CINDIº II

System User's Guide C-II Software, Version 5

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Minimum software level reflected in this guide: C-II v5 rev. F

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1 Introduction

This User's Guide tells you how CINDI can increase your telephone communication power.

CINDI is an acronym for Central INformation DIspatch. Because you are a CINDI Boxholder,

- CINDI will answer your telephone and take messages
- CINDI will call you at another number and deliver your messages
- CINDI will call other people and deliver messages from you
- CINDI will deliver "certified" messages from you to other
 Boxholders
 - CINDI will deliver a group message from you to as many as 247 other Boxholders
 - CINDI will take messages from you for your guests

In fact, CINDI can provide all of your telephone messaging needs...and using CINDI is as simple as pressing the keys on your telephone.

But before you can begin, you must have two pieces of information. First, you need to have the telephone number or main extension assigned to CINDI:

CINDI's Telephone Number:

Second, you need to know the number of the mailbox that has been created for you:

Your Mailbox Number:	97 VI

You should obtain both of these pieces of information from your System

Manager.

1.1 Calling CINDI

You can reach CINDI by calling the telephone number or main extension assigned to CINDI, just like you would call any other number. CINDI's telephone number should be listed on the first page of this chapter.

When CINDI answers, simply follow the instructions provided by pressing the appropriate keys on your telephone keypad.

The phrases that you hear when you call CINDI depend on 1) the greetings recorded for your organization; and 2) the feature options included on your system.

For example, when you first call CINDI, you might hear a greeting recorded specifically for your organization. Or, you might hear a standard greeting. For simplicity's sake, the examples in this chapter use the standard CINDI greeting.

Next, what you hear depends upon whether or not your system includes one of the following optional feature packages:

- Inbound Service 724[™] (IS724)
 - Fujitsu Focus 960 Integration
- NEC Neax 2400 Integration
- Northern Telecom SL-1 IVMS Integration

Your system may support one or more of these options. If this is the case, not all telephone lines used with your CINDI system may have identical capabilities.

As an example, if your organization is using the IS724 feature, some of the system's telephone lines may be allocated for the IS724 functions. The remaining lines may be allocated for standard voice mail functions exclusively.

On a system like this, there may be two telephone numbers available to call CINDI: one for IS724 and one for standard CINDI. As a user, you need to know which capabilities each number has. Contact your System Manager for this information.

1.1.1 Leaving a Message

This section describes how callers leave messages for you in your mailbox. For practice, you will leave a message in your own mailbox.

When you call CINDI's extension, CINDI greets you and asks you to enter the mailbox number you want. CINDI might present a standard greeting as follows:

Please enter the mailbox number you wish. If you are using a rotary phone or do not know the number, please wait. Otherwise, use your telephone keypad to enter the number now.

You can enter commands at any time, even if CINDI is talking. When CINDI asks for the mailbox number, simply enter the number of the mailbox to receive the message. If you do not enter a mailbox number, CINDI waits a moment, then begins taking a voice message that will be deposited in the general delivery mailbox.

You can select any mailbox simply by entering its number. To reach your own mailbox, enter the number assigned to you by your System Manager. Usually, your mailbox number is the same as your telephone extension number. This number should be listed on the first page of this chapter.

As soon as you enter your mailbox number, CINDI begins to take a message that will be deposited in your mailbox:

I'm taking a message for: (your name or mailbox).

Please leave your name and message at the tone. When you are finished, press any key.

Go ahead and leave yourself a message. If you suddenly find yourself tongue-tied, simply say: "Hello, this is (your name), and I am testing my CINDI mailbox." Press any key when you have finished your message. CINDI also automatically stops recording after several seconds of silence.

When you have stopped recording the message, CINDI presents the Message Recording menu:

If this message is acceptable, press [1]. To review the message, press [2]. To continue this message, press [3]. To re-record the message, press [4]. To cancel the message, press [8].

» Press [1] to accept the message and have CINDI put it in your mailbox. When you open your mailbox and receive your messages for the first time, it will be there for you to hear.

When you accept the message, CINDI confirms that it has been delivered to your mailbox:

System User's Guide

Thank you.

Your message has been delivered to: (your name).

Depending on how your System Manager has configured your system, CINDI might conclude the call or give you the option to continue:

Thank you. Good day/evening.
os
To continue, press [1].
To end this call, press [9].

tongue ned, singel and "Hello, the it your name), and I am testing my

» For now, if you are given the option, press [9] to conclude the call. In the future, you should always remember to press [9] so CINDI hangs up when you do.

1.2 Opening Your Mailbox

The previous sections showed you how you can reach CINDI and how callers leave messages for you in your mailbox. This section explains how to open your mailbox so that you can receive your messages and gain access to other important features.

To open your mailbox, you need a "key." This key is a password that you can enter with your telephone keypad. You are the only person who can open your mailbox, since no one else knows the password you choose.

When the System Manager first creates your mailbox, the system automatically assigns password [0] to the mailbox. This is the default password you will enter the very first time you open your mailbox.

Once you log onto your mailbox and enter the default password, CINDI will prompt you to enter your own unique password. Accordingly, before you open your mailbox for the first time, you should decide what this password will be.

A password can be any combination of numbers or letters on the telephone keypad, up to four characters long (the [*] and [#] keys cannot be used).

Some examples of passwords are:

85, 2789, VW, USAF, 2BIT

Make sure you record your password where you can find it, should you forget it. You can always change it later if you don't like it.

To open your mailbox for the first time, follow the steps presented below. Please note that these steps apply to standard CINDI lines. If you are opening your mailbox from an IS724 line or from an integrated line, please refer to the end of this chapter for the steps you should follow.

- Call CINDI by dialing an extension or the company telephone number.
- When CINDI answers, enter your mailbox number. You can enter the number as soon as you hear CINDI. You don't need to wait for CINDI's request.
- Enter a [0] immediately after your mailbox number. This tells CINDI that you want to open your mailbox and use the Boxholder features rather than simply depositing a message in the mailbox.
 - Enter the default password [0] when CINDI asks for it.

After you enter the default password, CINDI welcomes you and asks you to enter the password to be used in the future. You hear:

Welcome to your new mailbox, (your name).
In order to ensure the privacy of your messages, you should select a new password for your box. I will use this password to verify your identity on future calls.
Enter your new password.

* Enter the new password you have chosen. If you do not specify a password at this time, CINDI will retain [0] as your password.

After you enter a new password, CINDI plays it back to you and asks for your confirmation:

To keep this password, press [1].

To change the password, press [8].

» Press [1] when you are satisfied with the password you have entered.

In the future, when you enter your mailbox to access Boxholder functions, CINDI asks you to enter your password before allowing you to open your mailbox.

If you want to change your password, refer to the Personalizing the System User's Mailbox chapter in this manual.

1.2.1 Opening Your Mailbox with Optional Feature Packages

If your system includes IS724 or an integration, the way in which you open your mailbox differs slightly from the manner described above.

maker considerable with IS724 to anii ACVEI as over sodies a movem

To open your mailbox by calling into an IS724 line:

- cooldales yes group and no in O Call CINDL
 - Press [9] when CINDI asks for the extension number.
- 3 Enter your mailbox number.
 - Enter a [0] immediately after your mailbox number.
 - Enter your password.

With an Integration

If your CINDI is equipped with one of the integrations, you can open your mailbox from your own telephone station as follows:

- ① Call CINDL
- Enter your password when CINDI asks for it.

You can gain access to your mailbox in this manner only when calling one of CINDI's integrated lines from your own telephone station. When you call CINDI from your station, the system automatically receives your mailbox number and [0]. As a result, the system only requires your password.

Remember, if you call CINDI from another telephone station, the system will automatically receive the mailbox number (and [0]) associated with that station. CINDI will accept only the password for that mailbox. To sign onto your own mailbox when calling from another station, press [#] first. Then enter your mailbox number, [0], and your password.

1.2.2 The Importance of Opening Your Mailbox

In order to have full access to CINDI's features, it is important that you open your mailbox each time you call CINDI, even if you do not intend to use any of the Boxholder features available inside your mailbox. By opening your mailbox, you tell CINDI that you are a Boxholder, and so are allowed other privileges during your call.

For example, the System Manager can prevent CINDI from presenting the following prompt to non-Boxholders:

To continue, press [1].
To end this call, press [9].

This prompt normally is presented after a caller has finished leaving a message for a Boxholder. When the prompt is not presented, CINDI automatically concludes the call — as if the caller had pressed [9] in response to the prompt. Consequently, a caller wanting to leave two messages would need to make two calls.

However, if CINDI knows you are a Boxholder -- because you have opened your mailbox sometime during the call -- the prompt is always presented to you. Therefore, if you intend to leave two separate messages for Boxholders, you should open your mailbox, close it by pressing [1], and then proceed to leave the two messages.

Opening your mailbox each time you call CINDI has the added advantage of keeping you up to date on the number of new messages in your mailbox. CINDI tells you how many new messages you have each time you open your mailbox.

1.3 The System User's Main Menu

When you open your mailbox, CINDI tells you the number of new messages in your mailbox and presents the System User's main menu to you. This menu tells you all of the features available to a CINDI Boxholder:

To receive your messages, press [2].
For message forwarding, press [3].
For call placements, press [4].
For group messages, press [5].
For certified messages, press [6].
For guest accounts, press [7].
To personalize your mailbox, press [8].
To record a message, press [1].
To end this call, press [9].
If you'd like to speak with someone, press [0].

You select a feature by pressing the appropriate key. Remember, you can make your selection even while CINDI is speaking.

Each of the features is discussed briefly below. Those marked with an asterisk are special features authorized by your System Manager and might not be assigned to your mailbox. Check with your System Manager to verify which have been authorized for you.

[1] RECORD A MESSAGE

With this feature, you can "close" your mailbox and record a standard message for any Boxholder. If you want to use other Boxholder features after you record the message, you must re-open your mailbox.

[2] RECEIVE YOUR MESSAGES

All new and saved messages left in your mailbox can be reviewed with this feature.

[3] MESSAGE FORWARDING *

Use this feature to have CINDI forward your messages to any telephone number you specify, including long distance.

[4] CALL PLACEMENTS *

This feature allows you to have CINDI make an outgoing call and deliver a message from you.

[5] GROUP MESSAGES *

Using this feature, you can send a message to as many as 247 people at one time.

[6] CERTIFIED MESSAGES

This feature allows you to send a message to another Boxholder and have CINDI record the date and time the message was received.

[7] GUEST ACCOUNTS *

Use this feature when you have business associates or family members who are not Boxholders for whom you need to leave messages. Using a password you assign specifically for them, your guests can receive messages from you in their own guest mailbox.

[8] PERSONALIZE YOUR MAILBOX

This feature allows you to record a personal greeting (*) for your callers, change your password, change the name recorded for your mailbox, and use other important features.

[9] END THIS CALL

This command tells CINDI you are finished using your mailbox and intend to hang up.

[0] SPEAK WITH SOMEONE ELSE

This feature allows you to transfer from CINDI to an extension or to the attendant, and it is available from many of CINDI's menus. If the System Manager has prevented CINDI from transferring calls on the line you are using, CINDI does not present this option to you.

Each of these Boxholder features is explained in detail in the following chapters.

IN CERTIFIED MESSAGES

This feature allows you to send a pease go to another Boxholder and have CINDI record the date and time the measure was received.

I'M GUEST ACCCUNTS "

Use this feature when you have business associates or family members who are not Bounders for whom you need to leave messages. Using a password you assue a specifically or them, your guests can receive messages from you in their own guest mathem.

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Fach of these Boxhouder features is explained in detail in the following chapters.

2 Message Recording

One of the primary features with which every CINDI user needs to become familiar is Message Recording. Familiarity with this feature is important because Message Recording is used in many other CINDI features, including: message transfers with preceding comments, call placements, group messages, certified messages, and guest messages. These are in addition to the message recording key [1] in the main menu.

When you press [1] from the main menu to record a message, you should remember that this "closes" your mailbox. If, after you finish recording the message, you want to access your mailbox's features again, you should open your mailbox by re-entering your mailbox number and password.

When you send messages to other Boxholders in the system, CINDI will only be able to identify you as the sender of the message if you opened your mail-box prior to sending the message. By opening your mailbox first, the message recipient can respond easily to your message without having to look up and enter your mailbox number. CINDI will automatically send the response to you. If you do not open your mailbox prior to sending a message, CINDI will not know who you are and the recipient will need to specify your mailbox if he or she wants to respond to your message.

When you access the Message Recording feature, CINDI will prompt you with the phrase:

Standard Phrase:

Please leave your name and message at the tone. When you are finished, press any key. (Beep)

If you are using the feature while transferring a message to another Boxholder, CINDI will present a different prompt:

Message Transfer Phrase:

Please give me your prefacing comments. (Beep)

You can press [1] to skip through the prompt to speed up the recording process. If you choose to do this, CINDI presents an abbreviated prompt:

Recording. (Beep)

Press any key to stop recording. Recording also stops if:

- CINDI receives four seconds of continuous silence.
- The entire maximum message length is used.
- You hang up.

be able to stenuth you as the sender of the message if you opened your mail-

and contrology granders mumber. CINDI will automatically send the response

When you recess the Message Recording feature, CINDI will prompt you

In addition, when the maximum message length is longer than 30 seconds, CINDI interrupts you with a reminder when only 30 seconds remain, after which CINDI stops recording automatically. This allows you to conclude your message in an orderly fashion.

