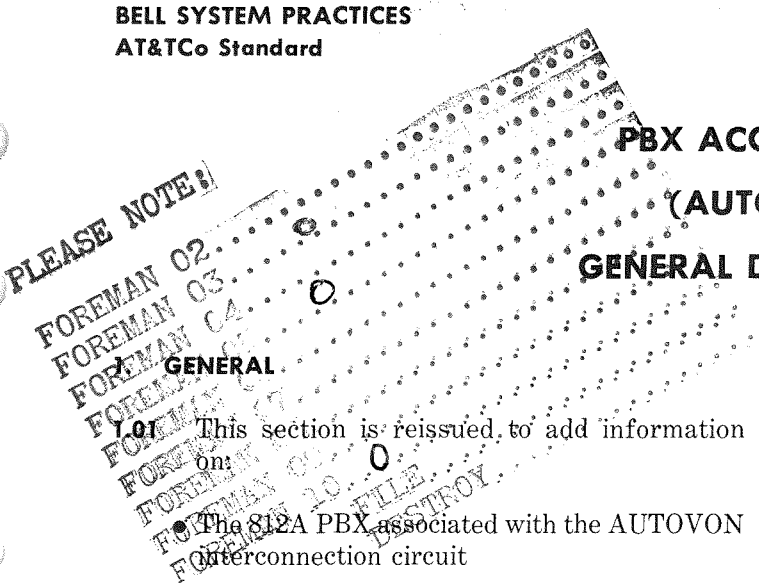

PBX ACCESS LINES (AUTOVON) GENERAL DESCRIPTION

1. GENERAL

1.01 This section is reissued to add information on:

- The 812A PBX associated with the AUTOVON interconnection circuit
- The 155A6E-03L AUTOVON attendant console for use with AUTOVON access lines.

1.02 This section describes the general features and characteristics of PBX access line circuits used at the 812A PBX associated with the 155A6E-03L attendant console and an AUTOVON interconnection circuit and at certain step-by-step dial PBX and manual PBX systems which require access to the AUTOVON 4-wire switching centers.

1.03 Four PBX access line circuits have been designed for services such as AUTOVON. Three of these circuits are used on the relatively simple manual PBX systems. All three of these circuits provide the same basic features. The fourth access line is a dial-repeating type which is used with the 812A PBX, certain step-by-step PBX systems or a large manual PBX when a more sophisticated circuit is required.

1.04 The 812A PBX for use with AUTOVON access lines is associated with the following schematic drawings:

SD-1C588-01 Iss. 1 AUTOVON Interconnection Circuit

SD-1C589-01 Iss. 1 PBX System #812A (155A6E-03L) AUTOVON Attendant Console

SD-1C407-01 Iss. 1 CCSA Interface Circuit

2. DESCRIPTION

Manual PBX Access Line Circuit

2.01 The manual PBX access line circuits are designed for E and M lead trunk-type signaling. One or two jack appearances (key appearances on a cordless PBX) with associated line lamp and optional busy lamp are provided on the PBX switchboard for each line circuit.

2.02 The line circuit provides ***routine*** or ***precedence*** incoming alerts on the line lamp. On a ***routine*** call, the attendant is alerted by a steady line lamp. ***Precedence*** calls cause the line lamp to flash at the ***precedence*** rate. If an established connection is preempted by the switching center, an audible tone and a disconnect signal are received from the switching center.

2.03 Provisions have been made in the line circuit for night and through-dial operation if required. This enables an incoming call from the switching center to operate the ringer at an extension. The through-dial provision also allows an extension to establish outgoing calls via the switching center.

2.04 The access line circuit also enables calls over a PBX trunk from the serving central office to be extended to a switching center, such as AUTOVON, and vice versa. In addition, ground signals are provided for a traffic usage recorder, indicating the total of all calls as well as the total of incoming calls.

