

*Tech Support #*

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**PERCEPTION**

**FEATURE DESCRIPTIONS MANUAL**

*1-719-395-9302*

**SYSTEM**

*NA-1 20518 June 73447*

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# P E R C E P T I O N

I/II  
e&ex

## *System Features*

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**DESCRIPTION** This feature allows a station access to any one of the following: one external paging zone, all external paging zones, one internal paging group, the expanded internal paging group, or both the expanded internal paging group and all external paging zones.

**OPERATION** A paging access code is dialed in order to connect the station user directly to the paging system or the electronic/digital telephone speakers.

The attendant console's **PAGE** button can be assigned to access either the external zone(s) or internal zone(s).

**To Page a Single External Zone:**

1. Lift the handset.
  - You will hear dial tone.
2. Press the **PEXT** button, or dial the access code **(1 5 3)** \_\_\_\_\_.
  - You will now be connected to the External Page zone.
3. Dial the desired paging zone number (0 ~ 4).

**Paging Access Codes**

	Code	Location
ZONE 1	_____	_____
ZONE 2	_____	_____
ZONE 3	_____	_____
ZONE 4	_____	_____
ZONE 5	_____	_____

4. Announce your page.
  - Speak slowly and distinctly, and repeat your message.

**To Page All External Zones:**

1. Lift the handset.
  - You will hear dial tone.
- 2A. Dial the access code **(1 5 4)** \_\_\_\_\_.
  - You will be connected to the External All-Page zone.... or ...
- 2B. To page the Expanded Internal Paging Group in addition to all External Paging Zones, dial \_\_\_\_\_.
  - You will be connected to the Expanded Internal Paging group and the External Paging zone.
3. Announce your page.
  - Speak slowly and distinctly, and repeat your message.

**To Page a Single Internal Group:**

1. Lift the handset.
  - You will hear dial tone.
2. Press the **PINT** button, or dial the access code **(1 5 1)** \_\_\_\_\_.
  - You will be connected to the Internal Paging zone.

# Access to Paging

3. Dial the desired paging group number (2 ~ 17).
4. Announce your page.
  - Speak slowly and distinctly, and repeat your message.

## To Page All Internal Groups:

1. Lift the handset.
  - You will hear dial tone.
- 2A. Press the **PINT** button and dial **0** (the Internal All Paging Group number).
  - You will now be connected to the Internal All Paging group.
  - ... or ...
- 2B. Dial the access code **(1 5 2)** \_\_\_\_\_.
  - You will be connected to the Internal All Paging zone.
  - ... or ...
- 2C. To page all External Paging Zones in addition to the Expanded Internal Paging Group, dial \_\_\_\_\_.
  - You will be connected to all the External Paging zones and the Expanded Internal Paging group.
3. Announce your page.
  - Speak slowly and distinctly, and repeat your message.

## To Page All Internal Groups and All External Zones:

1. Lift the handset.
  - You will hear dial tone.
2. Dial the All Page access code \_\_\_\_\_. (This access code is defined in the DSYS Data Block.)
3. Hang up.

## PROGRAMMING

1. Paging Zone access codes are assigned in the DACD Data Block.
2. The All Page access code is assigned in the DSYS Data Block.
3. The console's **PAGE** button is assigned in the DATT Data Block.
4. The DEKT Data Block is where EKT/DKT stations are assigned to Internal Paging groups.

## NOTES:

1. The External Paging control circuits are located on the NPRU PCB, which is part of the system's standard equipment.
2. Station access to any or all Paging zones is determined by the station's designated Class of Service.
3. DID, CCSA and TIE trunks cannot access Paging.
4. Paging cannot be accessed via Remote Access to Services (DISA).
5. With software versions prior to **D.02**, PERCEPTION provides only the five External Paging zones.
6. The attendant console preempts any station performing a page.

## RELATED FEATURES

1. Class of Service Restrictions (System).
2. Meet-Me Page (Station).

## BENEFITS

Access to paging is convenient to the user since it permits the utilization of a system-incorporated paging unit and eliminates the need for external microphones. Additionally, the feature's characteristic access-flexibility allows a station to access any or all Paging zones and groups, and thus eliminates the need for dedicated Paging positions.

External Zone Paging enables the customer to make announcements over external loudspeakers that can be heard over a wide area. This feature is especially applicable to large, open, or noisy environments such as automobile dealerships, warehouses, or workshops. It can also be used in conjunction with Internal Group Paging, to provide the end-user with a Paging scheme customized to his or her unique requirements.

In Internal Group Paging, pages over the speakers in electronic/digital telephones are more private than zone pages. They can be made to specific groups of station users rather than physical locations. This feature is especially applicable to office environments, professional business such as law or accounting offices, and other applications in which low noise levels must be maintained. It can be used in conjunction with External Zone Paging, to provide the end-user with a Paging scheme customized to his or her unique requirements.

# Account Codes: Forced, Verifiable, Voluntary

## DESCRIPTION

Account codes enable the end-user to track both incoming and outgoing calls and then bill, allocate costs, or otherwise classify calls by type or purpose. The account code is entered either during a call, or immediately following it, and then included in the Station Message Detail Recording (SMDR) information for the call. The code can be printed out as part of an SMDR call record or, if a call accounting system is connected to PERCEPTION, manipulated as part of a customized call report. In this last case, calls can be sorted and analyzed using the entered account code as a primary variable. Typical uses of account codes include assigning billable telephone time to clients for professional services (attorneys, accountants, etc.); allocating expenses to internal cost centers for various types of business operations; classifying the nature or subject of a call for service or sales organizations.

PERCEPTION gives the end-user the ability to choose between three types of account code entry:

1. **Voluntary entry** enables each telephone user to enter the codes when he or she deems it necessary on either incoming or outgoing calls.
2. **Forced entry** requires the telephone user to enter a code when making certain types of outgoing calls. (Account code entry cannot be forced on any incoming calls.) Unless the entered code is also **verified**, once the appropriate number of digits has been entered, the call will automatically be completed. Forced entry can be applied to all calls, or to toll calls only. Toll calls apply to the following dialing sequence:
  - Dial **1** plus 10 digits.
  - Dial **1** plus 7 digits.
  - Dial **N 0/1 X** plus 7 digits.
3. **Verified entry** enables any code entered on an outgoing call (either Forced or Voluntary) to be **verified** against a list of valid account codes programmed in the PERCEPTION data base. PERCEPTION automatically completes the call if the entered code is valid. If the entered code is not valid, PERCEPTION provides reorder tone to the caller and does not complete the call. If account code entry is forced and verifiable, PERCEPTION gives the caller three opportunities to enter a valid code before disconnecting the call. If account code entry is voluntary and verifiable, PERCEPTION will continue to provide reorder tone until the caller enters a valid code or overrides code entry.

Forced account codes, for all calls and/or forced toll calls only, and verified account codes can be combined so that a station user will be required to enter just one code. The code entered serves as both a forced and verifiable code. A station user gets three opportunities to enter a correct code before overflow tone is received.

Forced and Verified account code entry is controlled by a station's Class of Service, and can be separately assigned for either all outgoing calls or for toll calls only.

# Account Codes: Forced, Verifiable, Voluntary

Account codes can be from 1 to 12 digits in length, and PERCEPTION will only accept codes of the programmed length. There is no limit to the number of nonverified codes that can be entered. (Obviously, code length determines how many individual codes can be used—100 codes for a two-digit length, 1000 for three digits, etc.) Because verifiable codes utilize space in system memory, there are limits to the number of codes that can be verified based on digit length. The following matrix shows the maximum number of verifiable codes for each possible code length.

VERIFIABLE ACCOUNT CODE MAXIMUMS								
DIGITS	1	2	3	4	5, 6	7, 8	9, 10	11, 12
CODES	10	100	1000	1500	1000	750	600	500

## OPERATION

### To Record a Voluntary Account Number Before Dialing a Call:

1. Lift the handset.
  - You will hear dial tone.
2. Press the **CRG** button, or dial the access code (**#9**) \_\_\_\_\_.
3. Dial the account number on the dialpad (1 ~ 12 digits).
  - When the number is completed, you will receive recall dial tone.
4. Dial the telephone number in the usual manner.

### To Record a Voluntary Account Number During a Call (Incoming or Outgoing) Without a **CRG** Button:

At any time before disconnect ...

1. Ask your party to wait.
2. Press the **CONF** button.
  - Your connection will be placed on hold, and you will hear recall dial tone.
3. Dial the access code **#9** \_\_\_\_\_.
  - You will hear recall dial tone.
4. Dial the account number (1 ~ 12 digits).
  - When the number is completed, you will hear recall dial tone again.
5. Press the appropriate **DN** button.
  - You will be reconnected to your party.
6. Resume your conversation.

### To Record a Voluntary Account Number During a Call (Incoming or Outgoing) With a **CRG** Button:

At any time before disconnect ...

1. Ask your party to wait.

# Account Codes: Forced, Verifiable, Voluntary

2. Press the **CRG** button.
  - The connection will be placed on hold, the DN LED indicates the On-hold status, and the CRG LED will light.
3. Dial the account number (1 ~ 12 digits).
  - When the number is completed, the call will automatically be reconnected.
4. Resume your conversation.

## To Record a Forced, or a Forced and Verifiable Account Code (Direct Trunk Access or Least Cost Routing):

1. Access a CO line (by dialing the DTA or LCR access code).
  - You will hear dial tone.
2. Dial the distant directory number.
  - You will hear recall dial tone.
3. Using the dialpad, dial the 1- ~ 12-digit account code (determined in the DMDR Program).
  - The account code is saved to output to SMDR.
  - The system stores dialed directory number to auto-dial queue, and the trunk call is made.

*NOTE: These Forced and Forced/Verifiable Account Codes can be applicable to either all calls or toll calls only (programming option).*

## To Record a Verifiable Account Code Before Dialing a Call:

1. Lift the handset.
  - You will hear dial tone.
2. Press the **CRG** button.
3. Dial the 1- ~ 12-digit account code on the dialpad.
  - You will hear recall dial tone.
4. Dial the Direct Trunk access code and the desired telephone number.
  - The trunk call is made.

## To Record a Verifiable Account Code During a Call (Incoming or Outgoing) With a **CRG** Button:

At any time during conversation ...

1. Ask your party to wait.
2. Press the **CRG** button.
  - You will hear recall dial tone.
  - The connection will be placed on hold, the DN LED indicates the On-hold status, and the CRG LED will light.
3. Dial the 1- ~ 12-digit account code.
  - The system will store the account code to output to SMDR, and the call will automatically be reconnected.
4. Resume the conversation.

# Account Codes: Forced, Verifiable, Voluntary

## To Record a Verifiable Account Code During a Call (Incoming or Outgoing) Without a **CRG** Button:

At any time before disconnect ...

1. Ask your party to wait, then press the **CONF/TRNS** button.
  - You will hear recall dial tone.
2. Dial the CRG access code.
  - Your connection will be placed on hold, and you will hear recall dial tone.
3. Dial the 1- ~ 12-digit account code.
  - The system will store the account code to output to SMDR.
4. Resume your conversation.

## To Record a Verifiable Account Code After a Call Is Completed:

This procedure applies when a station user forgets to input an account code either before, or during a call. The account code can still be entered after the call is completed, provided it is done prior to disconnecting the trunk.

After the call is completed and prior to the station user hanging up, the system automatically sets the ACT timer. Before the ACT timer expires ...

1. Press the **CRG** button or dial the CRG access code.
  - You will hear recall dial tone.
2. Dial the 1- ~ 12-digit account code.
  - The system sets the account code, the SMDR is printed out, and the line locks out.
3. Hang up.

## PROGRAMMING

This feature is available only with **D.04** and later versions of software.

1. Forced and/or verifiable account codes are assigned to individual Classes of Service in the Class of Service (DCOS) Data Block. (No programming is required to permit stations to enter account codes on a voluntary basis.) A specific Class of Service is assigned to each station in either the Electronic/Digital Telephone (DEKT) or the Standard Telephone (DSTT) Data Block.
2. Account codes that PERCEPTION will verify are entered in the Verifiable Account Code (DVAC) Data Block. Verifiable account codes can be entered from the maintenance terminal (on-site or remotely), an attendant console, or an attendant-position electronic/digital telephone.
3. Account code length (number of digits) is assigned in the Station Message Detail Recording (SMDR) Data Block. All valid account codes must be of this programmed number of digits in length. It does not matter what type of account codes are being used, a value **MUST** be entered in this data block for the feature to be enabled.

# *Account Codes: Forced, Verifiable, Voluntary*

**SYSTEM FEATURES**

**PERCEPTION**

## **RELATED FEATURES**

1. Station Message Detail Recording (System).
2. Class of Service (System).
3. Toll Restriction/Class of Service Override Code (System).

## **BENEFITS**

Account codes give the end-user additional control over the operation of the telephone system. They enable additional revenue to be generated by accurately tracking billable telephone time on client calls. They also permit internal costs to be allocated among in-house cost centers for telephone expenses. And, they are flexible enough to allow the end-user to manipulate them in ways that serve the unique requirements of his or her application requirements.

# Alphanumeric Trunk ID

PERCEPTION

SYSTEM FEATURES

**DESCRIPTION** This feature enables the end-user to assign an alphanumeric name of up to 16 characters to each Central Office trunk connected to PERCEPTION. This name is displayed on the lower row of an electronic or digital telephone display while an incoming Central Office trunk call is ringing, and for ten seconds after it has been answered. If the call is forwarded, hunts, or is transferred, the name display follows the call to its final destination.

The name can be used to identify a company or person in an executive-suite application, or a product or sales promotion in an Automatic Call Distribution (ACD) or inbound call-center operation, or any other information important to the end-user. It provides the station user with important information about the call before it is actually answered.

**OPERATION** This feature operates automatically once it is programmed.

**PROGRAMMING** This feature is available only with **D.04** and later versions of software. Each Central Office trunk (Incoming, Outgoing, Bothway, WATS, and Foreign Exchange) can be programmed with an alphanumeric ID of up to 16 characters in the Trunk (DTRK) Data Block.

*NOTE: An alphanumeric Trunk ID **CANNOT** be programmed for a DID or TIE trunk, or any trunk assigned as a private line. Alphanumeric Trunk ID can be assigned to Central Office trunks routed into PERCEPTION via T1 trunks.*

**RELATED FEATURES** Automatic Call Distribution (Automatic Call Distribution Features).

**BENEFITS** Alphanumeric Trunk ID provides station users with important information about an incoming trunk call before it is answered, enabling them to process the call more efficiently and more effectively. It is an especially important feature in Executive Suite and Automatic Call Distribution applications.

# Call Forward Busy (System/DID)

**DESCRIPTION** Call Forward Busy (System/DID) is used to automatically route incoming DID or CCSA calls, which encounter a busy tone at a station's DID or CCSA directory number, to the attendant operator **ONLY**.

**OPERATION** **To Use Call Forward Busy (System/DID):**

- 1A. Press the **CFSB** button.
  - The CFSB LED will flash.
- 2A. Dial **0** (the only number to which calls can be forwarded).
- 3A. Press the **CFSB** button.
  - The CFSB LED will light steadily.
  - ... or ...
- 1B. Lift the handset.
  - You will hear dial tone.
- 2B. Dial the access code **(# 1 3)** \_\_\_\_\_.
  - You will hear recall dial tone.
- 3B. Dial **0**.
- 4B. Dial **#**.
  - You will hear dial tone.
- 5B. Hang up.

**PROGRAMMING** The Call Forward Busy (System/DID) feature access code is programmed in the DACD Data Block.

**NOTES:**

1. *If Call Forward Busy (System/DID) is restricted by a station's Class of Service, then either the station will receive overflow tone (if the station utilizes a Call Forward Busy (System/DID) feature access code), or the station's CFSB LED will not light (if the station utilizes a **CFSB** button).*
2. *If an attendant dials the Call Forward cancel code, all Call Forward information which is currently registered within the system, will be canceled.*
3. *Calls may originate from stations which have forwarded their incoming calls to the attendant.*
4. *If Call Forward Busy (System/DID) is registered, incoming calls to the DID/CCSA DN will forward according to the registered forwarding information. Incoming calls to other DNs, which appear on a telephone, will ring normally.*
5. *Only one type of Call Forwarding may be activated at one time. The last-registered Call Forward entry overrides all previously-assigned entries.*
6. *If any type of Call Forwarding and Station Hunting are set on a station simultaneously, Call Forwarding takes precedence.*
7. *CFSB-type forwarding can only be set to forward to the attendant operator (0).*

# Call Forward Busy (System/DID)

PERCEPTION

SYSTEM FEATURES

8. If CFSB is set on a station, and then another type of call forward (i.e., CFD) is set at that station, CFSB is temporarily deactivated. Once the other call forward is canceled, CFSB becomes reactivated again.

## RELATED FEATURES

1. Class of Service Restrictions (System).
2. Call Forward All Calls (Station).
3. Call Forward Busy/No Answer (Station).
4. Call Forward Busy (Station).
5. Call Forward No Answer (Station).
6. Call Forward to Trunk (Station).
7. Station Hunting (Station).
8. Saved Call Forward and Message Waiting (System).
9. Call Forward Busy/No Answer (System/DID) (System).

## BENEFITS

This feature allows a station user to forward incoming DID calls to the attendant while forwarding other types of calls to a different location, when his or her extension is busy. This flexibility increases the end-user's telephone productivity.

# Call Forward Busy/No Answer (System/DID)

**DESCRIPTION** Call Forward Busy/No Answer (System/DID) is used to automatically route incoming DID or CCSA calls at a station's DID or CCSA directory number, which encounter either a busy tone or are not answered within a predetermined amount of time, to the attendant operator **ONLY**.

- OPERATION** **To Use Call Forward Busy/No Answer (System/DID):**
- 1A. Press the **CFSN** button.
    - The CFSN LED will flash.
  - 2A. Dial **0** (the only number to which calls can be forwarded).
  - 3A. Press the **CFSN** button.
    - The CFSN LED will light steadily.
    - ... or ...
  - 1B. Lift the handset.
    - You will hear dial tone.
  - 2B. Dial the access code (**# 1 4**) \_\_\_\_\_.
    - You will hear recall dial tone.
  - 3B. Dial **0**.
  - 4B. Dial **#**.
    - You will hear dial tone.
  - 5B. Hang up.

**PROGRAMMING** The Call Forward Busy/No Answer feature access code is programmed in the DACD Data Block.

**NOTES:**

1. If Call Forward Busy/No Answer (System/DID) is restricted by a station's Class of Service, then either the station will receive overflow tone (if the station utilizes a Call Forward Busy/No Answer (System/DID) feature access code), or the station's CFSN LED will not light (if the station utilizes a **CFSN** button).
2. If an attendant dials the Call Forward cancellation code, all Call Forward information which is currently registered within the system, will be canceled.
3. Calls may originate from stations which have forwarded their incoming calls to the attendant.
4. If Call Forward Busy/No Answer (System/DID) is registered, incoming calls to the station's DID/CCSA DN will forward according to the registered forwarding information. Incoming calls to other DNs, which appear on a telephone, will ring normally.
5. Only one type of Call Forward may be activated at one time. The last-registered Call Forward entry overrides all previously-assigned entries.
6. If any type of Call Forward and Station Hunting are set on a station simultaneously, Call Forward takes precedence.
7. CFSN-type forwarding can only be set to forward to the attendant operator (0).

# Call Forward Busy/No Answer (System/DID)

PERCEPTION

SYSTEM FEATURES

8. If CFSN is set on a station, and then another type of call forward (i.e., CFD) is set at that station, CFSN is temporarily deactivated. Once the other call forward is canceled, CFSN becomes reactivated again.

## RELATED FEATURES

1. Class of Service Restrictions (System).
2. Call Forward All Calls (Station).
3. Call Forward Busy/No Answer (Station).
4. Call Forward Busy (Station).
5. Call Forward No Answer (Station).
6. Call Forward to Trunk (Station).
7. Station Hunting (Station).
8. Saved Call Forward and Message Waiting (System).
9. Call Forward Busy (System/DID) (System).

## BENEFITS

This feature allows a station user to forward incoming DID calls to the attendant while forwarding other types of calls to a different location, when his or her extension is either busy or there is no answer. This flexibility increases the end-user's telephone productivity.

**DESCRIPTION** This feature enables callers to reserve access to a busy station or trunk. One short warning tone from a station's speaker advises the user that either the attendant or another station has camped on an outside call to that station. When this occurs, the user has two choices:

1. Ignore the call; it will return to either the station or the attendant, whoever sent the call.
2. Terminate the existing call and accept the new one.

**NOTES:**

1. *When Camp-on is used on a standard telephone, the short warning tone will be heard through the handset. The party on the original connection does not hear this warning tone.*
2. *Call Waiting and Camp-on are mutually exclusive features. All stations come equipped with Call Waiting (CWT). If CWT is denied in the station's Class of Service, then the station has Camp-on. Camp-on cannot be denied in a station's Class of Service.*

**OPERATION** **To Accept the Camp-on Call:**

1. Complete the original call and hang up.
  - The telephone will ring.
  - The DN led will flash.
2. Answer the new call.

**PROGRAMMING** Camp-on is assigned to a station only when Call Waiting has been denied to that station in its Class of Service Data Block (DCOS).

The warning tone for this feature is assigned in the DEKT and/or DSTT Data Blocks.

**RELATED FEATURES** Call Waiting (Station).

**BENEFITS** Camp-on enhances station-user efficiency by eliminating the need for constantly redialing a busy station. Station users waste less time because the system performs the operations for them.

# Class of Service Restrictions

PERCEPTION

SYSTEM FEATURES

## DESCRIPTION

PERCEPTION provides a maximum of 16 (0 ~ 15) Classes of Service (COS). A specific class is assigned to each station and particular trunks in order to determine its customized access to features and outgoing trunks.

## OPERATION

1. A station or trunk can be allowed or denied access to a particular feature through the assignment of a particular COS.
2. Each COS is defined by the allowance or denial of the following features:
  - Account Codes (Forced and Verifiable)
  - ACD/MIS Call Pick-up
  - All types of paging
  - Attendant Control Override
  - Automatic Callback
  - Call Forward-(All Calls, Busy, No Answer, Busy/No Answer, Busy/No Answer DID, and Busy-DID)
  - Call Pickup-(Directed, Group)
  - Call Waiting
  - Data Group 0 ~ 15 (Data Security)
  - Direct Trunk Access
  - Least Cost Routing Class 1 ~ 3
  - Lodging/Health Care
  - Off-hook Call Announce
  - Override
  - Paging Zones
  - Remote Log In
  - Speed Dial-System
  - Supervisor Monitor Tone and LCD Display
  - Trunk Group 0 ~ 15

## PROGRAMMING

The Class of Service (DCOS) Data Block defines the 16 Classes of Service. A COS is then assigned to each station by entering the relevant class number (0 ~ 15) in response to the COS prompt in the DSTT, DEKT and DTGP (TIE, CCSA, and DID trunk groups only) Data Blocks.

## RELATED FEATURES

1. Access To Paging (System).
2. Intercept (System).
3. Toll Restriction (System).
4. Call Forward-All Calls (Station).
5. Call Pickup-Directed (Station).
6. Call Pickup-Group (Station).
7. Call Waiting (Station).
8. Conference (Station).
9. Direct Outward Dialing (Station).
10. Trunk Group Access Control (Attendant).
11. Data Security Groups (Data).
12. Forced Account Codes (Station).

### NOTES:

1. All features are allowed to a COS by default (with the exception of HRM and OCA). The customization of each COS must be achieved through the denial of specific features.

# Class of Service Restrictions

SYSTEM FEATURES

PERCEPTION

- In Lodging/Health Care systems, the code HRM must be entered in the COS of guest-room stations. This activates the Lodging/Health Care features for those stations. While ordinarily, the entrance of a feature access code in the DCOS Data Block indicates a feature denial, in this case, the code entrance signifies an allowance.*

## **BENEFITS**

Class of Service assignment determines which features may be accessed by which stations, enabling the station user to control how the system is used. It can be used with Toll Restriction to further customized individual stations' outgoing call capabilities.

# Common Control Switching Arrangement Access

PERCEPTION

SYSTEM FEATURES

**DESCRIPTION** PERCEPTION can access a Common Control Switching Arrangement (CCSA) network for both network inward dialing to the system, and direct outward dialing to the CCSA network. Additionally, many features similar to those provided on the public exchange network, are provided within the CCSA network.

**OPERATION**

1. The interface for a CCSA line is usually an E & M TIE trunk circuit (NEMU PCB).
2. Incoming and outgoing call operation is the same as that for a TIE trunk.

**PROGRAMMING** All CCSA trunk parameters are specified within the DTGP and DTRK Data Blocks.

*NOTE: Number Translation and/or digit absorption can be provided on incoming dialed numbers from TIE/CCSA and DID trunks. This process is controlled by the OAB, IAB, TRN1, and TRN2 prompts in the DTGP Data Block as follows:*

**OAB** (Outgoing Absorb Digits)—Identifies the specific digits which are to be ignored for purposes of Toll Restriction. While these digits will still be outpulsed, the system will not acknowledge them as the first digits of a destination number.

*TO PROGRAM: Enter either the specific digits which are to be absorbed or NONE. A maximum of two digits can be absorbed by the system.*

**IAB** (Incoming Absorb Digits)—Defines the number of digits that are to be stripped off an incoming dialed number from a TIE/CCSA or DID trunk.

*TO PROGRAM: Enter either the number of digits to be absorbed (maximum of two digits), or NONE.*

**TRN1** (Translated Number 1)—Defines the absorbed digit (IAB) which is to be translated into another digit(s). (See examples.)

*TO PROGRAM: Enter either X # Y or X # YY.*

*X = The digit which is to be translated into another digit or digits. In a case where two digits are absorbed, only the second digit will be translated.*

*Y or YY = The translated digit or digits which are to take the place of the initially-absorbed digit (X).*

**TRN2** (Translated Number 2)—Defines the absorbed digit (IAB) which is to be translated into another digit(s). This parameter is the same as the TRN1 entry.

*TO PROGRAM: Enter either X # Y or X # YY.*

**EXAMPLE A:**

*IAB = 1*

*TRN1 = 9#2*

*TRN2 = 8#3*

*Three Digits Received from CO: 900 ~ 999; 800 ~ 819*

*To Ring Three-digit DNs: 200 ~ 299; 300 ~ 319*

# Common Control Switching Arrangement Access

SYSTEM FEATURES

PERCEPTION

## EXAMPLE B:

*IAB = 2*

*TRN1 = 9#2*

*TRN2 = 8#3*

*Four Digits Received from CO: 5900 ~ 5999; 5800 ~ 5819*

*To Ring Three-digit DNs: 200 ~ 299; 300 ~ 319*

## EXAMPLE C:

*IAB = 2*

*TRN1 = 9#21*

*TRN2 = 8#32*

*Four Digits Received from CO: 5900 ~ 5990; 5800 ~ 5890*

*To Ring Four-digit DNs: 2100 ~ 2199; 3200 ~ 3299*

## RELATED FEATURES

1. Direct Inward Dialing (System).
2. Multiple Trunk Groups (System).
3. TIE Trunks (System).
4. Call Forward-Busy (Station).
5. Call Forward-No Answer (Station).
6. Direct Outward Dialing (Station).

## BENEFITS

Access to Common Control Switching Arrangement enables a PERCEPTION user to reduce telecom costs by incorporating the system into a CCSA-type private network.

# Consoleless Operation

PERCEPTION

SYSTEM FEATURES

**DESCRIPTION** PERCEPTION can be operated without an attendant console. In this situation, incoming trunk calls can be routed to individual stations, attendant-position electronic/digital telephones, or the UNA device. PERCEPTION will operate in the Night Service mode in a consoleless operation, unless there is at least one Attendant-Position EKT/DKT (AEKT/ADKT) with a **SYS** button to place the system in the Day mode.

**OPERATION** Whenever the system is powered up and a console is not used, PERCEPTION will automatically assume a consoleless mode, which is identical to Night mode (see Night Service). In this mode of operation, each trunk rings at the station assigned as the night number (NIT prompt) in the DTRK Data Block, unless the system is equipped with an Attendant-Position EKT/DKT with a **SYS** button, which is programmed in the DEKT and DSD2 Data Blocks.

**PROGRAMMING** See Night Service.

**RELATED FEATURES**

1. Attendant-Position Electronic/Digital Telephones (DSS/DDSS).
2. Direct-in Lines (System).
3. Night Service (System).

**BENEFITS** Consoleless operation can reduce costs, both by allowing an attendant to perform other duties during slow periods and by eliminating the need to employ an attendant on a daily basis.

In tenant systems, executive suites, and distributed call processing applications, there is a need for several answering positions, each controlling specific trunks, but not requiring all the power of an attendant console. A PERCEPTION, in consoleless operation utilizing 20-button LCD electronic/digital telephone (with or without DSS/DDSS consoles) or other types of telephones as answering positions, satisfies this requirement perfectly.

This feature gives end-user a great deal of flexibility to configure the call answering/processing that best fits his or her unique application requirements.

# Data Transmission-Voice Band

## SYSTEM FEATURES

## PERCEPTION

**DESCRIPTION** PERCEPTION is suitable for voice-band data transmission (via modem), and is compatible with conventional modems operating at transmission rates of up to 9600 bps.

**OPERATION** A standard telephone interface circuit from an NSTU PCB is compatible with conventional modems.

**PROGRAMMING** Any station which is to activate data transmission should be programmed **not** to receive warning tone. This will prevent the transmission interruption and data scrambling which could occur if warning tone were to sound during a data transferring session. Warning tone is denied by entering **N** in the WTA entry of the DEKT and DSTT Data Blocks. Denying warning tone also denies features which normally generate warning tone (Station Verification, Call Waiting, etc.) and the non-use of Camp-on indicator tones (Camp-on is still operable).

**RELATED FEATURES** Data Switching (all Features).

**BENEFITS** The ability of PERCEPTION to interface modems to standard station ports gives the station user an inexpensive method for low-speed transmission of data, both through the system and over the telephone network.

# Dialed Number Identification Service (DNIS)

## DESCRIPTION

The Dialed Number Identification Service (DNIS) feature enables a PERCEPTION user to take advantage of the DNIS capability offered by all major long distance services. DNIS will interface with PERCEPTION at an E&M TIE line on either an NEMU or NDTU PCB, or at a DID port on either an NLSU or NDTU PCB. The system will be programmed by trunk group (in the DTGP Data Block) to treat received digits on each E&M TIE line and DID port as either a TIE/DID trunk call, or a DNIS call. If TIE or DID trunk operation is programmed, no changes from current operation are required. If DNIS is programmed, the system will route the incoming calls (based on the digits received; one to five digits permitted) to an internal directory number, an ACD group pilot number, a distributed hunting group, a voice mail port, the attendant console (UNA in Night service), or UNA in either Day or Night service. DNIS calls can only be routed to a single destination. Call preceded by invalid DNIS digits will be routed to Intercept 2.

The end-user will also be able to program an alphanumeric identifier, of up to 16 characters, that will be displayed on LCD telephones when the DNIS call is routed to it. If a DNIS call hunts, or is transferred or forwarded, the DNIS display will follow the call and be displayed on the final destination. If the DNIS call is routed to a pooled DIL destination, the display will be presented on each telephone on which the call rings.

PERCEPTION will send a message to the MIS processor for each DNIS call routed into an ACD group, so that this information can be included in the relevant agent and group reports. The alphanumeric designation for each DNIS number will be part of the download from PERCEPTION to the MIS processor. For non-ACD calls, the DNIS number will be included in the SMDR information (in characters 35 ~ 39 on the printout field).

## OPERATION

An incoming DNIS call is basically routed in the following manner:

1. PERCEPTION compares the received number to the table in the DNIS Data Block.
  - If the number is not entered in the data block, the call is routed to Intercept 2.
2. If the programmed destination is the pilot number of an ACD group, the call enters the group queue and is processed as a normal ACD call.
  - The programmed display is shown at the answering agent's telephone.
  - The DNIS number is included in the information sent to the MIS processor for the call and the agent.
3. If the programmed destination is the master number of a distributed hunt group, the call will be routed to the station in the group that should receive the next call in the normal manner.
  - The display will be presented to that telephone.
4. If the programmed destination is a station that is call forwarded, or if the answering station then transfers the call, the call will follow the programmed forward or transfer to either an internal or external DN.

# Dialed Number Identification Service (DNIS)

- The programmed display will follow the call to the destination telephone (if the forward or the transfer is to an internal DN) and will be presented to that telephone.
- 5. If the call is routed to the attendant console, or rings no answer from a station to the attendant console and is then transferred to another station, the programmed display will be presented to the final destination station.

## PROGRAMMING

1. The DNIS numbers, destinations, and alphanumeric displays are programmed in the DDNI Data Block. The system will also refer to the DDNI Data Block for routing and other handling instructions for calls received via a port assigned to a DNIS trunk group.

*NOTE: The DNIS message (for example: "ABC COMPANY") will be shown on the LCD display **only** when a DNIS message is registered at the DIS entry in the DDNI Data Block. If NONE is registered at the DIS entry, current message ("TXXXX CALLING") will be shown on the LCD display.*

2. The assignment of a trunk group as a DNIS group is programmed in the DTGP Data Block.

## RELATED FEATURES

1. ACD/MIS (ACD/MIS).
2. Call Forward-No Answer (Station).
3. Station Hunting (Station).
4. Call Transfer (Station).
5. Voice Mail Connection (System).
6. Universal Night Answer (System).
7. Night Service (System).
8. Intercept (System).
9. Direct Inward Dialing (System).

## BENEFITS

Since DNIS numbers are programmed by trunk group, this feature allows incoming calls to be routed to the proper channels, thus enabling calls to be immediately and properly handled by the most competent personnel to handle them. Proper identification of incoming and outgoing calls also makes the various ACD groups' report printouts easier to evaluate.

**DESCRIPTION** This feature permits an incoming trunk to be assigned to a specific station or hunt group, so that an incoming trunk call will ring directly at the specified station or hunt group. A Direct-in Line may be assigned to either the same or an alternate station (or hunt group) during day and night operation. Direct-in Lines are particularly applicable to Attendant-Position Electronic/Digital Telephones, either with or without associated Direct Station Selection Consoles, and Automatic Call Distribution Groups.

**OPERATION** Day and night trunk-to-station Direct-in Line assignments are flexible, and can be altered by the system attendant.

**To Make Direct-in Line Connections:**

1. Dial the directory number.
  - The EXCL SRC LED will light steadily when the first digit is dialed.
  - The voice path to the caller will be broken.
  - The DEST directory number will be displayed as the digits are dialed.
  - STATUS will display RNG, and you will hear ringing tone.
2. Press the **RLS** button, or dial the access code (**#\*3**) \_\_\_\_\_.
  - The LPK LED and all displays will go out.
  - The RLS LED will light, the console will become idle, and the caller will hear ringing tone.

**NOTES:**

1. If you want to announce the call, wait for the called party to answer before pressing the **RLS** button.
2. If the call remains unanswered for (\_\_\_\_) seconds, the call will be returned to your console as a Timed Recall. (The TIM LED will display in the ICI display area.)
3. Some or all of the system's CO trunks may be assigned to ring specific directory numbers (DNs).
4. Once a trunk-to-station assignment is changed by the attendant, it is stored in random access memory and remains effective until the system is reloaded.
5. A trunk-to-station assignment may be changed by the attendant any time when Night Service is not activated.
6. A trunk may not be assigned to multiple DN's; however, one or more trunks may be assigned to the same DN in **Versions D.02** software and below. In **Versions D.03** software and above, DIL-delayed ringing is allowed in the Day mode. See this feature for further explanation.
7. To change Night Destinations, see Night Service (Attendant Feature).
8. Trunks can be routed directly to the pilot number for an ACD Group or a Distributed Hunting Group.

**PROGRAMMING** This feature is initially assigned in the **DTRK Program** at the DAY and NIT prompts, although the attendant has the ability to alter assigned trunk-to-station connections.

# Direct-in Line

SYSTEM FEATURES

PERCEPTION

## RELATED FEATURES

1. Automatic Call Distribution/Management Information System (ACD/MIS).
2. Attendant-Position Electronic/Digital Telephone (DSS/DDSS).
3. Direct-in Line Pooling (System).
4. Consoleless Operation (System).
5. Delayed Ringing (System).

## BENEFITS

The Direct-in Line feature allows any trunk to ring directly at any station without having to go through an attendant. This reduces the cost of handling incoming calls by reducing the call load of an attendant, or by enabling the system to operate without an attendant. A Direct-in Line connection also allows a trunk or group of trunks to ring directly to a group of stations that represent a particular service group. This feature gives the end user the flexibility necessary to configure the call answering/processing arrangement that best fits his or her unique application requirements.

# Direct-in Line Pooling (Delayed Ringing)

**DESCRIPTION** When the system is in the Day mode of operation, direct-in line trunks may utilize the Direct-in Line Pooling feature. This feature allows up to eight DNs to be assigned to ring either immediately, or after a preset period of time (delayed ringing) per trunk. Stations set for delayed ringing will receive a visual indication of an incoming call before ringing begins. If a pooled DN is busy, then the call will follow the programmed hunt sequence for that DN, and continues to ring at the other programmed stations. When the call is answered on one DN, the other DNs become idle, freeing them to answer another call.

**OPERATION** Automatic.

**PROGRAMMING** The termination destination for each DIL trunk, whether it is using just the pooling feature or both pooling and delayed ringing, is programmed in the DTRK Data Block, at the DAY prompt.

The timing for delayed ringing is established in the DSYS Data Block, at the DLY prompt.

**NOTES:**

1. *These features are available only in Versions D.03 software and above. For operation of Direct-in Lines on earlier versions of software, refer to the Direct-in Line feature.*
2. *A maximum of eight DNs per trunk can be assigned to ring.*
3. *The delay ring timer is a system timer and not set for each trunk.*
4. *If an attendant console is programmed at the DAY prompt, all other DN assignments will be ignored.*

**RELATED FEATURES**

1. Attendant-Position Electronic/Digital Telephone (DSS/DDSS).
2. Direct-in Line (System).
3. Consoleless Operation (System).

**BENEFITS** Direct-in Line Pooling enables up to eight station users to share incoming call answering duties for a single trunk. Typically, this feature would be used by members of a single department or work group, although it would be valuable in virtually any application that requires several people to share answering duties for a specific incoming trunk. The ability to delay or prevent ringing at any directory number increases the system's call processing flexibility.

# Direct Inward Dialing

**DESCRIPTION** Direct Inward Dialing (DID) allows an incoming call from the network to reach a specific station without attendant assistance. Because incoming DID calls route into the system over shared trunk facilities, the end-user can use this feature to reduce trunking costs. DID service is beneficial in a situation where there is a high volume of calls which should go directly to specific stations. Since calls would ordinarily be routed through an attendant, the use of DID reduces the number of necessary attendants in large installations. The use of DID trunks requires that the central office also be equipped for DID service.

**OPERATION** Automatic.

**NOTES:**

1. When the central office accesses a DID trunk in PERCEPTION, the directory number of the desired station within the PBX will automatically be outpulsed. PERCEPTION then translates the received digits to route the call to the appropriate station.
2. PERCEPTION DID trunks may be set for either DTMF or dial-pulse signaling (DTMF is strongly recommended) and can use either immediate start, wink start, or delay-dial operation.
3. Two Listed Directory Numbers (LDNs) can be registered per system so that directed incoming calls will automatically be routed to an attendant. When each call comes in, the attendant console's ICI display panel will display either LN1 or LN2. Once the call is answered, the attendant can extend an incoming call to appropriate system stations. In tenant service, LDN calls will be routed to attendant 0 (tenant 0).
4. When the system is in Night Service, calls to LDNs will automatically be routed to the DN or UNA that is specified by the NT1 and NT2 entries in the DSYS Data Block. LDN night assignments cannot be altered by an attendant.
5. Number Translation and/or digit absorption can be provided on incoming dialed numbers from TIE/CCSA and DID trunks. This process is controlled by the OAB, IAB, TRN1, and TRN2 prompts in the DTGP Data Block as follows:

**OAB** (Outgoing Absorb Digits)—Identifies the digits that are to be ignored for purposes of Toll Restriction. These digits will be outpulsed, but will not be acknowledged by the system as the first digits of a destination number.

**TO PROGRAM:** Enter either the specific digits which are to be absorbed or NONE. A maximum of two digits can be absorbed by the system.

**IAB** (Incoming Absorb Digits)—Defines the number of digits that are to be deleted from a dialed number that is transmitted over a DID trunk.

**TO PROGRAM:** Enter the number of digits (maximum: 2 digits) or NONE.

**TRN1** (Translated Number 1)—Defines the absorbed digit (IAB) which is to be translated into another digit(s). (See examples.)

# Direct Inward Dialing

*TO PROGRAM: Enter either X # Y or X # YY.*

*X = the digit which is to be translated into another digit or digits (when two digits are absorbed, only the second digit will be translated).*

*Y or YY = the digit or digits which are to take the place of the initially-absorbed digit (X).*

*TRN2 (Translated Number 2)—Defines the absorbed digit (IAB) which is to be translated into another digit or digits. This parameter is the same as TRN1 (see examples).*

*TO PROGRAM: Enter X # Y or X # YY.*

*X = The digit which is to be translated into another digit or digits (when two digits are absorbed, only the second digit will be translated).*

*Y or YY = The digit or digits which are to take the place of the initially-absorbed digit (X).*

*EXAMPLE A:*

*IAB = 1*

*TRN1 = 9#2*

*TRN2 = 8#3*

*Three Digits Received from CO: 900 ~ 999; 800 ~ 819*

*To Ring Three-digit DNs: 200 ~ 299; 300 ~ 319*

*EXAMPLE B:*

*IAB = 2*

*TRN1 = 9#2*

*TRN2 = 8#3*

*Four Digits Received from CO: 5900 ~ 5999; 5800 ~ 5819*

*To Ring Three-digit DNs: 200 ~ 299; 300 ~ 319*

*EXAMPLE C:*

*IAB = 2*

*TRN1 = 9#21*

*TRN2 = 8#32*

*Four Digits Received from CO: 5900 ~ 5999; 5800 ~ 5890*

*To Ring Four-digit DNs: 2100 ~ 2199; 3200 ~ 3299*

## PROGRAMMING

1. All DID trunk parameters are set via the DTGP and DTRK Data Blocks.
2. LDNs are specified in the LN1 and LN2 entries of the DSYS Data Block. These numbers cannot conflict with other station numbers.

## RELATED FEATURES

1. CCSA Access (System).
2. TIE Trunks (System).
3. Call Forward-Busy (Station).
4. Call Forward-No Answer (Station).
5. Station Hunting (Station).

*NOTE: The Telco will assign a seven-digit (including office code) directory number to each DID station. However, only the last three or four digits will be transmitted over the trunks to PERCEPTION. The system program*

# Direct Inward Dialing

SYSTEM FEATURES

PERCEPTION

*then correlates the transmitted digits with the DID station's two-, three-, or four-digit system directory number.*

## **BENEFITS**

The use of Direct Inward Dialing allows a caller to reach a specific station directly, without attendant interception. This both reduces the number of necessary attendants, and frees an attendant for other duties. It also allows calls to a specific person or group to be answered with less delay. This feature is particularly applicable to executive suites, inside sales and customer service organizations, and individual executives for important incoming calls.

**DESCRIPTION** PERCEPTION provides Distinctive Ringing patterns, which enable a station user to distinguish between incoming station-to-station calls and trunk/attendant-to-station calls. An additional tone sequence is supplied to indicate an automatic callback to a station, and varies according to the absence or presence of the Handsfree Answerback capability.

**OPERATION** Automatic.

**NOTES:**

*The following ringing patterns are provided by PERCEPTION:*

- 1. Station-to-station calls: 1-second on, 3-seconds off, repeating.*
- 2. Trunk/attendant-to-station calls: 0.4-second on, 0.2-second off, 0.4-second on, 3-seconds off, repeating.*
- 3. Automatic Callback tone to a station which has Handsfree Answerback capability: Tone burst over the station speaker (0.5-second on).*
- 4. Automatic Callback tone to a standard telephone or electronic/digital telephone, which does not have Handsfree Answerback capability: 0.5-second on, 0.5-second off, repeating for 6 seconds.*

**PROGRAMMING** None.

**RELATED FEATURES**

1. Immediate Ringing (System).
2. Automatic Callback (Station).
3. Tone Buzzing (Electronic/Digital Telephone).
4. Tone Ringing (Electronic/Digital Telephone).

**BENEFITS** Distinctive Ringing patterns provide an immediate indication of what type of call is ringing at a station. This allows a station user to answer a ringing station in the most appropriate manner.

# Emergency Ringdown

**DESCRIPTION** This feature allows a user to indicate the destination for an emergency signal (station-to-station ring) when a station goes off-hook, but does not complete dialing a valid number within a programmed time period (Dial Pulse Timeout and Line Lockout Time). The destination can be programmed as either a specific station, the attendant, or the system UNA device. An LCD electronic/digital telephone, or the attendant, will display the off-hook telephone's directory number. A specific **DN** button may be assigned the destination with an emergency or alarm designation.

**OPERATION** Automatic.

**PROGRAMMING** The assignment destination for Emergency Ringdown is programmed in either the DEKT or DSTT Data Block.

**RELATED FEATURES** All (Lodging/Health Care).

**BENEFITS** Emergency Ringdown is intended to primarily enhance guest security in Lodging/Healthcare applications. If a guest or patient suffers an accident, medical problem, or break-in, and attempts to make a call that cannot be completed, an emergency station is notified, and help can be dispatched almost immediately. In other applications, such as warehousing or classrooms, this feature can provide added station user security and reduce the customer's liability.

**DESCRIPTION** The Flexible Numbering Plan allows for flexible station directory number assignment, as well as for the customization of trunk and special service access codes. Such flexibility allows assignments to be made in accordance with a customer's unique requirements and preferences.

**OPERATION** None.

**PROGRAMMING** Numbering assignments are made during installation programming in accordance with the numbering plan desired by a particular customer. Specific assignments are made in the Data Block which corresponds to each telephone or code type. The various stations and features which require such number assignment are as follows:

- Electronic/Digital Telephones—DEKT Data Block
- Standard Telephones—DSTT Data Block
- Trunk Access Code—DTGP Data Block
- Feature Access Code—DACD Data Block
- Least Cost Routing—DLC1/DLC2 Data Block
- Lodging/Health Care—DHMF Data Block
- Data Stations—DDIU Data Block
- Listed Directory Numbers—DSYS Data Block
- Remote Access Directory Number—DSYS Data Block
- All Call Page—DSYS Data Block

**NOTES:**

1. Access code 0 is always assigned to the attendant console by system software.
2. Access code 9 is not permitted to be used as an access code for a station. Access code 9 may, however, be used as the LCR access code or as a trunk group access code.
3. Rotary dial telephones use single-digit prefixes in place of the \* and # buttons. The digits, which are composed of these prefixes, however, cannot conflict with any access codes registered in the system.
4. Mixed 1-, 2-, 3-, or 4-digit numbering is possible, as long as it does not impose a numbering conflict (e.g., if 51 is assigned as a DN, then neither 5 nor 51X can be assigned as access codes).
5. Feature access codes are preprogrammed, although they can be changed in the DACD Data Block in order to accommodate a customer's unique requirements or preferences.
6. In **Version A** levels of software, the system maximum number of different directory numbers is 200. In **Versions D.01** and **D.02** software, the system maximum increases to 240. In **Version D.03**, it is 510.

**RELATED FEATURES** Multiple Appearing Directory Numbers (System).

**BENEFITS** Flexible Numbering allows a system to be custom-programmed in order to fit a customer's specific needs or preferences. This numbering flexibility is particularly important when replacing an existing PBX with a PERCEPTION system, since it allows a customer to retain the currently-used numbering plan. In Lodging/Health Care systems, the directory numbers of guest phones can be the same as the room numbers. In other applications, the numbering plan can be configured to reflect the end-user's organizational or operational structure.

# Immediate Ringing

**DESCRIPTION** The Immediate Ringing feature supplies ringing (20 Hz, tone, or buzz signals) to a station, immediately after the completion of a dialed number. This eliminates the time delay associated with a ringing cycle.

**OPERATION** Ringing is applied to a called station as the result of any of the following performances:

- Station-to-station call.
- Station call transfer.
- Attendant forwarded trunk call.
- Application of Call Forwarding features.
- DID/CCSA/TIE Trunk call.
- DIL.
- PVL.

**PROGRAMMING** Each directory number must be specified as ringing via the SCR or PVR entry in the DEKT Data Block.

**RELATED FEATURES** Distinctive Ringing (System).

**BENEFITS** The Immediate Ringing feature immediately notifies an individual of any incoming or a transferred call, and reduces the caller's waiting time.

## DESCRIPTION

The Intercept feature provides three types of intercept which act to re-route calls that cannot be completed because of system restrictions or dialing errors. Calls are rerouted to either the attendant or the overflow tone, depending upon the registration of each intercept type's routing destination.

## OPERATION

Intercepted calls will automatically be routed to either an attendant or overflow tone under the following three conditions:

**Intercept #1:** This type of intercept will occur if the attendant has taken control of a Trunk Group (using the Trunk Group Control feature).

**Intercept #2:** This intercept will occur when an incoming call comes in on either a DID, TIE, or CCSA trunk during Day Service, and the dialed station number has either been disabled or does not exist. In **Version D.03** software, Intercept #2 has been enhanced to include the possible entries of a trunk port number or a standard telephone port number. A recorded announcement can be connected to these ports. When ICP2 goes to this port, answer supervision will not be returned.

**Intercept #3:** This type of intercept occurs when an incoming call comes in on either a DID, TIE, or CCSA trunk during Day Service in order to dial back-out over a system trunk. Any call which cannot be completed because of either a misdialled trunk access code or because of LCR access restriction, will automatically be rerouted.

## PROGRAMMING

Each of intercepts #1, #2 (see Note 2), and #3 routes an intercepted call to either the attendant or the overflow tone, depending upon the specific assignment of each intercept type in the ICP1, ICP2, and ICP3 entries of the DSYS Data Block.

### NOTES:

1. *Whenever an intercepted call is presented to an attendant console, an INT (intercept) indication will display on the console's ICI display panel.*
2. *In **Version D.03** software, Intercept #2 has been enhanced to include the possible entries of a trunk port number or a standard telephone port number. A recorded announcement can be connected to these ports. When ICP2 goes to this port, answer supervision will not be returned.*
3. *When the system is in Night Service, if an intercept has been programmed to go to the attendant, the calls will get overflow tone.*

## RELATED FEATURES

1. Class of Service Restrictions (System).
2. Toll Restriction (System).
3. Trunk Group Access Control (Attendant).

## BENEFITS

Intercept allows the customer to handle calls to invalid destinations. Callers can be informed that they have dialed an invalid number, and instructed how to reach the appropriate destination. Important calls are not missed, and customers receive proper treatment. This is also an important feature in regions in which the Public Utilities Commission requires a voice response on DID calls to unassigned directory numbers.

# Least Cost Routing (LCR)

## DESCRIPTION

Least Cost Routing provides automatic routing over the customer's trunk facilities based on a dialed number and a customer-specified routing selection. Based on this information, PERCEPTION will automatically select the least-costly route (trunk) for each particular call. If the least-expensive route is busy, then (if permitted by a station's Class of Service) the next route in the ranked routing listing will be accessed. If this route is also busy, then the system will continue down the queue until a COS-allowable open trunk is accessed. If all trunks are busy, the caller may camp onto LCR, and a trunk will automatically be made available to him or her as soon as it becomes available. In this case, the system stores the dialed number and automatically outputs it once the caller is again connected. LCR also provides access to trunks during a specified time of the day.

## OPERATION

1. Obtain dial tone.
2. Dial the access code (# # 6) \_\_\_\_\_.
3. Dial the desired telephone number.
- 4A. If a trunk (which is allowed by the caller's LCR Class of Service) is available:
  - The call will be dialed automatically over the proper trunk.
  - Call progress tones will be heard.
  - Conversation may begin when the party answers.
- 4B. If no trunks (which are allowed by a caller's LCR Class of Service) are available:
  - The caller will hear busy tone.
  - The caller may activate the Automatic Callback (ACB) feature (\* 7) \_\_\_\_\_.
  - The telephone number will be dialed automatically when completed by the ACB feature.

## PROGRAMMING

For programming Least Cost Routing information, refer to the PERCEPTION<sub>e&ex</sub> Data Blocks DLC1 (PAR, ACT, AOC) and DLC2 (RTB, MDT). Also refer to the PERCEPTION Least Cost Routing and Toll Restriction Programming Guide (Appendix 2).

### NOTES:

1. PERCEPTION provides 15 separate LCR tables which can each be broken down by area and office code. Each LCR table can use up to six different routing steps, which can each be partitioned into three different time periods.
2. LCR Class of Service (LC1, LC2, or LC3) is assigned to each station in the Class of Service Data Block (DCOS).
3. Before Least Cost Routing is processed, the system will automatically assess whether or not the dialing station may perform the particular call, based on the station's specific Toll Restrictions.
4. In a tenant situation, either both tenants must share the same LCR program or one tenant must be denied LCR access.
5. Dialed digits may be added or deleted through the MDT subprogram in the DLC2 Data Block.

# *Least Cost Routing (LCR)*

**PERCEPTION**

**SYSTEM FEATURES**

## **RELATED FEATURES**

1. Multiple Trunk Groups (System).
2. Route Advance (System).
3. Toll Restriction (System).
4. Tone Dialing-to-Dial Pulse Conversion (System).
5. Direct Outward Dialing (Station).
6. Automatic Callback (Station).

## **BENEFITS**

The use of Least Cost Routing can reduce the cost of long distance calls by routing them over the proper (lowest cost) trunks and long distance carriers available to the customer. The automatic nature of the feature also eliminates the need for a station user to individually assess system trunk routes that are the least costly, as well as the need for the entrance of special trunk codes.

# Least Cost Routing Enhancement for "011"

SYSTEM FEATURES

PERCEPTION

**DESCRIPTION** This feature enhancement allows the customer to now direct all international calls (011) to a preset route, chosen when the system's Least Cost Routing (LCR) was configured.

**OPERATION** There are no special operating procedures. The customer has only to dial the 011 international number. However, the customer's ability to make international calls is subject to his or her Class of Service and Toll Class restrictions.

**PROGRAMMING** The Enhancement for the "011" Least Cost Routing is programmed in the DLC1 Data Block. Also refer to the PERCEPTION Least Cost Routing and Toll Restriction Programming Guide (Appendix 2).

**NOTES:**

1. Any route can be used and the use of one route will not restrict it from being used in other features like LDI, LCR, etc.
2. The chosen route should have a minimum of one valid trunk.

**RELATED FEATURES**

1. Least Cost Routing (System).
2. Toll Restriction (System).

**BENEFITS** This enhancement enables the customer to use the Least Cost Routing feature when making international calls, thus reducing the cost of the calls by routing them over the proper (lowest cost) long distance carriers available to the customer. The automatic nature of the feature also eliminates the need for a station user to individually assess system trunk routes that are the least costly, as well as the need for the entrance of special trunk codes.

## DESCRIPTION

Line Lockout releases station connections from the common system equipment in certain conditions, in order to keep lines and trunks free for access. Actual lockouts will occur after predetermined time periods, which have been registered in the system database, have elapsed. Specific conditions which bring about a Line Lockout include when a station terminal is not hung up at the end of a call (either after another party has hung up, or after busy tone has been accessed), and when a caller does not complete dialing within the time period allotted by lockout registration.

## OPERATION

### Electronic Terminal Line Lockout Conditions/Actions:

A line lockout will occur when any of the following case conditions applies. The resultant actions of each noted condition apply exclusively to electronic/digital telephones:

**Case 1**—When a station user takes his telephone off-hook to place a call, and does not dial within the time period allotted by the Dial Pulse Time-out period which has been assigned within the DPT entry of the DSYS Data Block.

■ Resulting action:

1. Dial tone is removed (if it has not already been removed).
2. Overflow tone is provided until the Line Lockout Time-out period elapses. (The Line Lockout Time-out is defined within the LLO entry of the DSYS Data Block.)

■ Next resulting action:

1. Overflow tone is removed.
2. The call connection is released.
3. The formerly-connected station is returned to its idle state and the station DN LED goes out.

**Case 2**—When dialing has been completed, and either busy tone or overflow tone has been reached. In this case, lockout action will occur after the predetermined Line Lockout Time-out period has elapsed.

■ Resulting action:

1. Busy or overflow tone is removed.
2. The call connection is released.
3. The formerly-connected station is returned to its idle state.

**Case 3**—When either party disconnects a call, and the Line Lockout Time-out period has elapsed.

■ Resulting action:

1. The call connection is released.
2. The formerly-connected station is returned to its idle state.

### Standard Telephone Line Lockout Conditions/Actions:

The following case conditions will produce a line lockout, with the noted actions applying exclusively to standard telephones.

**Case 1**—When a station user takes his telephone off-hook to place a call, and does not dial within the time period allotted by the Dial Pulse Time-out period which has been defined by the DPT entry of the DSYS Data Block.

■ Resulting action:

1. Dial tone is removed (if it has not already been removed).
2. Overflow tone is provided until the Line Lockout Time-out occurs.

# Line Lockout

- Next resulting action:
  1. Overflow tone is removed.
  2. The dialing station is made busy by the system, and is unable to receive calls.
  3. The station user must place his telephone on-hook in order to regain standard station operation.

**Case 2**—When dialing has been completed, and either busy tone or overflow tone has been reached. In this case, lockout action will occur after the predetermined Line Lockout Time-out period has elapsed.

- Resulting action:
  1. Busy or overflow tone is removed.
  2. The call connection is released.
  3. The formerly-connected station remains busy, and cannot receive calls.
  4. The station user must place his telephone on-hook in order to regain standard station operation.

**Case 3**—When either party disconnects a call, and the Line Lockout Time-out period has elapsed.

- Resulting action:
  1. The call connection is released.
  2. The station that remains off-hook will remain busy and will not be able to receive calls.
  3. The station user must place his telephone on-hook in order to regain standard station operation.

## PROGRAMMING

The Dial Pulse Time-out and the Line Lockout Time-out are respectively defined in the DPT and LLO entries of the DSYS Data Block.

### NOTES:

1. *Line Lockout will not act upon a station whenever Call Waiting/Camp-on is in effect at that station. In such a situation, a calling station will receive only a consistent overflow tone. The Line Lockout silence period which normally follows this tone will not occur.*
2. *Time-outs do not apply to a station-to-station ringing connection, unless the called station has been programmed for Call Forward-No Answer or Busy/No Answer. However, if an incoming call has been transferred to a station by an attendant, then the call will automatically be transferred back to the attendant when the system's Ring-No-Answer Time-out occurs. This timing period also governs the length of time that a telephone will ring before forwarding to a registered Call Forward-No Answer or Busy/No Answer forwarding destination.*
3. *There is no time-out which applies to calls that have been put on hold at an electronic/digital telephone. The Hold/EKT/DKT Park Time-out applies only to calls that have been put on hold at a standard DTMF (2500-type) telephone, or to calls that have been parked at an electronic/digital telephone.*
4. *Calls which have been put on hold at a standard telephone will ring back after the Hold/EKT/DKT Park Time-out period has elapsed. This time-out is registered in the HLD entry of the DSYS Data Block.*

## RELATED FEATURES

1. Tone Dialing-to-Dial Pulse Conversion (System).
2. Variable Time-out (System).
3. Call Forward-No Answer (Station).
4. Call Waiting (Station).
5. Hold All Calls (Station).
6. Emergency Ringdown (System).

## BENEFITS

By automatically dropping any call connection which is not being utilized, Line Lockout prevents valuable system facilities from being unnecessarily tied up, and opens lines and trunks for calls which need to be placed.

# Message Center

**DESCRIPTION** The Message Center feature provides customers with a means of storing messages when incoming calls cannot be personally answered. Two types of Message Center are available for PERCEPTION, they are a Message Center (MC) which can be the attendant, an attendant-position EKT/DKT, or EKT/DKT (both of which need an **MSG** button programmed), and Voice Mail (VM).

**OPERATION** The operation of a Message Center varies according to the Message Center type.

**PROGRAMMING** Parameters for both types of Message Center are set in the DMCD Data Block.

**RELATED FEATURES**

1. Tenant Service (System).
2. Message Waiting (Attendant and Electronic/Digital Telephone).
3. Voice Mail Connection (System).

**BENEFITS** A Message Center provides a centralized point for system messages and prevents messages from being delayed, lost, or forgotten. It also eliminates the time that would otherwise be spent carrying message notes to individual desks and departments.

# Multiple Console Operation

## DESCRIPTION

Multiple Console Operation permits up to two attendant consoles to be used with PERCEPTION. Additionally, up to eight Attendant-Position Electronic/Digital Telephones and DSS/DDSS Consoles can be assigned, giving PERCEPTION a possible total of 10 centralized answering positions.

## OPERATION

When a second console is equipped for operation, the following capabilities are provided:

### 1. Incoming Call Treatment:

If tenant service is not being utilized, and both consoles are idle, the system will automatically select one of the two consoles to receive the next incoming call. The console which is not selected will receive no indication of the call. Incoming calls will be served in the order of their arrival (unless incoming call priority has been selected) and are alternately distributed between the two consoles, unless one of the consoles is busy. In this latter case, the call will automatically be routed to the idle console. If both consoles are busy, the call will be held in the attendant queue and both consoles will receive a Call Waiting (CW) LED indication. When one of the consoles regains an idle loop, the calls in the attendant queue will be presented in the order in which they arrived. Refer to Tenant Service (8), Feature 5 for further information.

### 2. Incoming Call Identification:

Each incoming call that is presented to an idle attendant console will automatically prompt the display of the appropriate Incoming Call Identification (ICI) code, as well as the source and/or Class of Service of the caller. All pertinent displays will appear only at the console to which the call is presented.

### 3. Attendant Queue:

The attendant queue consists of calls which are waiting to be presented whenever a console becomes idle. The attendant console's Call Waiting LED indicates that calls are waiting in the queue, although there is no indication as to how many calls are currently in the queue, or how long each call has been waiting.

### 4. Call Waiting LED:

The attendant console Call Waiting LED will light up on both consoles whenever one or more calls are waiting in the attendant queue (see Tenant Service (8), Feature 4). The CW LED gives one buzz tone to alert the attendant of a waiting call.

### 5. Emergency Transfer:

The console emergency transfer switch may be wired so that either or both consoles may activate an emergency transfer.

### 6. Night Service:

Either of the system's two attendant consoles may independently control Night Service. Thus, if one console activates Night Service, then either that same console, or the other console may cancel the

# Multiple Console Operation

service. When Night Service is activated, the attendant consoles are made busy to incoming calls. Night Service can initially be activated only when both consoles are idle.

## 7. Timed Reminders:

A call which must be returned to an attendant due to a system time-out, will be returned to the console which originally handled the call. If a call has been completed and then transferred back to the attendant, it will be presented to the first idle console.

## 8. Tenant Service:

Tenant Service permits calls which arrive over a particular trunk group to be answered by only one prespecified console. The use of this service modifies the above features (1 through 7) as follows:

**Feature 1:** A trunk call will only be presented to the console which has been specified for call presentation. The call will remain in the attendant queue until that particular console becomes idle. ATT0 = Tenant 0; ATT1 = Tenant 1.

**Feature 2:** No Change.

**Feature 3:** No Change.

**Feature 4:** If the attendant console, to which an incoming trunk call is presented, is busy upon the call's initial arrival, the call will be placed in the busy console's attendant queue and the Call Waiting LED will light only on that particular console. The system's other attendant console will receive no indication of the call.

**Feature 5:** No Change.

**Feature 6:** Each console controls Night Service for its own designated trunks.

**Feature 7:** A call which must be returned to an attendant console because of a time-out, will be returned to the console which originally handled the call. A call which has been transferred to an attendant by a station, will be routed to the console which is assigned to that station's tenant group.

## NOTES:

1. A Ring-No-Answer call will not return to the console at which it was initially presented. However, a call which is waiting via either Call Waiting or Camp-on, will return to its original attendant after the system's predetermined Camp-on/Call Waiting Time-out period has elapsed.
2. When Night Service is canceled, the console which initializes the cancellation will automatically be available to receive incoming calls. The other console will remain busy until its **POS BSY** button is pressed.
3. If one attendant console employs Night Service, the service will automatically be activated for the entire system. In this situation, the Night Service LEDs on both consoles will light after either the **POS BSY** button on the other (non-initializing) attendant console is pressed, or after that console's headset or handset is disconnected.

# Multiple Console Operation

PERCEPTION

SYSTEM FEATURES

## PROGRAMMING

1. Attendant console parameters are set within the DATT Data Block.
2. Tenant Service is specified in the TEN entry of the DSYS Data Block.

## RELATED FEATURES

1. Tenant Service (System).
2. Night Service Control (Attendant).
3. Consoleless Operation (System).
4. DSS Consoles (DSS/DDSS).
5. Attendant-Position Electronic/Digital Telephones (DSS/DDSS).
6. Trunk Groups (System).

## BENEFITS

In Multiple Console Operation, the ability to configure up to 10 centralized answering positions (two attendant consoles and eight attendant-position electronic/digital telephones and DSS/DDSS console combinations) gives the customer the flexibility and the power to design the call answering arrangement that best serves his or her unique application requirements. In high-traffic centralized call processing applications, up to two full PBX attendant consoles can be configured; and the attendants can be backed up with Attendant-Position Electronic/Digital Telephones with up to eight DSS/DDSS consoles if required.

# Multiple Trunk Groups

**DESCRIPTION** PERCEPTION can accommodate up to 16 trunk groups (0 ~ 15). These trunk groups can be configured to organize the end-user's trunk facilities to suit his or her application requirements. It also enables the end-user to break up different trunks and trunk types for access by the Least Cost Routing feature.

**OPERATION** The operation of each trunk group varies according to each specific trunk type. Individual trunk groups are accessed by entering an access code at the telephone, prior to dialing the destination directory number. The station user's ability to access individual trunk groups is controlled by the Class of Service assigned to his or her station.

**PROGRAMMING** Trunk parameters are set within the DTGP and DTRK Data Blocks.

**NOTES:**

1. *A private line is assigned to a designated private-line trunk group.*
2. *Depending upon the system and software, there is a restriction to the number of trunks that may be assigned to one trunk group. Refer to the appropriate PERCEPTION Installation and Maintenance manual.*

**RELATED FEATURES**

1. CCSA Access (System).
2. Class of Service (System).
3. Least Cost Routing (System).
4. Route Advance (System).
5. Tandem Switching (System).
6. TIE Trunks (System).
7. Direct-in Dialing (System).
8. Direct-in Lines (System).

**BENEFITS** Multiple Trunk Group capability allows PERCEPTION to accommodate different types of trunks which are each required for their unique call-routing capabilities. It also allows the end-user to customize the outgoing call capabilities of individual station users.

# Music-on-Hold and Camp-on

PERCEPTION

SYSTEM FEATURES

**DESCRIPTION** A standard interface allows for system connection to a customer-provided music source. When music is provided in the system, it will be connected to each call that is placed by a station or attendant, into either a hold, Camp-on/Call Waiting, or consultation-hold condition. As an option, the Music-on-Hold (MOH) source can be used simultaneously with the Automatic Wake-up/Timed Reminder feature.

**OPERATION** The customer-supplied outside music source is connected to an access port on the NPRU PCB via the appropriate Main Distribution Frame (MDF) connector.

**NOTES:**

1. When Music-on-Hold is incorporated into a system, an LED on the front panel of the NPRU PCB will light whenever music is being played on a held, camped-on, or call waiting call.
2. An outside call will be placed on consultation hold whenever a station user either flashes the hookswitch on a standard telephone, or presses the **CONF** button on an electronic/digital telephone in an attempt to initiate either a transfer or a conference. In such a situation, the caller will hear Music-on-Hold if it is provided within the system.

**PROGRAMMING** None.

**RELATED FEATURES**

1. Call Waiting (Station).
2. Conference (3-Party/Transfer) (Station).
3. Hold All Calls (Station).
4. Attendant Camp-on with Indication (Attendant).
5. Automatic Wake-up/Timed Reminder (Lodging/Health Care).

**BENEFITS** Music-on-Hold assures outside callers that they are still on hold and that their call has not been dropped or forgotten, and provides a pleasant interlude while waiting for their calls to be handled. When used simultaneously with the Automatic Wake-up/Timed Reminder feature, Music-on-Hold will allow a station user to differentiate between a regular call and a wake-up call, since a call recipient will hear music, rather than the silence that is associated with a regular incoming call. Music-on-Hold can also be used to provide callers with recorded information about the organization's products or services while they wait for their calls to be handled.

# Night Operator Station

**DESCRIPTION** This feature assigns the Night Mode Answering Destination for Operator (dial-0) calls. The destination can be programmed as either a specific directory number or Universal Night Answer.

**OPERATION** Automatic.

**PROGRAMMING** The Night Operator Station is programmed in the DSD2 Data Block.

**NOTES:**

1. This feature is only available in **Versions A.06B** software and above.
2. If a Night Operator Station is not programmed, dial-0 calls (when the system is in the Night mode) will receive a fast-busy.
3. If a standard telephone is programmed as a Hot Line to the attendant, the call will forward to the Night Operator Station when the system is in the Night mode and a Night Operator is programmed.

**RELATED FEATURES** Manual Line Service (Station).

**BENEFITS** Night Operator Station adds security to the system, by ensuring that dial-0 calls reach an attended station when the system is in Night Operation. This feature is particularly valuable in Lodging/Health Care applications, in which the front desk or central answering position is not attended around the clock. It can also be used for after-hours attendant call rerouting in business systems.

**DESCRIPTION** Night Service is used to route incoming calls, which are normally answered by an attendant, to either specific directory numbers (Flexible Night Answer), or to the Universal Night Answer (UNA) feature. Night Service is automatically activated whenever the attendant console or an attendant-position electronic/digital telephone (consoleless operation) puts the system into the night service.

**OPERATION** **Flexible Night Answer (FNA):**

1. Some or all of the CO trunks may be routed on a one-to-one basis to selected DNs.
2. The trunk-to-station assignments which are used for FNA, may be altered by an attendant whenever Night Service is not activated (See Night Service Control—Attendant Feature).
3. Once a particular trunk-to-station assignment is made, it is considered fixed, and will remain stored in PERCEPTION memory.
4. A trunk may not be assigned to multiple DNs; however, in **Versions D.02** software and below, one or more trunks may be assigned to the same DN. In **Versions D.03** software and above, DIL-delayed ringing is allowed in the Day mode. See this feature for further explanation.

**Universal Night Answer:**

1. UNA service arranges for incoming calls, which are normally answered by the attendant, to activate a common signaling device (loud bell, gong, chime, etc.) on the customer's premises whenever the console is left unattended.
2. When UNA is activated, any station user may answer an incoming call by simply dialing the system's UNA access code (**\*1**) \_\_\_\_\_. This access code is specified in the DACD Data Block.
3. The attendant may also answer a UNA call (after changing from Night to Day mode) by dialing the UNA access code (**\*1**) \_\_\_\_\_.
4. A station which answers an incoming call over the UNA feature, may still utilize any other features which are normally available to that station.
5. Any incoming trunk call which is not registered to ring at a particular station via FNA will automatically access the UNA feature.

**PROGRAMMING**

1. In order for PERCEPTION to route incoming calls to specific stations, a connection must be registered between each relevant port number, trunk group/member number, and Night Service station number. This information is registered in the DTRK Data Block via the use of either a TTY or an attendant console (see Attendant Features: Night Service Control).
2. When a system utilizes tenant service (when the TEN prompt of the DSYS Data Block = Y), two additional prompts will arise to enable the assignment of a specific UNA zone for each tenant (UNA0 = TEN0; UNA1 = TEN1).
3. See Notes 7, 8 and 9.

**NOTES:**

1. *Some members of a particular trunk group may be assigned to ring at specific stations during Night Service (FNA), while other members of*

- the same trunk group may access the UNA service. Any incoming call which utilizes the FNA feature, can be answered via Call Pickup-Directed/Group.
2. When the system is in Night mode, DID-LDN calls may optionally be routed to either a specific DN (FNA) or to the UNA feature. Either of these routing options may be assigned in the DSYS Data Block (NT1, NT2) via a TTY. Neither routing assignments nor changes may be accomplished via an attendant console.
  3. Night Service will automatically be activated whenever power is restored after a power failure.
  4. All features which are usually available to a station user (other than those which involve an attendant) are available while Night Service is in effect.
  5. Night Service will automatically be activated whenever both attendants have:
    - a. Removed their handsets/headsets, or
    - b. Pressed their **NITE** buttons, or
    - c. Pressed their **POS BSY** buttons (see Attendant Features: Night Service Control).
  6. Night Service is often assigned to act as a default in instances when a call cannot be completed normally. These instances are noted within their relevant topic-feature descriptions. It is advisable to always have a signaling device attached to the UNA port.
  7. If an FNA station is busy, incoming trunk calls will align in a queue and either Call Waiting or Camp-on will automatically be employed. The employment of either of these features will be indicated to the user of the busy station through the sounding of a warning tone (if the system is programmed to do so). The user will hear a CO ringback tone, and may then access the waiting party and direct him to call back later, to continue holding, etc. Incoming station calls which encounter a busy night station will receive busy tone.
  8. If an FNA station is a standard DTMF telephone, its COS should allow for warning tone usage (Warning Tone-Allowed). It is important to note, however, that such a station cannot also be used for data transmission since the sounding of warning tone could easily scramble transferring messages. Thus, warning tone should be denied to stations which are to utilize data transferring capabilities. Refer to the Data Transmission-Voice Band system feature for further information regarding this restriction.
  9. If an FNA station is an electronic/digital telephone, it should be equipped with a Call Waiting button.
  10. Trunks which are directly assigned to specific directory numbers for FNA application can be accessed from outside PERCEPTION by dialing the 7-digit number of the connected DN.
  11. If an incoming call, which is directed over either FNA or UNA, is answered and then transferred, and a Ring-No-Answer time-out occurs, the call will either return to the respective FNA station, or will, once again, sound the UNA device.
  12. When Night Service is active, the Do Not Disturb (DND) feature cannot be used on a station that has been designated for FNA night answer.

13. *If tenant service is being utilized, a distinct UNA zone may be assigned for each tenant. In this case (when the TEN prompt of the DSYS Data Block = Y), two additional prompts will arise to enable distinct UNA-zone assignment.*
14. **SYS** *button can be assigned on an AEKT/ADKT in consoleless operation.*
15. *DILs cannot be pooled for Night Service destinations.*

## **RELATED FEATURES**

1. Consoleless Operation (System).
2. Power Failure/Emergency Transfer (System).
3. Call Pickup-Directed (Station).
4. Call Pickup-Group (Station).
5. Call Waiting (Station).
6. Attendant Camp-on with Indication (Attendant).
7. Night Service Control (Attendant).
8. Trunk Group (System).

## **BENEFITS**

Night Service enables the end-user to change the destinations of incoming calls during periods when primary call answering/processing points are not staffed.

# Off-premises Stations

**DESCRIPTION** This feature allows standard telephones to be remotely located from where a system's switching equipment is located. Once connected, an off-premises station will have the abilities and limitations of a regular on-premises station (as determined by the station's designated COS). The Off-Premises Extension connects to PERCEPTION via the local telcos' central office facilities.

**OPERATION** Automatic.

**NOTES:**

1. *The maximum unaided loop range of the DSTU/NSTU is 500 ohms (including the station instrument).*
2. *A standard telephone (DSTU/NSTU) line circuit may be connected to standard long-line circuits, 2- and 4-wire converters, and 2- and 4-wire repeaters. These units collectively provide the necessary range extension for signaling, supervising, and ringing a remotely-located standard telephone. They also provide the power and gain that are necessary to compensate for excessive loop loss.*
3. *The FCC Facility Interface Code is OL13A.*
4. *Standard telephone line circuits introduce a 1dBm loss on line-to-trunk connections, and a 5dBm loss on line-to-line connections. Although the acceptable transmission-degradation level is 5dBm, repeaters may be required in cases where there is excessive loop loss. Thus, the off-premises loop loss should always be checked when replacing a conventional PBX with a PERCEPTION system.*

**PROGRAMMING** Off-premises Stations are assigned in the DSTT Data Block as standard DTMF or rotary-dial stations.

**RELATED FEATURES** None.

**BENEFITS** The use of Off-premises Stations allows low-cost standard telephones to be used in a small branch, or other remote locations where a full PBX system is cost-prohibitive. Connection to a PERCEPTION system allows the remote stations to access and use PBX features which would otherwise be unavailable.

# Power Failure/Emergency Transfer

PERCEPTION

SYSTEM FEATURES

## DESCRIPTION

This feature allows up to eight CO trunks to be connected to preselected standard DTMF telephones in the event of a common control or power failure. The specified trunks may be connected either automatically or manually to the preselected telephones in order to reactivate call processing. A Power Failure Transfer (DPFT) unit can be installed to support this capability.

## OPERATION

An emergency transfer will occur when any of the following circumstances arises:

- There is a power failure.
- Call processing in the CPU has a MAJOR failure.
- The attendant activates the Emergency Transfer (EMT) switch.
- The PFT switch in the system cabinet is activated.
- The LOAD switch in the system cabinet is activated.

## PROGRAMMING

None.

### NOTES:

1. *Electronic/digital telephones cannot be used for Emergency Transfer service.*
2. *If a ground-start trunk is designated for use during an Emergency Transfer, then any standard telephone which is to be used for Emergency Transfer must be equipped with ground-start buttons.*
3. *All transfer circuits except those which are connected to off-hook telephones, will simultaneously operate and reset upon command. In regards to these off-hook exceptions, circuits will reset once the telephones regain an idle status.*
4. *Once power is restored, all circuit transfers which have occurred (except those which involve circuits that are connected to off-hook telephones) will automatically reset. In regards to telephones which are off-hook when circuit transferral takes place, a circuit reset will occur once an idle status is reestablished.*
5. *A circuit transfer which is brought about either by a system fault, or by manual activation of the EMT or PFT switch, must be reset manually.*
6. *The occurrence of a circuit transfer is indicated by a "MAJ" alarm LED which lights on both the attendant console and the PERCEPTION cabinet.*
7. *When a system has recovered from its transfer condition, it will automatically be placed in Night Service mode.*
8. *If call processing in the CPU fails within four minutes of power initialization, the system's disk programs will automatically be reloaded.*

## RELATED FEATURES

1. Attendant Emergency Transfer (Attendant).
2. Night Service Control (Attendant).

## BENEFITS

The Power Failure/Emergency Transfer capability ensures that incoming trunk calls will be processed in the event of either a power outage, or system failure. By having reserved circuits for emergency use, a system is able to retain some level of call processing abilities in a situation in which they would otherwise be lost, enabling the end-user to continue to conduct business.

# Remote Access to Services

**DESCRIPTION** Remote Access to Services allows an outside caller to access system services via the public exchange network.

**OPERATION** The outside user dials a preselected DDD system directory number, followed by the entrance of a 3-digit authorization code. This will connect the caller with the system, and all subsequent calls which he makes will be processed by the system in the same manner as standard station calls. There is no toll restriction for this type of call.

**PROGRAMMING** **DSYS Program:**  
In this program you assign a directory number that is used to assign a trunk for Remote Access To Services.  
Example: REM = 599.

In this program you also define the **code used by the attendant operator to change** the authorization code **used by people who will have access to Remote Access To Services**.  
Example: RAC = # \* 2 (# \* 2 is the default code).

**DACD Program:**  
In this program you will define the access code (authorization code) used by outside callers to gain access into the system. This is the code the attendant operator can change by using the code defined at the RAC prompt in the DSYS Program. In this program, the prompt for the Remote Access To Services code is also RAC.  
Example: RAC = \* \* 5 (\* \* 5 is the default code).

**DEKT or DSTT Program:**  
In one of these programs, you must assign a port to the DN that you assigned at the REM prompt in the DSYS Program, as in this case, DN 599. In the DEKT Program, it can be on the same port as another EKT/DKT. Just assign it to one of the feature buttons other than button 0, or it can occupy a port of its own. If you assign this directory number to an EKT/DKT port of its own, it does have to have a physical telephone at the end of the connection. If you assign this directory number to a single-line station port of its own, it does not have to have a physical telephone at the end of the connection.  
For example: POR# = L013.

**DTRK Program:**  
In this program, you assign a trunk or trunks for Remote Access To Services. For the RAD prompt, you will answer either Y to make this trunk(s) available both night and day for Remote Access To Services, or you can answer N to make it (them) available just nights for Remote Access To Services. If you make it available during both night and day, you are making it an exclusive trunk for Remote Access To Services. To do this, for both the NIT and DAY prompts, you enter the directory number you assigned in the REM prompt of the DSYS Program. This now makes the trunk (or trunks) available exclusively for Remote Access To Services. To make it available strictly in the NITE mode, at the NIT prompt enter the directory number you assigned at the REM prompt of the DSYS Program. At the DAY prompt, enter a DN, ATT0 or ATT1, or NONE. This now makes

# Remote Access to Services

the trunk (or trunks) available only in the NITE mode for Remote Access To Services. For the SIG prompt you must enter GRD, since there must be ground-start trunks for this feature to operate properly. The DIS prompt must be answered Y, since you must have disconnect supervision on ground-start trunks. Example:

<b>Exclusive Use (DAY &amp; NITE)</b>	<b>NITE ONLY</b>
RAD = Y	RAD = N
NIT = 599	NIT = 599
DAY = 599	DAY = ATTO
SIG = GRD	SIG = GRD
DIS = Y	DIS = Y

**NOTES:**

- 1. Remote Access To Services can be utilized only if a remote caller uses tone (DTMF) dialing. This feature cannot be accessed by rotary telephones. Additionally, in order to utilize this feature, a system must have an incorporated DRCU/FRCU/NRCU PCB.*
- 2. The Remote Access authorization code can be changed by an attendant at any time.*
- 3. When Remote Access To Services is used, the Remote Access trunk may require the attachment of a repeater (amplifier), in order to guarantee quality transmission.*
- 4. If a Remote Access trunk is a 2-way trunk, then outgoing calls may interfere with proper Remote Access operation.*
- 5. The Remote Access trunk must be a ground-start-type trunk (DTRK, SIG = GRD), and must also be programmed for disconnect supervision (DTRK, DIS = Y). If the Remote Access DN is entered as a night station for a trunk which does not meet these requirements, then any incoming call will be routed to the attendant while the system is in Day mode, and to UNA during Night mode (see Tandem Switching).*
- 6. Remote Access To Services is primarily used to access system-connected trunks for outgoing calls; to conveniently access stations that are in a system's network; and to utilize voice mail facilities. System-generated Camp-on, Call Waiting, Automatic Callback, and Do Not Disturb services are not provided to remotely calling stations.*

## RELATED FEATURES

Tandem Switching (System).

## BENEFITS

Remote Access To Services allows users the convenience of dialing into PERCEPTION from a remote location, and then either dialing out again on system trunks, or accessing many of the system's features without attendant assistance. This process saves the attendant and the calling party both time and effort, and allows business calls to be billed to an office location, rather than to a more-costly credit card. Additionally, the use of this method, in combination with Least Cost Routing, saves both time and money through the system's incorporated ability to choose an OCC or least-cost available route. This ability eliminates the need for an individual to consciously assess the cost of each routing alternative, as well as the problems which often evolve from having to issue and reconcile separate OCC accounts.

# Remote Administration/Maintenance

## SYSTEM FEATURES

## PERCEPTION

**DESCRIPTION** The Remote Administration/Maintenance feature enables the system data base to be maintained and serviced from a remote location, such as the dealer's service center. A customer-provided modem connects PERCEPTION to either the public or a private telephone network for remote access. Security codes restrict access to prevent unauthorized tampering with the customer's system data.

- OPERATION**
1. An RS-232C connection must be made between the intended modem and the PERCEPTION MODEM connector.
  2. A 2-wire (single-line) connection must be made between the intended modem and a DSTU/NSTU line (on PERCEPTION) system.
  3. If the above connections are performed, then the Remote Administration/Maintenance capability should operate successfully. Operation will commence once an incoming trunk addresses the standard station PCB that is connected to the modem.
  4. Once access is made, the remote caller will receive a tone (from the modem), which indicates that the desired connection has been established.
  5. Following a recognized modem-Teletype connection, the remote-end Teletype will operate in the same way as an on-site (local) terminal that is connected to the TTY connector.

**PROGRAMMING** A standard telephone port is programmed in the DSTT Data Block.

### NOTES:

1. *Only one connection (TTY or MODEM) is allowed at one time.*
2. *Neither a TTY nor a MODEM connection will interrupt normal system operation.*
3. *A TTY connection has priority over a MODEM connection. Thus, if a MODEM connection is currently established, and a TTY connection is attempted, the MODEM connection will be released.*

**RELATED FEATURES** None.

**BENEFITS** The use of Remote Administration/Maintenance saves a customer both money and time, since it eliminates the need to transport programming equipment for changes and repairs. This capability also assists a technician, since problems can be defined before commuting to a job site. Thus, with this prior knowledge, the appropriate tools and parts can be acquired, and maintenance can be performed much more quickly and efficiently.

# Rotary Dial Compatibility

**PERCEPTION**

**SYSTEM FEATURES**

**DESCRIPTION** PERCEPTION is compatible with conventional rotary-dial telephones and trunks.

**OPERATION** PERCEPTION is capable of receiving dial-pulse signals from its standard line and trunk interfaces at a nominal rate of either 10 or 20 PPS. Outgoing trunk dialing can also be specified to transmit either tone (DTMF) signals, or 10 or 20 PPS dial pulses.

**PROGRAMMING** Each specific dialing type is assigned in its respective customer DSTT and/or DTRK Data Block, as noted below:

Incoming Dialing:

- Station: Electronic/digital telephone—not applicable; standard telephone—DSTT Data Block (DLG entry).
- Trunk: DTRK Data Block (DIN entry).