2.1 Message Recording Menu

When you have finished recording, CINDI presents the Message Recording menu to you:

If this message is acceptable, press [1].

To review the message, press [2].

To continue this message, press [3].

To re-record the message, press [4].

To cancel the message, press [8].

This menu gives you complete control over the content and presentation of your message.

2.1.1 Accept the Message (Send)

Until the message you record is acceptable to you, CINDI does not deliver it to the specified receiver(s).

To tell CINDI that the message is acceptable:

» Press [1] when presented the Message Recording menu.

Depending on how you accessed the Message Recording feature, CINDI acknowledges your input with a brief delivery confirmation or by continuing with the feature you used to access Message Recording.

2.1.2 Review the Message

To review the message as it is currently recorded:

» Press [2] when presented the Message Recording menu.

CINDI plays back the entire message for you and then presents the Message Recording menu to you again.

If you enter a key while the message is being played back, CINDI treats the key as another response to the Message Recording menu. This means that you can press:

- Another [2] to restart the review process.
- A [3] to continue recording from the end of the current message (not from the point in the message where you press [3]).
- · Any other key in the Message Recording menu.

2.1.3 Continue the Message

To continue recording from the current end of the message:

» Press [3] when presented the Message Recording menu.

CINDI responds by presenting the abbreviated recording prompt:

Recording. (Beep)

If the entire maximum message length has already been used, CINDI does not allow you to continue recording the message. If a request to continue recording is received in this circumstance, CINDI responds by saying "Invalid entry" and presents the Message Recording menu again.

2.1.4 Re-record the Message

To discard the current recording and start the message over:

» Press [4] when presented the Message Recording menu to re-record the message.

CINDI responds by presenting the abbreviated recording prompt:

Recording. (Beep)

When you press [4] to re-record, you have the entire maximum message length available to you again. The length of the discarded message is not considered.

2.1.5 Cancel the Message

To cancel the recording session:

» Press [8] when presented the Message Recording menu.

CINDI will return you to the feature you were using when you entered Message Recording.

2.1.6 Hangup, No Input

CINDI is designed to be as easy to use as possible, particularly for callers unfamiliar with CINDI. If a hangup or no input is received after presentation of the Message Recording menu, messages are delivered to the specified

recipient. In other words, a hangup or no input is treated the same as if the message had been accepted with a [1].

This treatment is especially important for callers with rotary phones. These callers can record messages and know they will be delivered, even though they cannot provide CINDI with any tone input.

2.2 Maximum Message Length

It is helpful for you to understand how CINDI uses a mailbox's maximum message length when recording messages.

2.2.1 In an Open Mailbox

The maximum message length controlling a recording is determined by where the recording is being done. If you entered a password and are in an open mailbox, that mailbox's maximum message length is in effect. This is the case for

- · Prefacing comments
- Call placements
- Group messages
- Certified messages
- Guest messages

For example, if the mailbox's maximum message length is two minutes, no message recorded through these features can exceed two minutes in length.

2.2.2 Not in an Open Mallbox

If you are not in an open mailbox, the maximum message length of the receiving mailbox is in effect. This is the case if

- · You have not opened your mailbox with your password
- You have closed your mailbox by pressing [1] from the main menu.

If the receiving mailbox's maximum message length is only 30 seconds, the message you record cannot exceed 30 seconds in length, even though your mailbox might have a longer maximum.

2.3 Telset Messages (IVMS Integration Only)

If your system is equipped with the IVMS integration for the Northern Telecom SL-1, you have the opportunity of leaving a Telset Message rather than recording a voice message. Telset Messages are short messages prerecorded on the CINDI system that Boxholders can deposit into any mail-box. Callers can leave a Telset Message by pressing a telephone keypad code that corresponds with the desired message.

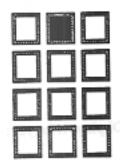
For more information on Telset Messages, refer to the IVMS Chapter in this guide. For detailed instructions on how to leave Telset Messages from your telephone set, please refer to the SL-1 documentation.

2.3 Tolset Messages (IVIA'S Integration Only)

If your system is equipped with the IVMS integration for the Northern Telecont SL-1, you have the opportunity of leaving a Telect Message rather than two ording a voice message. Telect Messages are short messages pre-records; on the CEVDI system that II wholders can deposit into any mailbox. Callers can leave a Telect Message by pressing a telephone keypad code that corresponds with the desired message.

For more information on Telect Messages, refer to the IVMS Chapter in this guide. For detailed instructions on he was leave Telect Messages from your telephone set, please refer to the SL-1, documentation.

3 Message Receiving: Key [2]



In order to receive your messages,

» Press [2] when presented the System User's main menu.

If there is a System Bulletin, CINDI presents it to you each time you enter Message Receiving. After it's presented, CINDI asks whether you want to continue to have it presented in the future:

System bulletin: (bulletin)
Press [1] to save the current bulletin.
Press [8] to delete it.

through a stack of paper messages. This prost ones effective communication

» If you want the Bulletin presented each time you enter Message Receiving, press [1]. Press [8] if you do not need to hear it each time. (You can recover access to the Bulletin if you delete it -refer to the chapter, Personalizing Your Mailbox: Key [8].)

When the System Bulletin presentation is complete, CINDI presents your new messages followed by your saved messages. CINDI presents your messages in either LIFO (last in, first out) or FIFO (first in, last out) order, depending upon the message retrieval order set for your mailbox. Refer to the chapter, Personalizing Your Mailbox: Key [8], for information about how to set your message retrieval order.

If you have no messages, CINDI will inform you and automatically return you to the System User's Main Menu.



3.1 Message Receiving Menu

After each message, CINDI tells you the date and time the message was deposited in your mailbox. CINDI then presents an abbreviated menu of the available Message Receiving commands:

To keep this message, press [1]. To take action on it, press [7]. To delete the message, press [8]. For other options, press [0].

If you want to hear the complete menu, press [0], and CINDI plays it for you:

To keep the message, press [1].
To repeat the message, press [2].
To replay the previous ten seconds, press [3].
To move ahead ten seconds, press [4].
To skip ahead through the message, press [5].
To stop playback for 30 seconds, press [6].
To take action on this message, press [7].
To delete the message, press [8].
To exit message receiving, press [9].

Every Message Receiving command can be entered while the message is being played — you do not need to listen to the entire message before pressing a key. The function associated with that key is executed immediately.

Descriptions of the commands available during message receiving are found below.

3.1.1 Keep the Message

To keep the message and move on to the next one,

» Press [1] during or immediately after the message.

If you keep the message, CINDI continues to remember it for the message retention period assigned to the mailbox. The message is removed from CINDI's memory during routine housekeeping chores once it has exceeded the assigned time period.

Because you advance to the next message each time you press [1], you can quickly scan through your phone messages as you would if you were going through a stack of paper messages. This promotes effective communication by enabling you to respond more quickly to higher priority messages, while saving other messages for attention in the future.



3.1.2 Repeat the Message

Press [2] any time during or immediately after the message, to have the message repeated in its entirety,

3.1.3 Replay Previous Ten Seconds

Press [3] to replay the previous ten seconds of the message. You can press [3] several times to back up further. This allows you to write down an address or hear a telephone number for a second time.

If the message is transferred one or more times with appended comments, you can only back up to the beginning of the message section to which you are currently listening. (A "section" is a prefacing comment or the original message.) To return to a prior section, press [2] to repeat the entire message.

3.1.4 Move Ahead Ten Seconds

Press [4] to move forward through a message quickly. Each time you press [4], you skip ahead ten seconds.

3.1.5 Skip Ahead Through the Message

Press [5] to jump to the end of the section of the message to which you are currently listening.

Usually, this causes CINDI to present the date and time the message was recorded, which is presented automatically after the message. However, if you press [5] while listening to prefacing comments recorded when the message was transferred, CINDI skips to the beginning of the next section of the message.

3.1.6 Stop Playback for 30 Seconds

Press [6] to stop the playback of the message for 30 seconds. The message automatically starts playing again after 30 seconds, or you can start the message playing again by pressing any key.

3.1.7 Take Action on the Message

Press [7] to copy a message with or without comments, relay information to a mailbox, or leave a response for the sender of the message.



When you press [7], CINDI gives you some additional options:

To copy the message with comments, press [1].
To copy without comments, press [2].
To relay information to another mailbox, press [6].
To respond to the sender, press [7].
To exit without taking any action, press [9].

Each of these is discussed below. In all cases, you return to the Message Receiving menu with the message still in your mailbox. If you are finished with the message, you should delete it from your mailbox.

Copy With Comments

If you press [1], CINDI asks you for the mailbox number to receive the message. CINDI prompts you as follows:

Enter the mailbox number to receive this message.

» Enter the mailbox number to which you want the message copied.

CINDI then asks you to confirm the receiver:

This mailbox is for: (Boxholder's name).
To continue, press [1].
To cancel your request, press [8].

» If the Boxholder named is the intended recipient, press [1].

After you verify the recipient, CINDI asks you to record your comments:

Please give me your prefacing comments.

When you have finished recording your comments, CINDI presents the Message Recording Menu. (For information about this menu, refer to the chapter, Message Recording.) When you have accepted the recorded comments, CINDI executes and confirms the delivery of the copy and your comments:

Message delivered.

Copy Without Comments

As with sending a copy with comments, if you press [2] to send a copy without comments, CINDI asks you for the mailbox number to receive the message. After you verify the recipient, CINDI confirms the delivery of the copy:

Message delivered.



Relay Information to Another Mailbox

If you press [6], you can send a new message to another mailbox without having to exit Message Receiving. This is similar to sending comments without attaching a copy of the original message. CINDI asks you for the mailbox to receive the message, and when you have verified the recipient, CINDI prompts you to leave your message:

Please leave your name and message at the tone. When you are finished, press any key.

When you have finished recording your message, CINDI presents the Message Recording Menu. When you have accepted the recorded message, CINDI delivers it with the confirmation

Message delivered.

Respond to the Sender

If you press [7], you can record a new message to be automatically sent to the person who sent you this message (if the sender of the message did not open his or her mailbox prior to sending the message to you, CINDI will ask you to enter the mailbox number). CINDI prompts you to leave your message:

Please leave your name and message at the tone. When you are finished, press any key.

When you have finished recording your message CINDI presents the Message Recording Menu. (For information about this menu, refer to the chapter, Message Recording.) When you have accepted the recorded message, CINDI delivers it with the confirmation:

Message delivered.

Exit Without Taking Any Action

If you press [9], CINDI returns you to the Message Receiving menu.

3.1.8 Delete the Message

Press [8] during or immediately after the message to delete it from your mailbox.

You should always delete any messages you do not need to keep. This keeps CINDI's memory from being wasted with unnecessary messages.

Frest [8] during or immediately after the message to delete it from your mail-



3.1.9 Exit Message Receiving

Press [9] to return to the System User's Main Menu.

3.1.10 Other Options

As mentioned above, CINDI presents only an abbreviated menu of available commands after each message. Every command is operational -- CINDI just doesn't prompt for all of them unless you request the entire menu.

Press [0] if you want to hear the complete Message Receiving menu. CINDI then lists all available commands.

3.2 Certified Messages

If someone has sent a certified message to you, CINDI announces it:

The following message was sent via certified mail. Press [0] to receive this message.

» Press [0] to listen to the certified message. The message's sender is notified of the date and time on which you accept delivery.

If you press any key other than [0] or [9], CINDI moves on to present the next message without delivering the certified message. If you press [9], the certified message remains undelivered and CINDI returns you to the main menu. CINDI does not consider the certified message delivered until you accept it by pressing [0] after the announcement.

Notice that, when you have a certified message, pressing [0] allows you to listen to the message. However, if CINDI is not presenting the certified message announcement, pressing [0] lists the complete message receiving menu.

3.2 Certified Messages

If some one has sent a certified message to you, CINDI announces in

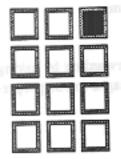
The following nursings was sent via crafted mail. Press [0] to receive only message.

Press (0) to listen to the certified message. The message's sender is notified of the date and time on which you accept delivery.

If you press any key other than [0] or [9], CINDI moves on to present the next me issign without delivering the certified message. If you press [9], the certified message remains undelivered and CINDI returns you to the main ments. (IINDI does not consider the certified message delivered until you accept it by pressing [0] after the announcement.

Notice that, when you have a certified message, pressing [0] allows you to listen to the message. However, if CEVDI is not presenting the certified message an concernent, pressing [0] lists the complete message receiving menu.

4 Message Forwarding: Key [3]



Message Forwarding allows you to have CINDI deliver your messages to you at whatever time and location you choose. It is a special feature and must be authorized by your System Manager. Check with your System Manager to determine whether you are authorized to use it. Please note that IVMS integrated lines do not support this function.

To use the Message Forwarding feature:

» Press [3] when presented the System User's Main Menu.

If you have not been authorized to use the Message Forwarding feature, CINDI informs you:

> This mailbox is not authorized for this function. Please check with the System Manager.

CINDI then returns you to the System User's main menu.

If you are authorized to use the feature, CINDI presents the Message Forwarding secondary menu to you:

> To enable Message Forwarding, press [1]. To cancel forwarding, press [8]. To exit this menu, press [9].

CINDI provides you the flexibility of choosing how often your messages are delivered to you. You can choose from:

- Forwarding at a specified time and date
- · Daily forwarding at a specific time
- Immediate forwarding on a specific date
- · Immediate forwarding on a daily basis

Message Forwarding can be scheduled for a specific date up to 30 days in advance.