Dial-Repeating Access Line Circuit Terminated at a Dial PBX With Associated Switchboard

2.05 The dial-repeating PBX access line circuit uses E and M lead signaling and is arranged for both network-in-dialing (NID) and network-out-dialing (NOD). In addition, calls are completed to and from the PBX switchboard attendant. Both a ROUTINE and a PRECEDENCE

jack and associated line and busy lamps are provided at the switchboard.

2.06 In the basic dial-repeating line circuit, all precedence traffic is completed to and from the switchboard attendant; however, optional arrangements are available to permit NID of ***precedence*** calls. If the called station does not answer or is busy, the incoming call is transferred to the PBX switchboard for completion. The dial-repeating access line circuit also enables the switchboard attendant to preempt an existing ***routine*** call at the switchboard. When this is done, preempt tones are sent to the PBX user and over the network (eg, AUTOVON).

2.07 Both ***routine*** and ***precedence*** calls may be transferred from a station to the switchboard attendant.

2.08 Like the manual line circuit, the dial-type line circuit enables calls from a central office trunk to be completed over the network. In addition, ground signals are provided for a traffic usage recorder and confirmed audible ringing can be provided.

2.09 When an established connection is preempted by the switching center, the access line circuit automatically breaks the connection if the extension does not disconnect within 3 seconds.

Dial-Repeating Access Line Circuit Terminated on an 812A PBX Associated With an AUTOVON Interconnection Circuit and 155A6E-03L Attendant Console

2.10 Dial-repeating tie lines terminated on an 812A PBX are equipped for NID, NOD, and processing incoming and outgoing ***routine*** calls and incoming and outgoing ***precedence*** calls.

2.11 Incoming ***routine*** and ***precedence*** calls may be dialed directly to stations behind the PBX.

2.12 The following calls become attendant seeking and are routed to the console attendant by the AUTOVON interconnection circuit:

(a) A ***routine*** incoming call to a LISTED DIRECTORY NUMBER (LDN)

(b) A ***routine*** incoming call transferred by the called station

(c) A ***precedence*** call to an LDN

(d) A ***precedence*** call transferred by the called station

(e) A ***precedence*** call to a busy PBX station

(f) A ***precedence*** call to a PBX station that does not answer in approximately 12 to 15 seconds.

2.13 Outgoing ***routine*** calls may be dialed direct by stations behind the PBX. Outgoing ***precedence*** calls can only be placed by the console attendant.

2.14 A call may be preempted by the AUTOVON switching center, the AUTOVON interconnection circuit, or the console attendant may preempt a call on a barge-in basis and request the preempted parties to hang up. When a call is preempted by either the AUTOVON switching center or the AUTOVON interconnection circuit, a 3-second preemption tone is transmitted to both the called and calling parties prior to the termination of the call.

GENERAL OPERATION

Manual PBX Access Line Circuit

2.15 When the switching center places a ***routine*** call to the PBX, the line lamp at the PBX lights steadily. If a ***precedence*** call is placed, the line lamp flashes. The attendant handles the call by inserting the answer cord into the talk jack and using another cord in that pair to complete the call (at a cordless PBX, key operations replace the cords). Outgoing calls are made by connecting the PBX to the access lines and dialing toward the switching center. If provision is made for night or through-dial operations, the access circuit is connected to an extension line. Incoming calls then operate the extension ringer while outgoing calls may be made directly from the extension.

Dial-Repeating Type Access Line Circuit Terminating on a PBX With Associated Switchboard

2.16 To make an outgoing call, the access line is seized by a station or tie trunk from the selector or selector-connector banks, or at a switchboard by the attendant. This action applies an off-hook signal to the switching center. When dial tone is received, TOUCH-TONE® signals containing the address and precedence information are transmitted to the switching center. When the call is answered at the distant end, supervision is transmitted back to the access line.

2.17 An incoming call causes the switching center to seize the access line circuit and transmit pulses to complete the call. When the call is completed, the access line circuit transmits answer supervision to the switching center.

2.18 The attendant can preempt a ***routine*** call on the access line. This is accomplished by supplying a preempt tone to the called and calling parties for 3 seconds. At the end of this time, a disconnect signal is automatically sent to the switching center. The line circuit then reseizes the line to initiate the ***precedence*** call.