Outgoing Dialing:

- Station: Not applicable.
- Trunk: DTRK Data Block (DOT entry).
- Outpulsing # or \* from a rotary telephone: DSYS Data Block.

## **RELATED FEATURES**

1. Tone Dialing (System).
2. Tone Dialing-to-Dial Pulse Conversion (System).

**BENEFITS** Rotary Dial Compatibility ensures the PERCEPTION customer's ability to interface with rotary telephone sets, and Dial Pulse central-office equipment.

# Route Advance

**DESCRIPTION** Route Advance is used in conjunction with multiple trunk groups in order to reroute access requests that are initially directed to a busy trunk group. The incorporation of Route Advance will automatically send all overflow requests to an alternative predesignated trunk group.

**OPERATION** Automatic.

*NOTE: Route Advance will occur anytime when a desired trunk group is busy, and an alternative, preprogrammed Route Advance trunk group is available for access. If the above programming is retained, Route Advance will occur when a station user, who desires to access a trunk within a trunk group, is unable to do so because all trunks within that group are busy.*

**PROGRAMMING** Alternative trunk groups which are to be accessed, when an initial trunk request is not available, are specified in the STP entry of the DTGP Data Block.

**NOTES:**

1. Before Route Advance is performed, PERCEPTION will automatically verify that access to a specific trunk group is allowed by a station's Class of Service. If access is denied, then routing will not occur.
2. A maximum of eight routing steps may be assigned.
3. Route Advance is only effective when attempted calls utilize direct trunk access. The feature does not apply to Least Cost Routing calls.

**RELATED FEATURES**

1. Least Cost Routing (System).
2. Multiple Trunk Groups (System).

**BENEFITS** Route Advance supplies alternative avenues for outbound call processing by providing an automatic transfer capability from a busy to an idle trunk group. This increases the chances that a call will successfully be completed. The Route Advance feature is particularly useful in applications which utilize some trunk groups primarily for incoming calls, and others for exclusive outgoing call purposes. Such a situation (e.g., in a lodging application) requires that trunk groups be programmed so that overlapping (busy trunks) will not readily occur. Route Advance satisfies this requirement by isolating specific trunk groups for reserve access.

# Station Message Detail Recording (SMDR)

PERCEPTION

SYSTEM FEATURES

**DESCRIPTION** Station Message Detail Recording (SMDR) automatically registers incoming and outgoing call information on either storage equipment, or a hard-copy printout device. SMDR provides verification of call activity, including call duration, specific calling and answering directory numbers, and seized trunk identification.

Specific information which will be recorded by SMDR is as follows:

- Date.
- Time at start of call.
- Duration of call (hours, minutes, seconds).
- Condition code (type of call).
- Trunk access code.
- Trunk port number (see Note 4).
- Dialed number (1 ~ 15 digits).
- Calling number.
- Calling port number.
- Account code (1 ~ 12 digits).
- Called station.
- Called port number.

**OPERATION** Automatic.

**PROGRAMMING** SMDR is programmed in the DMDR Data Block.

**NOTES:**

1. SMDR utilizes an RS-232C connector.
2. Recording data speed for SMDR can be specified on CPU PCB as either 300 or 1200 BPS.
3. SMDR data consists of a 7-bit ASCII code with one start bit, one stop bit, and one parity bit (even parity).
4. Trunk port number is available only in **Versions D.02B** software and above.

**RELATED FEATURES** None.

**BENEFITS** SMDR is a strong cost-control tool, and it can convert PERCEPTION into a profit center for the end-user. SMDR details calls, enabling the user to identify unauthorized calling activities, and then program toll restriction to prevent them. Account codes printed out with the SMDR data, enables such companies as Legal or Accounting partnerships to accurately bill clients for telephone time. And, of course, Lodging and Health Care organizations can send the SMDR data to a call-accounting system, enabling them to generate revenue by reselling telephone service to their guests.

# Station Set Mix

## SYSTEM FEATURES

## PERCEPTION

### DESCRIPTION

The Station Set Mix arrangement permits a single Directory Number (DN) to appear simultaneously on a maximum of one standard telephone, and seven or ninety-five electronic/digital telephones, depending on software level. This feature allows a station user to join an established conversation which involves a station with a like-DN appearance. Definitively, the Station Set Mix arrangement is a calling arrangement which allows a station user to access an established call without any warning indication to the members of the call. A Privacy feature is not incorporated into the calling arrangement. This joining process, called bridging, may occur simultaneously between a maximum of one trunk member and five stations which share the same DN-line appearance.

### OPERATION

1. Interaction between standard telephones and electronic/digital telephones which are part of the same Station Set Mix are noted below:
  - a. The indication of an incoming call is presented to a standard telephone as ringing tone. Likewise, an electronic/digital telephone will either ring or not (as determined by the SCN/SCR entry in the DEKT Data Block), while, simultaneously, the respective line LED will flash until the call is answered.
  - b. Once a call is answered, bridging may occur between the two separate stations. If the standard telephone is engaged in a call, then an electronic/digital telephone may bridge into the conversation by depressing the appropriate **DN** button. When the extended connection has been established, the corresponding LED will light steadily. In the case that an electronic/digital telephone is engaged in a call which a standard telephone user wishes to join, the standard telephone user needs to only pick up the handset in order to join the conversation.
  - c. Any party of a bridged conversation (including the call originator) can drop out of the conversation at any time, without any effect on the remaining call connections. Exiting is performed by simply going on-hook.
  - d. Bridging is not provided in the following situations:
    - When a conversation has not yet been established. A station user must wait until a call has been established before he can gain access to the connection.
    - When a call is still active at an attendant console.
    - When a conference situation has been established through the use of a **CONF** button, rather than through the use of a like-**DN** button.
    - When a standard telephone user is involved in a conversation, and an incoming call has sounded Call Waiting tone onto the line. In this case, the called station user must acknowledge the call that is waiting, and eliminate the waiting connection before another station may bridge onto the line.
    - When the station which is to join a call connection goes off-hook before an originating station has completed dialing.
2. The Call Waiting and Camp-on features can be applied to a station only when it is involved in a regular one-to-one call connection. Therefore, a call cannot be transferred to a station involved in a conference or a Station Set Mix call.

3. A Station Set Mix arrangement allows stations with the same DN-line appearance to transfer calls simply by placing a call on hold at one station, and reaccessing it from another. The bridging process can also be used to transfer calls, since a 3-way conversation can temporarily be established, and then one member may drop out by hanging up.
4. Automatic Callback is available to both standard and electronic/digital telephones, and is activated identically with either type of telephone. Specifically, when a station user places a call to another station and encounters busy tone, he can then initiate an automatic callback to that station once that station becomes idle, via either a specific feature access code or button. Once Automatic Callback has been registered, and after the initially-called station has become idle, the system will generate special recall tone to only the originally-calling station. Other stations in the same Station Set Mix (stations which have the same DN-line appearance) will not receive this recall tone, and will not be able to answer the call.
5. If an electronic/digital telephone is involved in a bridged conference with stations within its Station Set Mix, then any attempt to operate a Privacy Release (**PRS**) button will be ignored.
6. A Station Set Mix arrangement will not affect the operation of any other system, station, or electronic/digital telephone features.

## PROGRAMMING

1. The inclusion of a standard telephone in a Station Set Mix arrangement must be designated in the SMX entry of the DSTT Data Block (SMX = Y). The inclusion of an electronic/digital telephone requires no special programming.
2. If a standard telephone is not programmed for inclusion in a Station Set Mix arrangement (SMX = N), an electronic/digital telephone user must utilize the telephone's PRS button to establish a bridged connection to a call involving that standard telephone.

### NOTES:

1. *The bridging of station parties within a Station Set Mix arrangement is similar to conference and requires a conference circuit.*
2. *If a Station Set Mix conference arrangement involves an external trunk call, the connection's dBm level will be reduced.*
3. *A standard telephone's directory number is considered to be its Prime DN, and thus, cannot be assigned to button **0** of an electronic/digital telephone.*

## RELATED FEATURES

1. Multiple-Appearance DN (Electronic/Digital Telephone).
2. Prime DN (Electronic/Digital Telephone).
3. Privacy (Electronic/Digital Telephone).
4. Privacy Release (Electronic/Digital Telephone).

# *Station Set Mix*

**SYSTEM FEATURES**

**PERCEPTION**

**BENEFITS** The bridging capability of a Station Set Mix arrangement provides convenient conference and supervisory monitoring capabilities to stations which commonly require such interaction. Additionally, the inherent duplication of DN-line appearances on stations involved in a Station Set Mix arrangement, provides a backup-call answering capability, since each of the involved stations has the ability to pick up the same incoming call.

**DESCRIPTION** The digital trunk (NDTU) PCB enables PERCEPTION (<sub>e</sub> or <sub>ex</sub>) to connect directly to T1-span lines (using a channel service unit), to connect either to the central office, or to a private network by using DS-1 signaling. T1 transmission can offer both a significant reduction in the cost of external connectivity, and the enhanced quality of digital transmission.

**OPERATION** Automatic.

**PROGRAMMING** The NDTU PCB supplies 24 channels (for up to 24 trunks). These can be CO trunks (including DILs and PVLs), FX trunks, DID trunks, and/or TIE trunks. The trunks are programmed in the usual manner in the DTGP and DTRK Data Blocks. Once the trunks are programmed, the NDTU takes over.

**NOTES:**

1. A maximum of two NDTU PCBs may be assigned per system; one in the main cabinet and one in the expansion cabinet.
2. T1 is available only in PERCEPTION<sub>e&ex</sub> systems, but it can be used with Versions **D.01** ~ **D.03** software.
3. An NTWU-3 PCB is required for clocking to the NDTU.

**RELATED FEATURES**

1. TIE Trunks (System).
2. Tandem Switching (System).
3. Direct Inward Dialing (System).
4. Direct-in Line (System).
5. Direct-in Line Pooling (System).
6. Common Control Switching Arrangement (System).
7. Direct Outward Dialing (Station).
8. Private CO Line (Station).
9. Trunk-to-Trunk Connections (Station).

**BENEFITS** T1 interface enables PERCEPTION to connect up to 2 T1 digital trunk interfaces, for a total of 48 trunks, over either a private network, or the public telephone network. T1 trunks provide higher quality speech transmission, and reduce the expense of trunking facilities. In a private network, T1 significantly reduces the number of cables that must be run. In the public network, T1 enables the user to reduce the expense of leased telco facilities. PERCEPTION also allows the user to mix trunk types (CO, DID, TIE), on a circuit-by-circuit basis, over a single T1 interface.

# Tandem Switching

**DESCRIPTION** The Tandem Switching capability allows PERCEPTION to be used as an intermediate switching point in a call connection, between either two other PBX systems or a PBX and a central office. In its role as an intermediate switching point, PERCEPTION can provide its unique capabilities to network members which may not possess the trunks that are necessary to make a particular call.

- OPERATION**
1. The Tandem Switching process usually involves the use of TIE trunks. Such utilization is necessary, if a caller is to make a tandem call without attendant assistance. Exclusive TIE-trunk utilization normally applies to a call between two PBX systems and PERCEPTION, however, a case in which a central office is involved as the third member in a call-switching arrangement requires a TIE trunk on one end of the connection, and an outgoing trunk on the other.
  2. When accessed as an intermediate calling point, PERCEPTION will automatically translate all dialed dial pulse or DTMF digits into information that is required for call transmission and connection to the other PBX system or central office. PERCEPTION will then complete the call connection and will outpulse any remaining digits.
  3. PERCEPTION will automatically apply Toll and Class of Service restrictions to any incoming call which passes through the system, from either another PBX or a central office. Any registered Least Cost Routing information or Direct Trunk access assignments will also be taken into consideration before completing a tandem connection.
  4. PERCEPTION requires a DEMU/NEMU TIE trunk PCB, and Type 1, 2-wire, E & M interface trunks (FCC facility interface code = TL11M). PERCEPTION<sub>e&ex</sub> can also use Type II 4-wire. TIE trunks must be specified for both dialing type and starting arrangement, with available options as follows:
    - a. Incoming Dialing = DTMF or Dial Pulse (10 or 20 PPS).
    - b. Outgoing Dialing = DTMF or Dial Pulse (10 or 20 PPS).
    - c. Start Arrangement = Immediate, Wink, or Delay Dial.
  5. The permission or denial of a particular tandem connection is based upon PERCEPTION's supervision of the involved TIE trunks. The system's ultimate decision to allow or deny is made in regards to its assessment of the following points (which apply to both originating and terminating trunks):
    - a. Trunk type (CO, TIE, etc.) of each involved trunk, as specified in the TKT entry of the DTGP Data Block.
    - b. Loop-start or ground-start arrangement, as specified in the SIG entry of the DTRK Data Block.
    - c. Directional type of the trunk (incoming or outgoing) over which a call has been routed to the intermediate PERCEPTION point.
    - d. Existence or non-existence of trunk-disconnect supervision, as specified in the DIS entry of the DTRK Data Block.
    - e. Registered type of disconnect control (originating party control or first party release), as specified in the CTL entry of the DTRK Data Block.

# Tandem Switching

PERCEPTION

SYSTEM FEATURES

The possible types of tandem connections are as follows:

- Incoming Call Facilities.
- TIE Trunk Loop, dial repeating.
- Incoming dial, outgoing automatic E & M.

Outgoing Call Facilities:

- TIE Trunk Loop, dial repeating.
- Incoming dial, outgoing automatic E & M.
- CO Trunk, loop start.
- Ground start.
- Paging trunk (see Note 1).

6. Any tandem call which does not utilize TIE trunks, requires the intervention of either an attendant or a station to perform trunk connections (see Trunk-to-Trunk Connections). Such calls may originate from either a CO/FX/WATS or a DID trunk. If an attendant attempts to make a connection which is prohibited, the incomplete call will be held on the console loop. Prohibited connections which have been set up by a station, will be disconnected once the station goes back on-hook.

## PROGRAMMING

1. See Operation, step 5.
2. All trunk parameters are programmed through entries in the DTGP and DTRK Data Blocks.

### NOTES:

1. *The conversion from DTMF dialing tones to dial pulses, (or vice versa), is automatically provided whenever trunks of different dialing classes are connected in tandem (see Tone Dialing-to-Dial Pulse Conversion).*
2. *It should be noted that if the system's signaling-starting arrangement is set as immediate (IMM Start), then this may occasionally cause voids in digit acknowledgement, since the connected tandem system or central office may operate on a different starting-time frame (e.g., wink, or delay). Start arrangement should be the same on both ends.*
3. *The same COS and Toll Restrictions that apply to stations also apply to TIE trunks.*
4. *Whenever a station places a tandem call to another PBX, PERCEPTION will not verify Class of Service and Toll Restriction assignments which apply to TIE-trunk lines. If the connecting TIE trunks are governed by such restrictions (e.g., the specification of certain TIE trunks for only incoming TIE calls), then these stipulations will be imposed at the distant PBX.*

## RELATED FEATURES

1. Multiple Trunk Groups (System).
2. Remote Access to Services (System).
3. TIE Trunks (System).
4. Conference (Station).
5. Trunk-to-Trunk Connections (Station).

# Tandem Switching

SYSTEM FEATURES

PERCEPTION

## **BENEFITS**

Tandem Switching allows PERCEPTION to be part of a larger network, since every network member does not need to have its own trunks for all of its specific calling purposes. Rather, tandem switching allows trunks to be shared between network members. This allowance can eliminate the need for the duplication of both foreign exchange lines and OCC services, and thus can provide considerable cost savings in addition to its inherent advantage of network flexibility.

**DESCRIPTION** Tenant Service allows a single PERCEPTION system to be shared by two customers. This set-up provides the advantages of dual usage (cost savings, space requirements, etc.), while also providing the individual system feature with unique attendant console operation. The station members of each tenant group are able to access system features and trunks (as allowed by their specific Class of Service), and may also place calls to cross-tenant members.

- OPERATION**
1. The employment of Tenant Service primarily affects the operation of attendant consoles. Specifically, in an application which utilizes two attendant consoles without Tenant Service, the consoles alternatively share the handling of incoming and outgoing calls. In a tenant situation, however (when TEN = Y in the DSYS Data Block), the consoles do not share the call load, but rather, handle only the calls that are addressed to and from the members that are in each of their specific tenant groups (0 or 1). This differentiation applies to station-to-station calls, Operator (0) calls, and all incoming and outgoing CO/FX/WATS trunk calls.
  2. Since the station members of each tenant group may place calls to each other, it is important to note that PERCEPTION's station-numbering plan must be continuous. There can be no numbering duplications.
  3. The trunk groups which are contained within a PERCEPTION system are registered in a single overall trunk group arrangement. The ability for each tenant station member to access the different group members of this arrangement is governed solely by each station's Class of Service assignment. Thus, it is important to note that trunk group access codes must also be assigned in an overall arrangement. Each trunk group must have its own unique access code, which is used universally between tenants, in order to access a particular trunk group. Once a station enters a particular access code, PERCEPTION will automatically correlate the access code with its respective trunk group, and in turn, will reference each station's COS to decide whether or not access will be allowed.
  4. In **D.01** software and above, a second NPRU must be installed to provide two UNA zones in Tenant Service. In a non-tenant system, only one UNA zone is possible.

- PROGRAMMING**
1. Tenant Service is assigned in the TEN entry of the DSYS Data Block (TEN = Y). The assignment of this service will automatically convert an ordinary dual-attendant-console load-sharing set-up, to the call-differentiating tenant arrangement. Specific attendant-to-tenant assignment is noted below:  
ATT 0 = TEN0  
ATT 1 = TEN1
  2. A station is assigned to a specific tenant group through the registration of either a 0 or a 1 in the TEN entry of the DEKT/DSTT Data Blocks.

# Tenant Service

3. A trunk is assigned to a specific tenant group through the registration of either a 0 or a 1 in the TEN entry of the DTGP Data Block.
4. When a system is programmed for Tenant Service, a separate Universal Night Answer (UNA) zone can be assigned to each tenant (UNA0 = TENO; UNA1 = TEN1) in the DSYS Data Block. When dual UNA zones are assigned, any station user (regardless of tenant membership) may dial the same UNA access code, or depress a UNA feature access button in order to obtain trunk calls which are designated specifically for their particular tenant. To allow this capability, a second NPRU PCB must be installed. Systems which do not employ Tenant Service may only utilize one UNA zone.

*NOTE: When a system is divided into tenant partitions, this causes complex feature interactions. Thus, before Tenant Service is employed, each tenant party should be carefully reviewed to make sure that the desired functions and results of the pending tenant arrangement can be achieved.*

## RELATED FEATURES

All.

## BENEFITS

Tenant Service allows two customers with the same communication needs to share the features of a single PBX system, rather than have to maintain their own separate systems. This saves both money and space since only one main system needs to be installed. Tenant Service provides the benefits of dual usage, while allowing each tenant its own unique call-differentiating attendant console.

- DESCRIPTION** TIE trunks allow a 1- or 2-way interconnecting between systems which are within the same communication network. PERCEPTION utilizes E & M signaling, Type I and Type II, 2- and 4-wire on (PERCEPTION<sub>e&ex</sub> only) interface trunks, which may be specified to transmit either dial-pulse signals or DTMF tones. A TIE trunk may be used either to make a direct connection between a station, or attendant and another network member, or as a connective means to another trunk which is contained within the network member system. (Refer to Tandem Switching for further information regarding this latter capability.)
- OPERATION** See Tandem Switching.
- PROGRAMMING** All TIE trunk parameters are specified within the DTGP and DTRK Data Blocks. Class of Service groups for both stations and TIE trunks are defined within the DCOS Data Block.

**NOTES:**

1. *The FCC Facility Interface Code for the PERCEPTION E & M TIE trunk (DEMU/NEMU) is TL11M.*
2. *The same COS and Toll Restrictions which apply to stations also apply to TIE trunks.*
3. *Whenever a station places a tandem call to another PBX, PERCEPTION will not verify COS or Toll Restriction assignments which apply to TIE-trunk lines. If the connecting TIE trunks are governed by such restrictions (e.g., the specification of certain TIE trunks for only incoming TIE calls), then these stipulations will be imposed at the distant PBX.*
4. *PERCEPTION does not permit External-zone or Internal-group pages to be made across a TIE trunk.*
5. *PERCEPTION can be programmed to perform number translation and/or digit absorption on incoming dialed numbers which arrive over either a TIE/CCSA, or DID trunk. The programming for either of these capabilities is performed in the OAB, IAB, TRN1, and TRN2 entries of the DTGP Data Block. A description of each of these separate parameters and each of their different entry options is described as follows:*

**OAB (Outgoing Absorb Digits)**—*This parameter identifies any outgoing dialed digits which are to be ignored by the system for Toll Restriction purposes. The registration of specific digits for outgoing absorption means that if these particular digits are dialed by a station user, they will not be considered as part of the dialed number.*

*TO PROGRAM: Enter either the number of digits which are to be absorbed or NONE. A maximum of 2 digits can be absorbed by the system.*

**IAB (Incoming Absorb Digits)**—*This entry defines the number of digits that are to be stripped off of an incoming dialed number, which arrives over either a TIE/CCSA or DID trunk.*

*TO PROGRAM: Enter either the number of digits which are to be absorbed (maximum: 2 digits), or NONE.*

**TRN1** (Translated Number 1)—The TRN1 entry is used to specify any absorbed digit (IAB) which is to be translated into another digit (or digits). (See examples following TRN2.)

TO PROGRAM: Enter either X # Y, or X # YY.

X = The digit which is to be translated (when two digits are absorbed, only the second digit will be translated).

Y or YY = The digit or digits which are to take the place of the originally-absorbed digit (X).

**TRN2** (Translated Number 2)—This parameter is also used to specify an absorbed digit (IAB) which is to be translated into another digit or digits (See examples).

TO PROGRAM: Enter either X # Y, or X # YY.

**EXAMPLE A:**

IAB = 1

TRN1 = 9#2

TRN2 = 8#3

Three Digits Received from CO: 900 ~ 999; 800 ~ 819

To Ring Three-digit DNs: 200 ~ 299; 300 ~ 319

**EXAMPLE B:**

IAB = 2

TRN1 = 9#2

TRN2 = 8#3

Four Digits Received from CO: 5900 ~ 5999; 5800 ~ 5819

To Ring Three-digit DNs: 200 ~ 299; 300 ~ 319

**EXAMPLE C:**

IAB = 2

TRN1 = 9#21

TRN2 = 8#32

Four Digits Received from CO: 5900 ~ 5999; 5800 ~ 5890

To Ring Four-digit DNs: 2100 ~ 2199; 3200 ~ 3299

## RELATED FEATURES

1. CCSA Access (System).
2. Direct Inward Dialing (System).
3. Multiple Trunk Groups (System).
4. Tandem Switching (System).
5. Tone Dialing (System).
6. Call Forward-No Answer (Station).
7. Direct Outward Dialing (Station).

## BENEFITS

TIE Trunks enable PERCEPTION to integrate into a private networking arrangement, utilizing the most commonly-used types of TIE trunking. The expense of calling between nodes in the network is reduced, because of the elimination of toll calls; and calls to external directory numbers in the area/office codes of the nodes may be less expensive when made across TIE trunks. Since TIE trunk calls can access features and stations in the distant systems, less time and attendant assistance are required.

# Toll Restriction (6-Digit)

**DESCRIPTION** Toll Restriction enables the end-user to control the outbound calling capabilities of individual stations. There are 10 available Toll Restriction classes (0 ~ 8 and NONE), which determine the long distance numbers that individual station users may call. PERCEPTION provides true Six-digit Restriction, meaning that it can screen both area and office codes, as well as 0 and 1 as the first digits dialed, to provide the end-user with maximum flexibility in configuring outbound calling capabilities for individual station users. The registration of NONE in a Toll Restriction assignment allows unlimited dialing privileges. However, if a station's Toll Restriction assignment denies the placement of a particular call, a system attendant has the ability to bypass that governing restriction.

**OPERATION**

1. The use of Toll Restriction stipulates the dialing privileges of specific area codes and/or office codes.
2. The examination of Toll Restriction stipulations is performed automatically by PERCEPTION, and is indicated through the system's follow-up procedures. Specifically, when a station user attempts to dial a number which contains an area or office code which is denied through Toll Restriction, he or she will receive overflow tone. If Direct Trunk access is used to place a call to an area which is governed by an area- or office-code restriction, the system will indicate the restriction by not furthering the attempted call. Likewise, PERCEPTION will indicate its recognition of Toll Restrictions which affect trunks, by bypassing any restricted trunk while performing Least Cost Routing.

**PROGRAMMING**

1. Each station and TIE/CCSA trunk is assigned a specific Toll Restriction class (0 ~ 8 or NONE) in the TOL entry of the DSTT, DEKT, and DTGP Data Blocks.
2. Toll class restrictions are defined within the **DTOL Program**.

**NOTES:**

1. *Toll Restriction can be applied to series of numbers which contain up to six digits. This allows for the restriction of the following:*
  - a. Area codes and/or home-office codes.
  - b. Area codes/office codes (within the respective area) and/or home-office codes.
2. *Toll Restriction classes 0 ~ 7 may be used to restrict selective operator calls, international calls, and/or long distance assistance (555) calls. Toll Restriction class 8 is reserved for dialed numbers which begin with either a 0 or 1, while Toll Restriction class (NONE) places no restrictions on outgoing calls.*
3. *Toll Restriction works together with Class of Service in forming the allowance/denial framework within which each individual station is to operate. While Toll Restriction is used to allow or deny the dialing of particular area/office codes, Class of Service is used to either permit or deny feature-access privileges.*
4. *For further information regarding Toll Restriction, refer to the Least Cost Routing and Toll Restriction Programming Guides.*
5. *Toll Restriction is not applied to calls made over Private Lines.*
6. *System Speed Dial does not override Toll Restriction.*

# *Toll Restriction (6-Digit)*

**SYSTEM FEATURES**

**PERCEPTION**

## **RELATED FEATURES**

1. Class of Service Restrictions (System).
2. Intercept (System).
3. Least Cost Routing (System).
4. Direct Outward Dialing (Station).

## **BENEFITS**

Through its denial of specific area/office codes to particular stations, Toll Restriction provides access to only those station users who require it. This ability is beneficial in preventing the unauthorized dialing of long distance calls, which can dramatically reduce the end-user's long distance calling expenses. Such restrictive measures act to further customize a system to meet the needs of a particular customer, and are a major means of cost control.

# Toll Restriction/Class of Service Override Code

**DESCRIPTION** This single code, when input prior to dialing an outgoing number at any telephone in the system, changes both the Toll Restriction Class and the Class of Service programmed for that station to 0 for the duration of a single call. Once that call is completed, the Toll Restriction Class and Class of Service programmed in the system data base for that station are reapplied. This feature enables executives and other persons requiring specialized, outgoing calling capabilities to make calls from any telephone in the system, regardless of the restrictions that are normally applied to that telephone. This feature can also be applied to telephones located in unattended or unsecure locations to prevent telephone abuse. Toll Restriction Class 0 and Class of Service 0 can be set in system programming to apply the features and restrictions the customer wishes to apply to override calls.

Although only one override code is provided by PERCEPTION software, code entry can be customized to require multiple or individualized override codes by activating Forced and Verifiable Account Codes in Class of Service 0. In this case, when a person enters the override code at a station and then dials an outgoing number, the system will force an account-code entry and then verify the code entered, before permitting the call. Thus, not only will individual persons have unique override codes, but the account-code number output with the SMDR data will also identify the exact person making the override code, providing additional control and security for the customer.

**OPERATION** **To Use Toll Restriction/Class of Service Override:**

1. Lift the handset.
  - You will hear dial tone.
2. Dial the access code (#\*7) \_\_\_\_\_.
  - You will hear dial tone.
3. Dial the DTA or LCR code and the desired telephone number.
  - Your call will be connected.

**PROGRAMMING** This feature is available only with **D.04** and later versions of software.

1. The default Toll Restriction/Class of Service Override code (#\*7) \_\_\_\_\_ can be changed in the Access Code (DACD) Data Block.
2. Class of Service 0 is programmed in the Class of Service (DCOS) Data Block. Toll Restriction is programmed in the Toll Restriction (DTOL) Data Block.

**RELATED FEATURES**

1. Account Codes: Forced, Verifiable, Voluntary (System).
2. Class of Service (System).
3. Station Message Detail Recording (System).
4. Toll Restriction (System).

**BENEFITS**

This feature increases telephone security by allowing the end-user to assigned, restricted outgoing call and feature privileges to specific stations, while still permitting particular individuals to override those restrictions as required.

# Tone Dialing

**DESCRIPTION** Tone Dialing capability permits PERCEPTION to accept audible tones from DTMF telephones (the 2500-series). Once received, these tones can be used to make a call connection between any calling telephone and any type of trunk. PERCEPTION can also generate and receive DTMF over central office and private network trunks. Additionally, PERCEPTION can convert electronic/digital telephone dialing signals into tone-dialing signals, to enable connection to a tone-dialing trunk, voice mail system, or other DTMF-activated device. The system also has the capability to convert tones into dial-pulse signals in order to connect the calling station with a dial-pulse class trunk (see Tone Dialing-to-Dial Pulse Conversion).

**OPERATION**

1. In order to accommodate DTMF telephones, PERCEPTION is equipped with DTMF receivers (DRCU/FRCU/NRCU PCB) which serve to translate tone-dialing signals into PERCEPTION signaling messages.
2. In order to establish an outgoing trunk call, PERCEPTION will first access an outgoing trunk, and will then generate and outpulse the appropriate dial pulse or DTMF signals which the trunk requires.

**PROGRAMMING**

1. The dialing-type (tone or dial-pulse) designation for standard telephone stations (DSTU/NSTU circuits) is specified in the DLG entry of the DSTT Data Block.
2. Trunk dialing parameters are specified within the DTRK Data Block.
3. See Note 1.

**NOTES:**

1. *While dialing from a standard-DTMF telephone, the transmit connection from the station to an outgoing trunk is disabled, and the station is connected to a DTMF receiver. During this time, the caller will be involved in a listen-only connection. Once the last digit has been dialed, and once the Push-button time-out period has elapsed, a 2-way connection will automatically be established. Once this occurs, any further dialing from a DTMF telephone (for security-code entrance, etc.) will be transmitted via the established voice path. The Push-button Time-out period is specified in the PBT entry of the DSYS Data Block.*
2. *A station line which has been designated for tone dialing may still receive calls which are transmitted via dial-pulse signals. It is important to note, however, that a station which does not require tone dialing (i.e., a station that makes calls mainly to dial-pulse destinations) should not be designated for tone dialing, since this would unnecessarily promote extra traffic on the system's DTMF receivers.*

**RELATED FEATURES**

1. Line Lockout (System).
2. Rotary Dial Compatibility (System).
3. TIE Trunks (System).
4. Tone Dialing-to-Dial Pulse Conversion (System).

## **BENEFITS**

The ability of PERCEPTION to receive and transmit DTMF-tone signals (Tone Dialing) provides immediate access to DTMF central offices, as well as to banking and messaging services which require the input of DTMF security codes. Furthermore, the system's ability to translate tone signals into dial-pulse signals enhances PERCEPTION's operational flexibility, since the system can freely interact with both DTMF and dial-pulse trunks as well as with either the 500-series, or the 2500-series standard telephones.

# Tone Dialing-to-Dial Pulse Conversion

**DESCRIPTION** Tone Dialing-to-Dial Pulse Conversion capability allows PERCEPTION to automatically convert DTMF or dial-pulse signals from a standard telephone into the type of signals required by a particular trunk. Converted dial-pulse signals may consist of either 10 or 20 pulses per second. The conversion of electronic/digital telephone push-button dialing signals into the required signaling form (either DTMF or dial-pulse) is also performed automatically by the system.

- OPERATION**
1. The conversion of standard telephone DTMF signals, into PERCEPTION signaling messages, is automatically enabled whenever a telephone goes off-hook, and is accomplished through the incorporation of a tone receiver (DRCU/FRCU/NRCU PCB).
  2. Whenever an outgoing trunk call is placed, PERCEPTION will access the appropriate trunk, and then generate and output either dial-pulse or DTMF signals, as required by the trunk.

**PROGRAMMING** The Dial Pulse and Push-button Time-out periods, which specify the allowable length of time for digit dialing, are respectively programmed in the DPT and PBT entries of the DSYS Data Block. The signaling type which is required by each particular trunk, is initially programmed in the SIG entry of the DTRK Data Block.

**NOTES:**

1. *While dialing from a DTMF telephone, the transmit connection from the station to the connecting trunk is disabled, and the station is connected to a DTMF receiver. During this time period, the caller will receive a listen-only connection. Once dialing is completed, and once the Push-button Time-out (PBT) period has elapsed, a 2-way connection will be established. At this point, any further dialing (for security-code entrance, etc.) will directly be transmitted over the voice path. The Push-button Time-out period is specified in the PBT entry of the DSYS Data Block.*
2. *While dialing from either a rotary or an electronic/digital telephone, a caller will receive a listen-only connection. Calls will automatically receive a 2-way connection once dialing has been completed, and after the DPT time-out period has elapsed. Any additional digits which are dialed from either of these telephone types will be ignored by the system.*
3. *The Dial Pulse and Push-button Time-out periods are programmed to determine the length of time allowed for digit dialing. The Dial Pulse Time-out (DPT) period applies to dial-pulse and electronic/digital telephones, while the Push-button Time-out (PBT) applies to DTMF telephones.*
4. *If the registered DPT time-out value elapses before either a station number, trunk number, or Least Cost Routing access code is dialed, then a rotary or electronic/digital telephone will receive overflow tone. Comparably, if a digit is not dialed within the PBT-timing allotment, then a standard DTMF telephone will be disconnected from its respective DTMF receiver.*

# *Tone Dialing-to-Dial Conversion*

**PERCEPTION**

**SYSTEM FEATURES**

## **RELATED FEATURES**

1. Least Cost Routing (System).
2. Line Lockout (System).
3. Rotary Dial Compatibility (System).
4. Tone Dialing (System).
5. Variable Time-out (System).
6. Push-button Dialing (Attendant and Electronic Telephone).

## **BENEFITS**

Tone Dialing-to-Dial Pulse Conversion capability eliminates the need to program specific signaling types to stations. Conversion capability also enables free access to all trunks, and decreases the possibility of tied-up lines.

# Traffic Measurement

**DESCRIPTION** PERCEPTION automatically measures and records various traffic patterns in the system. Traffic data is stored in the system's memory, and can be printed out either automatically (at 30- or 60-minute intervals), or manually (upon request).

- OPERATION**
1. A TTY, which may be located either on- or off-premises, is used both for initiating the metering process and for printing the resulting data.
  2. The specific traffic parameters which can be measured are listed below. Metering may apply to any or all of these parameters, and may also be designated to apply only to specific trunk groups.

TRAFFIC MEASUREMENT PARAMETERS	
ITEM	TYPE
<b>System</b>	
DTMF RCVR delay (3 seconds)	PEG count
<b>Attendant</b>	
Time in Service	CCS
Work Time	CCS
Incoming Trunk Calls	PEG count
Time Servicing Incoming Calls	CCS
Dial-0 Calls	PEG count
All Loops Busy	PEG count
Average Time to Answer	SEC
Overflow	PEG count
<b>Trunks</b>	
Incoming Usage	CCS
Incoming Calls	PEG count
Outgoing Usage	CCS
Outgoing Calls	PEG count
All Trunks Busy	PEG count

CCS = Hundred Call Seconds, which are measured with this formula:  
 $CCS/36 \times \text{study period in minutes}$ . One hour of telephone traffic is equal to 36 CCS ( $60 \times 60 = 3600$  minutes divided by  $100 = 36$ ). For trunk groups, the maximum CCS per group is the number of trunks in the group  $\times 36$ . Maximum CCS per trunk is 36. Incoming and outgoing usage can never be more than the maximum number of CCS per group.  $\text{Time in minutes} = CCS/\text{max. CCS} \times \text{study period}/\# \text{ of trunks in group}$ .

**PROGRAMMING** Traffic Measurement is controlled through entries in the DTRF Data Block.

**NOTES:**

1. *Setting the real-time clock can be done either directly from an attendant console, or through the use of a Teletype (TTY) via the Traffic Measurement program.*

# Traffic Measurement

PERCEPTION

SYSTEM FEATURES

2. *Traffic data is collected in a set of registers which accumulate data during each prescribed hour or half-hour reporting interval. The accumulated data is then automatically transferred to a set of holding registers, so that it may be printed. After off-loading to the holding registers, the accumulating registers will reset to zero and will then begin to collect data for the next report. Each of these registers actually represents a specific location within the system's memory.*
3. *A Traffic Measurement printout cannot be performed if a utility program is currently being utilized. In this case, at the time when the printout would normally occur, the Teletype will generate a request to abort the utility program. Once the utility program is aborted, the traffic measurement report will print.*

## RELATED FEATURES

None.

## BENEFITS

Traffic Measurement generates information regarding trunk and attendant usage, which is helpful in determining whether or not a system's current configuration fulfills a customer's particular needs. It is important to the end-user for assessing the efficiency of the system configuration, and determining any changes that should be made to the trunking or attendant console arrangements.

# Trunk Transfer Recall (Timer & Termination Destination)

**DESCRIPTION** Each trunk in the system can be programmed to have a unique, final, transfer-recall destination, which can be any system station, the attendant console, or universal night answer. If a transferred trunk call is not answered and recalls to the station that transferred it, and the call is then not answered at that station (after a predetermined amount of time—designated by Trunk Transfer Recall Timer), it will recall to the final destination assigned to that trunk.

*NOTE: This feature is only available in **Versions D.02** software and above.*

**OPERATION** Automatic.

**PROGRAMMING** The Trunk Transfer Recall Destination is programmed in the DTRK Data Block for each trunk.

The Trunk Transfer Recall Destination Timer is programmed in the DSD2 Data Block. It is a system-wide timer for all trunks programmed with a destination.

## RELATED FEATURES

1. Direct-in Lines (System).
2. Attendant-Position Electronic/Digital Telephones (DSS/DDSS).

**BENEFITS** Transfer Recall Destination enables the customer to configure a final answer position for each incoming trunk, ensuring that important calls always reach someone who can handle them. This capability is especially valuable in distributed-call-processing applications, in which Direct-in Lines are terminated on Attendant-Position Electronic/Digital Telephones or other system's stations.

# Uniform Distribution Wiring

PERCEPTION

SYSTEM FEATURES

**DESCRIPTION** Uniform Distribution Wiring refers to the ability to prewire a PERCEPTION installation site with either 2- or 3-pair cable, regardless of the future configuration of the system. This is enabled both through the system's employment of electronic/digital telephones with 2-pair wiring, and through the system's non-utilization of conventional button equipment.

**OPERATION** None.

**PROGRAMMING** None.

*NOTE: If a future system configuration is to utilize voice/data transmission capabilities, then 3-pair cable should be used.*

**RELATED FEATURES** None.

**BENEFITS** By using the industry standard system and station wiring plan, PERCEPTION eliminates the end-user expense of installing custom house wiring.

# Universal Night Answer

**DESCRIPTION** When the system is in night operation, incoming calls can be programmed to go to either a night-answer station, or to a Universal Night Answer device, such as a bell or loud ringer. Any station user can pick up a UNA call by pressing a **UNA** button on the telephone, or by dialing an access code. In **Version A** software, one UNA zone can be programmed per system. In **Version D** software, up to two UNA zones can be programmed per system (tenant Systems only).

- OPERATION** **To Answer an Incoming Call When the Night Bell Is Heard:**
1. Obtain dial tone.
  2. Press the **UNA** button, or dial the access code **(11) \_\_\_\_\_**.  
■ You will be connected to the incoming call.
  3. Speak to the caller.
  4. Use Call Transfer to connect the call with the desired station.

**PROGRAMMING** **Version A software:** Programming for UNA is done on an individual-trunk basis. In the DTRK Program, at the NIT and DAY prompts, if you wish the trunk to ring UNA, enter NONE.

**Version D software:** Programming for UNA is done the same as in **Version A** software, with one additional program. If **Y** was entered to TEN in the DSYS Program, two additional prompts will appear in this program: UNA0 and UNA1. This is where each UNA zone is assigned to either tenant 0 (TEN0) or tenant 1 (TEN1).

*NOTE: Night assignments of trunks can be reassigned via the Attendant Console.*

- RELATED FEATURES**
1. Consoleless Operation (System Features).
  2. Night Service (System Features).
  3. Night Service Control (Attendant Console Features).

**BENEFITS** Universal Night Answer ensures that incoming calls are answered, even if the primary answering position is not attended. It enables customers to reduce the number of personnel required to handle calls during periods of low staffing, or in applications in which employees are distributed throughout a facility without permanent stations (such as warehouses, car dealerships, etc.).

# Universal Port Architecture

**DESCRIPTION** PERCEPTION<sub>e&ex</sub> provide great flexibility in station and trunk configuration. This is inherent in a universal-port system, although there are a certain number of dedicated slots (for either trunks, stations, and attendant consoles), the remaining slots can be used for trunk, station, or data PCBs.

**OPERATION** Automatic.

**PROGRAMMING**

1. Station ports are programmed in either the DEKT or DSTT Data Block.
2. Trunk ports are programmed in the DTRK Data Block.
3. Data ports are programmed in the DDIU and DMDU Data Block.

**NOTES:**

1. *PERCEPTION II is a dedicated port system. In **Version A** software levels, the number of analog/data stations is 120 and the number of trunks is 32. With **Versions D.01 ~ D.01D** software and the expansion cabinet, the number of stations increases to 240 and the number of trunks grows to 64.*
2. *PERCEPTION<sub>e</sub>, which runs on **Version D** software, is a universal-port system. The line/trunk capacity in the basic cabinet is 96 stations and 0 trunk to a square system of 32 each. With an expansion cabinet installed, these numbers increase to 192 stations and 0 trunk to 64 by 64.*
3. *PERCEPTION<sub>ex</sub>, which also runs on **Version D** software, is also a universal-port system. The line/trunk capacity in the basic cabinet is 128 stations and 32 trunks, or 0 station and 96 trunks. With the first expansion cabinet installed, these numbers increase to 192 stations and 48 trunks to 64 stations by 112 trunks. With the second expansion cabinet installed, these numbers increase again to 255 stations and 64 trunks to 128 stations by 128 trunks.*

**RELATED FEATURES** None.

**BENEFITS** PERCEPTION's Universal Port Architecture enables it to meet the unique trunk and station requirements of a wide range of end-users. It also makes it much easier and much less expensive for users to expand existing systems, since most available PCB slots in each cabinet will accept either trunk, station, data, or DSS Console PCBs.

# Variable Time-out

**DESCRIPTION** The various time-out intervals which are used in conjunction with certain features may be individually altered from their default, standard time-out values. The time-out periods which allow such alterations are as follows:

1. **Timed Reminders (Camp-on/RNA):**
  - a. **Camp-on or Call Waiting (COT)**—This timer indicates the period of time that elapses between the time that a call is placed in the Camp-on/Call Waiting mode, and the time when that call rings back.
  - b. **Ring-No Answer (RNA)**—The RNA time-out setting indicates the length of time that a call will ring at a station before it will return for rerouting, message service, etc.
2. **Attendant Overflow (AOF)**—This setting indicates the length of time that a call will ring at an attendant console (which has been placed in Overflow mode) before it is routed to the assigned Overflow station.
3. **Call Forward-No Answer (CFD)**—The CFD setting determines the length of time that a telephone will ring, before it will forward to a Call Forward-No Answer or Call Forward-Busy/No Answer forwarding destination.
4. **Hold/Electronic/Digital Telephone Park (HLD)**—The Hold/Electronic/Digital Telephone Park reminder timer is set to determine the length of time that a call will remain either on hold (on standard telephones), or in a Park mode (on electronic/digital telephones), before that call will ring back to the station at which it is waiting. This time-out setting also has the option of being turned off completely, rather than being assigned a timing value.
5. **Dial Pulse Timer (DPT)**—The DPT timer applies to rotary and electronic/digital telephones, and indicates the allowable time between dialed digits. The attendant must also wait for this timer to expire after the last digit of a telephone number is dialed, before putting the call on hold, or dialing additional digits.
6. **Push-button Timer (PBT)**—The PBT timer also indicates the allowable time between dialed digits, but applies to standard push-button telephones which are connected to a DTMF receiver. Specifically, the PBT time allocation denotes the length of time that a DTMF circuit will be held on line in order to receive digits.
7. **Line Lockout (LLO)**—This time-out determines the allowable time between the time that a telephone is taken off-hook, and the time that dialing is started. It also designates the overall time period which is allowed for digit dialing.
8. **Automatic Callback Reserve Time (ACB)**—This timer indicates the length of time that a system will hold a now-idle call which has been registered for Automatic Callback at another station. Once the registered station becomes idle, the system will automatically recall the registering station. The duration of time, in which the system will

ringing the registering station and simultaneously retain the now-idle registered call connection, is determined by the ACB time-out setting.

## **OPERATION**

None.

## **PROGRAMMING**

All of the above time-out periods are programmed in their corresponding entries of the **DSYS Program**. Available timing values for each time-out maximize at 255 seconds, however, specific stipulations must be adhered to in order to ensure the correct operation of several of the noted time-out periods. Refer to the following notes for practical limitations regarding these specific timers. As noted above, the Hold/Park reminder time-out also has the option of being completely disconnected.

### **NOTES:**

- 1. The duration of the Call Forward-No Answer (CFD) time-out period must be less than the Ring-No-Answer (RNA) time-out, or else a call will return rather than be forwarded to the registered forwarding destination.*
- 2. The Automatic Callback (ACB) time-out may be designated a value of up to six seconds. Although higher time-out values will be accepted in programming, they will prevent the system from functioning properly.*
- 3. The DPT time-out should be set at the lowest practical value, since a two-way-transmit speech path is not obtainable on either a rotary or electronic/digital telephone until after the DPT time-out elapses. While the preset default value of the DPT time-out is 15 seconds, normal operation requires that it be set at between four and six seconds, although having it set this low may not light Message Waiting Lights.*
- 4. The PBT time-out value should also be brief, since it determines the length of time before a two-way speech path is obtainable on a standard DTMF telephone. The default value of the PBT time-out period is four seconds, which is a recognized optimum timing value.*

## **RELATED FEATURES**

1. Line Lockout (System).
2. Tone Dialing-to-Dial Pulse Conversion (System).
3. Timed Reminders-Variable (Attendant).

## **BENEFITS**

Variable system timers allow for individual system flexibility and customization. Available programming options permit the further customization of a system, since features and their accompanying time-outs can be configured to fit each customer's unique application requirements.

# Voice Mail Connection

**DESCRIPTION** PERCEPTION has the ability to interface with a voice mail messaging system to enable the convenient transmission, receipt, and storage of voice messages. Selected stations are assigned a voice mailbox, which can be designated as the forwarding destination of a Call Forward operation, or which can be reached directly so that messages can be left by callers, or listened to and stored by a mailbox addressee. Access to the voice mail system (other than automatic access achieved through Call Forwarding) is achieved through the entrance of specific access and security codes. A mailbox addressee may also access his or her mailbox from an off-premises location in order to review any messages which may have been left.

**OPERATION** **To Leave a Message at a Voice Mailbox:**

1. Dial the voice mail port.
2. Dial the mailbox.

**To Call Forward to Voice Mail:**

1. Dial the access code **(9)** \_\_\_\_.
2. Dial the voice mail port.
3. Dial the mailbox address.
4. Press the **#** button.

**To Review a Message Which Has Been Left at Your Mailbox:**

1. Dial the voice mail port.
2. Dial the mailbox address.

**To Review a Message Which Has Prompted the Message LED to Light (This Applies Only to Stations Which Have a Message Waiting Indication):**

1. Press the **MSG** button.
  - The awaiting messages will automatically be retrieved (if the **MSG** button is programmed to do so), and the button's accompanying LED will automatically go out after the waiting messages have been reviewed.

**PROGRAMMING** Voice mail is programmed in the DMCD Data Block. Eight standard telephone ports may be assigned as voice mail ports in **Version A** level of software, and 32 standard telephone ports may be assigned as voice mail ports in **Version D** software levels.

**NOTES:**

1. When an electronic/digital telephone dials voice mail access digits, the PERCEPTION system will convert these signals into DTMF tones, and then send these tones to one of the station ports which has been assigned to voice mail operation in the DMCD Data Block.
2. Each voice mail port within a voice mail system can be programmed to provide a message waiting indication to a station whenever a

# Voice Mail Connection

message has been left at that station's mailbox. Specifically, if a port has been assigned this capability, then any message which has been left through that particular port will automatically light the message waiting lamp on the telephone of the initially-called station. Any electronic/digital or standard DTMF telephone which has a programmed message (MSG) button will receive this indication. The ability for a specific voice mail port to activate the lighting of a station's message waiting lamp is made by first entering VM (voice mail) in response to the MWC0 or MWC1 prompt within the DMCD Data Block, and by then entering the directory number of the port which is to provide this capability.

3. If programmed to do so, PERCEPTION will generate an automatic disconnect signal to the incorporated voice mail system whenever a connected station or trunk hangs up.
4. The utilization of Tenant Service allows PERCEPTION to have one message center designated as a voice mail port and the other specified as the message center, if desired.
5. When dialing a voice mail port, the voice mail system must answer the call before PERCEPTION will outpulse any digits. This forces the user to wait for an answer before resuming digit dialing.
6. **A.06B** software is the first level of **Version D** software that enables up to 32 ports at the TVM0/TVM1 prompts in the **DMCD Program**. **Version D.01C** software enables 32 ports to be entered at the MDN0/MDN1 prompts in the **DMCD Program**.

## RELATED FEATURES

1. Station Hunting (Station).
2. Automatic Dialing (Electronic/Digital Telephone).
4. Message Waiting (Station).
5. Call Forward-All types (Station and System).
6. Speed Dial-System (Attendant).
7. Direct Inward Dialing (System).
8. Direct-in Line (System).

## BENEFITS

Voice Mail Integration enables the customer to integrate virtually any voice mail/automated attendant system, using in-band signaling, into a PERCEPTION system. Voice Mail ensures that important information is not lost when a called party cannot take the call, and it greatly improves employee productivity. An automated attendant simplifies call processing, and it can reduce the need for additional manpower. Frequently, an automated attendant can be incorporated into a call processing arrangement that also includes attendant consoles and attendant-position electronic/digital telephones. This feature greatly enhances the customer's ability to configure call processing arrangements that satisfy unique application requirements.

# P E R C E P T I O N

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## *Attendant Console Features*

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# Attendant Camp-on/Call Waiting

**DESCRIPTION** Attendant Camp-on/Call Waiting enables any incoming trunk call, which has been extended to a busy station by an attendant, to be held in queue until the called station becomes idle. When Camp-on/Call Waiting is registered, the busy station will hear either a single tone for Camp-on, or a double tone for Call Waiting to indicate the waiting call. If an incoming call remains camped-on to a busy line, or sits in the Call Waiting queue for a period longer than the system's set Camp-on/Call Waiting time-out period, the call will return to the attendant console.

- OPERATION**
1. Dial the directory number.
    - The EXCL SRC LED will light steadily when the first digit is dialed, and the voice path to the caller will be broken.
    - The DEST directory number will be displayed as the digits are dialed, and STATUS will display BSY.
    - If you hear nothing (Camp-on), go to Step 2.
    - If you hear ringing tone (Call Waiting), go to Step 4A.
    - If you hear busy tone, go to Step 3B (busy tone indicates that Camp-on/Call Waiting is not possible for one of the following reasons):
      - a. Camp-on/Call Waiting is not permitted due to system restrictions.
      - b. The called station is either in a conference call, on hold, or ringing.
  2. Press the **EXCL DEST** button.
    - The EXCL DEST LED will light, the EXCL SRC LED will go out, and you will now have a voice connection with the caller.
  - 3A. If the caller wants to wait:
  - 4A. Press the **RLS** button.
    - The LPK LED and all displays will go out, the RLS LED will light, and the console will become idle.

*NOTE: If the call remains unanswered for (\_\_\_\_\_) seconds, the call will be returned to your console as a Timed Recall.*

- 3B. If the caller does not want to wait, or if Camp-on is not allowed:
- 4B. Press the **RLS DEST** button.
  - The called station will be released from the console, the DEST display will clear, and if requested, another DN can now be dialed.
- 5B. Press the **RLS** button.
  - The LPK LED and all displays will go out, the RLS LED will light, and the console will become idle.

- PROGRAMMING**
1. See Notes 1 and 5.
  2. The Camp-on/Call Waiting time-out period is assigned in the COT entry of the DSYS Data Block.

# Attendant Camp-on/Call Waiting

## NOTES:

1. *Camp-on and Call Waiting are mutually exclusive. If Call Waiting is denied by the station's COS, Camp-on will automatically be applied.*
2. *Station Hunting overrides both Camp-on and Call Waiting. However, if all directory numbers that are assigned to a particular hunting group are busy, Camp-on will occur.*
3. *If the station which has been camped-on to is an electronic/digital telephone, the Camp-on/Call Waiting warning tone will sound over the station's speaker. If the station is a standard telephone, the tone will sound over the station handset. Any voice announcement that is currently being received, when a station is called, will be interrupted for the duration of the warning tone (0.5 second).*
4. *The attendant console will receive the following visual and audible indications for timed recalls:*
  - a. *No Answer Condition (Ring No Answer).*
    - *ICI = TIM*
    - *Loop = 60 IPM flash*
    - *Status = RNG*
    - *Console = Buzz tone sounds*
    - *SRC = Calling trunk number*
    - *DEST = Called DN**(When the attendant answers the recall, the LPK LED indication will light steadily and the buzz tone will stop).*
  - b. *Busy Condition (Camp-on/Call Waiting).*
    - *ICI = TIM*
    - *Loop = 60 IPM flash*
    - *Status = BSY*
    - *Console = Buzz tone sounds*
    - *SRC = Calling trunk number*
    - *DEST = Called DN**(When the attendant answers the recall, the LPK LED indication will light steadily and the buzz tone will stop).*
5. *If the called station is programmed for Warning Tone-Denied (WTA = N in DEKT/DSTT Data Blocks), the tone interruption will not be provided to the called station. Camp-on operation, however, will still be activated.*
6. *Camp-on/Call Waiting does not apply to unanswered station-to-station calls. This includes calls made to/from handsfree answerback stations.*
7. *If a station is programmed for Warning Tone-Denied, Call Waiting will not occur, and Camp-on will be applied.*
8. *An unlimited number of calls can be camped-on to a single station by an attendant. Only one call can sit in the Call Waiting queue.*

## RELATED FEATURES

1. Music-on-Hold and Camp-on (System).
2. Night Service (System).
3. Call Waiting (Station).
4. Hunting (Station).
5. Uninterrupted Line Connections (Station).
6. Handsfree Answerback with Speaker Cut-Off (Electronic/Digital Telephone).

# *Attendant Camp-on/Call Waiting*

**PERCEPTION**

**ATTENDANT CONSOLE FEATURES**

## **BENEFITS**

Attendant Camp-on enables an attendant to place an incoming call in queue for a busy station, and gives the attendant the freedom to receive and place other calls. Camp-on also ensures that station users will not miss important incoming calls.

# Attendant Conference

- DESCRIPTION** An attendant can set up a conference call for as many as five people (including a maximum of two trunks) plus the attendant, at the request of either a station user or an outside caller. The starting point for a conference can be any of the following conditions:
- The console has answered an incoming call from a station or trunk, and that party is to be the first member of the conference.
  - The console dials the first conference member on an **LPK** button in the usual manner.
  - Due to an Attendant Recall, the console has a three-way connection on an **LPK** button. The attendant must establish a three-way voice connection through a second operation of the **LPK** button prior to proceeding to step 1.

- OPERATION** To use Attendant Conference, a station user or trunk party calls the attendant, who then establishes all conference connections. An attendant conference is set up by adding one party at a time. It can be initiated in the following ways:

**To Establish a Conference Call After a Station or Trunk Calls the Attendant:**

1. The attendant presses the **CONF** button.
  - The LPK LED will remain steadily lit.
  - The CONF LED will flash.
  - The COS display will show 01 (the number of conferees).
2. The attendant dials the second party (on the same LPK) and, when the call is answered, presses the **CONF** button again.
  - A conference will now exist between the first and second parties, and the attendant.
  - The COS display will show 02.
3. The attendant may then dial the third party.
  - When the first digit is pushed, the console will drop out of the conference, leaving parties #1 and #2 connected.
  - The CONF LED will now light steadily.
  - When party #3 answers, the party can be added to the conference by pressing the **CONF** button.
  - A four-party conference (including the attendant) will now exist.
  - The COS display will show 03.
4. Up to two additional parties may be added in the same manner.
  - The COS display will show 05.
5. When the conference is complete, the attendant presses the **RLS** button in order to remove the console from the conference.
  - The CONF LED will now light steadily.
6. The attendant may reenter an established conference at any time by pressing the **LPK** and **CONF** buttons. When this is done:
  - The CONF LED will flash.
  - A warning tone (440 Hz 1-second burst) will signal the conference members that the attendant is about to reenter the conference.
  - The attendant will not hear the warning tone.

# Attendant Conference

## To Transfer a Two-party Connection (Established on an **LPK** Button) to an Attendant Conference:

1. The attendant presses the **CONF** button.
  - The CONF LED will flash.
  - The LPK LED will remain steadily lit.

*NOTE: The two parties will now be the first two parties in a conference. Additional parties may be added by following the previously-mentioned steps.*

## To Initiate a Conference Call by an Attendant:

1. The attendant presses an **LPK** button.
  - The LPK LED will light steadily.
  - The CONF LED will flash.
2. The attendant now dials the first party, and when the call is answered, presses the **CONF** button.
  - Additional parties may be added to the conference by following the previously-mentioned steps.

## NOTES:

1. If an attendant attempts to establish a conference call consisting of more than five parties (in addition to the console itself), the overflow tone will return to the attendant. This tone may be canceled by pressing the **RLS DEST** button.
2. If an attendant dials a number that is either busy or is not answered, the attendant may release the dialed connection by pressing the **RLS DEST** button. This will return the console to the conference.
3. The attendant may be recalled to an established conference, either by a hookflash (standard telephone), or via the **CONF** button (electronic/digital telephone). When this occurs:
  - a. The CONF and LPK LEDs will flash at 60 IPM.
  - b. The console buzzer will sound.
  - c. When the attendant answers with an **LPK** button:
    - The console buzzer will stop.
    - The CONF and LPK LEDs will light steadily.
    - No warning tone will sound to the established conference members.
  - d. The attendant will now be connected only to the recalling party member. The other parties will remain in conference with each other.
4. Transmission performance in a conference is designed for a maximum of two trunks. Additional trunks may be conferenced, however, transmission may be impaired (amplification is not provided by Attendant Conference).
5. Certain trunks will not release automatically from a conference. Therefore, the attendant must either break in occasionally, or ask one of the conferring stations to call once the conference is finished. The release capability must be determined locally on a case-by-case basis.
6. Paging trunks cannot be conferenced.

# Attendant Conference

7. An incoming call that is answered by the attendant cannot be added to an existing conference. With the exception of the first party, the attendant must originate all calls to all conference participants.
8. PERCEPTION's maximum conference capabilities are as follows:
  - 3-party = 20 maximum.
  - 4-party = 6 maximum. Each uses two 3-party conference circuits, and can be formed only via the use of a Privacy Release (PRS) button.
  - 6-party = 1 maximum. Each uses two 3-party conference circuits, and is entirely attendant-controlled.
9. The **maximum number** of outside CO lines that can be involved in any conference at one time is **2**.
10. The attendant cannot reenter a conference call they have dropped out of, if the Line Lockout feature has been enabled in the DATT Data Block.

## PROGRAMMING

None.

## RELATED FEATURES

Line Lockout (Attendant).

## BENEFITS

The Attendant Conference feature is very convenient to any busy individual, since an attendant can independently set up a conference arrangement. The conference feature also enables an individual to participate in multi-party business meetings, without having to attend the meetings in person.

# Attendant Emergency Transfer

PERCEPTION

ATTENDANT CONSOLE FEATURES

## DESCRIPTION

Attendant Emergency Transfer allows an attendant to perform an emergency/power failure transfer. The attendant console is equipped with a dedicated **EMT** switch located on the right-hand underside of the console. A dedicated cable pair is routed from this switch to the control circuit for the Emergency Transfer (**DPFT**) relays. When this switch is used, predetermined trunks will be transferred to dedicated stations, and the MAJOR alarm LED on the attendant console will light steadily. The system program, however, will still work in the usual manner. With the exception of transferred trunks and stations, Emergency Transfer has no effect on the system operation.

## OPERATION

### To Operate the Emergency Transfer:

1. Use the **EMT** switch.
  - The MAJOR alarm LED will light.

### To Restore Normal Operation:

1. Press the **EMT** switch.
  - The MAJOR alarm LED will light.

## PROGRAMMING

None.

### NOTES:

1. An optional Power Failure Transfer unit (**DPFT**), which transfers up to 8 trunks, is required. There is a maximum of one **DPFT** per system.
2. The **PFT** switch on the DPMU/NPRU PCB performs exactly the same function as the **EMT** switch. However, an emergency transfer can be reset only from the switch at which it was originally set. (NPRU with PERCEPTION<sub>e&eX</sub>, DPMU with PERCEPTION and PERCEPTION II.)
3. In the case of a power failure, emergency transfer will automatically be activated by the **DPFT** unit. When power is restored, the **DPFT** unit will automatically switch the transferred trunks and stations back to normal operation.

## RELATED FEATURES

Power Failure/Emergency Transfer (System).

## BENEFITS

Attendant Emergency Transfer allows an attendant to quickly activate Power Fail Transfer services in the case of a system failure.

# Attendant Hold

**DESCRIPTION** Attendant Hold allows the attendant to hold an established call at the console. After placing a call on hold, the operator is then free to receive other calls, access the Paging capabilities, use the Join feature, access the Meet-Me Page, and many other features.

- OPERATION**
1. When a call is active on an **LPK** button, press the **HOLD** button.
    - The LPK LED will flash.
  2. At this time, another **LPK** button may be utilized to receive other calls, make other calls, or access many of the other features.
  3. The held call may be reaccessed by pressing the appropriate **LPK** button.

**PROGRAMMING** The DPT timer is programmed in the DSYS Data Block.

**NOTES:**

1. *The DPT timer must expire before the attendant operator can put a call or an outgoing call on hold.*
2. *All **LPK** buttons can be placed on hold simultaneously.*
3. *The HLD indication under the Incoming Call Identification (ICI) is presently not used.*

- RELATED FEATURES**
1. Hold All Calls (Station).
  2. Join (Attendant).
  3. Meet-Me Page (Attendant).
  4. Access to Paging (Attendant).

**BENEFITS** This feature enables the attendant to put any call at the console on hold, either for subsequent handling or for call screening, ensuring efficient call processing.

# Attendant Initialization

PERCEPTION

ATTENDANT CONSOLE FEATURES

**DESCRIPTION** Attendant Initialization allows an attendant to initialize the system whenever absolutely necessary. This is accomplished through the utilization of a dedicated **INT** switch that is located on the left-hand underside of the console. Whenever this switch is used, the system logic will be initialized, and all calls in progress will be lost. Standard operation will begin again after approximately three seconds. This switch is for **EMERGENCY USE** only!

- OPERATION**
1. Attendant uses the **INT** switch.
    - All system logic will be reset.
    - MAJOR alarm LED will light momentarily.
    - All calls will be dropped.
    - Software will not reload.
  2. The system will resume normal service after approximately 3 seconds.
    - Night mode will be entered automatically.
    - MINOR alarm LED will light until the attendant resets the system clock.

**PROGRAMMING** None.

**RELATED FEATURES** None.

**BENEFITS** Attendant Initialization enables the attendant to clear transient logic errors. However, it should be used with care, since when used, all calls will automatically be dropped.

# Attendant Recall

**DESCRIPTION** Attendant Recall allows an attendant to be recalled by a station user while talking to another party, so the attendant can further handle the call.

- OPERATION**
1. You will hear an incoming call signal.
    - ICI will display RCL.
    - The SRC and DEST will be displayed, COS will be displayed if the station originated the call, and the LPK LED will flash.
  2. Press the appropriate **LPK** button.
    - The LPK LED will light steadily, and the EXCL SRC LED will light.
    - The call signal will stop, and STATUS will display TLK.
    - You will have a voice connection with the DEST party, and the SRC party will be separated from the conversation.
  3. Press the **RLS DEST** button.
    - The DEST party (recalling party) will be disconnected, and you will have a voice connection with the SRC party.
  4. Process the call in the same manner as a newly-answered call.

**NOTES:**

1. If the attendant presses the **LPK** button a second time, a three-way conversation will be formed.
  - At this point, any of the three parties can release, and leave the other two connected.
2. An attendant recall will produce the following console displays:
  - ICL = RCL.
  - SRC = Non-recalling station or trunk.
  - COS = COS of SRC party, if SRC is a station or TIE trunk (otherwise no display).
  - DEST = Recalling station number.
  - STATUS = TLK after attendant answers.
3. The two parties on an attendant recall can be selectively released by using the **RLS SRC** and **RLS DEST** buttons.

**PROGRAMMING** None.

**RELATED FEATURES** Attendant Conference (Attendant).

**BENEFITS** Attendant Recall allows a station user to reach an attendant while involved in an established call connection.

# Busy Lamp Field

**DESCRIPTION** The attendant console is equipped with a panel containing 100 LEDs (which indicate busy DNs), and two 7-segment displays to indicate which of the two possible "hundreds" groups is currently being displayed (LEDs are numbered **00 ~ 99**). The 7-segment display for the hundreds groups can be programmed to illuminate any two digits between 1 and 9.

**OPERATION** A Busy Lamp Field Select (**BLF**) button is provided on the console. Its operation will cause the Busy Lamp Field to display alternate hundreds groups (a maximum of two hundreds groups may be displayed).

**PROGRAMMING** The two hundreds-group digits to be used as the 7-segment BLF display, are specified in the BLF1 and BLF2 entries of the DSYS Data Block.

**RELATED FEATURES** Busy Lamp Field (Lodging/Health Care).

**BENEFITS** The console's built-in Busy Lamp Field provides the attendant with an easy and quick indication of which stations are busy. This allows calls to be handled in a more timely and efficient manner.

# Call Forward Cancel

**DESCRIPTION** All Call Forwards that are registered in a system may be canceled from either an attendant console, or an attendant-position electronic/digital telephone, via the use of a Call Forward All Clear access code.

- OPERATION**
- To Cancel All Call Forward:**
1. Press an idle **LPK** button.
    - The LPK LED will light.
    - The RLS LED will go out.
  2. Dial the Call Forward cancel code (**# 1 8**) \_\_\_\_\_.
    - All Call Forward arrangements will be canceled.
  3. Press the **RLS** button.
    - The LPK LED will go out.
    - The RLS LED will light.
    - The console will become idle.

**PROGRAMMING** The Cancel All Call Forward is programmed in the DACD Data Block.

- RELATED FEATURES**
1. Call Forward All Call (Station).
  2. Call Forward Busy (Station).
  3. Call Forward No Answer (Station).
  4. Call Forward Busy/No Answer (Station).
  5. Call Forward Busy-System/DID (System).
  6. Call Forward Busy/No Answer-System/DID (System).
  7. Call Forward Cancel (Station and Attendant).

**BENEFITS** Call Forward Cancel—System-wide provides for a more efficient system operation, by enabling any attendant-position to cancel all call forwards set in the system, including those that may have been set and forgotten. It helps ensure that calls get to the appropriate destination.

# Call Waiting Lamp

PERCEPTION

ATTENDANT CONSOLE FEATURES

**DESCRIPTION** The Call Waiting LED indicates that unanswered calls are waiting in the attendant queue. The LED will flash whenever the queue contains one or more calls, and will continue to flash until the queue is empty.

**OPERATION** See Description.

**NOTES:**

- 1. When a call is presented to an idle console loop, it will be removed from the attendant queue. In dual-console installations, the Call Waiting LED will not light until both consoles are busy, and additional calls are waiting to be answered.*
- 2. The Call Waiting LED shows no indication of either the number of calls, that are currently in the attendant queue, or the length of time that any call has been waiting.*

**PROGRAMMING** None.

**RELATED FEATURES** Overflow Facility (Attendant).

**BENEFITS** Call Waiting Lamp enables an attendant to answer calls more efficiently, since it indicates that at least one call is waiting to be answered.

# Call Waiting Lamp Signaling

**ATTENDANT CONSOLE FEATURES**

**PERCEPTION**

**DESCRIPTION** Call Waiting Lamp Signaling provides a threshold indication of multiple calls waiting by the CW LED on the attendant console.

**OPERATION** The number of incoming calls waiting to be answered is differentiated by the LED as follows:

- 0 call: LED off.
- 1 call: LED steady on.
- 2 calls: LED winks.
- 3 or more calls: LED flashes.

**PROGRAMMING** None.

**RELATED FEATURES** None.

**BENEFITS** This feature provides the attendant with an indication on the number of incoming calls that are waiting to be answered, thus enabling him or her to make a decision on how fast to process the current call.

# Digital Information Display

## DESCRIPTION

The PERCEPTION attendant console receives call information from a group of displays mounted on the console. Eight pieces of information are provided:

- ICI: Incoming Call Identification.
- SRC: Source or calling party.
- COS: Class of Service (calling party).
- DEST: Destination or called party.
- STATUS: Status of called party.
- TGB: Trunk Group Busy.
- ALARM: Major (MAJ), Minor (MIN), and SMDR (MDR).
- CW: Call Waiting.

## OPERATION

### ICI (Incoming Call Identification):

A backlighted panel that identifies the type of call being presented to the console. Any one of the 12 indicators can be illuminated:

- TIE: TIE trunk.
- CO: Central Office trunk.
- WAT: WATS trunk.
- FX: Foreign Exchange trunk.
- INT: Intercept.
- RCL: Recall.
- OPR: Dial-0 (operator) call.
- TIM: Timed reminder (Camp-on, Ring No Answer, etc.).
- SER: Serial call (business console only).
- HLD: (Not Used).
- LN1: DID call to Listed Number 1.
- LN2: DID call to Listed Number 2.

### SRC (Source):

A 3-character, 7-segment display that denotes either the calling station's directory number, or the trunk access code and member number which applies to each incoming call. (In Lodging/Health Care operation, Maid-in-Room, and Deposit Paid information will be displayed.)

### COS (Class of Service):

A 2-character, 7-segment display that shows either a calling party's Class of Service (station or TIE trunk), or the number of parties in an attendant conference. (In Lodging/Health Care operation, Do Not Disturb and Room Status information will be displayed.)

### DEST (Destination):

A 3-character, 7-segment display that shows either the called party's directory number (station), or the access code and member number (trunk).

### STATUS:

This backlighted panel informs the attendant of the called party's status. Any one of the eight indicators can be illuminated:

- RNG: The called station is ringing.
- BSY: The called station is busy.
- DND: The called station is in Do Not Disturb mode.
- FWD: The called station has been forwarded to the number now displayed as DEST.

# Digital Information Display

- RST: The attempted connection is restricted (not allowed).
- HNT: The called station was busy, and hunting has occurred to the number now displayed as DEST.
- VCT: The called number either does not exist or is disabled.
- TLK: The attendant is currently involved in a talking connection with the called party.

## TGB (Trunk Group Busy):

Trunk Group Busy LEDs are numbered 0 ~ 9, and they provide a visual indication of the status of each trunk group. Possible indications are as follows:

- LED off: At least one trunk is idle.
- LED on steadily: Attendant has utilized Trunk Group Access Control.
- LED flashing: All trunks are currently busy.

## ALARM:

1. ALARM-MAJ (Major)—This alarm occurs when the system is not functional, and is accompanied by an emergency transfer.
2. ALARM-MIN (Minor)—This alarm indicates that either the system clock is not set, or that there has been a ringing-generator power failure.
3. ALARM-MDR (SMDR)—This alarm indicates a problem with the external SMDR equipment.

## CW (Call Waiting):

Indicates that an unanswered call(s) is waiting for the attendant.

*NOTE: When a 2- or 3-digit trunk access code is used, only the first digit will be displayed (together with the member number) on the SRC/DEST LEDs.*

## PROGRAMMING

None.

## RELATED FEATURES

1. Incoming Call Identification (Attendant).
2. Station Number Display (Attendant).
3. Trunk Equipment Number Display (Attendant).

## BENEFITS

The digital information display provides an attendant with valuable information regarding each incoming and outgoing call. This allows for quick and efficient call handling, and also enables the attendant to immediately relay the call source or status information to party members who may request it.

# Direct Access to Paging

## DESCRIPTION

The **PAGE** button on the attendant console provides an attendant with a direct push-to-talk access to any of the following: one external paging zone, all external paging zones, one internal paging group, the expanded internal paging group, or both the expanded internal paging group and all external paging zones. When an attendant presses this button, this will preempt any page that is already in progress. The PAGE LED will light steadily whenever a page zone is being utilized by the attendant.

## OPERATION

### To Page from an Idle Console:

1. Press the **PAGE** button, or press an idle **LPK** button and dial the proper access code for the desired zone/group.
  - The PAGE LED will light.
  - The RLS LED will go out.
  - An idle LPK LED will light.
  - The PAGE ACCESS code will be displayed as DEST.
  - The STATUS display will show TLK.
2. Make the announcement.
3. Press the **RLS** button.
  - The PAGE and LPK LEDs will go out.
  - The RLS LED will light.
  - The DEST and STATUS displays will go out.

### To Page from an Active **LPK** Button:

1. Press the **PAGE** button, or put the active **LPK** button on hold, press an idle **LPK** button and dial the proper access code for the desired zone/group.
  - The call will automatically go on hold.
  - The PAGE LED will light.
  - The EXCL SRC LED will light.
2. Make the announcement.
3. Press the **RLS** button.
  - The PAGE LED will go out.
  - The EXCL SRC LED will go out.
  - The LPK LED will flash.
  - The RLS LED will light.

# Direct Access to Paging

The paging assignments in the system are as follows:

ZONE	ACCESS CODE
0	(1 5 3 and 0) _____.
1	(1 5 3 and 1) _____.
2	(1 5 3 and 2) _____.
3	(1 5 3 and 3) _____.
4	(1 5 3 and 4) _____.
All External Zone Paging	(1 5 4) _____.
Internal Group Paging	(1 5 1 and 1, 2 through 1 7) _____.
Expanded Internal Group Paging	(1 5 2) _____.
Expanded Internal Group Paging and All External Zone Paging	Defined in DSYS Data Block _____.

## PROGRAMMING

The assignment of the **PAGE** button to a particular page zone or to an All Page zone, is done independently for each console within the DATT Data Block. The paging access codes are defined in the DACD Data Block. The All Page access code is assigned in the DSYS Data Block.

### NOTES:

1. This feature provides an attendant with a single-button access to either one particular zone, or to all zones. If a different page zone (other than that assigned to a **PAGE** button) is to be used, the attendant must press an idle **LPK** button and dial the appropriate access code for that particular page zone.
2. Station users, who are involved in a page and are interrupted by an attendant page, will receive overflow tone and will be disconnected. A paging circuit/trunk must be reaccessed in order for a preempted announcement to be continued.

## RELATED FEATURES

1. Meet-Me Page (Station).
2. Meet-Me Page (Attendant).

## BENEFITS

Direct Access to Paging allows an attendant to quickly and easily access the Paging feature.

# Incoming Call Identification

PERCEPTION

ATTENDANT CONSOLE FEATURES

**DESCRIPTION** The Incoming Call Identification (ICI) display is a backlit panel that indicates the type of call that is currently connected to a console Loop (LPK) button. Twelve different displays are possible:

- TIE: TIE Trunk.
- CO: Central Office trunk.
- WAT: WATS trunk.
- FX: Foreign Exchange trunk.
- INT: Intercept.
- RCL: Recall.
- OPR: Dial-0 call.
- TIM: Timed reminder (Camp-on, RNA, etc.).
- SER: Serial call (business console only).
- HLD: (Not Used).
- LN1: DID call to LDN 1.
- LN2: DID call to LDN 2.

**OPERATION** Operation is automatic.

**PROGRAMMING** Intercept and Listed Directory Numbers (LN1 and LN2) are assigned within the DSYS Data Block.

**RELATED FEATURES** Digital Information Display (Attendant).

**BENEFITS** Incoming Call Identification enables an attendant to identify the type of call currently ringing at the console. It also allows for a call differentiation, when more than one company or division shares a single console.

# Incoming Call Priority

**DESCRIPTION** An attendant console can be programmed to receive calls according to a set Incoming Call Priority pattern. Incoming calls can either be presented according to a designated sequence, which specifies the priority levels of different types of trunk calls, operator calls, and recalls, or they can be presented on a first-in/first-out basis.

**OPERATION** Once the system is programmed, the operation of Incoming Call Priority will be automatic.

**PROGRAMMING** Incoming Call Priority is assigned within the DATT Program.

**NOTES:**

1. *If two attendant consoles are used (without tenant service), the priority options are as follows:*
  - a. *One attendant can be assigned priority and the other not have priority.*
  - b. *Both can have priority.*
  - c. *Neither has priority.*

*For option a, program one console with priorities and the other console without priorities. For the second console, ATT1 is to have priority and console ATT0 not to have priority; program both to have priority, then go in and turn off priority for ATT0.*

*For option b, program both consoles to have the same priorities.*

*For option c, answer N to the DATT/PRI prompt.*
2. *If tenant service is used, each attendant console will have its own Incoming Call Priority arrangement.*
3. *When attendant overflow is used, the electronic/digital telephone, which is to receive overflow calls, will receive calls according to the same priority arrangement that is assigned to the registering attendant console.*

**RELATED FEATURES** Digital Information Display (Attendant).

**BENEFITS** Incoming Call Priority provides the option of receiving calls, either according to their designated importance, or strictly on a first-in/first-out basis. This provides users with a degree of further system-customization, and allows calls to be handled more efficiently.

# *Individual Trunk Access*

**PERCEPTION**

**ATTENDANT CONSOLE FEATURES**

<b>DESCRIPTION</b>	The use of Individual Trunk Access enables an attendant to access each trunk individually. This is useful for trunk-testing purposes.
<b>OPERATION</b>	See Trunk Verification.
<b>PROGRAMMING</b>	None.
<b>RELATED FEATURES</b>	<ol style="list-style-type: none"><li>1. Trunk Verification (Attendant).</li><li>2. Station Verification (Attendant).</li></ol>
<b>BENEFITS</b>	Individual Trunk Access is useful for trunk-testing purposes, enabling defective trunks to be easily identified.

# Interposition Call Transfer

**DESCRIPTION** Interposition Call Transfer allows attendants in a multiple-console system to call each other, and transfer calls from one console to the other.

**OPERATION** **To Call Console-to-Console:**

1. Press an idle **LPK** button on the **calling** console.
  - The LPK LED will light.
  - The RLS LED will go out.
2. Dial **0**.
  - DEST will display 0.
  - STATUS will display RNG.
  - A ringing tone will be heard.
3. When the **called** console answers:
  - ICI will display OPR.
  - STATUS will change to TLK.
  - A voice connection between the two consoles will now be established.

**To Transfer a Call Console-to-Console:**

1. Dial **0**.
  - The EXCL SRC LED will light.
  - The voice path to the caller will be broken.
  - DEST will display 0.
  - STATUS will display RNG, and a ringing tone will be heard.
  - Release, or stay on the line to announce the call.

*NOTE: At this point, it is possible to return to the original calling party without transferring the call. To do so, press the **RLS DEST** button.*

2. When the **called** console answers:
  - STATUS will change to TLK.
  - A voice connection between the two consoles will now be established.
  - ICI will display OPR.
3. Press the **RLS** button.
  - The RLS LED will light.
  - The LPK and EXCL SRC LEDs, and all displays will go out.
  - A voice connection will be established between the second console and the original calling party.
  - ICI will change to reflect the type of the call.
  - The console will become idle.

**PROGRAMMING** The operation of this feature is automatic.

**RELATED FEATURES** None.

**BENEFITS** Interposition Call Transfer makes call processing quicker and more efficient. Once answered, a call can be transferred to the attendant best able to handle it.

**DESCRIPTION** The **JOIN** Business button and/or the **RS/JOIN** Lodging/Health Care button allows one LPK line to be connected with another LPK line. A typical operation that utilizes this button is when a call has returned to the console, unanswered on an **LPK** button, and the called party must be paged.

- OPERATION** **To Join Calls:**
1. Press the **PAGE** button.
    - The party on the **LPK** button will automatically be placed on hold.
    - The LPK LED will flash.
    - The RLS LED will light.
  2. Page the called party.
  3. When the called party calls the attendant:
    - The LPK LED will flash.
    - ICI, SRC, and COS will be displayed.
  4. Press the **LPK** button to answer the call.
    - The LPK LED will light.
    - The RLS LED will go out.
  5. Inform party #2 of the call on the **LPK** button.
  6. Press the **JOIN** or **RS/JOIN** button.
    - The ICI, SRC, and COS displays will go out.
    - The second LPK will be placed on hold.
  7. Press the first **LPK** button.
    - The second LPK LED will go out.
    - The first LPK LED will light steadily.
    - The ICI, SRC, and COS LEDs will light to identify the original call on the first LPK.
    - DEST will display the DN from the second LPK.
    - STATUS will display TLK.
    - A three-way conversation will now be established.
  8. Press the **RLS** button.
    - The first LPK LED and all displays will go out.
    - The RLS LED will light.
    - The two parties remain connected.

**NOTES:**

1. This feature allows only the following type of calls to be joined together:
  - One outside call on one loop key, and one internal (station) call on the other loop key.
  - One internal (station) call on one loop key, and another internal (station) call on another loop key.
2. Two outside calls **CANNOT** be joined together. (Do not confuse this with the Conference feature.)

# Join

## PROGRAMMING

The operation of this feature is automatic.

## RELATED FEATURES

1. Conference (Station).
2. Meet-Me Page (Attendant).

## BENEFITS

Join enables the attendant to ensure that an incoming call reaches the correct person as quickly as possible. It also enables the attendant to speak with both parties before releasing the conversation from the console. Join is a particularly valuable feature in centralized call answering applications.

**DESCRIPTION** Lockout denies an attendant the ability to reenter an established two-party connection that is being held on a console loop. Reaccess is only possible, when one station user hangs up, and the other station automatically recalls the attendant. This feature is a programmable option for the attendant console.

**OPERATION** **Starting Condition:**

1. An attendant processes a call in the normal manner, but presses the **HOLD** button instead of **RLS** button.
  - The LPK LED will flash.
  - The calling and called parties will be connected.
  - The call will be held at the console.

**When Lockout Is Active:**

1. After an attendant presses an **LPK** button:
  - The LPK LED will light.
  - The EXCL SRC and EXCL DEST LEDs will light.
  - The attendant will have control of the loop, but will not be able to hear the established conversation.
2. At this point, either one of the following two actions is possible:
  - a. Press the **HOLD** button in order to return to the starting condition described in number 1 above.
  - b. Press the **RLS** button in order to release the call from the console.
    - The LPK, EXCL SRC, and EXCL DEST LEDs will go out.
    - The RLS LED will light.
3. Once one of the called stations hangs up, the other station will recall to the attendant, and may be rerouted.
4. When the console is recalled:
  - DEST will display the station number.
  - ICI will display RCL.

**When Lockout Is Denied:**

1. After an attendant presses the **LPK** button:
  - The LPK LED will light.
  - The attendant will be able to access and bridge onto an existing conversation, and no warning tone will be provided to the conversing parties.

**PROGRAMMING** Lockout is individually selected for each console via the LKO entry of the DATT Data Block. Specific programming options are as follows:

- LKO = Y (Lockout active).
- LKO = N (Lockout denied).

*NOTE: When Lockout is activated, the called station will still be connected to the attendant, and thus, cannot utilize Call Transfer, Call Conference, or any other Call-related features.*

**RELATED FEATURES** None.

# Lockout

**ATTENDANT CONSOLE FEATURES**

**PERCEPTION**

**BENEFITS** Lockout provides a degree of privacy to a station user, by not allowing an attendant to break into a locked-out, monitored station.

## DESCRIPTION

The Meet-Me Page feature enables a call to be parked, while an individual is paged from an attendant console. The paged party can then pick up the call by accessing any system telephone and dialing the Meet-Me Page access code.

## OPERATION

### To Make a Meet-Me Page:

1. Dial the Meet-Me Page access code (1 0) \_\_\_\_\_.
  - The EXCL SRC LED will light steadily when the first digit is dialed.
  - The voice path to the caller will be broken.
  - DEST will be displayed, as digits are dialed.
2. Press the **PAGE** button.
  - The PAGE LED will light.
  - DEST will display the access code that is necessary to pick up the parked call.
  - STATUS will display TLK.
3. Make the announcement, giving the access code that is displayed in DEST.
4. Press the **RLS** button.
  - The PAGE, LPK, and EXCL SRC LEDs will go out.
  - All displays will go out.
  - The RLS LED will light.
  - The console will become idle.

*NOTE: If the parked call is not picked up before a programmed time-out occurs, the call will recall to the attendant. DEST will display the code used by the attendant to park the call.*

### To Cancel a Meet-Me Page:

1. Press the **RLS DEST** button.
  - The DEST display will go out.

## PROGRAMMING

1. The Meet-Me Page access coder, which is used to initiate a page, is assigned in the MMP entry of the DSYS Data Block.
2. Access codes, which are used to establish a page to each of the available Meet-Me Page zones, are assigned in the MMP entries of the DACD Data Block. The default codes are as follows:

Meet-Me Page Zone # 0	(1 1 0) _____.
Meet-Me Page Zone # 1	(1 1 1) _____.
Meet-Me Page Zone # 2	(1 1 2) _____.
Meet-Me Page Zone # 3	(1 1 3) _____.
Meet-Me Page Zone # 4	(1 1 4) _____.
Meet-Me Page Zone # 5	(1 1 5) _____.
Meet-Me Page Zone # 6	(1 1 6) _____.
Meet-Me Page Zone # 7	(1 1 7) _____.
Meet-Me Page Zone # 8	(1 1 8) _____.
Meet-Me Page Zone # 9	(1 1 9) _____.
Meet-Me Page Zone # 10	(1 2 0) _____.