4.1 Enabling Message Forwarding

To enable Message Forwarding:

- Open your mailbox.
- Press [3] to use the Message Forwarding menu.
- Press [1] to enable Message Forwarding.

CINDI responds to your request to enable Message Forwarding by asking for all of the information necessary to deliver your messages to you properly.

4.1.1 Time

The first information CINDI must be given is when to make the call:

The time is: (current time).

Enter the time to call. For immediate forwarding when messages arrive, enter [9999].

If you want your messages forwarded to you immediately when they are left in your mailbox, enter [9999]. CINDI then asks for the date you want the call to be made. This arrangement is especially useful when you have CINDI activate a pager.

If you want your messages forwarded to you at a specific time, enter that time using the telephone keypad. If you are in a different time zone, remember to enter the time from CINDI's perspective, not your own. For example, if CINDI is in California, and you want messages forwarded to you in New York at 9:00, enter [0600] for the time. If you want to receive your messages at 2:30 in New York, enter [1130] for the time.

When you enter a specific time, CINDI asks if the time is AM or PM (again, from CINDI's perspective):

If this time is in the AM, press [1].
For PM, press [8].

* Enter [1] or [8].

When requesting forwarding at a specific time, it is important for you to know that CINDI forwards messages to the designated number only if there is at least one new message in your mailbox at the scheduled time for the call. If not, and if daily forwarding is scheduled, CINDI checks again at the requested time the next day to see if there are new messages to be forwarded.



4.1.2 Date

CINDI continues by asking for the date you want the call to be made:

Enter the date on which I should call. For daily forwarding, enter [99] when the month is requested.

Today's date is: (current date).

Enter the month, one through twelve.

If you want messages forwarded to you every day, enter [99]. CINDI then asks for the telephone number.

If you want messages forwarded to you on a specific date, enter the month, using two digits. For example, January is [01], and December is [12].

After you enter the month, CINDI asks for the date:

Enter the date.

Enter the day of the month, again using two digits.

4.1.3 Telephone Number

CINDI continues by asking for the telephone number to be called:

Enter the telephone number to which your messages will be forwarded.

When you are entering a telephone number for Message Forwarding, you must consider exactly how you would dial the number from CINDI's location. CINDI allows you to enter up to 29 digits (including any inserted pauses and/or delays) for the telephone number to be dialed.

For example, suppose you want to instruct CINDI to forward your calls to a number that you dial as:

> 9 (to access an outside line) (wait for dial tone) 1-916-985-4050 (the telephone number)

To supply the number to CINDI, you begin by pressing [9]. Then, wait for CINDI to ask you what you want to enter next. CINDI gives you these command choices:

If the entire telephone number is entered correctly, press [1].
To review the number you have entered, press [2].
To add more digits to the number, press [3].
To insert a wait for dial tone, press [4].



To insert a four-second delay, press [5].
For message forwarding to a pager, press [6].
To insert a star key, press [7].
To cancel the entry and try again, press [8].
Dial [9] to cancel the call.

You want to tell CINDI to wait for a dial tone, so you press [4] when presented the menu. After you hear CINDI's response, press [3] to continue entering the rest of the number, and then enter [19169854050].

As you can see, CINDI makes it very easy to enter numbers. Any time you stop dialing, CINDI asks you what you want to do next. If you are just thinking, you can press [3] and continue entering digits. If you want to check the number you've entered so far, press [2]. It is advisable to check the number prior to pressing [1].

When programming the telephone number, there are some special considerations which you should note:

If you are going to use a long-distance service, you might have to insert a second dialing delay to wait for the service dial tone. Some long-distance services do not provide a dial tone between the access code and the destination telephone number, yet they require a small delay between these segments for accurate dialing. If your service is like this, request CINDI to pause between these numbers by pressing [5] to insert a four-second pause.

If you are using the speed dial feature on your telephone system, be sure to insert enough pauses in the number you give CINDI to allow the telephone system to dial the expanded number before any other digits are to be dialed.

4.1.4 Time Window

If you requested forwarding to occur as soon as messages arrive (immediate forwarding), CINDI allows you to establish a time-window during which messages will be forwarded:

Please enter the earliest time you will accept calls at this number.

Enter the beginning of the time-window. Remember to enter the time from CINDI's perspective if you're in a different time zone.

If this time is in the AM, press [1].
For PM, press [8].

» Enter [1] or [8].



Enter the latest time you will accept calls.

» Enter the end of the window. If you want calls forwarded to you 24 hours/day, enter the same time as you did for the earliest time.

If this time is in the AM, press [1]. For PM, press [8].

» Enter [1] or [8].

4.1.5 Acknowledgement

After you enter the necessary information, CINDI reviews how Message Forwarding is scheduled.

If you requested forwarding for a specific date and time, CINDI presents the following review:

Message Forwarding enabled to: (telephone number)
on: (scheduled date)
at: (scheduled time)

If you requested immediate forwarding on a daily basis, CINDI presents this review:

Message Forwarding enabled to: (telephone number)
on: a daily basis
as messages arrive
from: (carliest time)
to: (latest time)

The reviews for other types of forwarding are presented in a similar manner.

After CINDI reviews the Message Forwarding schedule, CINDI returns you to the Message Forwarding menu.



4.2 Message Forwarding to a Pager

Instead of having CINDI call you to deliver messages left in your mailbox, you can elect to have CINDI activate your pager simply to notify you that you have received new messages.

To do this, you follow the same steps listed above for enabling Message Forwarding. However, when you are programming the telephone number, one additional step is required.

After you have completed entering the digits for the telephone number, listen for the telephone number menu.

Before you press [1] to accept the telephone number, press [6] to inform CINDI that the number is used to activate a pager.

Once you have pressed [6], CINDI does not allow you to add any more digits to the number. Therefore, if you plan to include digits in the telephone number to be displayed on your pager's LCD readout, be sure to add them before pressing [6] from the menu.

Because you have told CINDI that forwarding is going to a pager, CINDI knows to handle the call a little differently. First, CINDI does not speak anytime during the call; CINDI dials the number as programmed, waits approximately 30 seconds, and then hangs up.

Also, there is no way to verify whether a pager has been activated by the call

-- the pager may be turned off, the signal could be prevented from reaching
the pager, etc. Consequently, in order to improve the chances of informing
you that you have new messages, CINDI calls the programmed number four
times at 15-minute intervals (unless you call CINDI and receive your messages within that time).

4.3 What You Hear When CINDI Calls

When CINDI calls you to forward your messages, the first person CINDI encounters might be a company operator or attendant. For this reason, CINDI presents the following message first:

This is a recording. I have a message for: (your name).

Please transfer me. If you are not on a switchboard, please press the [1] key on your telephone keypad to receive this message.

CINDI presents this recording five times, stopping only if a tone is entered (unless you have a portable tone dialer, you <u>cannot</u> receive your messages while using a rotary telephone). If no tone is supplied, CINDI will reschedule the call as if no one answered (as discussed below).

When a key is pressed, CINDI continues Message Forwarding by stating the mailbox number for which messages are being forwarded:

Message Forwarding for mailbox: (mailbox number).

Next, CINDI prompts you to enter your password. You are allowed three attempts to enter a valid password. If you fail to provide the correct password, CINDI hangs up and reschedules the call for 30 minutes later. If the correct password is not entered in this rescheduled call, CINDI does not attempt to forward messages again until you call in and re-enable the Message Forwarding option.

After you enter your password, CINDI presents your messages. All messages in your mailbox are available for review. In fact, when CINDI calls you through Message Forwarding, you have the same Boxholder features available to use as if you had called CINDI yourself.



4.4 How CINDI Reschedules Message Forwarding

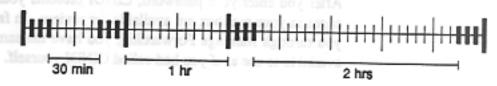
If CINDI encounters a busy signal or if there is no answer at the specified number, CINDI will continue to call the number in an attempt to forward your messages.

4.4.1 Busy Signals

If a busy tone is received after dialing the number, CINDI hangs up and schedules the first call retry for five minutes later. The second and third retries, with a continued busy condition, are also scheduled at five-minute intervals.

Assuming the line remains busy and does not become available, CINDI schedules the next group of call retries for 1/2 hour later. (A group of call retries consists of a scheduled call retry followed by three calls at five-minute intervals).

CINDI schedules two additional call retries for one hour and two hours, respectively, after the last busy tone of the preceding group is encountered. Thus, when continually receiving a busy tone, CINDI could dial a number as many as 16 times before no longer attempting to forward messages. This means that CINDI could make a call originally scheduled for 1:30 PM at 6:00 PM. For a summary of this "worst-case" condition, review the following illustration:



Five minutes per line. Bolded lines indicate possible calls.

4.4.2 No Answer

When CINDI receives a no-answer condition, the first, second, and third call retries are scheduled for 1/2 hour, one hour, and two hours, respectively. If there is still no answer by the third retry, CINDI no longer attempts to make the call. However, receipt of a new message resets the message forwarding feature.

Message Forwarding: Key [3]	Cancelling Message Forwarding
Message Forwarding, Rey [5]	

4.5 Cancelling Message Forwarding

To cancel Message Forwarding:

- Open your mailbox.
- Press [3] to use the Message Forwarding menu.
- 3 Press [8] to disable Message Forwarding.

CINDI responds by acknowledging the cancellation of Message Forwarding:

Message Forwarding cancelled.

CINDI then returns you to the Message Forwarding menu.



i.5 Cancelling Message Forwarding

To cancel Message Forwarding

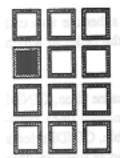
- D Open your mailbox.
- 2 Press [3] to use the Message Forwarding menu.
 - D Press (8) to disable Messa se Forwarding.

CIND I responds by acknowledging the cancellation of Message Forwarding:

Message Ferwarding concelled.

CINDI then returns you to the Message Forwarding menu.

5 Call Placements: Key [4]



The Call Placement feature allows you to have CINDI deliver a message from you to another person at whatever time and location you choose. It is a special feature and must be authorized by your System Manager. Check with your System Manager to determine whether you are authorized to use it. Please note that IVMS integrated lines do not support this function.

To use the Call Placement feature:

» Press [4] when presented the System User's Main Menu.

If you have not been authorized to use the Call Placement feature, CINDI informs you:

This mailbox is not authorized for this function. Please check with the System Manager.

CINDI then returns you to the System User's main menu.

If you are authorized to use the feature, CINDI presents the Call Placement secondary menu to you:

To have me place a call, press [1]. To check the status of your calls, press [2]. To exit this menu, press [9].

The first inforcation CIMDI must be given it what number to call



5.1 Scheduling a Call Placement

Call Placements can be scheduled up to 14 days in advance, and you can have up to eight Call Placements scheduled at any one time.

CINDI makes your call at the time you request. If you schedule two call placements for the same time, CINDI makes the calls in the order in which they were scheduled.

If two or more Boxholders have scheduled calls for the same time, CINDI will make the calls simultaneously, providing there are enough lines available to make the calls. Otherwise, if fewer lines are available, CINDI selects calls for handling and processes the remaining calls as soon as lines become available.

To schedule a Call Placement:

- Open your mailbox.
- Press [4] to use the Call Placement menu.
- Press [1] to schedule a Call Placement.

If you already have eight Call Placements scheduled, CINDI informs you:

I'm sorry. I've run out of space.

CINDI then returns you to the Call Placement menu.

If fewer than eight Call Placements have already been scheduled, CINDI asks for all of the information necessary in order to make the call.

5.1.1 Telephone Number

The first information CINDI must be given is what number to call:

Please enter the telephone number where I can reach your party.

When you are entering a telephone number for a Call Placement, you must consider exactly how you would dial the number from CINDI's location. CINDI allows you to enter up to 29 digits (including any inserted pauses and/or delays) for the telephone number to be dialed.

For example, suppose you want to instruct CINDI to forward your calls to a number that you dial as:



9

(to access an outside line) (wait-for dial tone)

1-916-985-4050

(the telephone number)

To supply the number to CINDI, you begin by pressing [9]. Then, wait for CINDI to ask you what you want to enter next. CINDI gives you these command choices:

If the entire telephone number is entered correctly, press [1]. To review the number you have entered, press [2]. To add more digits to the number, press [3]. To insert a wait for dial tone, press [4]. To insert a four-second delay, press [5]. To insert a star key, press [7]. To cancel the entry and try again, press [8]. Dial [9] to cancel this function.

You want to tell CINDI to wait for a dial tone, so you press [4] when presented the menu. After you hear CINDI's response, press [3] to continue entering the rest of the number, and then enter [19169854050].

As you can see, CINDI makes it very easy to enter numbers. Any time you stop dialing, CINDI asks you what you want to do next. If you are just thinking, you can press [3] and continue entering digits. If you want to check the number you've entered so far, press [2]. It is advisable to check the number prior to pressing [1].

When programming the telephone number, there are some special considerations which you should note:

If you are going to use a long-distance service, you might have to insert a second dialing delay to wait for the service dial tone. Some long-distance services do not provide a dial tone between the access code and the destination telephone number, yet they require a small delay between these segments for accurate dialing. If your service is like this, request CINDI to pause between these numbers by pressing [5] to insert a four-second pause.

If you are using the speed dial feature on your telephone system, be sure to insert enough pauses in the number you give CINDI to allow the telephone system to dial the expanded number before any other digits are to be dialed.

5.1.2 Time

CINDI continues by asking for the time you want the call to be made:



The time is: (current time).