2.19 The switching center can preempt any call which has a lower order of precedence than the call to be established. A preempt signal is transmitted to the access signal circuit and warning tone is supplied to the access line circuit for 3 seconds. The access line circuit then disconnects the PBX party if it is off-hook at the end of 3 seconds. An on-hook signal is transmitted to the switching center at the end of 3 seconds or when the PBX party goes on-hook, whichever occurs first. (Attendant-placed ***precedence*** calls cannot be preempted until the attendant removes the cord plug from the PRECEDENCE jack.)

EQUIPMENT ELEMENTS

Manual PBX Access Line Circuits

2.20 Three PBX access line circuits have been designed for manual PBX use. Although all three provide the same features, the different circuits are required because of fundamental differences in the manual PBXs. Normally each line circuit has two jack appearances on the PBX switchboard. The first jack, designated TALK, is used for the majority of connections. The other jack is designated NIGHT & ROTARY and is used for night and through-dial connections or when it is necessary to use a rotary dial in calling the switching center. If the PBX is cordless, keys take the place of jacks used on a cord-type PBX. The key units are a trunk key and an extension key. One or two lamps are used at each appearance of the access line circuit. A line lamp indicates an incoming call requiring attention while a busy lamp, if used, lights when the circuit is in use.

2.21 The components which make up the manual PBX access line circuits are mounted on 4- by 23-inch mounting plates for installation on relay racks.

Dial-Repeating PBX Access Line Circuits Terminating on a PBX With Associated Switchboard

2.22 The dial-repeating PBX access line circuit provides two jack appearances at the switchboard. These appearances are designated ROUTINE and PRECEDENCE. In addition, line and busy lamps are provided for each access line appearance.

Dial-Repeating PBX Access Line Circuits Terminating on the 812A PBX Associated With the AUTOVON Interconnection Circuit and the 155A6E-03L Attendant Console

2.23 All AUTOVON access lines have a console appearance and may be directly accessed by the console attendant. ***Routine*** access lines appear on a single button with an internal line lamp. Precedence trunks appear on two buttons designated Routine (R) and Precedence (P) also having line lamps within the buttons. Both the routine and precedence buttons light on a precedence call. A ***ROUTINE*** key provides access to ***routine*** trunks. It may be located at any position in the console key field except when it is associated with a ***precedence*** capable trunk.

2.24 When a call is preempted by the console attendant, the same condition occurs as described in 2.17 and 2.18.

2.25 The components which make up the dial-type access line circuit are mounted on an 8- by 23-inch mounting plate for installation on relay racks.

3. METHOD OF OPERATION

3.01 To make an outgoing call, the access line circuit is seized by a station behind the PBX or by the attendant. The seizure applies an off-hook signal toward the AUTOVON switching center. When dial tone is received, dial pulses or TOUCH-TONE signals are transmitted to the switching center. When the call is answered at the distant end, answer supervision is transmitted back to the access line.

3.02 Incoming calls seize the access line circuit and pulse the E lead to complete the call. The access line circuit transmits answer supervision to the switching center when the connection is complete and the called party goes off-hook.

Manual PBX Access Line Circuit

3.03 ***Incoming Call (Cord-Type PBX):*** On a ***routine*** call the line lamp lights steadily when the trunk is seized by the 4-wire switching center. On a ***precedence*** call the line lamp follows the ***precedence*** alert rate (approximately 1.6 seconds on, 0.345 seconds off). If the night alarm is on, the audible alarm sounds.

3.04 The switchboard attendant answers the incoming call by inserting a station or answer cord plug into the line jack. This causes the line lamp to extinguish. If a busy lamp is provided, the busy lamp lights until the cord plug is removed from the line jack.

3.05 The cord lamp associated with the cord used to answer the call remains dark. The cord lamp associated with the trunk or calling cord functions in the usual manner.