# Meet-Me Page

Meet-Me Page Zone # 11	(1 2 1) _____.
Meet-Me Page Zone # 12	(1 2 2) _____.
Meet-Me Page Zone # 13	(1 2 3) _____.
Meet-Me Page Zone # 14	(1 2 4) _____.
Meet-Me Page Zone # 15	(1 2 5) _____.

### NOTES:

1. In **A** levels of software, along with the **D.01** level of software, the maximum number of the Meet-Me Page zones is 10. In **D.02** level of software and above, the number of the Meet-Me Page zones is 16.
2. The attendant may reaccess a parked call that is associated with a page, by dialing the appropriate Meet-Me Page access code.
3. If a page is not answered before the system's Camp-on time-out period elapses, the parked call will ring at the attendant console. The Camp-on time-out period is specified in the COT entry of the DSYS Data Block.
4. If the parked call times out back to the console, the attendant can do one of two things:
  - Answer the call on the **LPK** button, then press the **RLS** button to send it back into the park zone, or
  - Answer the call on the **LPK** button, then press the **RLS DEST** button to take it out of the parking zone, and speak to the caller again.
5. If the system is in tenant service, and ATTO parks a call, a station in tenant 1 can retrieve the call, and vice versa.

### RELATED FEATURES

1. Access to Paging (System).
2. Hold-All Calls (Station).
3. Meet-Me Page (Station).

### BENEFITS

Meet-Me Page enables people, who are not at their stations, or whose jobs require that they move about the facility frequently, to pick up incoming calls from virtually any location. It contributes to call processing efficiency.

## DESCRIPTION

Message Waiting allows an attendant console, that has been designated as the Message Center, to activate the Message Waiting signal on telephones which have been equipped to receive a Message Waiting indication. Such telephones may be either the 2500-series telephones with lamp indicators, or electronic/digital telephones with assigned **MSG** buttons. The attendant console's Busy Lamp Field can display all the stations that have Message Waiting set.

## OPERATION

### To Leave a Message Waiting Signal:

1. After dialing a station that either is busy, is in Do Not Disturb mode, or does not answer.
  2. Press the **MSG** button.
    - The MSG LED will light, and the MW indication will be set.
  3. Press the **RLS** button.

### To Display Message Waiting:

1. Press the **MSG** button.
2. Dial the hundreds group to be displayed.
  - The hundreds group identifier will display the dialed hundreds group.
  - The Busy Lamp Field will display all the stations that have Message Waiting set.
3. If necessary, dial another hundreds group to display additional stations that have Message Waiting set.
4. Press the **MSG** button.
  - The Busy Lamp Field will return to the busy station's display.

### To Cancel Message Waiting:

1. Press an idle **LPK** button.
  - The LPK LED will light and the RLS LED will go out.
2. Dial the station's directory number.
  - The DEST directory number will be displayed as the digits are dialed.
  - The MSG LED will show the status of the MW LED at the called station.
3. Press the **MSG** button.
  - The MSG LED will go out (if it was on), and the MW condition will be cleared at the called station.
4. Press the **RLS** button.

### To Cancel All Message Waiting Signals:

1. Press an idle **LPK** button.
  - The LPK LED will light and the RLS LED will go out.

# Message Waiting

2. Dial the All Clear access code (# # 5) \_\_\_\_\_.
3. Press the **RLS** button.

## PROGRAMMING

The Message Center is defined in the DMCD Data Block. In order for an electronic/digital telephone to receive a Message Waiting indication, it must have a designated **MSG** button, which is assigned in the DEKT Data Block. Standard telephones receive this capability through the assignment of Message Waiting Lamp (MWL = Y) within the DSTT Data Block.

### NOTES:

1. The number of message centers is limited to one in a non-tenant services system, and to one per tenant in a tenant services system.
2. A Message Waiting indication can be sent to a station which has registered Do Not Disturb.
3. A Message Waiting indication will be sent to the destination of a call forward, unless the destination is a message center. In this case, the message will be sent directly to the station which initiated the call forward. Likewise, any voice mail message will be indicated at the initial forwarding station.
4. In a station hunting situation, any Message Waiting indication will always be sent to the originally-dialed station.
5. When a common directory number (DN) appears on several telephones, a Message Waiting indication will appear only on the telephone which claims the dialed DN as its Prime DN (PDN).
6. A Message Waiting indication cannot be sent to a single-appearing secondary DN. Any pending message indication regarding one of these lines, must be sent to a station's PDN.
7. A system or tenant can be configured with either a "LIVE" Message Center, or a recorded Voice Mail Message Center, but not both.
8. Any multi-button electronic/digital telephone can have both an assigned **MSG** (Message Waiting) button, and an assigned **SSM** (Station-to-Station Message) button.
9. A message center can send an unlimited number of Message Waiting indications. There is also no limit to the number of station message indicators which can simultaneously be activated. Each station can receive only one Message Waiting indication, although those equipped with an **SSM** button, may also receive a station-to-station message indication.
10. If an electronic/digital telephone is not equipped with an **MSG** button, or if a standard telephone does not have a Message Waiting lamp, when the attendant leaves a message, the station will receive a double ring every 20 minutes. If voice mail is the designated message center, the station **WILL NOT** receive the double ring every 20 minutes.

## RELATED FEATURES

None.

## BENEFITS

The ability of the attendant console to send Message Waiting indications quickly and conveniently, informs station users that a message is waiting for them. This improves communication among both employees and outside callers, by reducing the occurrence of lost messages.

## DESCRIPTION

Each attendant console in a PERCEPTION system has the ability to activate or deactivate the Night Service. This allows calls which arrive either after regular business hours, or during other designated time periods, to be routed either to specific stations (Flexible Night Answer), or to a common signaling device which indicates incoming calls through the sound of a bell, gong, or chime (Universal Night Answer). When utilizing Flexible Night Answer, each attendant console also has the ability to assign calls, which arrive over specific trunks, to ring at specific stations. The activation/deactivation of Night Service can be controlled only from an attendant position.

## OPERATION

### To Activate Night Service:

Night Service will automatically be activated in the following situations:

1. In single-console installations, when an attendant presses either the console's **NITE** or **POS-BSY** button, or disconnects the console's handset/headset.
2. In two-console installations, when an attendant presses each console's **NITE** or **POS-BSY** button, or has disconnected its handset/headset. (Combinations of these operations between the two attendants are permitted.)

### To Assign Flexible Night Answer Connections:

1. Press an idle **LPK** button.
  - The LPK LED will light.
  - The RLS LED will go out.
2. Press the **NITE** button.
  - The NITE LED will flash.
  - Dial tone will be heard.
3. Dial the trunk access code followed by its member number (see Note 6).
  - The dial tone will stop once the first digit is dialed.
  - The LPK LED will go out, and the dial tone will return once the complete number has been dialed.
  - The first two dialed digits will display under the DEST designation, and will move to the SRC designation once the number has been completely dialed.

*NOTE: If a nonexistent access code or trunk member number has been dialed, the attendant will hear overflow tone. This tone can be released by pressing the **RLS SRC** button.*

4. Dial the directory number (DN).
  - The dial tone will stop after the first digit has been dialed.
  - The DN will display under the DEST designation.
  - The LPK LED will light.
  - The dial tone will be heard.
5. Repeat Steps 3 and 4 in order to make additional assignments.

# Night Service Control

6. Press the **RLS** button.
  - The RLS LED will light.
  - Both the NITE and LPK LEDs will go out.

*NOTE: If a nonexistent DN has been dialed, the attendant will hear overflow tone. This tone can be released by pressing the **RLS DEST** button.*

## To Assign Universal Night Answer Connections:

1. Press an idle **LPK** button.
  - The LPK LED will light.
  - The RLS LED will go out.
2. Press the **NITE** button.
  - The NITE LED will flash.
  - Dial tone will be heard.
3. Dial the trunk access code followed by its member number (see Note 6).
  - The dial tone will stop once the first digit has been dialed.
  - The LPK LED will go out, and the dial tone will return once the complete number has been dialed.
  - The first two dialed digits will display under the DEST designation, but will shift to SRC once dialing has been completed.

*NOTE: If a nonexistent access code or trunk member number has been dialed, the attendant will hear overflow tone. This tone can be released by pressing the **RLS SRC** button.*

4. Press the **RLS** button.
  - The RLS LED will light.
  - The NITE and LPK LEDs will go out.

*NOTE: Repeat Steps 1 ~ 4 in order to make additional assignments.*

## PROGRAMMING

Night routing numbers for specific trunks can also be assigned by entering the directory number of the designated night station in the NIT entry of the DTRK Data Block.

### NOTES:

1. Night numbers can be assigned only if Night Service is not currently activated, when the attendant begins the trunk-to-night-station posting procedure.
2. Night Service cannot be activated by an attendant while a call is being processed.
3. Timed recalls, which occur after the activation of Night Service, will ring either the specified night station or the UNA signaling device.
4. If the attendant console's handset/headset is disconnected, the console keyboard will be disabled. This procedure is recommended in order to prevent tampering, when the console is left unattended.
5. Once assigned, night stations will remain fixed until they are changed via either the attendant console, or a data input terminal.

# Night Service Control

PERCEPTION

ATTENDANT CONSOLE FEATURES

6. *A trunk's member number is the second half of the Group/Member Number (GMN) indication in the DTRK Data Block. The member number portion of this indication designates each individual trunk contained within a particular trunk group.*
7. *Night Service calls from DID or CCSA trunks to specific directory numbers (LDNs), will be routed to the destination defined by the NT1 and NT2 entries in the DSYS Data Block. These entries cannot be changed by the attendant.*

## RELATED FEATURES

1. Multiple Console Operation (System).
2. Night Service (System).
3. Call Forward-No Answer (Station).
4. Manual Line Service (Station).
5. Overflow Facility (Attendant).
6. Position Busy (Attendant).

## BENEFITS

Night Service ensures that calls will not be missed, either after regular business hours or within time periods, when a console must be left unattended. The availability of Night Service alternatives (Flexible Night Answer and Universal Night Answer) offers an additional degree of system customization, since incoming calls can be routed to answer positions in the method that most conveniently corresponds with each customer's situational requirements.

# Non-Delayed Operation

**DESCRIPTION** The Non-Delayed Operation allows a console operator to make a call for a requesting station user, without requiring the station user to go on-hook. The user initially reaches the attendant console by dialing 0.

- OPERATION**
1. An attendant answers a 0 call from a requesting station.
  2. The attendant dials the desired trunk access code.
  3. The attendant either dials the desired number and then releases, or simply releases and allows the station to complete the desired dialing.

**PROGRAMMING** None.

*NOTE: When a station places a call through an attendant (Through Dialing), toll restrictions which normally apply to that station, will not apply.*

**RELATED FEATURES** Through Dialing (Attendant).

**BENEFITS** Non-Delayed Operation permits a station user to place a call that would otherwise be prevented by Toll or Class of Service restrictions. This saves the user the effort of having to locate a telephone which would allow the placement of his/her desired call.

## DESCRIPTION

The Overflow Facility is activated by a dedicated **OVERFLOW** button on the attendant console. Pressing this button causes any incoming calls, which are not answered within the designated Attendant Overflow time-out period, to be automatically transferred either to a specific preassigned station, or to the Universal Night Answer (UNA) facility. Overflow is active, only when the Overflow feature has been activated and the attendant is busy using a loop button.

## OPERATION

1. The OVERFLOW LED is off when the feature is not activated.
2. To activate the Overflow Facility, press the **OVERFLOW** button.
  - The OVERFLOW LED will light steadily.
3. While the feature is activated, any incoming call which is not answered before the Attendant Overflow time-out period elapses, will be released from the console, and routed to the alternate answering point.
  - If the call is not answered at the alternate point within the time period allowed by the specified Ring-No-Answer time-out, it will return to the console.
4. To deactivate the Overflow facility, press the **OVERFLOW** button.
  - The OVERFLOW LED will go out.

## PROGRAMMING

1. The answering point(s) for the Overflow facility can be defined either through the use of a Teletype terminal, or directly from an attendant console.
  - In a tenant situation, either console may be used.
  - When using a Teletype terminal, Overflow destinations should be indicated within the OFL1 (for tenant 0) and the OFL2 (for tenant 1) entries of the DSYS Data Block.
  - In non-tenant systems, the OFL2 prompt will not appear on the programming screen.
  - In a one-tenant system which utilizes two attendant consoles, the Overflow destination that is specified in the OFL1 entry will apply to both consoles.
2. To assign an Overflow answering point from an attendant console, follow the procedure below. The noted procedure is the same as that used to set destination points for Flexible Night Answer and Universal Night Answer, except that 0 is substituted for the trunk access code and member number.

### When the Overflow Answering Point is a Specified Directory Number (DN):

1. Press an idle **LPK** button.
  - The LPK LED will light.
  - The RLS LED will go out.
2. Press the **NITE** button.
  - The NITE LED will flash.
  - Dial tone will be heard.

# Overflow Facility

3. Dial **0**.
4. Dial the DN.
  - The dial tone will stop after the first digit has been dialed.
  - The DN will display under the DEST designation.
  - The LPK LED will light.
  - The dial tone will be heard.
5. Press the **RLS** button.
  - The RLS LED will light.
  - The NITE and LPK LEDs will go out.

*NOTE: If a nonexistent DN is dialed, the attendant will hear overflow tone. At this point, the **RLS DEST** button should be pressed, and the correct DN should be redialed.*

## When the Overflow Point is the Universal Night Answer Facility:

1. Press an idle **LPK** button.
    - The LPK LED will light.
    - The RLS LED will go out.
  2. Press the **NITE** button.
    - The NITE LED will flash.
    - Dial tone will be heard.
  3. Dial **0**.
    - The LPK LED will go out.
  4. Press the **RLS** button.
    - The RLS LED will light.
    - The NITE and LPK LEDs will go out.
3. The Attendant Overflow Time-out, and the Ring-No-Answer time-out periods are assigned in the AOF and RNA entries of the DSYS Data Block.

## NOTES:

1. Overflow transfer applies only to incoming calls from the public exchange (CO/FX/WATS) network.
  - Calls to the operator from either a station or a TIE trunk will not be sent to the Overflow destination, and will stay in a Call Waiting at the attendant console.
  - Likewise, any call to an attendant for conference or recall purposes will not be routed via the Overflow feature, and will remain in Call Waiting at the console.
  - Specifically, when a station is connected to a trunk, and the user presses either the flash or the **CONF** button, and dials **0**, the call will be treated like a regular 0 call.
  - The routing station can retrieve the originally-connected trunk, by pressing either the flash or the **CONF** button.

# Overflow Facility

PERCEPTION

ATTENDANT CONSOLE FEATURES

2. *When two consoles are being used in a non-tenant system, Overflow can be activated and deactivated by either console.*
  - *The Overflow LEDs on both consoles will light, or go out in response to the activation/deactivation from either console.*
3. *In a tenant situation, the specific Overflow destination, as well as the specific trunks which are to be routed over the Overflow feature, can be assigned independently for each tenant.*

## RELATED FEATURES

1. Tenant Service (System).
2. Call Waiting Lamp (Attendant).
3. Night Service Control (Attendant).

## BENEFITS

The Overflow feature ensures that all incoming calls will be handled quickly during peak calling periods by providing a backup destination for calls which cannot be quickly answered by an attendant.

# Position Busy

**DESCRIPTION** Position Busy enables an attendant to "busy out" the console position, in order to prevent additional incoming calls from being presented at that console position. While the console is "busy," calls will be diverted to the second console.

**OPERATION** **To Use Position Busy:**

1. Press the **POS BSY** button.
  - The RLS LED will go out.
  - If there is only one console in the system (or the other console is in POS BSY), the POS BSY and NITE LEDs will light (the system will be in NITE service).
  - If the other console is active, the POS BSY LED will light.

**To Return the Console to Service:**

1. Press the **POS BSY** button again.
  - The POS BSY LED will go out, and the RLS LED will light.

**PROGRAMMING** None

**NOTES:**

1. In either single-console or tenant-service systems, pressing the **POS BSY** button, or disconnecting the handset/headset will automatically activate Night Service.
2. In a two-console system, pressing the **POS BSY** button on one console will divert all calls to the second console.
3. If the system is equipped with just one console, the **POS BSY** button will have the same effect as the **NITE** button.

**RELATED FEATURES** Night Service Control (Attendant).

**BENEFITS** The Position Busy feature is convenient when one attendant in a two-console system must temporarily go out of operation. It allows an attendant to leave his/her area, and have all calls directed to the other console.

# Push-Button Dialing

**DESCRIPTION** The attendant console's push-button dialpad is used to establish all calls, both to the telephone network and within the system.

**OPERATION** The conversion of attendant dialing or speed dialing to either Dial Pulse or DTMF signals, is performed automatically by the system. The specific type of conversion is dependent upon the particular requirements of the outgoing trunk facility. Trunks are provided with either 10 or 20 PPS Dial Pulsing, or standard DTMF dialing frequencies.

**PROGRAMMING** Each trunk's specific outgoing dialing method is assigned in the DOT entry of the DTRK Data Block.

**NOTES:**

1. *Pressing a dialpad button on either an attendant console or an electronic/digital telephone will not produce DTMF signals.*
  - *Whenever one of these buttons is pressed, a data signal will immediately be transmitted to the system's central equipment in order to be processed.*
  - *Station-to-station calls will be processed directly.*
  - *Trunk calls, however, require the conversion of dialed digits to either dial pulses or DTMF tones.*
  - *They will be processed according to either the requirements of CO facilities, or the trunk requirements specified within the DTRK Data Block.*
2. *Internal DTMF signaling will be performed only at station ports, which are designated as voice mail ports within the DMCD Data Block.*
3. *The attendant console dialpad can send DTMF tones until the DPT timer expires. Once the DPT timer expires, it changes to transfer mode.*

**RELATED FEATURES**

1. Tone Dialing-to-Dial Pulse Conversion (System).
2. Voice Mail Connection (System).
3. Through Dialing (Attendant).
4. End-to-End Signaling (Electronic/Digital Telephone).

**BENEFITS** Push-Button Dialing allows quick and easy dialing of station/directory numbers.

# Secrecy

**DESCRIPTION** The Secrecy feature automatically splits the source party from a call connection, whenever an attendant either extends the call, or answers an attendant recall. If desired, the attendant may either void the split by pressing the **LPK** button a second time, or alternate between parties by using the **EXCL SRC** and **EXCL DEST** buttons.

**OPERATION** Splitting is automatic on all calls that are either extended by, or recalled to an attendant.

1. Whenever a call is extended by an attendant, the source and destination parties of that call will be split immediately after dialing.
  - The attendant console's EXCL SRC LED will light.
  - Splitting will be retained until either the attendant holds, releases from that occupied loop, or presses that loop's **LPK** button a second time.
2. Whenever an attendant answers a recall, the resulting connection will exclusively be between the attendant and the recalling party.
  - The other party of the initial call will automatically be placed on hold, and the console's EXCL SRC LED will light.

**PROGRAMMING** None.

**RELATED FEATURES** Splitting (Attendant).

**BENEFITS** Secrecy enables an attendant to screen calls with complete privacy.

# Serial Call (Business Console Only)

PERCEPTION

ATTENDANT CONSOLE FEATURES

**DESCRIPTION** The Serial Call feature is utilized whenever an incoming trunk party needs to speak sequentially to more than one party. If this feature is activated by an attendant, the trunk party will be held, and the attendant will be recalled, whenever a desired internal station disconnects. This enables the attendant to then extend the trunk party to the next-desired station. At this time, if the trunk party needs to speak to still another party, the attendant can reset the Serial Call. Serial Call cannot be used in Lodging/Health Care operation.

**OPERATION** **To Make a Serial Call:**

1. While on an **LPK** button, press the **SER CALL** button.
  - The SER CALL LED will light.
2. Dial the first station number, and extend the call by using standard procedures.
3. When the inside party disconnects, the trunk will ring the attendant console, and the console's Incoming Call Identification display will show SER.
4. Repeat this same procedure for each desired station, except the last.
  - Serial Call should not be registered for the last-desired station in a sequential series.
  - Dial only the desired station number.

**PROGRAMMING** None.

**RELATED FEATURES** None.

**BENEFITS** Serial Call ensures that incoming trunk calls are transferred to all requested parties. It also eliminates the need for individual stations to transfer the caller to the next-desired destination.

# Speed Dialing-System

**DESCRIPTION** Speed Dialing-System is assigned to a button/LED combination on the console, and it enables an attendant to dial frequently-called numbers by using abbreviated address codes. A maximum of 90 telephone numbers may be stored in the system directory. The attendant also controls any changes in the system directory.

**OPERATION** **To Make a Call with Speed Dialing-System:**

1. Press an idle **LPK** button.
  - The RLS LED will go out.
  - The LPK LED will light.
2. Press the **SP DIAL** button.
3. Dial the 2-digit address code for the desired telephone number (**10 ~ 99**).
  - The system will dial the number.
  - The call will proceed normally.

**To Store a Number:**

1. Press the **SP DIAL** button (**do not** press an **LPK** button).
  - The SP DIAL LED will flash.
2. Dial:
  - a. The 2-digit code (**10 ~ 99**) that is associated with the desired telephone number.
  - b. The trunk access code.
  - c. The **⏏** button (this will insert a 3-second pause to allow time for trunk dial tone to sound).
  - d. The desired telephone number.
3. Press the **SP DIAL** button again.
  - The SP DIAL LED will go out.
  - The code and telephone number will now be stored.

**NOTES:**

1. Dial tone delays may be achieved by using the **⏏** button to insert 3-second pauses between numerical digits. Each pause is counted as one digit against the 16-digit storage capacity.
2. System Speed Dial Numbers can also be entered via the TTY in the DSDL Data Block.

**PROGRAMMING** System Speed Dialing numbers must be programmed either from an attendant console, or via a programming terminal (DSDL Data Block).

**RELATED FEATURES**

1. Repeat Last Number Dialed (Station).
2. Speed Dialing (Station).

**BENEFITS** Speed Dialing encourages the use of alternative long distance services, since any required access codes can conveniently be preprogrammed. The feature also allows quick access to often-dialed numbers, and prevents costly misdials.

**DESCRIPTION** Splitting permits an attendant to consult privately with either party of a call that appears on an attendant console. The feature is automatic on both attendant-extended calls and attendant recalls, but can be accessed manually at any time by using the **EXCL SRC** and **EXCL DEST** buttons.

## **OPERATION** **AUTOMATIC**

Splitting is automatic on all calls that are either extended by, or recalled to an attendant.

1. Splitting will occur, once an attendant dials a destination party and extends an incoming call.
  - At this time, the console's EXCL SRC LED will light.
  - The source and destination parties of the call will remain split, until the attendant holds, releases from that occupied loop, or presses that loop's **LPK** button a second time.
2. Whenever an attendant answers a recall, the resulting connection will exclusively be between the attendant and the recalling party.
  - The other party of the initial call will automatically be placed on hold, and the console's EXCL SRC LED will light.

## **MANUAL**

The use of the Exclusion (**EXCL SRC** and **EXCL DEST**) buttons enables an attendant to split an established call into a three-way call connection, by joining the call connection. The attendant also has the option of conversing privately with either the source or destination party of the initial call. Summarily, when an attendant is involved in a three-way connection, it is possible to either:

1. Talk privately with the called party (DEST).
2. Talk privately with the calling party (SRC).
3. Form a 3-way voice connection consisting of the attendant, and both the calling and called parties.

### **To Talk to the Called Party (DEST Display) Privately:**

1. Press the **EXCL SRC** button.
  - The EXCL SRC LED will light.
  - The attendant may now talk privately to the called party, and the calling party will not be able to hear the conversation.
2. The Exclude Source condition will automatically be activated whenever dialing to extend a call.

### **To Talk to the Calling Party (SRC Display) Privately:**

1. Press the **EXCL DEST** button.
  - The EXCL DEST LED will light.
  - The attendant may now talk to the calling party privately, and the called party will not be able to hear the conversation.

# Splitting

## To Form a Three-way Conversation from Either an EXCL SRC or EXCL DEST Condition:

1. Press the appropriate **LPK** button.
  - The EXCL SRC or EXCL DEST LED will go out.
  - The three parties may now converse freely.

## To Release a Call While in Any of the Above Conditions (Connecting the Calling and Called Parties:)

1. Press the **RLS** button.
  - The LPK LED and all call-related displays will go out.
  - The RLS LED will light.
  - The SRC and DEST parties will now be connected.

**PROGRAMMING** None.

**RELATED FEATURES** Secrecy (Attendant).

**BENEFITS** Splitting enables an attendant to screen calls with complete privacy.

# Station Number Display

**PERCEPTION**

**ATTENDANT CONSOLE FEATURES**

**DESCRIPTION** The SRC and DEST displays on the PERCEPTION attendant console identify any system station which is currently connected to the console.

- OPERATION**
1. The Calling Source Number display is a 3-character, 7-segment LED display that indicates the number of the calling station or trunk.
  2. The Call Destination Number display is a 3-character, 7-segment LED display which denotes the station number or trunk number, which has been dialed by the attendant.

**PROGRAMMING** None.

**RELATED FEATURES** Digital Information Display (Attendant).

**BENEFITS** The SRC display enables an attendant to quickly identify any calling station, while the DEST display provides a quick reference of the station which it has called.

# Switched Loop Termination

**DESCRIPTION** Switched Loop Termination refers to PERCEPTION's method of routing incoming calls to an attendant console. Specifically, neither trunk nor station calls appear directly at a console. Instead, each call that requires attendant assistance is automatically switched to one of the console's loop buttons (the lowest-numbered idle loop button is selected). Each attendant console is initially equipped with four **LPK** buttons, and one corresponding LED per loop. An **LPK** button provides the attendant with an access to the speech connection that is currently on a loop.

- OPERATION**
1. When a call rings in at the attendant console, it will be connected to the source (SRC) side of an attendant loop circuit.
    - Simultaneously, the LED which corresponds to the console's lowest-numbered idle loop will flash.
    - The attendant can answer the incoming call by pressing the associated **LPK** button.
  2. Pressing the Release (**RLS**) button completes call processing.
    - The console loop becomes idle, and is available to receive new calls.
    - The caller who had been connected to the loop, will be transferred to the desired destination.
  3. Each attendant console is equipped with either four, six, or eight loop buttons, numbered **LPK-1 ~ LPK-8**.
    - In most cases, an occupied loop will be freed for a new call once the attendant presses the **RLS** button.
    - Calls that are not subsequently completed (Ring-no-answer calls, Camped-on calls, etc.), will return to the attendant queue after a specified time interval.
  4. A call will be held on a console loop under either of the following two conditions (both conditions involve an attempted call connection between an incoming and an outgoing trunk):
    - a. When an attendant attempts to establish a call connection via a trunk-to-trunk connection, which lacks the supervision to release automatically.
    - b. When the system automatically decides to hold a call, after assessing the descriptive parameters of each involved trunk. (Refer to Trunk-to-Trunk Connections for detailed parameter descriptions.)

**PROGRAMMING** See Note 2.

**NOTES:**

1. Each console requires one circuit on a NEKU PCB (for PERCEPTION<sub>e&ex</sub>) or a DEKU PCB (for PERCEPTION I & II).
2. When an attendant utilizes the Lockout feature (when LKO = Y in the DATT Data Block), the attendant will be denied access to any loop, on which an established call is currently being held (for example, for Serial Call and Conference purposes). The attendant may, however, access any recall from an involved held-call member.

# Switched Loop Termination

PERCEPTION

ATTENDANT CONSOLE FEATURES

3. *Class of Service Restrictions and Trunk Access (Toll) Restrictions require that certain station-originated calls be completed by the attendant.*

## RELATED FEATURES

1. Overflow Facility (Attendant).
2. Trunk-to-Trunk Connections (Attendant).
3. Variable Loop Buttons (Attendant).

## BENEFITS

Switched Loop Termination allows a console loop button to become idle, immediately after a call is released. This eliminates call blocking and enables an attendant console to receive more calls.

# Through Dialing

**DESCRIPTION** Through Dialing enables a station and TIE-line users to make calls that are ordinarily prevented by Class of Service and Toll Restriction limitations, by using the attendant as an intermediary dialing point. Once an attendant is accessed, the restricted calls can then be performed.

**OPERATION** After receiving a call from a requesting station or a TIE-line user, an attendant can complete a restricted call by performing one the following series of actions:

**To Handle Through Dialing Requests:**

1. An incoming call signal will be heard.
  - ICI will display OPR, SRC and COS will be displayed, and the LPK LED will flash.
2. Press the appropriate **LPK** button.
  - The LPK LED will light steadily, the console signal will stop, and you will now have a voice connection with the calling (SRC) party.
3. Dial the desired trunk access code or the LCR access code (**# # 6**)  
\_\_\_\_\_.
  - The EXCL SRC LED will light steadily, DEST will display the trunk and member number.
  - STATUS will display TLK, the voice connection with the calling party will be broken, and you will hear trunk dial tone.
4. Press the **RLS** button to transfer trunk dial tone to the station.
  - The RLS LED will light, and the calling (SRC) station may now dial out on the selected trunk.

*NOTE: Restriction will **NOT** be in effect at the station for the duration of the call.*

**PROGRAMMING** Through Dialing is automatic. Trunk access codes are defined in the DTGP Data Block, and the LCR access code is defined in the DACD Data Block.

**RELATED FEATURES**

1. Intercept (System).
2. Push-Button Dialing (Attendant).
3. Non-Delayed Operation (Attendant).

**BENEFITS** Through Dialing saves valuable time, by allowing an attendant to pass Central Office dial tone to restricted stations, so that users can place their own calls. The feature is also highly beneficial in high-traffic situations, or when individuals must make calls from various (often restricted) telephones within a business facility.

# Timed Recall-Variable

**DESCRIPTION** The time-out intervals, which determine when certain types of calls will recall to an attendant console, are adjustable via system programming.

**OPERATION** Refer to each individual feature that is controlled by each time-out period.

<b>PROGRAMMING</b>	<b>FEATURE</b>	<b>DSYS DATA BLOCK ENTRY</b>
	Camp-on (or Call Waiting)	COT
	Ring-No-Answer	RNA
	Attendant Overflow	AOF

*NOTE: Each time-out period that is associated with each of the above features, may be set in the range of 0 ~ 255 seconds.*

**RELATED FEATURES**

1. Variable Time-out (System).
2. Trunk Transfer Recall.

**BENEFITS** Timed Recalls prevent incoming calls from being abandoned, by returning them to the attendant (Camp-on/Call Waiting, Ring-No-Answer), or by forwarding them to another location (Trunk Transfer Recall), once a specified time period has elapsed.

# Time-of-Day Display, Set, Reset

**DESCRIPTION** Time-of-Day Display, Set, Reset allows an attendant to reset the system's real-time clock. The date, time-of-day, and day-of-week can be changed directly from the attendant console, and will thereafter be displayed both at the console and at all system LCD electronic/digital telephones. The console will display the date and time in the SRC, COS, and DEST positions, whenever manually prompted by the attendant.

**OPERATION** **To Display the Date:**

1. Press the **DIS TOD** button.
  - The date will be displayed as follows:  
SRC                    COS                    DEST  
Month                Day                    Year/Day of the week

**To Set the Date:**

1. Enter the 7-digit date (via the dialpad) in the following format: MMDDYYD.
  - The last D explains the day of the week.
  - The day of the week is defined as 1 for Sunday through 7 for Saturday.  
For example, for January 4, 1991, Friday, enter **0104916**.
  - The new date will appear on the display.

**To Display the Time:**

1. Press the **DIS TOD** button.
  - The time will be displayed as follows:  
SRC                    COS                    DEST  
Hours                Minutes                Seconds

**To Set the Time:**

1. Enter the 6-digit time (via the dialpad) in the following format: HHMMSS  
For example, for 9:30 AM, enter **093000**.
  - The new time will appear on the display.
  - Time is displayed and entered in the 24-hour clock format (for any hour after 12 noon, add 12).  
For example, 9:30 AM is 0930.  
9:30 PM is 2130.

**To Start the Clock and Clear the Display:**

1. Press the **DIS TOD** button a third time.
  - The display will clear.

**PROGRAMMING**

System time and date can also be set via a programming terminal by using the Traffic Measurement (DTRF) Data Block.

**NOTES:**

1. The system clock is maintained by a battery on the CPU PCB, and is not lost during a power failure, data base reload, or system reinitialization.
2. The date and time may have to be reset on occasion. The Minor (MIN) alarm switch on the attendant console will remain illuminated, until the clock has been reset.

# Time-of-Day Display, Set, Reset

PERCEPTION

ATTENDANT CONSOLE FEATURES

3. A date or time display will be replaced by pertinent information, whenever the attendant presses an **LPK** button to answer an incoming call. After the call has been processed, the **DIS TOD** button must be used in order to redisplay the date or time.
4. The system date, day, and time information that is set via an attendant console, is the same clock/calendar information used by Least Cost Routing, Station Message Detail Recording, and Traffic Measurement.

## RELATED FEATURES

Liquid Crystal Display (Electronic/Digital Telephone).

## BENEFITS

The ability for an attendant to set and reset the system's time-of-day information, allows this information to be conveniently set or reset.

# Trunk Equipment Number Display

**DESCRIPTION** The attendant console's SRC and DEST displays show the identity of any trunk that is currently connected to the console. Each display consists of three characters. The first character shows the connected trunk's access code, while the remaining two indicate the trunk's member number.

- OPERATION**
1. Calling Source Number: This display is a 3-character, 7-segment LED display which indicates the station or directory number of the calling station or trunk.
  2. Call Destination Number: This display is a 3-character, 7-segment LED display which shows the station or directory number of the station or trunk called by the attendant.

**PROGRAMMING** None.

*NOTES:*

1. A trunk's member number is the second half of the Group/Member Number (GMN), that is entered within the DTRK Data Block to identify each individual trunk.
2. If a trunk's access code consists of 2 or 3 digits, only the first digit of the access code will be displayed.

**RELATED FEATURES** Digital Information Display (Attendant).

**BENEFITS** The Trunk Equipment Number Display identifies the specific trunk connected to the console at any one time. It is helpful in identifying any non-working trunk. This reduces repair time, since the defective trunk has already been determined and can quickly be replaced.

# Trunk Group Access Control

**DESCRIPTION** Trunk Group Access Control allows an attendant to seize control of any trunk group, at any time. Once a trunk group has been seized, its corresponding Trunk Group Busy (TGB) LED on the attendant console, will light steadily. This indicates that no outgoing calls can now be made through that trunk group, unless they are made or extended directly from the attendant console. Any station or TIE trunk without the Attendant Control Override capability, which attempts to access such a restricted trunk group, will either be intercepted by the attendant, or will receive overflow tone.

## OPERATION **To Take Control of a Trunk Group:**

1. Press an idle **LPK** button.
2. Dial **\*\*#**, followed by the desired trunk group's access code.
  - The trunk group's corresponding TGB LED will light steadily.
3. Press the **RLS** button.

## **To Release Trunk Control (TGB LED is On):**

1. Press an idle **LPK** button.
2. Dial **#\*#**, followed by the desired trunk group's access code.
  - The trunk group's corresponding TGB LED will go out.
3. Press the **RLS** button.

## PROGRAMMING

1. Any station or TIE-trunk caller who attempts to place a call to a deactivated trunk group, will either be intercepted by the attendant, or will receive overflow tone.
  - This intercept option is controlled by the ICP1 entry within the DSYS Data Block.
  - The specific programming options are as follows:
    - ICP1 = ATT (attendant console).
    - ICP1 = OFL (overflow tone).
2. A station or TIE trunk, whose specified Class Of Service (COS) allows Attendant Control Override, is able to override trunk-group deactivation, and will be permitted access to the desired trunk group.
  - Each COS level is defined within the DCOS Data Block.
  - Specific allowances and restrictions customize each COS level (0 ~ 15).
  - A specific COS level is assigned to each station, via the COS entry of the station's DEKT, DSTT, or DTGP Data Block.

### NOTES:

1. When all trunks in a trunk group are busy, that group's associated TGB LED will light steadily.
2. If a station places a call to a deactivated trunk group, and that call is intercepted by the attendant, the console's Incoming Call Identification panel will display INT.
3. Attendant Control Override will override any trunk deactivation, unless this feature is specifically denied by a station's designated

# Trunk Group Access Control

*COS. To make this denial, enter "ACO" (after the entrance of the desired COS level number) in the COS entry of the DCOS Data Block.*

## RELATED FEATURES

1. Class of Service Restrictions (System).
2. Intercept (System).
3. Trunk Group Busy Indication (Attendant).

## BENEFITS

Trunk Group Access Control allows an attendant to control calls placed over a specific trunk group.

# Trunk Group Busy Indication

**DESCRIPTION** Each attendant console is equipped with ten Trunk Group Busy (TGB) LED indicators.

**OPERATION** Trunk Group Busy LEDs are numbered **0 ~ 9**, and they provide a visual indication of the status of each trunk group. Possible indications are as follows:

1. LED off = At least one trunk is idle.
2. LED on steadily = Attendant has utilized Trunk Group Access Control.
3. LED flashing = All trunks are currently busy.

**PROGRAMMING** Each Trunk Group Busy LED indicator (**0 ~ 9**) indicates the status of its corresponding trunk group (For example, TGB LED 0 = Trunk Group 0, TGB LED 1 = Trunk Group 1, etc.). Each trunk group is assigned a number and defined within the DTGP Data Block.

*NOTE: Although the system permits the formation and use of up to 16 trunk groups, only the first 10 (0 ~ 9) can be represented by a console TGB LED.*

**RELATED FEATURES** Trunk Group Access Control (Attendant).

**BENEFITS** Trunk Group Busy LED indicators allow an attendant to monitor the status of individual trunk groups. This saves the attendant valuable time, since access to busy trunk groups need not be attempted. It also encourages trunk group efficiency, by identifying groups that require additional trunks.

# Trunk-to-Trunk Connections

**DESCRIPTION** An attendant has the ability to connect an incoming trunk to an outgoing trunk, via the attendant console.

**OPERATION** **To Connect an Outside Call (Answered at the Console) to an Outgoing Line:**

1. Dial the desired trunk access code or LCR access code (# # 6)  
\_\_\_\_\_.
  - The console's EXCL SRC LED will light.
  - The outgoing trunk number will be displayed as DEST.
  - The STATUS display will show TLK.
  - Dial tone will be received.
2. Dial the Directory Number.
3. Press the **RLS** button.
  - The RLS LED will light.
  - All displays will go out.
  - The LPK LED will either go out or will flash, depending on the type of trunk involved in the connection.
  - A flashing LED will indicate a held trunk (see Note 1).

**To Reenter a Trunk-to-Trunk Call:**

1. Press the **LPK** button.
  - The LPK LED will light steadily.
  - The ICI, SRC, COS, DEST, and STATUS displays will go on.
  - A 3-way conversation will now be established.
- 2A. If the conversation is still in progress:
  - 3A. Press the **RLS** button.
    - The RLS LED will light.
    - All displays will go out.
    - The LPK LED will flash, indicating that the call is being held.
- 2B. If the call has been completed:
  - 3B. Press the **RLS DEST** button.
    - DEST will be disconnected.
    - The DEST and STATUS displays will go out.
  - 4B. Press the **RLS** button in order to terminate the call.
    - The LPK LED and all displays will go out.
    - The RLS LED will light.
    - The console will become idle.

**PROGRAMMING** See Notes.

**NOTES:**

1. A call will be held on a console loop, if an attendant attempts to establish a call connection via a trunk-to-trunk connection, which lacks the supervision to release automatically.
2. The decision to release, or hold a trunk connection on a loop is

# Trunk-to-Trunk Connections

automatically made by the system, after it verifies the following parameter points in regards to each involved (originating/terminating) trunk.

- a. Trunk type (CO, TIE, etc.) of each trunk as specified in the TKT entry of the DTGP Data Block.
  - b. Loop-start or ground-start indication as specified for SIG entry of the DTRK Data Block.
  - c. Whether the pending trunk-to-trunk connection represents an incoming or an outgoing call.
  - d. Whether each involved TIE, DID, or CCSA trunk has Originating Party Control or First Party Release as its type of disconnect control, as specified in the CTL entry of the DTRK Data Block.
  - e. Type of Disconnect Supervision as specified in the DIS entry of the DTRK Data Block.
3. Calls which are held on a loop, must be periodically entered by the attendant, so that intended disconnect time can be assessed. When this occurs, no warning tone will be presented to the conversing parties. Once the conversation is finished, the attendant must manually disconnect the trunks by using the **RLS SRC** and **RLS DEST** buttons. This applies to loop-start trunks.

## RELATED FEATURES

1. Tandem Switching (System).
2. Trunk-to-Trunk Connections (Station).

## BENEFITS

The Trunk-to-Trunk Connection feature enables the attendant to connect two trunks together and then drop out of the connection, permitting two people outside the system to converse.

# Variable Attendant Console Loop Buttons

## DESCRIPTION

This feature enables the end-user to configure each attendant console in the system, to use either four, six, or eight Loop (LPK) buttons, depending on the application's call processing requirements. LPK buttons control the answering and processing of calls ringing in on the attendant console. When a call is HELD (rather than placed into a Meet-Me Page orbit) at the attendant console, the LPK button on which the call was answered is unavailable for further call processing until the held call is released. Thus, if a call is held on each console LPK button, the console is effectively busied out, and all calls ringing into the console must wait in queue, until an LPK button becomes idle (or overflow occurs).

In most PBX applications, the attendant processes calls as rapidly as possible, since it is usually more efficient (both in terms of time required and caller's happiness) to find out who the caller wishes to speak with, and extend the call to that destination immediately, than to place the call on hold and then recall it and go through the processing operation. However, some applications require that the attendant screen calls before extending them, which means that calls must be placed on hold until the attendant can get to them. In these cases, especially if the system has a high volume of incoming traffic, four, and even six LPK buttons may not be sufficient. This feature gives the end-user the ability to configure additional LPK buttons as required to best fit the application requirements.

## OPERATION

*NOTE: The PERCEPTION attendant console features **Switched Loop call processing**, which means that once the attendant presses the **RELEASE** button, a caller is immediately transferred to the desired directory number within the system. The LPK button is not held up until either the called party answers, or the caller recalls to the attendant. Instead, it becomes immediately idle and available for calls waiting in the attendant console queue. This capability significantly enhances the PERCEPTION attendant console's ability to quickly and efficiently process calls.*

The LPK button operation is the same regardless of the number of LPK buttons configured on an attendant console.

### To Answer a Call Ringing on an Attendant Console LPK Button:

1. Press the LPK button.
2. Begin speaking to the caller.

### To Transfer a Call to Another Party:

1. Dial the appropriate directory number (either internal or external to the system).
- 2A. Either screen the call (by staying on the line and announcing the caller to the called party),  
... or ...
- 2B. Press the **RELEASE** button.
  - The call will immediately be transferred to the called party.
  - The LPK button will be freed.

# Variable Attendant Console Loop Buttons

## To Place an Answered Call on Hold:

1. Press the **HOLD** button.
  - The **LPK** button that the call was answered on will become unavailable for call processing.
2. Press the appropriate **LPK** button to reaccess the held call.

## PROGRAMMING

This feature is available only with **D.04** and later versions of software. The number of **LPK** buttons assigned to each system attendant console is programmed in the DATT Data Block.

*NOTE: When more than four **LPK** buttons are programmed on the attendant console, some of the features assigned to other attendant console feature buttons are either lost, or their positions shift. Figures 1, 2, and 3 show the button assignment of each attendant feature for each **LPK**-button configuration. The darkening of the buttons indicates that those buttons either have function changes, or their positions have shifted.*

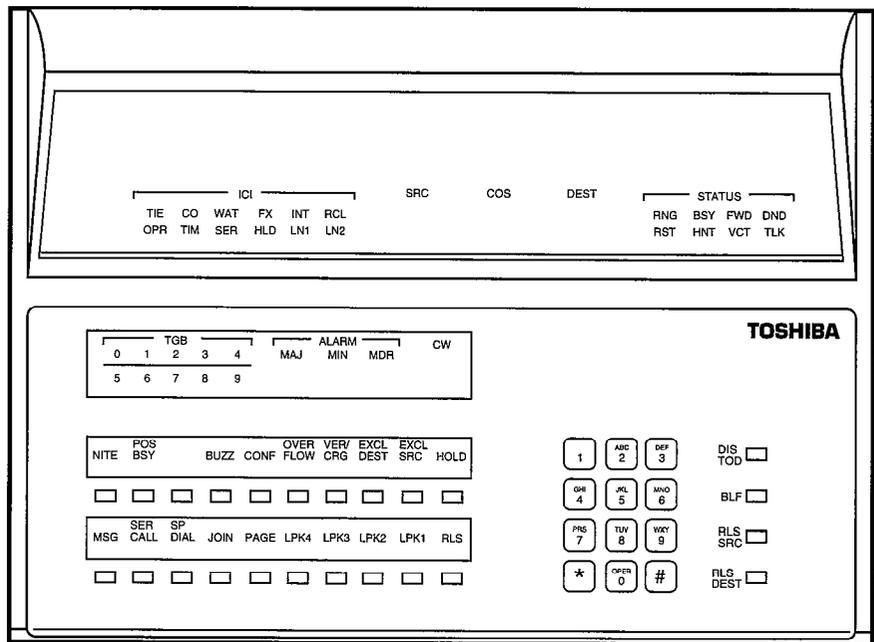


Figure 1— Attendant Console With Four **LPK** Buttons

# Variable Attendant Console Loop Buttons

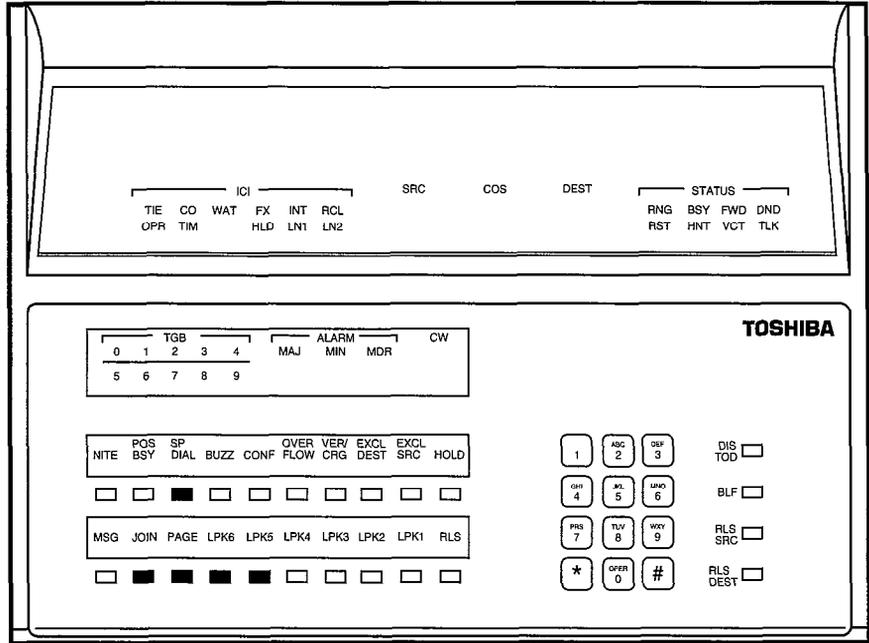


Figure 2—Attendant Console With Six LPK Buttons

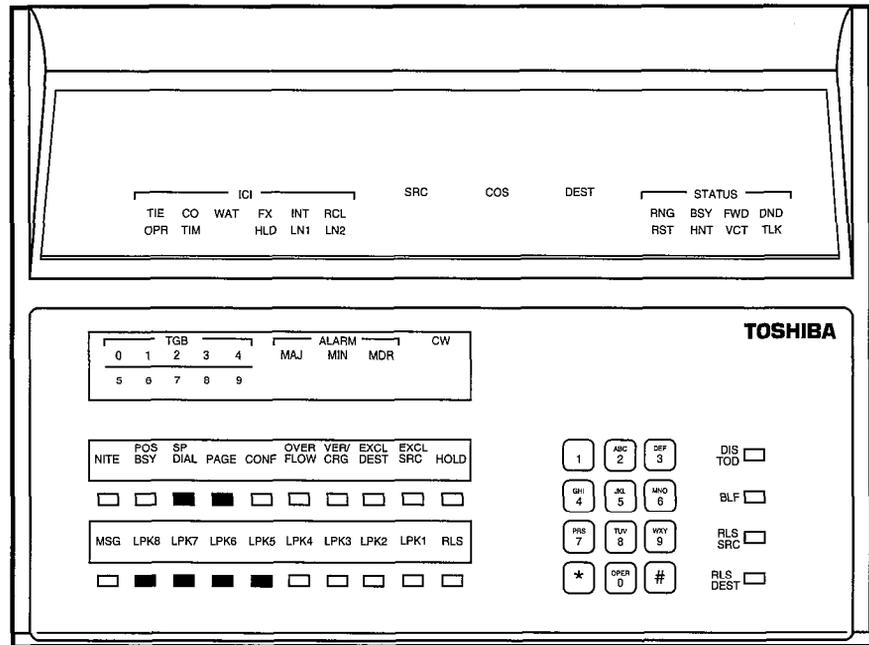


Figure 3—Attendant Console With Eight LPK Buttons

# Variable Attendant Console Loop Buttons

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## RELATED FEATURES

1. Attendant Hold (Attendant).
2. Switched Loop Operation (Attendant).

## BENEFITS

The ability to vary the number of **LPK** buttons on the attendant console enables the end-user to configure the call processing capability of the console to best fit the application requirements. For normal call processing requirements, four **LPK** buttons will normally be sufficient. However, when high incoming-call traffic must be handled from a centralized answer position, particularly when Attendant Call Screening is required, six or eight **LPK** buttons can be configured.

# Verification (Station & Trunk)

**DESCRIPTION** Verification allows an attendant to break into an established call connection, or to verify the status of a station or trunk. The attendant's presence is revealed to the conversing parties through the sounding of a warning tone, which consists of an initial 1-second burst of miscellaneous tone (440 Hz), followed by a 0.256-ms burst every 15 seconds. Following the initial part of this tone, the attendant will receive an open speech path over which a message can be delivered to the conversing parties. The initial tone will be heard by the attendant as ringback tone.

**OPERATION** A Verification warning tone will be denied, if an established connection involves an uninterruptible station or trunk (a station programmed as Warning Tone Denied [WTA = N], in either the DSTT or DEKT Data Block, or a trunk programmed as Warning Tone Denied [WTA = N] in the DTRK Data Block).

### To Verify Station and Trunk Status:

1. Press an idle **LPK** button.
  - The LPK LED will light.
  - The RLS LED will go out.
2. Press the **VER/CRG** button.
  - The VER/CRG LED will light.
3. Dial the station number, or trunk access code followed by the trunk member number.
  - The number will be displayed under the console's DEST designation.
4. At this point, if any of the following situations applies, the noted actions will occur:
  - a. The **station** or **trunk** is either disabled or not assigned.
    - The attendant will receive overflow tone.
    - The console's LPK LED will remain lit.
    - The VER/CRG LED will go out (STATUS = VCT for stations, and RST for trunks).
  - b. The **station** has been call forwarded to another DN.
    - The attendant will receive busy tone (which can be traced to the receiving DN [STATUS = FWD]).
  - c. The **station** has call forwarded to the attendant console.
    - The attendant will receive overflow tone.
    - The console's LPK LED will remain lit.
    - The VER/CRG LED will go out (DEST = 0, and STATUS = FWD).
  - d. The **station** or **trunk** is idle.
    - The station will ring, a trunk will be seized and will receive dial tone.
    - The LPK LED will remain lit.
    - The VER/CRG LED will go out (DEST = DN, and STATUS = RNG).

# Verification (Station & Trunk)

- e. The **station** is neither idle nor talking in a standard connection. (For example, the called station is currently dialing, is in a conference, or is involved in an unanswered station-to-station call.)
    - Verification will not be allowed.
    - The LPK LED will remain lit.
    - The VER/CRG LED will go out.
    - The attendant will receive busy tone (DEST = DN, and STATUS = RST).
  
  - f. The **station** or **trunk** is in a normal talking mode on a two-party connection.
    - The talking parties will be connected to the console.
    - The LPK LED will remain lit.
    - The VER/CRG LED will flash.
    - The SRC/COS/DEST will indicate the appropriate SRC, COS, and DEST numbers which apply to the call connection (STATUS = TLK).
5. Press the **RLS** button.

## PROGRAMMING

See Note 2.

### NOTES:

1. Verification is subject to conference-circuit blocking, since a conference circuit is required to utilize the feature. If conference blocking occurs, the attendant will receive overflow tone and STATUS will show RST. The maximum conference capabilities for a single PERCEPTION system are as follows:
  - 3-Party = 20 maximum.
  - 4-Party = 6 maximum: Each uses two 3-party conference circuits. Conferences can only be formed by using the Privacy Release (**PRS**) button.
  - 6-party = 1 maximum: Each uses two 3-party conference circuits. This type of conference is entirely attendant-controlled.
2. If an attendant attempts to verify a station or trunk (or conversation involving any such station), which has been programmed to have Warning Tone Denied (WTA = N in the DEKT, DSTT, or DTGP Data Block), then Verification will be denied, and the attendant will hear overflow tone.
3. Verification of an idle multiple-appearance DN will cause all stations which have that common DN appearance to ring (if they have been programmed to ring). If one of these stations has a call currently established on that DN, only that particular station will receive the verification tone, and will be verified by the attendant.
4. If the dialed trunk is connected to another attendant, the dialing attendant will receive overflow tone, the console's VER/CRG LED will go out, and the console's STATUS indicator will show RST.

## RELATED FEATURES

1. Override (Station).
2. Uninterrupted Line Connections (Station).
3. Multiple-Appearance Directory Number (Electronic/Digital Telephone).

# Verification (Station & Trunk)

4. Privacy (Electronic/Digital Telephone).
5. Individual Trunk Access (Attendant).
6. Trunk Verification (Attendant).

## **BENEFITS**

Verification allows an attendant to enter into an ongoing conversation in order to make emergency interruptions, and to verify if a particular trunk is in working order.

# P E R C E P T I O N

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## *Lodging/Health Care Features*

Issue 2, February 1992  
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## DESCRIPTION

The PERCEPTION attendant console functions almost identically in Lodging/Health Care systems as it does in business applications. Noticeable differences include the provision of a separate Lodging/Health Care console faceplate, which alters the position of some of the console buttons, and the replacement of the Serial Call button with a Guest Room button.

The Lodging/Health Care attendant console has all the feature capabilities of the business system console, except for Serial Call. Additionally, the Lodging/Health Care attendant console provides the following features:

- Automatic Wake-up.\*
- Deposit Paid Confirmation (Display).
- Maid-in-Room (Display).
- Message Registration.\*
- Message Waiting.\*
- Outgoing Restriction.
- Room-to-Room Blocking.
- Room Status (Display).

### NOTE:

1. \* This feature is also available on the business attendant console.
2. HRM must be assigned to a station's Class of Service in order for Lodging/Health Care features to be applicable.
3. The DMYC Data Block must be run when the system is put into the Lodging/Health Care mode of operation. This is a memory check program that initializes the Lodging/Health Care features.

## OPERATION

The operation of Business Attendant Console features is described in the Attendant Console section of this manual. The operation of Lodging/Health Care Attendant Console features is found within this section. Two features of the Lodging/Health Care attendant console, which operate slightly differently from the business attendant console, are described below.

### To Operate the Busy Lamp Field (BLF):

1. Press the **BLF** button.
2. Dial the first digit of the desired hundreds groups on the dialpad.
3. Press the **BLF** button again to return to the default display.
4. Repeat steps 1 through 3 to display additional BLF groups.

### To Display Stations Registered as Message Waiting Stations on the BLF:

1. Press the **MSG** button.
2. Dial the first digit of the desired hundreds group to be displayed.
3. Press the **MSG** button again (or press the **LPK** button) to clear the display.

# Attendant Console

**LODGING/HEALTH CARE FEATURES**

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One feature that operates the same but is located under a different button is Display Date and Time of Day.

## **PROGRAMMING**

The assignment of an attendant console, either as a Lodging/Health Care or a business unit, is done within the DSD2 Data Block when the system is programmed to operate either as a business system or a Lodging/Health Care system.

## **RELATED FEATURES**

All (Attendant Console).

## **BENEFITS**

See Description.

# Automatic Wake-up/Timed Reminder

**DESCRIPTION** Automatic Wake-up/Timed Reminder provides a wake-up call to a guest telephone at any desired time. The call can consist of either a digitized voice message, music, or silence. Automatic Wake-up/Timed Reminder can be registered from either a telephone or an attendant console, and the console can also display times.

- OPERATION**
- To Set Automatic Wake-up/Timed Reminder from a Telephone:**
1. Obtain dial tone.
  2. Dial the access code (# 8 0) \_\_\_\_\_, and wait for recall dial tone.
  3. Dial the 4-digit (HHMM) time (based on a 24-hour clock), and wait for dial tone. For example, 9:30 AM = 0930.
  4. Hang up.

- To Cancel Automatic Wake-up/Timed Reminder from a Telephone:**
1. Obtain dial tone.
  2. Dial the access code (# 8 0) \_\_\_\_\_, and wait for recall dial tone.
  3. Dial the 4-digit (HHMM) time as 0000, and wait for dial tone.
  4. Hang up.

- To Set Automatic Wake-up/Timed Reminder from an Attendant Console:**
1. Press the **GST-RM** button.
  2. Dial the number of the guest telephone which is to receive the call.
  3. Press the **DIS-TOD** button.
  4. Dial the 4-digit (HHMM) time (based on a 24-hour clock).
  5. Press the **RLS** button.

- To Cancel Automatic Wake-up/Timed Reminder from an Attendant Console:**
1. Press the **GST-RM** button.
  2. Dial the number of the guest telephone which is to receive the call.
  3. Press the **DIS-TOD** button.
  4. Dial the 4-digit time as 0000.
  5. Press the **RLS** button.

- To Display Automatic Wake-up/Timed Reminder from an Attendant Console:**
1. Press the **GST-RM** button.

# Automatic Wake-up/Timed Reminder

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PERCEPTION

2. Dial the number of the guest telephone which is to receive the call.
3. Press the **DIS-TOD** button.
4. Press the **RLS** button.

## PROGRAMMING

1. Automatic Wake-up/Timed Reminder source and printout destination are programmed within the DHMF Data Block.
2. The Automatic Wake-up/Timed Reminder access code is programmed in the DACD Data Block.

### NOTES:

1. *All system telephones can have call registrations (one per station) simultaneously set in the system's memory.*
2. *If a call is not answered within six rings, or if the telephone is busy, a second (and, if necessary, a third) attempt will be made after a five-minute interval.*
3. *All call information can be output at either the SMDR or TTY port, for call record/accounting or Property Management System requirements.*
4. *This feature can be used in business systems to provide a user- or attendant-set reminder alarm (to remind an individual of a meeting, appointment, etc.).*

## RELATED FEATURES

All (Lodging/Health Care).

## BENEFITS

The Automatic Wake-up/Timed Reminder feature ensures that calls are provided in a timely manner, and are not forgotten. Additionally, the optional digitized voice-announcement enables call recipients to know immediately why they are being called. In addition to the Lodging/Health Care industry, Automatic Wake-up/Timed Reminder provides business users with an "alarm," to remind them of important meetings or appointments.

# Clear the Maid-in-Room Status

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**DESCRIPTION** Clear the Maid-in-Room Status provides the attendant with the capability to clear the Maid-in-Room status when the maid forgets to do so.

**OPERATION** **To Cancel Maid-in-Room Status from the Attendant Console:**

1. Press the **GST-RM** button.
2. Dial the guest room number.
3. Enter the access code (**\*##0**) \_\_\_\_\_.
  - The attendant display will show the new room status.
4. Press the **RLS** button to clear.

**PROGRAMMING** None.

**RELATED FEATURES**

1. Maid-in-Room (Lodging/Health Care).
2. Room Status (Lodging/Health Care).

**BENEFITS** This feature enables the attendant to cancel the Maid-in-Room status of any guest room without having to go to the room. It helps clear the status of the room and make it available for a new check-in.

# Deposit Paid Confirmation

**DESCRIPTION** The Deposit Paid status of an individual guest room can be set, canceled, or displayed by the attendant console. The total number of deposits paid can also be displayed by the attendant console. This permits immediate front desk verification of a guest room's deposit status.

**OPERATION** Until set, an attendant console will display a guest's deposit as not paid.

**To Set Deposit Paid for an Individual Guest Room:**

1. Press the **GST-RM** button.
2. Dial the directory number of the associated guest room.
3. Dial the access code (**\*#3**) \_\_\_\_\_.
4. Press the **RLS** button.

**To Clear Deposit Paid for an Individual Guest Room:**

1. Press the **GST-RM** button.
2. Dial the number of the associated guest room.
3. Dial the access code (**\*#9**) \_\_\_\_\_.
4. Press the **RLS** button.

**To Display the Deposit Paid Status of an Individual Guest Room:**

1. Press the **GST-RM** button.
2. Dial the number of the associated guest room.
3. Press the **RLS** button.

**To Display the Total Number of Deposits Paid:**

1. Press the **RS/JOIN** button.
2. Dial the access code (**\*#7**) \_\_\_\_\_.
3. Press the **RLS** button.

**PROGRAMMING** The Deposit Paid Confirmation feature is inherent in PERCEPTION software. Once activated, the feature operation will be available.

*NOTE: Deposit status is printed out on a room status audit.*

**RELATED FEATURES**

1. Room Status (Lodging/Health Care).
2. Room Status Audit-Printout (Lodging/Health Care).

**BENEFITS** Deposit Paid Confirmation provides an attendant with an immediate indication of each room's deposit status. This eliminates the need to run external reports, or to look up the information on room receipts.

# Emergency Ringdown

**PERCEPTION**

**LODGING/HEALTH CARE FEATURES**

**DESCRIPTION** Emergency Ringdown allows the system to assign a line as the destination for an emergency signal (continuous ringing), when a telephone goes off-hook, but does not complete dialing a valid number within a programmed time period (Line Lock-out Time). The destination can be programmed as either a specific telephone, the attendant, or the system Night Answer (UNA) device. An LCD electronic/digital telephone or the attendant will display the off-hook telephone's directory number.

**OPERATION** The Emergency Ringdown feature is inherent in PERCEPTION software. Once activated, the feature operation will be available.

**PROGRAMMING** The destination for the Emergency Ringdown is programmed in either the DEKT or DSTT Data Block.

**RELATED FEATURES** None.

**BENEFITS** Emergency Ringdown is primarily intended to enhance guest security in Lodging/Health Care applications. If a guest or patient suffers an accident, medical problem, or break-in, and attempts to make a call that cannot be completed, an emergency station (telephone) is notified, and help can be dispatched almost immediately. In other applications, such as warehousing or classrooms, this feature can provide added station user security, and reduce the customer's liability.

# Executive Suite Telephone

LODGING/HEALTH CARE FEATURES

PERCEPTION

**DESCRIPTION** The Executive Suite Telephone enables an electronic/digital telephone to be used as a guest room telephone. Feature access buttons on the telephone can flexibly be programmed to provide one-button access to special Lodging/Health Care features (for example, direct access to room service, a nurse's station, etc.).

**OPERATION** The Executive Suite Telephone feature is inherent in PERCEPTION software. Once activated, the feature operation will be available.

**PROGRAMMING** An electronic/digital telephone can be software-assigned as an Executive Suite Telephone, within the DEKT Data Block. This data block is also used to assign specific features to access buttons.

## NOTES:

1. Any number of electronic/digital telephones that are assigned to a system, can be programmed as Executive Suite Telephones.
2. When specific Lodging/Health Care features have been assigned to Executive Suite Telephone buttons via fixed auto-dialing buttons, they can only be changed via system programming.
  - Alterations cannot be made directly from the telephone.
  - This is of notable importance, since in business operations, an electronic/digital telephone's Automatic Dialing (ADL) buttons may be assigned and altered directly at the telephone.
3. PERCEPTION integrated voice/data capability is compatible with the Executive Suite Telephone.

**RELATED FEATURES** See the Electronic/Digital Telephone section.

**BENEFITS** The provision of Executive Suite Telephones provides another means for a hotel to differentiate between standard rooms and deluxe suites. The enhanced feature access capability, and the attractive appearance of the electronic/digital telephone serve to further upgrade any classified deluxe suite.

The enhanced feature is fixed automatic dialing, which allows certain buttons to be programmed to call special services such as room service, front desk clerks, rent-a-car, taxi, etc. The permanent aspect of the feature also eliminates any need for concern that buttons may accidentally be altered. Additionally, direct access eliminates telephone calls to the main desk regarding requests for appropriate telephone or outside numbers.

# Guest Room Information

PERCEPTION

LODGING/HEALTH CARE FEATURES

## DESCRIPTION

An on-board system power supply automatically preserves all guest room data in the instance of a power failure. This prevents any loss of information that is required for guest billing and feature operation. The data that is saved includes the following:

- Automatic Wake-up Registrations.
- Deposit Paid Confirmation.
- Maid-in-Room Data.
- Message Registrations.
- Message Waiting Data.
- Outgoing Restrictions.
- Room Status Data.

## OPERATION

Operation is automatic.

## PROGRAMMING

Guest Room Information is a hardware-based feature. No programming is required.

## RELATED FEATURES

None.

## BENEFITS

This feature ensures that a power failure will not affect guest information regarding such things as long distance calls, registered wake-up calls, and message waiting indications. The Guest Room Information prevents loss of entitled revenue, and it ensures that guests receive their expected calls and messages.

# Maid-in-Room

**DESCRIPTION** The Maid-in-Room status and Set Clean Room status of each guest room can be set and canceled from the dialpad of the telephone in that room. This information can then be displayed at the attendant console.

**OPERATION** **To Set Maid-in-Room Status from a Guest Telephone:**

1. Lift the handset.
2. Dial the access code (# 0 0) \_\_\_\_\_ and wait for recall dial tone.
3. Dial the access code (# 0 1) \_\_\_\_\_ and wait for recall dial tone.
4. Hang up.

**To Cancel Maid-in-Room Status from a Guest Telephone:**

1. Lift the handset.
2. Dial the access code (# 0 0) \_\_\_\_\_ and wait for recall dial tone.
3. Dial the access code (# 0 2) \_\_\_\_\_ and wait for recall dial tone.
4. Hang up.

**To Cancel Maid-in-Room and Set Clean Room Status:**

1. Lift the handset.
2. Dial the access code (# 0 0) \_\_\_\_\_ and wait for recall dial tone.
3. Dial the access code (# 0 3) \_\_\_\_\_ and wait for recall dial tone.
4. Hang up.

**To Display Maid-in-Room Status at an Attendant Console:**

1. Press the **GST-RM** button.
2. Dial the number of the guest room.
3. If the Maid-in-Room status has been set, a 1 will appear as the first digit under SRC.
4. Press the **RLS** button.

**To Clear Maid-in-Room Status from the Attendant Console:**

1. Press the **GST-RM** button.
2. Dial the number of the guest room.
3. If the Maid-in-Room status has been set, a 1 will appear as the first digit under SRC.
4. Dial the access code (\* # 0) \_\_\_\_\_.
5. Press the **RLS** button.

# Maid-in-Room

## NOTES:

1. When the system is initially powered up, run the DMYC program and then initialize the system, so that the clear code (**#0**) will function.
2. Maid-in-Room status can be set either from a guest telephone (standard telephone), or from an executive suite telephone (electronic/digital telephone).

## PROGRAMMING

To utilize this and other Lodging/Health Care features, a telephone set must be assigned the HRM feature in the DCOS Program, which defines it as a guest telephone. This Class of Service information must then be programmed in the telephone's DEKT/DSTT Data Block.

## RELATED FEATURES

Room Status (Lodging/Health Care).

## BENEFITS

This feature allows an attendant to track down maids, without having to call every room. It also helps prevent guests from being checked into rooms where a maid is still working. These combined benefits create better guest relations, and give the impression of an efficient hotel.

# Message Registration

**DESCRIPTION** Message Registration provides a flexible price fixation to guest calls that are made to numbers within the system's home area code. Guest calls to numbers outside this area code are priced in accordance with either a call accounting equipment, or a local telco HOBIC service. Specifically, the price of each local call is calculated by the system, based on the total number of "message units" (time factors) that have been charged to the call. Accumulated message registration units can be printed out, or displayed at the attendant console.

**OPERATION** The Message Registration feature is inherent in PERCEPTION software. Once activated, the feature operation will be available.

**PROGRAMMING** Message Registration is activated within the DHMF Data Block. Message Unit billing parameters are defined within the DMRD Data Block.

**NOTES:**

1. *Message Registration is compatible with call accounting and resale-of-services equipment, provided by either the customer or the telco-provided HOBIC service.*
2. *Office codes can be divided into five separate pricing tables. This permits flexibility in the pricing of calls, placed to different areas within the home area code.*
3. *In order to allow for unanswered calls and other factors, the time between dialing and the initial charging of message units can be varied.*
4. *In order to provide flexibility in call pricing, the length and cost of the first message unit can vary from, or be the same as subsequent message units.*
5. *The message unit total for each telephone can be cleared at the attendant console.*
6. *See the following features for the operation of the Message Registration features.*

**RELATED FEATURES**

1. Message Registration-Audit (Lodging/Health Care).
2. Message Registration-Room Display (Lodging/Health Care).

**BENEFITS** The Message Registration feature allows hotels, which are still using the HOBIC system, to generate accurate bills for local calls that are not reported by HOBIC.

# Message Registration-Audit

PERCEPTION

LODGING/HEALTH CARE FEATURES

## DESCRIPTION

Message Registration-Audit enables an attendant to print out accumulated message units for each telephone that has made outgoing calls within the home area code. The attendant can specify for printouts to include information regarding either all or individual telephones. The data which is printed out includes the following:

- Telephone number.
- Time of printout.
- Total number of accumulated message units for that particular telephone.

## OPERATION

### To Print Message Registration Total for an Individual Telephone:

1. Press an idle **LPK** button.
2. Dial the access code (**# 8 2**) \_\_\_\_\_.
3. Dial the number of the telephone to be printed.
4. Press the **RLS** button.

### To Print Message Registration for All Telephones:

1. Press an idle **LPK** button.
2. Dial the access code (**# 8 1**) \_\_\_\_\_.
3. Press the **RLS** button.

### To Stop Printing:

1. Press an **LPK** button.
2. Dial the access code (**# 8 3**) \_\_\_\_\_.
3. Press the **RLS** button.

## PROGRAMMING

The Message Registration-Audit feature is inherent in PERCEPTION software. Once activated, the feature operation will be available.

The port (SMDR, TTY, or NONE) that is used to connect the printer to the PERCEPTION cabinet is assigned within the DHMF Data Block.

## RELATED FEATURES

1. Message Registration (Lodging/Health Care).
2. Message Registration-Room Display (Lodging/Health Care).

## BENEFITS

The Message Registration-Audit feature provides an immediate indication of all local call charges for each telephone. This enables a front desk clerk to check out a guest quickly and accurately. Message Registration-Audit also provides each guest with a receipt noting his/her calls.

# Message Registration-Room Display

**LODGING/HEALTH CARE FEATURES**

**PERCEPTION**

**DESCRIPTION** Message Registration-Room Display enables an attendant to display the total cost of message units that has been accumulated by each telephone.

**OPERATION** **To Display the Message Registration Total for an Individual Telephone:**

1. Press the **GST-RM** button.
2. Dial the number of the telephone.
3. Press the **VER/CRG** button.
4. Press the **RLS** button.

**To Clear Message Registration Total for an Individual Telephone:**

1. Press the **GST-RM** button.
2. Dial the number of the telephone.
3. Press the **VER/CRG** button.
4. Dial **#** on the dialpad.
5. Press the **RLS** button.

**PROGRAMMING** The Message Registration-Room Display feature is inherent in PERCEPTION software. Once activated, the feature operation will be available.

**RELATED FEATURES**

1. Message Registration (Lodging/Health Care).
2. Message Registration-Audit (Lodging/Health Care).

**BENEFITS** Message Registration-Room Display provides an immediate indication of all local call charges, which pertain to a specific guest. This enables a front desk clerk to check out a guest, both quickly and accurately.

# Message Waiting-Executive Suite Telephone

PERCEPTION

LODGING/HEALTH CARE FEATURES

**DESCRIPTION** An Executive Suite Telephone can have a Message Waiting button that will light whenever this feature is activated. When a message is waiting, the Message Waiting LED on the telephone will light. If the telephone is not equipped with a Message Waiting button/LED, it will receive a double ring every 20 minutes.

**OPERATION** **To Obtain a Message and Cancel Message Waiting at the Executive Suite Telephone:**

1. Lift the handset.
2. Press the **MSG** or **MESSAGE** button, or dial the Message Center number.
3. Collect your messages.
4. Hang up.

**To Cancel Message Waiting at the Executive Suite Telephone:**

- 1a. While the telephone is idle, press the **MSG** or **MESSAGE** button.  
...or...
- 1b. Lift the handset.
2. Dial the access code **(# 5)** \_\_\_\_\_.
3. Hang up.

**PROGRAMMING** An Executive Suite Telephone is assigned an **MSG** button within the DEKT Data Block. If a digital telephone is being used, there is a permanent **MESSAGE** button assigned.

**NOTES:**

1. *If a telephone goes off-hook while the telephone is being signaled by the Message Waiting feature, the message will automatically be connected to the Message Center.*
2. *If Voice Mail sets the Message Waiting, the telephone **WILL NOT** receive a double ring every 20 minutes.*
3. *PERCEPTION is compatible with stand-alone messaging systems that are manufactured by other vendors. These systems can be incorporated into the PERCEPTION Messaging feature.*

**RELATED FEATURES**

1. Message Waiting (Station).
2. Message Waiting-Guest Telephone (Lodging/Health Care).

**BENEFITS**

The provision of an Executive Suite Telephone **MSG** or **MESSAGE** button ensures that each guest will receive his/her message in a timely manner.

# Message Waiting-Guest Telephone

LODGING/HEALTH CARE FEATURES

PERCEPTION

**DESCRIPTION** A guest telephone (standard telephone) can be equipped with a message waiting lamp that will flash, whenever the Message Waiting feature is activated for that telephone.

**OPERATION** **To Retrieve Messages:**

1. Lift the handset.
2. Dial the Message Center.
3. Collect your messages.
4. Hang up.

**To Cancel Message Waiting:**

- 1a. Retrieve the messages per the above instructions.  
...or...
- 1b. Lift the handset.
2. Dial the access code **(#5)** \_\_\_\_\_.
3. Hang up.

**PROGRAMMING** A guest telephone equipped with a message waiting lamp, is assigned within the DSTT data block.

**NOTES:**

1. *Guest telephones that are not equipped with a message waiting lamp will receive a double ring every 20 minutes, to notify the guest of a waiting message. The message waiting lamp must be lit by the attendant or MC assigned EKT/DKT in order to receive the double ring every 20 minutes. (If Voice Mail sets the Message Waiting, the telephone **WILL NOT** receive the double ring every 20 minutes.) If the guest goes off-hook during this double ring, he/she will directly be connected to the Message Center.*
2. *PERCEPTION is compatible with stand-alone messaging systems that are manufactured by other vendors. These systems can be incorporated into the PERCEPTION Messaging feature.*

**RELATED FEATURES**

1. Message Waiting (Station).
2. Message Waiting-Executive Suite Telephone (Lodging/Health Care).

**BENEFITS** The provision of a guest telephone message waiting lamp ensures that each guest will receive his/her messages in a timely manner.

# Outgoing Restriction

PERCEPTION

LODGING/HEALTH CARE FEATURES

## DESCRIPTION

Outgoing Restriction enables an attendant to restrict any telephone in the system from making outgoing trunk calls. If such restrictions are placed, any outgoing trunk calls from a restricted telephone will automatically be routed to the attendant console. The attendant console can also display individual guest telephones with outgoing restriction set.

## OPERATION

### To Set Outgoing Restriction:

1. Press the **GST-RM** button.
2. Dial the number of the guest telephone to be restricted.
3. Dial the access code (**# 8 4**) \_\_\_\_\_.
4. Press the **RLS** button.

### To Cancel Outgoing Restriction:

1. Press the **GST-RM** button.
2. Dial the number of the guest telephone on which the restriction was originally set.
3. Dial the access code (**# 8 5**) \_\_\_\_\_.
4. Press the **RLS** button.

### To Display Outgoing Restriction:

1. Press the **GST-RM** button.
2. Dial the number of the guest telephone on which the restriction was set.
3. Press the **RLS** button.

### NOTES:

1. All system telephones can have Outgoing Restriction simultaneously activated.
2. If a guest room telephone has either one of the following statuses set: *Vacant and Clean*, or *Vacant and Needs Cleaning*, the Outgoing Restriction cancellation code (**# 8 5**) will not operate. A room needs to be occupied before Outgoing Restriction can be set.

## PROGRAMMING

The Outgoing Restriction feature is inherent in PERCEPTION software. Once activated, the feature operation will be available.

## RELATED FEATURES

1. Room Status (Lodging/Health Care).
2. Through Dialing (Attendant).

## BENEFITS

Outgoing Restriction prevents maids and guests that have checked out, from making any outgoing trunk calls. This ensures that a hotel will always receive compensation for authorized calls. Additionally, Outgoing Restriction is useful in all industries for lobby telephones, or other instruments which require only temporary calling restrictions.

# Room/Number Correlation

**LODGING/HEALTH CARE FEATURES**

**PERCEPTION**

**DESCRIPTION** Room/Number Correlation enables each guest telephone, or executive suite telephone directory number, to be assigned in correlation to the number of each guest room. Such correlation greatly simplifies the dialing of guest rooms in any Lodging/Health Care system application.

**OPERATION** The Room/Number Correlation feature is inherent in PERCEPTION software. Once activated, the feature operation will be available.

**PROGRAMMING** Guest telephone directory numbers are programmed within the DSTT Data Block. Executive suite telephone directory numbers are programmed within the DEKT Data Block.

*NOTE: Directory numbers (DNs) can be from one to four digits long. When using 4-digit DNs, the first digit must be identical for all directory numbers, and cannot conflict with the first digit of any programmed access code.*

**RELATED FEATURES** None.

**BENEFITS** Room/Number Correlation enables a faster and more efficient call processing, by ensuring that an attendant does not have to memorize, or supply alternate telephone numbers for a particular room.

## DESCRIPTION

Room Status enables an attendant to display, set, and change the status of each guest telephone and executive suite telephone in the system. Information controlled by this feature includes the following:

- Room Condition Status:
  1. Vacant and clean.
  2. Occupied and clean.
  3. Vacant and needs cleaning.
  4. Occupied and needs cleaning.
- Deposit Paid.
- Message Waiting.
- Message Registration (total cost and clear).
- Change all Room 2 Status to 4 Status.
- Change all Room 4 Status to 2 Status.

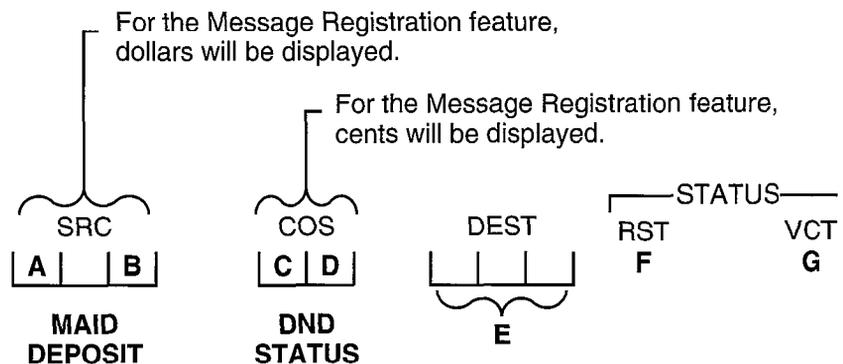
## OPERATION

This feature also enables an attendant to display (but not change) the following information:

- Maid-in-Room.
- Do Not Disturb.

### To Display Room Status:

1. Press the **GST-RM** button.
2. Dial the number of the guest room.
3. Press the **RLS** button.



- A. A 1 indicates that Maid-in-Room status has been set at the guest room telephone.
- B. A 1 indicates that Deposit Paid status has been set for this guest room.
- C. A 1 indicates that Do Not Disturb is registered for that guest room.
- D. Room Status Code:
  - 1 = Vacant and clean.
  - 2 = Occupied and clean.
  - 3 = Vacant and needs cleaning.
  - 4 = Occupied and needs cleaning.
- E. Guest room telephone directory number.
- F. Indicates that this guest room telephone has been restricted from making outside calls. (This indication will also go on when buttons are pressed, following the completion of an operation.)

# Room Status

- G. Indicates that this station is not registered as a guest room telephone. (Room status cannot be assigned.)

*NOTE: Changing Room Status from occupied to vacant will automatically clear the Deposit Paid indication and will restrict the telephone in that room.*

### To Set Room Status:

1. Press the **GST-RM** button.
2. Dial the number of the guest room.
3. Dial the status access code.
  - Room Status 1 (\*#1) \_\_\_\_\_.
  - Room Status 2 (\*#2) \_\_\_\_\_.
  - Room Status 3 (\*#3) \_\_\_\_\_.
  - Room Status 4 (\*#4) \_\_\_\_\_.
4. Press the **RLS** button.

### To Change Room Status 2 to Status 4 on All DNs in the System:

1. Press the **RS/JOIN** button.
2. Dial the access code (\*#5) \_\_\_\_\_.
3. Press the **RLS** button.

### To Change Room Status 4 to Status 2 on All DNs in the System:

1. Press the **RS/JOIN** button.
2. Dial the access code (\*#6) \_\_\_\_\_.
3. Press the **RLS** button.

## PROGRAMMING

The Room Status feature is inherent in PERCEPTION software. Once activated, the feature operation will be available.

## RELATED FEATURES

1. Deposit Paid Confirmation (Lodging/Health Care).
2. Maid-in-Room (Lodging/Health Care).
3. Message Registration (Lodging/Health Care).
4. Room Status Audit-Printout (Lodging/Health Care).

## BENEFITS

The ability for an attendant console to display room status information provides an attendant with a complete overview regarding each room and guest. These separate display informants combine to create a more efficiently-run organization. The attendant's ability to change status directly from the console provides a complete control.

# Room Status Audit-BLF

PERCEPTION

LODGING/HEALTH CARE FEATURES

**DESCRIPTION** Room Status Audit-BLF enables the attendant to display, in the BLF area, the rooms from a particular hundreds group which have the same condition status: 0, 1, 2, 3, or 4.

**OPERATION** **To Display Status Conditions:**

1. Press the **BLF** button.
2. Dial the appropriate access code.
  - Maid-in-Room Status (\*0) \_\_\_\_\_.
  - Vacant/Clean (\*1) \_\_\_\_\_.
  - Occupied/Clean (\*2) \_\_\_\_\_.
  - Vacant/Needs Cleaning (\*3) \_\_\_\_\_.
  - Occupied/Needs Cleaning (\*4) \_\_\_\_\_.
3. Dial the desired hundreds group (0 ~ 9).

**NOTES:**

1. To move from one hundreds group to another, key in only one digit corresponding to the new group.
2. To display another room status, go back to step 2 and dial the appropriate new access code and the new hundreds group.
4. To clear the display, press the **RLS** button.

**PROGRAMMING** The Room Status Audit-BLF feature is inherent in PERCEPTION software. Once the Room Status feature is activated, the Room Status Audit-BLF operation will be available.

**RELATED FEATURES**

1. Deposit Paid Confirmation (Lodging/Health Care).
2. Room Status (Lodging/Health Care).
3. Maid-in-Room (Lodging/Health Care).

**BENEFITS** Room Status Audit-BLF provides management with the capability to check the various room status information. With the BLF display, the exact number of rooms that have the same condition status are available, thus enabling management to direct cleaning efforts or select an available clean room for a guest check-in from the list.

# Room Status Audit-Printout

**DESCRIPTION** Room Status Audit-Printout provides a printed report of room status data, for either specific or all guest rooms. The report includes the following information:

- Time and date of the printout.
- Room number.
- Room condition status.
- Deposit paid.
- Maid-in-room.

**OPERATION** **To Print the DN and Room Status of Every Lodging/Health Care Telephone in the System:**

1. Press an idle **LPK** button.
2. Dial the access code **(# 8 6)** \_\_\_\_\_.

**To Print the DN and Room Status of an Individual Lodging/Health Care Telephone:**

1. Press an idle **LPK** button.
2. Dial the access code **(# 8 7)** \_\_\_\_\_.
3. Dial the room number.
4. Press the **RLS** button.

**To Stop Print:**

1. Press an idle **LPK** button.
2. Dial the access code **(# 8 8)** \_\_\_\_\_.
3. Press the **RLS** button.

**PROGRAMMING** The Room Status-Audit Printout feature is inherent in PERCEPTION software. Operation will be available, once this feature is activated.

**RELATED FEATURES**

1. Deposit Paid Confirmation (Lodging/Health Care).
2. Maid-in-Room (Lodging/Health Care).
3. Room Status (Lodging/Health Care).

**BENEFITS** A Room Status-Audit Printout provides management with a report of various room status information, so that cleaning time and room assignments can be adjusted accordingly. The printout also provides an indication of revenue earned from prepaid room deposits.

# Room-to-Room Blocking

PERCEPTION

LODGING/HEALTH CARE FEATURES

## DESCRIPTION

Room-to-Room Blocking enables an attendant to prevent **all** calling between **all** guest telephones in the system. When activated, Room-to-Room Blocking will cause **all** attempted guest room-to-room calls to be routed to the attendant. Once the call is intercepted, the attendant can then extend any call to the desired guest room (if necessary).