Please enter the time to call.

As you enter the time, remember to enter it from CINDI's perspective, not the receiver's. This is important if the receiver is in a different time zone than CINDI. For example, if CINDI is in California, and the receiver in New York is expecting the call at 9:00, enter [0600] for the time. If the receiver is expecting the call at 2:30 in New York, enter [1130] for the time.

CINDI then asks if the time is AM or PM (again, from CINDI's perspective):

If this time is in the AM, press [1].
For PM, press [8].

» Enter [1] or [8].

5.1.3 Date

CINDI then asks for the date you want the call to be made:

Enter the date on which I should call.

Today's date is: (current date).

Enter the month, one through twelve.

Enter the month, using two digits. For example, January is [01], and December is [12].

After you enter the month, CINDI then asks for the date:

Enter the date.

Enter the day of the month, again using two digits.

5.1.4 Retry on No Answer

you what you want to do next. If you are just think-

CINDI then asks if you want the call retried if it is not completed on the first attempt:

To cancel the call if no one answers, press [1].

To have me keep trying, press [8].

If, by pressing [8], you tell CINDI to keep trying, several attempts are made to complete the call. The method CINDI uses to reschedule calls is detailed in a following section.

5.1.5 Confirmation

Once you supply CINDI this information, CINDI reviews it and asks you to confirm it:

I'm calling: (telephone number)
on: (scheduled date)
at: (scheduled time)
If this information is correct, press [1].
To change the information, press [8].
To cancel the call, press [9].

If you press [8], CINDI asks you to supply all of the information again. If you press [9], CINDI returns you to the Call Placement menu, and all information concerning the call is deleted.

5.1.6 Receiver's Name

Once you have verified the information necessary to make the call, CINDI asks you for the receiver's name:

Please tell me the name of the person to receive this message.

» Say the name. You have approximately five seconds of recording time available. To terminate the recording, press any key.

5.1.7 Message

After you record the receiver's name, CINDI enters the Message Recording feature (detailed in the chapter, Message Recording) where you record the message to be delivered.

5.1.8 Password

The last step in scheduling a Call Placement is the assignment of a password to the message:

Please enter the message's password. Press [0] if no password is required.

If you enter anything other than [0], you should be sure that the intended recipient is aware of the required password. Passwords are recommended for messages that contain sensitive or confidential information. The password should be different than the one you use to open your mailbox, and it should be different from those assigned to your guests — unless the intended recipient is a guest, also.



5.1.9 Acknowledgement

After you enter the necessary information, CINDI acknowledges that the Call Placement has been scheduled;

I'm delivering a message to: (receiver's name).

CINDI then returns you to the Call Placement menu.

The last step in school ding a Call Placement is the assignment of a password

5.2 What a Call Placement Receiver Hears

When CINDI makes a Call Placement, the first person CINDI encounters might be a company operator or attendant. For this reason, CINDI presents the following greeting:

This is a recording. I have a message for: (receiver's name).

Please transfer me. If you are not on a switchboard, please press the [1] key on your telephone keypad to receive this message. If you need to put me on hold, press [6]. Pressing [6] again will take me off hold. If this person is not available, and you're ready to take a message, press [9].

CINDI presents this greeting five times. If the recipient enters [6] to put CINDI on hold, CINDI periodically presents a reminder to the caller:

Press [6] to take me off hold.

When the recipient enters [6] to take CINDI off hold, or when 30 seconds have elapsed, CINDI returns to presenting the Call Placement greeting.

The recipient must enter a [1] to receive the message. Therefore, unless a portable tone dialer is used, a recipient with a rotary telephone is not able to receive the Call Placement's message. If a [1] is not entered, CINDI hangs up. The call is rescheduled only if you requested CINDI to keep on trying when a no-answer condition is detected.

With password protected messages, after the recipient enters [1], CINDI continues by asking for the required password:

This message has been password protected. Please enter your password.

CINDI allows the receiver three attempts to enter the correct password. As soon as the recipient provides the correct password (or when no password is required), CINDI responds with the statement:

Press [0] for help.

CINDI then presents the message you recorded. After the message, CINDI presents an abbreviated menu of options to the recipient:

Press the [1] key to respond to the message. Press [2] to have me repeat the message. Press [9] if you are finished.



At any time -- while listening to the message or to the options presented above, the recipient can press [0] for help. When the recipient presses [0], CINDI presents the full menu of message receiving options:

To respond to the message, press [1].
To repeat the message, press [2].
To replay the previous ten seconds, press [3].
To move forward ten seconds in the message, press [4].
To skip to the end of the message, press [5].
To stop playback for 30 seconds, press [6].
To conclude this call, press [9].

If the recipient presses [1] to respond to the message, CINDI enters the Message Recording feature. The response is recorded the same way any other message is recorded. CINDI concludes the call after the recipient has finished recording the response.

Keys [2] through [6] have the same function here as they do in Message Receiving. Please refer to the chapter, Message Receiving: Key [2], for more information.

If the recipient presses [9], CINDI concludes the call.

5.2.1 Call-Back Message

ed (or when no password is

If the recipient does not provide the correct password, CINDI leaves a callback message telling the recipient how the message can be received:

(your name)

From: (your company's name)

Called for: (recipient's name).

The telephone number is: area code
(your company's telephone number).

The message can be found in voice mailbox: (your mailbox number)

Zero.

Following this information, CINDI asks if the recipient wants the call-back message repeated:

Press [1] to repeat the message.

Press [9] if the message has been received.

When the recipient indicates that the call-back information has been received, CINDI concludes the call.



The message you recorded then can be received in the same manner that a guest receives messages. In fact, if the password assigned to the Call Placement matches one assigned to one of your guests, the Call Placement message is presented along with any messages in the guest's mailbox when the recipient/guest calls CINDI. Because of this, it is important for you to use the same password for a guest account and a Call Placement only when both are intended for use by the same person. For more information on guest accounts, please refer to the chapter, Guest Accounts: Key [7].

If a busy tone is received after dialing the number, CINDI bangs up and schedules the first call reay for five minutes later. The second and third retries, with a continued busy caudition, also are scheduled at five-minute intervals. If, after the third call reay, the line remains busy, CINDI reschedules the call ONLY if you requested CINDI to keep trying when a nocessawer condition is detected.

If you instructed CINIDI to cancel the call if no one answers, there is no are tempt to place the call again. CINIDI informs you of this condition when you check the status of your call placements, at which point you can ask CINIDI to reschedule the call.

If you macrucing CINDI to keep trying the call, CINDI schedules the next group of call reufes for 1/2 hour tater. (A group of call reufes consists of a scheduled call retry followed by three calls at five-minute intervals).

respectively, after the last busy tone of the preceding group is encountered. Thus, when continually receiving a busy tone. CINDI could dial a number as many as 16 times before no longer attempting to make the call placement. This means that CINDI could make a call originally scheduled for 1:30 PM at 6:00 PM. For a summary of this "worse-case" condition, review the following illustration:



CINIDI detects a no-saswer condition while placing a call, and if you told INDI to lessp on trying if there was no sesswer at the destination telephone



5.3 How CINDI Reschedules Call Placements

If CINDI encounters a busy signal or if there is no answer at the specified number, CINDI can continue to call the number in order to deliver your message to the intended recipient.

5.3.1 Busy Signals

If a busy tone is received after dialing the number, CINDI hangs up and schedules the first call retry for five minutes later. The second and third retries, with a continued busy condition, also are scheduled at five-minute intervals. If, after the third call retry, the line remains busy, CINDI reschedules the call ONLY if you requested CINDI to keep trying when a no-answer condition is detected.

If you instructed CINDI to cancel the call if no one answers, there is no attempt to place the call again. CINDI informs you of this condition when you check the status of your call placements, at which point you can ask CINDI to reschedule the call.

If you instructed CINDI to keep trying the call, CINDI schedules the next group of call retries for 1/2 hour later. (A group of call retries consists of a scheduled call retry followed by three calls at five-minute intervals).

CINDI schedules two additional call retries for one hour and two hours, respectively, after the last busy tone of the preceding group is encountered. Thus, when continually receiving a busy tone, CINDI could dial a number as many as 16 times before no longer attempting to make the call placement. This means that CINDI could make a call originally scheduled for 1:30 PM at 6:00 PM. For a summary of this "worst-case" condition, review the following illustration:



Five minutes per line. Bolded lines indicate possible calls.

5.3.2 No Answer

If CINDI detects a no-answer condition while placing a call, and if you told CINDI to keep on trying if there was no answer at the destination telephone number, three additional attempts to complete the call are made. The first

call retry is made 30 minutes after the first no-answer condition is encountered.

If there continues to be no answer, a second call retry is scheduled for one hour later and the third call retry, pending the no-answer condition, is scheduled for two hours thereafter. If, after the third call retry — 3 1/2 hours after the time you originally requested — there is still no answer, CINDI no longer attempts to place the call. CINDI informs you of this condition when you check the status of your call placements, at which point you can ask CINDI to reschedule the call.



5.4 Checking the Status of a Call

You are able to check on the status of Call Placements that are scheduled to be made or that have been cancelled by CINDI. Once CINDI completes a call, all information concerning the call is removed from the system.

To check the status of a Call Placement:

- ① Open your mailbox.
- Press [4] to use the Call Placement menu.
- Press [2] to check the status of your calls.

If there are no pending or cancelled Call Placements in your mailbox, CINDI notifies you:

You have no call placements pending.

The notification provides two pieces of information:

- · Scheduled Call Placements have been completed.
- Call Placements cancelled because of no answer conditions have been deleted because they were on the system longer than your allowed message retention time.

CINDI then returns you to the Call Placement menu.

If there are pending or cancelled Call Placements in your mailbox, CINDI lists the status of the call and the name of the receiver;

A call is scheduled to: (receiver's name). or I was unable to reach: (receiver's name),

The following sections detail the options you have concerning each of these two types of calls.

5.4.1 Pending Call Placements

When the Call Placement is currently scheduled to be made, CINDI presents a menu of options concerning the call:

To keep this call, press [1].
For more information, press [3].
To cancel the call, press [8].
To exit this menu, press [9].



Keep the Call

If you want to keep a pending Call Placement, press [1]. CINDI moves on and lists the next scheduled call. If there are no other calls, CINDI notifies you:

End of call placements.

CINDI then returns you to the Call Placement menu.

More Information

If you require more information concerning the call, press [3]. CINDI reviews the telephone number and the scheduled date and time for the call:

I'm delivering a message to: (recipient's name) at: (phone number)

on: (date)
at: (time).

CINDI then presents the menu of options concerning the call to you again.

Cancel the Call

If you no longer want the call to be made, press [8]. CINDI then acknowledges the cancellation:

Call cancelled.

CINDI then moves on and lists the next scheduled call. If there are no other calls, CINDI notifies you:

End of call placements.

CINDI then returns you to the Call Placement menu.

Exit

If you press [9], CINDI leaves the status of the call unchanged and returns you to the Call Placement menu.

5.4.2 Cancelled Call Placements

When the Call Placement has been cancelled because there was no answer, CINDI presents a different menu of options concerning the call:

To send this message again, press [1]. For more information, press [3]. To delete the call, press [8]. To exit, press [9]. Keys [3], [8], and [9] all function in the same manner as described above for pending Call Placements.

Key [1] allows you to reschedule the cancelled call, without having to rerecord the receiver's name and the message. When you press [1], CINDI responds with:

Recovering message.

CINDI then guides you through the same steps you used to originally schedule the call:

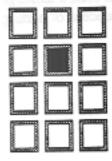
- Telephone number
- · Time
 - Date
 - Retry on No Answer
 - Confirmation

After you have provided this new information, CINDI acknowledges that the call is rescheduled and moves on to review the status of the next call. If there are no other scheduled calls, CINDI notifies you:

End of call placements.

CINDI then returns you to the Call Placement menu.

6 Group Messages: Key [5]



Most CINDI features are designed to allow you to send a message to one person. The Group Messages feature, however, allows you to send a single message to as many as 247 people at one time. This feature enables you to communicate rapidly with all the members of a department or sales force. Group Messages is authorized by your System Manager. Check with the System Manager to determine whether you are authorized to use this feature.

If you are authorized for Group Messages, CINDI lets you define up to eight groups and lets you decide the number of members for each group. You are allowed a maximum of 247 members that may be allocated any way you want among the eight groups.

To use the Group Messages feature:

» Press [5] when presented the System User's Main Menu.

If you have not been authorized to use Group Messages, CINDI informs you,

This mailbox is not authorized for this function. Please check with the System Manager.

CINDI then returns you to the System User's Main Menu.

If you are authorized to use this feature, CINDI presents the Group Messages secondary menu to you:

To send a group message, press [1].
To add members to a group, press [3].
To list a group, press [4].
To delete group members, press [8].
To exit this menu, press [9].

Each of these functions is described in the following sections.



6.1 Sending a Group Message

Before you can send a group message, you must define the group by specifying the Boxholders that are members. (Adding members to a group is detailed in a later section in this chapter.) If you attempt to send a message to an undefined group, CINDI guides you through the process of adding members to that group.

To send a group message:

- ① Open your mailbox.
 - Press [5] to use the Group Messages menu.
- The send a group message.

6.1.1 When the Group is Defined

If you have at least one group defined, CINDI responds to your request to send a message by asking for the group to receive the message:

Please enter the group number.

If the group you select does not have any members, CINDI informs you:

There are no members in that group.

CINDI then guides you through the process of adding members to the group (please see the following section).