3.06 When an answered connection is preempted, a preempt tone is placed on the transmission circuit from the switching center and a disconnect supervisory signal (lamp on) appears at the lamp associated with the cord plug inserted into the access line jack. The other half of the cord pair functions in the usual manner. The lamp associated with the cord plug inserted into the station jack lights when the station disconnects. If this cord plug is inserted into a trunk jack or a ringdown tie trunk, the lamp associated with the cord plug inserted into that jack remains dark even though the party on that connection has heard the preempt tone and has disconnected.

3.07 After the attendant disconnects by removing the cord plug from the jack, and if the preemption was undertaken in order to reach the PBX, the new call is connected at the 4-wire switching center and a ***precedence*** alert signal appears on the line lamp.

3.08 ***Outgoing Call (Cord-Type PBX):*** The PBX attendant answers the PBX extension with a station or answer cord. The lamp associated with that cord remains dark. The lamp associated with the trunk or calling cord functions in the usual manner. The attendant inserts the plug of the trunk or calling cord into the PBX access line jack and after hearing dial tone, the attendant, using the TOUCH-TONE dial, dials the desired destination address prefixed by the priority and route digits as required. When the distant-end termination answers, the lamp associated with the trunk or calling cord extinguishes.

3.09 When the distant end disconnects, the lamp associated with the trunk or calling cord lights. The lamp associated with the station line functions in the usual manner. When the attendant removes the plug from the PBX access line jack, an on-hook signal is sent to the switching center. When the plug is removed from the station jack, both cord lamps extinguish. As soon as the attendant places a cord in the PBX access line jack, the associated busy lamp, if provided, lights.

3.10 When an answered call is preempted, functional operation is the same as described in the case of an incoming call.

3.11 If the attendant position is equipped with only a rotary dial, the connection is established as described previously. The attendant must then insert the plug of the trunk or calling cord of another pair into the night/rotary jack and use that cord to dial the address. When dialing is completed, the plug may be removed from the dial jack. Answer supervision is obtained on the cord inserted into the line jack. Supervision is not displayed on the cord plug inserted into the night/rotary jack. This lamp remains extinguished.

3.12 Calls from a central office are answered in the usual manner by the PBX attendant with a trunk or answer cord. Both cord lamps will remain dark. If the call is to be connected into a network (eg, AUTOVON), the associated station or calling cord is inserted into the PBX access line

jack. The lamp associated with this cord lights while the other cord lamp remains extinguished. In order to dial the address using the rotary or TOUCH-TONE dial, it is necessary in this case to use the trunk or calling cord of another cord pair with the plug inserted into the night/rotary jack as described previously.

3.13 ***Night Service:*** When a switchboard is unattended, the operator may connect a PBX station assigned for night service to the network PBX access line. The night and through-dial key of the cord is operated. The plug of the trunk or calling cord is inserted into the night/rotary jack of the PBX access line. The plug of the station or answer cord is inserted into the assigned extension jack. After all night assignments have been made, the switchboard battery cutoff key is operated.

3.14 The assigned station will be able to dial a network connection using either a rotary or TOUCH-TONE dial. On incoming calls the bell at the assigned station has the standard ringing cycle of 2 seconds on, 4 seconds off for ***routine*** calls and about 1.6 seconds on and 0.345 seconds off for ***precedence*** calls.

3.15 ***Cordless PBX Operation:*** The access line features of a cord switchboard are duplicated in most cases on a cordless PBX. A 507-type cordless PBX position has two appearances for the access line circuit: a trunk key and an extension key. Incoming calls from a network such as AUTOVON will appear on the trunk key. A steady lighted lamp is presented for ***routine*** calls, while a flashing lamp indicates ***precedence*** calls. Completion to a station requires operation of the desired key. Completion to a central office trunk requires the operation of the extension appearance of the network access line, the release of the trunk appearance, and the operation of CO trunk key. Network answer and disconnect supervision is received on these calls.

3.16 Outgoing calls to a network from a station use the trunk appearance of the access line. Calls from a central office trunk use the station appearance. Network supervision is received on calls using the station appearance.