## OPERATION

### To Set Room-to-Room Blocking:

1. Press an idle **LPK** button.
2. Dial the access code **(# 0 4)** \_\_\_\_\_.
3. Press the **RLS** button.

### To Cancel Room-to-Room Blocking:

1. Press an idle **LPK** button.
2. Dial the access code **(# 0 5)** \_\_\_\_\_.
3. Press the **RLS** button.

## PROGRAMMING

The Room-to-Room Blocking feature is inherent in PERCEPTION software. Once activated, the feature operation will be available.

*NOTE: Room-to-Room Blocking affects only telephones that are designated in the system database, as either guest telephones or executive suite telephones. Room-to-Room calls can still be made from facility staff telephones.*

## RELATED FEATURES

None.

## BENEFITS

Room-to-Room Blocking can be employed to prevent **all** guests from receiving annoying calls late at night.

# Set/Clear Do Not Disturb Room Status

LODGING/HEALTH CARE FEATURES

PERCEPTION

**DESCRIPTION** Set/Clear Do Not Disturb Room Status provides the attendant with the capability to set or clear Do Not Disturb room status.

**OPERATION** **To Set or Change the Status of a Particular Guest Room:**

1. Press the **GST-RM** button.
2. Dial the guest room number.
3. Dial the appropriate status access code.
  - Do Not Disturb Clear (**# # 2**) \_\_\_\_\_.
  - Do Not Disturb Set (**# 2**) \_\_\_\_\_.
4. Press the **RLS** button.

**PROGRAMMING** None.

**RELATED FEATURES** Room Status (Lodging/Health Care).

**BENEFITS** This feature saves the attendant's time when setting Do Not Disturb or clearing it from a guest room, without having to go to the room.

# P E R C E P T I O N

I/II  
e&ex

## *ACD/MIS Features*

Issue 2, February 1992  
Section 200-255-680

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## DESCRIPTION

Automatic Call Distribution (ACD) is an extremely efficient method for distributing inbound calls among one or more groups of call-handling agents. These agents can work in telemarketing, inside sales, customer service, or technical support groups, or in any other function in which a group of people handle a large volume of incoming calls. PERCEPTION's ACD ensures that agent productivity is maintained at a high level, and that inbound callers are handled efficiently and effectively.

Calls to an ACD group are routed to a pilot number and then queued to wait for an available agent in the group. Depending upon the application, agents may be available to take the call immediately, or the end-user may extend the productivity of the agents by having callers wait a predetermined average amount of time before being answered. While in queue, callers typically are provided messages encouraging them to wait to be answered. Music from the system's music-on-hold device is often provided to make the waiting period more tolerable.

PERCEPTION transmits data about the operation of the ACD system to the Management Information System (MIS) processor, where it can be stored on hard disk. This data is manipulated by the MIS processor and organized into four real-time reports and ten historical reports. The displays are provided to ACD group supervisors via terminals connected to the MIS processor. The reports can be called up for shift, hourly, daily, weekly, monthly, and annual periods, and can be either displayed at supervisor terminals, or printed out at printers connected to the MIS processor.

PERCEPTION's ACD capability is provided as a value-added module in **D.04** and later versions of software. The MIS processor is an external application processor (proprietary computer) that connects to PERCEPTION by an RS-232 link. The MIS processor is available in a simple hardware platform that can be optionally configured to support a range of agent IDs and three different output configurations.

The ACD feature provides the end-user with many important capabilities to satisfy call distribution requirements. The most important of these are:

## SYSTEM FEATURES

- **16 ACD Groups:** PERCEPTION will support up to 16 ACD groups, each with its own supervisor.
- **256 Agent IDs:** PERCEPTION utilizes an ID-based ACD system. This means that agents are not tied to particular telephone sets, making the feature more flexibly configurable to serve the needs of a wider range of application requirements. Up to 256 agent IDs can be assigned to a single agent, enabling that agent to log in and out of several ACD groups.
- **128 Active Agents:** Up to 128 of the possible 256 agent IDs can be active at any one time. Calls will be routed through the ACD queues for each group to these agents.
- **Proprietary/Standard Telephone Sets:** Agents and supervisors can use any type of telephone set, either proprietary digital or electronic telephones, or standard sets. However, because of the added

efficiency of the flexibly-assignable feature buttons and the important information provided by the display, Toshiba recommends that proprietary display sets be used for agent positions.

- **Inbound-call Routing:** Calls can be routed into the ACD queues from any type of trunking—Central Office (Incoming, Bothways, WATS, or Foreign Exchange), Direct Inward Dialing, and TIE—across either analog, or T1 digital facilities. Calls can also be transferred into the ACD queue from the attendant console or any station in the system.
- **After-call Work Time:** Allows ACD agents to automatically enter an after-call work mode after disconnecting from an ACD call. This is sometimes referred to as "wrap-up time," and gives the agent a predetermined amount of time to complete work regarding the last ACD call (i.e., paperwork, order processing, filing, etc.). The agent position remains in this mode until the predetermined "After Call Work Time" expires, or the agent manually exits this mode. When an agent position is in after-call work mode, it is not available for ACD calls. This feature is available to agents only.
- **After-shift Service:** Allows calls directed to the ACD group to be routed to a predefined answering position when all agents have logged out of the ACD mode. Each ACD group can be programmed with one after-shift answering position. This can be any one of the following: another ACD group, the attendant console(s), an audible signaling device (night bell), another PBX station, a voice mailbox, or an answering/announcement machine. The group will remain in after-shift service until at least one agent logs into the ACD group, at which time PERCEPTION will resume routing calls into the group.

### CALL DISTRIBUTION

End-users can choose between two call-routing algorithms to deliver calls through the ACD-group queues to agents for handling.

1. The first of these is true-ACD **time-based** routing. This algorithm attempts, over a period of time, to keep agents in the group on ACD calls for approximately the same length of time. This is known as Most-Idle-First.
2. The second algorithm, which is **call-based**, attempts to deliver an equal number of calls to the agents in the group over a given time period. This is known as Next-Available-First.

Most-Idle-First routing is appropriate for most call distribution applications, since it tends to maximize the productivity of individual agents and the overall efficiency of the entire group. However, some applications may need the specific capabilities of Next-Available-First routing. PERCEPTION allows the end-user to choose the call distribution method that best fits the application.

- **Data Collection and Reporting:** PERCEPTION<sub>e&ex</sub> collects ACD-related real-time data and transfers it in packets to the MIS processor. The MIS processor organizes the information into real-time displays, statistics, and reports. The information collected includes ACD call activities (before and after answer), agent status, ACD queue

- activities, and PBX call activities (non-ACD calls placed and received).
- **Delay Announcements and Music:** Provides announcements and music to unanswered calls in queue at predetermined time intervals. The system provides flexible announcement patterns which can be individually assigned to each ACD group by the customer. Up to three different announcements can be programmed per group.
    - Each announcement may be customer-programmed.
    - The lengths of all music intervals are selected by each customer initially when the feature is programmed.
    - Calls connected to announcements will be synchronized to the beginning of the message.
  - **Overflow:** Allows the calls waiting in queue to be routed to another ACD group. Each ACD group can have one overflow group to act as a backup in the event that the originally-dialed ACD group is unable to handle the call. Each ACD group can be the overflow point for multiple ACD groups. Each ACD group queue is associated with an overflow threshold which governs the disposition of calls to be overflowed. Overflow can be set to occur after a user-specified time in queue.
    - When a call is forwarded due to an overflow, the total waiting time in queue and the announcement status (overflow disposition) will be carried into the overflow queue for further processing (e.g., statistics accumulation, call progress information displaying).
    - If the overflow group's agents are all busy, the call will not overflow; it will remain in the original group.
  - **Queuing:** Each ACD group has its own queue. As calls arrive at an ACD group; if no agent positions are available, the calls enter and wait in queue until they are answered. Calls are unloaded from the queue on a first-in, first-out basis as the agents become available. While waiting in the queue, calls may receive announcements and music, and/or forward to an overflow group.

## AGENT FEATURES

- **ACD Call Status Display:** This feature provides ACD agents (using an electronic/digital telephone with LCD) with a visual indication of ACD call progress information in addition to the standard display operation. When an agent position is in ACD mode, the number of ACD calls waiting in queue will be shown on the LCD (the call status information will also be shown on the LCD).
- **Assistance:** Allows an ACD agent to call the supervisor position for assistance. Activation of this feature, while in the talk state, will automatically place the current ACD call on hold and initiate an assistance call to the supervisor position. As soon as the supervisor answers the call, the agent may establish a three-way conversation or may talk privately with the supervisor, and then return to the caller.
- **Auto-answer with Zip Tone:** When an ACD agent position is in auto-answer mode (electronic/digital telephone feature) while using a headset, the system will provide an audible burst of tone to the agent position before connecting the agent to the incoming ACD call.
- **Intra-group Call Pickup:** Allows ACD agents to answer ACD calls to other agents within their group. Access to this feature is controlled by

the station's assigned Call Pick-up Group. ACD stations must be assigned to the same pick-up group of other ACD stations they wish to use this feature on.

- **Login/Logout:** Allows an ACD agent to start and end his or her shift by dialing the agent identification (ID) code from the agent station. When an agent logs into the system, the station is activated as an ACD position and is available for incoming ACD calls. Operating statistics are collected for the agent, and output to a connected MIS processor until the agent logs out (station leaves ACD mode).
- **Remote Login/Logout:** Allows the ACD agents to log into the system from a station which was not originally assigned to the ACD group. Once the agent logs into the system, the station enters the ACD mode and is available to receive ACD calls for the agent's group until the agent logs out.
- **Ring State Preselection:** When an ACD call rings an agent's station, that call is provided to the agent via automatic answer, or when the agent goes off-hook.
- **Unavailable:** Allows an ACD agent to enter a state which makes the position temporarily unavailable to ACD calls without being logged out. Essentially, this state is used for short breaks from work.
- **Work Unit (Stroke Count):** Allows an ACD agent to use the agent station's dialpad to register a two-digit code which indicates the type of work being performed on the call. Each Work Unit code will be totaled individually for each agent or each ACD group, depending on the type of display/report requested. The values of the codes are customer-defined. An unlimited number of work units can be entered for each call and will be recorded on the MIS report for each call. Only the last work unit entered is output with the SMDR record for that call.

### SUPERVISOR FEATURES

- **Agent Assistance:** Provides visual indication to the supervisor position when an agent assistance call takes place. If the position is idle, the station starts ringing and a message, indicating the assistance call and the agent ID, is shown on the LCD. The supervisor can connect directly to the agent by pressing the ACD Directory Number button. The agent can then speak privately with the supervisor, or can initiate a three-way conference with the supervisor and the ACD caller. When the supervisor hangs up, the agent is automatically reconnected to the ACD call.
- **Agent Monitoring:** Allows a supervisor to tap into a conversation between an ACD agent and ACD caller. A one-way, listen-only path will be established for the supervisor while the agent and the caller continue their conversation. When an agent is monitored, a continual low-frequency tone will be heard in the conversation, and a message that indicates supervisor monitoring will be shown on the LCD. Or, on a system-wide basis, the monitoring can be done without tone being inserted into the conversation.
- **Alarm Indication:** Provides an audible alarm to the supervisor station as certain predefined queue thresholds (e.g., number of calls waiting, waiting time for the oldest call) are exceeded. The audible alarm will remain on the station until the supervisor acknowledges the alarm by pressing the **MONITOR** button.

- **MIS Access:** The ACD group supervisor may access the MIS displays and reports via a terminal connected to the MIS processor. The supervisor can call up displays and reports on the groups or individual agents to monitor ongoing performance. The supervisor can also signal the system to print out reports at a printer connected to the MIS processor.

### ACD/MIS DISPLAYS AND REPORTS

**Supervisor Displays:** The MIS application processor provides supervisors with a wide variety of status, statistics, and traffic displays used to monitor the performance of ACD groups and individual agents.

These displays show the supervisor what type of work the agents are involved in, how efficiently the group is handling incoming calls, how quickly calls are being answered, how many calls were lost, and how many non-ACD calls have been placed and received during the requested reporting period. PERCEPTION passes ACD-related information to the MIS processor in *Real-time*, that is, as it occurs. The system administrator can set the length of time in seconds between screen updates for the four real-time displays.

Supervisor terminals can use either color or monochrome monitors. Color monitors can be programmed to display important information in a variety of colors to further emphasize such things as alert levels that are affecting the efficiency of the ACD group, and current agent status such as agent available, agent talking, agent in after-call work mode, logged out or unavailable, or calling the supervisor for help.

The following are brief descriptions of the screens that are available to the supervisors:

- **Agent Statistics:** Displays the current status of each agent within the ACD group, plus the accumulative call-processing information for that period. Included are number of calls waiting, longest call waiting, calls handled, average talk time, average after-call work time, average handling time (talk plus after-call work time), available time, auxiliary-work time (non-ACD), number of non-ACD calls originated and received, and productivity percentage. The display will show the totals of each agent's statistics and will give the group statistics, including the group-productivity percentage, and a warning if the service level of the group is falling below acceptable levels.
- **Agent Status:** Displays the current availability of each agent within the ACD group. Included will be the agent's ACD ID number, agent's name, current status, and Work Unit code, if used.
- **Group Traffic Monitor:** Displays real-time statistical information used by the supervisor in evaluating ACD staffing requirements. Included are: total calls offered, answered, overflowed, and lost; service-level percentage, average speed of answering, maximum delayed call (in seconds), current calls waiting; number of manned, busy, available, and unavailable stations. There are three warning messages used with this display to indicate when the service level for a group is falling below the acceptable levels (e.g., service quality is low, bad, or unacceptable).

- **System Status:** Displays accumulative totals for whichever ACD groups are allowed to the supervisor for viewing. Included for each group are overall service level percentage; total numbers of calls offered to the group, calls answered, calls overflowed to another group, calls lost (offered but not answered), calls delayed before answered; average talk, handling, and delayed times; total current number of calls waiting to be answered; the maximum number of calls waiting at one time; the longest time (in seconds) that a call waited to be answered.

**Supervisor Reports:** A number of reports are available to the supervisor which provide information and statistics on individual agents, ACD groups, or the system status over a selectable period of time. Each report can be run for any of the following time periods: a period report (30 or 60 minutes), shift, daily, weekly, monthly, and yearly (up to two years). The top of each report will indicate the exact time frame that has been used to compile the report. The end of each report will show an overall total (or average) of each item on the report for quick reference. The following briefly describes the purpose and contents of each report:

- **Agent Performance:** Provides call processing and after-call activity information for all agents within an ACD group. This report can be used for evaluating the performance of each agent in relation to other agents in the group. Included on the report will be: agents' ID numbers and names; total login times, number of ACD calls handled; average talk, work-handling times, available times, auxiliary-work times; agents' productivity percentages; numbers of PBX calls received and originated, and average length of PBX calls.
- **Agent Statistics:** Used to summarize the performance of individual agents. The information regarding the agent will include: name and ID number, ACD group number, productivity percentage, number of calls per hour, number of Work Unit codes entered, number of supervisor assistance calls; total login time, talk time, after-call work time, available and unavailable time; number of calls received and originated, and average length of calls.
- **Delayed Call:** Provides a summary of all calls offered to a group vs. totals and percentages of calls handled, calls delayed, and percentages of calls answered within predefined time increments. This information can be compared to other reports, such as Agent Statistics and System Status Reports, to see if agents are working efficiently, and if staffing is adequate.
- **Group Overflow:** Used to determine under-staffing and over-staffing conditions. This report will summarize the calls to the group and display primary and secondary traffic for comparison purposes. Included on the report will be: ACD group number; number of calls offered; percentage of calls handled, lost, and overflowed to another group.
- **Incoming Call Duration:** Provides call duration statistics for a specified ACD group. This report will indicate the average duration of calls, the longest single-call duration, and the percentage of calls answered within predefined time periods (in seconds). This report is useful in determining staffing requirements and modifying acceptable service levels for each group.

- **Lost Call:** Provides a summary of calls that disconnected before being answered. Percentages will be calculated based on 13 time intervals (defined by the System Administrator for each group). This information is useful in determining waiting periods before delay announcements should be given, or when to overflow ACD calls into another group.
- **Supervisor Group:** Provides call processing and after-call activity information for ACD groups. The report contains similar information to the Agent Performance report except that instead of the report detailing each agent's statistics, the report will show group totals based on the time frame requested (e.g., daily reports reflect each hour in the day; monthly reports reflect each day in the month; yearly reports reflect each month in the year).
- **System Status:** Used to summarize the call handling characteristics of a group during the current report interval. Statistics will include: number of calls offered, answered, overflowed, and lost; average talk time, after-call time, and handling time; number of calls delayed (held in queue), service level percentage; average and maximum delay time; maximum number of calls in queue at one time, and the number of agents required to handle current group traffic and maintain the defined quality level.
- **Work Unit:** Work Unit codes are established by each customer to represent types of call activities that an agent may be involved in. These two-digit codes are entered from the agent's telephone dialpad during an ACD call, and are used in this summary report to show the total number of calls handled per work unit, the average time spent per work unit on talking, in after-call work, handling, and in auxiliary work. This information will aid in modifying distribution of particular types of calls for more efficient handling.

**Forecasting (Optional Feature):** Forecasting provides the ability to utilize ACD data to calculate the future staffing, trunking, and equipment needs of ACD groups in the system. Forecast information can be generated for a single day, or a selected period of time, up to 10 years into the future. Historical data is stored automatically, on a daily basis, in a separate file for up to 380 days. The historical data, or predicted data (specified by the user) is then used to calculate daily, weekly, or yearly reports. The users can include their anticipated percentage of growth to get more realistic projections. The MIS application processor can be easily upgraded to include the optional Forecasting feature when desired.

**Electronic Billboard (Optional Feature):** Large LED billboards are used to display important statistics in order to keep the agents aware of the overall efficiency of the group or system. Options include the number of calls offered, answered, overflowed from another group, lost, current service level percentage; the time of day; the average speed of answer for incoming calls; the number of calls waiting, and the longest call waiting time; number of agent positions currently manned, busy, available, and unavailable for new calls. (Other messages, such as group/agent targets or visitor welcomes, can also be displayed.)

Billboards come in three different sizes, and connect to the CRT/printer ports of the MIS processor. Up to 23 electronic billboards can be installed on a single MIS processor port.

## **OPERATION**

1. For agent features, please refer to the *Agent User Guide*.
2. For supervisor features, please refer to the *Supervisor Guide* and the *Administrator Guide*.

## **PROGRAMMING**

1. The Call Distribution Algorithm, length of the Stroke Count entries, MIS processor activation, and ACD Agent Handsfree Answerback are programmed in the System 2 (DSD2) Data Block.
2. ACD agent and supervisor telephone sets are programmed in the Electronic/Digital Telephone (DEKT) and Standard Telephone (DSTT) Data Blocks.
3. Trunks are routed to the pilot numbers for ACD groups in the Trunk (DTRK) Data Block.
4. Agent and supervisor IDs and ACD groups are programmed in the ACD (DACM) Data Block.

## **RELATED FEATURES**

1. Alphanumeric Trunk ID (System).
2. Direct-In-Line (System).
3. Summary of LCD Functions (EKT/DKT).

## **BENEFITS**

Automatic Call Distribution gives the end-user a powerful tool for distributing large volumes of inbound calls. It makes the jobs of the people processing those calls easier and more efficient, saving the end-user money and increasing the productivity of the call handling agents. The Management Information System (MIS) display and reports enable the end-user to monitor the performance of ACD groups and of individual agents within each group. This information makes it possible to configure the operation of the ACD system for maximum productivity and profitability.

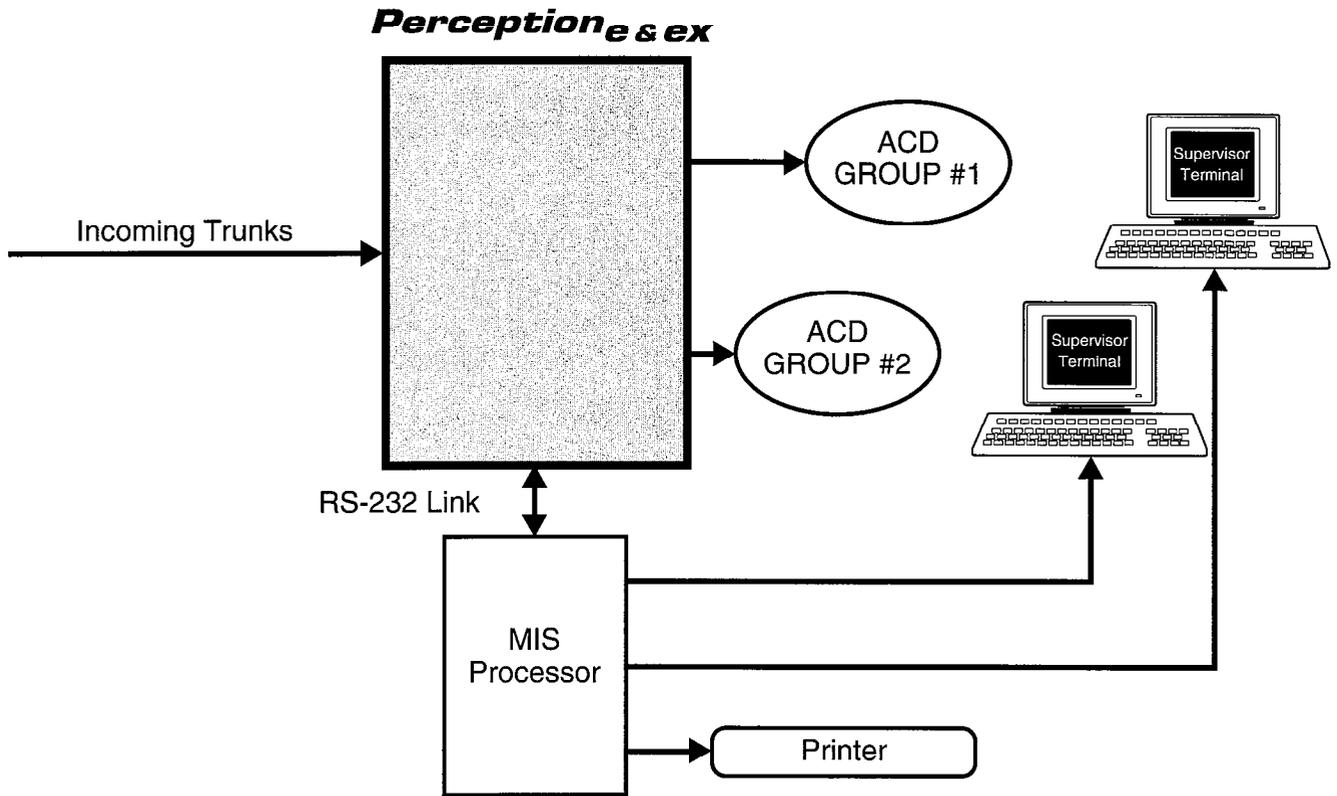


Figure 1—PERCEPTION<sub>e&ex</sub>/MIS Interaction

# Multiple-Call Monitoring

**DESCRIPTION** Multiple-call Monitoring enables the supervisor to monitor an indefinite series of ACD calls to an agent without having to reaccess the agent's station when a call ends. The supervisor accesses monitoring for a particular agent logged into the supervisor's group, and then monitors that agent's ACD calls until either the agent logs out of the group, or the supervisor manually terminates the monitoring. The supervisor is also able to have some assistance calls waiting, when he or she is busy monitoring calls.

**OPERATION** **To Monitor Multiple Calls:**

1. Call the agent that is going to be monitored.
  - If the agent is on a call, the supervisor will hear busy tone.
2. Press the **TAP** button.
  - Monitoring tone will be heard.
  - LCD will show that supervisor monitoring is in progress.
3. Monitoring will continue through an indefinite series of ACD calls, until either the supervisor presses the **TAP** button, hangs up, or the agent logs out of the group.

**NOTES:**

1. *The Multiple-call Monitoring feature is applicable to ACDA DN's on agent stations **only**.*
2. *The Multiple-call Monitoring applies only to the supervisor's group password. No access to other groups is possible without logging out and using the other groups' passwords.*
3. *This feature is limited by the availability of conference slots.*
4. *If a conference trunk is not available, overflow tone will be heard.*

**To Make an Assistance Call While the Supervisor Is Monitoring a Call (The Call Is Made by Either the Agent Being Monitored or Another Agent Within the Group):**

1. Agent presses the **ASSIST** button.
  - Busy tone will be heard.
2. Press the **ASSIST** button a second time.
  - Agent will hear ringback tone, and the call will be camped on to the supervisor's station. Agent must wait off-hook for supervisor station to become idle.
  - Supervisor hears CW/CP-on tone, alerting him or her that an agent is waiting for an assistance.
  - Supervisor's LCD will show the agent's number that needs assistance.
  - Supervisor can scroll through the displays with multiple depressions of the **PAGE** button.
3. When the supervisor becomes idle, the agent's call will go through.

# Multiple-Call Monitoring

PERCEPTION

ACD/MIS FEATURES

**PROGRAMMING** The operation of this feature is automatic.

**RELATED FEATURES**

1. ACD/MIS (ACD/MIS).
2. Summary of LCD functions (EKT/DKT).

**BENEFITS**

This feature saves the supervisor time since he or she does not need to reaccess the agent's station every time a call ends. It also is beneficial in that the supervisor can still be alerted when another agent or the one being monitored needs the supervisor's assistance.

# Multiple Overflow Destinations

**DESCRIPTION** The Multiple Overflow Destinations feature enhances the system's capabilities to select an overflow destination for each ACD group from several possible entries.

This enhancement enables the system to perform nearly-continuous look-ahead function, so that an overflow call will immediately be routed to an answering position at the overflow point once one becomes available. Overflow calls can now be sent to any one of the following destinations:

- Another ACD group.
- Any internal directory number.
- Any external directory number.
- A Distributed Hunt group.
- The attendant (and the UNA when the system is in Night mode).
- UNA in both Day and Night modes.
- A station or Trunk Announcement port.

The ultimate destination of an overflow call can also be voice mail, whether directly into a voice mail port or via distributed hunting, or an ACD group.

**OPERATION** None.

**PROGRAMMING** The Multiple Overflow Destinations feature is assigned in the OVFG entry of the DACM Data Block.

**RELATED FEATURES** ACD/MIS (ACD/MIS).

**BENEFITS** By allowing overflow calls to go to more than one type of overflow destination, this feature makes the ACD operation more efficient. Inbound calls do not have to queue for a long time to be handled, thus minimizing lost calls and reducing the frustration of customers.

*NOTE: Continuous look-ahead occurs when there are no announcement ports programmed in the system. If announcement ports are programmed, look-ahead occurs after MOH.*

# P E R C E P T I O N

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e&ex

## *Data Features*

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*NOTE: The above features relate to the PDIU-DI/DS data units **only**.*

**DESCRIPTION** Automatic Callback for data switching enables an individual who encounters a busy Digital Data Interface Unit (DDIU-MA or -MAT) to activate a system callback once the unit becomes idle. In this instance, the callback is actually an LED signal to the calling DDIU.

**OPERATION** (See Note 2 for DDIU-MAT):

**To Activate Automatic Callback After Receiving Busy Tone on an Attempted Call:**

1. Press the Automatic Callback **ACB** button.
  - The LED will light.... or ...  
Press the data **DN** and dial the access code **(\*)7** \_\_\_\_\_.
  - The DIAL LED will light.
  - Busy tone will be replaced by dial tone.
2. Press the **RLS** button in order to release the connection; and wait for a system callback. On a MAT, press the **DRS** button.
  - The DIAL LED will go out.

**To Answer an Automatic Callback:**

1. When the desired connection becomes idle:
  - The calling DDIU will be signalled.
  - The ACB LED will flash.
  - The DN LED will flash.
2. If an automatic callback is not answered within the specified ACB timeout, then the request will be cancelled.
3. Press the data **DN** button.
  - The called DDIU will be signalled.
  - The DIAL LED on the calling DDIU will light.
4. If the BUSY LED on the calling DDIU lights, it indicates that the called DDIU has previously been registered for a callback to a different terminal. At this point, press the **RLS** button and wait to be called back again.

**To Cancel Automatic Callback:**

1. Press the ACB button, or press the data **DN** and dial the access code **(\*)7** \_\_\_\_\_.
  - The ACB LED will go out.
  - Automatic Callback will be cancelled.

**NOTES:**

1. When performing an Automatic Callback, the PERCEPTION System will "reserve" a trunk or Directory Number (block it from being used for other calling attempts) for the period of time specified by the ACB timer. If there is more than one station in queue for the called station, the system will hold the trunk only for the period of time set by the ACB timer, before it offers the trunk to the next station in line. If there is only one station in the queue, the callback will be disconnected by

# Automatic Callback

*the ACB time-out, and the called station will be available for connection to any other dialing station. If a station attempts to answer a callback after the ACB time-out, the caller will receive overflow tone and the callback will be queued once again.*

- 2. When a Digital Data Interface Unit is used with an electronic telephone, an assigned **ACB** button on the telephone can be used to activate both voice and data callbacks.*
- 3. A maximum of 80 data/regular callbacks can be registered in the system at one time. All 80 callbacks can be made simultaneously from one or more stations.*
- 4. Only one automatic callback can be registered from a particular station at one time. When a callback is registered, this will cancel all previous callback assignments.*

## PROGRAMMING

The Automatic Callback Reserve Time setting specifies the length of time that a trunk or Directory Number will be held for call connection on a callback. This setting is assigned in the ACB entry of the DSYS Data Block. The ACB time period cannot be set higher than six seconds.

## RELATED FEATURES

Automatic Callback (Station).

## BENEFITS

This feature permits a data caller, when encountering a busy data destination, to register an automatic callback to that DN. When the DN is available, the caller is signaled and the data connection made automatically.

# *Automatic Data Release*

**PERCEPTION**

**ANALOG DATA FEATURES**

<b>DESCRIPTION</b>	The Optional Automatic Data Release feature prevents the Digital Data Interface Units (DDIUs) from being tied-up when there is no detection of data transmission. Utilization of this feature causes the system to monitor data transmission and, if there is no detection of data transmission within a period of 18 minutes, to disconnect the calling data unit from a calling connection. This procedure both prevents unnecessary data blocking and enables more efficient system operation.
<b>OPERATION</b>	A switch on the DDIU-MA (Switch 5)/DDIU-MAT (Switch 1) device is used to activate/deactivate Automatic Data Release. Once activated, feature operation is automatic.
<b>PROGRAMMING</b>	None.
<b>RELATED FEATURES</b>	All (Data).
<b>BENEFITS</b>	Automatic Data Release prevents a DDIU from being held on-line after a data call has ended or has been interrupted, dropping the connection and making the DDIU available for another connection. This reduces customer toll costs and increases the efficient usage of office resources.

# Automatic Dialing

**DESCRIPTION** Automatic Dialing allows one or more buttons on a Digital Data Interface Unit (DDIU-MA) to be assigned as Automatic Dialing **ADL** buttons. Any dedicated **ADL** button can be used to supply convenient one-button dialing to a stored telephone number consisting of up to 16 digits. Whenever an **ADL** button is pressed, it will automatically cause the stored number to be outpulsed, just as though it had been dialed manually. Dialing may also be performed through the "chaining" of stored ADL numbers. In this case, stored numbers will outpulse in the same order in which their accompanying **ADL** buttons were pressed. However, after a chaining sequence has been utilized, only the last number in the chain will be retained within the Redial Last Number Dialed memory. Numbers which are stored on **ADL** buttons may be either station Directory Numbers (DNs), access codes (followed by enough digits to complete the call within the TIE trunk, CCSA, or public network), or computer codes.

**OPERATION** **To Use Automatic Dialing:**

1. Press the Data **DN** button.
2. Press the appropriate **ADL** button.
3. The system will automatically dial the stored number.

**To Store Numbers in Memory (See Note 9):**

1. Press the appropriate **ADL** button.
  - The dialed number will be stored in memory.
  - The accompanying ADL LED will flash.
2. Dial the number to be stored (up to a maximum of 16 digits).
3. Press the **ADL** button.
  - The accompanying ADL LED will go out.

**PROGRAMMING** **ADL** buttons are specified in the DDIU and DEKT Data Blocks.

**NOTES:**

1. *Stored numbers may include trunk access codes. When either a TIE/CCSA trunk with wink start, or a regular trunk with ground start, is used, the outpulsing of digits will not occur until the respective wink or ground-start signal is received. However, when immediate start is used, digits will begin outpulsing immediately, perhaps even before a trunk has been seized. It therefore may be required to register a 3-second delay before the stored series of ADL digits. A 3-second pause may be inserted by a single depression of the **⏏** button. Each additional button depression will initiate another 3-second pause. A maximum of 16 digits, including pauses, may be stored and dialed.*
2. *Additional digits may be dialed either before or after an **ADL** button is pressed.*
3. *The single button operation of Automatic Dialing is an advantage over Speed Dialing, which utilizes multi-digit codes.*
4. *This feature may also be used for direct station selection.*
5. *Any number of **ADL** buttons (within the total feature button limit) may be assigned to a DDIU-MA.*

# Automatic Dialing

PERCEPTION

ANALOG DATA FEATURES

6. The expanded configuration (software **Version D**) of PERCEPTION can accommodate a maximum of 500 assigned **ADL** buttons, while the basic configuration (software **Version A**) can accommodate 250.
7. Automatic-dialing numbers are stored in volatile memory. However, if a daily data dump is specified in the DSYS Data Block, the system will automatically store all such numbers on the disk each day. If a power outage or system reload occurs before a data dump occurs, any newly stored numbers will be lost.
8. On a DDIU-MAT, the ADL button on the attached electronic telephone activates one automatic dialing number, for either a voice or data call. See *Automatic Dialing (Electronic/Digital Telephone Features)* for ADL operation with a DDIU-MAT.
9. If the associated electronic telephone has Flexible Automatic Dialing, ADL numbers can be stored directly from the telephone. However, if the electronic telephone has Fixed Automatic Dialing, stored ADL numbers are fixed and can only be changed through programming.

## RELATED FEATURES

1. Automatic Dialing (Electronic/Digital Telephone).
2. Speed Dialing (Station).

## BENEFITS

Automatic Dialing allows a DDIU-MA or DDIU-MAT user to access frequently-dialed data directory numbers without having to memorize specific codes or dial lengthy directory numbers.

# Data Button

**DESCRIPTION** A data **DN** button is assigned to an electronic telephone with a built-in DDIU (DDIU-MAT) in order to access a data-transmission path to other DDIUs. Each data **DN** button has its own assigned Directory Number (DN), which is used to originate and receive data calls to/from other DDIUs. Each data DN may be programmed as either Station Call Ring (SCR) or Station Call No Ring (SCN).

**OPERATION** Each data **DN** button is used to access data features, much like a voice directory number is used to access voice-calling features.

**To Use an Assigned Data **DN** Button:**

1. Press the data **DN** button.
  - The accompanying data DN LED will light steady and dial tone will be heard.
2. Dial the directory number of the desired data station.
  - Ringback tone will be heard.

**For Outgoing Data Calls via a Modem Pool:**

1. Use a voice circuit to access the distant data equipment (either LCR or direct trunk access).
2. Wait for the modem-carrier tone from the terminating end.
3. To complete the data connection:  
Press the data **DN** button.
4. On your PC, type **ATD** and press **RETURN**.

**PROGRAMMING** An electronic telephone/DDIU-MAT combination utilizes two station ports, one NEKU port and one NDCU or NMDU port. Each data **DN** button is assigned within the DEKU Data Block. This assignment correlates each button to a specific data port. A Data Release **DRS** button must also be assigned within the DEKT Data Block.

Each data directory number and its respective data port are assigned within the DDIU Data Block. These assignments must be made prior to assigning a data port number to a particular telephone.

**RELATED FEATURES**

1. Station Hunting (Station).
2. Data Release Button (Data).
3. Data Security Groups (Data).

**BENEFITS** An electronic-terminal data **DN** button makes data-call set-up identical to, and as easy as, voice calls.

# Data Only Transmission

PERCEPTION

ANALOG DATA FEATURES

**DESCRIPTION** A stand-alone Digital Data Interface Unit (DDIU-MA) can be used independently to transmit data to data equipment. A telephone is not required for equipment interaction.

**OPERATION** **To Make a Data Call Using a DDIU-MA:**

1. Press the Data-directory number button.
2. Dial the destination directory number.
  - Data transmission will begin once call set-up has been completed.

**To Disconnect a Data Call from a DDIU-MA:**

1. Press the release button.

**PROGRAMMING** DDIU-MAs are assigned to data ports within the DDIU Data Block.

**NOTES:**

1. *The data operations of a DDIU-MA and a DDIU-MAT are identical.*
2. *A separate DDIU-MA is required for each desired position.*
3. *Each DDIU-MA requires one port from either an NDCU or NMDU PCB.*
4. *A maximum of six NDCU/NMDU PCB combinations may be installed in a PERCEPTION<sub>e</sub> system (a total of 48 DDIUs). There are no limits in PERCEPTION<sub>ex</sub>.*

**RELATED FEATURES**

1. Automatic Dialing (Electronic/Digital Telephone and Data).
2. Automatic Callback (Station and Data).
3. Modem Pooling (Data).

**BENEFITS** Data Only Transmission provides the convenience of connecting a PERCEPTION system to data equipment, without the added expense of an electronic telephone. Any utilized DDIU-MA will automatically answer incoming data calls from remote data equipment such as printers, mainframes, desk-top computers, and modems.

# Data Release Button

**DESCRIPTION** A Data-release button is used to disconnect a data-transmission call. In a DDIU-MAT set-up, a Data Release **DRS** button is assigned to an electronic telephone in order to allow an established data path to be disconnected separately from a voice path. When a stand-alone DDIU-MA is used, data connections will be released via an incorporated Release **RLS** button.

**OPERATION** A data call from a DDIU-MAT data arrangement can be terminated independently of voice transmission, simply by pressing the **DRS** button.

*NOTE: The termination of a voice call, caused by going on-hook at an electronic telephone/DDIU-MAT, will not affect an ongoing data call at that same station.*

**PROGRAMMING** The assignment of a DRS button to an electronic telephone is made within the DEKT Data Block.

**RELATED FEATURES** Data Button (Data).

**BENEFITS** A **DRS** button allows a data user to conveniently disconnect a data transmission via a single button. The independence of the disconnect operation permits any electronic telephone (DDIU-MAT data arrangement), which initiates such a disconnect, to also retain any existing voice path.

**DESCRIPTION** Data Security Groups can be assigned within a system in order to restrict interaction between particular DDIUs. When utilized, each DDIU is assigned to a specific group, and group interaction is defined through Class of Service restrictions. Each data-security group can be composed of any number of DDIUs.

**OPERATION** Once a DDIU has been assigned to a data-security group, and group-interaction restrictions have been noted in the Class of Service (DCOS) Data Block, operation will be automatic.

**PROGRAMMING** Individual DDIUs are assigned to data-security groups within the DDIU Data Block. Security-group access is restricted via each station's class-of-service level, which is defined within the DCOS Data Block. Restrictions are programmed by entering the codes for the specific groups which are not to be accessed.

**NOTES:**

1. *Each DDIU must be assigned to a data-security group.*
2. *An individual DDIU cannot be assigned to more than one data-security group.*
3. *A system may have up to 16 defined data-security groups (D00 ~ D15).*
4. *There is no limit to the number of DDIUS in a single group.*

**RELATED FEATURES** Data Button (Data).

**BENEFITS** Data Security Groups ensure that unauthorized Digital Data Interface Units will not access other data groups. This provides data users with a degree of data security, since confidential information cannot be accessed.

# Data Switching Modes

**DESCRIPTION** Optional data switching modes allow data to be transmitted either asynchronously or synchronously. Asynchronous data transmissions will operate at a maximum speed of 19,2 kbps. If a slower rate is necessary, then a DDIU will automatically make the speed adjustment. Synchronous data transmission can be set at a rate of either 2.4, 4.8, or 9.6 kbps.

**OPERATION** Each DDIU automatically assumes asynchronous mode operation. Transmission speed is automatically adjusted (up to a maximum of 19.2 kbps) to conform with the requirements of the connected data terminal equipment. Synchronous mode is switch-selectable at speeds of 2.4, 4.8, or 9.6 kbps. (Refer to the labeled switches on the bottom of each DDIU-MA/MAT).

**PROGRAMMING** None.

*NOTE: In order to accommodate data switching modes, any utilized data-terminal-equipment software and/or hardware will require special adjustments and programming.*

**RELATED FEATURES** All (Data).

**BENEFITS** The ability for one DDIU to use both asynchronous and synchronous transmission modes, eliminates the need to use different sending devices in order to accommodate various equipment requirements.

## DESCRIPTION

The DDIU-MAs are equipped with the following LED displays:

- TERMINAL READY—Indicates that the terminal is ready to transmit.
- DIAL—Lights when dialing is in progress.
- RING—Lights when the DDIU is ringing another terminal.
- CONNECT—Indicates that the DDIU is connected to another data station. The LED will remain on, until the **RLS** button is activated.
- BUSY—Indicates that the DDIU has reached a busy terminal.
- DIAL ERROR—Indicates that there has been a dialing error.

LED/Button Displays:

- TRANSFER—Not used.
- HOLD—Not used.
- RLS—Releases the DDIU from any connection.

## OPERATION

Automatic.

## PROGRAMMING

None.

## RELATED FEATURES

All (Data).

## BENEFITS

The DDIU-MA displays offer the user a visual indication of the progress and status of the data call/connection.

# Do Not Disturb

**DESCRIPTION** The Do Not disturb feature enables a Digital Data Interface Unit (DDIU-MA) user to optionally provide a busy indication to incoming callers, whenever the user does not want to be disturbed.

**OPERATION** FOR DDIU-MAs WITH A **DND** BUTTON:

**To Activate DND:**

1. Press the **DND** button.
  - DND LED lights.

**To Cancel DND:**

1. Press the **DND** button.
  - DND LED goes off.

FOR DDIU-MAs WITHOUT A **DND** BUTTON:

**To Activate DND:**

1. Depress the **DN** button.
2. Dial the access code (**# 2**) \_\_\_\_\_.
3. Activation of DND is confirmed by a second dial tone.
4. Hang up.

**To Cancel DND:**

1. Depress the **DN** button.
2. Dial the access code (**## 2**) \_\_\_\_\_.
3. Deactivation of DND is confirmed by a second dial tone.
4. Hang up.

**PROGRAMMING** The **DND** button is assigned in the DDIU Data Block.

**NOTES:**

1. A station which has registered Do Not Disturb will be perceived as busy to all incoming callers and features. Outgoing calls and features may still be performed while a station is in Do Not Disturb mode.
2. When an attendant console dials a station which has registered Do Not Disturb, the console will display a status of DND.
3. In software **Versions D.03** and earlier, Do Not Disturb does not apply when an incoming call arrives either over a Direct-In Line (DIL) or via Direct Inward Dial (DID).
4. On a DDIU-MAT, the attached electronic telephone's **DND** button activates Do Not Disturb, for either a voice or data call. See Do Not Disturb (Station Features) for DND operation with a DDIU-MAT.

**RELATED FEATURES** Do Not Disturb (Station).

# *Do Not Disturb*

**PERCEPTION**

**ANALOG DATA FEATURES**

**BENEFITS** The use of Do Not Disturb eliminates interruptions when an individual must perform other, more urgent duties.

# Modem Pooling

ANALOG DATA FEATURES

PERCEPTION

## DESCRIPTION

Modem Pooling allows various DDIU users to use a single modem, so that each DDIU does not need its own individual modem. Access to an idle modem is accomplished through the use of each DDIU's data **DN** button. Outgoing calls are made by establishing a voice call to a data destination, and then (after reaching a modem), pressing a DDIU's data **DN** button. An outgoing call can be processed over any type of outgoing trunk (including Least Cost Routing). Most incoming data calls will be connected to a modem after an incoming call is routed to a data directory number via an attendant. However, incoming calls which arrive via either the Remote Access to Services feature, or a TIE/DID line, will bypass an attendant, and will automatically be routed to a modem through the directly-dialed data directory number.

## OPERATION

1. Establish a voice call to the desired data destination.
2. When MODEM tone is heard, press the data **DN** button.
3. Type **ATD** on your terminal or personal computer.
4. a modem-to-modem connection will be made and data transmission may now begin.

## PROGRAMMING

Modem pools are configured in the DMDM Data Block.

### NOTES:

1. *The utilization of Modem Pooling requires customer-supplied compatible modems.*
2. *To utilize Modem Pooling, a system requires one DMDU/NMDU\* PCB per every four modems used.*
3. *A system utilizing Modem Pooling requires one DDIU-MA for each individual modem used.*
4. *A maximum of six NDCU/NMDU PCB combinations may be installed in a PERCEPTION<sub>e</sub> system (a total of 48 DDIUs). There are no limits in PERCEPTION<sub>ex</sub>.*
5. *The use of Simultaneous Voice/Data within the PERCEPTION system does not require a special modem or trunk.*

## RELATED FEATURES

All (Data).

## BENEFITS

This feature provides a more convenient and productive communications environment by eliminating the need for separate voice- and data-transmission units. The feature also reduces costs by allowing data devices to be added to any electronic telephone, without the need for special cables (other than 3-pair cable requirement).

# Redial Last Number Dial

**DESCRIPTION** This feature allows a Digital Data Interface Unit (DDIU-MA) user to automatically redial a DDIU's complete, last-dialed telephone number via either single depression of a designated button, or the entrance of a short access code.

**OPERATION** **DDIU-MAs with an RND button:**

1. Press the data **DN** button.
2. Press the **RND** button.

**Telephones without an RND button:**

1. Press the data **DN** button.
2. Dial the access code (**# 7**) \_\_\_\_\_.

## PROGRAMMING

1. The Redial-last-number-dialed access code is assigned within the DACD Data Block.
2. The **RND** button is assigned to a DDIU-MA within the DDIU Data Block.

### NOTES:

1. *Following a chain dial call, RND will outpulse the last telephone number only.*
2. *On a DDIU-MAT, the attached electronic telephone's **RND** button activates Redial Last Number Dialed, for either a voice or data call. See Redial Last Number Dialed (station features) for RND operation with a DDIU-MAT.*

## RELATED FEATURES

1. Redial Last Number Dialed (Station).
2. Speed Dialing (Attendant and Station).

## BENEFITS

The Redial Last Number Redial feature saves valuable time by eliminating the need to repeatedly dial a busy or unanswered number when placing a data call.

# Simultaneous Voice and Data Transmission

**ANALOG DATA FEATURES**

**PERCEPTION**

**DESCRIPTION** This feature allows both voice and data transmissions to occur simultaneously, through the use of a Digital Data Interface Unit (DDIU-MAT) and an electronic telephone. A DDIU-MAT mounts directly onto the bottom of an electronic telephone, forming a single composite unit. A DDIU-MAT set-up requires a 3-pair connection, composed of two pair for telephonic voice transmission, and one pair for DDIU data transmission.

**OPERATION** Simultaneous Voice and Data Transmission is based on electronic telephone/DDIU-MAT-to-Voice/Data port circuitry. Voice and Data calls are both performed in the standard manner.

**PROGRAMMING** DDIU-MATs are assigned to data ports within the DDIU Data Block. Electronic telephones are assigned within the DEKT Data Block.

**NOTES:**

1. *The utilization of Simultaneous Voice and Data Transmission requires a DDIU-MAT and electronic telephone for each desired position.*
2. *The use of this feature requires one port from a NEKU PCB, and one port from a NDCU PCB.*
3. *A maximum of six NDCU/NMDU PCB combinations may be installed in a PERCEPTION<sub>e</sub> system (a total of 48 DDIUs). There are no limits in PERCEPTION<sub>ex</sub>.*
4. *Simultaneous Voice/Data to an outside party requires two trunks; one for voice and one for data.*
5. *The use of Simultaneous Voice/Data within the PERCEPTION system does not require a special modem or trunk.*

**RELATED FEATURES** All (Data).

**BENEFITS** This feature provides a more convenient and productive communications environment by eliminating the need for separate voice- and data-transmission units. The feature also reduces costs by allowing data devices to be added to any electronic telephone, without the need for special cables (other than the 3-pair cable requirement).

- DESCRIPTION** Speed Dialing enables a Digital Data Interface Unit (DDIU-MA) user to dial complete telephone numbers (of up to 16 digits) through the use of abbreviated address codes. Two types of Speed Dialing are provided:
- Speed Dial-Station: Allows the user to maintain a separate 10-number directory, which may be shared by any number of DDIU-MAs. A maximum of 50 10-number directories are provided per system.
  - Speed Dial-System: Allows DDIU-MA users to access a system directory of up to 90 numbers.

## OPERATION SPEED DIAL STATION

### TO USE:

#### For DDIU-MAs Without an **SDU**, or **SDC** Button:

1. Press the data **DN** button.
2. Dial the access code (**# 3**) \_\_\_\_\_.
3. Dial the Speed-dial address code (0 ~ 9).
  - The system will dial the stored number.

#### For DDIU-MAs With an **SDU**, or **SDC** Button:

1. Press the data **DN** button.
2. Press the Speed-dial **SDU** or **SDC** button.
3. Dial the Speed-dial address code (0 ~9).
  - The system will dial the stored number.

### TO STORE OR CHANGE CODE NUMBERS:

#### For DDIU-MAs Assigned a Speed Dial List as a Controller, Without an **SDC** Button:

1. Press the data **DN** button.
2. Dial **##3** \_\_\_\_\_.
3. Dial the assigned single-digit code (0 ~ 9).
4. Dial the number to be stored (16 digits maximum).
  - It may be necessary to insert a pause to allow for dial-tone delay. To do this, press the **|** button, following the entrance of the trunk access code or LCR access code..
5. Dial **#**.
6. Press the **RLS** button.
7. Record the Speed Dial code and telephone number for future reference.

## For DDIU-MAs Assigned a Speed Dial List as a Controller, With an SDC Button:

1. Press the **SDC** button.
  - The SDC LED will flash.
2. Dial the assigned single-digit code (0 ~ 9).
3. Dial the number to be stored (16 digits maximum).
  - It may be necessary to insert a pause to allow for dial-tone delay. To do this, press the **⏸** button after the entrance of the trunk access code or LCR access code.
4. Press the **SDC** button.
  - The SDC LED will go out, indicating that the number has been stored.
5. Record the Speed-dial code and telephone number for future reference.

*NOTE: Speed-dial-station digits may also be changed via the data terminal by using the **DSDL Program**.*

## SPEED DIAL SYSTEM

### TO USE:

1. Press the data **DN** button.
2. Dial the access code (**# 6**) \_\_\_\_\_, or press the **SDS** button (if equipped).
3. Dial the Speed-dial-system address code (10 ~ 99).
  - The system will dial the stored number.

### TO STORE OR CHANGE A NUMBER:

The Speed-dial-system list of telephone numbers must be stored by either a data terminal or the attendant console. Input from the data terminal is done via the DSDL Data Block. To input information via an attendant console, see System Speed Dial (Attendant Features):

## PROGRAMMING

1. Speed-dial access codes are assigned within the DACD Data Block.
2. Speed-dial-station lists are assigned to a specific button via the DDIU Data Block (see Note 4).
3. Speed-dial-station/system numbers can be stored and changed within the DSDL Data Block.

### NOTES:

1. *Dial tone delays may be accomplished by using the **⏸** button to insert 3-second pauses. Each pause is counted as one digit against the allowable 16-digit limit.*

2. The same speed-dial directory may be shared by several DDIU-MAs, but only one, known as the controller (SDC), has the ability to change or store numbers.
3. Speed-dial list numbers which are entered by DDIU-MA controllers or by an attendant are stored in volatile memory. However, the system will automatically store all such numbers on the disk each day if a Daily Dump is specified in the System Data Block (DSYS). If a power outage or system reload occurs before the data dump, then any newly stored numbers will be lost.
4. More than one Speed-dial-station **SDC/SDU** button and list may be assigned to a DDIU-MA in order to provide additional speed-dialing capabilities to the user or to gain efficiency in number storage.
5. Additional digits may be chained by dialing more than one Speed-dial number.
6. A DDIU-MA's designated Class of Service may restrict the DDIU-MA from accessing an SDS directory.
7. A DDIU-MA's designated Toll Restriction Class may deny access to a telephone number that is automatically dialed by Speed Dial.
8. On a DDIU-MAT, the electronic telephone's **SDC**, **SDU**, and/or **SDS** buttons activate Speed Dialing, for either a voice or data call. See Speed Dialing (Station Features) for SDC and SDS operation with a DDIU-MAT.

## RELATED FEATURES

1. Redial Last Number Dialed (Station).
2. Automatic Dialing (Electronic/Digital Telephone).

## BENEFITS

Speed Dialing saves end-user time, by making calls to frequently-dialed numbers a simple operation, requiring only two or three easy-to-memorize keystrokes.

# Automatic Callback

**DESCRIPTION** Automatic Callback for data switching enables an individual who encounters a busy Digital Data Interface Unit (PDIU-DI or DS) to request a system callback once the called unit becomes idle. In this instance, the callback is actually an LED signal to the calling PDIU.

**OPERATION** (See Note 2 for PDIU-DS.)

**To Activate Automatic Callback After Receiving Busy Tone on an Attempted Call:**

1. Press the Automatic Callback **ACB** button.
  - The LED will light.... or ...  
Press the data **DN** and dial the access code **(\*)7** \_\_\_\_\_.
  - The DIAL LED will light.
  - Busy tone will be replaced by dial tone.
2. Press the **RLS** button to release the connection; and wait for a system callback.
  - The DIAL LED will go out.

**To Answer an Automatic Callback:**

1. When the desired connection becomes idle, the calling PDIU will be signaled.
  - The ACB LED will flash.
  - The DN LED will flash.
2. If an automatic callback is not answered within the specified ACB timeout, then the request will be cancelled.
3. Press the data **DN** button.
  - The called PDIU will be signaled.
4. If the called PDIU is busy, it indicates that the called PDIU has previously been registered for a callback to a different terminal. Press the data **DN** button to release the call, and wait to be called back again.

**To Cancel Automatic Callback:**

1. Press the **ACB** button, or press the data **DN** and dial the access code **(\*)7** \_\_\_\_\_.
  - The ACB LED will go out.
  - Automatic Callback will be cancelled.

**NOTES:**

1. When performing an Automatic Callback, the PERCEPTION System will "reserve" a trunk or Directory Number (block it from being used for other calling attempts) for the period of time specified by the ACB timer. If there is more than one station in queue for the called station, the system will hold the trunk only for the period of time set by the ACB timer, before it offers the trunk to the next station in line. If there is only one station in the queue, the callback will be disconnected by the ACB time-out, and the called station will be available for

# Automatic Callback

*connection to any other dialing station. If a station attempts to answer a callback after the ACB time-out, the caller will receive overflow tone and the callback will be queued once again.*

- 2. PDIU-DIs use the **ACB** button assigned to the corresponding digital telephone to activate Automatic Callback for either voice or data calls. Data devices connected to PDIU-DSs cannot access the Automatic Callback feature.*
- 3. A maximum of 80 data/regular callbacks can be registered in the system at one time. All 80 callbacks can be made simultaneously from one or more stations.*
- 4. Only one automatic callback can be registered from a particular station at one time. When a callback is registered, this will cancel all previous callback assignments.*

## PROGRAMMING

The Automatic Callback Reserve Time setting specifies the length of time that a trunk or Directory Number will be held for call connection on a callback. This setting is assigned in the ACB entry of the DSYS Data Block. The ACB time period cannot be set higher than six seconds.

## RELATED FEATURES

Automatic Callback (Station).

## BENEFITS

This feature permits a PDIU-DI user, when encountering a busy data destination, to register an automatic callback to that DN. When the DN is available, the caller is signaled and the data connection made automatically.

# Automatic Data Release

<b>DESCRIPTION</b>	The Optional Automatic Data Release feature prevents the Data Interface Units (PDIUs) from being tied-up when there is no detection of data transmission. Utilization of this feature causes the system to monitor data transmission and, if there is no detection of data transmission within a period of 8 to 9 minutes, to disconnect the calling data unit from a calling connection. This procedure both prevents unnecessary data blocking and enables more efficient system operation.
<b>OPERATION</b>	A switch on the PDIU-DI and -DS (Switch SW1-1) devices is used to activate/deactivate Automatic Data Release. Once activated, feature operation is automatic.
<b>PROGRAMMING</b>	None.
<b>RELATED FEATURES</b>	All (Data).
<b>BENEFITS</b>	Automatic Data Release prevents a PDIU from being held on-line after a data call has ended or has been interrupted, dropping the connection and making the PDIU available for another connection. This reduces customer toll costs and increases the efficient usage of office resources.

## DESCRIPTION

Automatic Dialing allows one or more buttons on a PDIU-DI equipped digital telephone to be assigned as Automatic Dialing **ADL** buttons. Any dedicated **ADL** button can be used to supply convenient one-button dialing of a stored telephone number consisting of up to 16 digits. Whenever an **ADL** button is pressed, it will automatically cause the stored number to be outpulsed, as though it had been dialed manually. Dialing may also be performed by "chaining" stored ADL numbers. Chained numbers will outpulse in the same order in which their associated **ADL** buttons were pressed. However, after a chaining sequence has been used, only the last number in the chain will be retained within the Redial Last Number Dialed memory. Numbers which are stored on **ADL** buttons may be either station Directory Numbers (DNs), access codes (followed by enough digits to complete the call within the TIE trunk, CCSA, or public network), or computer codes.

## OPERATION

(See Note 8 for PDIU-DS.)

### To Use Automatic Dialing:

1. Press the Data **DN** button.
2. Press the appropriate **ADL** button.
3. The system will automatically dial the stored number.

### To Store Numbers in Memory (see Note 9):

1. Press the appropriate **ADL** button.
  - The accompanying ADL LED will flash.
2. Dial the number to be stored (up to a maximum of 16 digits).
3. Press the **ADL** button.
  - The dialed number will be stored in memory.
  - The accompanying ADL LED will go out.

## PROGRAMMING

**ADL** buttons are specified in the DEKT Data Block.

### NOTES:

1. *Stored numbers may include trunk access codes. When either a TIE/CCSA trunk with wink start, or a regular trunk with ground start, is used, the outpulsing of digits will not occur until the respective wink or ground-start signal is received. However, when immediate start is used, digits will begin outpulsing immediately, perhaps even before a trunk has been seized. It therefore may be required to register a 3-second delay before the stored series of ADL digits. A 3-second pause may be inserted by a single depression of the **ADL** button. Each additional button depression will initiate another 3-second pause. A maximum of 16 digits, including pauses, may be stored and dialed.*
2. *Additional digits may be dialed either before or after and **ADL** button is pressed.*
3. *The single button operation of Automatic Dialing is an advantage over Speed Dialing, which utilizes multi-digit codes.*
4. *This feature may also be used for direct station selection.*

# Automatic Dialing

5. Any number of **ADL** buttons (within the total feature button limit) may be assigned.
6. The expanded configuration (software **Version D**) of PERCEPTION can accommodate a maximum of 500 assigned **ADL** buttons, while the basic configuration (software **Version A**) can accommodate 250.
7. Automatic-dialing numbers are stored in volatile memory. However, if a daily data dump is specified in the DSYS Data Block, the system will automatically store all such numbers on the disk each day. If a power outage or system reload occurs before a data dump occurs, any newly stored numbers will be lost.
8. PDIU-DIs use the **ADL** buttons assigned to the corresponding digital telephone. Data devices connected to PDIU-DSs cannot access the Automatic Dialing feature.
9. If the associated digital telephone has Flexible Automatic Dialing, ADL numbers can be stored directly from the telephone. However, if the digital telephone has Fixed Automatic Dialing, stored ADL numbers are fixed and can only be changed through programming.

## RELATED FEATURES

1. Automatic Dialing (Electronic/Digital Telephone).
2. Speed Dialing (Station).

## BENEFITS

Automatic Dialing allows a PDIU-DI user to access frequently-dialed data directory numbers without having to memorize specific codes or dial lengthy directory numbers.

**DESCRIPTION** The Command Mode allows call setup and call processing operations to be performed from a terminal or personal computer associated with the digital telephone/PDIU-DI combination. PDIU operation is controlled by typing commands (AT command) on the PC or terminal keyboard. PDIUs enter or remain in the Command Mode when any of the following actions occur:

- The DIU is powered up by connecting it to the PERCEPTION<sup>e&ex</sup> system via the modular jack/cord.
- The reset (**Z**) AT command is issued.
- No carrier is detected while originating or answering a data call.
- The carrier signal from a remote DIU or modem is lost.
- A semicolon (;) is entered at the end of the dial (**D**) command.
- The escape sequence (+ + +) is entered while the DIU is in the Communication Mode (on-line mode).

**OPERATION** Commands are issued by typing AT commands from the PC or terminal keyboard. Other available Command Mode features are listed below.

- **Result Codes**—Displayed on the terminal or personal computer screen, Result Codes are DIU responses to AT Commands and end-to-end connections and disconnections.
- **S-Registers**—DIUs can be configured for specific applications with S-Registers, which can only be changed or checked during the Command Mode. When power is first applied to the DIU and whenever its modular line cord is temporarily disconnected and then reconnected, the DIU initializes the S-Registers to the default values and enters the Command Mode.
- **Dialing Modifiers**—Dialing Modifiers do exactly what their name indicates. They can be issued anywhere in the dialing string and provide additional dialing instructions. Dialing Modifiers can be used for a variety of applications, including tone dialing, dial pulse dialing, and pause and flash inserting.

**PROGRAMMING** None.

**NOTES:**

1. A personal computer must be running a communications software or desk organizer dialing program (be on-line) to issue AT Commands. AT Commands cannot be issued from a data telephone's dialpad, a personal computer's DOS prompt, or from non-communications-type programs, such as word processing, data base, or spread sheet programs.
2. AT commands are executed by the DIUs only after the carriage return key is pressed. The carriage return is referred to as <ENTER> in this guide. On some keyboards, this key may have a different designation, such as RETURN, <CR>, etc.
3. All AT commands must be typed as capital letters.
4. DIUs can operate at up to 19,200 bps with manual dialing (from a digital telephone). If keyboard dialing with AT commands, the DIUs can operate at up to 9600 bps.

# Command Mode

**DIGITAL DATA FEATURES**

**PERCEPTION**

**RELATED FEATURES** Switching Between Modes (Data).

**BENEFITS** This feature provides greater flexibility of data call setup and processing by allowing the PDIU to be controlled by a PC or terminal rather than using the feature buttons on the associated digital telephone.

# Communication Mode

PERCEPTION

DIGITAL DATA FEATURES

**DESCRIPTION** The Communication Mode allows the actual transfer of data between two PDIUs to take place.

**OPERATION** Automatic.

**PROGRAMMING** None.

*NOTE: A called PDIU switches to the Communication Mode when it answers, automatically or manually.*

**RELATED FEATURES** Switching Between Modes (Data).

**BENEFITS** A PDIU automatically enters the Communication Mode when its call to another DIU is answered. At this point, the desired data operation (file, transfer, printing, etc.) can begin. This eliminates the need to manually set the parameters necessary to transfer data.

# Data Button

**DESCRIPTION** A data **DN** button is assigned to each digital telephone connected to a PDIU in order to access a data-transmission path to other telephones connected to PDIUs (PDIU-DI or PDIU-DS) or data devices connected to Stand-alone PDIUs (PDIU-DS). The data **DN** button has its own assigned Directory Number (DN), which is used to originate and receive data calls to/from other PDIUs. Each data **DN** may be programmed as either Station Call Ring (SCR) or Station Call No Ring (SCN).

**OPERATION** Each data **DN** button is used to access data features, much like a voice directory number is used to access voice-calling features.

**To Use an Assigned data **DN** Button:**

1. Press the data **DN** button.
  - The accompanying data DN LED will light steady and dial tone will be heard.
2. Dial the directory number of the desired data station.
  - Ringback tone will be heard.

**PROGRAMMING** A digital telephone/PDIU-DI combination utilizes two station ports, one NDKU port and one port adjacent to the NDKU. Each data **DN** button is assigned within the DEKT Data Block. This assignment correlates each button to a specific data port. A Data Release **DRS** button must also be assigned within the DEKT Data Block.

Each data directory number and its respective data port are assigned within the DDIU Data Block. These assignments must be made prior to assigning a data port number to a particular telephone.

*NOTE: Refer to PERCEPTION<sub>e&ex</sub> Installation and Maintenance Manual for correct installation procedures.*

**RELATED FEATURES**

1. Station Hunting (Station).
2. Data Release Button (Data).

**BENEFITS** A digital-terminal data **DN** button makes data-call set-up identical to, and as easy as, voice calls.

**DESCRIPTION** This feature allows a digital telephone/PDIU-DI combination with an associated personal computer to complete a data call to another internal digital telephone/PDIU-DI combination. A communication software program is required for this type of internal data calls.

**OPERATION** **To Place the Call From the PC or Terminal:**

1. Type **A T**, and press **<ENTER>** on your PC or terminal.
  - The PC or terminal screen will display the "OK" message to verify that communications exist between the PC or terminal and the PDIU-DI.
2. Type **A T D D**, the data DN of the other PDIU, and press **<ENTER>**.
  - The data DN LED will light.
  - The PC or terminal screen will display the data DN of the called PDIU-DS and the data transmission speed to indicate that a connection has been established between the PC or terminal and the PDIU connected to the system modem pool.
3. Exchange data using the terminal or PC software program.

**To Place the Call from the Telephone:**

1. Press the data **DN** button.
  - The data DN LED will light.
2. Dial the data DN of the other PDIU.
  - The PC or terminal screen will display the "CONNECT" message, indicating that communication has been established between the called and calling PDIUs.
3. Exchange data using the terminal or PC software program.

**To Terminate the Call from the PC or Terminal:**

1. Hold down the shift key and type **+ + +**.
  - The PC or terminal screen will display the "OK" message.
2. Type **A T H**, and press **<ENTER>**.
  - The data DN LED will turn off.
  - The PC or terminal screen will display the "OK" message, indicating the call is terminated.

**To Terminate the Call from the Telephone:**

1. Press the **DRS** button.
  - The data DN LED will turn off.
  - The PC or terminal screen will display the "NO CARRIER" message, indicating the call is terminated.

**PROGRAMMING** Modem pools are configured in the DMDM Data Block.

**NOTES:**

1. A PC involved in an outgoing data call must be running a communications software program.

# Data Call To PDIU-DI

DIGITAL DATA FEATURES

PERCEPTION

2. *The utilization of Modem Pooling requires customer-supplied compatible modems.*
3. *A system utilizing Modem Pooling requires a PDIU-DS for each individual modem used.*
4. *The use of Simultaneous Voice/Data within the PERCEPTION system does not require a special modem or trunk.*

## RELATED FEATURES

All (Data).

## BENEFITS

This feature provides a more convenient and productive communications environment by eliminating the need for separate voice- and data-transmission units. The feature also reduces costs by allowing data devices to be added to any digital telephone, without the need for special cables.

# Data Call To PDIU-DS

**DESCRIPTION** This feature allows a digital telephone/PDIU-DI combination with an associated personal computer to complete a data call to a printer while running a word processor, spread sheet, or data base program. The procedure can also be used to make data calls to other internal data devices, such as modems or mainframe computers, that are connected to stand-alone PDIUs. A communication software program is generally required for these types of internal data calls.

**OPERATION** **To Make The Call:**

1. Press the data **DN** button.
  - The data DN LED will light.
2. Dial the data DN of the PDIU-DS connected to the printer or data device.
3. Print or exchange data using the terminal or PC software program.

**To Terminate the Call:**

1. Press the **DRS** button.
  - The data DN LED will turn off.

**PROGRAMMING** PDIUs are assigned to data ports within the DDIU Data Block. Digital telephones are assigned in the DEKT Data Block.

*NOTE: Communication parameters of the PC or terminal must match those of the printer or data device being called.*

**RELATED FEATURES** All (Data).

**BENEFITS** This feature provides a more convenient and productive communication environment by eliminating the need for separate voice- and data-transmission units. The feature also reduces costs by allowing data devices to be added to any digital telephone, without the need for special cables.

# Data Release Button

**DESCRIPTION** A Data-Release button is assigned to each digital telephone connected to a PDIU in order to allow an established data path to be disconnected separately from a voice path.

**OPERATION** A data call from a PDIU-DI data arrangement can be terminated independently of voice transmission, simply by pressing the **DRS** button.

*NOTE: The termination of a voice call, caused by going on-hook at a digital telephone/PDIU-DI, will not affect an ongoing data call at that same station.*

**PROGRAMMING** The assignment of a **DRS** button to a digital telephone is made within the DEKT Data Block.

**RELATED FEATURES** Data Button (Data).

**BENEFITS** A **DRS** button allows a data user to conveniently disconnect a data transmission via a single button. The independence of the disconnect operation permits any digital telephone (PDIU-DI data arrangement), which initiates such a disconnect, to also retain any existing voice path.

**DESCRIPTION** Data Security Groups can be assigned within a system in order to restrict interaction between particular PDIUs. When utilized, each PDIU is assigned to a specific group, and group interaction is defined through Class of Service restrictions. Each data-security group can be composed of any number of PDIUs.

**OPERATION** Once a PDIU has been assigned to a data-security group, and group-interaction restrictions have been noted in the Class of Service (DCOS) Data Block, operation will be automatic.

**PROGRAMMING** Individual PDIUs are assigned to data-security groups within the PDIU Data Block. Security-group access is restricted via each station's class-of-service level, which is defined within the DCOS Data Block. Restrictions are programmed by entering the codes for the specific groups which are not to be accessed.

*NOTES:*

- 1. Each PDIU must be assigned to a data-security group.*
- 2. An individual PDIU cannot be assigned to more than one data-security group.*
- 3. A system may have up to 16 defined data-security groups (D00 ~ D15).*
- 4. There is no limit to the number of PDIUs in a single group.*

**RELATED FEATURES** Data Button (Data).

**BENEFITS** Data Security Groups ensure that unauthorized Data Interface Units will not access other data groups. This provides data users with a degree of data security, since confidential information cannot be accessed.

# Dialing Modifiers

**DESCRIPTION** When in the Command Mode, Dialing Modifiers can be issued anywhere in the dialing string to provide additional dialing instructions. Dialing Modifiers can be used for a variety of applications, including tone dialing, dial pulse dialing, and pause and flash inserting. Dialing Modifiers supported by PDIUs are:

- 0 ~ 9 \* #—Digits/characters for dialing
- A B C D—Digits/characters for dialing
- P—Pulse dial
- T—Tone dial
- ,—Delay processing of next character (1 second)
- !—Hookflash
- ;—Return to Command Mode after dialing

**OPERATION** Dialing Modifiers are entered from the PC or terminal keyboard following the appropriate AT commands.

**PROGRAMMING** None.

**RELATED FEATURES**

1. Command Mode (Data).
2. Switching Between Modes (Data).

**NOTES:**

1. A personal computer must be running a communications software or desk organizer dialing program (be on-line) to issue AT Commands. AT Commands cannot be issued from a data telephone's dialpad, a personal computer's DOS prompt, or from word processor-, data base-, or spread sheet-type programs.
2. AT commands are executed by the DIUs only after the carriage return key is pressed. The carriage return is referred to as <ENTER> in this guide. On some keyboards, though, this key may have a different designation, such as RETURN, <CR>, etc.
3. All AT commands must be typed as capital letters.
4. DIUs can operate at up to 19,200 bps with manual dialing (from a digital telephone). If keyboard dialing with AT commands, the DIUs can operate at up to 9600 bps.

**BENEFITS** This feature provides greater flexibility of data call setup and processing by allowing complex dialing instructions to be entered via a PC or terminal rather than using the feature buttons on the associated digital telephone.

# DIU Data Speed (Baud Rate)

PERCEPTION

DIGITAL DATA FEATURES

**DESCRIPTION** The speed at which a DIU will pass data (Baud Rate) depends on the method used to establish the data call. PDIUs will pass data at a baud rate of up to 19,200 bits per second (bps), if the call was established by manually dialing from a data telephone. If the call was established with AT commands from a personal computer or terminal, the PDIU will pass data at up to 9600 bps.

**OPERATION** The baud rate of a PDIU will be transparent when originating calls with the digital telephone or when receiving data calls, manually and automatically. When originating data calls with AT commands from a personal computer or terminal, the PDIU's speed will be the same as the rate of the first AT command. When answering data calls with the **A T A** command string, the PDIU baud rate will be the same as the command string.

*NOTE: The AT command baud rate is determined by the terminal's or personal computer's software program's baud rate.*

**PROGRAMMING** None.

## RELATED FEATURES

1. Incoming Data Call (Data)
2. Modem Pooling—Outgoing Data Call (Data).

**BENEFITS** The PDIU baud rate is a function of the device used to establish the call. This eliminates the need to manually set the baud rate before data transfer can take place.

# DIU Default Communication Parameters

**DESCRIPTION** Each PDIU will assume certain default communication parameters when power is initially applied to it or after the modular cord is disconnected and then reconnected. Default communication parameters for the PDIUs are:

- Baud rate: 1200 bps
- Data bits: 8 bits
- Parity: none
- stop bits: 1 stop bit

**OPERATION** When placing a data call, PDIU default communication parameters are transparent, or are changed by the first AT commands issued.

**PROGRAMMING** None.

**RELATED FEATURES** All (Data).

**BENEFITS** The DIU Default Communication Parameters eliminate the need to manually set the parameters necessary to transfer data.

# DIU Operation Modes

PERCEPTION

DIGITAL DATA FEATURES

**DESCRIPTION** PDIUs operate in either the Command Mode or the Communication Mode. All the dialing, answering, and disconnecting activities related to a data call take place during the command mode. The actual data operation—file transferring, printing, etc.—takes place during the communication mode.

**OPERATION** During the Command Mode, command are issued by typing AT commands from the PC or terminal keyboard. A PDIU-DI will automatically enter the Communication Mode when its call to another DIU is answered.

**PROGRAMMING** None.

*NOTES:*

- 1. A personal computer must be running a communications software or desk organizer dialing program (be on-line) to issue AT Commands. AT Commands cannot be issued from a data telephone's dialpad, a personal computer's DOS prompt, or from non-communications-type programs, such as word processing, data base, or spread sheet programs.*
- 2. AT commands are executed by the DIUs only after the carriage return key is pressed. The carriage return is referred to as <ENTER> in this guide. On some keyboards, this key may have a different designation, such as RETURN, <CR>, etc.*
- 3. All AT commands must be typed as capital letters.*
- 4. DIUs can operate at up to 19,200 bps with manual dialing (from a digital telephone). If keyboard dialing with AT commands, the DIUs can operate at up to 9600 bps.*

**RELATED FEATURES**

1. Command Mode (Data).
2. Communication Mode (Data).
3. Switching Between Modes (Data).

**BENEFITS** This feature provides greater flexibility of data call setup and processing by allowing the PDIU to be controlled by a PC or terminal rather than using the feature button on the associated digital telephone. Automatic operation of the Communication Mode eliminates the need to manually set the parameters necessary to transfer data.

# Do Not Disturb

**DESCRIPTION** The Do Not Disturb feature enables a PDIU-DI user to optionally provide a busy indication to incoming callers, whenever the user does not want to be disturbed.

**OPERATION** (See Note 4 for PDIU-DS.)

**FOR DKT/PDIU-DIs WITH A **DND** BUTTON:**

**To Activate DND:**

1. Press the **DND** button.
  - DND LED lights.

**To Cancel DND:**

1. Press the **DND** button.
  - DND LED goes off.

**FOR DKT/PDIU-DIs WITHOUT A **DND** BUTTON:**

**To Activate DND:**

1. Depress the data **DN** button.
2. Dial the access code (**# 2**) \_\_\_\_\_.
3. Activation of DND is confirmed by a second dial tone.
4. Depress the **SPKR** button.

**To Cancel DND:**

1. Depress the data **DN** button.
2. Dial the access code (**# # 2**) \_\_\_\_\_.
3. Deactivation of DND is confirmed by a second dial tone.
4. Depress the **SPKR** button.

**PROGRAMMING** The **DND** button is assigned in the DEKT Data Block.

**NOTES:**

1. A station which has registered Do Not Disturb will be perceived as busy to all incoming callers and features. Outgoing calls and features may still be performed while a station is in Do Not Disturb mode.
2. When an attendant console dials a station which has registered Do Not Disturb, the console will display a status of DND.
3. In software **Versions D.03** and earlier, Do Not Disturb does not apply when an incoming call arrives either over a Direct-In Line (DIL) or via Direct Inward Dial (DID).
4. PDIU-DIs use the **DND** button assigned to the corresponding digital telephone to activate Do Not Disturb for either a voice or data call. Data devices connected to PDIU-DSs cannot access the Do Not Disturb feature.

# *Do Not Disturb*

**PERCEPTION**

**DIGITAL DATA FEATURES**

**RELATED FEATURES** Do Not Disturb (Station).

**BENEFITS** The use of Do Not Disturb eliminates interruptions when an individual must perform other, more urgent duties.

# Incoming Data Call

**DESCRIPTION** Data calls originated from the outside can be made into the PERCEPTION<sub>e&ex</sub> system. Most incoming data calls will be connected to a modem after being routed to a data DN via an attendant. However, incoming calls which arrive via either the Remote Access to Services feature, or a TIE/DID line, will bypass an attendant, and will automatically be routed to a modem through the directly-dialed data DN.

- OPERATION** **To Place an Incoming Data Call From an External PC or Terminal:**
1. Type **A T**, and press **<ENTER>**.
    - The PC or terminal screen will display the "OK" message to verify that communications exist between the PC or terminal and the associated modem.
  2. Type **A T D T**, the number of the PDIU that will ring the system internal modem, and press **<ENTER>**.
    - The PC or terminal screen will display the telephone number of the internal modem and the data transmission speed to indicate the external and internal modems are connected and in the communication mode.
  3. Type **A T D D**, the data DN of the desired PDIU-DS or PDIU-DI, and press **<ENTER>**.
    - The PC or terminal screen will display the data DN of the internal PDIU and the data transmission speed to indicate that connection has been established.
  4. Exchange data using the terminal or PC software program.

- To Terminate the Call from the External PC or Terminal:**
1. Hold down the shift key and type **+++**.
    - The PC or terminal screen will display the "OK" message.
  2. Type **A T H**, and press **<ENTER>**.
    - The PC or terminal screen will display the "OK" message, indicating the call is terminated.

**PROGRAMMING** None.

**RELATED FEATURES** All (Data).

**BENEFITS** This feature allows data users outside the PERCEPTION system to transfer data via a PDIU.

# Modem Pooling—Outgoing Data Call

PERCEPTION

DIGITAL DATA FEATURES

**DESCRIPTION** Calls to data terminals outside the PERCEPTION system are accomplished using a modem. Modem pooling allows various PDIU users to use a single modem, so that each PDIU does not need its own individual modem. Access to an idle modem is accomplished through use of the PC or terminal connected to the PDIU. An outgoing call can be processed over any type of outgoing trunk (including Least Cost Routing).

- OPERATION** **To Place an Outgoing Data Call (Through the System Modem Pool):**
1. Type **A T**, and press **<ENTER>** on your PC or terminal.
    - The PC or terminal screen will display the "OK" message to verify that communications exist between the PC or terminal and the PDIU-DI.
  2. To dial the system modem pool from the PC or terminal keyboard, type **A T D D**, the data DN of the PDIU connected to the system modem pool, and press **<ENTER>**.
    - The data DN LED will light.
    - The PC or terminal screen will display the data DN of the called PDIU-DS and the data transmission speed to indicate that a connection has been established between the PC or terminal and the PDIU-DS connected to the system modem pool.
  3. To issue commands to the modem from the PC or terminal keyboard, type **A T D T**, a trunk access code or LCR access code, the telephone number of the external modem or data service, and press **<ENTER>**.
    - The PC or terminal screen will display the external telephone number and the data transmission speed to indicate that connection has been established.
  4. Exchange data using the terminal or PC software program.

**To Terminate the Call from the PC or Terminal:**

1. Hold down the shift key and type **+++**.
  - The PC or terminal screen will display the "OK" message.
2. Type **A T H**, and press **<ENTER>**.
  - The data DN LED will turn off.
  - The PC or terminal screen will display the "OK" message, indicating the call is terminated.

**To Terminate the Call from the Telephone:**

1. Press the **DRS** button.
  - The data DN LED will turn off.
  - The PC or terminal screen will display the "NO CARRIER" message, indicating the call is terminated.

**PROGRAMMING** Modem pools are configured in the DMDM Data Block.

**NOTES:**

1. A PC involved in an outgoing data call must be running a communications software program.

# Modem Pooling—Outgoing Data Call

DIGITAL DATA FEATURES

PERCEPTION

2. *The utilization of Modem Pooling requires customer-supplied compatible modems.*
3. *A system utilizing Modem Pooling requires a PDIU-DS for each individual modem used.*
4. *The use of Simultaneous Voice/Data within the PERCEPTION system does not require a special modem or trunk.*

## RELATED FEATURES

All (Data).

## BENEFITS

This feature provides a more convenient and productive communications environment by eliminating the need for separate voice- and data-transmission units. The feature also reduces costs by allowing data devices to be added to any digital telephone, without the need for special cables.

# PDIU-DI Buttons and LEDs

**DESCRIPTION** In addition to the station complement of feature buttons, the PDIU-DIs are equipped with the following buttons and LED displays:

- **Data DN Button**—Enables a digital telephone's PDIU-DI to be connected with another DIU in the system when manually dialing from the telephone. When the data **DN** button is pressed on an idle telephone, the system returns dial tone to the telephone to prompt dialing. The DATA LED lights when a data call is received from another telephone or when a data call is made from the telephone, personal computer, or ASCII terminal. The DATA LED will always be red when lit (ON).
- **DRS Button**—Terminates data calls. The DRS LED never illuminates.

**OPERATION** Each data **DN** button is used to access data features, much like a voice directory number is used to access voice-calling features. A data call from a PDIU-DI can be terminated independently of voice transmission, simply by pressing the **DRS** button.

**PROGRAMMING** Each data **DN** button is assigned within the DEKT Data Block. The **DRS** button must also be assigned within the DEKT Data Block.

**RELATED FEATURES** All (Data).

**BENEFITS** The PDIU-DS displays offer the user a visual indication of the progress and status of the data call/connection.

# *PDIU-DS Displays*

**DESCRIPTION** The PDIU-DSs are equipped with the following LED displays:

- **POWER**—Indicates the PDIU is connected to the PERCEPTION<sup>e&ex</sup> system.
- **READY**—Indicates that the terminal is ready to transmit.
- **CONNECT**—Indicates that the PDIU is connected to another data station. The LED will remain on until the connection is terminated.

**OPERATION** Automatic.

**PROGRAMMING** None.

**RELATED FEATURES** All (Data).

**BENEFITS** The PDIU-DS displays offer the user a visual indication of the progress and status of the data call/connection.

# Redial Last Number Dialed

PERCEPTION

DIGITAL DATA FEATURES

**DESCRIPTION** This feature allows a PDIU-DI user to automatically redial the PDIUs complete, last-dialed telephone number via either single depression of a designated button, or the entrance of a short access code.

**OPERATION** (See Note 2 for PDIU-DS.)

**For DKT/PDIU-DIs with an RND button:**

1. Press the data **DN** button.
2. Press the **RND** button.

**For DKT/PDIU-DIs without an RND button:**

1. Press the data **DN** button.
2. Dial the access code **(# 7) \_\_\_\_\_**.

## PROGRAMMING

1. The Redial-last-number-dialed access code is assigned within the DEKT Data Block.

### NOTES:

1. *Following a chain dial call, RND will output the last telephone number only.*
2. *PDIU-DIs use the **RND** button assigned to the corresponding digital telephone to activate Redial Last Number Dialed for either a voice or data call. Data devices connected to PDIU-DSs cannot access the Redial Last Number Dialed feature.*

## RELATED FEATURES

1. Redial Last Number Dialed (Station).
2. Speed Dialing (Attendant and Station).

## BENEFITS

The Redial Last Number Redial feature saves valuable time by eliminating the need to repeatedly dial a busy or unanswered number when placing a data call.

# Result Codes

**DESCRIPTION** Result Codes are PDIU responses to AT Commands and end-to-end connections and disconnections, which are displayed on the terminal or personal computer screen. Result Codes supported by the PDIUs are:

- OK—Command executed.
- CONNECT—Connection at 0 to 300 bps.
- RING—Ring signal detected.
- NO CARRIER—Carrier signal not detected, or lost.
- ERROR—Invalid command, checksum. Error in command line, or command line exceeds 255 characters.
- CONNECT 1200—Connection at 1200 bps.
- BUSY—Busy signal detected.
- CONNECT 2400—Connection at 2400 bps.
- CONNECT 4800—Connection at 4800 bps.
- CONNECT 9600—Connection at 9600 bps.

**OPERATION** Automatic.

**PROGRAMMING** None.

**RELATED FEATURES**

1. Command Mode (Data).
2. Communication Mode (Data).

**BENEFITS** Result Codes offer the user a visual indication of the progress and status of the data call/connection.

**DESCRIPTION** PDUIs can be configured for specific applications with S-Registers, which can only be changed or checked during the Command Mode. When power is first applied to it and whenever its modular line cord is temporarily disconnected and then reconnected, the PDIU initializes the S-Registers to the default values and enters the Command Mode.

**OPERATION** **To Check the Value of an S-Register:**

1. Type **A T S X**, where X is the the number of the S-Register to check, and press **<ENTER>** on your PC or terminal.
  - The value of the S-Register will be displayed, followed by the "OK: Result Code.

**To Change the Value of an S-Register:**

1. Type **A T S X = Y**, where X is the the number of the S-Register to be changed and Y is its new value, and press **<ENTER>** on your PC or terminal.
  - The value of the S-Register will be changed, and the "OK: Result Code will be displayed.

*NOTE: If the entry is invalid, the "ERROR" Result Code will be displayed in most cases.*

**PROGRAMMING** None.

**RELATED FEATURES**

1. Command Mode (Data).
2. Result Codes (Data).
3. Switching Between Modes (Data).

**BENEFITS** This feature provides greater flexibility of data call setup and processing by allowing the PDIU to be configured for specific applications.