When the group number you specify has members, CINDI enters the Message Recording feature (detailed in another chapter) where you record the message to be delivered.

When CINDI returns from the Message Recording feature with the completed message, CINDI distributes it to all members of the group:

Please wait while I deliver your message.

There is a brief pause while CINDI delivers your message to each member. When complete, CINDI acknowledges delivery:

Thank you for waiting. Your message has been delivered to group: (group number).

CINDI then returns you to the Group Messages menu.



6.1.2 When the Group is Undefined

If you have no groups defined, or if the group number you selected has no members, CINDI guides you through the process of adding members to the group:

You are allowed eight message groups, numbered one to eight. At my prompt, please enter the mailbox numbers for the people to receive this message. After you exit, I will be happy to take your message and deliver it to these people in group: (group number).

Enter the mailbox number. Press [0] to exit.

If you press [0] prior to adding any mailboxes to the group, CINDI cancels your request to send the message, stating:

Your last request was not performed.

CINDI then returns you to the Group Messages menu.

If you enter mailbox numbers, CINDI states the Boxholder's name to acknowledge each addition. After you have added all of the members, press [0] to exit the addition process. CINDI then enters the Message Recording feature (detailed in another chapter) where you record the message to be delivered.

When CINDI returns from the Message Recording feature with the completed message, CINDI distributes it to all members of the group:

Please wait while I deliver your message.

There is a brief pause while CINDI delivers your message to each member. When complete, CINDI confirms delivery:

Thank you for waiting. Your message has been delivered to group: (group number).

CINDI then returns you to the Group Messages menu.



6.2 Adding Members to a Group

You can define a maximum of eight groups and can allocate a total of 247 group members any way you want among the eight groups.

To add a new group or to add members to an existing group:

- Open your mailbox.
 - Press [5] to use the Group Messages menu.
 - 3 Press [3] to add members to a group.

CINDI responds by asking you for the group number:

Please enter the group number.

If you have already assigned a total of 247 users to your groups, CINDI notifies you that no space is left for additional group members:

I'm sorry. I've run out of space.

CINDI then returns you to the Group Messages menu.

If there is room for additional members, CINDI asks for the Boxholder to be added to the group:

Enter the mailbox number. Press [0] to exit.

As you enter mailbox numbers, CINDI states the Boxholder's name to acknowledge each addition. You cannot include the System Operator or yourself as a member of the group.

After you have added all of the members, press [0] to exit the addition process. CINDI then returns you to the Group Messages menu.

6.3 Listing the Members of a Group

To list all of the members of a group:

- Open your mailbox.
- Press [5] to use the Group Messages menu.
 - D Press [4] to list the members of a group.

CINDI responds by asking you for the group number:

Please enter the group number.

If the group you select is not defined, CINDI notifies you:

There are no members in that group.

CINDI then returns you to the Group Messages menu.

If the group you select has members, CINDI lists each Boxholder's name.

When all of the members have been listed, CINDI informs you:

End of group.

After all of the group's mambers are confirmed or deleted in this manner,

CINDI then returns you to the Group Messages menu.



6.4 Deleting Group Members

To delete one or more members from a group:

- Open your mailbox.
- ② Press [5] to use the Group Messages menu.
- Press [8] to delete group members.

CINDI responds by asking you for the group number:

Please enter the group number.

If the group you select is not defined, CINDI notifies you:

There are no members in that group.

CINDI then returns you to the Group Messages menu.

If the group you select has members, CINDI lists each one. After the member's name or mailbox number, CINDI asks if you want to retain the member in the group:

To keep the mailbox, press [1]. To delete the mailbox, press [8].

If you elect to keep the member in the group, CINDI moves on to the next member. If you delete the member, CINDI acknowledges the change:

Deleted

CINDI then moves on to the next member.

After all of the group's members are confirmed or deleted in this manner, CINDI notifies you:

End of group.

CINDI then returns you to the Group Messages menu.

7 Certified Messages: Key [6]

The Certified Messages feature allows you to send another Boxholder a message and determine if and when that message was received. You can have up to eight certified messages outstanding at one time.

To use the Certified Messages feature:

When you have accepted the mostage, CINI's delivers it and remms you to

» Press [6] when presented the System User's Main Menu.

CINDI then presents the Certified Messages secondary menu to you:

To send a certified message, press [1].

To check delivery status, press [2].

To cancel notification for a message, press [8].

To exit this menu, press [9].



7.1 Sending a Certified Message

To send a certified message:

- ① Open your mailbox.
- Press [6] to use the Certified Messages menu.
- 3 Press [1] to send a certified message.

If you already have eight outstanding Certified Messages, CINDI informs you:

All available certified messages are in use. Please check their status.

Otherwise, CINDI responds by asking for the mailbox to receive the message:

Enter the mailbox number to receive this message.

When you enter the mailbox number, CINDI states the Boxholder's name and asks you to verify that this is the correct recipient:

I'm delivering a message to: (recipient's name).
To continue, press [1].
To cancel your request, press [8].

If the Boxholder is not the correct recipient, press [8], and CINDI asks you to re-enter the mailbox number.

When you have verified the recipient, CINDI enters the Message Recording feature (described in another chapter) where you record the message to be delivered.

When you have accepted the message, CINDI delivers it and returns you to the Certified Messages menu.



7.2 Checking Delivery Status

You are able to check the status of each Certified Message you have sent to determine if and when the message was received. One of three different conditions exists for each message:

- Received: CINDI presents the date and time the Boxholder received the message.
- Not yet received: CINDI presents the date and time you sent the message.
- Expired: CINDI presents the date and time the message was deleted from the system because the Boxholder did not receive it within the allotted message retention time.

After CINDI presents the status of a received or expired message, CINDI removes information concerning the message from your mailbox. This releases space for you to send another certified message.

To check the status of a certified message:

- Open your mailbox.
- Press [6] to use the Certified Messages menu.
- 3 Press [2] to check delivery status.

If you do not have any outstanding certified messages, CINDI informs you:

You have no certified messages.

CINDI then returns you to the Certified Messages menu.

If you have certified messages to review, CINDI presents the status of the first message:

```
(Recipient's name)...
...received your message on: (date)
at: (time).
or
...has not received the message sent on: (date)
at: (time).
or
...never received the message cancelled on: (date)
at; (time).
```

CINDI then asks if you would like to review the next message or exit status checking:

To continue, press [1]



To exit this menu, press [9].

When the status of each certified message has been reviewed, CINDI informs you:

End of messages.

CINDI then returns you to the Certified Messages menu.



7.3 Cancelling Notification

CINDI allows you to cancel notification of receipt for a certified message. This is important when you have eight certified messages outstanding and you need to send another, more important, message.

When you cancel notification, the message is still delivered to the recipient as a certified message. Only the notification back to you is cancelled.

To cancel notification for a certified message:

- Open your mailbox.
- Press [6] to use the Certified Messages menu.
- Press [8] to cancel notification.

CINDI then reviews those messages that have not yet been received and gives you the option of cancelling notification:

(Recipient's name)
has not received the message sent on: (date)
at: (time).
To keep notification, press [1].
To cancel it, press [8].

If you elect to cancel notification, CINDI confirms your selection:

Notification cancelled.

CINDI then moves on to the next certified message that has not been received. If no other ones exist, CINDI informs you:

End of messages.

CINDI then returns you to the Certified Messages menu.



3 Cancelling Notification

CINE allows you to cancel actification of receipt for a certified message.

This is important when you have cight certified messages outstanding and
you seed to send a volter, more important, message.

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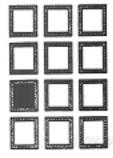
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8 Guest Accounts: Key [7]



The Guest Accounts feature allows you to leave messages for people with whom you communicate frequently but who are not Boxholders on a CINDI system. It is a special feature and must be authorized by your System Manager. Please check with your System Manager to determine whether you are authorized to use it.

Each guest is identified by a unique password that you assign when you open the guest account. Only you and your guest, by entering the password, have access to the guest's mailbox.

To use the Guest Accounts feature:

» Press [7] when presented the System User's main menu.

If you have not been authorized to use the Guest Accounts feature, CINDI informs you:

This mailbox is not authorized for this function. Please check with the System Manager.

CINDI then returns you to the System User's main menu.

CINDI also prevents you from using the Guest Accounts feature if one of your guests is using their account. In this instance, CINDI informs you:

I'm sorry. You currently have a guest in your mailbox. Please try again in a few minutes.

CINDI then returns you to the System User's main menu.

If none of your guests is in your mailbox, CINDI then presents the Guest Accounts secondary menu to you:

To record a guest message, press [1].

To check the status of a message, press [2].

To open a new guest account, press [3].

To list your guests, press [4].

To delete a guest account, press [8].

To exit, press [9].

Each of these commands is discussed below.



8.1 Recording a Guest Message

Each guest can have up to five messages in their mailbox at any one time. Once a guest receives a message, the message is automatically deleted from the system; guests cannot save messages.

To record a guest message:

- ① Open your mailbox.
- Press [7] to use the Guest Accounts menu.
- Press [1] to record a guest message.

If you do not have any open guest accounts, CINDI informs you:

You have no assigned guest accounts.

CINDI then returns you to the Guest Accounts menu.

If you have at least one open guest account, CINDI responds by asking for the password of the guest to receive the message:

Please enter your guest's password.

If the password you enter does not match any guest's password, CINDI notifies you:

No guest is assigned to that password.

CINDI then returns you to the Guest Accounts menu.

If the specified guest already has five messages, CINDI notifies you:

I'm sorry. I've run out of space. Your last request was not performed.

CINDI then returns you to the Guest Accounts menu.

If the guest can receive a message, CINDI reviews the name of the guest:

This guest account is for: (guest's name).

CINDI then enters the Message Recording feature (described in another chapter), where you record the message to be delivered to the guest.

When you have accepted the message, CINDI delivers the message to the guest's mailbox, and returns you to the Guest Accounts menu.

8.2 Checking the Status of a Guest Message

By checking the status of a guest message, you are able to review and, if necessary, cancel messages you have sent to your guests.

To check on the status of a guest message:

- Open your mailbox.
- Press [7] to use the Guest Accounts menu.
- Press [2] to check the status of a guest message.

If you do not have any open guest accounts, CINDI informs you:

You have no assigned guest accounts.

CINDI then returns you to the Guest Accounts menu.

If you have at least one open guest account, CINDI responds by asking for the password of the guest whose messages you want to review:

Please enter your guest's password.

If the password you enter does not match any guest's password, CINDI notifies you:

No guest is assigned to that password.

CINDI then returns you to the Guest Account menu.

When you have entered a matching password, CINDI presents the guest's name and the number of messages not yet received:

(Guest's name)

has __ message(s).

If the guest has no messages, CINDI returns you to the Guest Accounts menu.

If the guest has one or more messages, CINDI presents the number of the message and the date and time you recorded it, followed by a menu of options available to you:

Message __: (date and time).
To keep this message, press [1].
For more information, press [3].
To delete the message, press [8].
To exit, press [9].



Keep the Guest Message

If you press [1] to keep the message, CINDI moves on to the next message in the guest account. If no other messages remain, CINDI notifies you:

End of messages.

CINDI then returns you to the Guest Accounts menu.

More Information

If you press [3] to receive more information, CINDI presents the message to you, followed by the date and time it was recorded. CINDI then lists the menu of options available to you.

Delete a Guest Message

The guest's messages are presented in a first-in, first-out (FIFO) order. Because of this, if you press [8] to delete the current message, the next message in the account is assigned the position of the message just deleted. For example, if a guest has three messages and you are reviewing Message 1, when you elect to delete it, Message 2 becomes Message 1. Similarly, Message 3 becomes Message 2.

This reassignment of position is important to recognize. After you press [8] to delete a message, CINDI moves on to the next message, announcing its position. The position will be the same as the message you just deleted. Be sure to listen carefully when reviewing this next message.

When you elect to delete a message and no other messages remain, CINDI notifies you:

End of messages.

CINDI then returns you to the Guest Accounts menu.

Exit Guest Message Status

If you press [9] when checking the status of a guest's messages, CINDI returns you to the Guest Accounts menu. The message being reviewed is retained in the guest's account.



8.3 Opening a Guest Account

You are allowed to open up to eight guest accounts. Each guest is identified by a unique password that you assign when you open the guest account. Before you open an account, you and your guest should agree on the password to be used. To avoid confusion, be sure to select a password that is not similar to either your password or those of other guests.

To open a guest account:

- Open your mailbox.
- Press [7] to use the Guest Accounts menu.
- 3 Press [3] to open a guest account.

If you already have eight guest accounts open, CINDI informs you:

All of your guest accounts are assigned.

CINDI then returns you to the Guest Accounts menu.

If you are able to open another guest account, CINDI responds by asking for the name of the new guest:

Please tell me the name of your guest. (Beep)

After you have recorded the name of the guest, CINDI asks you for the password to be used to identify the guest:

Please enter your guest's password.

The password may be one to four digits in length. If you attempt to assign a password that is already assigned to another guest, CINDI informs you:

This guest password is already assigned.

CINDI then asks you to assign this guest a different password.

After you have provided the password to CINDI, CINDI acknowledges the opening of the guest account:

Guest account added for: (guest's name) with password: (guest's password).

CINDI then returns you to the Guest Accounts menu.



8.4 Listing Your Guest Accounts

By listing your guest accounts, you are able to review both the name and the password of each of your guests. This is helpful if you need to send a guest message and can't remember the password.