Dial-Repeating PBX Access Line Circuits Terminating on a Dial PBX with Associated Switchboard

3.17 ***Routine Incoming Call:*** A ***routine*** call is completed using regular NID to the station. As soon as the trunk is seized at the 4-wire switching center, the off-hook signal (ground on E lead) causes the ***routine*** busy lamp of the switchboard to light. The ***precedence*** busy lamp also lights until the called station answers. Dial pulses (open and closures of E-lead ground) step the incoming selector. In turn, the other switches, including the connector, are actuated to the correct terminals. Pad control status may be indicated to the PBX access line by the selector level. Various standard PBX call progress tones, trunk busy, station audible ringing, etc, will be returned by the switches. When the station answers, an off-hook signal (battery on M lead) will be returned to the 4-wire switching center. If the station disconnects before the switching center, an on-hook signal is returned to the switching center. An on-hook signal (disconnect) from the switching center causes the switches to release. If the station does not go on-hook, it will seize a new line finder and hear dial tone.

3.18 Line circuits that are optioned for PNID do not use straight-forward dial pulsing; instead, every in-dial code is held until the PBX circuit returns an off-hook wink start to the network line switching center. The first digit pulsed in this case is always a ***precedence*** indication which is registered in the PBX line circuit.

3.19 A ***routine*** incoming call for the PBX attendant's listed number is indicated by a steady ***routine*** line lamp. The incoming selector returns a "fall back" signal after the level assigned to the attendant is reached. Digits pulsed after "fall back" are absorbed, delaying the lamp signal. Zero to four digits may be absorbed. Then the ***routine*** line lamp lights steadily. The calling party receives routine audible ringing until the attendant answers.

3.20 When the attendant inserts the station or answer cord plug into the ROUTINE jack, the cord lamp associated with that cord remains extinguished. The lamp associated with the trunk or calling cord functions in the usual manner. If the call is completed to a central office trunk or ringdown tie trunk, the lamp on that cord will operate only on a 200-cycle ringing signal.

3.21 When the switching center disconnects or the station disconnects, the cord lamp associated with that particular circuit lights. The cord lamp associated with the trunk jack does not light on disconnect.

3.22 ***Precedence Incoming Call:*** An incoming ***precedence*** call is routed to the PBX attendant. The ***precedence*** busy lamp and the ***routine*** busy lamp both light as soon as the circuit is seized. As soon as the PBX access line circuit recognizes the approximate 345-millisecond on-hook wink of the ***precedence*** signal, the ***precedence*** lamp lights steadily. The ***precedence*** busy lamp is extinguished when the line lamp is lighted. The attendant answers by inserting the plug of a station or answer cord into the PRECEDENCE jack. The connection is completed as explained in the case of a ***routine*** call.

3.23 If the switching center is arranged to outpulse ***precedence***-marked calls, the ***precedence*** and ***routine*** busy lamps will light as soon as the circuit is seized. An attempt is then made to complete the call as a regular ***routine*** NID call. The transmission path is split in the PBX access line, and ***precedence*** audible ringing is supplied to the calling party from the PBX access line circuit until the call is answered. The PBX station receives the regular ***routine*** ring.

3.24 If the called PBX station is busy or does not answer, the call is automatically transferred to the switchboard attendant after about 12 seconds. The ***precedence*** line lamp lights at a flashing rate of 60 ipm while the ***precedence*** busy lamp is extinquished. The ***routine*** busy lamp remains lighted. The attendant answers and completes the call in the usual manner for ***precedence*** calls. The ***precedence*** busy lamp lights when the attendant answers and the ***routine*** busy lamp remains lighted.