# Simultaneous Voice and Data Transmission

**DESCRIPTION** This feature allows both voice and data transmissions to occur simultaneously, through the use of a PDIU-DI and a digital telephone. A PDIU-DI mounts directly on the bottom of a digital telephone, forming a single composite unit. A PDIU-DI utilizes a 2B+D ISDN-type digital link to allow the associated digital telephone to perform simultaneous voice and data transmission. The simultaneous voice and data transmissions supported by the PDIU-DI are voice call while on a data call (between the same or different telephones), data call while on a voice call (same telephones), and data call while on a voice call (different telephones).

## **OPERATION FOR VOICE CALL WHILE ON A DATA CALL:**

While on a data call, a PDIU-DI can originate, answer, and disconnect any type of voice call without interrupting the data call. Voice call operations are performed in the standard manner.

## **FOR DATA CALL WHILE ON A VOICE CALL BETWEEN THE SAME TELEPHONES:**

### **To Make the Data Call:**

1. While on a voice call, press the data **DN** button.
  - The data DN LED will light.
  - A data path will automatically be established between the personal computers and/or terminals connected to the two telephones; the voice call will continue uninterrupted.
2. Exchange data using the terminal or PC software program as required.

### **To Terminate the Data Call:**

1. Press the **DRS** button.
  - The voice call, if not terminated earlier, will continue.

### **To Terminate the Voice Call:**

1. Press the **SPKR** button.
  - The voice call, if not terminated earlier, will continue.

## **FOR DATA CALL WHILE ON A VOICE CALL BETWEEN DIFFERENT TELEPHONES:**

### **To Make the Data Call:**

1. While on a voice call, press the **HOLD** button.
2. Make the data call in the normal manner.
3. Exchange data using the terminal or PC software as required.

### **To Return to the Voice Call:**

1. Press the held **DN** button.
  - The voice call will be reestablished; the data call will continue uninterrupted.

# Simultaneous Voice and Data Transmission

PERCEPTION

DIGITAL DATA FEATURES

## To Terminate the Data Call:

1. Press the **DRS** button.
  - The voice call, if not terminated earlier, will continue.

## To Terminate the Voice Call:

1. Press the **SPKR** button.
  - The voice call, if not terminated earlier, will continue.

## PROGRAMMING

PDIU-DIs are assigned to data ports within the DDIU Data Block. Digital telephones are assigned within the DEKT Data Block.

### NOTES:

1. *The utilization of Simultaneous Voice and Data Transmission requires a PDIU-DI and digital telephone at each desired position.*

## RELATED FEATURES

All (Data).

## BENEFITS

This feature provides a more convenient and productive communications environment by eliminating the need for separate voice- and data-transmission units. This feature also reduces costs by allowing data devices to be added to any digital telephone, without the need for special cables.

## DESCRIPTION

Speed Dialing enables a PDIU-DI user to dial complete telephone numbers (of up to 16 digits) through the use of abbreviated address codes. Two types of Speed Dialing are provided:

- Speed Dial-System: Allows PDIU-DI users to access a system directory of up to 90 numbers.
- Speed Dial-Station: Allows PDIU-DI users to maintain a separate 10-number directory, which may be shared by any number of PDIU-DIs. A maximum of fifty 10-number directories are provided per system.

## OPERATION

(See Note 8 for PDIU-DS)

### SPEED DIAL STATION

#### TO USE:

##### For DKT/PDIU-DIs With an **SDU**, or **SDC** Button:

1. Press the data **DN** button.
2. Press the appropriate **SDU** or **SDC** button.
3. Dial the Speed-dial-station address code (0 ~9).
  - The system will dial the stored number.

##### For DKT/PDIU-DIs Without an **SDU**, or **SDC** Button:

1. Press the data **DN** button.
2. Dial the appropriate access code (**# 3**) \_\_\_\_\_.
3. Dial the Speed-dial address code (0 ~ 9).
  - The system will dial the stored number.

#### TO STORE OR CHANGE CODE NUMBERS:

1. Press the **SDC** button or dial the access code (**# # 3**) \_\_\_\_\_.
  - The SDC LED will flash, if equipped.
2. Dial the assigned single-digit code (0 ~ 9).
3. Dial the number to be stored (16 digits maximum).
  - It may be necessary to insert a pause to allow for dial-tone delay. To do this, press the **⏸** button after the entrance of the trunk access code.
4. Press the **SDC** button, or press **#** and hang up.
  - The SDC LED will go out, indicating that the number has been stored.
5. Record the Speed-dial code and telephone number for future reference.

## SPEED DIAL SYSTEM

### TO USE:

#### For DKT/PDIU-DIs With an **SDS** Button:

1. Press the data **DN** button.
2. Press the **SDS** button.
3. Dial the Speed-dial-system address code (10 ~ 99).
  - The system will dial the stored number.

#### For DKT/PDIU-DIs Without an **SDS** Button:

1. Press the data **DN** button.
2. Dial the access code (**#6**) \_\_\_\_\_.
3. Dial the Speed-dial-system address code (10 ~ 99).

### TO STORE OR CHANGE A NUMBER:

The Speed-dial-system list of telephone numbers must be stored by either a data terminal or the attendant console. Input from the data terminal is done via the DSDL Data Block. To input information via an attendant console, see System Speed Dial (Attendant Features):

## PROGRAMMING

1. Speed-dial access codes are assigned within the DACD Data Block.
2. Speed-dial-station lists are assigned to a specific button via the DEKT Data Block (see Note 4).
3. Speed-dial-station/system numbers can be stored and changed within the DSDL Data Block.

### NOTES:

1. Dial tone delays may be accomplished by using the **3** button to insert 3-second pauses. Each pause is counted as one digit against the allowable 16-digit limit.
2. The same speed-dial-station directory may be shared by several DKT/PDIU-DIs, but only one, known as the controller (SDC), has the ability to change or store numbers.
3. Speed-dial list numbers which are entered by DKT/PDIU-DI controllers or by an attendant are stored in volatile memory. However, the system will automatically store all such numbers on the disk each day if a Daily Dump is specified in the System Data Block (DSYS). If a power outage or system reload occurs before the data dump, then any newly stored numbers will be lost.
4. More than one Speed-dial-station **SDC** or **SDU** button and list may be assigned to a DKT/PDIU-DI in order to provide additional speed-dialing capabilities to the user or to gain efficiency in number storage.
5. Additional digits may be chained by dialing more than one Speed-dial number.

6. A DKT/PDIU-DI's designated Class of Service may restrict the DKT/PDIU-DI from accessing an SDS directory.
7. A DTK/PDIU-DI's designated Toll Restriction Class may deny access to a telephone number that is automatically dialed by Speed Dial.
8. PDIU-DIs use the **SDC**, **SDU**, and/or **SDS** buttons assigned to the corresponding digital telephone to activate Speed Dialing for either a voice or data call. Data devices connected to PDIU-DSs cannot access the Speed Dial feature.

## RELATED FEATURES

1. Redial Last Number Dialed (Station).
2. Automatic Dialing (Electronic/Digital Telephone).

## BENEFITS

Speed Dialing saves end-user time, by making calls to frequently-dialed numbers a simple operation, requiring only two or three easy-to-memorize keystrokes.

# Switching Between Modes

PERCEPTION

DIGITAL DATA FEATURES

**DESCRIPTION** Switching Between Modes allows a PDIU that is connected to another PDIU and is in the Communication mode, to be switched to the Command mode and back to the Communication mode by issuing AT commands.

**OPERATION** **To Escape the Communication Mode:**

1. Hold down the shift key and type + + +.
2. Change communication parameters as necessary.

**To Reenter the Communication Mode:**

1. Type **A T O**, and then press <ENTER>..
2. Data communication will resume.

**PROGRAMMING** None.

**RELATED FEATURES** All (Data).

**BENEFITS** This feature allows communication parameters to be changed without requiring the data call to be terminated and reestablished.

# ***Perception<sup>®</sup>e & ex***

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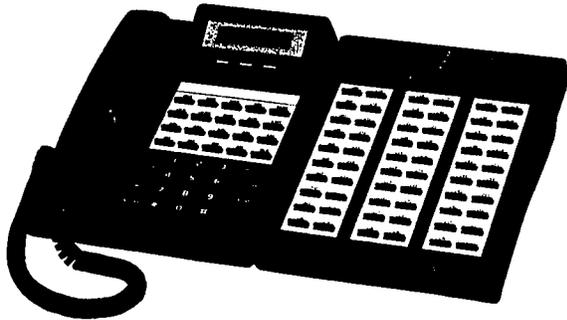
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**DSS/DDSS CONSOLE &  
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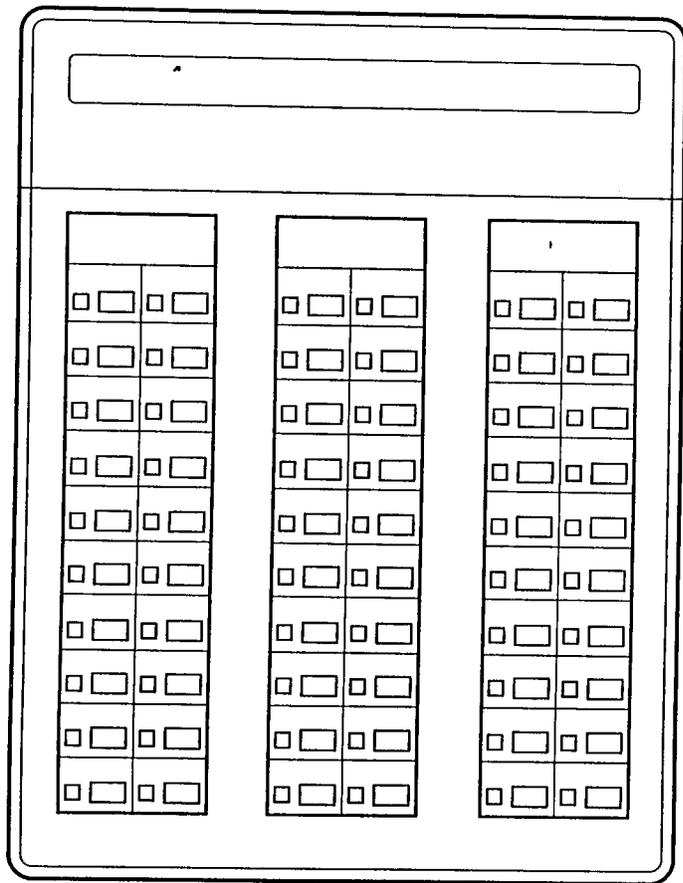


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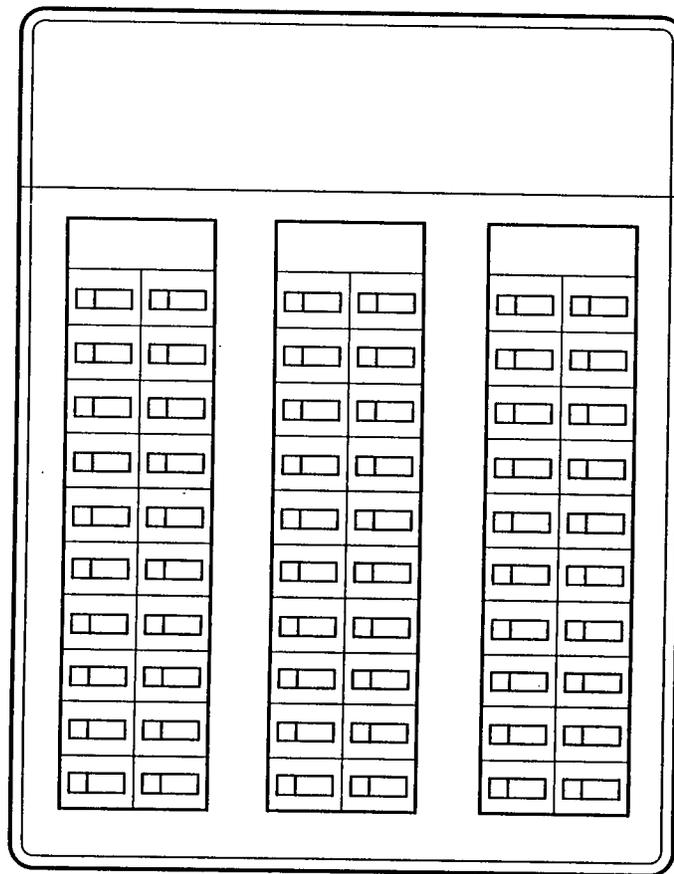
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Electronic DSS Console



Digital DSS Console

## GENERAL INFORMATION

The PERCEPTION<sub>e&ex</sub> Electronic/Digital Direct Station Selection Console and Attendant-Position Electronic/Digital Telephone allow a station user to perform many functions that are normally performed by an attendant console.

A DSS console allows calls to be received and directed to specific stations, and provides immediate information about station status. Each console's 60 programmable buttons can be assigned to access either specific calling features, or fixed, or switched directory numbers. If two consoles are assigned to a telephone set, 120 buttons are available for programmed use.

An electronic/digital telephone that is an assigned Attendant-Position Electronic/Digital Telephone has access to several important attendant console features, including the assignment and cancellation of a Meet-Me Page, the assignment of a Remote Access Code, the system-wide cancellation of registered Call Forwards, and the ability to alternate day and night system operation.

This user guide outlines the information that you will need to know to perform all of these various operations from your electronic/digital telephone.

---

## DIRECT STATION SELECTION (DSS) BUTTON OPERATION

All DSS console buttons are assigned in programming. Buttons can be assigned to access either a switched or fixed directory numbers (DNs), or calling features.

---

## FEATURE BUTTONS

A list of features that are available for DSS button assignment is shown on page 2. The operation of each of these features is identical to its operation on an electronic/digital telephone without a DSS console connection. Refer to the PERCEPTION<sub>e&ex</sub> Electronic Telephone User Guide, or Digital Telephone User Guide, whichever is applicable, for procedures regarding the operation of each of these features.

- Account Number
- Alphanumeric Message
- Automatic Callback
- Automatic Dialing, Fixed or Flexible
- Call Forward-All Calls
- Call Forward-Busy
- Call Forward-Busy/No Answer
- Call Forward-No Answer
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- Repeat Last Number Dialed
- Speaker Cut-off
- Speed Dial-Station
- Speed Dial-System
- Station-to-Station Message
- Universal Night Answer
- VCP

### DIRECT STATION SELECTION BUTTONS

DSS buttons can be assigned as either fixed or switched. Calling procedures for both DSS types are identical, except for the difference explained in the following paragraphs.

### FIXED DIRECTORY NUMBER BUTTONS

Fixed DSS console buttons are permanently assigned to a single extension directory number (1 ~ 4 digits). These buttons can be used either to perform a direct voice announcement, or to transfer calls to a station user. The LEDs that are associated with each of these buttons

also provide a busy lamp field, that indicates, at a glance, which directory numbers are busy or idle.

### SWITCHED DIRECTORY NUMBER BUTTONS

Each of the switched DSS console buttons is assigned to the last two digits of a directory number (e.g., 00 ~ 09). Entire directory numbers are formed through the use of an assigned Hundreds Group button, which, when selected, supplies the remaining first digit of a directory number. For example, when a Hundreds Group button of 2 is pressed, switched **DN** buttons 00 ~ 09 become buttons 200 ~ 209. When a Hundreds Group button of 3 is pressed, these same buttons become buttons 300 ~ 309. Up to nine Hundreds Group buttons may be assigned to either your electronic/digital telephone or your DSS console. If your electronic/digital telephone is connected to two switched DN DSS consoles, then these buttons control operation on both consoles.

Once the desired Hundreds Group button has been selected, these buttons can be used either to make a direct voice announcement, or to transfer calls to a station user, in exactly the same manner as a fixed DSS button.

The DSS LED that is associated with that **DN** button will light.

#### To Call Another Station:

1. Press the button which corresponds to the desired directory number.
2. To drop the connection, press the **SPKR/SPEAKER** button on your electronic/digital telephone.

#### To Transfer a Call to an Idle Station:

1. Press the DSS button which corresponds to the station to be called.
2. Hang up (or announce the call and then hang up).

The original call will automatically be placed on hold. The electronic/digital telephone LED, corresponding to the line on which the call originally arrived, will flash at twice the On-hold rate. The DSS LED corresponding to the station being called will flash.

The electronic/digital telephone LED corresponding to the line on which the call originally arrived will go out. The transferred call will ring the called station. The DSS LED corresponding to the station being called will light steadily when the called station connects with the transferred call.

**To Transfer a Call to a Busy Station:**

1. If a station is busy, and that station's directory number appears on a DSS button, then that button will be steadily lit.  
A call can still be transferred to the station, but will be camped-on (or will go into a Call Waiting State) until either the busy station hangs up, or the camp-on timeout period elapses.
2. Press the DSS button which corresponds to the station to be called.  
You will hear busy tone. The call will automatically be placed on hold. The electronic/digital telephone LED, corresponding to the line on which the call originally arrived, will flash at twice the On-hold rate.
3. Hang up.  
The electronic/digital telephone LED corresponding to the line on which the call originally arrived will go out. The call will be camped-on to the called station. The DSS LED corresponding to the called station will remain steadily lit.

**NOTES:**

1. If the called station does not pick up the camped-on (or Call Waiting) call before the Camp-on timeout period elapses, the call will recall to your station.
2. You may reconnect to a call at any time before the called party answers (and before releasing the transfer), by pressing the **DN** button corresponding to the line on which the call is being held.
3. If you attempt to transfer a call to a station that is either making or receiving an internal page, you will hear a busy tone, and the transfer will be prevented. There will be no LED indication on your DSS console to indicate that this station is busy.

**ATTENDANT-POSITION ELECTRONIC/DIGITAL TELEPHONE FEATURE OPERATION**

Up to eight electronic/digital telephones per system can be assigned as Attendant-Position Electronic/Digital Telephones. This designation allows the telephones to perform several operations that are normally associated exclusively with attendant consoles. It is strongly recommended that only LCD telephones be installed as Attendant-Position Electronic/Digital Telephones. The procedures for these operations are detailed in the following paragraphs.

**MEET-ME PAGE REGISTRATION**

Attendant-Position Electronic/Digital Telephones may perform a Meet-Me Page so that a specific individual can be notified of an incoming call.

*NOTE: LCD telephones are strongly recommended.*

**To Park a Call:**

1. While connected to a call, press **CONF/TRNS** and dial the Meet-Me Page access code (or press the feature button programmed as a fixed auto dial with the Meet-Me Page access code).
2. Dial the page access code. Make your announcement, giving the page zone displayed above, indicating the code to retrieve the page.

The call will automatically extend to the zone displayed on the LCD when the Meet-Me Page code (**110** ~ **125**) is dialed.

**To Recall a Meet-Me Page:**

To return the call to the Meet-Me Page zone and repage the party:

1. From an active call, hang up, or press **SPKR/SPEAKER** button while in the speaker mode to hang up.
2. Obtain dial tone and dial the desired page zone to repage the party.

The call will automatically return to the original zone.

**To Cancel a Meet-Me Page:**

1. Dial the Meet-Me Page cancel code (**150**) while connected to the active call (or press the feature button programmed as a fixed auto dial with the Meet-Me Page cancel access code). Do **not** press the **CONF/TRNS** button.

You can now transfer the call to another station or take a message for the caller.

**NOTES:**

1. There will be a break in the connection while the digits are dialed.
2. If the parked call is not picked up by the paged party before the Meet-Me Page timer expires (COT timer), the call will recall to your station. You can either repark the call, or cancel the Meet-Me Page and transfer the call to another station. An LCD electronic/digital telephone will indicate the call as a Meet-Me Page Recall: **MMP RCL TK XXXX**.

**REMOTE ACCESS CODE ASSIGNMENT**

An Attendant-Position Electronic/Digital Telephone can change the system's remote access code by dialing a special change code, followed by the new remote access code. The remote access code is used by outside callers to access PERCEPTION<sub>e&ex</sub> features.

**To alter a Remote Access Code:**

1. Go off-hook (or press the prime **[DN]**).
2. Dial the remote access change code **(# 1 2)**.
3. Dial the new remote access code.
4. Hang up your handset (or press **SPKR/SPEAKER** in speaker mode).
5. The new code will be registered in the system.

You will hear recall dial tone.

You will then hear recall dial tone.

**SYSTEM-WIDE CALL FORWARD CANCELLATION**

All call forwards that are currently registered in a system may be simultaneously canceled by an Attendant-Position Electronic/Digital Telephone.

**To Cancel All System Call****Forwards:**

1. Go off-hook.
2. Dial the Call Forward-All Clear access code **(# 1 8)**.
3. Hang up.
4. All call forwards in the system will be canceled.

You will hear recall dial tone.

*NOTE: Call Forwards that are set to the electronic/digital telephone will not be canceled.*

**SYSTEM NIGHT OPERATION BUTTON**

A System Night Operation button can be assigned to one Attendant-Position Electronic/Digital Telephone (or its connected DSS console) per system. (System Night Operation buttons are available only in systems which do not have an attendant console.) The use of this button will alternate the system between day and night operational modes. The ringing assignment of trunks will also be affected whenever this mode change is made. The alteration of modes allows you to tailor system operation to periods of greater/lesser call traffic, as well as to particular times of day.

**To Change System Operational Mode:**

1. Press the assigned System Night Operation **(SYS)** button.
2. To alternate the system operational mode back to its original mode, press the System Night Operation button again.

The system will now change over to its alternate mode (day or night). When the system is in night mode, the System Night Operation button's LED will light.

By subsequently pressing this button, the system will alternate between day and night operation.

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STANDARD TELEPHONE

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## INTRODUCTION

This user guide applies to any standard rotary or DTMF telephone that is used in a Toshiba PERCEPTION<sub>e</sub> or PERCEPTION<sub>ex</sub> system. Available features include six different types of Call Forward, Internal and External Paging access, and Voice Mail access (specific feature access depends upon each telephone's assigned Class of Service). Most features are accessed via convenient feature access codes. While standard codes for each operation are noted in this user guide, these codes can be altered in system programming. Verify your system's specific codes with your System Manager.

## GENERAL INFORMATION

Dial tone must be heard before dialing a particular feature. If you have just lifted the handset, you will hear a dial tone. If you are engaged in a conversation, you must obtain "Recall Dial Tone" before activating another feature (transfer, etc.).

During a conversation, Recall Dial Tone is obtained by "flashing" the hookswitch, located in the cradle that holds your handset. To flash, momentarily press the hookswitch (for about 1/2 second). In response, you will hear Recall Dial Tone.

## CALL PROGRESS TONES

Dial:	Standard tone—continuous tone; indicates that you can proceed to dial.
Recall Dial:	Standard Tone—three short pulses followed by continuous tone; indicates that you can proceed with feature execution.
Busy:	Standard tone—60 impulses per minute (IPM); indicates that the connection or trunk line you have dialed is busy.
Overflow:	Same as busy tone—120 IPM; indicates that your call has been blocked, due to dialing error or service restrictions.
Ringin:	Standard tone—1 second on, 3 seconds off; indicates that your call is ringin.

## RINGING SIGNALS

Internal Call: A single ring every four seconds.

External or Attendant Call:  
A double ring at four-second intervals.

---

## SPECIAL SIGNAL TONES (while the telephone is in use)

Camp-on: A single muted warning tone indicates that a call is waiting.

Call Waiting: Two short warning tones during a conversation indicate that a call is waiting.

Attendant Verification/Executive Override:  
A short tone burst (repeated every 15 seconds) is applied whenever the attendant enters the conversation, and when a station user enters your conversation by using the Executive Override feature.

## SPEED DIALING

### REPEAT LAST NUMBER DIALED

The system will automatically store the last number that you have dialed and will redial it when requested to do so. This is convenient when you have reached a busy or unanswered number, and want to try the call again.

You will hear dial tone.

The system will automatically redial the number.

---

### SPEED DIAL-STATION

If your telephone is equipped with Speed Dial-Station, you can establish a personal directory of up to 10 telephone numbers.

You will hear dial tone.

The system will dial the stored number.

You will hear dial tone.

You will hear recall dial tone.

It may be necessary to insert a pause to allow for dial tone delay. Press the **⏏** button after the trunk access code.

#### To Redial the Last Number:

1. Lift the handset.
2. Dial **#7**.

#### To Use Speed Dial-Station:

1. Lift the handset.
2. Dial **#3**.
3. Dial the Speed Dial-Station address code (0 ~ 9).

#### To Store or Change Code Numbers:

1. Lift the handset.
2. Dial **#\*3**.
3. Dial the assigned single-digit code (0 ~ 9).
4. Dial the number to be stored (16 digits maximum).

5. Dial **#**.

You will hear recall dial tone, and the number will be stored.

**NOTES:**

1. A Speed Dial-Station directory may be shared by several stations. However, only one station (designated as the controller) can store or change numbers.
2. Record each speed dial code and its corresponding telephone number for future reference.

---

### SPEED DIAL-SYSTEM

As many as 90 telephone numbers can be stored in your Speed Dial-System directory.

**To Use Speed Dial-System:**

1. Lift the handset.
2. Dial **#6**.
3. Dial the Speed Dial-System address code (10 ~ 99).

You will hear dial tone.

The system will dial the stored number.

**To Store or Change a Telephone Number:**

1. Notify the attendant of your request.

The Speed Dial-System directory is controlled by the attendant console, or through the TTY in the programming.

---

## CALL FUNCTIONS

### AUTOMATIC CALLBACK

If you attempt to call another station or access a trunk and receive a busy tone, you can request to be signaled when the desired station or trunk is idle. You may continue to use your telephone in the usual manner while awaiting a callback.

**To Activate Automatic Callback:**

1. Flash the hookswitch.
2. Dial **#7**.

You will hear recall dial tone.

You will hear dial tone.

3. Hang up and wait for callback, or dial another number.

**To Answer Automatic Callback:**

When the desired connection becomes idle, your telephone will ring in short bursts. You must pick up the call within six seconds, or your request will be canceled.

1. Lift the handset.

If the called party is a trunk, you will hear outside dial tone.

*NOTE: If the call was made using Least Cost Routing, then the called number will be dialed automatically.*

If the called party is a station, that station will ring and you will hear ringback tone. If you hear an overflow tone, this indicates that the station or trunk that you called has previously been called by another party. Hang up and wait to be called again.

**To Cancel Automatic Callback:**

1. Lift the handset.
2. Dial **#7**.

You will hear dial tone.

Callback will be canceled.

---

## CALL FORWARDING

Call Forwarding enables you to direct your station's incoming calls to another station. There are four types of call forwarding available:

- Call Forward All Calls.
- Call Forward Busy.
- Call Forward No Answer.
- Call Forward Busy/No Answer.

In addition, there are two types of Call Forwarding that apply to calls for DID, TIE, and CCSA trunks. When the following Call Forwarding types are used, calls can be routed **only** to the attendant:

- Call Forward Busy (System).
- Call Forward Busy/No Answer (System).

**To Call Forward All Calls:**

1. Lift the handset.
2. Dial **#9**.

You will hear dial tone.

You will hear recall dial tone.

3. Dial the number to which calls are to be forwarded.

4. Dial **#**. You will hear dial tone, and the number will now be stored.

**To Use Call Forward Busy:**

1. Lift the handset. You will hear dial tone.

2. Dial **# 1 0**. You will hear recall dial tone.

3. Dial the number to which calls are to be forwarded.

4. Dial **#**. You will hear dial tone, and the number will now be stored.

**To Use Call Forward No Answer:**

1. Lift the handset. You will hear dial tone.

2. Dial **# 1 1**. You will hear recall dial tone.

3. Dial the number to which calls are to be forwarded.

4. Dial **#**. You will hear dial tone, and the number will now be stored.

**To Use Call Forward Busy/No Answer:**

1. Lift the handset. You will hear dial tone.

2. Dial **# 1 2**. You will hear recall dial tone.

3. Dial the number to which calls are to be forwarded.

4. Dial **#**. You will hear dial tone, and the number will now be stored.

**To Use Call Forward Busy (SYSTEM/DID):**

1. Lift the handset. You will hear dial tone.

2. Dial **# 1 3**. You will hear recall dial tone.

3. Dial **0**.

4. Dial **#**. You will hear dial tone, and the number will now be stored.

**To Use Call Forward Busy/No Answer (SYSTEM/DID):**

1. Lift the handset. You will hear dial tone.

2. Dial **# 1 4**. You will hear recall dial tone.

3. Dial **0**.

4. Dial **#**. You will hear dial tone, and the number will now be stored.

**To Cancel All Types of Call Forwarding:**

1. Lift the handset. You will hear dial tone.

2. Dial **# 1 9**. You will receive recall dial tone. Call Forwarding will be canceled.

---

**CALL PICKUP DIRECTED**

Call Pickup Directed allows you to answer a call which is ringing or is on hold at a station other than your own.

**To Use Call Pickup:**

1. Lift the handset. You will hear dial tone.

2. Dial **# 6**. You will hear recall dial tone.

3. Dial the station number that is ringing/on hold. You will now be connected to that call.

---

**CALL PICKUP GROUP**

Call Pickup Group allows you to answer a call that is ringing at a station within your designated group, without knowing exactly which station number is ringing.

**To Use Call Pickup Group:**

1. Lift the handset. You will hear dial tone.

2. Dial **#4**.

You will be connected to any call that is ringing at any station in your group.

*NOTE: Calls can only be picked up from an idle station. Calls ringing on a secondary DN cannot be picked up if that station's primary DN is busy.*

---

### CONFERENCING

It is possible to create a three-party conference by adding another station or trunk party to an existing two-party conversation. Any of the three parties may disconnect at any time, leaving the remaining two parties connected. (The system will refuse to connect certain types of trunks.)

#### To Initiate a Conference:

1. Flash the hookswitch.
2. Dial the desired number.

The original connection will be placed on hold, and you will hear recall dial tone.

#### NOTES:

1. *If you hear a busy tone after dialing the station number or trunk access code, flash the hookswitch **once** to return to the original call.*
2. *To return to the original call after accessing a trunk, flash the hookswitch **twice**.*

3. Flash the hookswitch when the new party answers.

A three-party conference will now be established.

#### To Return to the Original Connection:

1. Flash the hookswitch.

The third party will be released and the original connection will remain.

---

### CONSULTATION CALL

This feature enables you to consult with an inside or outside party while you hold another call.

#### To Consult with Another Party:

1. Flash the hookswitch.

The original connection will be placed on hold, and you will hear recall dial tone.

2. Dial the desired number.

#### NOTES:

1. *If you hear a busy tone after dialing the station number or trunk access code, flash the hookswitch **once** to return to the original call.*
2. *To return to the original call after accessing a trunk, flash the hookswitch **twice**.*

#### To Return to the Original Connection:

1. Flash the hookswitch **twice**.
2. Resume your conversation.

The first flash will conference all three lines.

---

### DO NOT DISTURB

This feature allows a station to give a busy indication to callers whenever the user does not want to be disturbed.

You will hear dial tone.

DND will be activated.

*NOTE: Outgoing calls and features will still function while a telephone is in the DND mode. The telephone will appear to be busy to all incoming calls.*

You will hear dial tone.

The Do Not Disturb feature will no longer be active.

---

### OFF-HOOK CALL ANNOUNCE

The Off-hook Call Announce (OCA) feature allows a station user to voice announce through the speaker of another station (electronic telephone) that is currently busy. However, a standard telephone having this feature cannot receive OCA calls, they can only originate them.

The operation of this feature depends on whether or not the telephone is programmed for Manual (M) or Automatic (A) OCA operation.

#### To Establish Off-hook Call Announce from a Station:

1. Lift the handset.
2. Dial the directory number of the desired station.
3. A—If the calling station has an automatic OCA feature:  
B—If the calling station has a manual OCA feature:
  1. Depress the hook flash.
  2. Dial the OCA access code.
4. You may speak to the called party through the speaker.

You will hear dial tone.

The system reads call forwards and station hunting data, **since that takes precedence over OCA**, if the station has either feature set.

The called station will hear warning tone, and you will hear ringback tone. The OCA call is now established.

The called station will hear warning tone, and you will hear ringback tone. The OCA call is now established.

#### NOTES:

1. When the called station is having another OCA, your OCA will queue until the OCA in progress terminates.
2. If the called station is on-hook upon termination, your OCA automatically becomes an on-hook call.
3. If the called station is off-hook, your OCA becomes an off-hook call upon termination of OCA in progress.
4. A four-second delay may occur in the operation of OCA when the following instance takes place:  
Station A is talking to station B. Station A needs to consult with station C. Station A flashes the hookswitch and dials station C, only to find it busy. If station C is equipped for OCA, and station A's COS allows for OCA to be performed (it is programmed for manual mode in the DSTT Program), then the four-second OCA timer is automatically initiated. The voice path will then be opened for the announcement.

#### OUTGOING CALLS, DIRECT TRUNK ACCESS

Direct Trunk Access allows you to use a specific trunk to make an outgoing call.

#### To Make an Outgoing Call:

1. Lift the handset.
2. Dial the required trunk access code.
3. Dial the desired telephone number.

You will hear dial tone.

Trunk Access Codes: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

You will hear outside dial tone.

#### OUTGOING CALLS, LEAST COST ROUTING

The system will automatically select the least-costly route (trunk group) for the call that you want to make. If the route is busy, the next best route will be selected (if permitted by your Class of Service).

#### To Use Least Cost Routing:

1. Lift the handset.
2. Dial the LCR access code  
\_\_\_\_\_.
3. Dial the number that you want to call.
- 4A. If a trunk allowed by your Class of Service is available:
- 5A. Proceed with your conversation.  
... or ...
- 4B. If no trunks are available:
- 5B. Activate the Automatic Callback feature.

You will hear dial tone.

*NOTE: At this point, you will hear dial tone if your system has been programmed to supply it in this situation.*

Your call will be dialed automatically over the proper trunk, and you will hear call progress tones.

You will hear busy tone.

## STATION-TO-STATION CALLING

### To Call Another Station:

1. Lift the handset.
2. Dial the station telephone number.
3. Hang up when the call is complete.

You will hear dial tone.

You will hear the call progress tones.

---

## CALL HOLD AND TRANSFER

### CALL PARK

Call Park allows you to originate and receive calls at your station while a connected call is being held. If you do not return to the held call within a designated time period, then your telephone will ring to recall you.

### To Park a Call:

1. Flash the hookswitch.
2. Dial **1 8**.
3. Hang up and dial another call.

You will receive recall dial tone, and your call will be parked (held).

You will hear dial tone.

### To Reconnect the Call:

1. Lift the handset.
2. Dial **1 8**.

Your call will be reconnected.

*NOTE: If you do not return to the call within a designated time period, your telephone will ring to recall you. (If your telephone is busy, it will go to the ATT or UNA.)*

---

## CALL TRANSFER

### To Transfer a Call:

1. Ask the party to wait.

2. Flash the hookswitch.
3. Dial the desired number.

The original connection will be placed on hold, and you will hear recall dial tone.

You will be connected to the called party.

### NOTES:

1. If you hear a busy tone after dialing the station number or trunk access code, flash the hookswitch **once** to return to the original call.
2. To return to the original call after accessing a trunk, flash the hookswitch **twice**.

4. When the called party answers, announce the call.
5. Hang up to transfer the call.

The call will be transferred.

---

## CALL WAITING

If you are involved in a call and the attendant has an outside call waiting for you, you will be alerted of the call by two short warning tones. At this point, you have three choices:

1. Ignore the call; it will return to the attendant.
2. Terminate your existing call and accept the new call.
3. Hold the existing call and accept the new call. In this mode, it is possible to alternate between the two calls until the conversations are terminated.

### To Accept the Waiting Call and Terminate the Existing Call:

1. Hang up.
2. Answer the call.

Your telephone will ring in the normal manner.

### To Accept the Waiting Call While Holding the Existing Call:

1. Flash the hookswitch.
2. Dial **# 4**.

You will hear recall dial tone, and the original call will be placed on hold.

You will be connected to the waiting call.

### To Return to the Original Call:

1. Flash the hookswitch.

The new call will be placed on hold.

2. Talk to the party on the original call.

*NOTE: It is possible to alternate between the two calls indefinitely by using successive hookswitch flashes.*

#### To Disconnect One Call and Remain Connected to the Other Call:

1. Hang up while connected to the call you want to terminate.
2. Answer the remaining call.

Your telephone will ring.

*NOTE: Camp-on and Call Waiting are mutually exclusive.*

---

### CAMP-ON CALLS

If you are involved in a call and the attendant parks another incoming call at your station, you will be alerted of the parked (camped-on) call by a short warning tone.

#### To Accept a Camp-on Call:

1. Complete the original call.
2. Hang up.
3. Answer the call.

Your telephone will ring.

*NOTE: Camp-on and Call Waiting are mutually exclusive.*

---

### MESSAGES

#### EXTERNAL ZONE PAGING (FIVE-ZONE PAGING)

##### To Page a Single External Zone:

1. Lift the handset.
2. Dial the External Paging Access Code (1 5 4).

You will hear dial tone.

3. Dial the desired paging zone number (0 ~ 4).
4. Announce your page.
5. Hang up when your page is complete.

You are now connected to the single external page zone.

Speak slowly and distinctly, and repeat your message.

Your page will be terminated.

##### To Page All External Zones:

1. Lift the handset.
- 2A. Dial the External All-Zone Paging access code (1 5 4).  
... or ...
- 2B. To page all the External Paging Zones in addition to the Expanded Internal Paging Group, dial \_\_\_\_\_. (Programmed in DSYS).

You will hear dial tone.

You are now connected to the all external page zones.

You are now connected to the all external page zones and the expanded internal paging group.

3. Announce your page.
4. Hang up when your page is complete.

Speak slowly and distinctly, and repeat your message.

Your page will be terminated.

---

### INTERNAL GROUP PAGING

##### To Page a Single Internal Paging Group:

1. Lift the handset.
2. Dial the Internal Paging access code (1 5 1).
3. Dial the desired paging group number (2 ~ 17).
4. Announce your page.
5. Hang up when your page is complete.

You will hear dial tone.

You are now connected to the single internal page group.

Speak slowly and distinctly, and repeat your message.

Your page will be terminated.

**To Page the Expanded Internal Paging Group:**

1. Lift the handset. You will hear dial tone.
- 2A. Dial the Expanded Internal Paging access code (1 5 2).  
... or ... You are now connected to the expanded internal page group.
- 2B. To page the Expanded Internal Paging Group in addition to all the External Paging Zones, dial \_\_\_\_\_. (Programmed in DSYS). You are now connected to the expanded internal page group and all external page zones.
3. Announce your page. Speak slowly and distinctly, and repeat your message.
4. Hang up when your page is complete. Your page will be terminated.

**MEET-ME PAGE**

This feature will automatically connect you to a call that has been "parked" for you by the operator. If you are away from your telephone, the operator may park the call and direct you, via the page system, to dial an access code.

**To Answer a Meet-me Page:**

1. Lift the handset (at any telephone). You will hear dial tone.
2. Dial the access code. You will immediately be connected to the caller.

**MESSAGE WAITING**

This feature allows the attendant or other Message Center to inform a station user that there is a message waiting. There are two signaling possibilities:

1. If your station is equipped with a Message Waiting light, it will flash on and off.
2. If your station is not equipped with a Message Waiting light, then it will receive a double ring every 20 minutes (when Message Waiting has been set by either the attendant console or an electronic

telephone). You will automatically be connected to the Message Center when you go off-hook. (You will not receive the ring every 20 minutes if voice mail sets the MSG light.)

**To Cancel Message Waiting:**

- 1A. Lift the handset. You will hear dial tone.
- 2A. Dial the Message Center.
- 3A. Collect your message(s).
- 4A. Hang up.  
... or ...
- 1B. Lift the handset. You will hear dial tone.
- 2B. Dial 1 5 2. Message Waiting will be canceled.
- 3B. Hang up.

**VOICE MAIL**

If your system is equipped with a Toshiba INTOUCH Digital Voice Messaging System, then refer to the INTOUCH User Guide for voice mail operating instructions. If your system uses a voice messaging system other than INTOUCH, refer to its specific manufacturer's literature for correct operating instructions. General Call Forwarding instructions, which apply to most voice mail systems, are as follows:

**To Call Forward to Voice Mail:**

1. Dial the access code for the desired Call Forward type, followed by the system's voice mail access number and your mailbox number.

2. Dial 1 5 2.

Calls will be forwarded to your voice mail.

**To Cancel Call Forward to Voice Mail:**

1. Dial 1 5 2.

Call forwarding will be canceled.

## MISCELLANEOUS FEATURES

### ACCOUNT CODE CALLS

For accurate billing purposes, you may be required (forced) to dial an account code before making outside calls. On other calls, you may wish to record an account number voluntarily after either dialing an outside number, or receiving an incoming call. The code you enter will be recorded on the Station Message Detail Recording (SMDR) printout with the details of your call. The Account Code Length (ACL) must be entered in the Station Message Detail Recording Data Block (DMDR) program. This feature will not operate without it.

#### To Record a Forced, or a Forced and Verifiable Account Code (Direct Trunk Access or Least Cost Routing):

- |  |  |
|--|--|
| 1. Access a CO line (by dialing the DTA or LCR access code).             | You will hear dial tone.   |
| 2. Dial the distant directory number.                                    | You will hear recall dial tone.  |
| 3. Dial the 1- ~ 12-digit account code (determined in the DMDR Program). | The account code is saved to output to the SMDR. The system stores the dialed directory number to auto-dial queue, and the trunk call is made. |

*NOTE: The Forced/Verifiable Account Code can be applicable to either all calls or toll calls only (Programming Option).*

#### To Record a Verifiable Account Code Before Dialing a Call:

- |  |                          |
|--|--------------------------|
| 1. Lift the handset.   | You will hear dial tone. |
| 2. Dial the CRG access code.   | You will hear dial tone. |
| 3. Dial the 1- ~ 12-digit account code (determined in the DMDR Program). |                          |
| 4. Dial the direct trunk access code and the desired telephone number.   | The trunk call is made.  |

#### To Record a Verifiable Account Code During a Call (Incoming or Outgoing) and/or After a Call Is Completed:

- |  |  |
|--|--|
|  | This procedure applies when a station user forgets to enter an account code before a call. The account code can still be entered during a call, or after the call is completed, provided it is done prior to the station user hanging up and before the ACT timer expires. |
|  | At any time before disconnect ...  |
| 1. Ask your party to wait, then flash the hookswitch.                    | You will hear recall dial tone, and your connection will be placed on hold.  |
| 2. Dial the CRG access code.   | You will hear recall dial tone.  |
| 3. Dial the 1- ~ 12-digit account code (determined in the DMDR Program). | The system will store the account code to output to SMDR. You will hear recall dial tone.  |
| 4. Flash the hookswitch.   |  |
| 5. Resume your conversation.   | Upon completion of call, the system sets the ACT timer automatically. Before the timer expires ...   |
| 1. Lift the handset.   | You will hear dial tone.   |
| 2. Dial the CRG access code.   |  |
| 3. Dial the 1- ~ 12-digit account code (determined in the DMDR Program). | The account code is set, the SMDR is printed out, and the line locks out. You will hear dial tone.   |
| 4. Hang up.  |  |

---

### ACCOUNT NUMBER RECORDING

Your system automatically records the details of some or all of the calls you make to or receive from outside the system. Recorded calls may be assigned account numbers for billing purposes (1 ~ 12 digits).

**To Record a Voluntary Account Number Before Dialing a Call:**

1. Lift the handset. You will hear dial tone.
2. Dial #9.
3. Dial the account number on the dialpad (\_\_\_\_ digits). When the number is completed, you will receive dial tone.
4. Dial the call in the usual manner.

**To Record a Voluntary Account Number During a Call (Incoming or outgoing):**

1. Flash the hookswitch. At any time before disconnect, ask your party to wait. The connection will be placed on hold, and you will hear recall dial tone.
2. Dial #9. You will hear recall dial tone.
3. Dial the account number (\_\_\_\_ digits). You will receive recall dial tone.
4. Flash the hookswitch.
5. Resume your conversation.

**AUTOMATIC WAKE-UP TIME/TIMED REMINDER**

Automatic Wake-up allows the station user to set a "wake-up" alarm that will ring the station at a prearranged time. After answering a wake-up call, the station will receive either a digitized voice message, music, or silence. If the wake-up call is not answered within six rings, or if the station is busy, a second, and if necessary, a third attempt will be made at five-minute intervals. The time is entered based on a 24-hour clock. (For any hour after 12:00 noon, add 12.)  
 Example: 9:30 AM is 0930.  
 9:30 PM is 2130.

**To Set Automatic Wake-up Time/Timed Reminder:**

1. Lift the handset. You will hear dial tone.

2. Dial #80. You will hear recall dial tone.
3. Dial the 4-digit time (via the dialpad) in the following format:  
 HHMM  
 Example: For 9:30 AM, enter 0930.  
 You will hear dial tone, and the time will now be stored.

**To Cancel Automatic Wake-up Time /Timed Reminder:**

1. Lift the handset. You will hear dial tone.
2. Dial #80.
3. Dial the four-digit time 0000. You will hear dial tone, and your wake-up time will be canceled.

**EXECUTIVE OVERRIDE**

Executive Override allows you to enter an established conversation. The conversing parties will receive a warning tone before you are conferenced into the connection.

**To Override a Busy Station:**

1. Flash the hookswitch. Busy tone will change to recall dial tone.
2. Dial #0.

A warning tone will be given to the existing connection. A 3-way conference will now exist (any one of the parties can leave the conference and the other two will remain connected).

*NOTE: A short tone will be heard every 15 seconds by all parties during the override condition.*

**MAID-IN-ROOM STATUS\***

This feature allows an attendant console to keep an up-to-date register of rooms currently being serviced by a maid. By using the guest-room telephone, the maid can inform the attendant that he/she is currently in the room.

**To Set Maid-In-Room Status:**

1. Lift the handset. You will hear dial tone.

2. Dial #00.

You will hear recall dial tone.

3. Dial #01.

You will hear recall dial tone, and Maid-in-Room status will be set.

**To Cancel Maid-in-Room Status:**

1. Lift the handset.

You will hear dial tone.

2. Dial #00.

You will hear recall dial tone.

3. Dial #02.

You will hear recall dial tone, and Maid-in-Room status will now be canceled.

**To Cancel Maid-in-Room Status and Set Room Clean Status:**

1. Lift the handset.

You will hear dial tone.

2. Dial #00.

You will hear recall dial tone.

3. Dial #03.

You will hear recall dial tone, Maid-in-Room status will now be canceled, and room clean status will be set.

*\*Available in Lodging/Health Care systems only.*

---

**TOLL RESTRICTION/CLASS OF SERVICE OVERRIDE**

This feature allows a station user to override the assigned TOL and COS, and assign class O of TOL and COS for the duration of the call to be made. Upon completion of the call, the station user's assigned TOL and COS will take precedence again.

**To Use Traveling Class of Service:**

1. Lift the handset.

You will hear dial tone.

2. Dial the Traveling Class of Service access code (\_\_\_\_).

You will hear dial tone.

3. Dial the DTA or LCR code and the desired telephone number.

**UNIVERSAL NIGHT ANSWER**

**To Answer an Incoming Call When the Night Bell Is Heard:**

1. Lift the handset.

You will hear dial tone.

2. Dial 11.

You will be connected to the incoming call.

3. Speak to the caller.

4. Use Call Transfer to connect the call with the desired station.

# TOSHIBA

## ELECTRONIC TELEPHONE USER GUIDE

B U S I N E S S  
T E L E P H O N E S  
S O L U T I O N S



# PERCEPTION

**e & ex**  
DIGITAL PBX



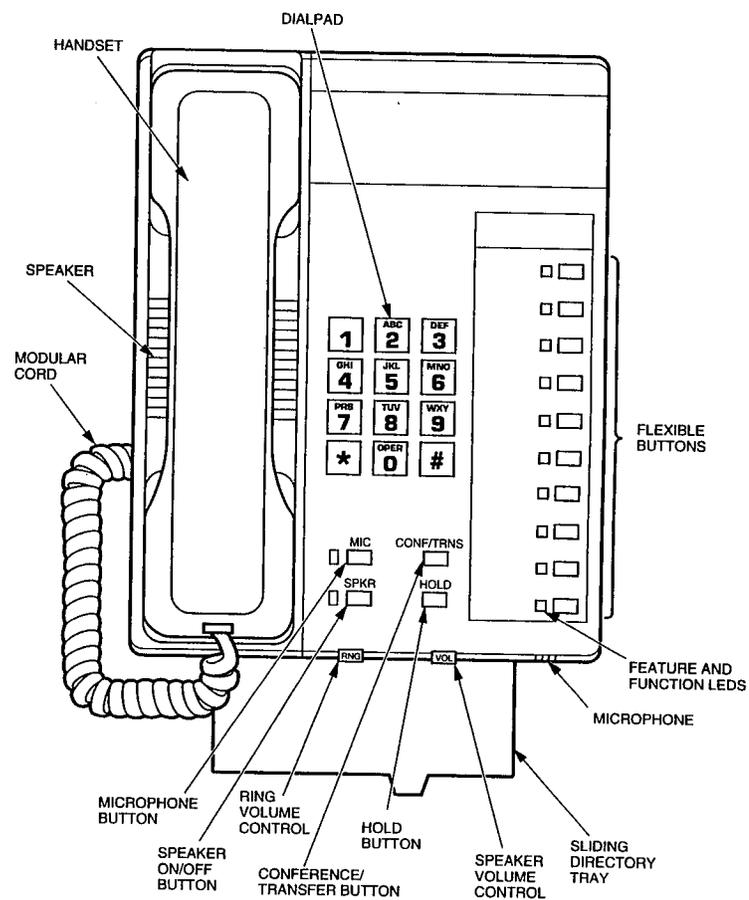
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ELECTRONIC TELEPHONE

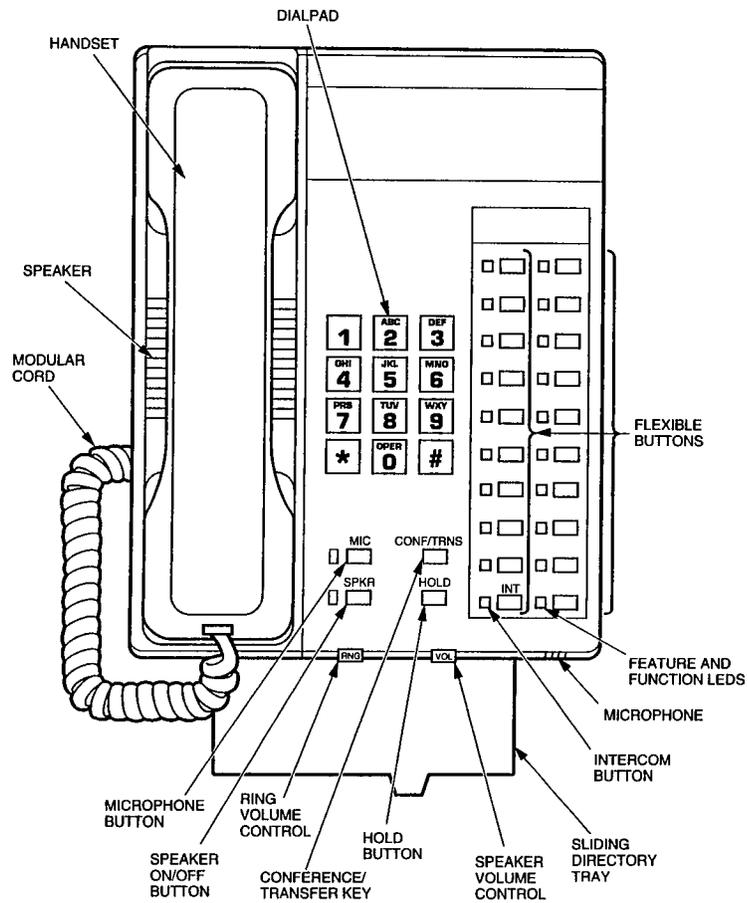
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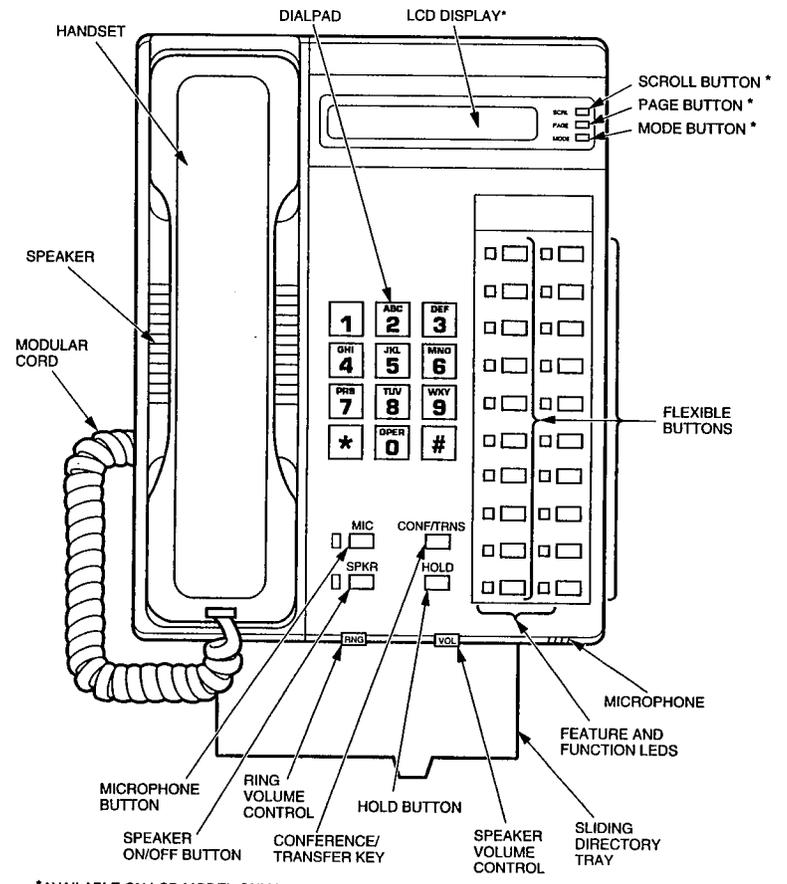
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10-button Electronic Telephone



20-button Electronic Telephone



\*AVAILABLE ON LCD MODEL ONLY

20-button Liquid Display Telephone

## GENERAL INFORMATION

Your electronic telephone has been designed to provide easy access to the wide range of features offered by your telephone system. Each telephone is equipped with a dialpad, 14 or 24 feature buttons, a speaker with volume control, and a handset. (A second modular connector can be used for a headset or other external device.)

Many electronic telephones in your system are provided with specific buttons that activate features. This is for your communications convenience, by speeding and enhancing telephone usage. However, because the system is so feature-rich, not all of its features can be assigned buttons. These additional features are accessed by dialing codes (which are indicated in this guide by appearing after the button, usually in parenthesis).

---

## CALL PROGRESS TONES

Dial:	Standard tone—continuous; proceed to dial.
Recall Dial:	Standard tone—three short pulses followed by continuous tone; proceed with feature execution.
Busy:	Standard tone—60 impulses per minute (IPM); the station or trunk you have dialed is busy.
Overflow:	Same as busy tone—120 IPM; your call has been blocked due to dialing error or service restrictions.
Ringling:	Standard tone—1-second on, 3-seconds off; your call is ringling.

---

## SPECIAL SIGNAL TONES (While Telephone Is In Use)

Camp-on:	A single, muted warning tone indicates that a call is waiting.
Call Waiting:	Two short warning tones via the speaker accompanied by a flashing Call Waiting LED indicate that a call is waiting.

**Attendant Verification/Executive Override:**

A short tone burst via the handset (repeated every 15 seconds) is applied whenever the attendant enters the conversation, and when a station user enters your conversation using the Executive Override feature.

**RINGING SIGNALS**

**Internal Call:** A ringing signal via the speaker every 4 seconds.

**External or Attendant Call:**  
A double ringing signal via the speaker at 4-second intervals.

**DN LED INDICATIONS**

Several LED illumination states are used to indicate the status of a DN.

**Flash:** 1/2-second on, 1/2-second off—indicates an incoming call.

**In-use:** 2-seconds on, 1/8-second off, 1/8-second on—indicates that a DN is in use at your telephone.

**On:** Steady on—indicates that a DN is in use at another telephone.

**On-hold:** 1/20-second on, 1/20-second off—indicates that a call is on hold at your telephone.

**Wink:** 3/8-second on, 1/8-second off—indicates that a call is on hold at another station.

**Off:** DN is idle.

**SPEED DIALING****AUTOMATIC DIALING**

An Automatic Dialing (ADL) button allows you to store and automatically dial any telephone number (up to 16 digits) by pressing a single button.

The stored number can be a station number, access code, or outside number. If your telephone has Flexible Automatic Dialing, then you can store numbers directly from your telephone. If, however, your telephone has Fixed Automatic Dialing, stored numbers are fixed and can only be altered via programming.

**To Dial a Stored Telephone Number:**

1. Lift the handset.
2. Press the appropriate ADL button.

You will hear dial tone.

The telephone number will be dialed.

**To Store a Telephone Number (for Telephones with Flexible Automatic Dialing):**

1. Leave the handset on-hook.
2. Press the desired ADL button.
3. Dial the telephone number to be stored (16 digits maximum).
4. Press the ADL button again.

The ADL LED will flash.

*NOTE: It may be necessary to insert a pause to allow for dial tone delay. To enter a pause, press the **PAUSE** button after the trunk access code.*

The ADL LED will go out, and the telephone number will be stored.

**REPEAT LAST NUMBER DIALED**

The system automatically stores the last number that you dialed. This enables you to quickly redial when the number that you have dialed is either busy or is not answered.

**To Redial the Last Number:**

1. Lift the handset.
2. Press the **RND** button, or dial the access code **#7** \_\_\_\_\_.

You will hear dial tone.

The system will automatically redial the number.

**SPEED DIAL-STATION**

If your telephone is equipped with Speed Dial-Station button(s), you can establish a personal directory of up to 10 telephone numbers per list.

**To Use Speed Dial-Station:**

1. Lift the handset.
2. Press the appropriate **SDC** or **SDU** button, or dial the access code (# **5**) \_\_\_\_\_.
3. Dial the Speed Dial-Station address code (0 ~ 9).

You will hear dial tone.

The SDC or SDU LED will flash.

The SDC or SDU LED will go out, and the system will dial the stored number.

A Speed Dial-Station directory may be shared by several stations. However, only one of these stations, designated as the controller, can store or change numbers.

**To Store Numbers or Change Address Codes:**

1. Leave the handset on-hook.
2. Press the **SDC** button or dial the access code (# **5**) \_\_\_\_\_.
3. Dial the assigned single-digit code (0 ~ 9).
4. Dial the number to be stored (16 digits maximum).

The SDC LED will flash.

*NOTE: It may be necessary to insert a pause to allow for dial tone delay. To enter a pause, press the **⏸** button after the trunk access code.*

5. Press the **SDC** button, or press the **⏸** button if the access code was used.

The SDC LED will go out, and the number will be stored.

6. Hang up.

7. Record the Speed Dial-Station address code and telephone number for future reference.

**SPEED DIAL-SYSTEM**

As many as 90 telephone numbers can be stored in the Speed Dial-System directory.

You will hear dial tone.

The SDS LED will flash.

The system will dial the stored number.

**To Use Speed Dial-System:**

1. Lift the handset.
2. Press the **SDS** button or dial the access code (# **5**) \_\_\_\_\_.
3. Dial the Speed Dial-System address code (10 ~ 99).

**To Store or Change a Telephone Number:**

1. Notify the attendant.

(The Speed Dial-System directory is controlled by the attendant console.)

*NOTE: In a consoleless operation, the Speed Dial-System is set and changed via the programming terminal (TTY connection).*

**CALL FUNCTIONS****AUTOMATIC CALLBACK**

If you attempt to call another station or access a trunk and receive a busy tone, you can request to be signaled when the desired station or trunk is idle. You may continue to use your telephone in the usual manner while awaiting a callback.

You will hear recall dial tone, and the ACB LED (if equipped) will light.

**To Activate Automatic Callback:**

1. Press the **ACB** button, or press the **CONF** button and dial the access code (# **7**) \_\_\_\_\_.
2. Hang up and wait for the callback, or dial another call.

**To Answer Automatic Callback:**

1. When the desired connection becomes idle, your telephone will signal once.
2. You must pick up the call within six seconds.
3. Lift the handset or press the prime **DN** button.
- 4A. If the called party is a trunk:
5. Proceed to dial.

The ACB LED (if equipped) and the DN LED will flash.

If you do not, your request will be canceled. (This time period is programmable.)

You will hear outside dial tone.

*NOTE: If the call was made using Least Cost Routing, then, at this point, the called number will be dialed automatically.*

- 4B. If the called party is a station:

The called station will ring, and you will hear ringback tone. If you hear overflow tone, this indicates that another station had already either camped onto, registered an Automatic Callback, or placed a call to that station before you.

- 4C. Hang up and wait to be called again.

**To Cancel Automatic Callback:**

1. Press the **ACB** button, or obtain dial tone and dial the access code **(117)** \_\_\_\_\_.
2. Hang up.

The ACB LED (if equipped) will go out, and the callback will be canceled.

**CALL FORWARDING**

Call Forwarding enables you to direct your station's incoming calls to another station. There are four types of call forwarding available:

- Call Forward All Calls
- Call Forward Busy
- Call Forward No Answer
- Call Forward Busy/No Answer

In addition, there are two types of Call Forwarding System that apply to calls from DID, TIE, and CGSA trunks. These types of Call Forwarding can **only** be directed to an attendant console:

- Call Forward Busy (System/DID)
- Call Forward Busy/No Answer (System/DID)

*NOTE: Only one type of Station Call Forwarding can be in use at a time.*

**To Call Forward All Calls:**

- 1A. Press the **CFD** button.

The CFD LED will flash.

- 2A. Dial the number to which calls are to be forwarded.

- 3A. Press the **CFD** button.

The CFD LED will light steadily.

...or... (if a **CFD** button is not provided)

- 1B. Obtain dial tone.

- 2B. Dial the access code **(19)** \_\_\_\_\_.

You will hear recall dial tone.

- 3B. Dial the number to which calls are to be forwarded.

- 4B. Dial **#**.

You will hear dial tone, and the number is stored.

- 5B. Hang up.

**To Use Call Forward Busy:**

- 1A. Press the **CFBY** button.

The CFBY LED will flash.

- 2A. Dial the number to which calls are to be forwarded.

- 3A. Press the **CFBY** button.

The CFBY LED will light steadily.

... or ... (if a **CFBY** button is not provided)

- 1B. Obtain dial tone.

- 2B. Dial the access code **(#10)** \_\_\_\_\_.

You will hear dial tone.

3B. Dial the number to which calls are to be forwarded.

4B. Dial **#**. You will hear dial tone, and the number is stored.

5B. Hang up.

**To Use Call Forward No Answer:**

1A. Press the **CFNA** button. The CFNA LED will flash.

2A. Dial the number to which calls are to be forwarded.

3A. Press the **CFNA** button. The CFNA LED will light steadily.

... or ... (if the **CFNA** button is not provided)

1B. Obtain dial tone.

2B. Dial the access code **(# 1 1)**. You will hear recall dial tone.

3B. Dial the number to which calls are to be forwarded.

4B. Dial **#**. You will hear dial tone, and the number will be stored.

5B. Hang up.

**To Use Call Forward Busy/No Answer:**

1A. Press the **CFBN** button. The CFBN LED will flash.

2A. Dial the number to which calls are to be forwarded.

3A. Press the **CFBN** button. The CFBN LED will light steadily.

... or ... (if the **CFBN** button is not provided)

1B. Lift the handset. You will hear dial tone.

2B. Dial the access code **(# 1 2)**. You will hear recall dial tone.

3B. Dial the number to which calls are to be forwarded.

4B. Dial **#**. You will hear dial tone, and the number will be stored.

5B. Hang up.

**To Use Call Forward Busy (SYSTEM/DID):**

1A. Press the **CFSB** button. The CFSB LED will flash.

2A. Dial **0** (the **only** number to which calls can be forwarded).

3A. Press the **CFSB** button. The CFSB LED will light steadily.

... or ... (if the **CFSB** button is not provided)

1B. Lift the handset. You will hear dial tone.

2B. Dial the access code **(# 1 3)**. You will hear recall dial tone.

3B. Dial **0**.

4B. Dial **#**. You will hear dial tone, and the number will be stored.

5B. Hang up.

**To Use Call Forward Busy/No Answer (SYSTEM/DID):**

1A. Press the **CFSN** button. The CFSN LED will flash.

2A. Dial **0** (the **only** number to which calls can be forwarded).

3A. Press the **CFSN** button. The CFSN LED will light steadily.

... or ... (if the **CFSN** button is not provided)

1B. Lift the handset. You will hear dial tone.

2B. Dial the access code **(# 1 4)**. You will hear recall dial tone.

3B. Dial **0**.

4B. Dial **7**.

5B. Hang up.

You will hear dial tone, and the number will be stored.

*NOTE: You may continue to place outgoing calls from your telephone while Call Forwarding is in effect.*

#### To Cancel All Types of Call Forwarding:

1A. Press the appropriate Call Forward button.

The LED will go out, and Call Forwarding will be canceled.

...or... (if no Call Forward button is provided)

1B. Lift the handset.

You will hear dial tone.

2B. Dial the access code **(F 4)** \_\_\_\_\_.

You will hear dial tone, and Call Forwarding will be canceled.

3B. Hang up.

---

### CALL PICKUP DIRECTED

Call Pickup Directed allows you to answer a call that is ringing or on hold at a station other than your own. The call can be answered via a **CPD** button or a Call Pickup Directed access code.

#### To Use Call Pickup Directed:

1. Lift the handset.

You will hear dial tone.

2. Press the **CPD** button or dial the access code **(F 5)** \_\_\_\_\_.

You will hear recall dial tone.

3. Dial the station number that is ringing/on hold.

You will be connected to that call.

*NOTE: A call which rings on a secondary DN can be picked up by dialing the secondary DN, but only when the primary DN is idle.*

### CALL PICKUP GROUP

Call Pickup Group allows you to answer a call that is ringing at a station within your designated group without knowing exactly which station number is ringing. The call can be answered via a **CPC** button or a Call Pickup Group access code.

#### To Use Call Pickup Group:

1. Lift the handset.

You will hear dial tone.

2. Press the **CPC** button or dial the access code **(F 4)** \_\_\_\_\_.

You will be connected to any call that is ringing at any station in your group.

*NOTE: Calls can only be picked up from an idle station. Calls cannot be picked up on a secondary DN if the primary DN is busy.*

---

### CONFERENCING

By using the **CONF** button, it is possible to add a third party to an existing two-party conversation. The added party can be either a station or an outside party. It is possible for any of the three parties to disconnect at any time, leaving the remaining two parties connected. (The system will refuse to connect certain types of trunk lines.)

#### To Initiate a Conference:

1. Press the **CONF** button.

The original connection will be placed on hold, and you will hear recall dial tone. The DN LED indication will change from In-use to On-hold status.

2. Dial the desired number.

3. Press the **CONF** button when the new party answers.

The DN LED indication will change from On-hold to In-use status. A 3-party conference will be established.

#### To Return to Your Original Connection:

1. Press the appropriate **DN** button.

The third connection will be released and the original connection will remain.

**CONSULTATION CALL**

This feature enables you to consult with either an inside or outside party while you simultaneously have another call on hold.

**To Consult:**

1. Press the **CONF** button.
2. Dial the desired number.

The original connection will be placed on hold, and you will hear recall dial tone. The DN LED indication will change from In-use to On-hold status.

You will be connected to the third party.

**To Return to the Original Connection:**

1. Press the appropriate **DN** button.
2. Resume your conversation.

The DN LED indication will change from On-hold to In-use status, and the third party will be disconnected.

**DO NOT DISTURB**

Do Not Disturb allows a station to give a busy indication whenever the user does not want to be disturbed. DND can only be applied to a station's primary DN.

The DND LED will light, and Do Not Disturb will be activated.

... or ... (if a **DND** button is not provided)

You will hear dial tone.

**To Activate DND:**

- 1A. Press the **DND** button.

- 1B. Lift the handset.

- 2B. Dial the access code **(#) 2)**

- 3B. Hang up.

Do Not Disturb will be activated.

**To Cancel DND:**

- 1A. Press the **DND** button.

The DND LED will go out, and Do Not Disturb will be canceled.

... or ... (if a **DND** button is not provided)

You will hear dial tone.

- 1B. Lift the handset.

- 2B. Dial the access code **(#) 2)**

- 3B. Hang up.

Do Not Disturb will be canceled.

**NOTES:**

1. *Outgoing calls and features will still function while the telephone is in the DND mode; however, the telephone will appear to be busy to any incoming calls.*
2. *The activation of Do Not Disturb will not interfere with Internal Paging.*

**HANDSFREE ANSWERBACK/SPEAKER CUT-OFF**

This feature allows you to reply handsfree on voice page calls and (optionally) on the following types of calls:

- Station-to-Station calls on standard **DN** buttons.
- Calls from the attendant console.

*NOTE: If the Speaker Cut-off (SCO) feature is activated (SCO LED on), the Handsfree Answerback feature will be disabled and all calls will ring your telephone in the usual manner.*

**To Answer a Call Handsfree:**

1. Listen to a single tone.
2. Speak in the direction of the telephone.
3. Lift the handset to speak privately.

The DN LED will indicate In-use status, the SCO LED will flash, and the SPKR LED will light.

*NOTE: If the attendant, Attendant-Position Electronic Telephone, or another station is announcing an outside call and you do not pick up the handset, the handsfree connection will be broken when the announcer releases, and the outside call will ring the **DN** button in the usual manner.*

**To Activate Speaker Cut-off:**

1. Press the **SCO** button.

The SCO LED will light, and the call will now ring your telephone.

**To Release Speaker Cut-off:**

1. Press the **SCO** button.

The SCO LED will go out, and Handsfree Answerback will now be active.

**LEAST COST ROUTING**

Your system will automatically select the least costly route (trunk group) for the call that you want to make. If that route is busy, the next best route will be selected (if permitted by your Class of Service).

In **D.05** software, the Least Cost Routing Enhancement for "011" will expand the PERCEPTION system's capability to include international calls in its Least Cost Routing. Your system will automatically select the least costly route for the international calls that you want to make, provided the calls are permitted.

**To Use Least Cost Routing:**

1. Lift the handset.
2. Dial the access code **(#) (#) (\*)**.
3. Dial the number that you want to call.
- 4A. If a trunk that is allowed by your Class of Service is available:
- 5A. When the party answers, you can begin your conversation.  
... or ...

You will hear dial tone.

\*You may hear dial tone at this point if your system is programmed to do so.

Your call will automatically be dialed over the proper trunk, and you will hear call progress tones.

**NOTE:** If your system has been programmed to do so, you will receive a 1-second warning tone before the system advances to the last choice routing.

- 4B. If no trunks are available:

You will hear busy tone.

- 5B. Activate the Automatic Callback feature.

Automatic Callback will be activated.

**OFF-HOOK CALL ANNOUNCE**

The Off-hook Call Announce feature allows a station user to voice announce through the EKT speaker of another station that is currently busy.

**To Establish Off-hook Call Announce from a Station:**

1. Lift the handset.
2. Dial the directory number of the desired station.
- 3A. If the calling station has an automatic OCA feature:
- 3B. If the calling station has a manual OCA feature, there are two ways to complete the call:
  - a. Press the **OCA** button.  
... or ...
  - b. Press the **CONF/TRANS** button, and dial the access code **(#) (#) \_\_\_\_\_**.
4. You may speak to the called party.

You will hear dial tone.

The system reads call forwards and station hunting data, to see if they are set, since those features take **precedence** over OCA.

The called station will hear warning tone, and you will hear ringback tone.

The OCA LED will flash.

The called station will hear warning tone, and you will hear ringback tone. The OCA call is established.

**NOTES:**

1. When the called station is having another OCA, your OCA will queue until the OCA in progress terminates.
2. If the called station is on-hook upon termination, your OCA automatically becomes an on-hook call.
3. If the called station is off-hook, your OCA becomes an off-hook call upon termination of OCA in progress.
4. A four-second delay may occur in the operation of OCA when the following instance takes place:  
Station A is talking to station B. Station A needs to consult with station C. Station A presses the **CONF/TRANS** button and dials station C, only to find it busy. If station C is equipped for OCA, and station A's COS allows for OCA to be performed (it is programmed for manual mode in the **DEKT Program**) but does not have an **OCA** button, then the four-second OCA timer is automatically initiated. The voice path will then be opened for the announcement.

**OUTGOING CALLS****VOICE****To Make an Outgoing Call:**

1. Lift the handset.
2. Dial the required trunk access code.
3. Dial the desired telephone number.

You will hear dial tone.

Trunk Access Codes: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

You will hear outside dial tone.

**DATA****To Make an Outgoing Call Using Modem Pooling:**

1. Obtain dial tone (on a voice DN).
- 2A. Make an outgoing call.  
... or ...
- 2B. Use the Least Cost Routing feature to make an outgoing call.
3. Press the data **DN** button when you hear modem tone from the called party.
4. Press the **DRS** button to disconnect data terminals.

(See To Make an Outgoing Call, above.)

The voice DN LED will go out, and the data DN LED will light. If desired, a simultaneous voice call can now be established by using normal procedures.

Data terminals will be disconnected.

**STATION-TO-STATION CALLING****VOICE****To Call Another Station:**

1. Obtain dial tone in one of the following ways:
  - a. Lift the handset.  
... or ...
  - b. Lift the handset and press a **DN** button.  
... or ...
  - c. For on-hook dialing, press a **DN** button.
2. Dial the station's number.
3. Hang up when the call is completed.

If your primary DN line is idle, then it will automatically be selected.

Dial tone will be heard via the speaker. It is not necessary to lift the handset unless you wish to use it.

You will hear the call progress tones.

**DATA****To Call Another Data Port:**

1. Press the data **DN** on your telephone.
2. Dial the data station's number.
3. The called DDIU will automatically answer.
4. Press the **DRS** button to disconnect data terminals.

You will hear dial tone.

A data connection between data terminals will be established. If desired, a simultaneous voice call can now be established by using normal procedures.

Data terminals will be disconnected.

**To Connect Data Ports (After a Voice Connection Has Been Established.):**

1. Press the data **DN** button.
2. Press the **DRS** button to disconnect data terminals.

A data connection between data terminals will be established, and a voice connection will be retained along with the data connection.

Data terminals will be disconnected.

## CALL HOLD AND TRANSFER

### CALL HOLDING

Call Park and Call Hold are two methods of holding calls. The Call Park (**PARK**) button allows you to originate and receive calls on the **DN** button once the call was parked (on hold). If you do not return to the parked call within a designated time period, your telephone will ring to recall you. The Call Hold (**HOLD**) button causes the **DN** button to become busy, but a held call will not recall you.

#### To Park a Call:

1. Press the **PARK** button, or press the **CONF** button and dial the access code **(#3)** \_\_\_\_\_.

2. Hang up or dial another call.

#### To Reconnect a Parked Call:

- 1A. Lift the handset.  
... or ...

- 1B. Press the **DN** button (this is necessary only for calls which are parked on a DN other than the primary DN).

- 2A. Press the **PARK** button or dial the access code **(#3)** \_\_\_\_\_.

#### To Hold a Call:

1. Press the **HOLD** button.

2. Hang up.

#### To Reconnect a Held Call:

1. Lift the handset.

The **PARK** LED will light (only if the **PARK** button was used). The **DN** LED will indicate the In-use status (unchanged). The Park connection will be placed on hold, and you will hear dial tone.

The primary **DN** LED will indicate the In-use status, and you will hear dial tone.

The **DN** LED will indicate the In-use status, and you will hear dial tone.

The **PARK** LED will go out, you will no longer hear dial tone, and you will be reconnected. The primary **DN** LED will indicate the In-use status (unchanged).

The **DN** LED will change from In-use to On-hold status, and the connection will be placed On-hold.

If the On-hold call was on your primary **DN** button, you will be reconnected immediately. The **DN** LED will change from On-hold to In-use status.

2. Press the **DN** button (this is necessary only for calls being held on a DN other than your primary DN).

The **DN** LED will change from On-hold to In-use status.

---

### CALL TRANSFER

#### To Transfer a Call:

1. Request the party to wait.
2. Press the **CONF** button.
3. Dial the desired number.\*
4. When the called party answers, announce the call.
5. Hang up to transfer the call.

The original connection will be placed on hold, you will hear recall dial tone, and the **DN** LED will change from In-use to On-hold status.

\*If you hear busy tone, return to the original party by pressing the **DN** button.

The call will be transferred.

---

### CALL WAITING

Two short warning tones from your telephone's speaker and a flashing **CWT** LED advise you that your attendant has an outside call waiting for you. When this occurs, you have three choices:

1. Ignore the call. The call will return to the attendant.
2. Terminate your existing call, and accept the new call.
3. Hold the existing call and accept the new call. In this mode, it is possible to alternate between the two calls until the conversation(s) are terminated.

#### To Accept the Waiting Call and Terminate the Existing Call:

1. Hang up.

The **CWT** LED will go off, and the new call will ring your prime DN in the usual manner.

**To Accept the Waiting Call While Holding the Existing Call:**

1. Press the **CWT** button, or press the **CONF** button and dial the access code (# 4)

The CWT LED will light steadily, the DN LED will indicate the On-hold status, and you will be connected to the waiting call.

**To Return to the Original Call:**

1. Press the appropriate **DN** button.

The CWT LED will flash, and the DN LED will indicate the In-use status.

*NOTE: It is possible to alternate between the two calls indefinitely by selecting either the **CWT** button or the **DN** button. If there is no **CWT** button, alternate between the calls by selecting either the **CONF** button, or the **DN** button.*

**To Disconnect One Call and Remain Connected to the Other Call:**

1. Hang up while connected to the call that you want to terminate.
2. Press the **DN** button.

The remaining call will appear in the hold condition at the **DN** button.

You will be connected to the remaining call.

*NOTE: Camp-on and Call Waiting are mutually exclusive.*

**CAMP-ON CALLS**

A short warning tone from your telephone's speaker (while you are talking with someone) advises you that an incoming call has been parked at your station by the attendant.

**To Accept a Camp-on Call:**

1. Complete the original call and hang up.
2. Answer the new call.

Your telephone will ring, and the DN LED will flash.

*NOTE: Camp-on and Call Waiting are mutually exclusive.*

**MESSAGES****MEET-ME PAGE**

This feature will automatically connect you to a call that has been "parked" for you by the operator. If you are away from your telephone, the operator may park the call and direct you via the page system to dial an access code.

**To Answer a Meet-me Page:**

1. Lift the handset of any telephone.
2. Dial the access code given by the operator.

You will hear dial tone.

You will be immediately connected to the caller.

**MESSAGE CENTER OPERATION**

The following applies only if your telephone is designated as the Message Center.

**To Leave a Message Waiting Signal:**

1. Dial the appropriate station number.
2. If you receive either busy or no answer, press the **MSG** button.

The MSG LEDs on both stations will light, and the Message Center's MSG LED will go out when the connection is broken.

**To Cancel Message Waiting by Message Center:**

- 1A. Dial the appropriate station number.
- 2A. Press the **MSG** button.  
... or ...
- 1B. Dial the access code (# 4 5)
- 3A. Hang up.

The MSG LED will go out (at both stations).

All Message Waiting indications will clear.

**MESSAGE WAITING**

Message Waiting allows the attendant or alternative Message Center to inform a station user that a message is waiting. When you have a message waiting, the Message Waiting LED on your telephone will light or your telephone will receive a double ring every 20 minutes. If Voice Mail sets your Message Waiting, you **WILL NOT** receive a double ring every 20 minutes.

**To Obtain a Message and Cancel Message Waiting at the Station:**

1. Lift the handset.

You will hear dial tone.

2A. Press the **MSG** button.  
... or ...

The Message Center will ring automatically.

2B. Dial the Message Center number \_\_\_\_\_.

The Message Center will ring.

3. Collect your message(s).

4. Hang up.

**To Cancel Message Waiting at the Station:**

1A. While the telephone is idle, press the **MSG** button.  
... or ...

The MSG LED will go out, and Message Waiting will be canceled.

1B. Lift the handset.

You will hear dial tone.

2B. Dial the access code **(# 5)**  
\_\_\_\_\_.

Message Waiting will be canceled.

3B. Hang up.

*NOTE: If you go off-hook while your station is being signaled by the Message Waiting feature, you will automatically be connected to the Message Center.*

**PAGING, EXTERNAL ZONES (FIVE ZONES)**

**To Page a Single External Zone:**

1. Lift the handset.
2. Press the **PEXT** button or dial the access code **(# 5 6)**  
\_\_\_\_\_.
3. Dial the desired paging zone number (0 ~ 4).

You will hear dial tone.

You will now be connected to the external page zone.

**Paging Access Codes**

	Code	Location
ZONE 0	_____	_____
ZONE 1	_____	_____
ZONE 2	_____	_____
ZONE 3	_____	_____
ZONE 4	_____	_____

4. Announce your page.

Speak slowly and distinctly, and repeat your message.

**To Page All External Zones:**

1. Lift the handset.
- 2A. Press the **PEXA** button or dial the access code **(# 5 4)**  
\_\_\_\_\_.  
... or ...
- 2B. To page all External Paging Zones in addition to the Expanded Internal Paging Group, dial \_\_\_\_\_  
(Programmed in DSYS).

You will hear dial tone.

You will be connected to the external all-page zone

You will be connected to all the external paging zones and the expanded internal paging group.

3. Announce your page.

Speak slowly and distinctly, and repeat your message.

**PAGING, INTERNAL GROUPS (0, 2 ~ 17)**

**To Page a Single Internal Group:**

1. Lift the handset.

You will hear dial tone.

2. Press the **PINT** button, or dial the access code **(1 5 1)**.  
\_\_\_\_\_
- You will be connected to the internal paging zone.
3. Dial the desired paging group number (2 ~ 17).
4. Announce your page. Speak slowly and distinctly, and repeat your message.
- To Page All Internal Groups:**
1. Lift the handset. You will hear dial tone.
- 2A. Press the **PINA** button and dial **0** (the Internal All Paging Group number).  
... or ...
- 2B. Dial the access code **(1 5 2)** and dial **0**.  
... or ...
- 2C. To page the Expanded Internal Paging Group in addition to all External Paging Zones, dial \_\_\_\_\_ (Programmed in DSYS).
3. Announce your page. Speak slowly and distinctly, and repeat your message.

---

### STATION-TO-STATION MESSAGE WAITING WITH LCD

- To Set a Message:**
1. Lift the handset. You will hear dial tone.
2. Dial the desired station number.
3. If you receive either no answer, busy tone, or DND, press the **SSM** button. The SSM LED will light at the called station. The LCD at the called station will display both "CALL" and the calling station's DN. The LCD at the calling station will display both "SENT" and the called station's DN.

### To Clear Station-to-Station Message from the Called Station:

1. While on-hook, press the **SSM** button. The SSM LED will go out, the "CALL" LCD display at the called station will clear, and the "SENT" LCD display at the calling station will clear.

### To Return a Station-to-Station Message Call:

1. Lift the handset. You will hear dial tone.
2. Press the **SSM** button.

The calling station will ring. When the station answers, the SSM LED will go out unless there are additional SSMs set to your station. The "CALL" LCD display at the called station will clear, and the "SENT" LCD display at the calling station will clear.

### To Clear a Station-to-Station Message from the Calling Station:

1. Lift the handset. You will hear dial tone.
2. Dial the called station number where SSM is set.
3. Press the **SSM** button twice.

The SSM LED will go out at the called station, the "CALL" LCD display at the called station will clear, and the "SENT" LCD display at the calling station will clear.

*NOTE: Up to six SSM displays may be stored on the LCD (only three 3-digit numbers can be displayed at one time). The station number in the left-most position will be called when the **SSM** button is pressed. To rotate the station numbers, press the **PAGE** button once, then press the **SCRL** button located next to the LCD.*

---

### VOICE MAIL

The following instructions provide general operating information for voice mail systems. Refer to your voice mail system's user guide for additional operating information.

**To Call Forward All Calls to Voice Mail:**

1. Press the **CFD** button or dial the access code (**1 9**) \_\_\_\_\_.
2. Dial your Voice Mail number.
3. Dial your mailbox number.
4. Press the **CFD** button (or **#** if access code is used).

The CFD LED will flash.

(Another digit may have to be dialed here. Check your VM System User Guide.)

The CFD LED will light steadily, and the call will be forwarded to your mailbox.

**To Cancel Call Forward to Voice Mail:**

1. Press the **CFD** button or dial the access code (**1 9**) \_\_\_\_\_.

The Call Forward to voice mail will be canceled.

*NOTE: You can set the **MSG** button to automatically retrieve your messages (on-hook).*

**To Program Your Message Button to Retrieve Messages Automatically:**

1. Press the **MSG** button.
2. Dial your Voice Mail number.
3. Dial your mailbox number and pass code.
4. Press the **MSG** button.
5. To respond, press the **MSG** button.

The MSG LED will flash.

(Another digit may have to be dialed here. Check your VM System User Guide.)

The MSG LED will light steadily.

You may deliver your response.

**VOICE PAGE**

This feature allows you to be automatically connected to the speaker of a specific electronic telephone.

**To Make a Voice Page:**

1. Lift the handset.
2. Press the appropriate Voice Page (**VCP**) button.
3. Make your announcement.

You will hear dial tone.

You will hear one-ring tone, and the VCP LED will light.

Your announcement will be made.

*NOTE: If the paged person is either busy on another DN or has SCO engaged, you will hear ring tone until the call is answered. If that DN is busy, you will hear busy tone.*

**MISCELLANEOUS FEATURES****ACCOUNT CODE CALLS**

On some calls, for accurate billing purposes, you may be required (forced) to dial an account code before dialing an outside number. On other calls, you may wish to record an account number voluntarily after either dialing an outside number, or receiving an incoming call. The code you enter will be recorded on the Station Message Detail Recording (SMDR) printout with the details of your call. Be sure the Account Code Length (ACL) is programmed in DMDR. This feature will not operate without it.