To list your guests:

- ① Open your mailbox.
- 2 Press [7] to use the Guest Accounts menu.
- Press [4] to list your guests.

If you do not have any open guest accounts, CINDI informs you:

You have no assigned guest accounts.

CINDI then returns you to the Guest Accounts menu.

If you have at least one open guest account, CINDI lists each guest's password and name. When all guests have been listed, CINDI notifies you:

End of guest accounts.

CINDI then returns you to the Guest Accounts menu.



8.5 Deleting a Guest Account

To delete a guest account:

- ① Open your mailbox.
- Press [7] to use the Guest Accounts menu.
- 3 Press [8] to delete a guest account.

If you do not have any open guest accounts, CINDI informs you:

You have no assigned guest accounts.

CINDI then returns you to the Guest Accounts menu.

If you have at least one open guest account, CINDI responds by asking for the password of the guest to be deleted:

Please enter your guest's password.

If the password you enter does not match any guest's password, CINDI notifies you:

No guest is assigned to that password.

CINDI then returns you to the Guest Accounts menu.

If the password you enter matches one assigned to a guest, CINDI presents the guest's name and asks if you want to keep or delete the account:

This guest account is for: (guest's name). To keep this guest, press [1]. To delete the guest, press [8].

If you press [1] to keep the guest, CINDI returns you to the Guest Accounts menu.

If you press [8] to delete the guest, CINDI acknowledges the deletion:

Guest account deleted.

CINDI then returns you to the Guest Accounts menu.



8.6 How a Guest Receives Messages

Guests open their mailboxes in the same manner that you open yours:

- Call CINDL
- When asked, enter your mailbox number.
- 3 Follow the mailbox number immediately with [0].
- Enter the password.

Only the last step is different for your guests, because each guest has a unique password. Once the guest opens the mailbox, CINDI announces the number of messages:

You have ___ message(s).

CINDI then presents the first message in the mailbox. After each message, CINDI tells the guest the date and time the message was recorded, followed by a menu of options available to the guest:

To respond to this message, press [1].
To have the message repeated, press [2].
To move to the next message, press [3].
To conclude the call, press [9].

Respond to the Message

The guest is able to respond to each message you record, without having to re-enter your mailbox number. When the guest presses [1] to respond, CINDI enters the Message Recording feature. The response is recorded the same way any other message is recorded.

When the guest returns from the Message Recording feature, CINDI begins presentation of the next message. If no more messages remain, CINDI informs the guest:

End of messages.

Repeat the Message

The guest is allowed to repeat the message just presented. You should be sure that your guest knows that, once any of the other options are selected, the message is removed from the system and cannot be heard again.

Move to Next Message

When the guest elects to move to the next message, the previous message is deleted from the system. If no other messages remain, CINDI notifies the guest:



Guest Accounts: Key [7]

How a Guest Receives Messages

End of messages.

Conclude the Call

The guest can conclude the call without listening to all messages in the mailbox. When the guest presses [9], the current message is deleted, but any remaining messages are retained for review at a later time.



End of metropyer

Concin de the Call

The guest can conclude the call without listening to all messages in the mailbox. When the guest presses [9], the current message is deleted, but any terms any messages are retained for review at a later time.

9 Personalizing Your Mailbox: Key [8]

The Personalize Mailbox feature is used to record a Personal Greeting, change the password for your mailbox, record your name, and perform other important functions.

To personalize your mailbox:

» Press [8] when presented the System User's Main Menu.

CINDI then presents the Personalize Mailbox menu:

To change your personal greeting, press [1].

To change your password, press [2].

To record your name, press [3].

To recover the current system bulletin, press [4].

*To change your message waiting notification status, press [5].

*To set your call screening level, press [6].

To select the order of message retrieval, press [7].

To exit, press [9].

* CINDI presents the message waiting prompt only if your system includes message waiting. CINDI presents the call screening prompt only if your system includes the Inbound Service 724 feature.

Each of the Personalize Mailbox menu functions is described in the following sections.



9.1 Changing Your Personal Greeting

A Personal Greeting is a special feature that must be authorized for you by the System Manager. Please contact the System Manager to determine whether you are authorized to have a Personal Greeting.

If you are authorized, you can record a Personal Greeting up to the maximum length programmed for CINDI by the System Manager. The maximum length can be as short as ten seconds or as long as three minutes. Again, contact the System Manager for the length of time possible.

Your Personal Greeting is played every time a caller enters your mailbox number. CINDI plays a standard greeting if no personal greeting is recorded.

To change your Personal Greeting:

- ① Open your mailbox.
- Press [8] to use the Personalize Mailbox menu.
 - Deress [1] to change your Personal Greeting.

If you have not been authorized to use the Personal Greeting feature, CINDI informs you:

This mailbox is not authorized for this function. Please check with the System Manager.

CINDI then returns you to the Personalize Mailbox menu.

If you have been authorized to use the feature, CINDI presents the current greeting (if any) and asks if you want to change it:

Your callers will be greeted with: (personal greeting).
or

No greeting is recorded.

To re-record, press [1].

To review the current recording, press [2].

To delete the recording, press [8].

To exit with the current recording, press [9].

If you press [1] to record a new greeting, CINDI asks you to read it aloud:

How should I greet your callers? (Beep)

When you finish, you can terminate recording by pressing any key or remaining silent. CINDI confirms the new Personal Greeting:

Your callers will be greeted with: (personal greeting).

CINDI then returns you to the Personalize Mailbox menu.

If you press [8], CINDI informs you that there no longer is a Personal Greeting recorded for your mailbox:

No greeting is recorded.

After you omen the peasward, CIMDI reprise your ontry and sale you to doe

If the password is acceptable, prote [1]. CBVDI confirms the password occ

CINDI then returns you to the Personalize Mailbox menu.



9.2 Changing Your Password

When your mailbox is created by the System Manager, the password is set to [0]. You can change this password at any time. If you have reason to believe that there is unauthorized use of your mailbox, you should change your password immediately.

A password can be any combination of numbers or letters on the telephone keypad, up to four characters long (the [*] and [#] keys cannot be used). Some examples of passwords are:

85, 2789, WL, USAF, 2BIT

To change your password:

- Open your mailbox.
- ② Press [8] to use the Personalize Mailbox menu.
- Press [2] to change your password.

CINDI asks you for your new password:

Enter your new password.

After you enter the password, CINDI repeats your entry and asks you to confirm it:

The password is: (password).
To keep this password, press [1].
To change the password, press [8].

If the password is incorrect, press [8] to change it. CINDI again asks you to enter the new password.

If the password is acceptable, press [1]. CINDI confirms the password one more time:

The password is: (password).

CINDI then returns you to the Personalize Mailbox menu.



9.3 Recording Your Name

The name associated with your mailbox is recorded by the System Manager when the mailbox is created. You might want to re-record this name in your own voice.

To record your name:

- Open your mailbox.
- 2 2. Press [8] to use the Personalize Mailbox menu.
- 3 3. Press [3] to record your name.

CINDI responds by stating the name as it is currently recorded and asking you if you want to change it:

This mailbox is for: (your name).

or

No name is recorded.

To re-record, press [1].

To review the current recording, press [2].

To delete the recording, press [8].

To exit with the current recording, press [9].

If you press [1] to record a new name, CINDI asks you to read it aloud:

Who is this mailbox for? (Beep)

Say your name (you have approximately five seconds of recording time available). When you finish, terminate recording by pressing any key. CINDI confirms the new recording of your name:

This mailbox is for: (your name).

CINDI then returns you to the Personalize Mailbox menu.

If you press [8], CINDI informs you that there no longer is a name recorded for your mailbox:

No name is recorded.

CINDI then returns you to the Personalize Mailbox menu.



9.4 Recovering the System Bulletin

The System Bulletin is presented to you in Message Receiving immediately prior to presentation of any messages. After the bulletin, you are given the option of saving it (meaning it is played each time you enter Message Receiving) or deleting it.

You can recover access to a System Bulletin you have deleted as long as the bulletin remains on the system.

To recover the System Bulletin:

- Open your mailbox.
 - Press [8] to use the Personalize Mailbox menu.
 - 3 Press [4] to recover the System Bulletin.

If the bulletin has already been deleted from the system, CINDI informs you:

There is no current system bulletin. Your last request was not performed.

If the bulletin still remains on the system, CINDI notifies you that you have access to it again through the Message Receiving feature.

Recovering message.

In both cases, CINDI returns you to the Personalize Mailbox menu.



9.5 Changing Message Walting Notification Status

Message waiting notification is a special feature available only on systems that have one of the following integration packages:

- Message Waiting Indication (MWI)
- Fujitsu Focus 960 integration
- NEC Neax 2400 integration
- Northern Telecom SL-1 integration (IVMS)

You have the ability to change message waiting notification status if your organization's CINDI system includes the feature and if your System Manager has given you the appropriate authorization. If you are authorized, you may enable and disable message waiting notification in order to suit your own needs.

When you enable message waiting, CINDI will activate your message waiting indicator when a new message is added to your mailbox. The indicator will be activated, however, only when your mailbox new message count goes from zero new messages to one new message. It will not be activated for additional new messages.

Remember: A message is considered new until you either save or delete it by pressing [1] or [8] during message receiving. If you exit message receiving while you were listening to a particular message (by pressing [9]), the status for the message will become saved (as if you pressed [1]).

With the SL-1, Neax 2400, and Focus 960 integrations, CINDI deactivates the indicator automatically once you receive all of your new messages. That is, the indicator is deactivated when your new message count goes from one or more new messages to zero new messages.

With the MWI package, CINDI automatically turns off the indicator once you receive your new message(s) if the system has been programmed to do so. If CINDI does not turn off the indicator, refer to your telephone system manual for instructions on how to do so.

When you choose to disable notification, CINDI does not activate your message waiting indicator when a new message is added to your mailbox.

To change your message waiting notification status:

- ① Open your mailbox.
- Press [8] to use the Personalize Mailbox menu.
- Press [5] to change your message waiting notification status.



CINDI presents your current message notification status:

Message notification is...
...enabled.
or
...disabled.

To change this information, press [1]. To exit, press [9].

If you press [9] to exit, the current notification status is retained and CINDI returns to the Personalize Mailbox menu.

then confirms the change:

Message notification is...
...disabled.
or
...enabled.

you receive your new message(s) if the system has been programmed to do

CINDI then returns you to the Personalize Mailbox menu.

To change your measage welding socification status:

For Fujitsu Focus 960 integration users, automatic callback to CINDI is available from digital display telephones with this message waiting feature. When your indicator signals a new message, you can press the message waiting key on your phone to automatically call CINDI. You are souted directly to your mailbox without having to first dial CINDI's extension.



9.6 Changing Call Screening Level

Call screening levels are a part of the Inbound Service 724 feature option. These levels give Boxholders greater control over their incoming telephone traffic. By setting a screening level, Boxholders can choose to block all calls, screen calls for the calling party's identity, transfer calls to an alternate extension, as well as receive calls in the standard fashion.

You have the ability to change call screening levels if your organization's CINDI system includes the IS724 feature and if your System Manager has given you the appropriate authorization.

To review and change your screening levels:

- Open your mailbox.
- ② Press [8] to use the Personalize Mailbox menu.
- 3 Press [6] to change Call Screening levels.

If you have not been authorized to use the call screening function, CINDI informs you:

This mailbox is not authorized for this function. Please check with the System Manager.

If you are an authorized Boxholder, CINDI reports your current screening level:

```
Your calls are currently being...
...transferred immediately.
or
...screened.
or
...blocked for reason code: (code number).
or
...sent to extension: (extension).
```

To change this information, press [1]. To exit, press [9].

If you press key [1] to change your screening level, CINDI presents the Call Screening Level Menu:

```
To have your calls transferred without screening, press [1]. To have your calls screened, press [2]. To block all incoming calls, press [3]. To have your calls sent to another extension, press [4]. To exit, press [9].
```



The sections below discusses how to use this menu in order to set your call screening level. After you select a screening level for your mailbox, CINDI confirms your decision by presenting the new level and giving you the option to change or retain it.

For information about receiving a screened call from IS724 and for additional information about call screening, blocking, and transferring, please refer to the chapter, Inbound Service 724.

9.6.1 Transfer Without Screening

If you press [1] from the Call Screening Level Menu, CINDI will transfer all incoming calls directly to your extension without first screening the calls. You receive calls in the standard fashion.

9.6.2 Screen Calls

If you press [2], CINDI will screen each call directed to you. Before you speak with the calling party, CINDI will present the party's identity and give you the opportunity to accept or refuse the call.

9.6.3 Block Incoming Calls

If you press key [3] to block all incoming calls, you must provide a reason. The system has 8 pre-set reasons from which you can choose. Each of the reasons has an associated reason code. When you press key [3], CINDI requests:

Enter the code.

Choose a reason code from the following list. Press the appropriate key on your telephone keypad to enter the code.

- [1] is not available
- [2] has left for lunch
- [3] is ill today
- [4] is out of the office
- [5] is out of town
- [6] is in a meeting
- [7] is out, but expects to return today
 - [8] is on vacation

Personalizing	Your	Mailbox:	Key	[8]

Changing Call Screening Level

CINDI does not list these reasons to you on-line. Make sure you have this listing with you when you want to use call blocking.

9.6.4 Send to Another Extension

If you press key [4] to send your calls to another extension, CINDI will ask you to:

Enter the extension.

You may choose to receive the messages deposited and stored in your mail-

» Enter the extension that will receive your calls.