3.25 If a ***routine*** or ***precedence*** call is completed by NID to a PBX station, the call may be transferred to the switchboard attendant by flashing the telephone switchhook. If a ***routine*** call is transferred, the ***routine*** line lamp flashes at 120 ipm. The ***routine*** busy lamp remains lighted and the call is completed in the usual manner. If a ***precedence*** call is transferred, the ***precedence*** line lamp flashes at 120 ipm. The ***precedence*** busy lamp is estinguished while the ***routine*** busy lamp remains lighted. The ***precedence*** busy lamp lights when the attendant answers. The call is completed in the usual manner.

3.26 ***Outgoing Calls:*** Only ***routine*** calls are network-out-dialed from PBX stations. ***Precedence*** calls are always originated by dialing the switchboard attendant. The attendant answers the station with a station or answer cord. The lamp associated with the trunk or calling cord lights. The attendant inserts the plug of the trunk or calling cord into the PBX access line talk jack and after hearing dial tone, dials (TOUCH-TONE) the address, including precedence and route digits as required. Switchboard positions used to initiate ***precedence*** calls must be equipped with 16-button TOUCH-TONE dials.

3.27 Calls received from the public message network that are to be completed over a network (eg, AUTOVON), are answered by the PBX attendant in the usual manner. The attendant then inserts the plug of the station or calling cord into the PRECEDENCE or ROUTINE line jack as appropriate. The lamp associated with this cord now lights. On all except certain 607- and 608-type switchboards, it is necessary for the attendant to use the trunk or calling cord of another pair inserted into the unused PRECEDENCE or ROUTINE line jack to dial (TOUCH-TONE or rotary) the network address. The 607- and 608-type switchboard positions equipped with rotary dials also have to operate using the PRECEDENCE or ROUTINE jack as a dial jack for the calling cord of another pair of cords. However, on positions equipped with TOUCH-TONE dials, it is possible to dial (TOUCH-TONE) over the same cord that was used to complete the connection.

3.28 ***Preempting by the Switching Center:*** When an established connection is preempted by the switching center, a preempt wink signal is sent toward the PBX access line circuit followed by an audible preempt tone. The switching center continues sending tone until an on-hook signal is received from the PBX. The receipt of the preempt signal causes the ***precedence*** busy lamp to light if not already lighted. At the same time a timing sequence of about 3 seconds is started. If the PBX station does not disconnect within 3 seconds, the PBX access line circuit automatically breaks the connection and drops the switch train or gives a disconnect signal to the cord of the PBX attendant handling the calls. When the switching center receives an on-hook signal from the PBX, the new

precedence call is established in the manner described previously.

3.29 When a ***precedence*** call that had been completed by a PBX attendant is preempted, the attendant must remove the plug from the PRECEDENCE jack before an on-hook signal is given to the switching center. When the preempted call is a ***routine*** call that had been completed by the attendant, an on-hook signal is given to the switching center after 3 seconds even though the cord plug is still in the ROUTINE jack.

3.30 ***Preempting by Switchboard Attendant:*** If all PBX access lines are busy and the switchboard attendant is requested to originate a ***precedence*** call, the attendant may preempt an access line which is being used for a ***routine*** call. Only attendants at switchboard positions where the access lines are terminated in both PRECEDENCE and ROUTINE line jacks may preempt an existing call. The attendant inserts the plug of the trunk or calling cord into the PRECEDENCE jack. The ***precedence*** busy lamp must not be lighted before the plug is inserted into the PRECEDENCE jack. The PBX access line will give preempt tone both to the preempted PBX station and to the switching center for about 3 seconds. If the parties have not disconnected by then, the connection is opened in the PBX access line and an on-hook signal is given to the switching center. After the center disconnects, an off-hook signal is given to the switching center from the PBX and the attendant hears dial tone. The new call is completed in the usual manner. If the call being preempted is an incoming call that is still unanswered, the access line must simulate an answer of about 1.1 to 1.5 seconds to cause the switching center to begin timing for a "calling party hold release" (about 500 milliseconds).

Dial-Repeating Access Line Circuits Terminating on the 812A PBX

3.31 All AUTOVON access lines have an appearance on the 155A6E-03L console. ***Routine*** trunks appear on a single button with the line lamp inside the button. ***Precedence*** trunks appear on two buttons, ***routine*** and ***precedence.*** These two buttons also have line lamps included. All outgoing ***precedence*** calls originated from a station behind the PBX must be handled by the console attendant.