**To Record a Forced, or a Forced and Verifiable Account Code (Direct Trunk Access or Least Cost Routing):**

1. Access a CO line (by dialing the DTA or LCR access code).
2. Dial the distant directory number.
3. Using the dialpad, dial the 1 ~ 12-digit account code (determined in the DMDR Program).

You will hear dial tone.

You will hear recall dial tone.

The account code is saved to output to SMDR. The system stores dialed directory number to auto-dial queue, and the trunk call is made.

*NOTE: These Forced and Forced/Verifiable Account Codes can be applicable to either all calls or toll calls only (Programming Option).*

**To Record a Verifiable Account Code Before Dialing a Call:**

1. Lift the handset. You will hear dial tone.
2. Press the **CRG** button.
3. Dial the 1- ~ 12-digit account code on the dialpad. You will hear recall dial tone.
4. Dial the direct trunk access code and the desired telephone number. The trunk call is made.

**To Record a Verifiable Account Code During a Call (Incoming or Outgoing) With a **CRG** Button:**

1. Ask your party to wait. At any time during conversation ...
2. Press the **CRG** button. You will hear recall dial tone. The connection will be placed on hold, the DN LED indicates the On-hold status, and the CRG LED will light.
3. Dial the 1- ~ 12-digit account code. The system will store the account code to output to SMDR, and the call will automatically be reconnected.
4. Resume the conversation.

**To Record a Verifiable Account Code During a Call (Incoming or Outgoing) Without a **CRG** Button:**

1. Ask your party to wait, then press the **CONF/TRNS** button. At any time before disconnect ... You will hear recall dial tone.
2. Dial the CRG access code (# 9) \_\_\_\_\_. Your connection will be placed on hold, and you will hear recall dial tone.
3. Dial the 1- ~ 12-digit account code. The system will store the account code to output to SMDR.
4. Resume your conversation.

**To Record a Verifiable Account Code After a Call Is Completed:**

This procedure applies when a station user forgets to input an account code either before, or during a call. The account code can still be entered after the call is completed, provided it is done prior to disconnecting the trunk.

After the call is completed and prior to the station user hanging up, the system automatically sets the ACT timer. Before the ACT timer expires ...

1. Press the **CRG** button or dial the access code (# 9) \_\_\_\_\_. You will hear recall dial tone.
2. Dial the 1- ~ 12-digit account code. The system sets the account code, the SMDR is printed out, and the line locks out.
3. Hang up.

**ACCOUNT NUMBER RECORDING**

Your system may automatically record the details of the calls you make to, or receive from outside the system. If desired, these calls may be assigned account numbers for billing purposes (\_\_\_\_\_ digits).

**To Record a Voluntary Account Number Before Dialing a Call:**

1. Lift the handset. You will hear dial tone.
2. Press the **CRG** button or dial the access code (# 9) \_\_\_\_\_. When the number is completed, you will receive recall dial tone.
3. Dial the account number on the dialpad (1 ~ 12 digits).
4. Dial the telephone number in the usual manner.

**To Record a Voluntary Account Number During a Call (Incoming or Outgoing) Without a **CRG** Button:**

1. Ask your party to wait. At any time before disconnect ...
2. Press the **CONF** button. Your connection will be placed on hold, and you will hear recall dial tone.

- |   |   |
|---|---|
| 3. Dial the access code (#9)<br>_____.      | You will hear recall dial tone.                                     |
| 4. Dial the account number (1 ~ 12 digits). | When the number is completed, you will hear recall dial tone again. |
| 5. Press the appropriate DN button.         | You will be reconnected to your party.                              |
| 6. Resume your conversation.                |   |

**To Record a Voluntary Account Number During a Call (Incoming or Outgoing) With a CRG Button:**

- |   |   |
|---|---|
| 1. Ask your party to wait.                  | At any time before disconnect ...   |
| 2. Press the CRG button.                    | The connection will be placed on hold, the DN LED indicates the On-hold status, and the CRG LED will light. |
| 3. Dial the account number (1 ~ 12 digits). | When the number is completed, the call will automatically be reconnected.                                   |
| 4. Resume your conversation.                |   |

---

### AUTOMATIC WAKE-UP/TIMED REMINDER

Automatic Wake-up/Timer Reminder allows the station user to set an alarm that will ring the station at a prearranged time. After answering a wake-up call, the station will receive either a digitized voice-message, music, or silence. If the call is not answered within six rings, or if the station is busy, a second (and, if necessary, a third) attempt will be made at 5-minute intervals.

**To Set Automatic Wake-up/Timer Reminder:**

- |   |                                 |
|---|---------------------------------|
| 1. Lift the handset.                    | You will hear dial tone.        |
| 2. Dial the access code (#30)<br>_____. | You will hear recall dial tone. |

3. Dial the 4-digit time (via the dialpad) in the following format:  
HHMM

For example: For 9:30 AM, enter 0930.  
You will hear dial tone, and the time will be stored.

**To Cancel Automatic Wake-up/Timer Reminder:**

- |   |  |
|---|--|
| 1. Lift the handset.                    | You will hear dial tone.   |
| 2. Dial the access code (#30)<br>_____. | You will hear recall dial tone.                                  |
| 3. Dial the 4-digit time 0000.          | You will hear dial tone, and the callback time will be canceled. |

---

### EXECUTIVE OVERRIDE

Executive Override allows you to enter an established conversation. The original connection will receive a warning tone before you actually join the established connection.

**To Override a Busy Condition:**

- |   |  |
|---|--|
| 1. Press the Override (OVR) button.   | The OVR LED will flash, and a warning tone will be given to the existing connection. |
| 2. A 3-way conference will now exist (any one of the parties can leave the conference and the other two will remain connected). |  |

*NOTE: During the override condition, a short tone will be heard every 15 seconds by all parties.*

---

### MAID-IN ROOM STATUS (Lodging/Health Care Only)

By using the guest room telephone, a maid can indicate to the attendant console that a maid is in a particular room. The attendant can then change the room's status.

**To Set Maid-in-Room Status:**

1. Lift the handset. You will hear dial tone.
2. Dial the access code (# 0 0) \_\_\_\_\_.  
You will hear recall dial tone.
3. Dial the access code (# 0 1) \_\_\_\_\_.  
You will hear recall dial tone, and Maid-in-Room Status will now be set.

**To Cancel Maid-in-Room Status:**

1. Lift the handset. You will hear dial tone.
2. Dial the access code (# 0 0) \_\_\_\_\_.  
You will hear recall dial tone.
3. Dial the access code (# 0 2) \_\_\_\_\_.  
You will hear recall dial tone, and Maid-in-Room Status will now be canceled.

**To Cancel Maid-in-Room Status and Set Clean Room Status:**

1. Lift the handset. You will hear dial tone.
2. Dial the access code (# 0 0) \_\_\_\_\_.  
You will hear recall dial tone.
3. Dial the access code (# 0 3) \_\_\_\_\_.  
You will hear recall dial tone, Maid-in-Room Status will now be canceled, and Clean Room Status will be set.

**MANUAL SIGNALING**

This feature allows you to signal a specific station.

**To Signal the Station:**

1. Press the **SIG** button. The SIG LED will flash once, and a single tone will be heard via the speaker of the called telephone.

**PRIVACY RELEASE**

By operating the Privacy Release (**PRS**) button, you can allow another station user who shares your DN appearance to join an established conversation. A maximum of five parties (station or trunk), including your own station, can be included in the conversation.

**To Release Privacy:**

1. Press the **PRS** button.
2. The second station user should now press the appropriate **DN** button.
3. Repeat the sequence to add other stations.

The LED of the DN which has Privacy established will flash.

The DN LED will change to the In-use status rate at both stations, and the conference will now begin.

**NOTES:**

1. Anytime you release privacy, you can reengage it immediately by pressing the **DN** button.
2. Any station that is a party involved in the conversation can release the privacy.

**PRIVATE LINE**

A Private Line allows incoming calls to bypass the attendant and arrive directly at your telephone. Unless a Private Line is assigned an Outgoing Call Restriction, outgoing calls can also be made.

**To Make a Call on a Private Line (for Private Lines Without Outgoing Call Restriction):**

1. Press the Private Line (**PVL**) button.
2. Proceed to dial.

The PVL LED will light, and you will hear outside dial tone.

**To Receive a Call on a Private Line:**

1. The line will ring your telephone.
2. Press the **PVL** button.

The PVL LED will flash.

You will be connected to the call.

*NOTE: Overflow tone will be given to a station attempting to make an outgoing call on a PVL from which it is restricted (transfers are operable).*

**SPEAKERPHONE (Optional)****To Make an Outside Call With Speakerphone (On-hook Dialing):**

1. Leave the handset on-hook.

2. Press your **DN** button or a **PVL** button (if available).

The DN or PVL LED will indicate the In-use status, and you will hear dial tone.

3. Dial the desired telephone number.

4. Speak at a normal voice level in the direction of the telephone.

5. Press the **SPKR** button when the call is completed.

Your call will be terminated.

**To Receive an Incoming Call (on Speakerphone):**

1. Leave the handset on-hook.

You will hear ringing tone.

2. Press the button corresponding to the DN or private line with the flashing LED.

The DN or PVL LED will indicate the In-use status.

3. Speak at a normal voice level in the direction of the telephone.

4. Press the **SPKR** button when the call is completed.

The call will be terminated.

**MICROPHONE CONTROL:**

The **MIC** button cuts off the speakerphone's microphone for private conversations for as long as the button is pressed. When the button is released, the microphone once again becomes active. The MIC LED indicates the status of the microphone:

LED	MICROPHONE
ON	ON
OFF	OFF

**NOTES:**

- To change from speakerphone to handset, lift the handset.
- To change from handset to speakerphone:
  - Press and hold the **SPKR** button.
  - Return the handset to on-hook position.
  - Release the **SPKR** button.

**TOLL RESTRICTION/CLASS OF SERVICE OVERRIDE**

The Toll Restriction Override feature allows a station user to override the assigned TOL and COS, and assign class O of TOL and COS for the duration of the toll call to be made. Once the toll call is completed, the station user's assigned TOL and COS will take precedence again.

**To Use Traveling Class of Service:**

1. Lift the handset.

You will hear dial tone.

2. Dial the access code **(#) (7)** \_\_\_\_\_.

You will hear dial tone.

3. Dial the DTA or LCR code and the desired telephone number.

Your call will be connected.

**UNIVERSAL NIGHT ANSWER****To Answer an Incoming Call When the Night Bell is Heard:**

1. Lift the handset.

You will hear dial tone.

2. Press the **UNA** button or dial the access code **(#) (1)** \_\_\_\_\_.

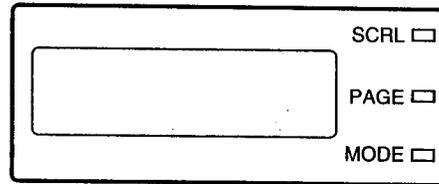
You will be connected to the incoming call.

3. Speak to the caller.

4. Use Call Transfer to connect the call with the desired station.

The call will be connected to the desired station.

## LIQUID CRYSTAL DISPLAY



The Liquid Crystal Display (LCD) electronic telephone is a 20-button speakerphone with the LCD as an additional feature. All features and functions of the LCD telephone, exclusive of the display itself, perform exactly like the non-LCD 20-button telephone.

In its idle state, the 32-digit LCD feature on your telephone gives you an accurate desk clock and calendar combination. When you have an outside call in progress, an Elapsed Time display will give a constant reminder of the call duration. In addition, a variety of information displays and feature prompts provide more efficient call handling. Alphanumeric messaging capability is also provided.

Display operations occur automatically as calls are continually processed. The only display operation that is controlled manually is the shifting between Date/Time and Elapsed Time, which is achieved by pressing the **PAGE** button during an active outside call. Station-to-Station Messages that have been previously set on the LCD can be scrolled by pressing the **SCRL** button.

**NOTE:** The **MODE** button, to the right of the display, is reserved for future use.

## SUMMARY OF LCD FUNCTIONS

## TYPE

## A. Date/Time

JAN 4 MON 10:12

## WHEN DISPLAYED

Idle Telephone

**NOTE:** The Date/Time is adjusted on a system-wide basis by the attendant console or **DTRF Program**.

## B. Dialed Number

## 1. Trunk

95551234

Digits will be displayed as a number is dialed on a trunk call or on a station-to-station call which uses either:

- Manual Dialing
- Automatic Dialing
- Repeat Last Number Dialed
- Speed Dial (Station and System)
- Least Cost Routing

## 2. Station

231

## C. Calling Number

## 1. Station

ST 202 CALLING

When you receive a call, the calling station's directory number will be displayed.

TALKING ST 202

When you have obtained a voice connection between the calling station and your station, the LCD will indicate talking status.

## 2. Attendant

ATT 0 CALLING

When you are being called by the attendant, the LCD will indicate the calling attendant number.

TALKING ATT 0

When you have obtained a voice connection between your station and the calling attendant, the LCD will indicate talking status.

## D. Trunk Number

TK 901 CALLING

When you are being called from an outside trunk, the number of the calling trunk will be displayed.

TALKING TK 901

When you have obtained a voice connection between the outside trunk and your station, the LCD will indicate talking status.

## E. Elapsed Time

00:13:23

While you are on a trunk call, the elapsed time of the call will be displayed. Elapsed Time will automatically replace the dialed number on the display after a programmed period of time has elapsed.

## F. Do Not Disturb

DO NOT DISTURB  
JAN 5 MON 10:15

When you are in the Do Not Disturb mode, the LCD will indicate Do Not Disturb at your station.

## G. Message Waiting (SSM)

SENT 200  
JAN 5 MON 10:15

When you hang up after setting Message Waiting (SSM) at another station, a reminder will be shown on the top row of your display panel.

CALL 301 302 303  
JAN 5 MON 10:15

Your display panel will show the numbers of stations that have left SSM messages at your station. Up to three numbers can be displayed at one time.

*NOTE: Your LCD panel will display the numbers of up to six stations that have left messages at your station. The additional three messages can be viewed via the Scroll (SCRL) button.*

## H. Automatic Callback

ACB SET

When you set ACB on a busy station or trunk, the LCD will indicate that ACB is set.

## I. Call Pickup

PICKUP 205

When you use Call Pickup Directed or Call Pickup Group to obtain a call, the LCD will indicate the DN at which the call is picked up.

901 CALLED 205

When you obtain a voice connection using Call Pickup Directed or Call Pickup Group, the LCD will now indicate the calling DN.

## J. Automatic Wake-up/Timed Reminder

## 1. Business

REMINDER 10:00 AM  
JAN 5 MON 9:05

When you register an Automatic Wake-up/Timed Reminder, the LCD will indicate the desired time.

## 2. Lodging/Health Care

WAKE UP 8:00 AM  
JAN 5 MON 7:00

When you register an Automatic Wake-up/Timed Reminder, the LCD will indicate the desired time.

## K. Automatic Dialing

ADL 5512347

When you program a number on an **ADL** button, your telephone will display the number as you program it.

L. Speed Dial  
1. Station

ST SPEED DIAL

When you use a Speed Dial Station number, the LCD will indicate the use of this feature.

## 2. System

SYS SPEED DIAL

When you use a Speed Dial System number, the LCD will indicate the use of this feature.

## M. Call Holding/Park

## 1. Call Holding

HOLD 354  
JAN 5 MON 3:05

When you place your directory number **DN** on hold, the LCD will display your DN.

## 2. Park

PARK 354  
JAN 5 MON 3:05

When you Park a call on your DN, the LCD will display your DN.

## N. Conferencing

CONFERENCE

When you set up a conference call from your telephone, the LCD will indicate the use of this feature.

## O. Account Number Recording

DIAL CODE 12345

When you use the Account Number Recording **CRG** feature, the LCD will indicate the entered account number.

## P. Paging

## 1. Internal Paging

PINT XX

When you access Page Zone XX, the LCD will indicate the desired zone number.

## 2. Internal All Paging

PINT ALL  
OR PINT 0

When you access Paging All Zones, the LCD will indicate "ALL."

## 3. External Paging

PEXT XX

## 4. External All Paging

PEXT ALL

## 5. All Paging

PAGE ALL

## Q. Call Forward

## 1. Call Forward All Calls

CF-AC TO-ST 203  
JAN 5 MON 11:00

When you Call Forward All Calls to a station, the LCD will indicate the DN to which calls are forwarded.

## 2. Call Forward Busy

CF-B TO-ST 203  
JAN 5 MON 11:00

When you Call Forward Busy to a station, the LCD will indicate the DN to which calls are forwarded.

## 3. Call Forward No Answer

CF-NA TO-ST 203  
JAN 5 MON 11:00

When you Call Forward No Answer to a station, the LCD will indicate the DN to which calls are forwarded.

## 4. Call Forward Busy No Answer

CF-BN TO-ST 203  
JAN 5 MON 11:00

When you Call Forward Busy/No Answer to a station, the LCD will indicate the DN to which calls are forwarded.

## 5. Call Forward Busy (System/DID)

CF-SB TO-ATT  
JAN 5 MON 11:00

When you Call Forward Busy (System/DID) to the attendant console, the LCD will indicate a Call Forward to "ATT."

## 6. Call Forward Busy/No Answer (System/DID)

CF-SN TO-ATT  
JAN 5 MON 11:00

When you Call Forward Busy/No Answer (System/DID) to the attendant console, the LCD will indicate a Call Forward to "ATT."

## R. Override

OVR 202 200

When you Override an existing station-to-station conversation, the LCD will indicate your DN and the DN that you are overriding.

- Meet-me Page (Attendant-Position Electronic Telephone, MMP)

C-HOLD XXXX

10

- Meet-me Page Recall (Attendant-Position Electronic Telephone)

MMP RCL TKXXXX

- Remote Access Code (when assigned by Attendant-Position Electronic Telephone)

RAC-XXXX

## S. Trunk Identification

CUSTOMER SERVICE

The trunk can be programmed to display an identifying name of up to 16 characters. The name will be displayed on incoming and outgoing calls.

## T. Off-hook Call Announce

CALL ANNOUNCE XXXX

When you Off-hook Call Announce to a busy station, your LCD displays the number of that station.

## U. Agent Queue Status

```

QUE#001
JUL 11 THU 9:53

```

If you are logged in as an ACD agent, the LCD will display the number of calls in queue that are waiting to be answered. The sample display (shown on the left) shows one call in queue.

## V. ACD Trunk Number

```

QUE#001
CUSTOMER SERVICE

```

When an ACD trunk is ringing at an ACD station, the queue number and trunk ID (either alpha or numeric) is displayed.

## W. ACD Trunk Answered

## 1. Trunk ID shifts right

```

QUE#001
CUSTOMER SERVICE

```

Once the ACD trunk call has been answered, the trunk ID shifts to the right of the display.

## 2. Elapsed Time Displays

```

QUE#001
00:00:01

```

The trunk ID is displayed for ten seconds and then changes to elapsed time.

## X. Work Time

```

010
00:03:50

```

When an ACD agent completes a call, the agent's status changes to After Call Work Time (programmable option). The queue status disappears and After Call Work Time appears in the upper right-hand corner and updates every ten seconds. Elapsed time remains on the display. When After Call Work Time is complete, the queue size, date, and time will be displayed again.

## Y. Assistance Call

## 1. Agent Places Call

```

QUE#001
ASSIST

```

When an agent places an Assistance Call, "ASSIST" is displayed in the lower right-hand corner of the agent's LCD.

## 2. Rings Supervisor

```

QUE#001
ASSIST AGT503

```

While the Assistance call is ringing at the supervisor's station, the display shows which agent is placing the Assistance call.

## 3. Supervisor Answers

```

QUE#001
SUPRVSR ASSIST

```

When the supervisor answers the Assistance call, the agent's display changes to reflect "SUPRVSR ASSIST."

## 4. Supervisor's Display

```

QUE#001
ASSIST AGT503

```

When the supervisor answers the Assistance call, the "ASSIST AGT" message will move to the right on the supervisor's display.

## Z. Monitored Call

## 1. Agent's display

```

QUE#001
MON.BY SUPRVSR

```

When a supervisor monitors an agent's ACD call, a message will appear on the agent's display to inform the agent that this call is being monitored. Then, the display will change back to elapsed time after five seconds.

## 2. Supervisor's display

```

QUE#001
MONTR AGT503

```

The supervisor's LCD displays which agent is being monitored for the entire time that the supervisor is monitoring the call.

## ALPHANUMERIC DISPLAY

The Alphanumeric Messaging feature on your LCD telephone enables you to set a short text message (up to 16 characters) at your station to ensure that you do not miss important calls. Any station may record a message; however, only stations with an LCD are able to display messages.

Your system has up to 10 preprogrammed messages (hand-written below) that can be displayed at any LCD telephone calling your station. You can add to or change any of these messages to leave a personalized message at your station. Any text that you program for message 9 will be saved and can be used again. However, any text that you program for messages 0 ~ 8 will be lost when you cancel the message.

#### PREPROGRAMMED MESSAGES

0. \_\_\_\_\_
1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_
8. \_\_\_\_\_
9. \_\_\_\_\_

#### To Leave a Message on Your LCD Telephone:

1. Press the **MES** button (handset on-hook) or obtain dial tone and dial the access code **(# 1 7) \_\_\_\_\_**.  
The MES LED will flash (if equipped), and "MES NO.?" will be displayed.
2. Dial the number of the message, that you want to appear, via the dialpad. (See the above preprogrammed messages.)  
The selected message will be displayed.
3. Press the **MES** button (if equipped) or hang up.  
The MES LED will light steadily.

#### To Leave a Message on a non-LCD Telephone:

1. Press the **MES** button (handset on-hook) or dial the access code **(# 1 7) \_\_\_\_\_** (handset off-hook).  
The MES LED will flash (if equipped).

2. Dial the number of the message, that you want to appear, via the dialpad. (See the above preprogrammed messages.)
3. Press the **MES** button (if equipped) or hang up.

The MES LED will light steadily.

#### To Cancel a Message on Your Telephone:

- 1A. Press the **MES** button.  
... or ...  
1B. Lift the handset.  
The message will clear from the LCD.  
You will hear dial tone.
- 2B. Dial the access code **(# 1 7) \_\_\_\_\_**.
- 3B. Hang up.  
The message will be canceled.

#### To Add to a Preprogrammed Message:

When you select a message, it will appear on your station display. A cursor (-) will also appear immediately to the far right side of the display. You can now input additional information (up to a total of 16 characters for each message). Some system messages may expect you to add more information. For example:

1. Call \_\_\_\_\_  
■ Add a station or outside telephone number.
2. Back at \_\_\_\_\_  
■ Add the time you will return.
3. Return at \_\_\_\_\_  
■ Add the date you will return.

#### To Leave a New Message:

You can leave a completely new, personalized message by overwriting any of the existing preprogrammed messages. To do this, simply call up one of the preprogrammed messages as instructed above. When the cursor appears to the right of the message, shift it to the left margin and write your new message over the programmed one. The new message will remain at your station until canceled. It will then be erased and the

original programmed message will be restored.

Use the following procedure when adding to a preprogrammed message or when leaving a new message:

#### To Record a Message:

1. Call up the message that you want to add to or change.

(See To Leave a Message.)

2. Press the **#** button to access alpha characters.

(Refer to the figure on the following page for an explanation of the dialpad buttons.)

3. Press the **←** button to move the cursor (→) to the desired position.

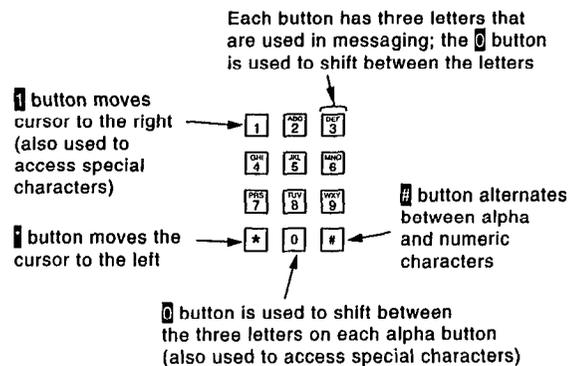
(The left edge of the display to program a new message, or two spaces to the right of the preprogrammed message to add information.)

4. Press the button corresponding to the letter which you want to enter.

Use the **0** button to shift from letter to letter on that button. For example:  
 ■ If you press **0**, a D will be displayed. By pressing **0**, the D will change to E. By pressing **0** again, the E will change to F. Press **0** again and the F will change to D.  
 ■ To enter spaces, press **1**.

5. If you want to enter a number, press the **#** button to change to numeric characters. Press the **#** button again to return to alpha characters.

Numbers are also entered on the dialpad.



6. The following special characters may be set by pressing **1** and then pressing **0** to step through the available characters:

Q, Z, :, -, +, /.

7. When the message is complete, press the **MES** button, or if you do not have a **MES** button, press the **SPKR** button

Your message is now stored on your station.

Address Code	Name	Phone Number
10		( )
11		( )
12		( )
13		( )
14		( )
15		( )
16		( )
17		( )
18		( )
19		( )
20		( )
21		( )
22		( )
23		( )
24		( )
25		( )
26		( )
27		( )
28		( )
29		( )
30		( )
31		( )
32		( )
33		( )
34		( )
35		( )
36		( )
37		( )
38		( )
39		( )
40		( )
41		( )
42		( )
43		( )
44		( )
45		( )
46		( )
47		( )
48		( )
49		( )
50		( )
51		( )
52		( )
53		( )
54		( )

Address Code	Name	Phone Number
55		( )
56		( )
57		( )
58		( )
59		( )
60		( )
61		( )
62		( )
63		( )
64		( )
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91		( )
92		( )
93		( )
94		( )
95		( )
96		( )
97		( )
98		( )
99		( )

# TOSHIBA

## DIGITAL TELEPHONE USER GUIDE

BUSINESS  
TELEPHONE  
SOLUTIONS

▶ PERCEPTION

**e & ex**  
DIGITAL PBX



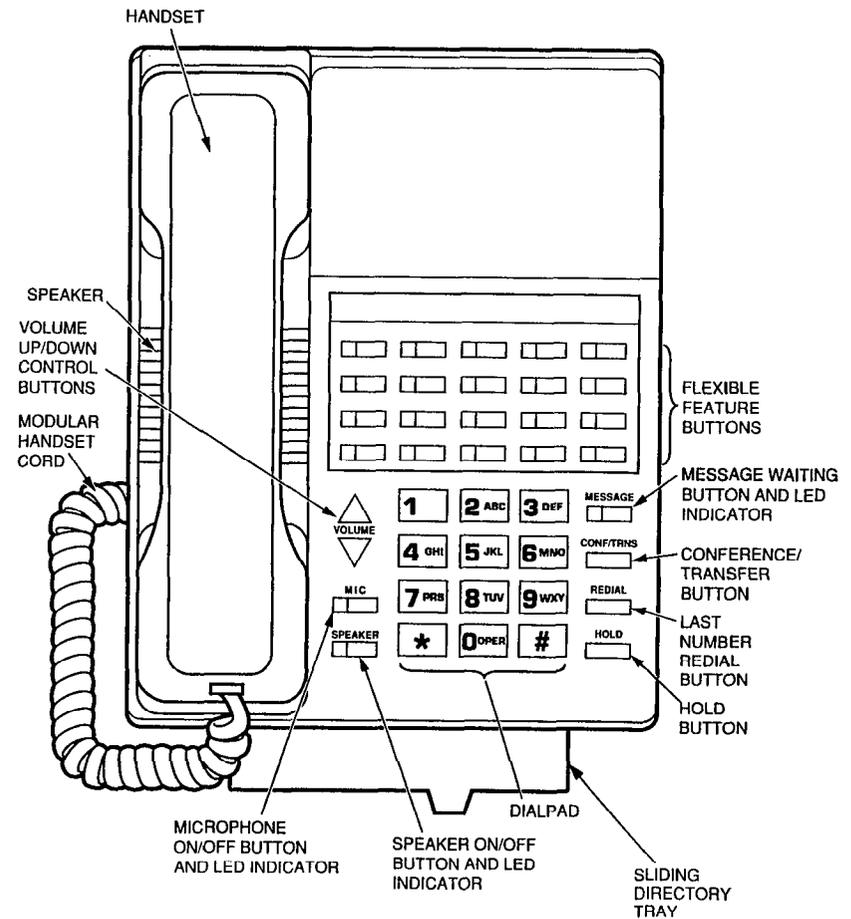
PERCEPTION<sub>e&ex</sub>

DIGITAL TELEPHONE

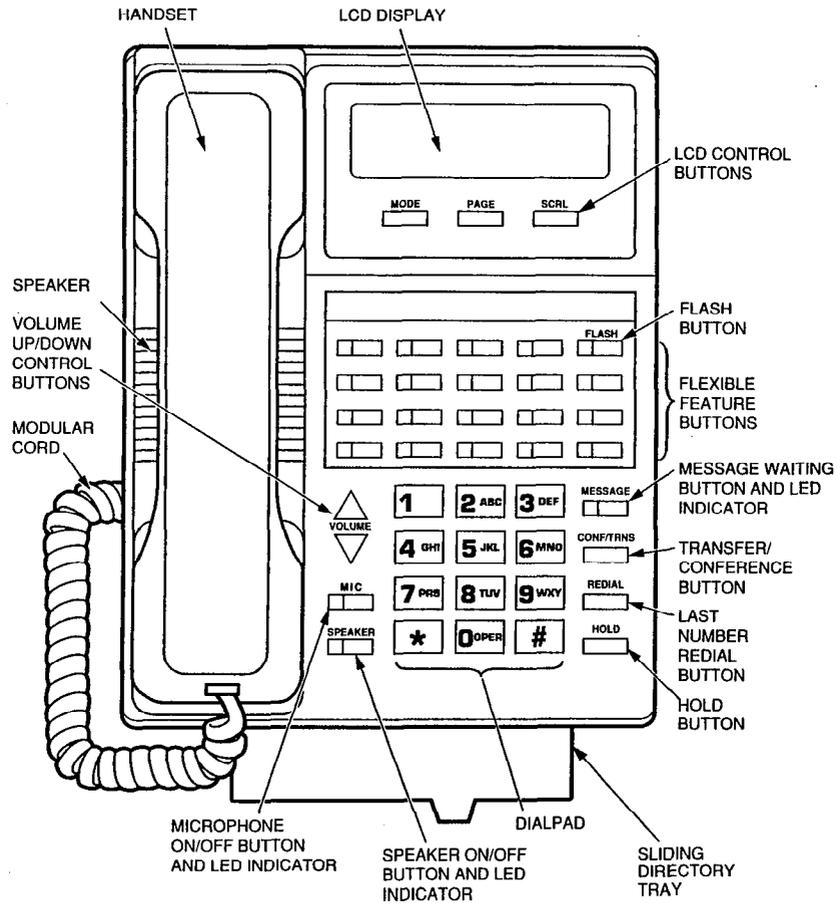
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20-button Digital Telephone



20-button Liquid Display Digital Telephone

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## GENERAL INFORMATION

Your digital telephone has been designed to provide easy access to the wide range of features offered by your telephone system. Each digital telephone is equipped with a dialpad, 26 feature buttons, volume control up-and-down buttons, and a handset. (A second modular connector can be used for a headset or other external device.) The feature buttons on each side of the dialpad are fixed, and their functions cannot be changed. The feature buttons above the dialpad are flexible and can be changed in programming.

Many digital telephones in your system are provided with specific buttons that activate features. This is for your communications convenience, by speeding and enhancing telephone usage. However, because the system is so feature-rich, not all of its features can be assigned buttons. These additional features are accessed by dialing codes (which are indicated in this guide by appearing after the button, usually in parentheses). This user guide provides step-by-step instructions for each of these features.

*NOTE: It is possible that your digital telephone may not be able to access all of the listed features. This is because feature accessibility is assigned by a Station's Class of Service in system programming.*

## CALL PROGRESS TONES

Dial:	Standard tone—continuous; proceed to dial.
Recall Dial:	Standard tone—three short pulses followed by continuous tone; proceed with feature execution.
Busy:	Standard tone—60 impulses per minute (IPM); the station or trunk you have dialed is busy.
Overflow:	Same as busy tone—120 IPM; your call has been blocked due to dialing error or service restrictions.
Ringing:	Standard tone—1-second on, 3-seconds off; your call is ringing.

**SPECIAL SIGNAL TONES (While Telephone Is In Use)**

- Camp-on:** A single muted warning tone indicates that a call is waiting.
- Call Waiting:** Two short warning tones via the speaker, accompanied by a flashing Call Waiting LED indicates that a call is waiting.
- Attendant Verification/Executive Override:**  
A short tone burst via the handset (repeated every 15 seconds) is applied whenever the attendant enters the conversation, and when a station user enters your conversation using the Executive Override feature.

**RINGING SIGNALS**

- Internal Call:** A ringing signal via the speaker every 4 seconds.
- External or Attendant Call:**  
A double ringing signal via the speaker at 4-second intervals.

**DN LED INDICATIONS**

One of the new enhancements provided with the Digital Telephones is the DN LED indications illuminating as both RED and/or GREEN. The following list describes both the state and color used to indicate the status of the DNs.

- Flash:** 1/2-second on, 1/2-second off—indicates an incoming call. DN flashes RED.
- In-use:** 2-seconds on, 1/8-second off, 1/8-second on—indicates that a DN is in use at your telephone. DN is GREEN.
- On:** Steady on—indicates that a DN is in use at another telephone. DN is RED.
- On-hold:** 1/20-second on, 1/20-second off—indicates that a call is on hold at your telephone. DN is GREEN.

**Wink:** 3/8-second on, 1/8-second off—indicates that a call is on hold at another station. DN is RED.

**Off:** DN is idle.

All of the flexible feature buttons and some of the fixed feature buttons have LEDs. If a feature button is activated, its LED will be RED.

**VOLUME CONTROLS**

The two **VOLUME** buttons, left of the dialpad, control the ring, speaker, and handset volume levels. The buttons consist of two arrows: one that points up and one that points down. To increase any of the above mentioned volume levels, press the upward pointing arrow; to decrease any of the levels, press the downward pointing arrow.

**IMPORTANT!**

*Either button must be held down for at least an eighth of a second for any volume change to occur. If either button is continually held down, the volume will continually change until the button is released.*

**To Adjust Ring Tone:**

1. Make sure the handset is on-hook.
2. Press the **VOLUME** button.
3. Hold down the **VOLUME** button until the desired ring volume is set.

Continuous ring tone will be heard.

**To Adjust the Speaker Volume:**

While on an established call using on-hook dialing, press the **VOLUME** button until the desired volume is set.

**To Adjust the Handset Volume:**

While the handset is off-hook on an established call, press the **VOLUME** button until the desired volume is achieved.

**To Adjust Station-to-Station Handsfree Volume:**

While receiving a handsfree station-to-station call, press the **VOLUME** button until the desired volume is set.

**SPEED DIALING****AUTOMATIC DIALING**

An Automatic Dialing (**ADL**) button allows you to store and automatically dial any telephone number (up to 16 digits) by pressing a single button. The stored number can be a station number, access code, or outside number. If your telephone has Flexible Automatic Dialing, then you can store numbers directly from your telephone. If, however, your telephone has Fixed Automatic Dialing, stored numbers are fixed and can only be altered via programming.

**To Dial a Stored Telephone Number:**

1. Lift the handset.

You will hear dial tone.

2. Press the appropriate **ADL** button.

The telephone number will be dialed.

**To Store a Telephone Number (for Telephones with Flexible Automatic Dialing):**

1. Leave the handset on-hook.
2. Press the desired **ADL** button.
3. Dial the telephone number to be stored (16 digits maximum).

The ADL LED will flash.

*NOTE: It may be necessary to insert a pause to allow for dial tone delay. To enter a pause, press the **PAUSE** button after the trunk access code.*

4. Press the **ADL** button again.

The ADL LED will go out, and the telephone number will be stored.

**REPEAT LAST NUMBER DIALED**

The system automatically stores the last number that you dialed. This enables you to quickly redial when the number that you have dialed is either busy or is not answered.

**To Redial the Last Number:**

1. Lift the handset.
2. Press the **REDIAL** button or dial the access code **#7** \_\_\_\_\_.

You will hear dial tone.

The system will automatically redial the number.

*NOTE: On the Digital Telephones, the **REDIAL** button is now a fixed feature key to the right of the dialpad.*

**SPEED DIAL-STATION**

If your telephone is equipped with Speed Dial-Station button(s), you can establish a personal directory of up to 10 telephone numbers per list.

**To Use Speed Dial-Station:**

1. Lift the handset.
2. Press the appropriate **SDC** or **SDU** button, or dial the access code **#3** \_\_\_\_\_.
3. Dial the Speed Dial-Station address code (0 ~ 9).

You will hear dial tone.

The SDC or SDU LED will flash.

The SDC or SDU LED will go out, and the system will dial the stored number.

A Speed Dial-Station directory may be shared by several stations. However, only one of these stations, designated as the controller, can store or change numbers.

**To Store Numbers or Change Address Codes:**

1. Leave the handset on-hook.
2. Press the **SDC** button.
3. Dial the assigned single-digit code (0 ~ 9).

The SDC LED will flash.

4. Dial the number to be stored (16 digits maximum).

*NOTE: It may be necessary to insert a pause to allow for dial tone delay. To enter a pause, press the **PAUSE** button after the trunk access code.*

5. Press the **SDC** button.
6. Record the Speed Dial-Station address code and telephone number for future reference.

The SDC LED will go out, and the number will be stored.

---

## SPEED DIAL-SYSTEM

As many as 90 telephone numbers can be stored in the Speed Dial-System directory.

### To Use Speed Dial-System:

1. Lift the handset.
2. Press the **SDS** button or dial the access code **#5** \_\_\_\_\_.
3. Dial the Speed Dial-System address code (10 ~ 99).

You will hear dial tone.

The SDS LED will flash.

The system will dial the stored number.

### To Store or Change a Telephone Number:

1. Notify the attendant.

(The Speed Dial-System directory is controlled by the attendant console.)

*NOTE: In a consoleless operation, the Speed Dial-System is set and changed via the programming terminal (TTY connection).*

---

## CALL FUNCTIONS

### AUTOMATIC CALLBACK

If you attempt to call another station or access a trunk and receive a busy tone, you can request to be signaled when the desired station or trunk is idle. You may continue to use your telephone in the usual manner while awaiting a callback.

### To Activate Automatic Callback:

1. Press the **ACB** button, or press the **CONF/TRNS** button and dial the access code **#7** \_\_\_\_\_.

You will hear recall dial tone, and the ACB LED (if equipped) will light.

2. Hang up and wait for the callback, or dial another call.

### To Answer Automatic Callback:

1. When the desired connection becomes idle, your telephone will signal once.

The ACB LED (if equipped) and the DN LED will flash.

2. You must pick up the call within six seconds.

If you do not, your request will be canceled. (This time period is programmable.)

3. Lift the handset or press the prime **DN** button.

- 4A. If the called party is a trunk:

You will hear outside dial tone.

- 5A. Proceed to dial.

*NOTE: If the call was made using Least Cost Routing, then, at this point, the called number will be dialed automatically.*

- 4B. If the called party is a station:

The called station will ring, and you will hear ringback tone. If you hear overflow tone, this indicates that another station had already either camped onto, registered an Automatic Callback, or placed a call to that station before you.

- 5B. Hang up and wait to be called again.

### To Cancel Automatic Callback:

1. Press the **ACB** button or dial the access code **#7** \_\_\_\_\_.

The ACB LED (if equipped) will go out, and the callback will be canceled.

## CALL FORWARDING

Call Forwarding enables you to direct your station's incoming calls to another station. There are four types of call forwarding available:

- Call Forward All Calls
- Call Forward Busy
- Call Forward No Answer
- Call Forward Busy/No Answer

In addition, there are two types of Call Forwarding System that apply to calls from DID, TIE, and CCSA trunks. These types of Call Forwarding can **only** be directed to an attendant console:

- Call Forward Busy (System/DID)
- Call Forward Busy/No Answer (System/DID)

*NOTE: Only one type of Station Call Forwarding can be in use at a time.*

### To Call Forward All Calls:

1A. Press the **CFD** button.

The CFD LED will flash.

2A. Dial the number to which calls are to be forwarded.

3A. Press the **CFD** button.

The CFD LED will light steadily.

...or... (if a **CFD** button number is not provided)

1B. Obtain dial tone.

2B. Dial the access code **(# 1 0)**

You will hear recall dial tone.

3B. Dial the number to which calls are to be forwarded.

4B. Dial **#**.

You will hear dial tone, and the number is stored.

### To Use Call Forward Busy:

1A. Press the **CFBY** button.

The CFBY LED will flash.

2A. Dial the number to which calls are to be forwarded.

3A. Press the **CFBY** button.

The CFBY LED will light steadily.

... or ... (if a **CFBY** button is not provided)

1B. Obtain dial tone.

2B. Dial the access code **(# 1 0)**

You will hear dial tone.

3B. Dial the number to which calls are to be forwarded.

4B. Dial **#**.

You will hear dial tone, and the number is stored.

### To Use Call Forward No Answer:

1A. Press the **CFNA** button.

The CFNA LED will flash.

2A. Dial the number to which calls are to be forwarded.

3A. Press the **CFNA** button.

The CFNA LED will light steadily.

... or ... (if the **CFNA** button is not provided)

1B. Obtain dial tone.

2B. Dial the access code **(# 1 1)**

You will hear recall dial tone.

3B. Dial the number to which calls are to be forwarded.

4B. Dial **#**.

You will hear dial tone, and the number will be stored.

### To Use Call Forward Busy/No Answer:

1A. Press the **CFBN** button.

The CFBN LED will flash.

2A. Dial the number to which calls are to be forwarded.

3A. Press the **CFBN** button.

The CFBN LED will light steadily.

... or ... (if the **CFBN** button is not provided)

1B. Lift the handset.

You will hear dial tone.

2B. Dial the access code (# 1 2)

You will hear recall dial tone.

3B. Dial the number to which calls are to be forwarded.

4B. Dial #.

You will hear dial tone, and the number will be stored.

**To Use Call Forward Busy (SYSTEM/DID):**

1A. Press the **CFSB** button.

The CFSB LED will flash.

2A. Dial 0 (the **only** number to which calls can be forwarded).

3A. Press the **CFSB** button.

The CFSB LED will light steadily.

... or ... (if the **CFSB** button is not provided)

1B. Lift the handset.

You will hear dial tone.

2B. Dial the access code (# 1 3)

You will hear recall dial tone.

3B. Dial 0.

4B. Dial #.

You will hear dial tone, and the number will be stored.

**To Use Call Forward Busy/No Answer (SYSTEM/DID):**

1A. Press the **CFSN** button.

The CFSN LED will flash.

2A. Dial 0 (the **only** number to which calls can be forwarded).

3A. Press the **CFSN** button.

The CFSN LED will light steadily.

... or ... (if the **CFSN** button is not provided)

1B. Lift the handset.

You will hear dial tone.

2B. Dial the access code (# 1 4)

You will hear recall dial tone.

3B. Dial 0.

4B. Dial #.

You will hear dial tone, and the number will be stored.

*NOTE: You may continue to place outgoing calls from your telephone while Call Forwarding is in effect.*

**To Cancel All Types of Call Forwarding:**

1A. Press the appropriate Call Forward button.

The LED will go out, and Call Forwarding will be canceled.

...or... (if no Call Forward button is provided)

1B. Lift the handset.

You will hear dial tone.

2B. Dial the access code (# 1 9)

You will hear dial tone, and Call Forwarding will be canceled.

---

**CALL PICKUP DIRECTED**

Call Pickup Directed allows you to answer a call that is ringing or on hold at a station other than your own. The call can be answered via a **CPD** button or a Call Pickup Directed access code.

**To Use Call Pickup Directed:**

1. Lift the handset.

You will hear dial tone.

2. Press the **CPD** button or dial the access code (# 5) \_\_\_\_\_.

You will hear recall dial tone.

3. Dial the station number that is ringing/on hold.

You will be connected to that call.

*NOTE: A call which rings on a secondary DN can be picked up by dialing the secondary DN, but only when the primary DN is idle.*

## CALL PICKUP GROUP

Call Pickup Group allows you to answer a call that is ringing at a station within your designated group without knowing exactly which station number is ringing. The call can be answered via a **CPG** button or a Call Pickup Group access code.

### To Use Call Pickup Group:

1. Lift the handset.
2. Press the **CPG** button or dial the access code **(# 2) \_\_\_\_\_**.

You will hear dial tone.

You will be connected to any call that is ringing at any station in your group.

*NOTE: Calls can only be picked up from an idle station. Calls cannot be picked up on a secondary DN, if the primary DN is busy.*

---

## CONFERENCING

By using the **CONF** button, it is possible to add a third party to an existing two-party conversation. The added party can either be a station or an outside party. It is possible for any of the three parties to disconnect at any time, leaving the remaining two parties connected. (The system will refuse to connect certain types of trunk lines.)

### To Initiate a Conference:

1. Press the **CONF** button.
2. Dial the desired number.
3. Press the **CONF** button when the new party answers.

The original connection will be placed on hold, and you will hear recall dial tone. The DN LED indication will change from In-use to On-hold status.

The DN LED indication will change from On-hold to In-use status. A 3-party conference will be established.

### To Return to Your Original Connection:

1. Press the appropriate **DN** button.

The third connection will be released and the original connection will remain.

## CONSULTATION CALL

This feature enables you to consult with either an inside or outside party while you simultaneously have another call on hold.

### To Consult:

1. Press the **CONF** button.
2. Dial the desired number.

The original connection will be placed on hold, and you will hear recall dial tone. The DN LED indication will change from In-use to On-hold status.

You will be connected to the third party.

### To Return to the Original Connection:

1. Press the appropriate **DN** button.
2. Resume your conversation.

The DN LED indication will change from On-hold to In-use status, and the third party will be disconnected.

---

## DO NOT DISTURB

Do Not Disturb allows a station to give a busy indication whenever the user does not want to be disturbed. DND can only be applied to a station's primary DN.

### To Activate DND:

- 1A. Press the **DND** button.
- 1B. Lift the handset.
- 2B. Dial the access code **(# 2) \_\_\_\_\_**.
- 3B. Hang up.

The DND LED will light, and Do Not Disturb will be activated.

... or ... (if a **DND** button is not provided)

You will hear dial tone.

Do Not Disturb will be activated.

### To Cancel DND:

- 1A. Press the **DND** button.
- 1B. Lift the handset.

The DND LED will go out, and Do Not Disturb will be canceled.

... or ... (if a **DND** button is not provided)

You will hear dial tone.

2B. Dial the access code (# # 2)

3B. Hang up.

Do Not Disturb will be canceled.

**NOTES:**

1. *Outgoing calls and features will still function while the telephone is in the DND mode; however, the telephone will appear to be busy to any incoming calls.*
2. *The activation of Do Not Disturb will not interfere with Internal Paging.*

### HANDSFREE ANSWERBACK/SPEAKER CUT-OFF

This feature allows you to reply handsfree on voice page calls and (optionally) on the following types of calls:

- Station-to-Station calls on standard DN buttons.
- Calls from the attendant console.

*NOTE: If the Speaker Cut-off (SCO) feature is activated (SCO LED on), the Handsfree Answerback feature will be disabled and all calls will ring your telephone in the usual manner.*

**To Answer a Call Handsfree:**

1. Listen to a single tone.
2. Speak in the direction of the telephone.
3. Lift the handset to speak privately.

The DN LED will indicate In-use status, the SCO LED will flash, the SPKR LED will flash, and the MIC LED will light steadily.

*NOTE: If the attendant, Attendant-Position Digital Telephone, or another station is announcing an outside call and you do not pick up the handset, the handsfree connection will be broken when the announcer releases, and the outside call will ring the DN button in the usual manner.*

**To Activate Speaker Cut-off:**

1. Press the SCO button.

The SCO LED will light, and the call will now ring your telephone.

**To Release Speaker Cut-off:**

1. Press the SCO button.

The SCO LED will go out, and Handsfree Answerback will now be active.

### LEAST COST ROUTING

Your system will automatically select the least costly route (trunk group) for the call that you want to make. If that route is busy, the next best route will be selected (if permitted by your Class of Service).

In D.05 software, the Least Cost Routing Enhancement for "011" will expand the PERCEPTION system's capability to include international calls in its Least Cost Routing. Your system will automatically select the least costly route for the international calls that you want to make, provided the calls are permitted.

**To Use Least Cost Routing:**

1. Lift the handset.
2. Dial the access code (# # 5)
3. Dial the number that you want to call.
- 4A. When the party answers, you can begin your conversation.  
... Or ...
- 4B. Activate the Automatic Callback feature.

You will hear dial tone.

*\*You may hear dial tone at this point if your system is programmed to do so.*

If a trunk that is allowed by your Class of Service is available, your call will automatically be dialed over the proper trunk and you will hear call progress tones. If no trunks are available, you will hear busy tone.

Automatic Callback will be activated.

*NOTE: If your system has been programmed to do so, you will receive a 1-second warning tone before the system advances to the last choice routing.*

### OFF-HOOK CALL ANNOUNCE

The Off-hook Call Announce feature allows a station user to voice announce through the DKT speaker of another station that is currently busy.

**To Establish Off-hook Call****Announce from a Station:**

1. Lift the handset.
2. Dial the directory number of the desired station.
- 3A. If the calling station has an automatic OCA feature, the called station will hear warning tone and you will hear ringback tone.
- 3B. If the calling station has a manual OCA feature, there are two ways to complete the call:
  - a. Press the **OCA** button.  
... or ...
  - b. Press the **CONFTRNS** button, and dial the access code **#13** \_\_\_\_\_.
4. You may speak to the called party.

You will hear dial tone.

The system reads call forwards and station hunting data, to see if they are set, since those features take **precedence** over OCA.

The OCA LED will flash.

The called station will hear warning tone, and you will hear ringback tone. The OCA call is established.

**NOTES:**

1. When the called station is having another OCA, your OCA will queue until the OCA in progress terminates.
2. If the called station is on-hook upon termination, your OCA automatically becomes an on-hook call.
3. If the called station is off-hook, your OCA becomes an off-hook call upon termination of OCA in progress.
4. A four-second delay may occur in the operation of OCA when the following instance takes place:  
Station A is talking to station B. Station A needs to consult with station C. Station A presses the **CONFTRNS** button and dials station C, only to find it busy. If station C is equipped for OCA, and station A's COS allows for OCA to be performed (it is programmed for manual mode in the **DEKT Program**) but does not have an **OCA** button, then the four-second OCA timer is automatically initiated. The voice path will then be opened for the announcement.

**OUTGOING CALLS****VOICE****To Make an Outgoing Call:**

1. Lift the handset.
2. Dial the required trunk access code.
3. Dial the desired telephone number.

You will hear dial tone.

Trunk Access Codes: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

You will hear outside dial tone.

**STATION-TO-STATION CALLING****VOICE****To Call Another Station:**

1. Obtain dial tone in one of the following ways:
  - a. Lift the handset.  
... or ...
  - b. Lift the handset and press a **DN** button.  
... or ...
  - c. For on-hook dialing, press a **DN** button.
2. Dial the station's number.
3. Hang up when the call is completed.

If your primary DN line is idle, then it will automatically be selected.

Dial tone will be heard via the speaker. It is not necessary to lift the handset unless you wish to use it.

You will hear the call progress tones.

## CALL HOLD AND TRANSFER

### CALL HOLDING

Call Park and Call Hold are two methods of holding calls. The Call Park (**PARK**) button allows you to originate and receive calls on the **DN** button once the call was parked (on hold). If you do not return to the parked call within a designated time period, your telephone will ring to recall you. The Call Hold (**HOLD**) button causes the **DN** button to become busy, but a held call will not recall you.

#### To Park a Call:

1. Press the **PARK** button, or press the **CONF/TRNS** button and dial the access code (**1 3**) \_\_\_\_\_.
2. Hang up or dial another call.

The **PARK** LED will light (only if the **PARK** button is equipped). The **DN** LED will indicate the In-use status (unchanged). The Park connection will be placed on hold, and you will hear dial tone.

#### To Reconnect a Parked Call:

- 1A. Lift the handset.  
... or ...
- 1B. Press the **DN** button (this is necessary only for calls which are parked on a **DN** other than the primary **DN**).

The primary **DN** LED will indicate the In-use status, and you will hear dial tone.

The **DN** LED will indicate the In-use status, and you will hear dial tone.

- 2A. Press the **PARK** button or dial the access code (**1 3**) \_\_\_\_\_.

The **PARK** LED will go out, you will no longer hear dial tone, and you will be reconnected. The primary **DN** LED will indicate the In-use status (unchanged).

#### To Hold a Call:

1. Press the **HOLD** button.
2. Hang up.

The **DN** LED will change from In-use to On-hold status, and the connection will be placed On-hold.

#### To Reconnect a Held Call:

1. Lift the handset.

If the On-hold call was on your primary **DN** button, you will be reconnected immediately. The **DN** LED will change from On-hold to In-use status.

2. Press the **DN** button (this is necessary only for calls being held on a **DN** other than your primary **DN**).

The **DN** LED will change from On-hold to In-use status.

---

### CALL TRANSFER

#### To Transfer a Call:

1. Request the party to wait.
2. Press the **CONF/TRNS** button.
3. Dial the desired number.\*
4. When the called party answers, announce the call.
5. Hang up to transfer the call.

The original connection will be placed on hold, you will hear recall dial tone, and the **DN** LED will change from In-use to On-hold status.

\*If you hear busy tone, return to the original party by pressing the **DN** button.

The call will be transferred.

---

### CALL WAITING

Two short warning tones from your telephone's speaker and a flashing **CWT** LED advise you that your attendant has an outside call waiting for you. When this occurs, you have three choices:

1. Ignore the call. The call will return to the attendant.
2. Terminate your existing call, and accept the new call.
3. Hold the existing call and accept the new call. In this mode, it is possible to alternate between the two calls until the conversation(s) are terminated.

#### To Accept the Waiting Call and Terminate the Existing Call:

1. Hang up.

The **CWT** LED will go off, and the new call will ring your prime **DN** in the usual manner.

**To Accept the Waiting Call While Holding the Existing Call:**

1. Press the **CWT** button, or press the **CONF/TRNS** button and dial the access code (# 4) \_\_\_\_\_.

The CWT LED will light steadily, the DN LED will indicate the On-hold status, and you will be connected to the waiting call.

**To Return to the Original Call:**

1. Press the appropriate **DN** button.

The CWT LED will flash, and the DN LED will indicate the In-use status.

*NOTE: It is possible to alternate between the two calls indefinitely by selecting either the **CWT** button or the **DN** button.*

**To Disconnect One Call and Remain Connected to the Other Call:**

1. Hang up while connected to the call that you want to terminate.
2. Press the **DN** button.

The remaining call will appear in the hold condition at the **DN** button.

You will be connected to the remaining call.

*NOTE: Camp-on and Call Waiting are mutually exclusive.*

**CAMP-ON CALLS**

A short warning tone from your telephone's speaker (while you are talking with someone) advises you that an incoming call has been parked at your station.

**To Accept a Camp-on Call:**

1. Complete the original call and hang up.
2. Answer the new call.

Your telephone will ring, and the DN LED will flash.

*NOTE: Camp-on and Call Waiting are mutually exclusive.*

**MESSAGES****MEET-ME PAGE**

This feature will automatically connect you to a call that has been "parked" for you by the operator. If you are away from your telephone, the operator may park the call and direct you via the page system to dial an access code.

**To Answer a Meet-me Page:**

1. Lift the handset of any telephone.
2. Dial the access code given by the operator.

You will hear dial tone.

You will immediately be connected to the caller.

**MESSAGE CENTER OPERATION**

The following applies only if your telephone is designated as the Message Center.

**To Leave a Message Waiting****Signal:**

1. Dial the appropriate station number.
2. If you receive either busy or no answer, press the **MSG** button.

The MSG LEDs on both stations will light, and the Message Center's MSG LED will go out when the connection is broken.

**To Cancel Message Waiting by Message Center:**

- 1A. Dial the appropriate station number.
- 2A. Press the **MSG** button.  
... or ...
- 1B. Dial the access code (# # 5) \_\_\_\_\_.

The MSG LED will go out (at both stations).

All Message Waiting indications will clear.

**MESSAGE WAITING**

Message Waiting allows the attendant or alternative Message Center to inform a station user that a message is waiting. When you have a message waiting, the Message Waiting LED on your telephone will light or your telephone will receive a double ring every 20 minutes. If Voice Mail sets your Message Waiting, you **WILL NOT** receive a double ring every 20 minutes.

**To Obtain a Message and Cancel Message Waiting at the Station:**

1. Lift the handset.

You will hear dial tone.

2A. Press the **MSG** button.  
... or ...

The Message Center will ring automatically.

2B. Dial Message Center number.

The Message Center will ring.

3. Collect your message(s).

4. Hang up.

**To Cancel Message Waiting at the Station:**

1A. While the telephone is idle, press the **MSG** button.  
... or ...

The MSG LED will go out, and Message Waiting will be canceled.

1B. Lift the handset.

You will hear dial tone.

2B. Dial the access code **(1 5)**  
\_\_\_\_\_.

Message Waiting will be canceled.

3B. Hang up.

**NOTES:**

1. If you go off-hook while your station is being signaled by the Message Waiting feature, you will automatically be connected to the Message Center.
2. On the digital telephones, the **MESSAGE** button is now a fixed feature key to the right of the dialpad.

**PAGING, EXTERNAL ZONES (FIVE ZONES)****To Page a Single External Zone:**

1. Lift the handset.

You will hear dial tone.

2. Press the **PEXT** button, or dial the access code **(1 5 3)**  
\_\_\_\_\_.

You will now be connected to the external page zone.

3. Dial the desired paging zone number (0 ~ 4).

**Paging Access Codes**

	Code	Location
ZONE 0	_____	_____
ZONE 1	_____	_____
ZONE 2	_____	_____
ZONE 3	_____	_____
ZONE 4	_____	_____

4. Announce your page.

Speak slowly and distinctly, and repeat your message.

**To Page All External Zones:**

1. Lift the handset.

You will hear dial tone.

2A. Press the **PEXA** button or dial the access code **(1 5 4)**  
\_\_\_\_\_.  
... or ...

You will be connected to the external all-page zone.

2B. To page all External Paging Zones in addition to the Expanded Internal Paging Group, dial \_\_\_\_\_.  
(Programmed in DSYS.)

You will be connected to all the external paging zones and the expanded internal paging group.

3. Announce your page.

Speak slowly and distinctly, and repeat your message.

**PAGING, INTERNAL GROUPS (0, 2 ~ 17)****To Page a Single Internal Group:**

1. Lift the handset.

You will hear dial tone.

2. Press the **PINT** button, or dial the access code **(1 5 1)**  
\_\_\_\_\_.

You will be connected to the internal paging zone.

3. Dial the desired paging group number (2 - 17).

4. Announce your page.

Speak slowly and distinctly, and repeat your message.

#### To Page All Internal Groups:

1. Lift the handset.

You will hear dial tone.

2A. Press the **PINA** button and dial **0** (the Internal All Paging Group number).  
... or ...

You will now be connected to the internal all-paging group.

2B. Dial the access code **(1 5 2)** \_\_\_\_\_ and dial **0**.  
... or ...

You will be connected to the internal all-paging zone.

2C. To page the Expanded Internal Paging Group in addition to all the External Paging Zones, dial \_\_\_\_\_. (Programmed in DSYS.)

You will be connected to the expanded internal paging group and all the external paging zones.

3. Announce your page.

Speak slowly and distinctly, and repeat your message.

---

### STATION-TO-STATION MESSAGE WAITING WITH LCD

#### To Set a Message:

1. Lift the handset.

You will hear dial tone.

2. Dial the desired station number.

3. If you receive either no answer, busy tone, or DND, press the **SSM** button.

The SSM LED will light at the called station. The LCD at the called station will display both "CALL" and the calling station's DN. The LCD at the calling station will display both "SENT" and the called station's DN.

#### To Clear Station-to-Station Message from the Called Station:

1. While on-hook, press the **SSM** button.

The SSM LED will go out, the "CALL" LCD display at the called station will clear, and the "SENT" LCD display at the calling station will clear.

#### To Return a Station-to-Station Message Call:

1. Lift the handset.

You will hear dial tone.

2. Press the **SSM** button.

The calling station will ring. When the station answers, the SSM LED will go out unless there are additional SSMs set to your station. The "CALL" LCD display at the called station will clear, and the "SENT" LCD display at the calling station will clear.

#### To Clear a Station-to-Station Message from the Calling Station:

1. Lift the handset.

You will hear dial tone.

2. Dial the called station number where SSM is set.

3. Press the **SSM** button twice.

The SSM LED will go out at the called station, the "CALL" LCD display at the called station will clear, and the "SENT" LCD display at the calling station will clear.

*NOTE: Up to six SSM displays may be stored on the LCD (only three 3-digit numbers can be displayed at one time). The station number in the left-most position will be called when the **SSM** button is pressed. To rotate the station numbers, press the **PAGE** button once, then press the **SCRL** button located next to the LCD.*

---

### VOICE MAIL

The following instructions provide general operating information for voice mail systems. Refer to your voice mail system's user guide for additional operating information.

#### To Call Forward All Calls to Voice Mail:

1. Press the **CFD** button or dial the access code **(1 9)** \_\_\_\_\_.

The CFD LED will flash.

2. Dial your Voice Mail number.

(Another digit may have to be dialed here. Check your VM System User Guide.)

- Dial your mailbox number.
- Press the **CFD** button (or **1** if access code is used).

The CFD LED will light steadily, and the call will be forwarded to your mailbox.

#### To Cancel Call Forward to Voice Mail:

- Press the **CFD** button or dial the access code (**1 1 9**)

The call forward to voice mail will be canceled.

*NOTE: You can set the **MSG** button to automatically retrieve your messages (on-hook).*

#### To Program Your Message Button to Retrieve Messages Automatically:

- Press the **MSG** button.
- Dial your Voice Mail number.
- Dial your mailbox number and pass code.
- Press the **MSG** button.
- To respond, press the **MSG** button.

The MSG LED will flash.

(Another digit may have to be dialed here. Check your VM System User Guide.)

The MSG LED will light steadily.

You may deliver your response.

---

#### VOICE PAGE

This feature allows you to automatically be connected to the speaker of a specific digital telephone.

#### To Make a Voice Page:

- Lift the handset.
- Press the appropriate Voice Page (**VCP**) button.
- Make your announcement.

You will hear dial tone.

You will hear one ring tone, and the VCP LED will light momentarily.

Your announcement will be made.

*NOTE: If the paged person is either busy on another DN or has SCO engaged, you will hear ring tone until the call is answered. If that DN is busy, you will hear busy tone.*

---

## MISCELLANEOUS FEATURES

### ACCOUNT CODE CALLS

On some calls, for accurate billing purposes, you may be required (forced) to dial an account code before dialing an outside number. On other calls, you may wish to record an account number voluntarily after either dialing an outside number, or receiving an incoming call. The code you enter will be recorded on the Station Message Detail Recording (SMDR) printout with the details of your call. Be sure that the Account Code Length (ACL) is programmed in DMDR. This feature will not operate without it.

#### To Record a Forced, or a Forced and Verifiable Account Code (Direct Trunk Access or Least Cost Routing):

- Access a CO line (by dialing the DTA or LCR access code).
- Dial the distant directory number.
- Using the dialpad, dial the 1- ~ 12-digit account code (determined in the DMDR Program).

You will hear dial tone.

You will hear recall dial tone.

The account code is saved to output to SMDR. The system stores dialed directory number to auto-dial queue, and the trunk call is made.

*NOTE: These Forced and Forced/Verifiable Account Codes can be applicable to either all calls or toll calls only (Programming Option).*

#### To Record a Verifiable Account Code Before Dialing a Call:

- Lift the handset.
- Press the **CRG** button.
- Dial the 1- ~ 12-digit account code on the dialpad.

You will hear dial tone.

You will hear recall dial tone.

4. Dial the direct trunk access code and the desired telephone number.

The trunk call is made.

**To Record a Verifiable Account Code During a Call (Incoming or Outgoing) With a **CRG** Button:**

1. Ask your party to wait.
2. Press the **CRG** button.
3. Dial the 1- ~ 12-digit account code.
4. Resume the conversation.

At any time during conversation ...

You will hear recall dial tone. The connection will be placed on hold, the DN LED indicates the On-hold status, and the CRG LED will light.

The system will store the account code to output to SMDR, and the call will automatically be reconnected.

**To Record a Verifiable Account Code During a Call (Incoming or Outgoing) Without a **CRG** Button:**

1. Ask your party to wait, then press the **CONF/TRNS** button.
2. Dial the access code (# 9) \_\_\_\_\_.
3. Dial the 1- ~ 12-digit account code.
4. Resume your conversation.

At any time before disconnect ...  
You will hear recall dial tone.

Your connection will be placed on hold, and you will hear recall dial tone.

The system will store the account code to output to SMDR.

**To Record a Verifiable Account Code After a Call Is Completed:**

This procedure applies when a station user forgets to input an account code either before, or during a call. The account code can still be entered after the call is completed, provided it is done prior to disconnecting the trunk.

After the call is completed and prior to the station user hanging up, the system automatically sets the ACT timer. Before the ACT timer expires ...

1. Press the **CRG** button or dial the access code (# 9) \_\_\_\_\_.

You will hear recall dial tone.

2. Dial the 1- ~ 12-digit account code.
3. Hang up.

The system sets the account code, the SMDR is printed out, and the line locks out.

---

## ACCOUNT NUMBER RECORDING

Your system may automatically record the details of the calls you make to, or receive from outside the system. If desired, these calls may be assigned account numbers for billing purposes (\_\_\_\_\_ digits).

**To Record a Voluntary Account Number Before Dialing a Call:**

1. Lift the handset.
2. Press the **CRG** button or dial the access code (# 9) \_\_\_\_\_.
3. Dial the account number of the dialpad (1 ~ 12 digits).
4. Dial the telephone number in the usual manner.

You will hear dial tone.

When the number is completed, you will receive recall dial tone.

**To Record a Voluntary Account Number During a Call (Incoming or Outgoing) Without a **CRG** Button:**

1. Ask your party to wait.
2. Press the **CONF** button.
3. Dial the access code (# 9) \_\_\_\_\_.
4. Dial the account number (1 ~ 12 digits).
5. Press the appropriate **DN** button.
6. Resume your conversation.

At any time before disconnect ...

Your connection will be placed on hold, and you will hear recall dial tone.

You will hear recall dial tone.

When the number is completed, you will hear recall dial tone again.

You will be reconnected to your party.

**To Record a Voluntary Account Number During a Call (Incoming or Outgoing) With a **CRG** Button:**

1. Ask your party to wait.
2. Press the **CRG** button.
3. Dial the account number (1 ~ 12 digits).
4. Resume your conversation.

At any time before disconnect ...

The connection will be placed on hold, the DN LED indicates the On-hold status, and the CRG LED will light.

When the number is completed, the call will automatically be reconnected.

---

### AUTOMATIC WAKE-UP/TIMED REMINDER

Automatic Wake-up/Timed Reminder allows the station user to set an alarm that will ring the station at a prearranged time. After answering a wake-up call, the station will receive either a digitized voice-message, music, or silence. If the call is not answered within six rings, or if the station is busy, a second (and, if necessary, a third) attempt will be made at 5-minute intervals.

**To Set Automatic Wake-up/Timed Reminder:**

1. Lift the handset.
2. Dial the access code **(# 3 0)** \_\_\_\_\_.
3. Dial the 4-digit time (via the dialpad) in the following format:  
HHMM

You will hear dial tone.

You will hear recall dial tone.

For example: For 9:30 AM, enter 0930.  
You will hear dial tone, and the time will be stored.

**To Cancel Automatic Wake-up/Timed Reminder:**

1. Lift the handset.
2. Dial the access code **(# 3 0)** \_\_\_\_\_.

You will hear dial tone.

You will hear recall dial tone.

3. Dial the 4-digit time 0000.

You will hear dial tone, and the callback time will be canceled.

---

### EXECUTIVE OVERRIDE

Executive Override allows you to enter an established conversation. The original connection will receive a warning tone before you actually join the established connection.

**To Override a Busy Condition:**

1. Press the Override **(OVR)** button.
2. A 3-way conference will now exist (any one of the parties can leave the conference and the other two will remain connected).

The OVR LED will flash, and a warning tone will be given to the existing connection.

*NOTE: During the override condition, a short tone will be heard every 15 seconds by all parties.*

---

### MAID-IN ROOM STATUS (Lodging/Health Care Only)

By using the guest room telephone, a maid can indicate to the attendant console that a maid is in a particular room. The attendant can then change the room's status.

**To Set Maid-In-Room Status:**

1. Lift the handset.
2. Dial the access code **(# 0 0)** \_\_\_\_\_.
3. Dial the access code **(# 0 1)** \_\_\_\_\_.

You will hear dial tone.

You will hear recall dial tone.

You will hear recall dial tone, and Maid-in-Room Status will now be set.

**To Cancel Maid-In-Room Status:**

1. Lift the handset.

You will hear dial tone.

2. Dial the access code **(# 0 0)**  
\_\_\_\_\_.

You will hear recall dial tone.

3. Dial the access code **(# 0 2)**  
\_\_\_\_\_.

You will hear recall dial tone, and Maid-in-Room Status will now be canceled.

#### To Cancel Maid-in-Room Status and Set Clean Room Status:

1. Lift the handset.

You will hear dial tone.

2. Dial the access code **(# 0 0)**  
\_\_\_\_\_.

You will hear recall dial tone.

3. Dial the access code **(# 0 5)**  
\_\_\_\_\_.

You will hear recall dial tone, Maid-in-Room Status will now be canceled, and Clean Room Status will be set.

---

### MANUAL SIGNALING

This feature allows you to signal a specific station.

#### To Signal the Station:

1. Press the **SIG** button.

The SIG LED will flash once, and a single tone will be heard via the speaker of the called telephone.

---

### PRIVACY RELEASE

By operating the Privacy Release (**PRS**) button, you can allow another station user who shares your DN appearance to join an established conversation. A maximum of five parties (station or trunk), including your own station, can be included in the conversation.

#### To Release Privacy:

1. Press the **PRS** button.

The LED of the DN which has Privacy established will flash.

2. The second station user should now press the appropriate **DN** button.

The DN LED will change to the In-use status rate at both stations, and the conference will now begin.

3. Repeat the sequence to add other stations.

#### NOTES:

1. Anytime you release privacy, you can reengage it immediately by pressing the **DN** button.
2. Any station that is a party involved in the conversation can release the privacy.

---

### PRIVATE LINE

A Private Line allows incoming calls to bypass the attendant and arrive directly at your telephone. Unless a Private Line is assigned an Outgoing Call Restriction, outgoing calls can also be made.

#### To Make a Call on a Private Line (for Private Lines Without Outgoing Call Restriction):

1. Press the Private Line (**PVL**) button.
2. Proceed to dial.

The PVL LED will light, and you will hear outside dial tone.

#### To Receive a Call on a Private Line:

1. The line will ring your telephone.
2. Press the **PVL** button.

The PVL LED will flash.

You will be connected to the call.

*NOTE: Overflow tone will be given to a station attempting to make an outgoing call on a PVL from which it is restricted (transfers are operable).*

---

### SPEAKERPHONE (Optional)

#### To Make an Outside Call With Speakerphone (On-hook Dialing):

1. Leave the handset on-hook.
2. Press your **DN** button or a **PVL** button (if available).
3. Dial the desired telephone number.

The DN or PVL LED will indicate the In-use status, and you will hear dial tone.

4. Speak at a normal voice level in the direction of the telephone.

5. Press the **SPKR** button when the call is completed.

Your call will be terminated.

#### To Receive an Incoming Call (on Speakerphone):

1. Leave the handset on-hook.

You will hear a ringing tone.

2. Press the button corresponding to the DN or private line with the flashing LED.

The DN or PVL LED will indicate the In-use status.

3. Speak at a normal voice level in the direction of the telephone.

4. Press the **SPKR** button when the call is completed.

The call will be terminated.

#### MICROPHONE CONTROL:

The **MIC** button cuts off the speakerphone's microphone for private conversations for as long as the button is pressed. When the button is released, the microphone once again becomes active. The MIC LED indicates the status of the microphone:

LED	MICROPHONE
ON	ON
OFF	OFF

#### NOTES:

- To change from speakerphone to handset, lift the handset.
- To change from handset to speakerphone:
  - Press and hold the **SPKR** button.
  - Return the handset to on-hook position.
  - Release the **SPKR** button.

#### TOLL RESTRICTION/CLASS OF SERVICE OVERRIDE

The Toll Restriction Override feature allows a station user to override the assigned TOL and COS, and assign class O of TOL and COS for the duration of the toll call to be made. Once the toll call is completed, the station user's assigned TOL and COS will take precedence again.

#### To Use Traveling Class of Service:

- Lift the handset.
- Dial the access code **(# 1 7)** \_\_\_\_\_.
- Dial the DTA or LCR code and the desired telephone number.

You will hear dial tone.

You will hear dial tone.

Your call will be connected.

---

#### UNIVERSAL NIGHT ANSWER

#### To Answer an Incoming Call When the Night Bell is Heard:

- Lift the handset.
- Press the **UNA** button or dial the access code **(# 1)** \_\_\_\_\_.
- Speak to the caller.
- Use Call Transfer to connect the call with the desired station.

You will hear dial tone.

You will be connected to the incoming call.

The call will be connected to the desired station.

## LIQUID CRYSTAL DISPLAY



The Liquid Crystal Display (LCD) digital telephone is a 20-button speakerphone with the LCD as an additional feature. All features and functions of the LCD telephone, exclusive of the display itself, perform exactly like the non-LCD 20-button telephone.

In its idle state, the 32-digit LCD feature on your telephone gives you an accurate desk clock and calendar combination. When you have an outside call in progress, an Elapsed Time display will give a constant reminder of the call duration. In addition, a variety of information displays and feature prompts provide more efficient call handling. Alphanumeric messaging capability is also provided.

Display operations occur automatically as calls are continually processed. The only display operation that is controlled manually is the shifting between Date/Time and Elapsed Time, which is achieved by pressing the **PAGE** button during an active outside call. Station-to-Station Messages that have been previously set on the LCD can be scrolled by pressing the **SCRL** button.

**NOTE:** The **MODE** button is reserved for future use.

## SUMMARY OF LCD FUNCTIONS

## TYPE

## A. Date/Time

JAN 4 MON 10:12

## B. Dialed Number

## 1. Trunk

9555 1234

## 2. Station

231

## C. Calling Number

## 1. Station

ST 202 CALLING

TALKING ST 202

## WHEN DISPLAYED

Idle Telephone

**NOTE:** The Date/Time is adjusted on a system-wide basis by the attendant console or **DTRF Program**.

Digits will be displayed as a number is dialed on a trunk call or on a station-to-station call which uses either:

- Manual Dialing
- Automatic Dialing
- Repeat Last Number Dialed
- Speed Dial (Station and System)
- Least Cost Routing

When you receive a call, the calling station's directory number will be displayed.

When you have obtained a voice connection between the calling station and your station, the LCD will indicate talking status.

## 2. Attendant

ATT 0 CALLING

When you are being called by the attendant, the LCD will indicate the calling attendant number.

TALKING ATT 0

When you have obtained a voice connection between your station and the calling attendant, the LCD will indicate talking status.

## D. Trunk Number

TK 901 CALLING

When you are being called from an outside trunk, the number of the calling trunk will be displayed.

TALKING TK 901

When you have obtained a voice connection between the outside trunk and your station, the LCD will indicate talking status.

## E. Elapsed Time

00:13:23

While you are on a trunk call, the elapsed time of the call will be displayed. Elapsed Time will automatically replace the dialed number on the display after a programmed period of time has elapsed.

## F. Do Not Disturb

DO NOT DISTURB  
JAN 5 MON 10:15

When you are in the Do Not Disturb mode, the LCD will indicate Do Not Disturb at your station.

## G. Message Waiting (SSM)

SENT 200  
JAN 5 MON 10:15

When you hang up after setting Message Waiting (SSM) at another station, a reminder will be shown on the top row of your display panel.

CALL 301 302 303

Your display panel will show the numbers of stations that have left SSM messages at your station. Up to three numbers can be displayed at one time.

*NOTE: Your LCD panel will display the numbers of up to six stations that have left messages at your station. The additional three messages can be viewed via the Scroll (SCRL) button.*

## H. Automatic Callback

ACB SET

When you set ACB on a busy station or trunk, the LCD will indicate that ACB is set.

## I. Call Pickup

PICKUP

When you use Call Pickup Directed or Call Pickup Group to obtain a call, the LCD will indicate that Call Pickup Directed is in use.

901 CALLED 205

When you obtain a voice connection using Call Pickup Directed or Call Pickup Group, the LCD will now indicate the calling DN.

J. Automatic Wake-up/Timed Reminder  
1. Business

REMINDER 10:00 AM  
JAN 5 MON 9:05

When you register an Automatic Wake-up/Timed Reminder, the LCD will indicate the desired time.

## 2. Lodging/Health Care

WAKE UP 8:00 AM  
JAN 5 MON 7:00

When you register an Automatic Wake-up/Timed Reminder, the LCD will indicate the desired time.

## K. Automatic Dialing

ADL 5512347

When you program a number on an **ADL** button, your telephone will display the number as you program it.

## L. Speed Dial

## 1. Station

ST SPEED DIAL

When you use a Speed Dial Station number, the LCD will indicate the use of this feature.

## 2. System

SYS SPEED DIAL

When you use a Speed Dial System number, the LCD will indicate the use of this feature.

## M. Call Holding/Park

## 1. Call Holding

HOLD 354  
JAN 5 MON 3:05

When you place your directory number **DN** on hold, the LCD will display your DN.

## 2. Park

PARK 354  
JAN 5 MON 3:05

When you Park a call on your DN, the LCD will display your DN.

## N. Conferencing

CONFERENCE

When you set up a conference call from your telephone, the LCD will indicate the use of this feature.

## O. Account Number Recording

DIAL CODE 12345

When you use the Account Number Recording **CRG** feature, the LCD will indicate the entered account number.

## P. Paging

## 1. Internal Paging

PINT XX

When you access Page Zone XX, the LCD will indicate the desired zone number.

## 2. Internal All Paging

PINT ALL  
OR PINT 0

When you access Paging All Zones, the LCD will indicate "ALL."

## 3. External Paging

PEXT XX

## 4. External All Paging

PEXT ALL

## 5. All Paging

PAGE ALL

## Q. Call Forward

## 1. Call Forward All Calls

CF-AC TO-ST 203  
JAN 5 MON 11:00

When you Call Forward All Calls to a station, the LCD will indicate the DN to which calls are forwarded.

## 2. Call Forward Busy

CF-B TO-ST 203  
JAN 5 MON 11:00

When you Call Forward Busy to a station, the LCD will indicate the DN to which calls are forwarded.

## 3. Call Forward No Answer

CF-NA TO-ST 203  
JAN 5 MON 11:00

When you Call Forward No Answer to a station, the LCD will indicate the DN to which calls are forwarded.

## 4. Call Forward Busy No Answer

CF-BN TO-ST 203  
JAN 5 MON 11:00

When you Call Forward Busy/No Answer to a station, the LCD will indicate the DN to which calls are forwarded.

## 5. Call Forward Busy (System/DID)

CF-SB TO-ATT  
JAN 5 MON 11:00

When you Call Forward Busy (System/DID) to the attendant console, the LCD will indicate a Call Forward to "ATT."

## 6. Call Forward Busy/No Answer (System/DID)

CF-SN TO-ATT  
JAN 5 MON 11:00

When you Call Forward Busy/No Answer (System/DID) to the attendant console, the LCD will indicate a Call Forward to "ATT."

## R. Override

OVR 202 200

When you Override an existing station-to-station conversation, the LCD will indicate your DN and the DN that you are overriding.

■ Meet-me Page (Attendant-Position Digital Telephone, MMP)

C-HOLD XXXX

10

■ Meet-me Page Recall (Attendant-Position Digital Telephone)

MMP RCL TKXXXX

■ Remote Access Code (when assigned by Attendant-Position Digital Telephone)

RAC-XXXX

## S. Trunk Identification

CUSTOMER SERVICE

The trunk can be programmed to display an identifying name of up to 16 characters. The name will be displayed on incoming and outgoing calls.

## T. Off-hook Call Announce

CALL ANNOUNCE XXXX

When you Off-hook Call Announce to a busy station, your LCD displays the number of that station.

## U. Agent Queue Status

```

QUE#001
JUL 11 THU 9:53
  
```

If you are logged in as an ACD agent, the LCD will display the number of calls in queue that are waiting to be answered. The sample display (shown on the left) shows one call in queue.

## V. ACD Trunk Number

```

QUE#001
CUSTOMER SERVICE
  
```

When an ACD trunk is ringing at an ACD station, the queue number and trunk ID (either alpha or numeric) is displayed.

## W. ACD Trunk Answered

## 1. Trunk ID shifts right

```

QUE#001
CUSTOMER SERVICE
  
```

Once the ACD trunk call has been answered, the trunk ID shifts to the right of the display.

## 2. Elapsed Time Displays

```

QUE#001
00:00:01
  
```

The trunk ID is displayed for ten seconds and then changes to elapsed time.

## X. Work Time

```

010
00:03:50
  
```

When an ACD agent completes a call, the agent's status changes to After Call Work Time (programmable option). The queue status disappears and After Call Work Time appears in the upper right-hand corner and updates every ten seconds. Elapsed time remains on the display. When After Call Work Time is complete, the queue size, date, and time will be displayed again.

## Y. Assistance Call

## 1. Agent Places Call

```

QUE#001
ASSIST
  
```

When an agent places an Assistance Call, "ASSIST" is displayed in the lower right-hand corner of the agent's LCD.

## 2. Rings Supervisor

```

QUE#001
ASSIST AGT503
  
```

While the Assistance call is ringing at the supervisor's station, the display shows which agent is placing the Assistance call.

## 3. Supervisor Answers

```

QUE#001
SUPRVSR ASSIST
  
```

When the supervisor answers the Assistance call, the agent's display changes to reflect "SUPRVSR ASSIST".

## 4. Supervisor's Display

```

QUE#001
ASSIST AGT503
  
```

When the supervisor answers the Assistance call, the "ASSIST AGT" message will move to the right on the supervisor's display.

## Z. Monitored Call

## 1. Agent's display

```

QUE#001
MON.BY SUPRVSR
  
```

When a supervisor monitors an agent's ACD call, a message will appear on the agent's display to inform the agent that this call is being monitored. Then, the display will change back to elapsed time after five seconds.

## 2. Supervisor's display

```

QUE#001
MONTR AGT503
  
```

The supervisor's LCD displays which agent is being monitored for the entire time that the supervisor is monitoring the call.

**ALPHANUMERIC DISPLAY**

The Alphanumeric Messaging feature on your LCD telephone enables you to set a short text message (up to 16 characters) at your station to ensure that you do not miss important calls. Any station may record a message; however, only stations with an LCD are able to display messages.

Your system has up to 10 preprogrammed messages (hand-written below) that can be displayed at any LCD telephone calling your station. You can add to or change any of these messages to leave a

personalized message at your station. Any text that you program for message 9 will be saved and can be used again. However, any text that you program for messages 0 ~ 8 will be lost when you cancel the message.

#### PREPROGRAMMED MESSAGES

- |    |       |
|----|-------|
| 0. | _____ |
| 1. | _____ |
| 2. | _____ |
| 3. | _____ |
| 4. | _____ |
| 5. | _____ |
| 6. | _____ |
| 7. | _____ |
| 8. | _____ |
| 9. | _____ |

#### To Leave a Message on Your LCD Telephone:

1. Press the **MES** button (handset on-hook) or obtain dial tone and dial the access code **(# 1 7) \_\_\_\_\_**.
2. Dial the number of the message, that you want to appear, via the dialpad. (See the above preprogrammed messages.)
3. Press the **MES** button (if equipped) or hang up.

The MES LED will flash (if equipped), and "MES NO.?" will be displayed.

The selected message will be displayed.

The MES LED will light steadily.

#### To Leave a Message on a non-LCD Telephone:

1. Press the **MES** button (handset on-hook) or dial the access code **(# 1 7) \_\_\_\_\_** (handset off-hook).

The MES LED will flash (if equipped).

2. Dial the number of the message, that you want to appear, via the dialpad. (See the above preprogrammed messages.)
3. Press the **MES** button (if equipped) or hang up.

#### To Cancel a Message on Your Telephone:

- 1A. Press the **MES** button.  
... or ...
- 1B. Lift the handset.
- 2B. Dial the access code **(# 1 7) \_\_\_\_\_**.
- 3B. Hang up.

The MES LED will light steadily.

The message will clear from the LCD.

You will hear dial tone.

The message will be canceled.

#### TO ADD TO A PREPROGRAMMED MESSAGE:

When you select a message, it will appear on your station display. A cursor (-) will also appear immediately to the far right side of the display. You can now input additional information (up to a total of 16 characters for each message). Some system messages may expect you to add more information. For example:

1. Call \_\_\_\_\_  
■ Add a station or outside telephone number.
2. Back at \_\_\_\_\_  
■ Add the time you will return.
3. Return at \_\_\_\_\_  
■ Add the date you will return.

#### TO LEAVE A NEW MESSAGE:

You can leave a completely new, personalized message by overwriting any of the existing preprogrammed messages. To do this, simply call up one of the preprogrammed messages as instructed above. When the cursor appears to the right of the message, shift it to the left margin and write your new message over the programmed one. The new message

2. Press the **#** button to access alpha characters.

(Refer to the figure on the following page for an explanation of the dialpad buttons.)