9.6.5 Exit the Call Screening Level Menu

To leave your call screening level unchanged, press [9]. You are returned to the Personalize Mailbox menu.

9.7 Message Retrieval Order

You may choose to receive the messages deposited and stored in your mailbox in either first in, first out (FIFO) or last in, first out (LIFO) order. In both cases, CINDI presents new messages first followed by saved messages.

To select the order of message retrieval:

- Open your mailbox.
- Press [8] to use the Personalize Mailbox menu.
- 3 Press [7] to select the order for message retrieval.

CINDI presents the current retrieval order for your messages, then prompts for a new selection:

Messages are currently presented...
...first in, first out
ot
...last in, first out.

To change this information, press [1]. To exit, press [9].

» Press [1] to change your retrieval order; CINDI will confirm your request. Press [9] to return to the Personalize Mailbox menu.

-	1

[9] is used throughout CINDI to allow you to exit a function and return to the previous menu.

From Secondary Menus

When in one of the secondary menus, pressing [9] returns you to the System User's Main Menu. The secondary menus, listed below, are discussed in detail in other chapters.

- Message Receiving Menu
- Message Forwarding Menu
- Call Placement Menu
- Group Messages Menu
- · Certified Messages Menu
- Guest Accounts Menu
- · Personalize Mailbox Menu.

From the Main Menu

Pressing [9] from the System User's Main menu tells CINDI you are finished using your mailbox and intend to hang up. You will hear:

Thank you. Good daylevening,

If you simply hang up without pressing [9], CINDI may not know that you have completed your call, causing CINDI to not release the line for a short period of time.

10 Key [9]

[9] is used throughout CIVIDI to allow you to exit a function and return to the provious menu.

From Secondary Manua

When in one of the secondary menus, pressing [9] returns you to the System User's Main Menu. The secondary menus, listed below, are discussed in fetall in other chapters.

- Message Receiving Menu
- Message Forwarding Menu
 - Call Placement Menu
 - Group Mossages Menu
 - Certified Messages Menu
 - · Guest Accounts Mena
- · Personalize Mailbox Menu.

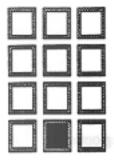
From the Maia Menu

Pressing [9] from the System User's Main mean tells CIVDI you are finished using your mailbox and intend to hang up. You will bear:

Thank you. Good daylevaning.

If you simply hang up without pressing [9], CINDI may not know that you have completed your call, causing CINDI to not release the line for a short period of time.

11 Call Transfers: Key [0]



When you reach CINDI on a line that is programmed to support call transfers, you can press [0] to transfer to the attendant or another extension.

Generally, when you press [0], CINDI asks you for the extension you desire:

To what extension should I transfer your call? Press [0] to reach the attendant.

» Enter the extension of the person with whom you want to speak.
Press [0] again if you want to reach the attendant.

After you enter the extension, CINDI attempts the transfer, prompting:

Please wait while I transfer your call.

Depending on how CINDI is configured, CINDI may connect you with the extension as soon as it rings, or CINDI may wait until the phone is answered. If the requested line is busy, or if CINDI waited for an answer and there was none, CINDI tells you:

This extension is unavailable.

You can then continue your session with CINDI.

The sections below provide more specific information on transfers under various conditions.

11.1 From CINDI Menus

You can press [0] from most CINDI menus, including:

- System User's Main Menu
- Message Forwarding Menu
- Call Placement Menu
- Group Message Menu
- Certified Messages Menu
- Guest Account Menu
- Personalize Mailbox Menu

Within each of these menus, CINDI presents the following option:

If you'd like to speak with someone, press [0].

This option is not presented if the line you are using is not programmed to allow call transfers.

If you request to transfer from any of these menus and the transfer is not completed, CINDI returns you to the System User's Main Menu.

From CINDI Menus

11.2 During Nightline

The System Operator is able to change CINDI's operation from Dayline mode to Nightline. Nightline is designed for use after you company's normal business hours.

When operating in Nightline mode, CINDI will not prompt for the attendant, nor will CINDI attempt a transfer to the attendant (CINDI assumes there is no attendant on duty).

If you request to transfer to the attendant during Nightline, CINDI will respond:

I'm sorry. There is no attendant at this time.

You can then continue your session with CINDI.



11.3 Systems with IS724

If you request to transfer on a line providing IS724 support, you hear the following Initial Extension Prompt:

Please enter the extension of the person you'd like to reach. Press [9] to leave a message if you do not need to interrupt this person. Press [0] to have an attendant assist you.

» Enter the extension to which you want to be transferred.

If you requested the transfer from within you mailbox, CINDI automatically closes your mailbox. If your transfer is unsuccessful, you can either leave a message in the called party's mailbox, attempt to transfer to another extension, or speak with the attendant.

If you press [9] in response to the initial extension prompt presented above, CINDI prompts:

Please enter the mailbox number. If you do not know the number, press [0] to leave a message in the general delivery mailbox.

To return to your own mailbox, open your mailbox as you normally would.

566	Call Transfers: Key [0]	Systems with the SL-1 Integration (IVMS)
500		

11.4 Systems with the SL-1 Integration (IVMS)

If your CINDI includes the SL-1 integration, please note that IVMS lines do not support direct call transfers to other extensions. When you press [0] from any CINDI system menu, you are always transferred to the SL-1's night call forwarding directory number (NCFDN). The NCFDN is an extension to which the SL-1 is programmed to transfer calls.

During the day, this number is probably the attendant (who can transfer you to other extensions within your company). During the night, this number may be the attendant (if your company has a 24-hour attendant) or it may be another extension.

System User's Guide



Systems with the SL-1 Integration (IVMS)

If your CINDI includes the SL-1 integration, please note that IVMS lines do not support direct call transfers to other extensions. When you press [0] from any CINDI system menu, you are always transferred to the SL-1's night call forwarding directory number (NCFDN). The NCFDN is an extension to which the SL-1 is programmed to transfer calls.

Ouring the day, this number is probably the amendant (who can transfer you to other extensions within your company). During the night, this number may be the attendant (if your company has a 24-hour attendant) or it may be mother extension.

12 Helpful Hints

Once you become familiar with CINDI's features, you will discover short cuts in using them. This chapter reviews some of these short cuts, and it lists some other pieces of information that help you use CINDI more effectively.

12.0.1 Command Inputs

CINDI is not offended if you interrupt a prompt to enter a command or mailbox number. When you know what you need to enter, press the proper key(s). CINDI immediately stops talking and responds to your request.

When you are more familiar with the various menus, you can press the key you want before CINDI says anything. For example, if you are leaving a message for someone, you can skip over the personal greeting. Simply press [1] immediately after you enter the mailbox number. CINDI responds with:

Recording. (Beep)

You then can leave your message.

12.0.2 Quick Entry of Dates and Time

When CINDI requests the month, enter both the month and day together as four digits. For example, January 4th is entered [0104]. CINDI then skips ahead quickly without prompting you for the day.

Enter the time as four digits also, followed by the AM or PM indicator, [1] or [8] respectively. For example, 1:06 PM is entered [01068]. CINDI then skips ahead quickly without prompting you for morning or evening hours.

12.0.3 CINDI's Memory

CINDI uses a large capacity disk drive to store your messages. This memory, although quite large, can become full. For this reason, CINDI keeps messages for the limited period of time set by your System Manager. Remember to check your messages frequently and delete those you do not need to keep.

12.0.4 Housekeeping

Each night, CINDI performs housekeeping operations. Messages that exceed the message retention time set by the System Manager are deleted during housekeeping.

Once housekeeping begins, CINDI is unable to perform voice-mail functions. If you try to contact CINDI during this time, CINDI tells you:

Please press the [6] key on your telephone keypad if you'd like to hold. Γ ll be with you in a few moments.

You can hang up or wait. If you press [6] to wait, CINDI says:

Please hold the line. I'll be with you shortly.

Once housekeeping is completed, CINDI checks to see if you are still waiting:

Thank you for waiting. Press the [6] key to continue.

After pressing [6], you are greeted as if you just called the system.

12.0.5 Passwords

Only you know your password. It helps to record it in a safe place. If, however, you forget your password, ask your System Manager to reset it to [0] for you.

12.0.6 Message Forwarding

This is a great way to accommodate the time differences on the West and East Coasts. If you live on the East Coast, set CINDI to forward messages to your home immediately between the hours of 8 PM and 9 PM. Thus, you can receive messages left after your business hours from associates on the West Coast.

This feature also helps keep a traveling sales force in touch with the home office.

Remember, if you use the SL-1 IVMS integration, IVMS lines do not support message forwarding. Contact your System Manager if you are not sure which lines are standard CINDI lines and which lines are IVMS integrated.

12.0.7 Other Tips

If you need to exit CINDI while you are listening to new messages, press [9]. Every message you did not listen to remains on the system. You can listen to those messages the next time you enter Message Receiving (unless they have exceeded the message retention time set by your System Manager).

You can use your telephone system's speed dial features when using the Message Forwarding or Call Placement features.

If you call CINDI and decide not to leave a message, press [###] when CINDI requests the mailbox number, and hang up.

12.0.7 Other Tips

If you need to exit CIND! while you are listening to new messages, press [9]. Every message you did not listen to remains on the system. You can listen to those messages include the next time you enter-Message Receiving (unless they have exceeded the message retended time set by your System Manager).

You can use your telephone system's spood dial features when using the Mestage Forwarding or Call Placement features.

If you call CINDI and decide not to leave a message, prest [###] when CINDI requests the mailbox number, and hang up.

13 Inbound Service 724

This chapter applies only to CINDI systems equipped with the Inbound Service 724 (IS724) feature option. If you do not know whether your system has IS724, check with your System Manager.

IS724 is a feature option on the CINDI system that allows callers to dial directly into specific extensions. IS724 is most useful when used to handle telephone traffic to phones that are frequently called by the same outside parties.

This feature is convenient for both callers and Boxholders. It gives callers speedy and direct access into such departments as customer service or order administration. It helps Boxholders organize their telephone communication and control their time more efficiently.

The following sections describe IS724 in more detail.

When you ask CIVIN to unastler all your calls away from your rosular ex-

13.1 Call Screening Levels

IS724 gives authorized Boxholders the opportunity to set their own call screening level. As an authorized user you can choose to screen, block, or transfer to an alternate extension all incoming calls.

Your System Manager authorizes you to change your call screening level. Contact your System Manager if you have any questions about this authorization.

If you are authorized to use this function, you can set your own call screening level through the Personalize Mailbox Menu. For complete information on how to change your call screening level, please refer to the chapter, Personalizing Your Mailbox: Key [8].

13.1.1 Call Screening

When you screen your calls, each call that comes to you is announced by CINDI. CINDI gives you the calling party's name and asks you if you want to accept or refuse the call. If you refuse the call, the caller can leave a voice message in your mailbox, try to reach another extension, or speak with the attendant.

13.1.2 Call Blocking

When you block calls, CINDI prevents all incoming calls from reaching you. CINDI will tell your callers that your are unavailable for a specific reason that you select. Again, callers can leave a voice message in your mailbox, try another extension, or speak with the attendant.

13.1.3 Routing Calls to an Alternate Extension

When you ask CINDI to transfer all your calls away from your regular extension, CINDI automatically sends them to an alternate extension specified by you.

Please note that the alternate extension you select may also be authorized for call screening. If this is the case, your incoming calls are handled according to the alternate extension's current screening level except when its calls are also being routed to an alternate extension. Under this condition, CINDI prevents you from selecting the extension.

13.1.4 No Screening

When you turn off the screening function, your calls are transferred immediately to you. In other words, you receive your calls in the standard fashion.

If you do not answer your phone on an unscreened call, CINDI may or may not offer to take a message, depending upon how your system is programmed by the System Manager.

13.2 Receiving a Screened Call from IS724

When you receive a screened call from IS724, make sure you follow CINDI's instructions carefully. When you answer your phone, you will hear:

(Caller's name)
is on the line.
Press [1] to accept this call.
Press [9] to refuse it.

When you press [1], you will hear:

I'll connect the caller.

CINDI connects the calling party and drops out of the call.

If you refuse to speak with the caller by pressing [9], CINDI will instruct you to hang up:

Please hang up.

You have five seconds in which to hang up your phone. Make sure you hang up within this five second window. CINDI needs this time to revert the call back to the calling party and to tell the party that you are unavailable. If you do not hang up within the five second window, you may be connected with the calling party.

14 Integrations

This chapter discusses features available only on CINDI systems equipped with one of the integrations listed below:

- Fujitsu Focus 960 integration
- NEC Neax 2400 integration

A better way to leave a message for another Boxholder is to open your mail-

Northern Telecom SL-1 integration (IVMS)

Check with your System Manager to see if your system includes one of these integrations.

ŝ

14.1 Functions From Your Own Telephone Station

On integrated lines, you can gain access into CINDI from more than one level. As a Boxholder, you can save several keystrokes and avoid a number of CINDI prompts when you open your mailbox, leave a message in another mailbox, or call another extension.

14.1.1 Accessing Your Mailbox

From your own telephone station, you can dial into CINDI and be immediately prompted for your password as follows:

Please enter your password. If you wish to leave a message for another mailbox, press the pound key on your telephone keypad.

When you dial CINDI from your station, the system automatically enters your mailbox number and [0]. Accordingly, CINDI will only accept your password. If you call CINDI from another telephone station, the system automatically enters the mailbox number (and [0]) associated with that station.