3.32 ***Incoming Routine Call***

A routine incoming call for a station will be completed using regular network-in-dialing (RNID). As soon as the trunk is seized at the AUTOVON office, the off-hook signal will cause the (R) button on the console to light. The (P) button will also light until all digits have been received and the called number answers. Various standard PBX call progress tones, trunk busy, station audible ringing, etc, will be returned by the 812 switch. When the station answers, an off-hook signal will be returned to the AUTOVON office, the (R) button at all positions, will remain lighted, and the (P) button will go dark. An on-hook signal from the AUTOVON office or the PBX will release the connection. If the station does not go on-hook, it will be connected to a register and hear dial tone.

3.33 ***Incoming Routine Call to Console Attendant***

A ***routine*** incoming call for the AUTOVON attendant's listed number will start out just as any other ***routine*** call. Both (R) and (P) buttons will light until the attendant answers. (Nonpreemptable access lines will not have a (P) button). The fact that this is a ***routine*** attendant call will be indicated by flashing the lamp under the (R) button. When the attendant answers, the (R) button will flutter and the (P) button will go dark. The corresponding (R) button on a multiple console will go steady. If it is necessary for the attendant to complete this call, she will operate her common Dial Key and key the desired station number into an associated register. The attendant may then release from the connection and the lamp will go steady. The connection will be automatically released when an on-hook signal is received either from the PBX or the AUTOVON office. A ***precedence*** incoming call for the attendant's listed number will proceed just as a routine call except that both the (R) and the (P) buttons will light during the entire call.

3.34 ***Incoming Precedence Call to a Station***

When the AUTOVON office and the PBX access line are arranged for precedence network-in-dialing, the AUTOVON office will prefix the PBX address with a precedence digit. This digit will be used to record a routine or precedence indication in the PBX access line circuit. The (R) and (P) buttons will light as soon as the circuit is seized. An attempt will then be made to complete both (R) and (P) calls through the regular PBX NID switch train. If a routine indication has been recorded,

the call will be completed as explained in 3.32. However, if a precedence indication has been recorded, the transmission path will be split in the AUTOVON access line circuit, and precedence audible ringing will be returned to the calling party from the access line circuit until the call is answered. The PBX station will receive regular PBX ringing. Both the (R) and the (P) buttons will remain lighted steadily for the duration of the call. If the called PBX station is busy or does not answer, a PNID call will be transferred automatically to the console attendant. The lamp under the (P) pickup button will flash. The attendant will answer and take a message or attempt to complete the call as described in 3.33.

3.35 *Incoming Precedence Call—Attendant Handled*

There is an optional mode of operation in the access line circuit which permits all incoming precedence calls to be routed directly to the attendant. As before, the (R) and (P) buttons will light when the access line is seized. As soon as the circuit recognizes the 345 millisecond on-hook wink of the precedence ring, the (P) button will flash. When the attendant answers, the (P) button will flutter. From this point on, the handling of the call will be the same as described for calls to the attendant's listed number (3.33).

3.36 *Outgoing Routine Call*

When a station behind the PBX places an outgoing ***routine*** call, it may be dialed direct. The station user goes off-hook, receives PBX dial tone and dials the AUTOVON access code. The AUTOVON interconnection circuit receives the code signal and determines the call is ***routine.*** The ***routine*** console lamp for the access line lights steadily; the calling party receives dial tone from the AUTOVON switching center and dials the remaining digits to complete the connection. The ***routine*** lamp on the console will remain lighted until the call is completed and an on-hook is returned to the AUTOVON interconnection circuit.