3. Press the **←** button to move the cursor (→) to the desired position.

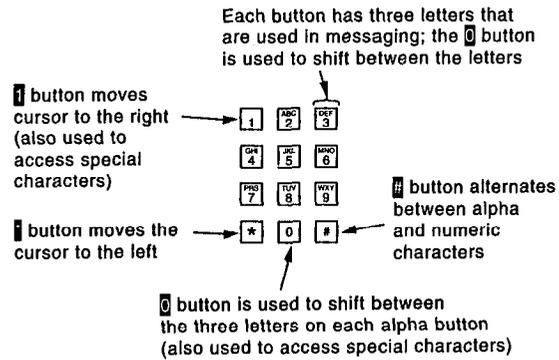
(The left edge of the display to program a new message, or two spaces to the right of the preprogrammed message to add information.)

4. Press the button corresponding to the letter which you want to enter.

Use the **0** button to shift from letter to letter on that button. For example:  
■ If you press **2**, a D will be displayed. By pressing **0**, the D will change to E. By pressing **0** again, the E will change to F. Press **0** again and the F will change to G.  
■ To enter spaces, press **\***.

5. If you want to enter a number, press the **#** button to change to numeric characters. Press the **#** button again to return to alpha characters.

Numbers are also entered on the dialpad.



MES button, press the **SPKR** button.

46	( )
47	( )
48	( )
49	( )
50	( )
51	( )
52	( )
53	( )
54	( )

90	( )
91	( )
92	( )
93	( )
94	( )
95	( )
96	( )
97	( )
98	( )
99	( )

# ***Perception<sup>®</sup>e & ex***

## **FAULT FINDING PROCEDURES**

**PERCEPTION<sub>e&ex</sub>  
FAULT FINDING  
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**1. GENERAL**

**1.01** This section describes the maintenance procedures that are used for the diagnosis of faults in the PERCEPTION<sub>e</sub> and PERCEPTION<sub>ex</sub> Digital Hybrid/ PBX systems. To eliminate system faults, faults must first be classified and then cleared by replacing the defective apparatus. Operational tests can then be performed to verify correct apparatus operation. To perform operational tests, follow the fault-clearing flowcharts and the steps noted in section 5.

**2. FAULT CLASSIFICATION**

**2.01** To ensure that fault clearing is pursued in a logical sequence, a Fault Classification Flowchart is provided in Chart No. 1.

**2.02** Each Fault Finding flowchart denotes the steps necessary to clear specific types of faults (power faults, specific PCB faults, etc.). Most of the provided flowcharts are based on an assumption that the system fault was discovered and reported by a station user. Therefore, all faults are classified according to the way they would appear at an electronic telephone, standard telephone, DDIU, data terminal/computer, DSS console, attendant console, or equipment cabinet.

**2.03** Faults and their associated flowcharts are organized into the following categories:

<b>TABLE A—FLOWCHARTS</b>	
Flowchart	Title
1	Fault Classification
2	Loading Faults
3	Power Faults
4	Ringing Power Faults
5	Time Switch Clock Faults
6	NPRU Faults
7	NRCU Faults
8	NCOU/NEMU/NLSU Faults
9	NEKU/NDKU/NSTU/NDSU Faults
10	SMDR, TTY, or MODEM Faults
11	Voice Communication Station Faults
12	INIT/LOAD Key Faults
13	MAJOR ALARM Faults
14	CO/DID/TIE Faults
15	Attendant Console Faults
16	Common Station Feature Faults

<b>TABLE A—FLOWCHARTS (continued)</b>	
Flowchart	Title
17	Speech Path or Dial Tone Faults
18	Data/Speech Path or Dial Tone Faults
19	Dialing Faults
20	Ringing/Ringback Tone Faults
21	Miscellaneous Faults
22	NMDU/NDCU Faults
23	Data Communication Station Faults
24	Data Communication Trunk Faults

**3. FAULT CLEARING PROCEDURES**

**3.01** Before attempting to clear any fault, ensure that the fault exists in the system and is not being caused by any associated external equipment, such as wiring, a Music-on-Hold source, etc.

**IMPORTANT!**

*Many PERCEPTION<sub>e&ex</sub> features are assigned, enabled, or disabled by using software entries described in the Programming Procedures manual. Before troubleshooting system hardware, it is important to verify that system programming is correct and functional.*

**3.02** Faults occurring in PERCEPTION<sub>e&ex</sub> systems are cleared by replacing PCBs, electronic telephones, standard telephones, DIUs, attendant consoles, or power supply(ies), according to instructions in the provided flowcharts.

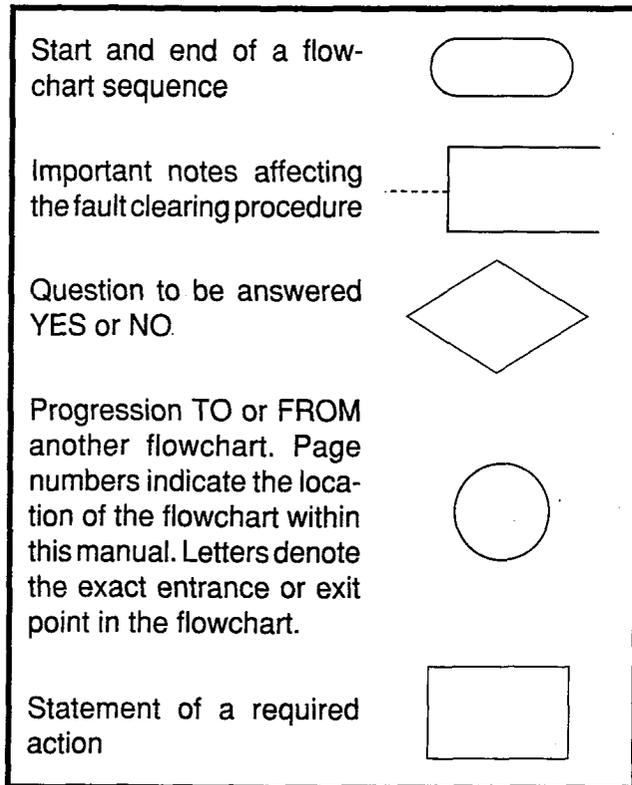
**3.03** Five different symbols are used in the flowcharts. Each is identified in Figure 1.

**3.04** The flowcharts are arranged sequentially to permit rapid fault localization within the system. All fault clearing must begin with the Fault Classification Flowchart (Flowchart 1), which denotes the correct sequence to be followed in fault localization.

**3.05** If more than one station has a fault classified as a station fault (see flowcharts), then only one station can be corrected at a time.

**3.06** An alarm or fault indicator is used as an aid in locating a particular fault. However, if a fault occurs and its corresponding indicator does not function,

**FAULT FINDING  
SECTION 200-255-500  
MARCH 1991**



**FIGURE 1—FLOWCHART SYMBOLS**

the affected PCB should be replaced. Alarm and fault indicators that have failed cannot be corrected.

**3.07** The following precautions must be observed when handling PCBs:

**DO NOT:**

- Drop a PCB.
- Stack one PCB on top of another.
- Handle a PCB without discharging any static electricity from your person by touching a metal part of the grounded system cabinet.
- Touch PCB contacts with your fingers.

**IMPORTANT!**

***If the fault is not cleared by substituting a PCB, the original PCB must be reinstalled in the system cabinet before proceeding to the next flowchart.***

**4. DEFECTIVE APPARATUS RETURNS**

**4.01** To return a defective system apparatus for repair, the apparatus must be prepared for ship-

ping by enclosing the item in a suitable container (preferably its original box). The following guidelines must be followed:

- a) All PCBs must be enclosed in anti-static containers.
- b) All electronic telephones, DIUs, attendant consoles, etc. must be enclosed in plastic bags before being inserted into their shipping containers.

**4.02 NEVER WRITE ON THE APPARATUS ITSELF!** Instead, describe the nature of the defect on a Toshiba return (TSD RA) tag, and attach the tag to the front of the defective unit with string (not wire). This will allow the tag to remain attached during the testing and repair process.

**4.03** If different and/or additional faults are created in the system by substituting a PCB, tag and return the substitute PCB as a defective unit.

**5. FAULT IDENTIFICATION and ELIMINATION PROCEDURES**

**5.01** In the provided flowcharts, single line telephones are referred to in different ways. These are defined as follows:

- 2500-type—Refers to a DTMF standard telephone with a "touch-tone" dialpad.
- STT—Refers to both DTMF and rotary dial telephones.
- 500-type—Refers to a standard rotary dial telephone.

**5.02** Check electronic/digital telephone cable continuity by using a voltmeter, as follows:

- 1) Check all station cables at the modular block and check all cables from NEKU/NDKU PCBs to the MDF, at the MDF.
- 2) Disconnect the electronic telephone.
- 3) Using a DC voltmeter, measure between the two pairs to verify the presence of the readings shown in Table B.

**TABLE B—ELECTRONIC TELEPHONE  
CABLE CONTINUITY READINGS**

(Using a voltmeter)

FROM			TO			VOLTAGE*
Pair	Wire	Color	Pair	Wire	Color	
1	T	Green	2	T	Black	24
1	R	Red	2	T	Black	24
1	T	Green	2	R	Yellow	24
1	R	Red	2	R	Yellow	24
1	T	Green	1	R	Red	0
2	T	Black	2	R	Yellow	0

*\*Nominal voltage— within the power supply limits of 23.2 ~ 28.2 VDC, while under AC power.*

- 3) An improper reading indicates an open, crossed, or shorted wire.
- 4) For the MDF-to-electronic/digital telephone/DSS console cable, a more precise check can be made by using an ohmmeter (See 5.03).

**5.03** Check electronic/digital telephone and DSS console cable continuity by using an ohmmeter, as follows:

- 1) Disconnect the electronic/digital telephone or DSS console.
- 2) At the MDF, remove the bridging clips.
- 3) Using an ohmmeter, measure the resistance between all combinations of the four wires at the modular block. All measurements should exceed 1 MOhm.
- 4) At the modular block, measure the resistance between all wire combinations. The proper readings are shown in Table C.

**NOTES:**

1. The green-red and black-yellow measurements should be within 10% of each other.
2. The maximum reading is 55 ohms.

**5.04** Check single line telephone (STT) cable continuity as follows:

**TABLE C—ELECTRONIC TELEPHONE  
CABLE CONTINUITY READINGS**

(Using an ohmmeter)

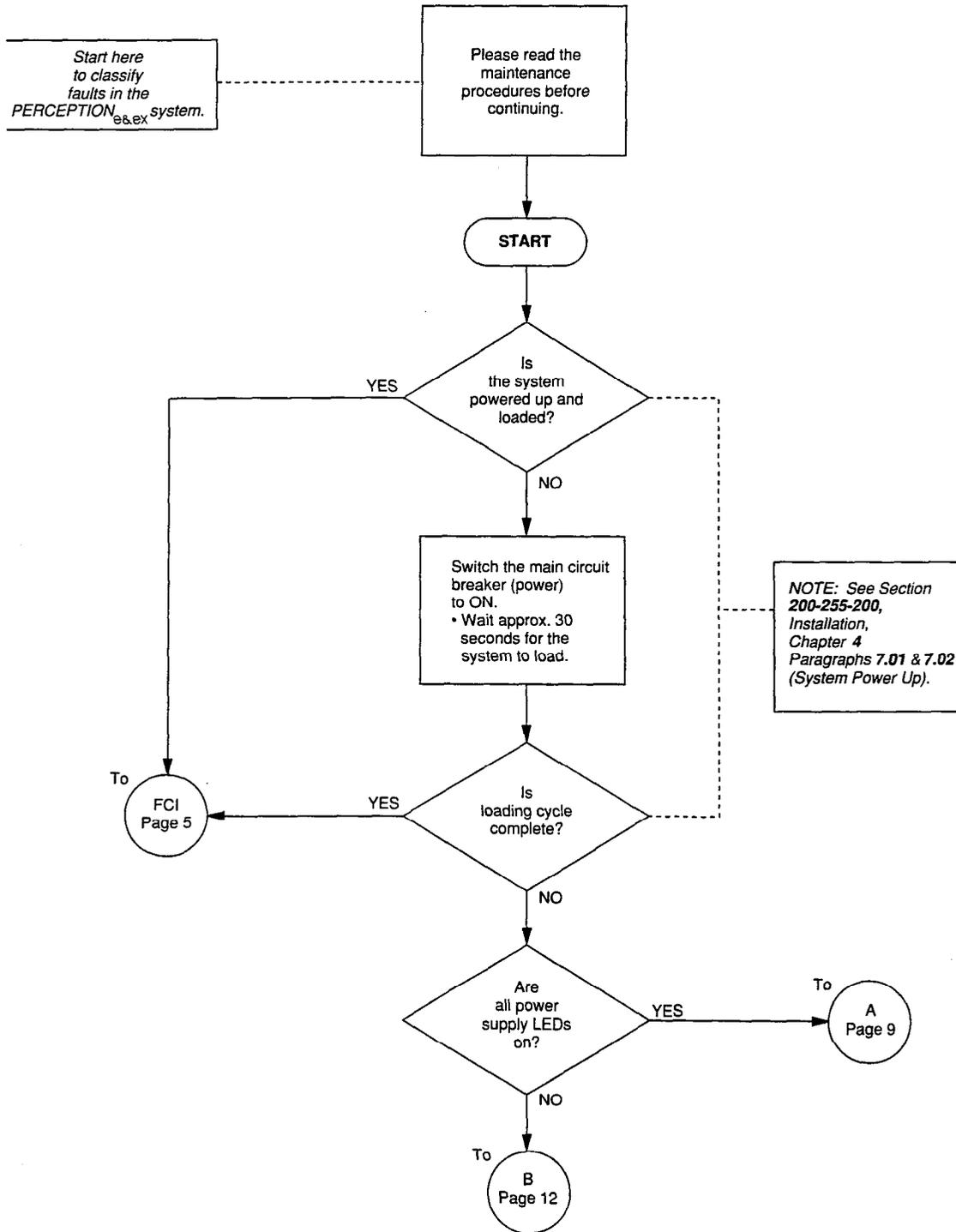
FROM			TO			VOLTAGE*
Pair	Wire	Color	Pair	Wire	Color	
1	T	Green	2	T	Black	1 MOhm
1	R	Red	2	T	Black	1 MOhm
1	T	Green	2	R	Yellow	1 MOhm
1	R	Red	2	R	Yellow	1 MOhm
1	T	Green	1	R	Red	≤ 55 Ohms*
2	T	Black	2	R	Yellow	≤ 55 Ohms*

- 1) Check all DDIU/PDIU cables at the modular block, and check all cables from NSTU PCBs to the MDF, at the MDF.
- 2) Disconnect the STT at the wall.
- 3) At the MDF, remove the bridging clips.
- 4) Using an ohmmeter, measure the resistance between the two wires at the modular block. All measurements should exceed 1 MOhm.
- 5) At the MDF, place shorting jumper wires between the two wires (T and R).
- 6) At the modular block, measure the resistance between T and R. Verify the maximum of 300 ohms.

**5.05** Check DDIU/PDIU cable continuity as follows:

- 1) Check all DDIU/PDIU cables at the modular block, and check all cables from NDCU/NMDU/NDKU PCB to the MDF, at the MDF.
- 2) At the MDF, remove the bridging clips.
- 3) Using an ohmmeter, measure the resistance between the two wires at the modular block. All measurements should exceed 1 MOhm .
- 4) At the MDF, place shorting jumper wires between the two wires (T and R).
- 5) At the modular block, measure the resistance between T and R. Verify the maximum of 300 ohms.

**CHART NO. 1**  
**FAULT CLASSIFICATION**



**CHART NO. 1  
FAULT CLASSIFICATION (continued)**

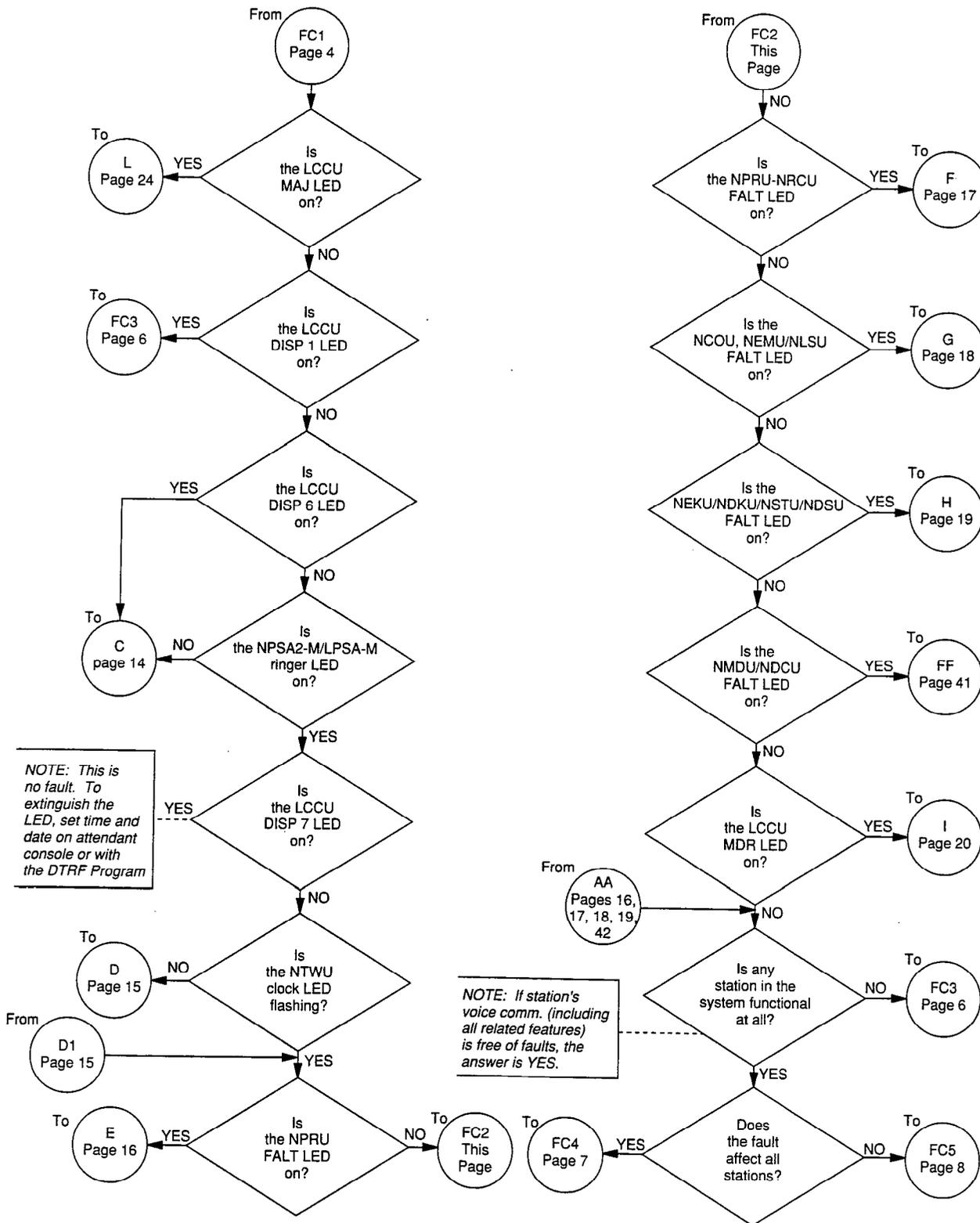
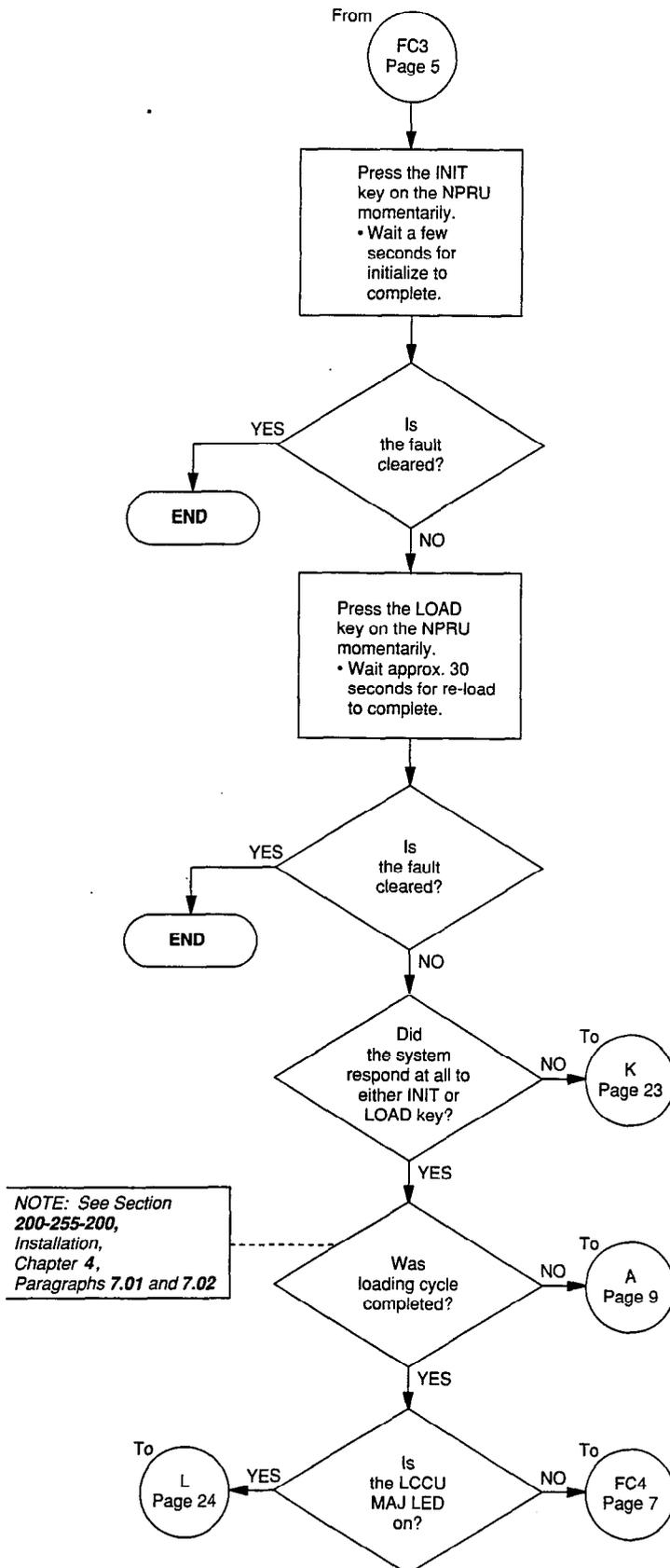
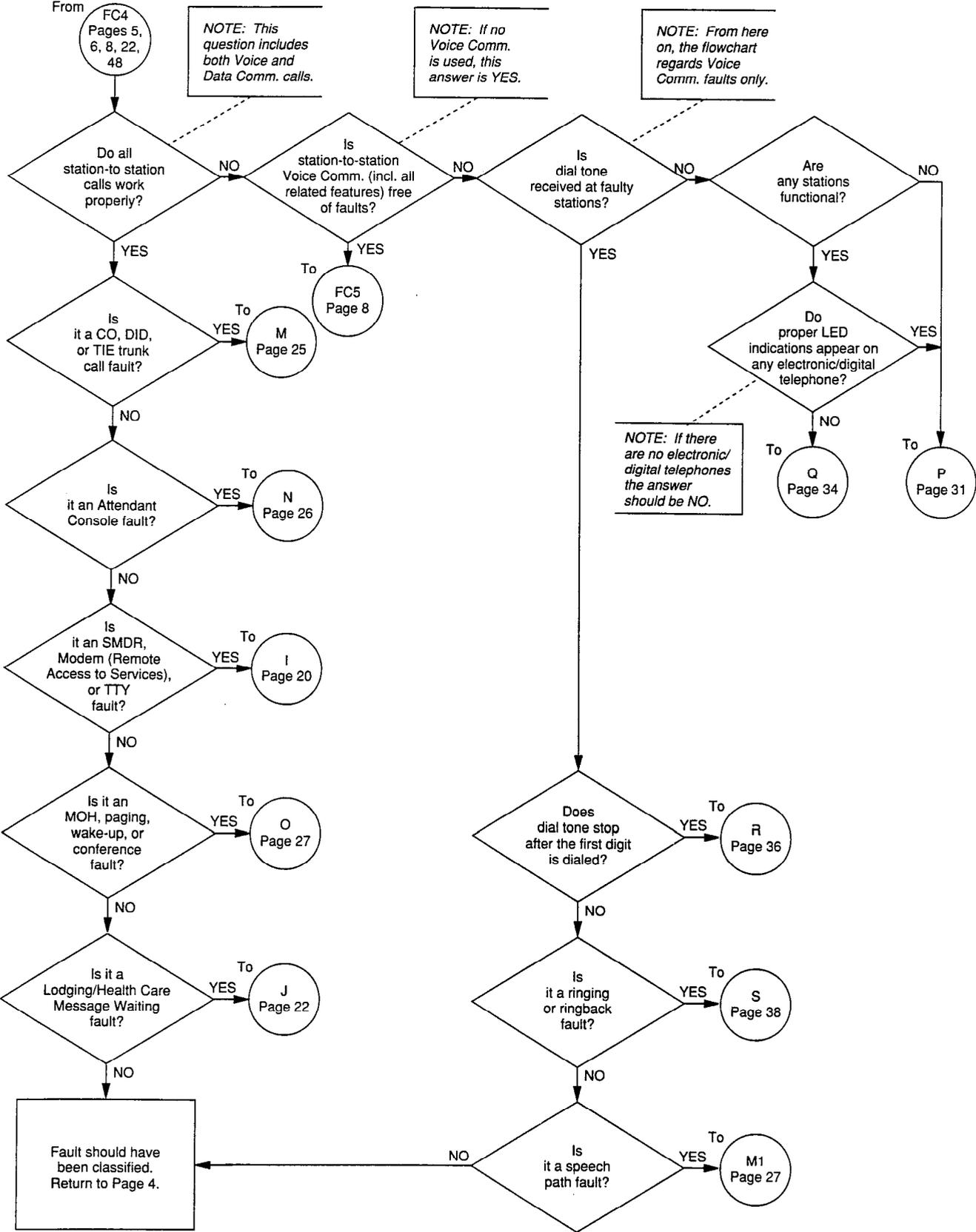


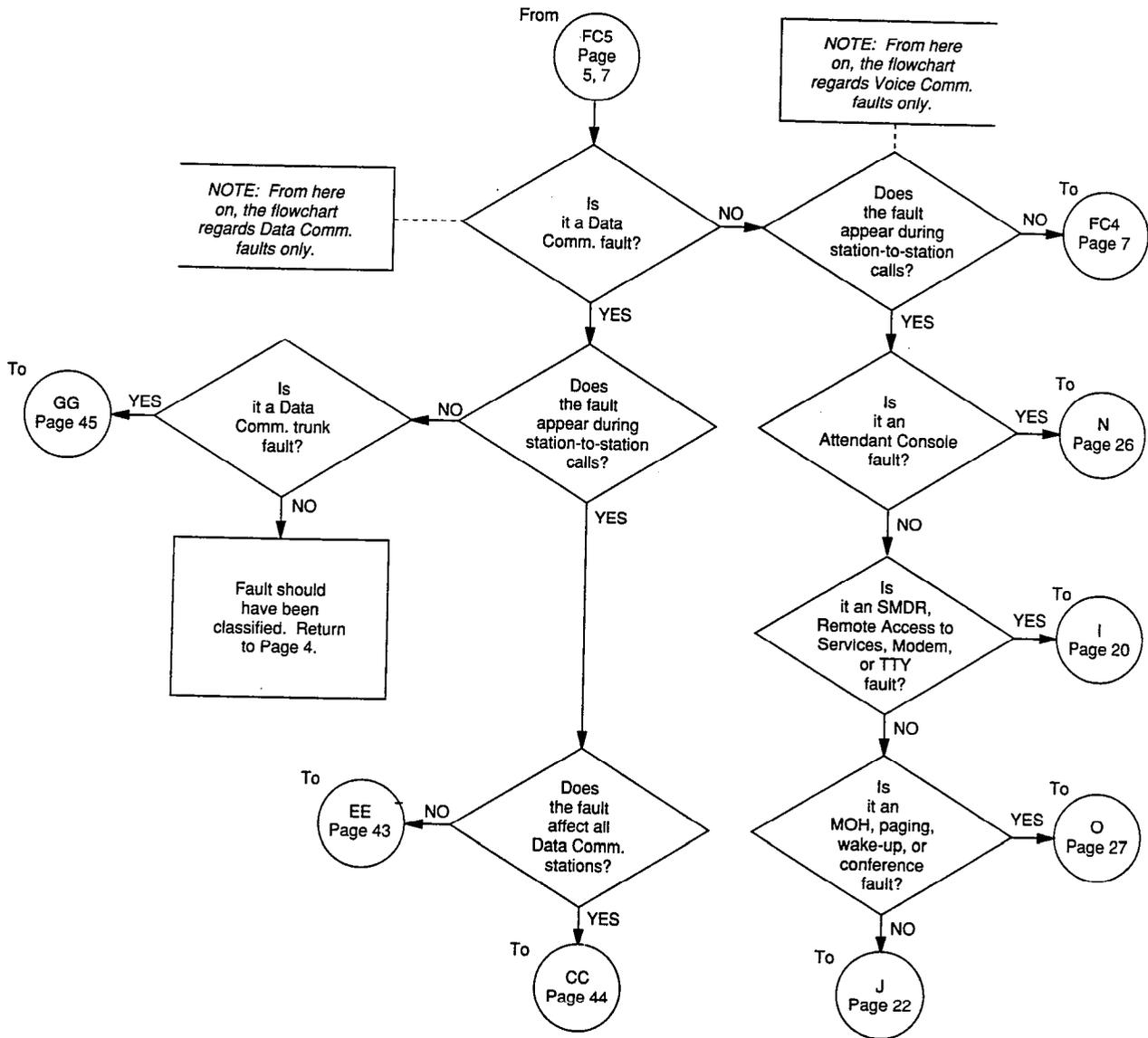
CHART NO. 1  
FAULT CLASSIFICATION (continued)



**CHART NO. 1**  
**FAULT CLASSIFICATION (continued)**



**CHART NO. 1  
FAULT CLASSIFICATION (continued)**





**CHART NO. 2  
LOADING FAULTS (continued)**

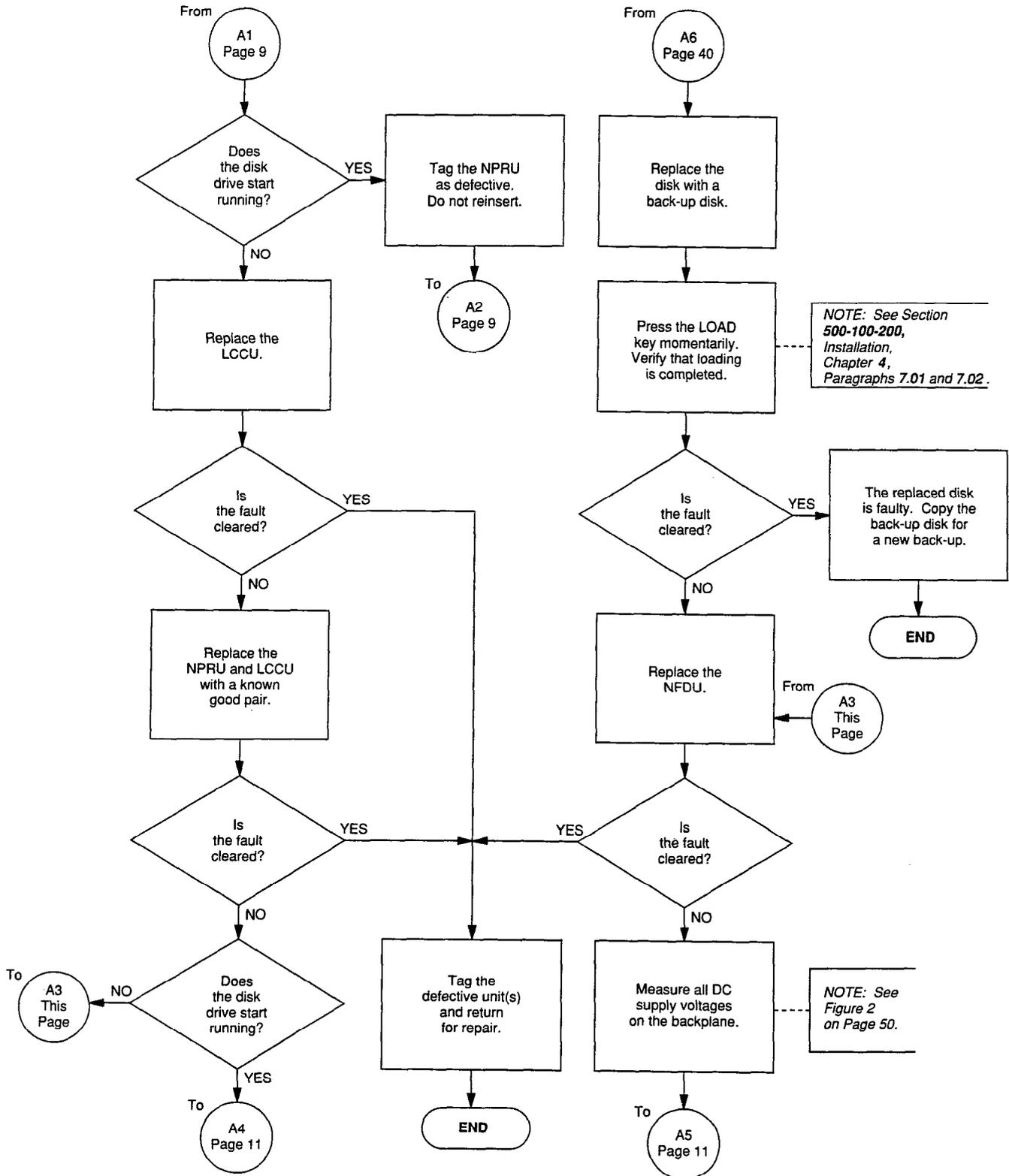
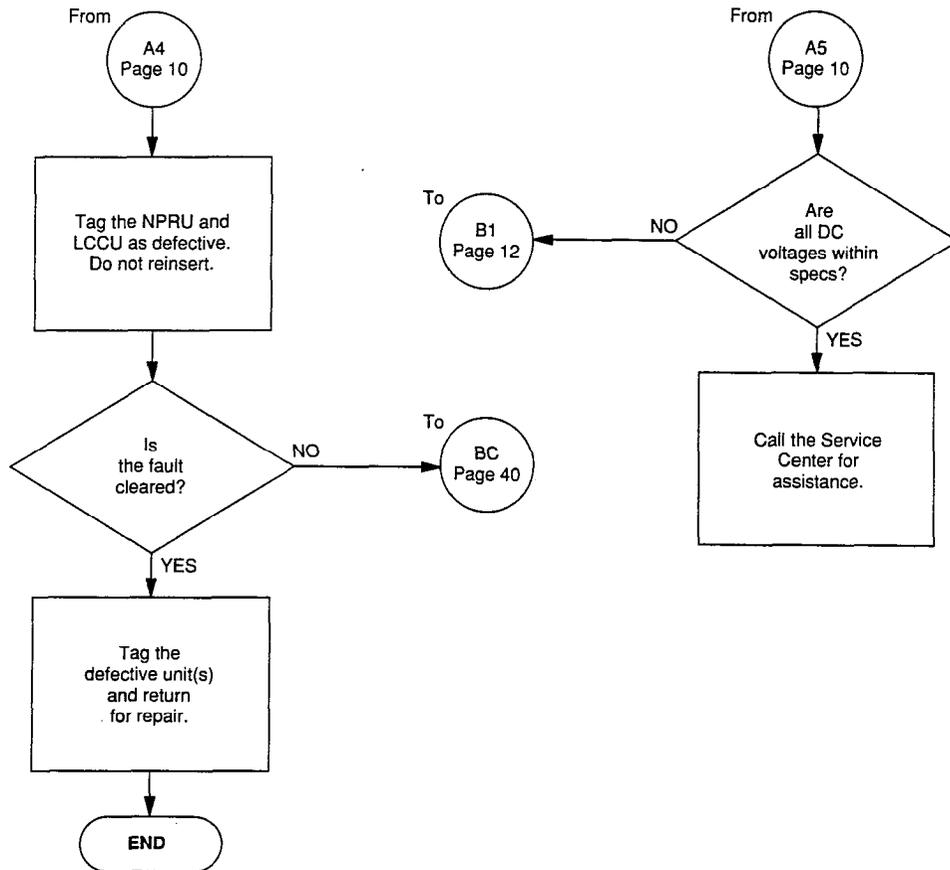
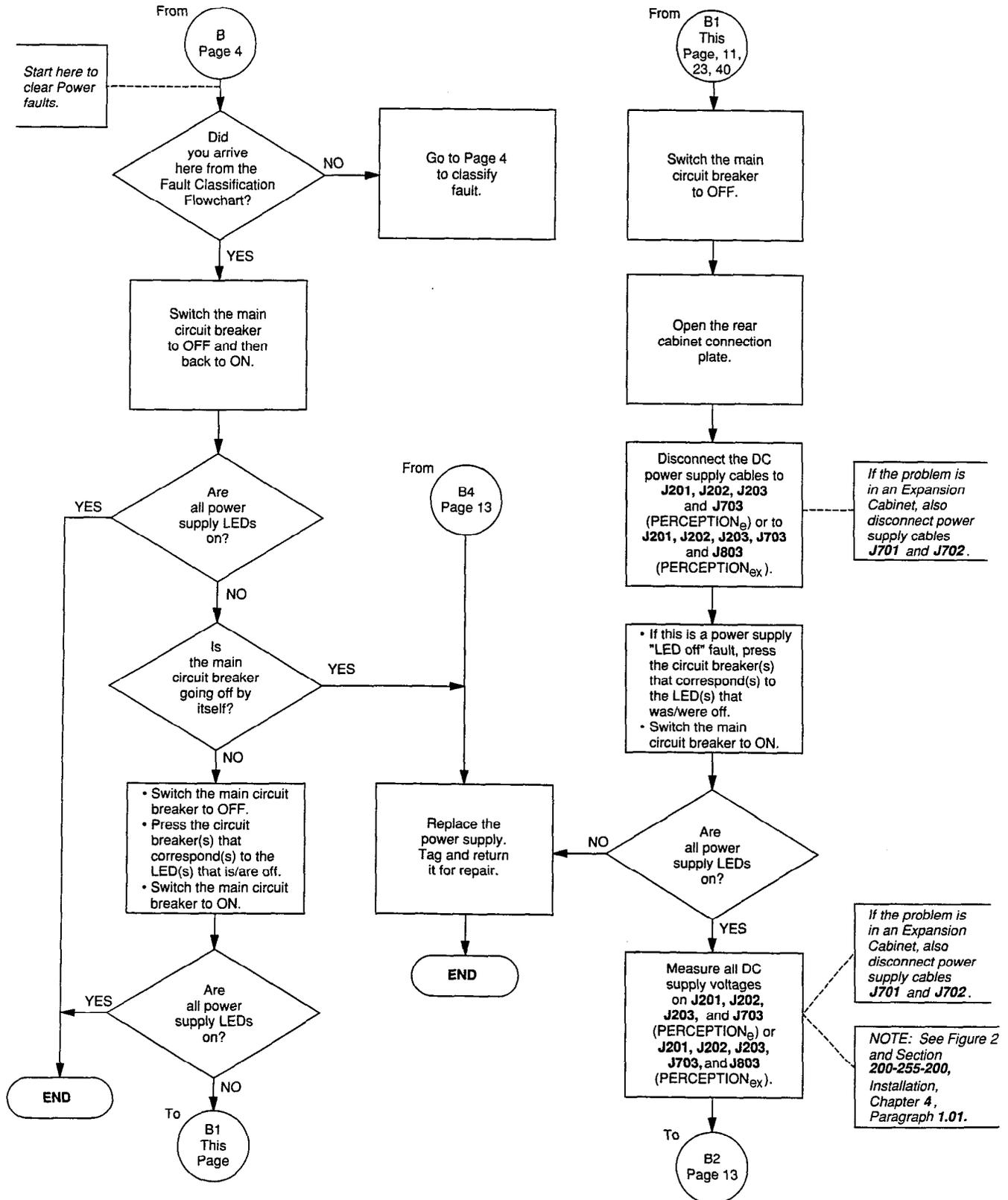


CHART NO. 2  
LOADING FAULTS (continued)



**CHART NO. 3**  
**POWER FAULTS**



**CHART NO. 3  
POWER FAULTS (continued)**

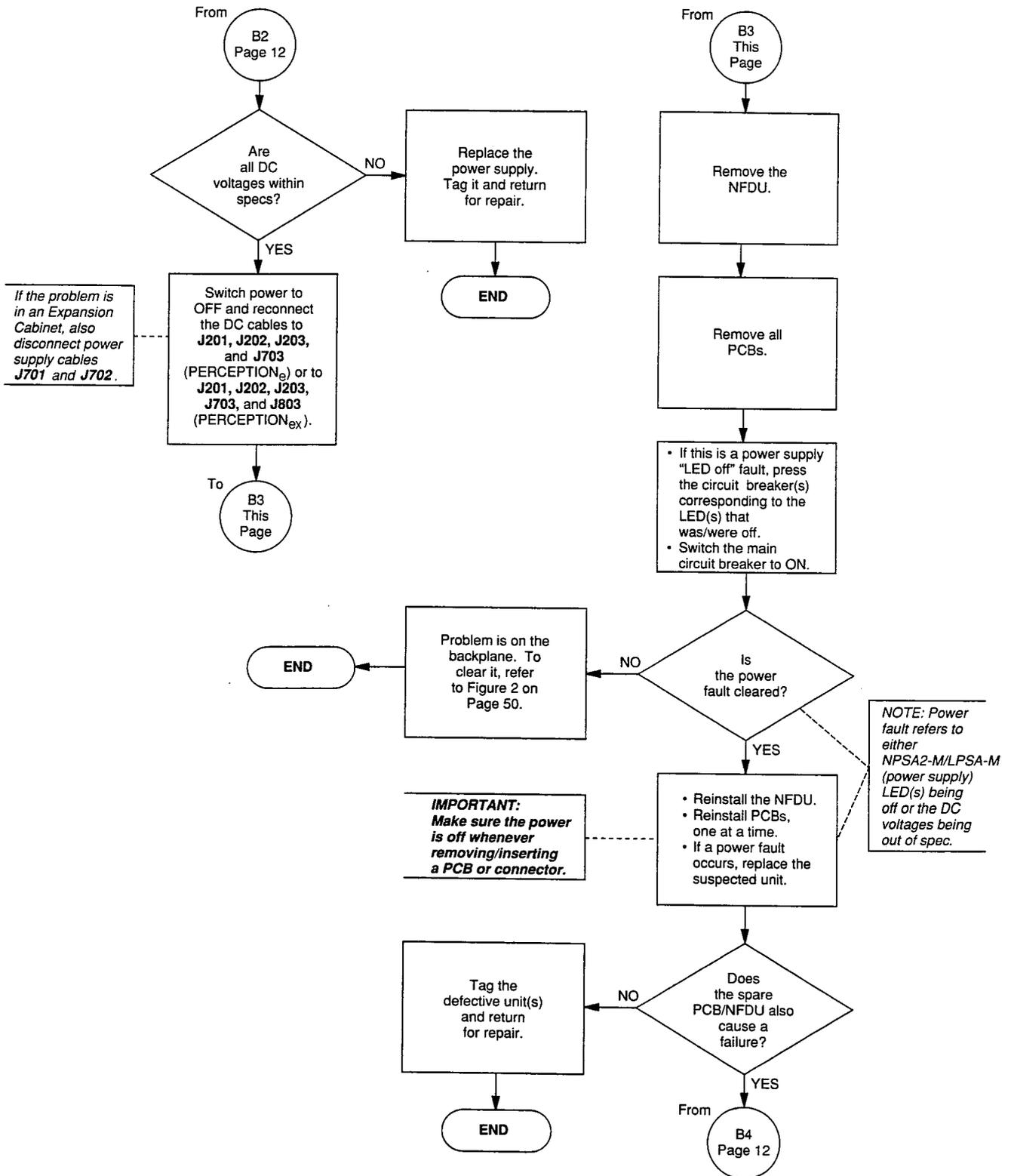


CHART NO. 4  
RINGING POWER FAULTS

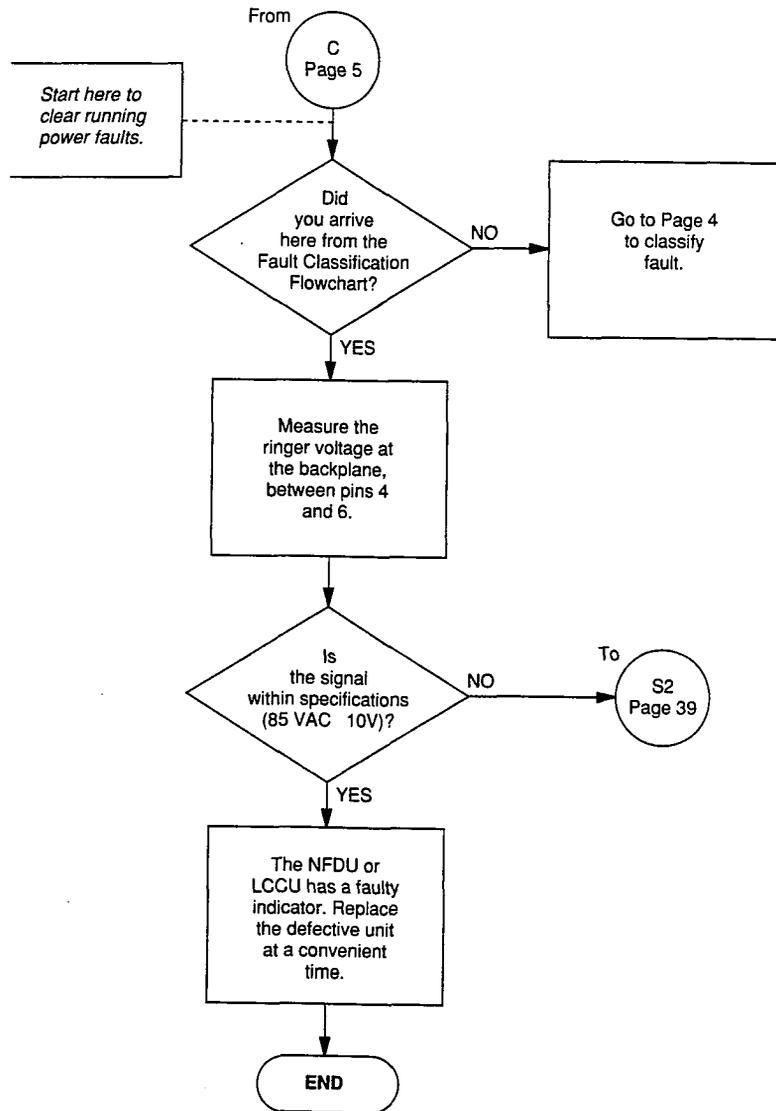


CHART NO. 5  
TIME SWITCH CLOCK FAULTS

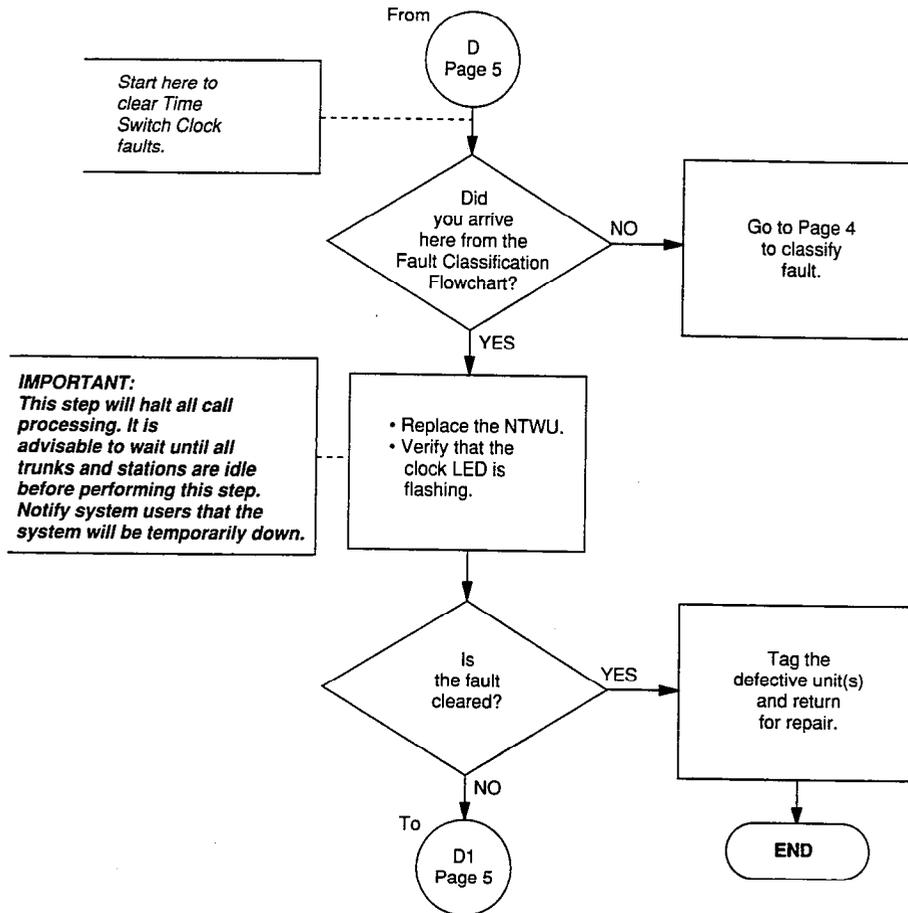
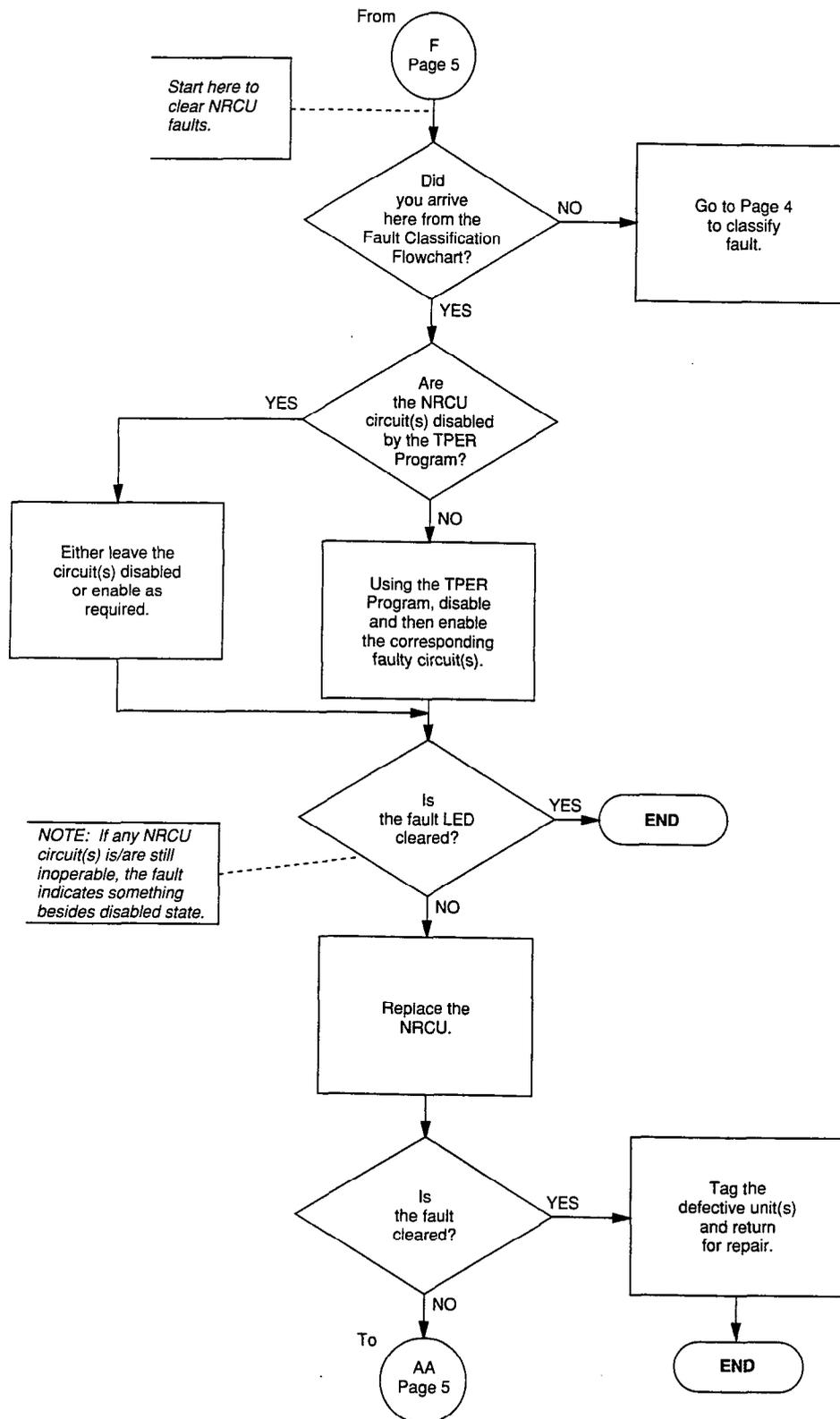


CHART NO. 7  
NRCU FAULTS



**CHART NO. 8  
NCOU/NEMU/NLSU FAULTS**

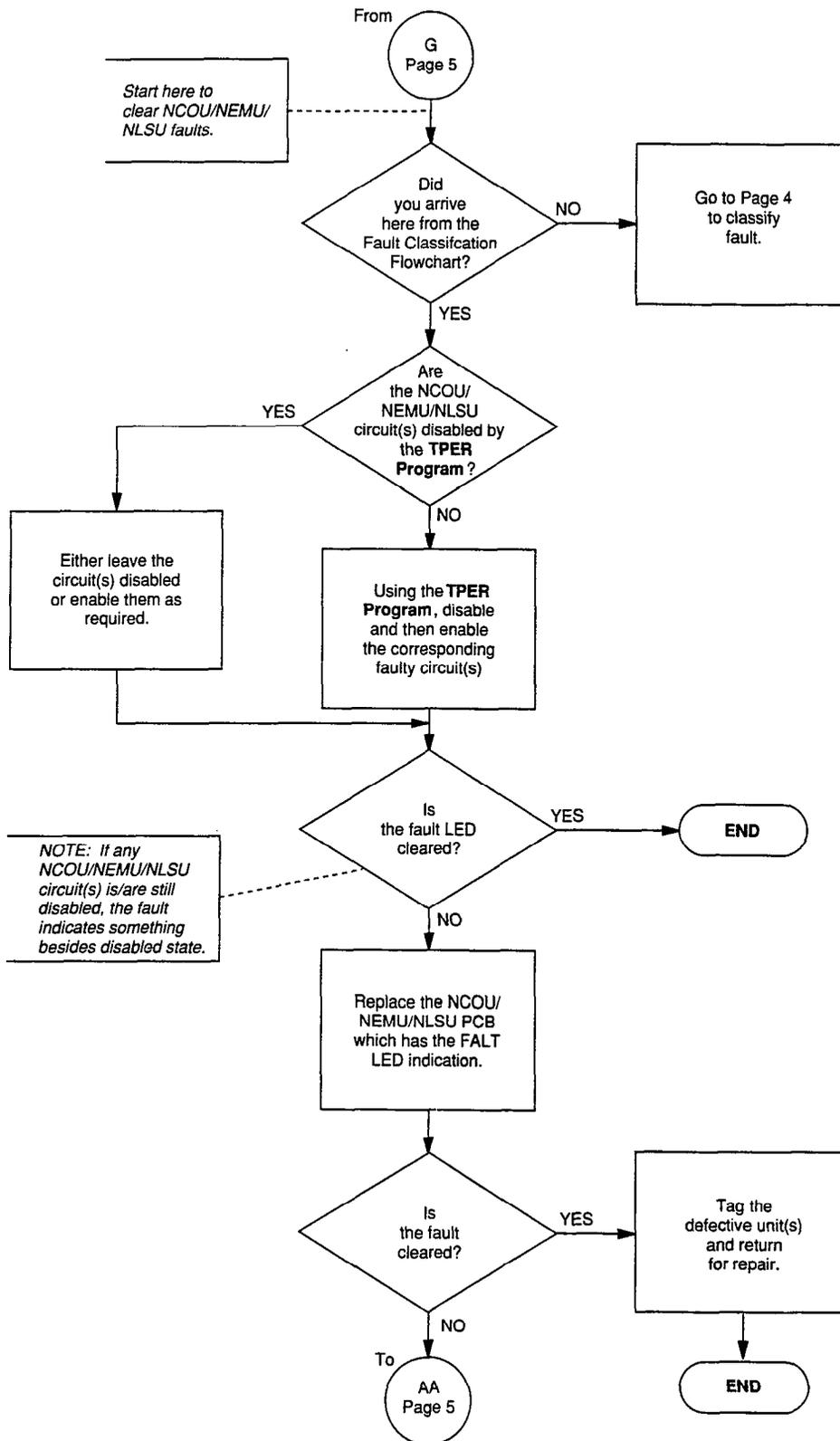
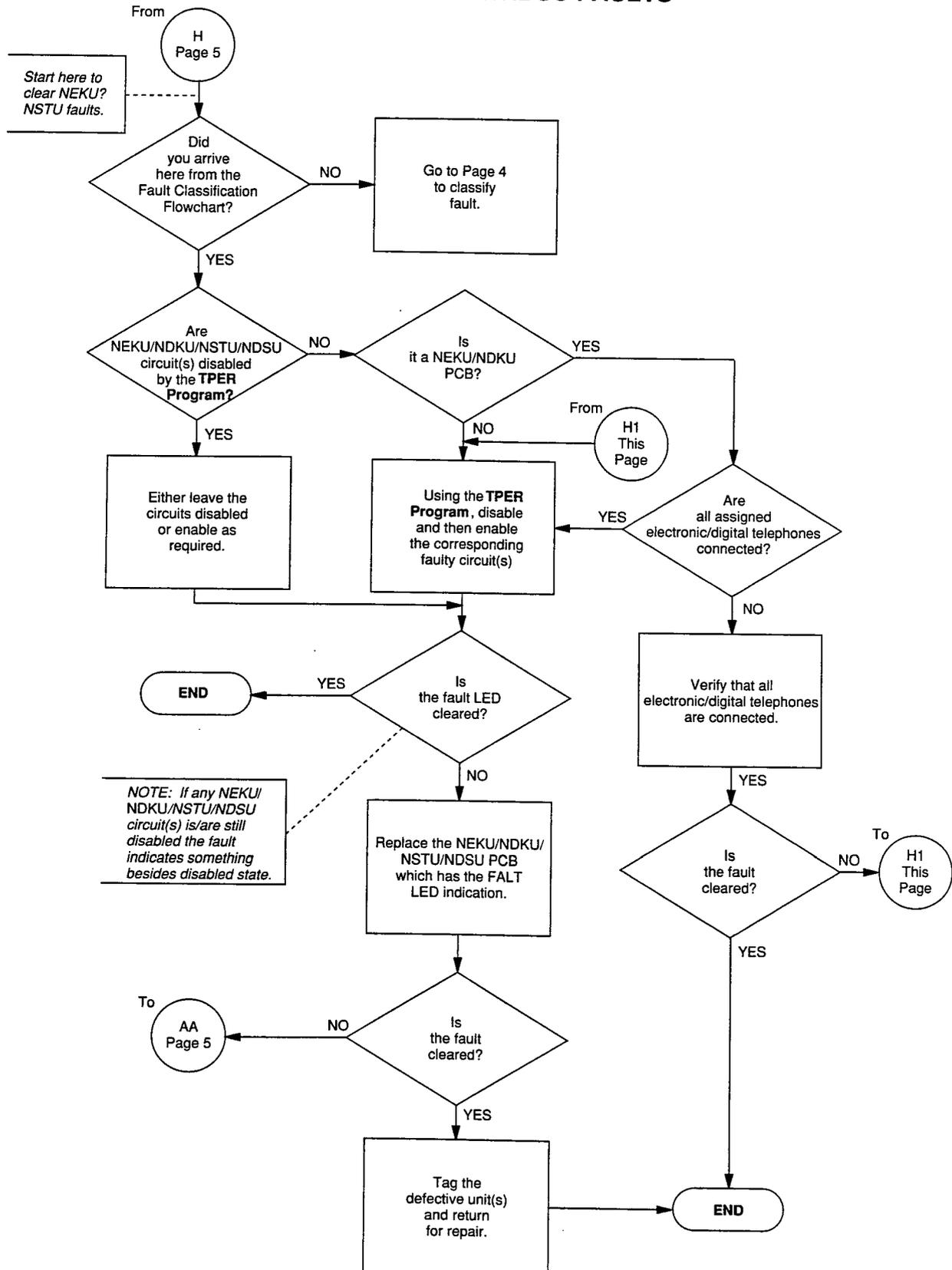


CHART NO. 9  
NEKU/NDKU/NSTU/NDSU FAULTS



**CHART NO. 10  
SMDR, TTY, OR MODEM FAULTS**

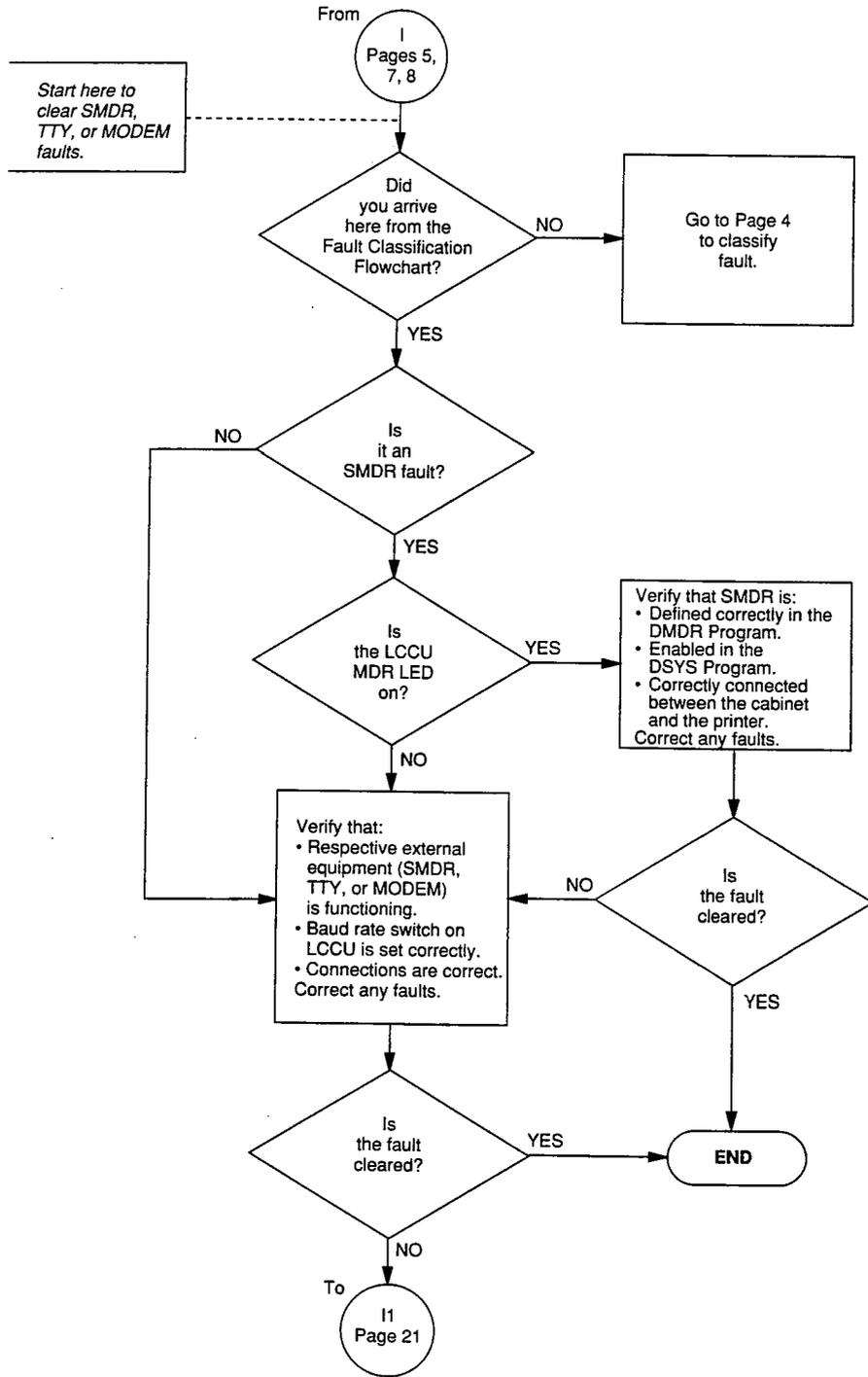
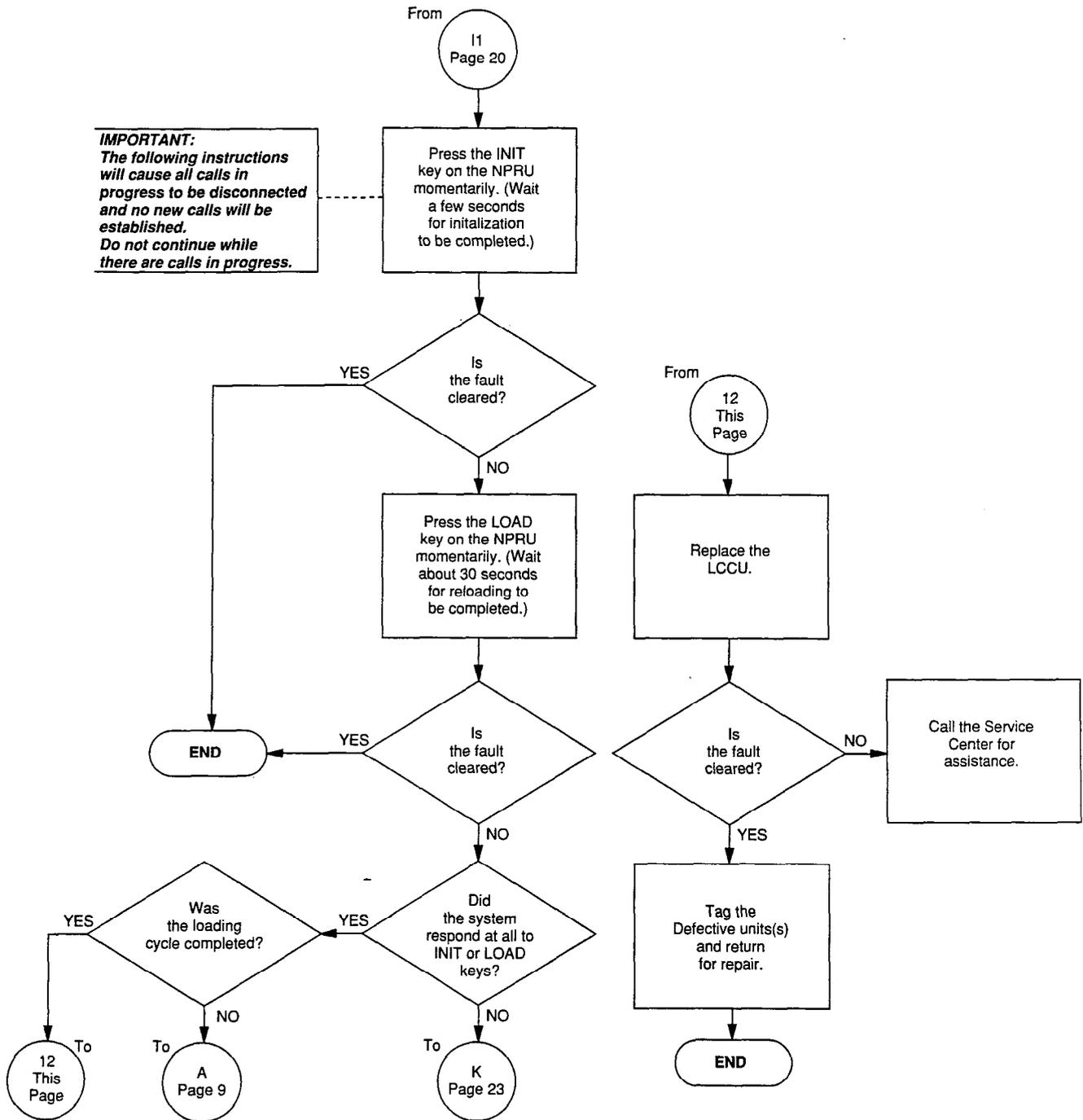
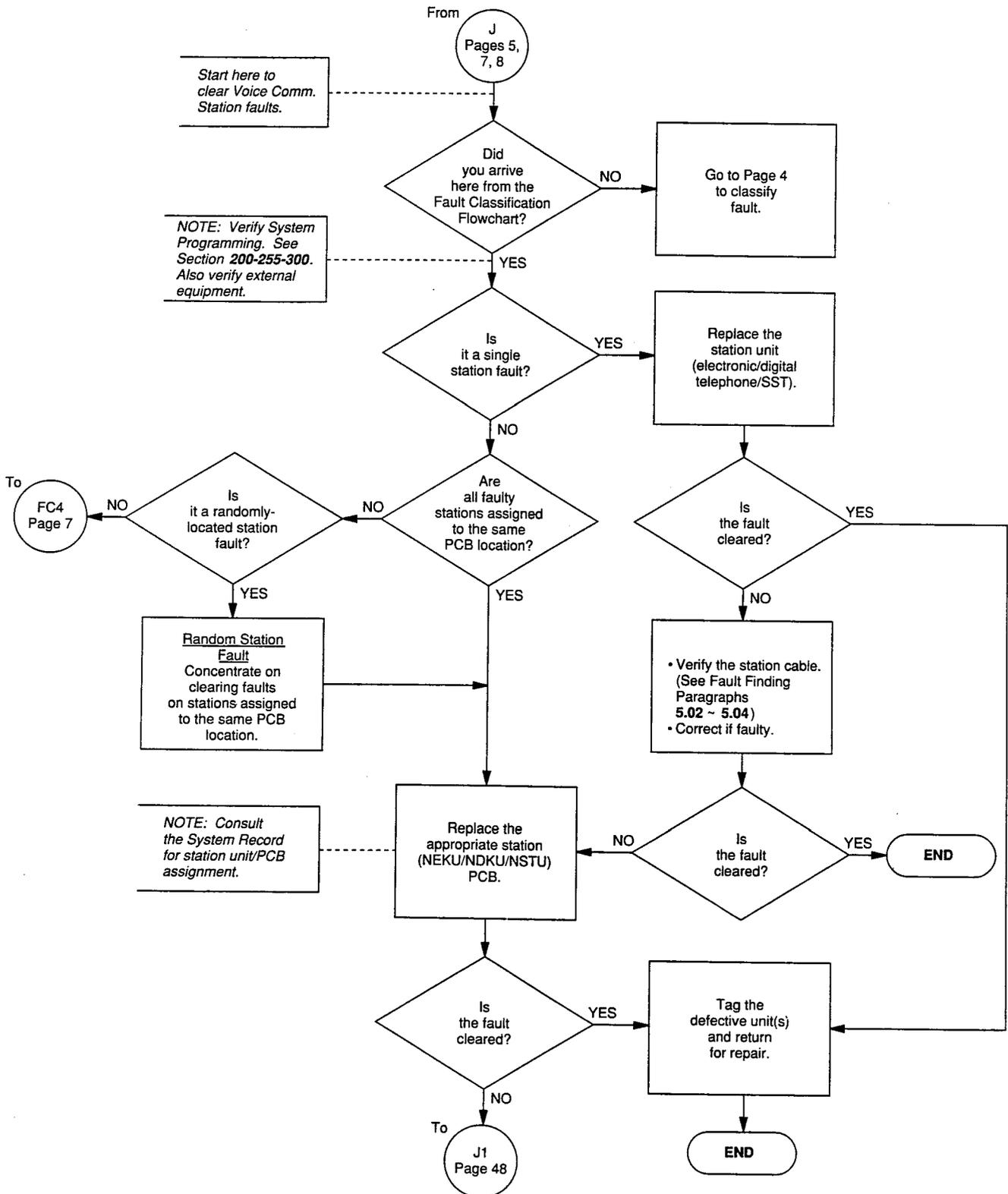


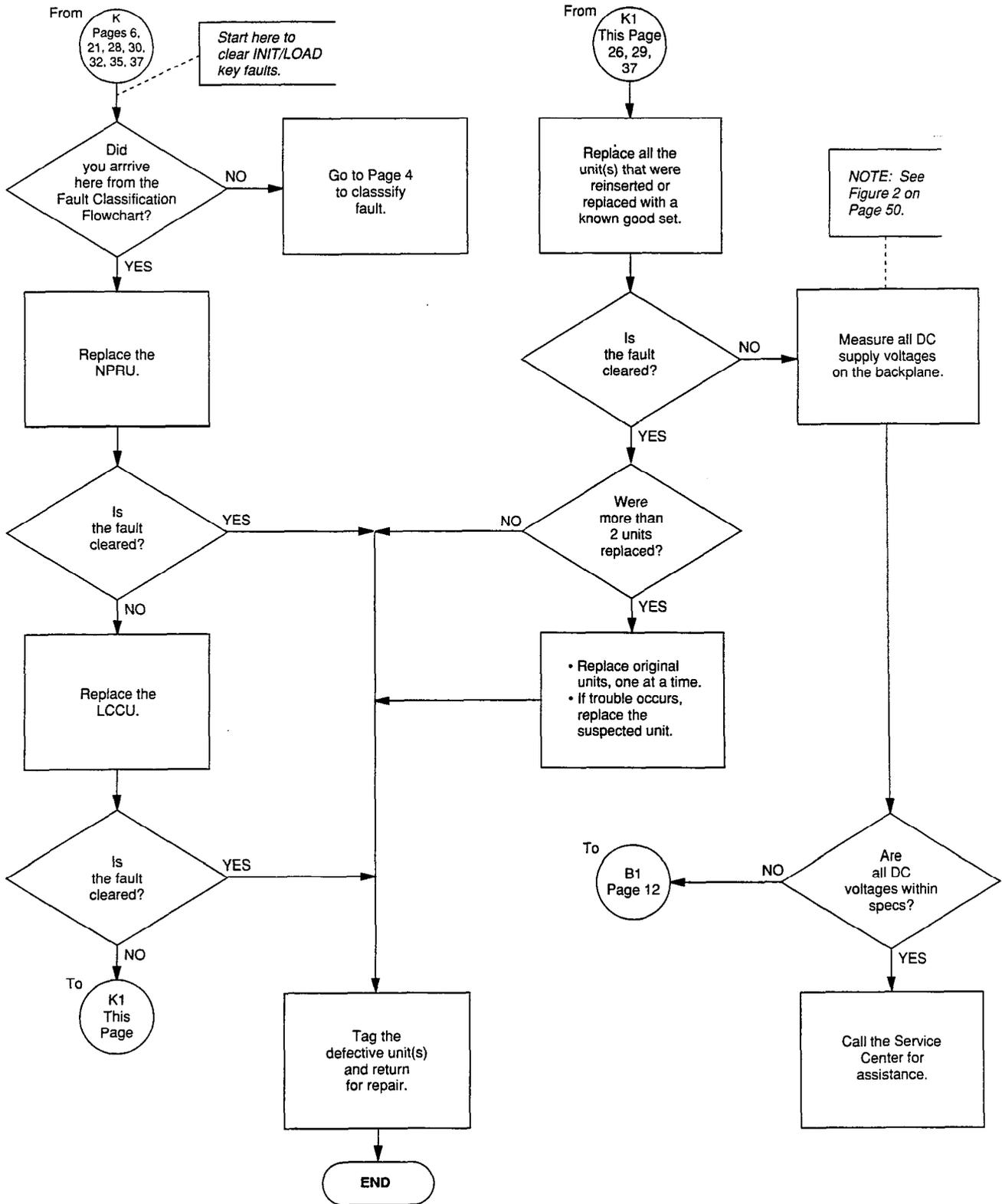
CHART NO. 10  
SMDR, TTY, OR MODEM FAULTS (continued)



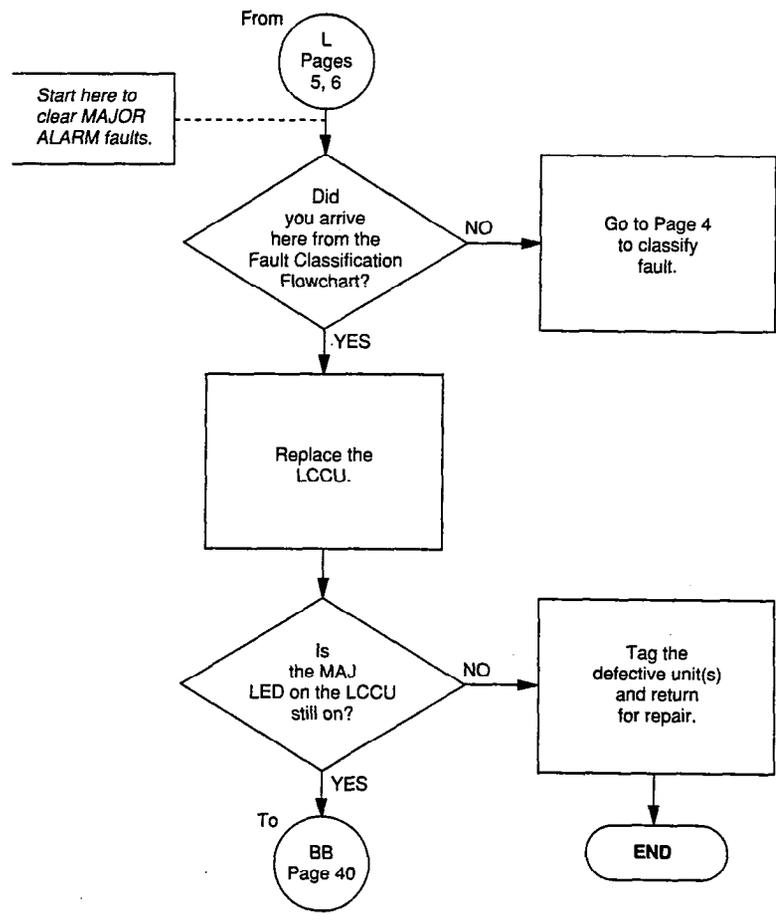
**CHART NO. 11**  
**VOICE COMMUNICATION STATION FAULTS**



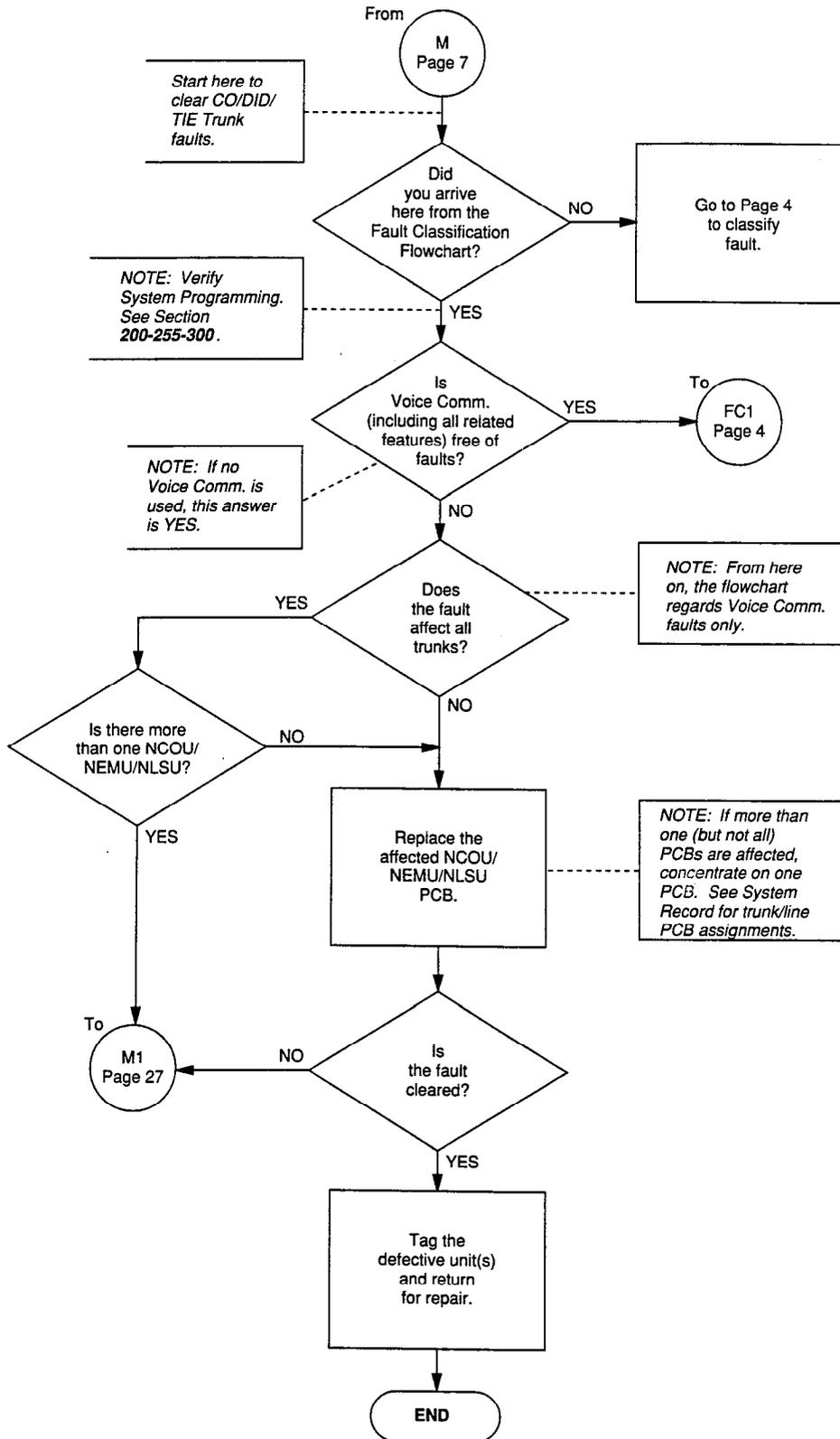
**CHART NO. 12  
INIT/LOAD KEY FAULTS**



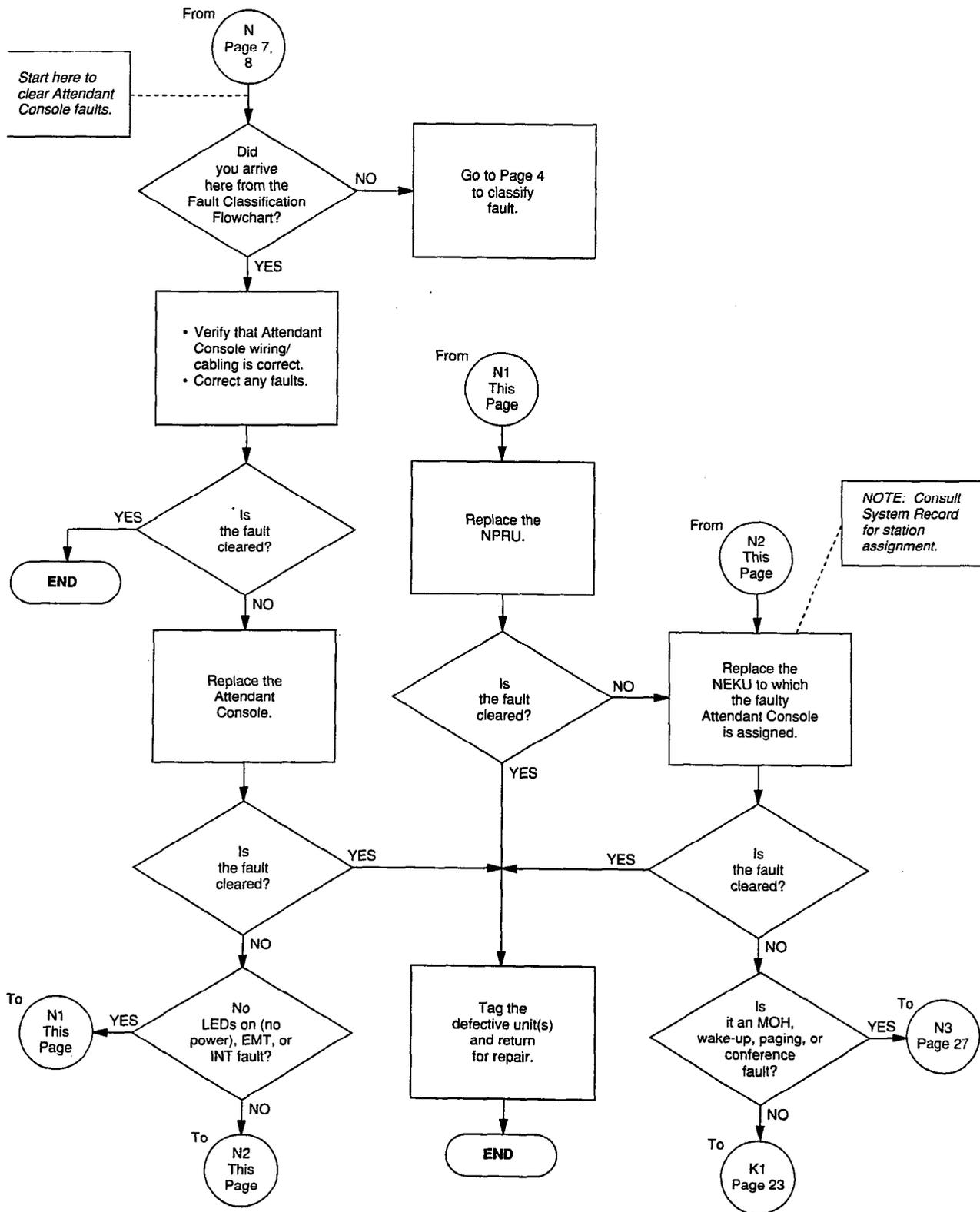
**CHART NO. 13  
MAJOR ALARM FAULTS  
(MAJ LED ON)**



**CHART NO. 14  
CO/DID/TIE TRUNK FAULTS**



**CHART NO. 15  
ATTENDANT CONSOLE FAULTS**



**CHART NO. 16  
COMMON STATION FEATURE FAULTS**

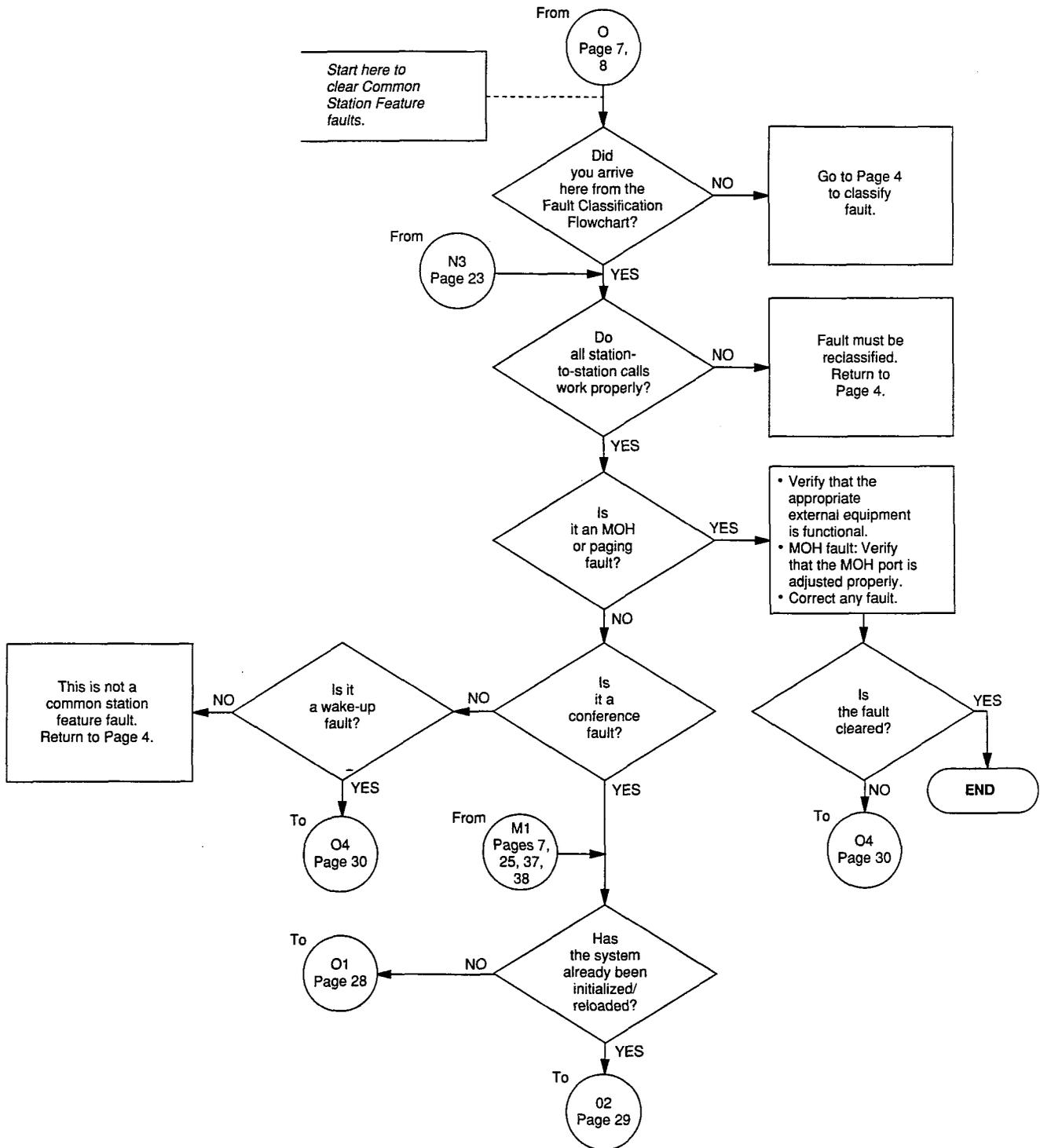


CHART NO. 16  
COMMON STATION FEATURE FAULTS (continued)

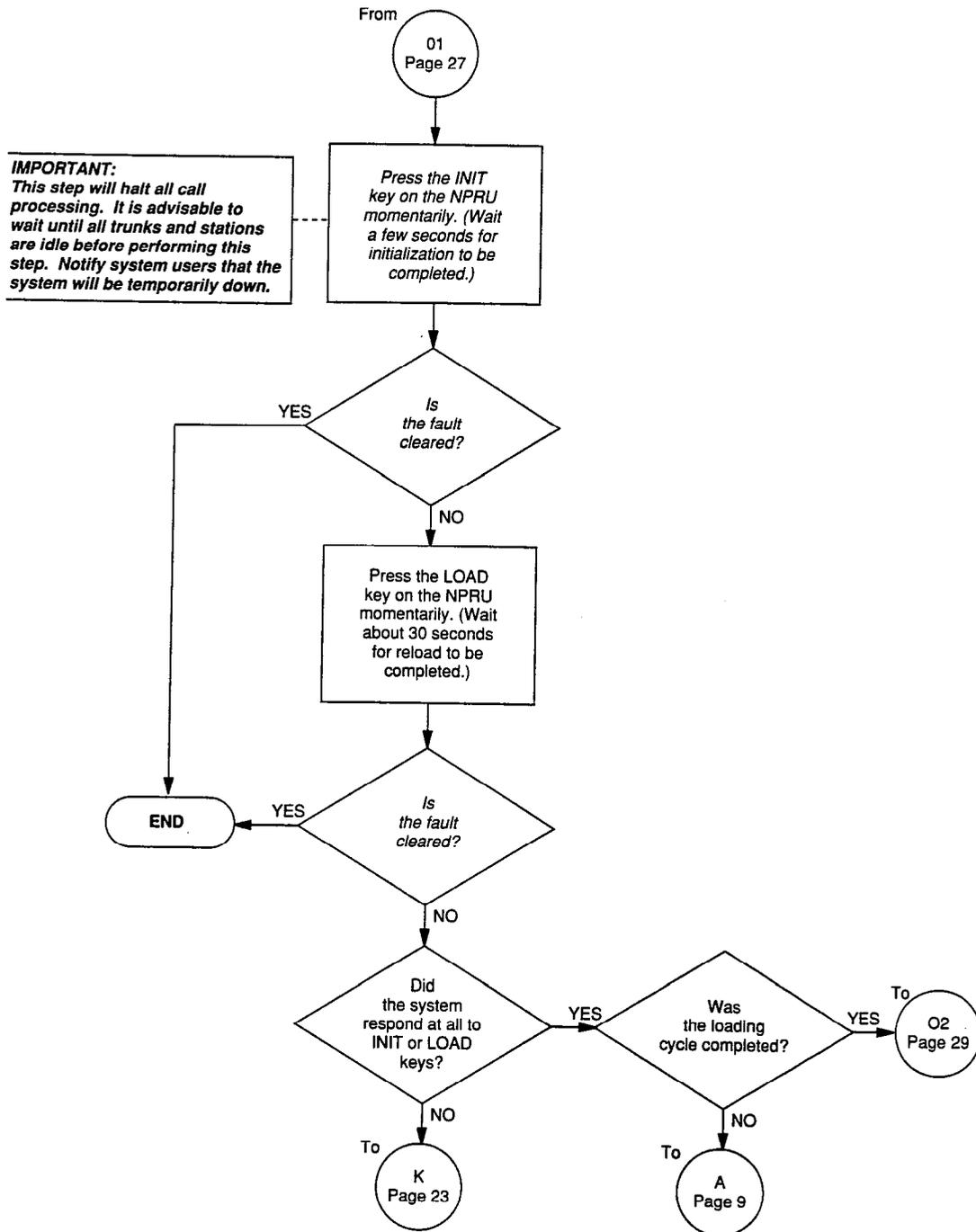


CHART NO. 16  
COMMON STATION FEATURE FAULTS (continued)

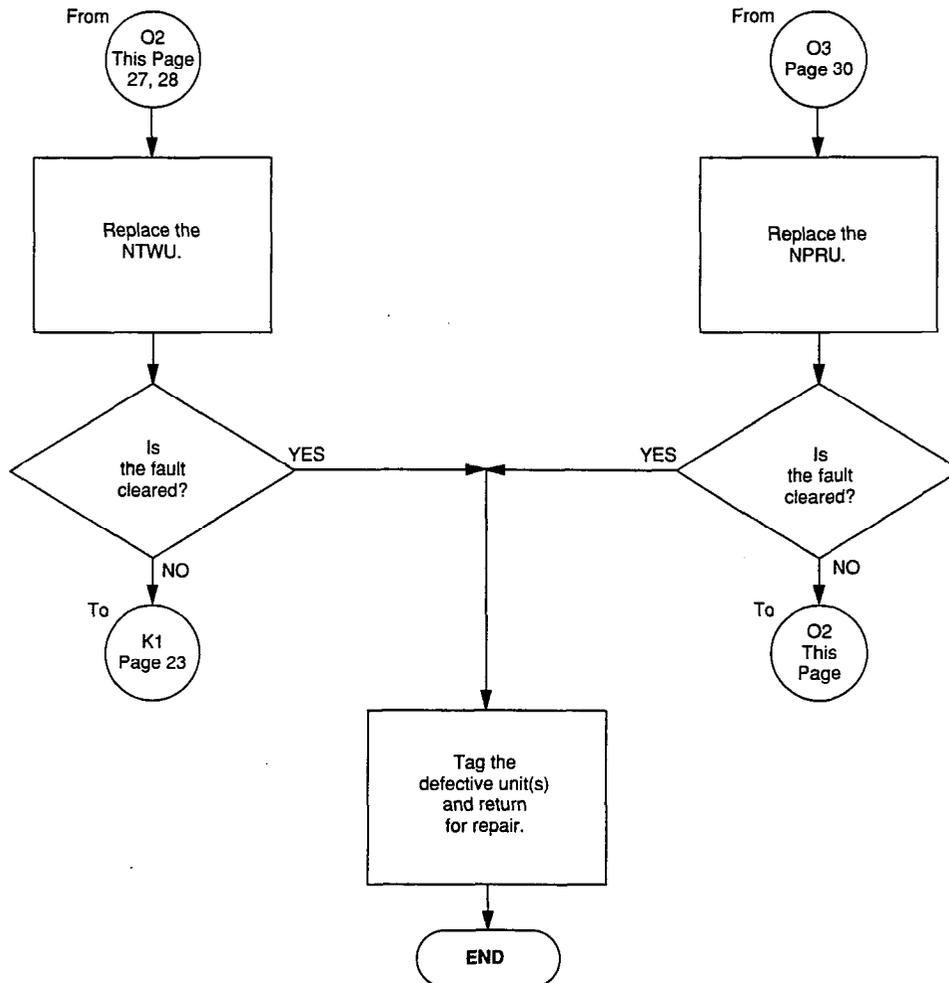
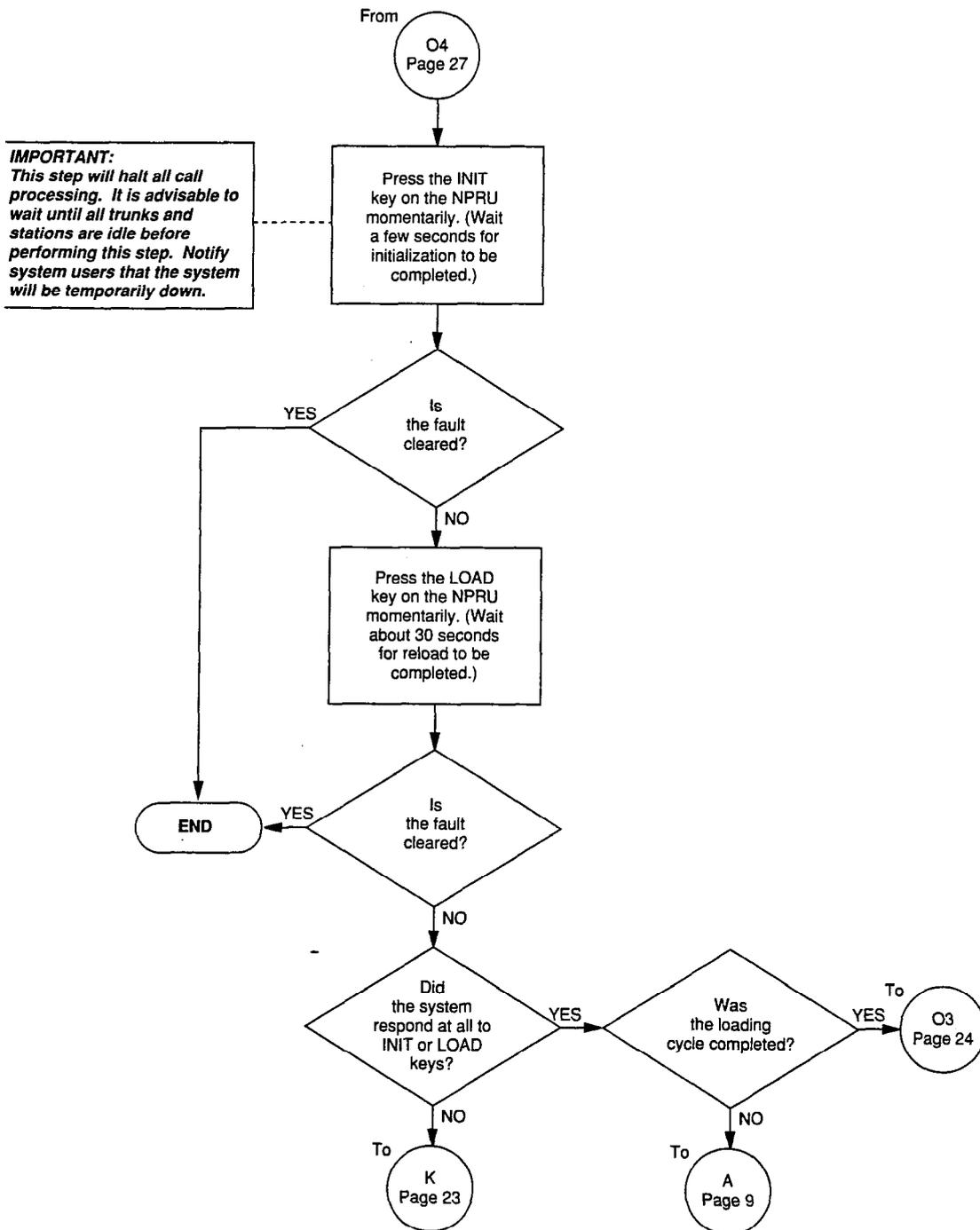
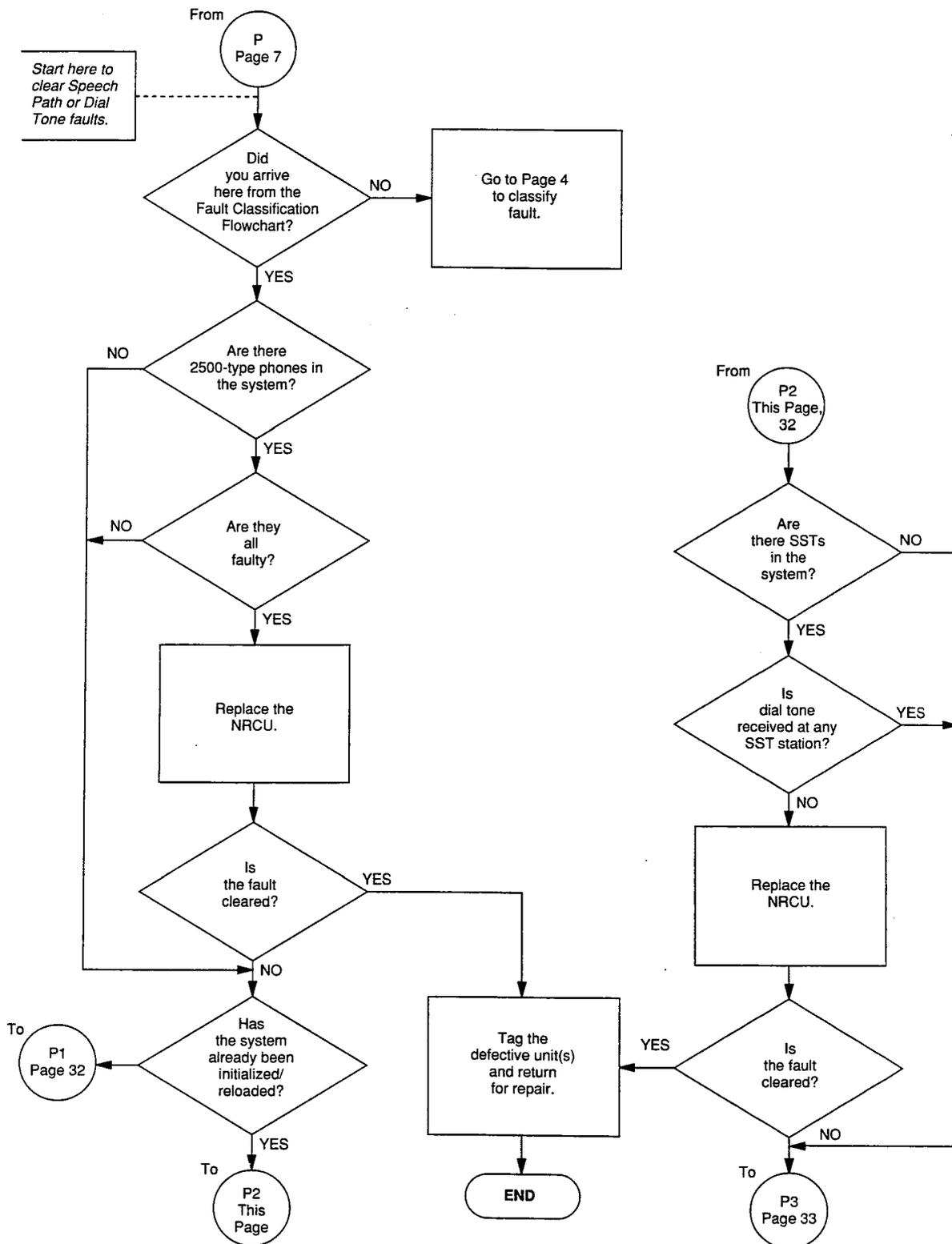


CHART NO. 16  
COMMON STATION FEATURE FAULTS (continued)



**CHART NO. 17  
SPEECH PATH OR DIAL TONE FAULTS**



**CHART NO. 17  
SPEECH PATH OR DIAL TONE FAULTS (continued)**

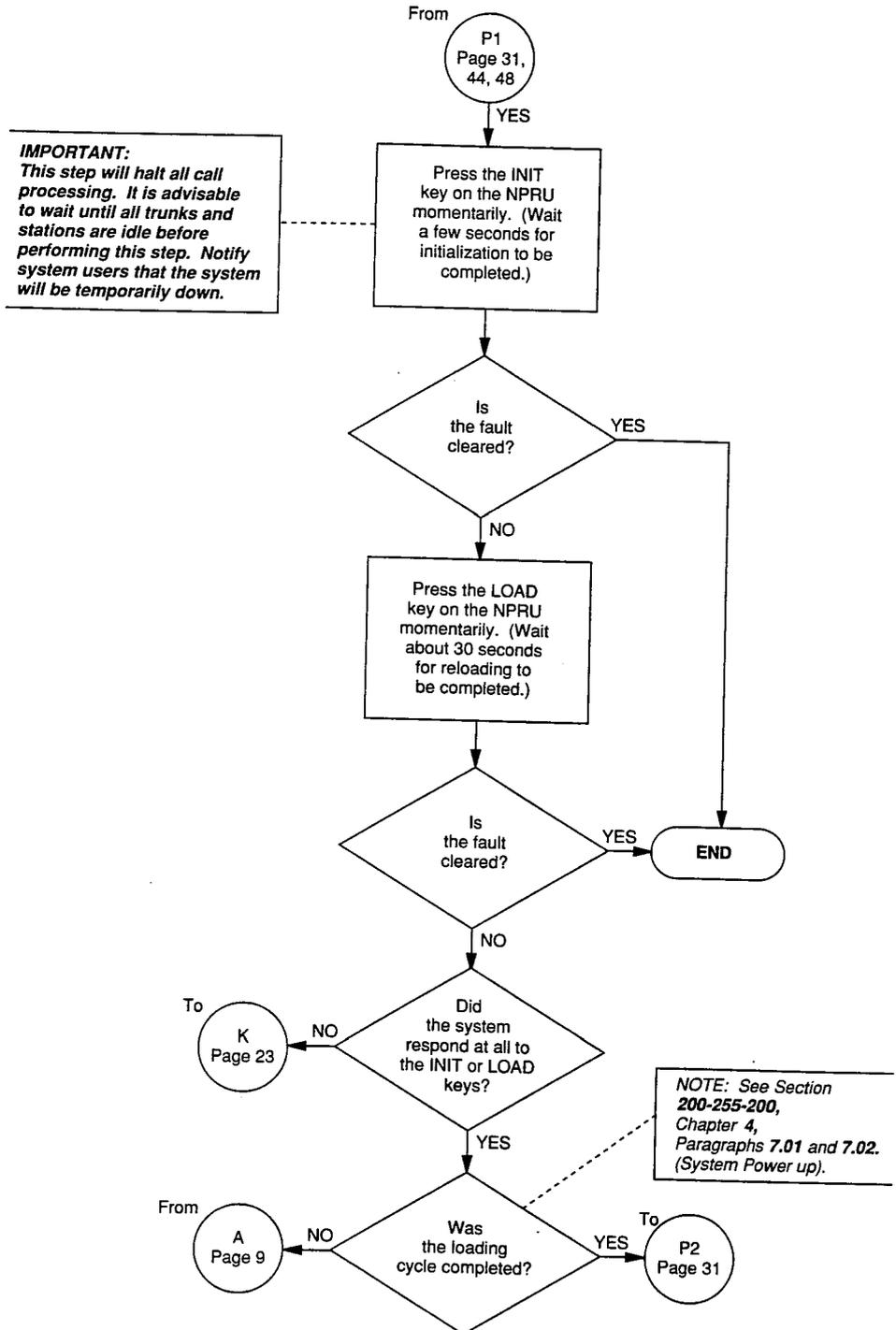


CHART NO. 17  
SPEECH PATH OR DIAL TONE FAULTS (continued)

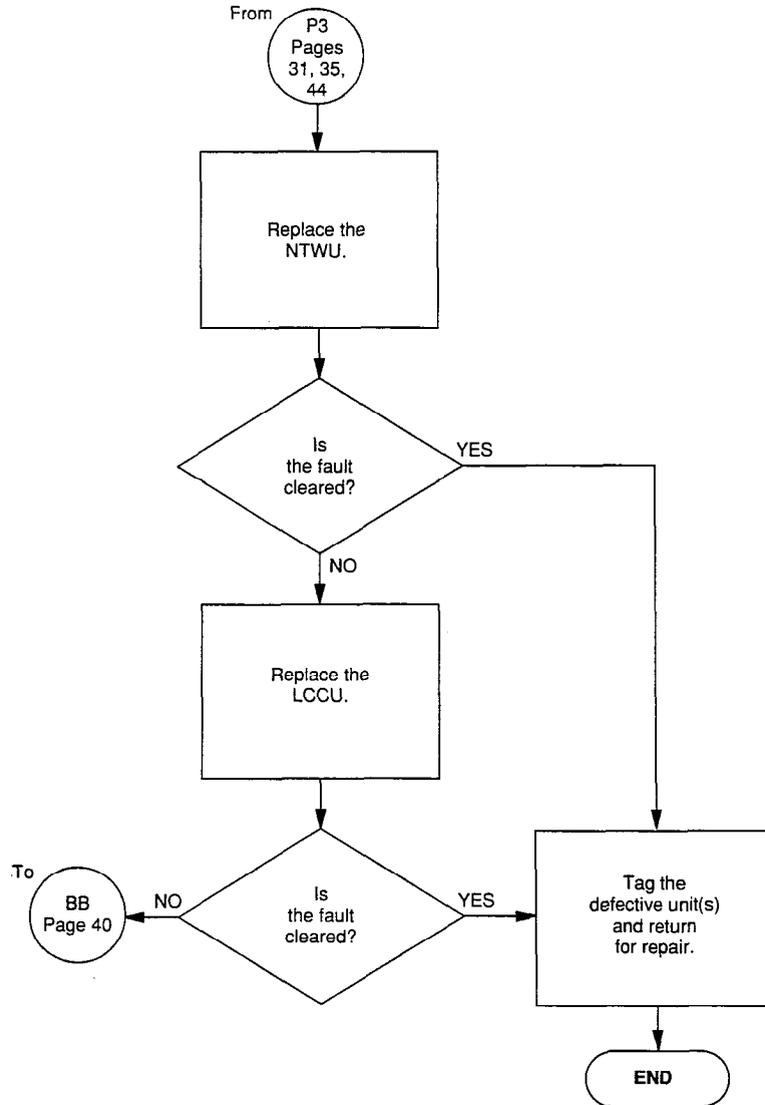
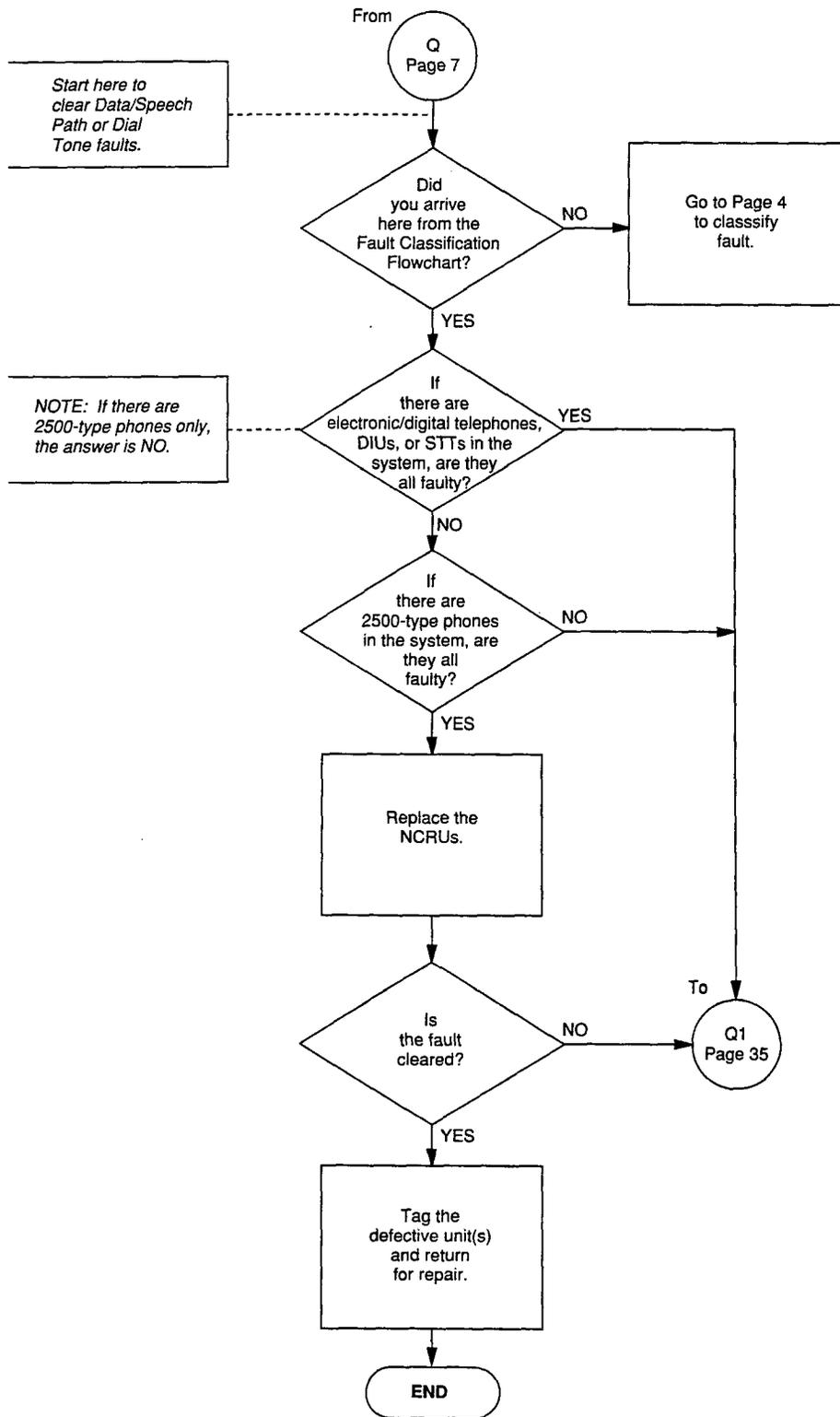
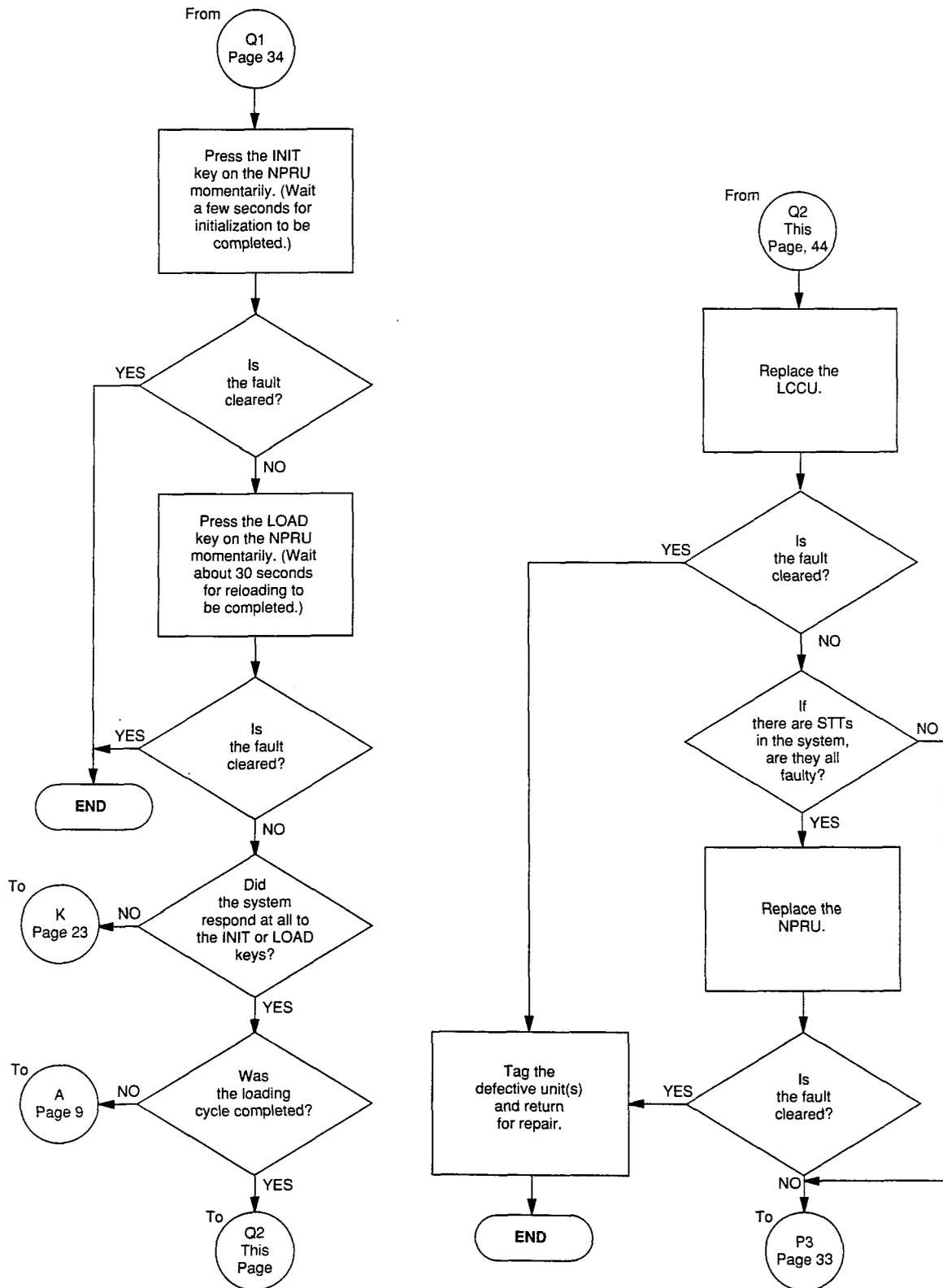


CHART NO. 18  
DATA/SPEECH PATH OR DIAL TONE FAULTS



**CHART NO. 18  
DATA/SPEECH PATH OR DIAL TONE FAULTS (continued)**



**CHART NO. 19  
DIALING FAULTS**

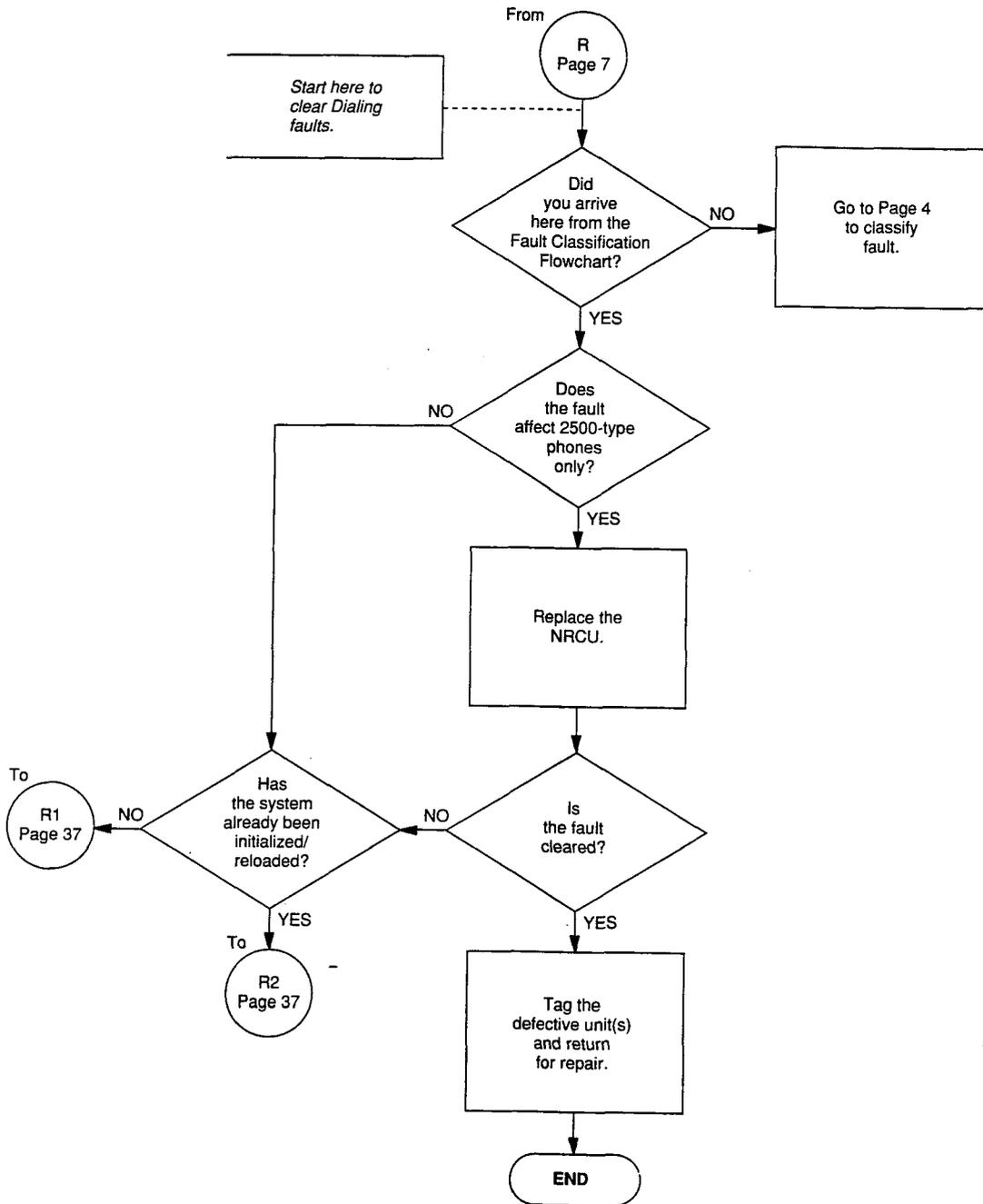
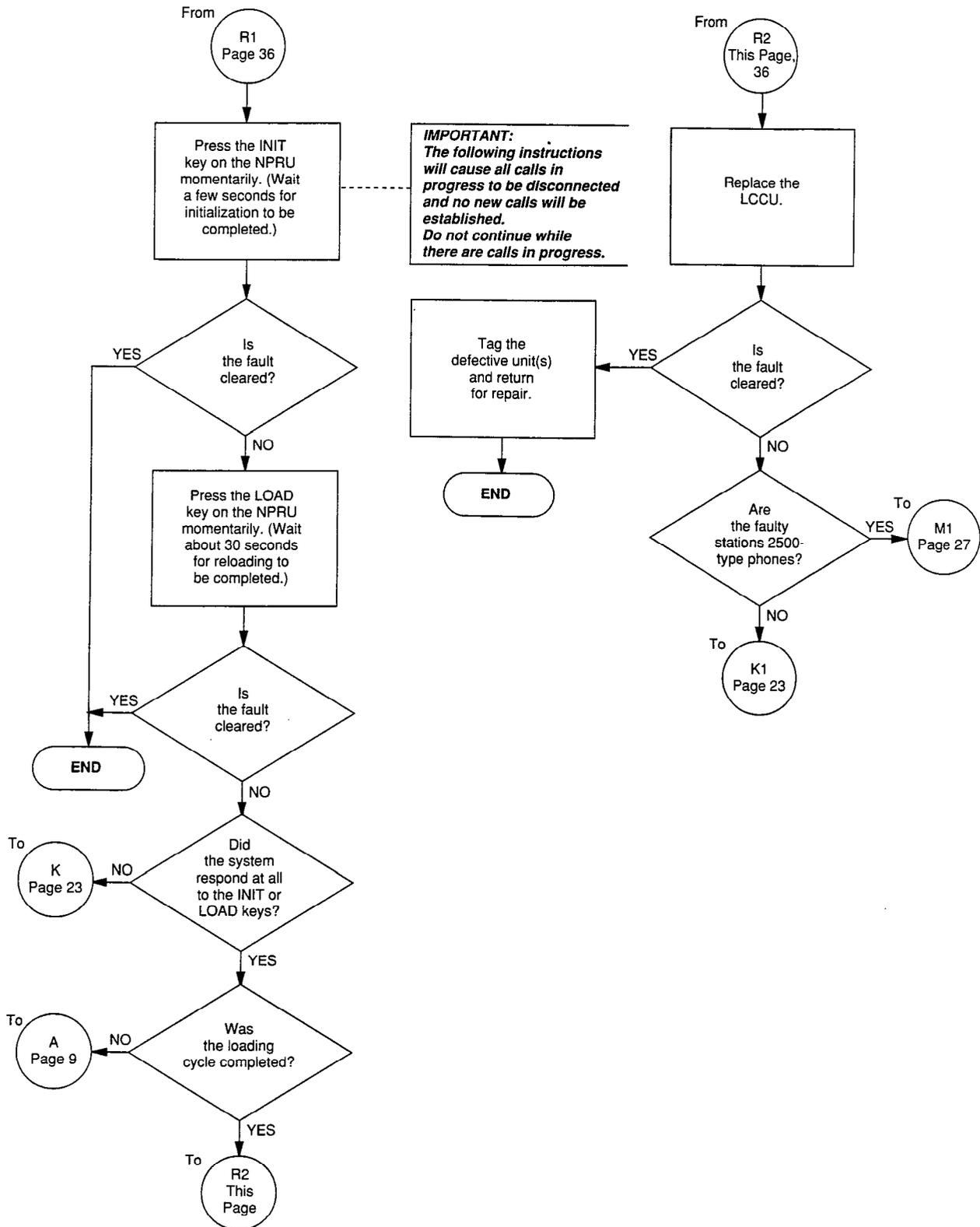


CHART NO. 19  
DIALING FAULTS (continued)



**CHART NO. 20**  
**RINGING/RINGBACK TONE FAULTS**

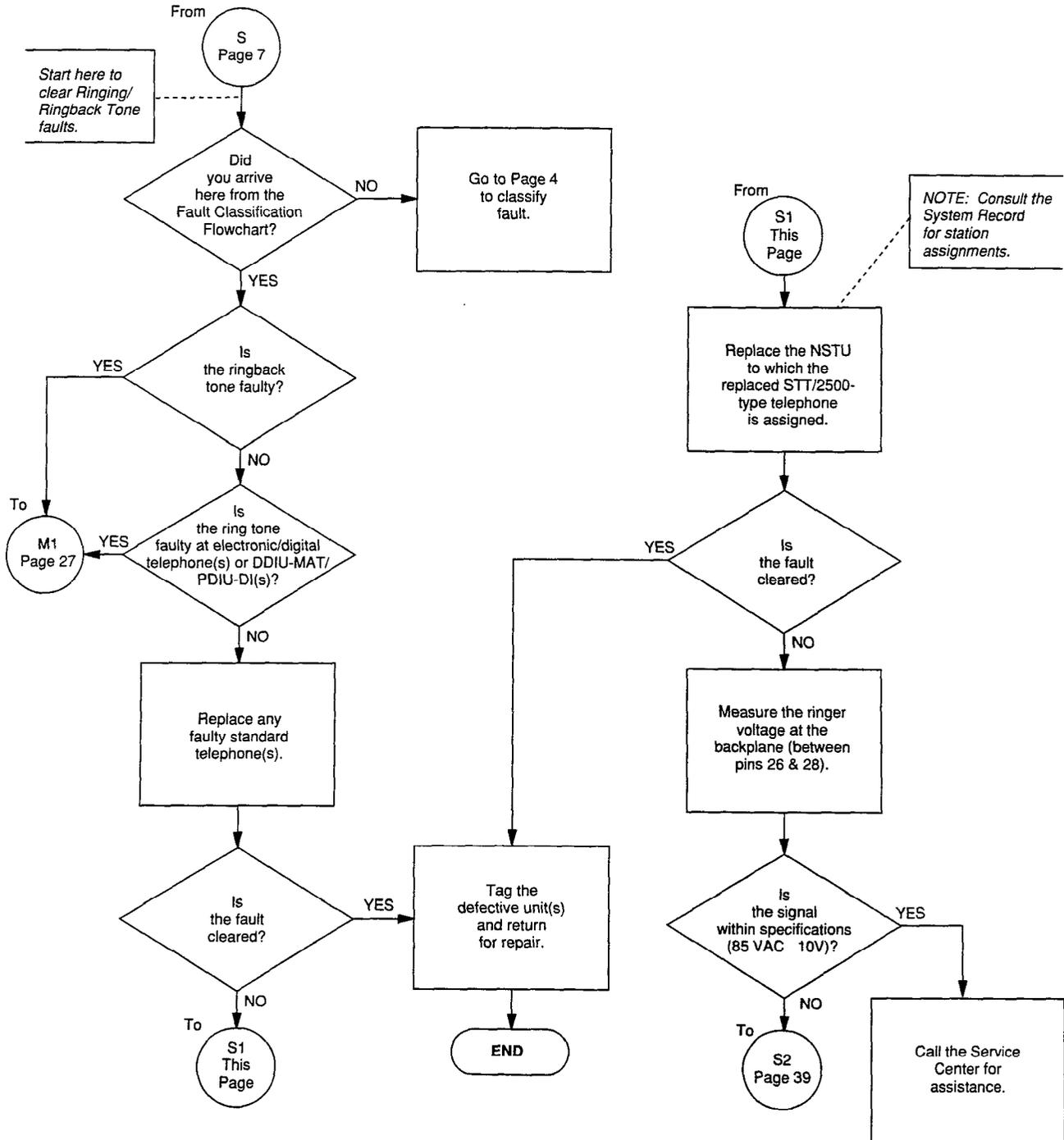


CHART NO. 20  
RINGING/RINGBACK TONE FAULTS (continued)

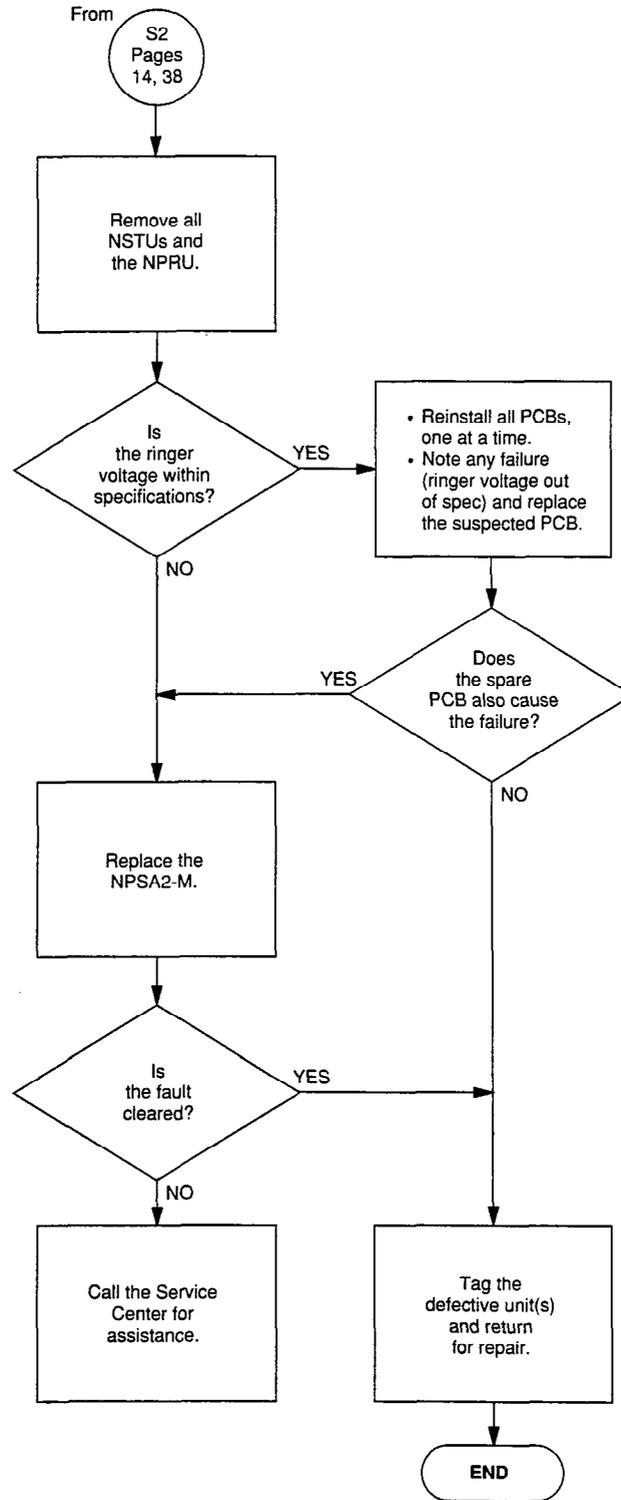


CHART NO. 21  
MISCELLANEOUS FAULTS

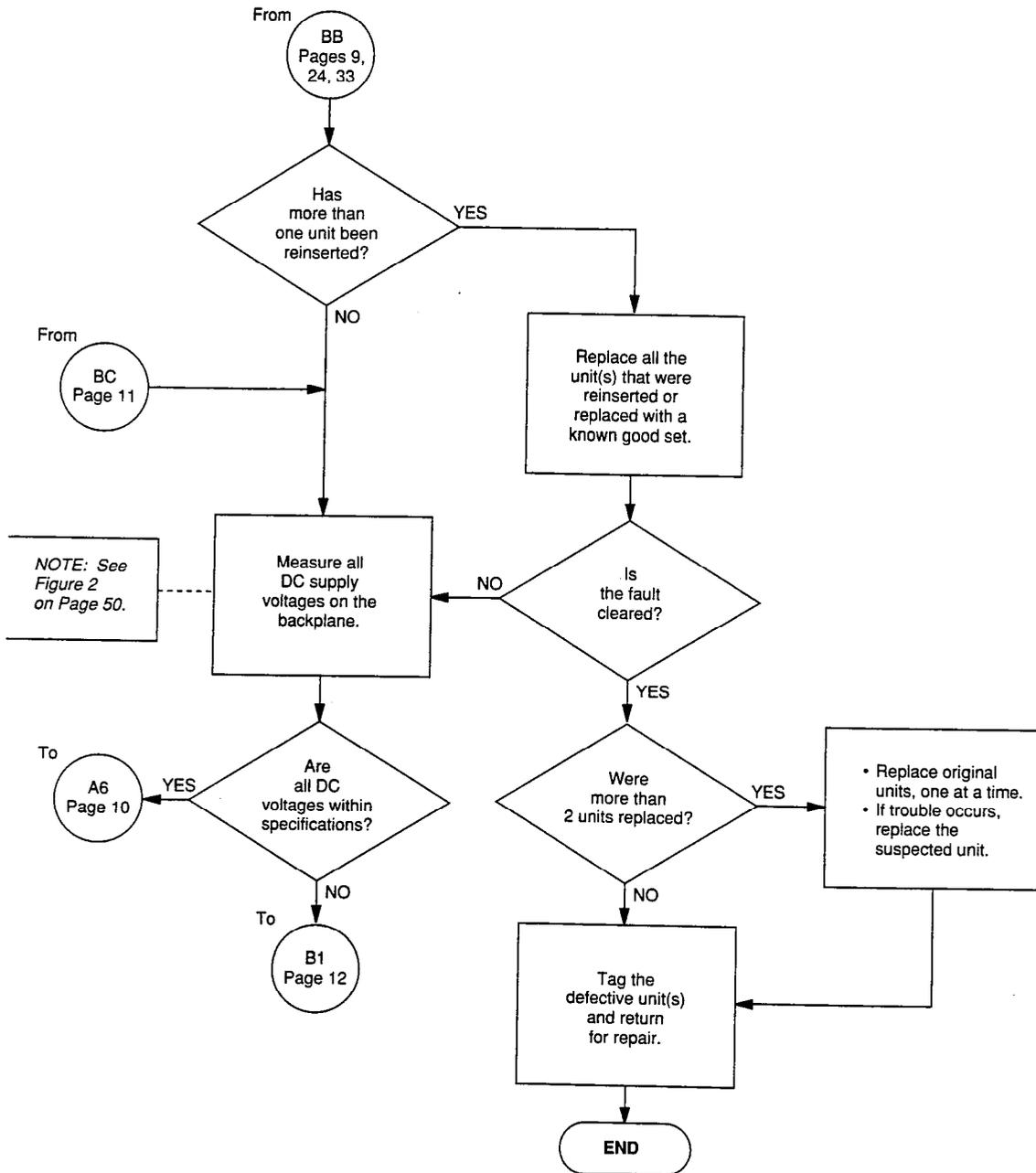
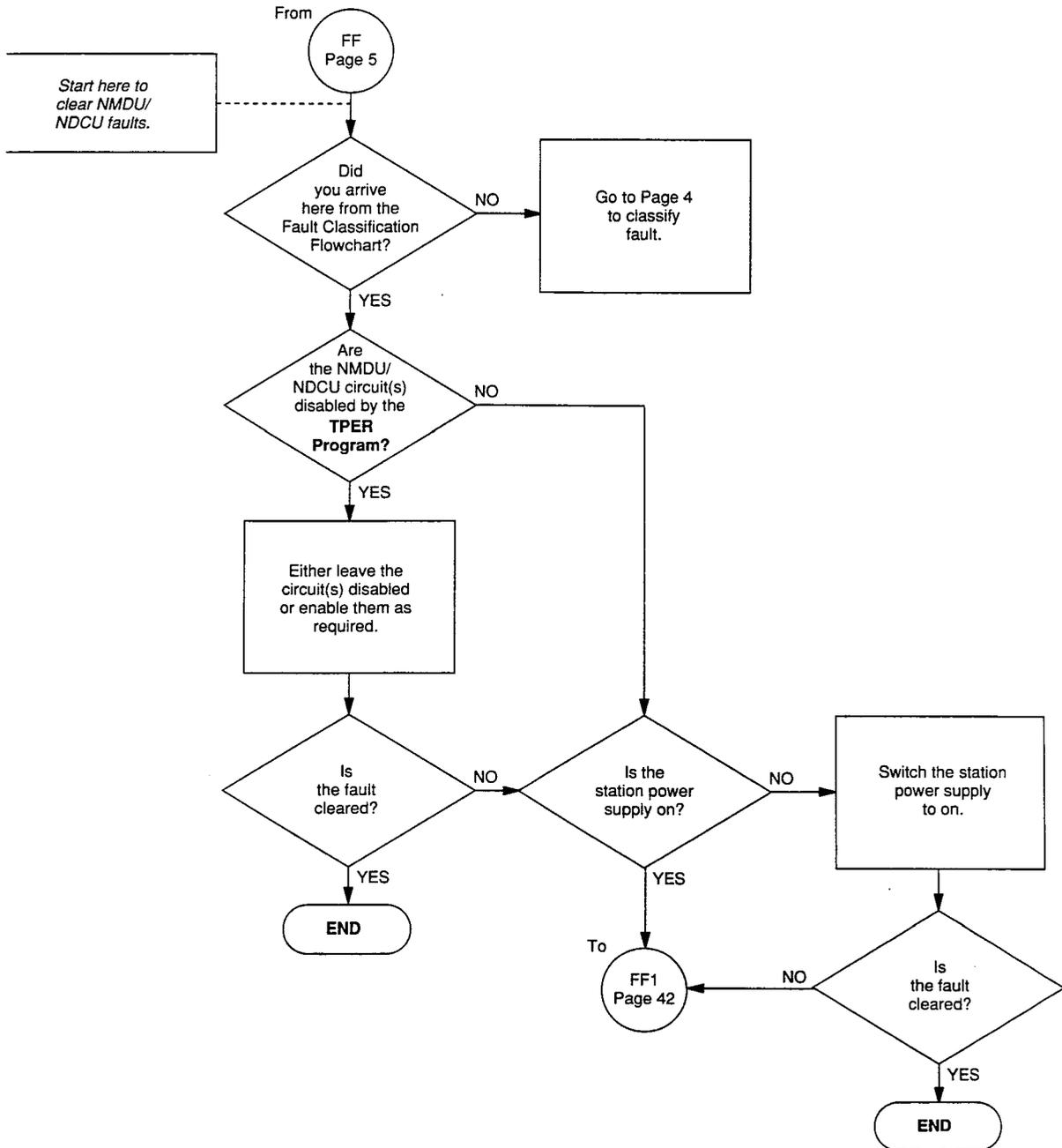
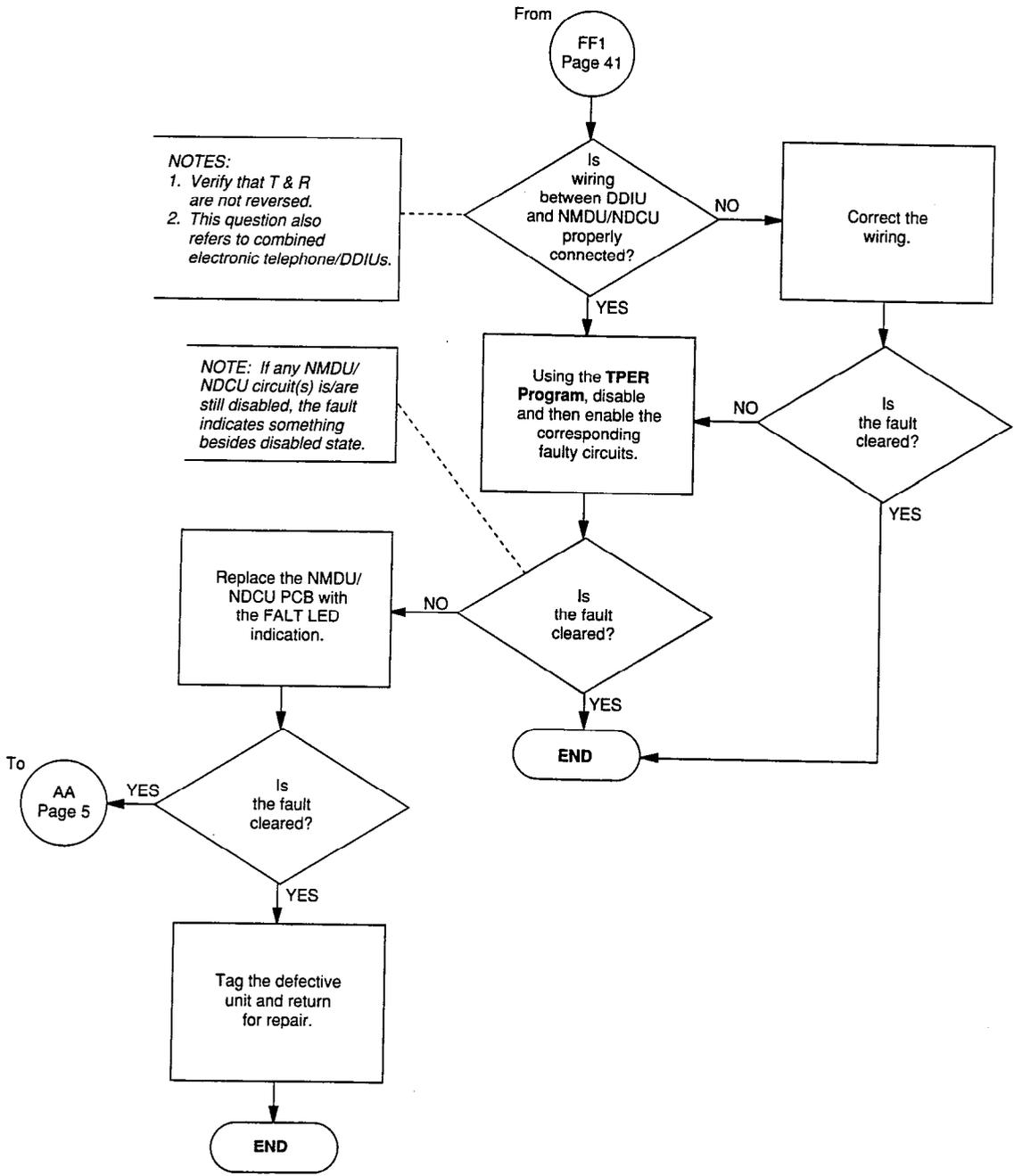


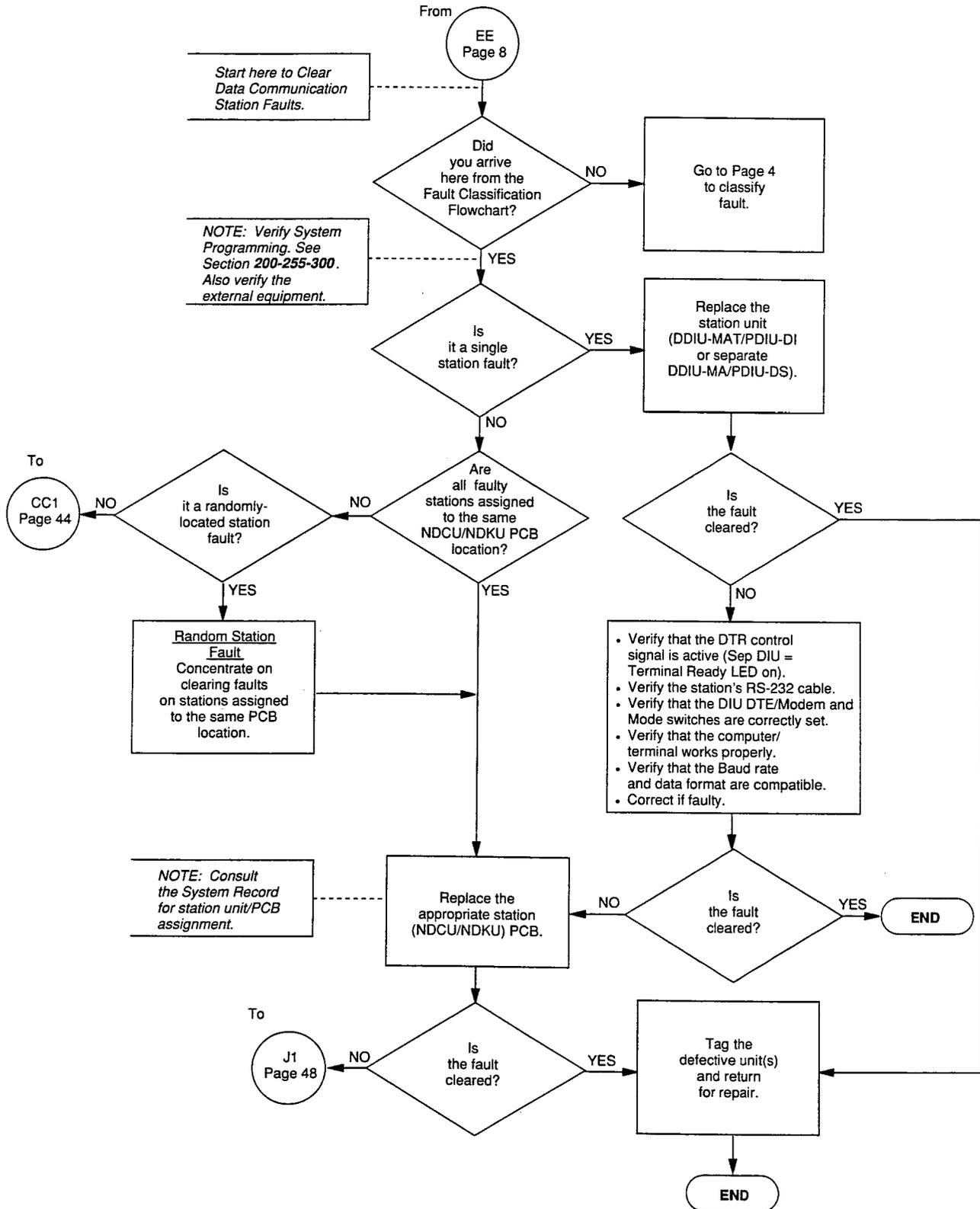
CHART NO. 22  
NMDU/NDCU FAULTS



**CHART NO. 22  
NMDU/NDCU FAULTS (continued)**



**CHART NO. 23  
DATA COMMUNICATION STATION FAULTS**



**CHART NO. 23  
DATA COMMUNICATION STATION FAULTS (continued)**

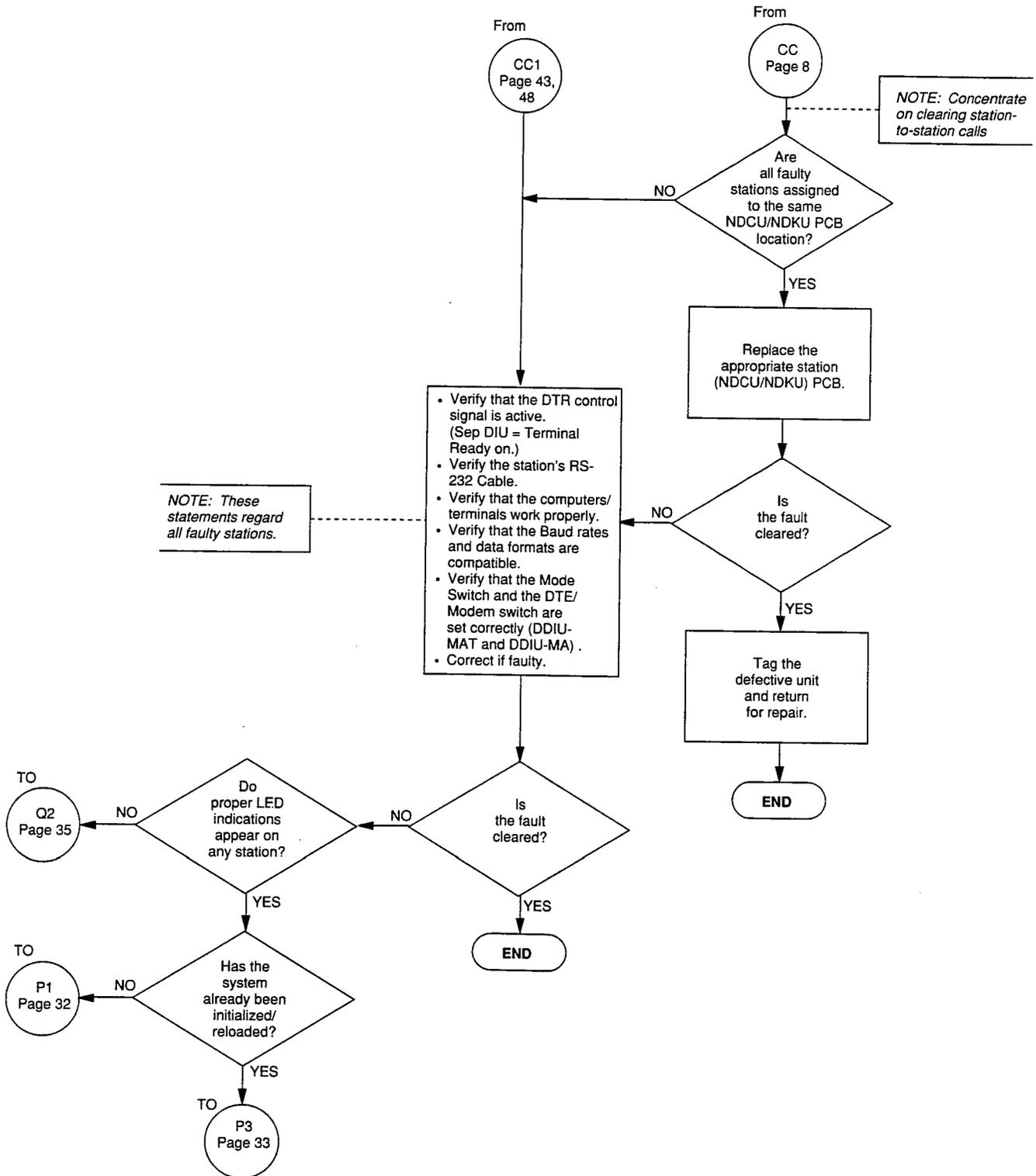


CHART NO. 24  
DATA COMMUNICATION TRUNK FAULTS

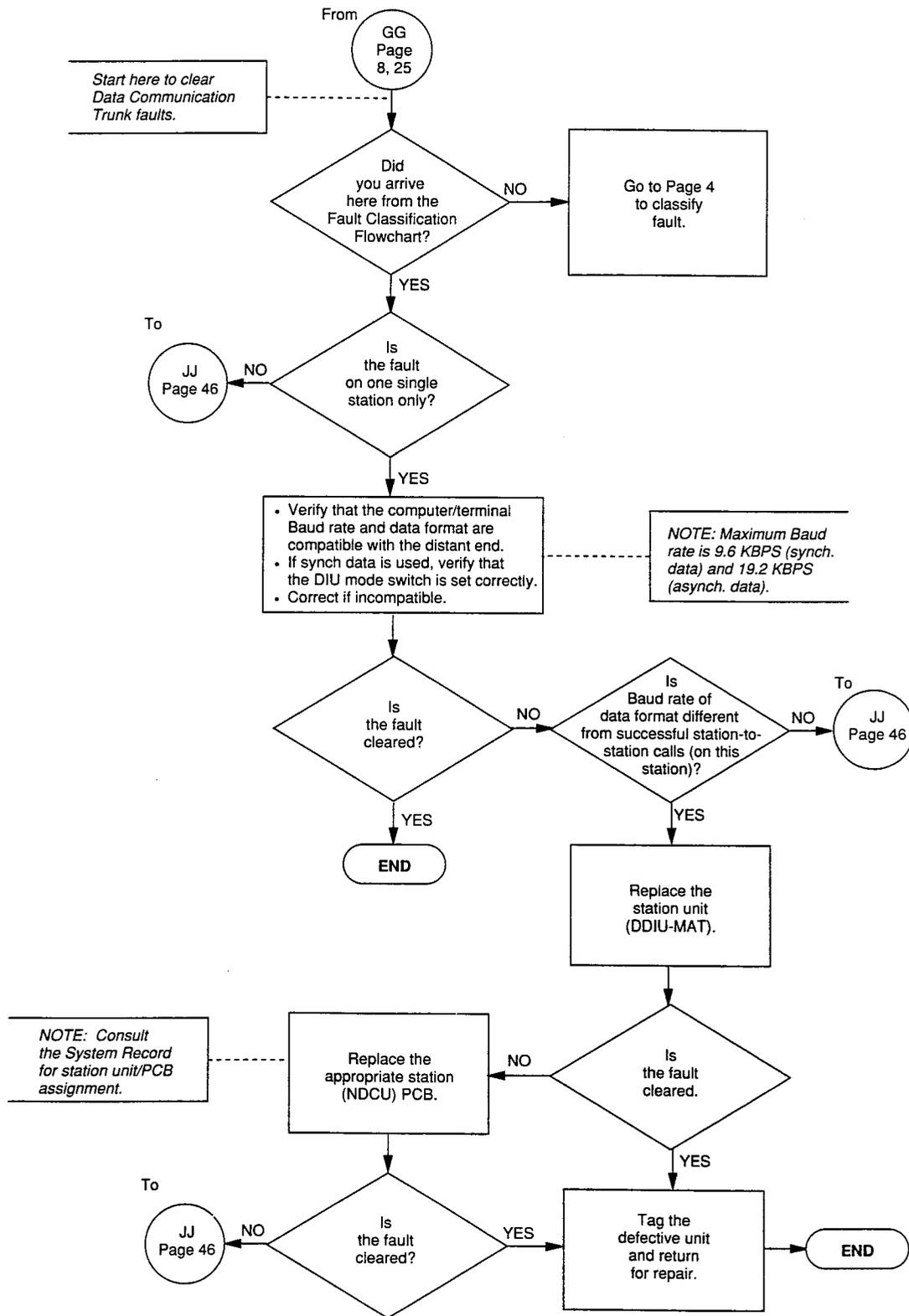


CHART NO. 24  
DATA COMMUNICATION TRUNK FAULTS (continued)

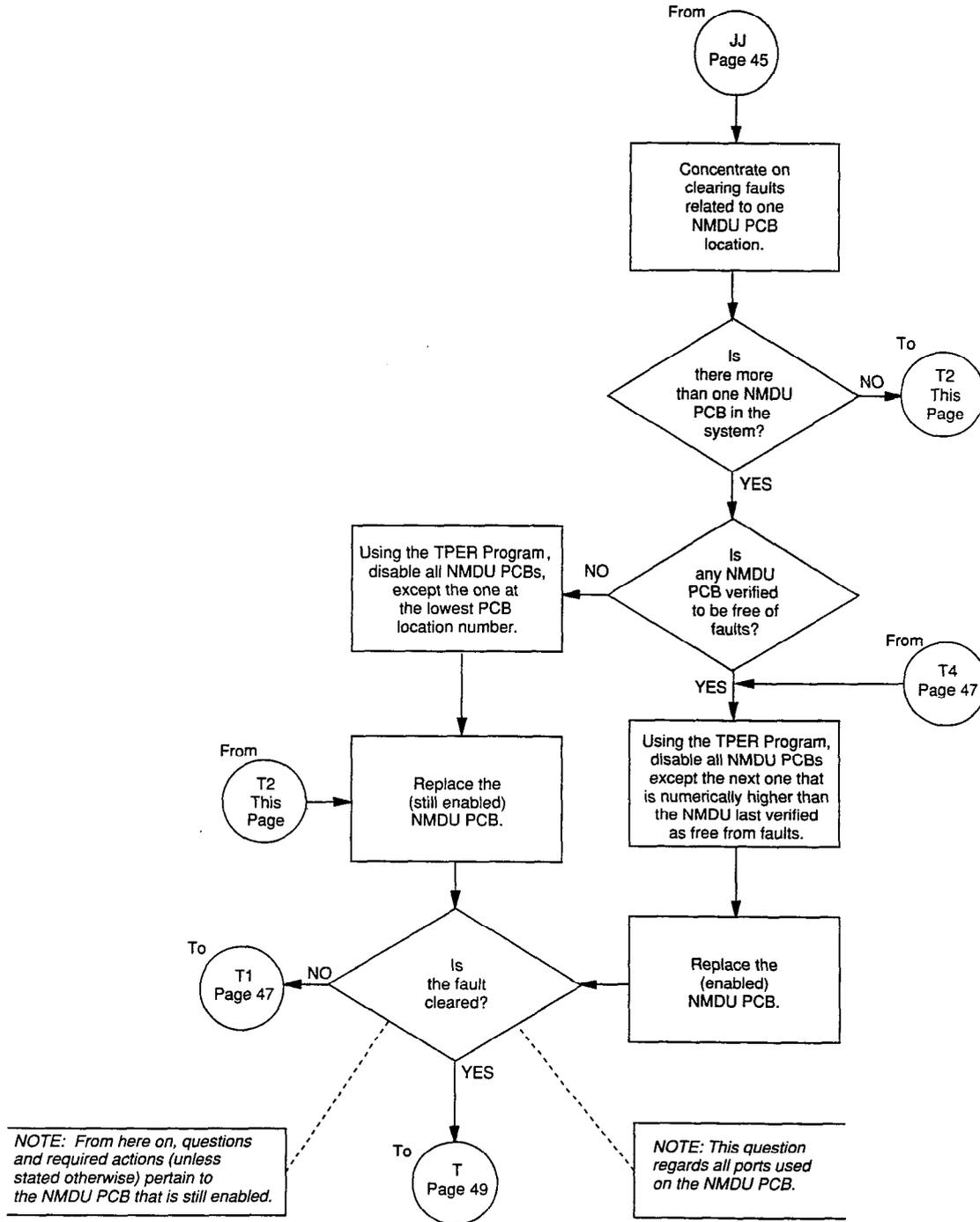
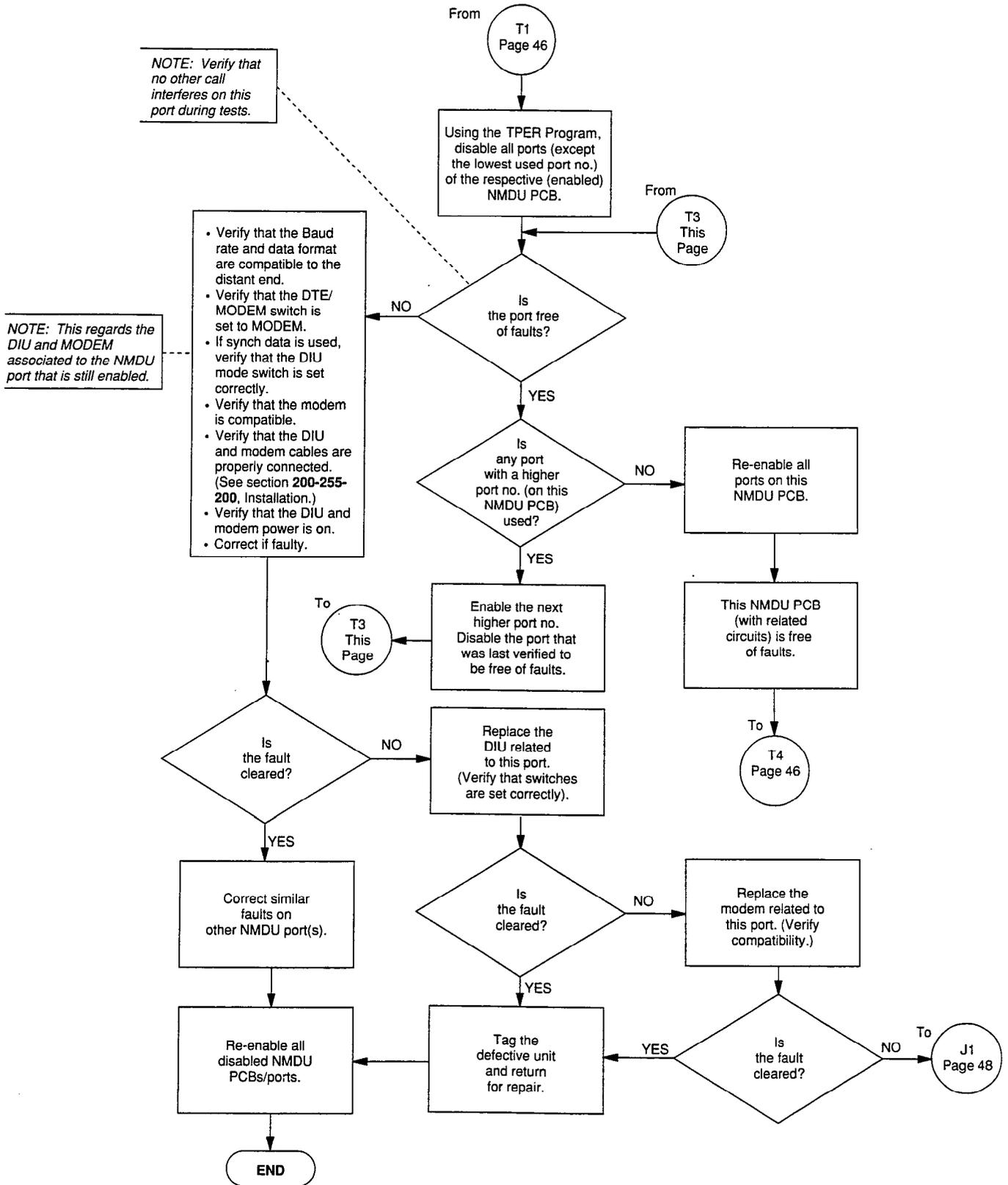
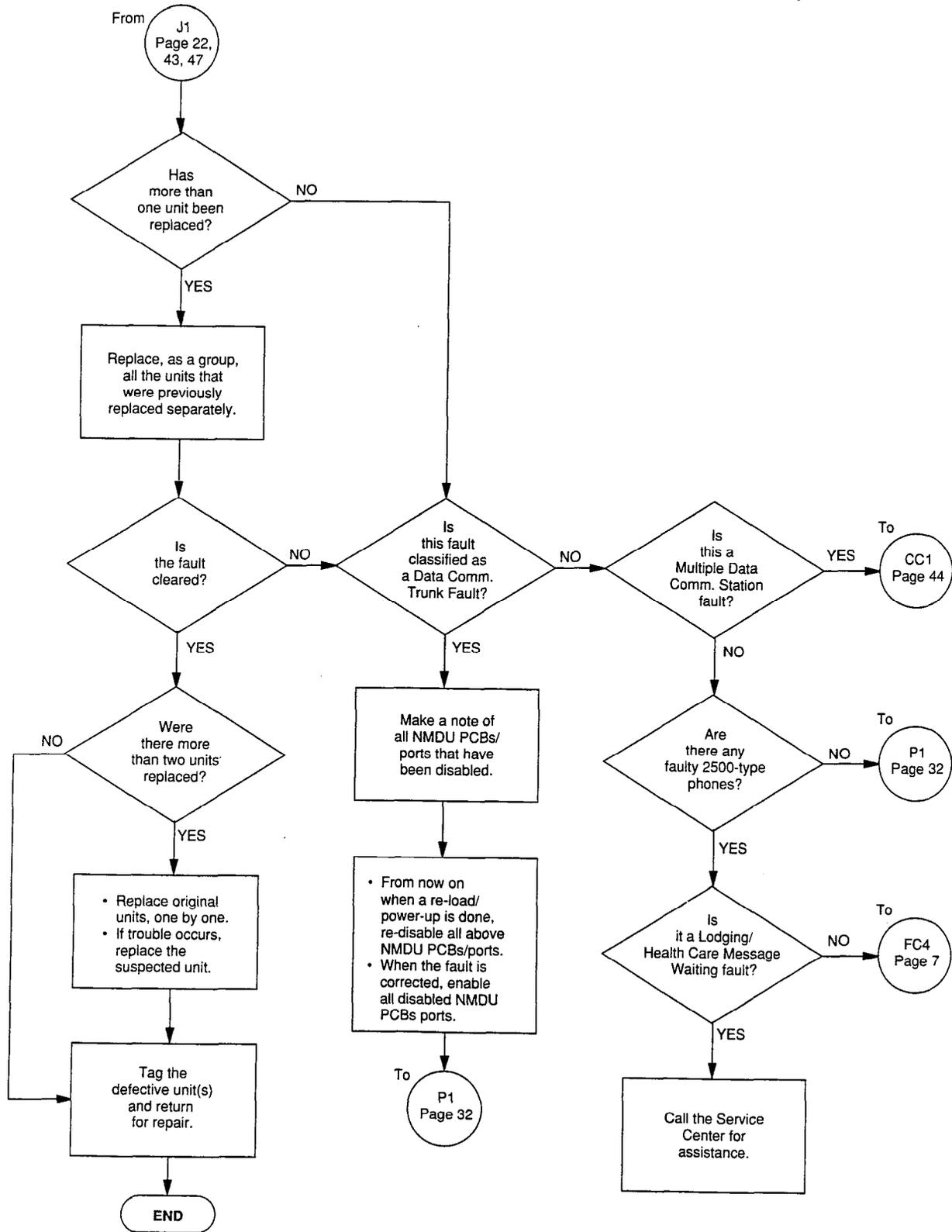


CHART NO. 24  
DATA COMMUNICATION TRUNK FAULTS (continued)



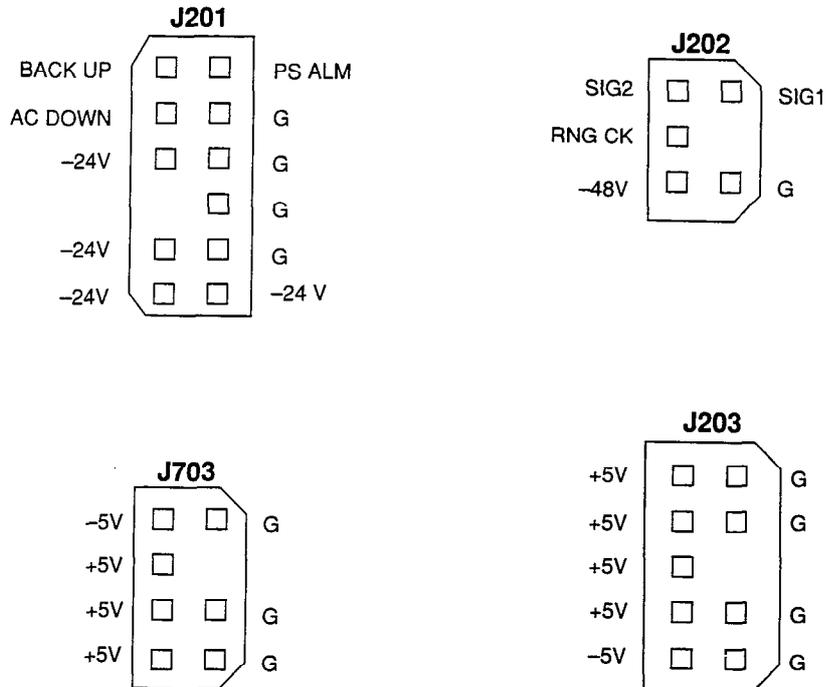
**CHART NO. 24**  
**DATA COMMUNICATION TRUNK FAULTS (continued)**



**EXPANSION CABINET**



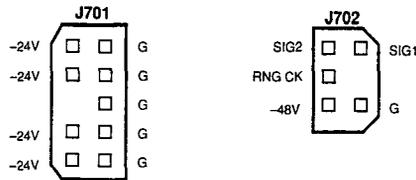
**BASIC CABINET**



NOMINAL (VDC)	RANGE (VDC)
-48	-47.52 ~ -48.96
-24	-26.75 ~ -28.12
+12	+11.76 ~ +12.48
-12	-11.76 ~ -12.48
+5	+5.0 ~ +5.4
-5	-5.0 ~ -5.4

**FIGURE 2 – PECEPTION<sub>e</sub> POWER SUPPLY VOLTAGE CHECKS**

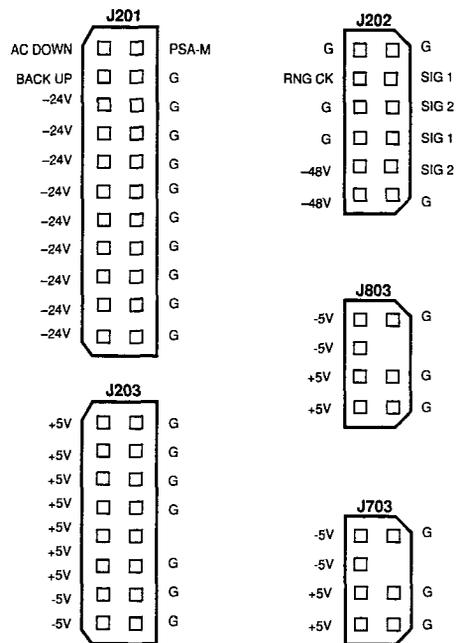
**EXPANSION CABINET**



**EXPANSION CABINET**



**BASIC CABINET**



FPSA ACCEPTABLE VOLTAGE RANGES	
NOMINAL (VDC)	RANGE (VDC)
-48	-47.52 ~ -48.96
-24	-26.75 ~ -28.12
+12	+11.76 ~ +12.48
-12	-11.76 ~ -12.48
+5	+5.0 ~ +5.4
-5	-5.0 ~ -5.4

FIGURE 3 – PECEPTION<sub>ex</sub> POWER SUPPLY VOLTAGE CHECKS