3.37 *Outgoing Precedence Calls*

When a station behind the PBX wishes to make an outgoing ***precedence*** call, the station user goes off-hook, receives PBX dial tone and dials the AUTOVON attendant trunk code. This will cause the lamp under the particular attendant trunk button (AT) to flash. When the attendant answers the call, the lamp under the button will flutter. To establish this ***precedence*** call through the AUTOVON network, the attendant will seize an AUTOVON access line by pressing the (P) button. Operation of this button (or any other pickup button) at this time will automatically place the attendant trunk on hold. This will cause the lamp under the (AT) button to wink. Any time after the attendant has determined that the selected access line is available to initiate an AUTOVON network call, the attendant trunk may be connected to the selected access line by operation of the winking (AT) button. This connection will be made via an auxiliary matrix furnished externally to the 812 PBX. The attendant, upon receiving dial tone from the AUTOVON office, will TOUCH-TONE dial the called station number, prefixed by the precedence digit, into the AUTOVON register. The attendant may then release. Release of the connection will occur upon receipt of a disconnect signal from the AUTOVON office or the PBX station.

3.38 *Preemption by the AUTOVON Center*

When an established connection is preempted by an AUTOVON office, a preempt wink signal will be sent toward the AUTOVON access line circuit followed by an audible preempt notification tone. This tone will continue to be sent until an on-hook signal is received from the PBX. The preempt wink also starts a timing sequence of about 3 seconds. If the PBX station does not disconnect before 3 seconds, the PBX access line circuit will automatically release the connection, whether it was established directly through the 812 PBX or by the attendant through the auxiliary switch matrix. An on-hook signal must be received from the PBX before the AUTOVON office connects any new call to the PBX access line. When the AUTOVON office receives this on-hook signal from the PBX, a new ***precedence*** call may be established as in 3.34.

3.39 *Preemption by Console Attendant*

If all PBX access lines are busy and the console attendant is requested to originate a ***precedence*** call, the attendant may preempt a ***routine*** call in progress on a preempt capable access line. On a ***routine*** call, only the (R) button will light. The attendant may operate the (P) button for preemption. The PBX access line will then give preempt tone to both the PBX station and the AUTOVON office

for three seconds. During this interval, the (P) lamp in the console will flutter-flash (720 ipm-60 ipm). If the parties have not disconnected by then, the connection will be opened in the PBX access line circuit and an on-hook signal will be given to the AUTOVON office. After the AUTOVON office disconnects toward the PBX, an off-hook signal is given to the AUTOVON office from the PBX. The attendant will hear dial tone, and the console lamp will change from flutter-flash to flutter (720 ipm). The attendant can then proceed with setting up the call. If the call being preempted is an incoming call that is still unanswered, the access line will simulate an answer of about 1.5 seconds to begin timing for a "calling party hold release." As soon as the attendant operates the (P) button, it will flutter. The (R) button will remain lighted until the call is terminated. If all access lines are busy with ***precedence*** calls, the attendant can enter one of these connections by operating the (P) button. If the ***precedence*** of the new call is higher than that of one of the established calls, the attendant will ask the parties to disconnect. The new call can then be established on this circuit when it becomes idle.

3.40 ***Call Transfer***

The 812A PBX is arranged optionally for station dialed call transfer and for attendant call transfer. To initiate call transfer, a PBX station user must operate his switchhook once. In the case of dial call transfer, dial tone will be returned to the station, and the user may dial the number of the station to which he wishes to transfer the call. In the case of attendant call transfer, the switchhook flash will be registered at the console. The attendant will answer and transfer the call. For most efficient and economical operation, transfer of all AUTOVON calls will be indicated in the AUTOVON portion of the console and handled via the attendant. However, either call transfer option can be exercised for all the regular (non-AUTOVON) traffic on the 812 PBX. Thus, if desired, the dial transfer option may be exercised for all stations. However, when the station user operates his switchhook to transfer an AUTOVON call, he will not get dial tone but will be connected to the attendant via appearances in the AUTOVON portion of the console.

3.41 A description of the method of operation for the 812A AUTOVON attendant console is detailed in 480-801-300. The initial lineup and maintenance tests for AUTOVON access lines terminating on the 812A PBX are covered in 480-801-500.