14.1.2 Leaving A Message

If you reach CINDI and want to leave a message for another Boxholder, do not enter your password when CINDI asks for it. Instead, press [#] to access the following mailbox prompt:

Please enter the mailbox number you wish.

If you enter a mailbox number that does not exist, or make some other kind of invalid entry, CINDI tells you:

Mailbox nnnn does not exit.

You are returned to the mailbox prompt for re-entry.

A better way to leave a message for another Boxholder is to open your mailbox by entering your password when CINDI asks for it. Then, you can press [1] from the System User's Main Menu in order to access message recording.

14.1.3 Dialing Another Extension

To call another extension from your own telephone station, simply dial the desired extension directly. If the desired extension is busy, rings without answer, or has been forwarded to CINDI, you are automatically routed to the extension's mailbox. You hear the Boxholder's greeting (if recorded) and have the opportunity to leave a message.

greatings, pre-recorded in CIVDI's voice, that you can select for incoming

in order to activate a desired Telest Status greeting for your meilbox. You

you have called." Each Telect Status greeting and its associated telephone

14.2 Mailbox Greetings

Before you record a message in a mailbox, CINDI greets you with a mailbox greeting. What you hear depends upon which of the following conditions exist:

- · a personal greeting is recorded.
- a Telset Status greeting is present (IVMS only).
- the Boxholder name is recorded.
- the Boxholder name playback is allowed.
- the call is "call forwarded busy" into CINDI.

Regardless of which conditions exist, you are always given the opportunity to leave a message. The ways in which the greetings work together are discussed in more detail below.

14.2.1 Call Forwarded Busy Greeting

On integrated lines, anytime an extension is busy, the caller is automatically routed directly into that extension's mailbox. The caller hears the following:

(Boxholder's name)
is on the telephone at the moment,
or
The person you have called is on the telephone at the moment.

No matter what other greetings may be recorded for the mailbox, you will always hear the "call forwarded - busy" phrase first if the condition exists.

14.2.2 Telset Status Greetings (IVMS only)

Northern Telecom SL-1 IVMS integrated systems offer nine Telset Status greetings, pre-recorded in CINDI's voice, that you can select for incoming callers to hear. These greetings provide brief, up to the minute reasons why you are not at your telephone. Each is associated with a telephone keypad access code. From your own telephone, tyou press one of these code keys in order to activate a desired Telset Status greeting for your mailbox. You do not need to call CINDI to perform this function.

The phrasing for each Telset greeting begins with either your name, if a name has been recorded and playback is allowed, or with "The person that you have called." Each Telset Status greeting and its associated telephone keypad access code is listed below:

- 1 has left for lunch
- 2 is ill today
- 3 is out of the office
- 4 is out of town
- 5 expects to return today
- 6 is in a meeting
- 7 is unavailable at the moment
- 8 is unavailable this morning
- 9 is unavailable this afternoon

Pressing [0] cancels the Telset Status greeting currently selected for your mailbox.

When you have an active Telset Status greeting and are on the phone, incoming calls still are automatically routed to your mailbox. However, callers hear the "call forwarded - busy" greeting rather than the Telset greeting.

For detailed instructions on how to leave Telset Status greetings on your telephone set (TELSET Status), refer to the SL-1 documentation.

14.2.3 Personal Greetings

Recording a Personal Greeting is discussed in the chapter, Personalizing Your Mailbox: Key [8].

The "call forward - busy" phrase works in conjunction with your personal greeting. When your telephone is busy and callers are automatically routed to your mailbox, they first hear the "call forward - busy" phrase followed by your personal greeting.

For SL-1 IVMS integrated systems, the Telset Status greeting feature can work in conjunction with your personal greeting. If you record a personal greeting and select a Telset Status greeting for your mailbox, callers hear the Telset Status greeting followed by your personal greeting when they are routed to your mailbox.

The first ignus received after the three second window terminates message

14.3 Telset Messages (IVMS only)

Telset Messages are short messages, pre-recorded on the CINDI systems, that internal callers can deposit into any mailbox. Telset Messages are available only on SL-1 IVMS integrated systems.

Callers can leave a Telset Message rather than recording a voice message by pressing telephone keypad codes that correspond with the desired message. The pre-recorded Telset Messages and associated telephone keypad access codes are listed below:

- The person at extension nnnn wishes you to call regarding an important matter.
- 2 The person at extension nnnn telephoned.
- 3 The person at extension nnnn wishes to see you regarding an important matter.
- 4 The person at extension nnnn returned your call.
- 5 The person at extension nnnn wishes you to call.
- 6 The person at extension nnnn will call again.
- 7 The person at extension nnnn telephoned again.
- 8 The person at extension nnnn wishes you to contact their secretary.
- 9 The person at extension nnnn will keep the arranged appointment.

If you leave a Telset Message, your extension number is reflected by the nnnn number listed above. Your Telset Message is deposited in the mailbox associated with the extension that you dialed.

If you plan to use this feature, it will be useful to keep this listing of messages and corresponding codes close to your phone.

14.3.1 Leaving a Telset Message

When you call an extension and are automatically routed to the mailbox due to a ring-no-answer or busy condition, you hear a unique tone. After hearing this tone, you have three seconds in which to press the appropriate telephone key codes associated with the desired Telset Message. Your successful input is then confirmed by another tone.

Please be aware that you must press the appropriate telephone key codes within the three second window. If you take too long, CINDI assumes that your key entry is a command to the system instead of a Telset Message code. The first input received after the three second window terminates message

recording. The second input received either causes CINDI to end the call (for all keys pressed except [1]) or causes CINDI to prompt for the mailbox number (if [1] pressed).

Also, if you leave a Telset Message, you should use your own telephone. The SL-1 knows from which extension a Telset Message originates and CINDI includes this information in the message.

If you do not want to leave a Telset Message, do not enter a telephone access code. After the three second delay, you hear the mailbox greeting and have the opportunity to leave a voice message.

For detailed instructions about how to leave Telset Messages on your telephone set, refer to the SL-1 documentation.

recording. The second input received either causes CINDL to end the call (for all keys pressed except [1]) or causes CINDL to prompt for the mailbox number (if [1] pressed).

Also, if you leave a Telset Message, you should use your own relephone. The SL-1 knows from which extension a Telset Message originates and CDVDI includes this information in the message.

If you do not want to leave a Telect Message, do not enter a telephone access code. After the three second delay, you hear the mailbox greeting and have the opportunity to leave a voice message.

For detailed instructions about how to leave Telast Messages on your telephone set, refer to the SL-1 documentation.

A System User Telephone Menus

System User's Main Menu

- Record a message
- [2] Receive messages
- [3] For Message Forwarding
- [4] For Call Placement
- [5] For Group Messages
- [6] For Certified Messages
- [7] For Guest Accounts
- [8] Personalize your mailbox
- [9] End the call

Message Recording Menu

- [1] Accept the message (send)
- [2] Review the message
- [3] Continue recording the message
- [4] Re-record the message
- [8] Cancel the message

[2] Message Receiving Secondary Menu (abbreviated) (presented after each message played)

- [1] Keep the message
- [7] Take action on the message
- [8] Delete the message
- [9] Exit message receiving
- [0] Other options

[2] Message Receiving Secondary Menu (complete) (presented after [0] pressed)

- [1] Keep the message
- [2] Repeat the message
- [3] Replay previous ten seconds
- [4] Move ahead ten seconds
- [5] Skip ahead through the message
- [6] Stop playback for 30 seconds
- [7] Take action on the message
 - [1] Copy the message with comments
 - [2] Copy the message without comments
 - [6] Relay information to a mailbox
 - [7] Leave a response for the sender
 - [9] Exit without taking action
- [8] Delete the message
- [9] Exit message receiving

[3] Message Forwarding Secondary Menu

- [1] Enable Message Forwarding
- [8] Cancel Message Forwarding
- [9] Exit Message Forwarding menu

[4] Call Placements Secondary Menu

- [1] Have CINDI place a call
- [2] Check status of calls
- [9] Exit Call Placement menu

[5] Group Messages Secondary Menu

[9] Exit Personalize Mailbox mean

- Send a group message
- [3] Add members to a group
- [4] List group members
- [8] Delete group members
- [9] Exit Group Message menu

[6] Certified Messages Secondary Menu

- [1] Send a certified message
- [2] Check the delivery status of a message
- [8] Cancel notification for a message
- [9] Exit Certified Message menu

[7] Guest Accounts Secondary Menu

- [1] Record a guest message
- [2] Check the status of a guest message
- [3] Open a new guest account
- [4] List guest accounts
- [8] Delete a guest account
- [9] Exit Guest Account menu

[8] Personalize Mailbox Secondary Menu

- [1] Change the personal greeting
- [2] Change the password
- [3] Record the name was seemed [3] Record the name
- [4] Recover the System Bulletin
- [5] Change the Message Waiting Notification status
- [6] Change Call Screening levels
- [7] Select message retrieval order
- [9] Exit Personalize Mailbox menu

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Sequence to ext	inguish MWI:	_			
	oxes so that each sponding box# (
Change correso mailboxes (Y,N	nding PBX exten):	sion for any			
	Modify Mailbox	PBX Extension	Modify Mailbox	PBX Extension	
				<u>, </u>	
					
-				_	
				-	
Print message v	vaiting diagnostic	cs (Y,N):			
Reactivate MW	I when mailbox	is closed (Y,N):			

-		

is same as corresponding box# (Y,N):

Fujitsu Focus 960 API Inte	egration Initialization		
Set PBX Directory Numbers (Y,N):			
Directory Number for CINDI lines:			
Line 1:	Line 5:		
Line 2:	Line 6:		
Line 3:	Line 7:		
Line 4:	Line 8:		
Define Directory Number for message waiting callback (Y,N):			
Directory Number for message waiting callback:			
Even parity (Y=even, N=odd):			
Initialize mailboxes so that each PBX extension			

Change Message Waiting privileges for any mailboxes (Y,N):				
	Modify Mailbox	Authorize for MWI	Modify Mailbox	Authorize for MWI
Print message wa	uiting diagnostics (Y,N):		
Print incoming ca	all diagnostics (Y,N	I):		
Reactivate MWI	when mailbox is cl	osed (Y,N):		

Genesis CINDI® II Technical Reference Manual

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This chapter provides a brief overview of voice mail and CINDI. If you are already familiar with them, you should proceed to the next chapter in this manual.

user's accounts are called "malboxes" and users assigned mailboxes are eferred to as "Boxholders." All users control the system through the elephone via Touch-Tone inputs in response to pron pting phrases and denus.

analog form during later playback. In the digitized forms, the messages can

voice mail a From a technical standpoint. CINDI is a voice mail machi-

From a user's transpoint, voice mail's benefits are most easily introduced by comparing it with two other forms of messaging: telephone answering machines and electronic mail.

CIND1 voice mail is similar to answering machines in some respects. Both transfer information from the sender to the neceiver in a voice formal, allowing the receiver to better understand messages by hearing tone of voice and affection. And both provide open access, meaning anyone can leave a measage for the intended receiver.

Yet, voice mail also differs widely from answering machines. The most important difference is that answering machines are single-user devices, while a voice mail system is a multi-user product. On CINDI, as many as 8 calls can be processed simultaneously by a single voice mail system supporting hundreds of mailboxes.

Another difference lies in "content commitment" — the amount of control the sender has over the content of the message. With answering machines, once a message is recorded, there is no method to alter it or prevent it from being stored and delivered. This content commitment can be so intimidating that many neonle refuse to leave messages.

With CINDL, the sender can add to or re-record the message before accepting it for delivery. If necessary, the sender can even cancel the message alIn order to understand what CINDI does, it helps to understand what CINDI voice mail is. From a technical standpoint, CINDI is a voice mail machine or computer that provides interactive, yet non-simultaneous 2-way communication.

Voice messages are digitized, stored on a hard disk and converted back to analog form during later playback. In the digitized format, the messages can be manipulated in the same manner as any other computer data.

User's accounts are called "mailboxes" and users assigned mailboxes are referred to as "Boxholders." All users control the system through the telephone via Touch-Tone inputs in response to prompting phrases and menus.

From a user's standpoint, voice mail's benefits are most easily introduced by comparing it with two other forms of messaging: telephone answering machines and electronic mail.

1.1.1 Compared with Answering Machines

CINDI voice mail is similar to answering machines in some respects. Both transfer information from the sender to the receiver in a voice format, allowing the receiver to better understand messages by hearing tone of voice and inflection. And both provide open access, meaning anyone can leave a message for the intended receiver.

Yet, voice mail also differs widely from answering machines. The most important difference is that answering machines are single-user devices, while a voice mail system is a multi-user product. On CINDI, as many as 8 calls can be processed simultaneously by a single voice mail system supporting hundreds of mailboxes.

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With CINDI, the sender can add to or re-record the message before accepting it for delivery. If necessary, the sender can even cancel the message altogether.

1.1.2 Compared with Electronic Mail

CINDI voice mail can also be compared with electronic mail (E-mail), with which there are many similarities. Both are multi-user systems, and provide the message redirection and group distribution capabilities necessary for business communication. Both systems also provide message confidentiality with password protection — E-mail through user accounts and voice mail through user mailboxes.

Still, CINDI and electronic mail have some marked differences. E-mail is accessed through computer terminals, which limits the number of people with the equipment necessary to use the system. Users must also possess an adequate level of computer literacy to understand E-mail's command structure in order to use it effectively.

CINDI, on the other hand, is controlled with Touch-Tone telephones, thus eliminating the need for additional equipment. Voice prompts and menus guide users through each feature, so even first-time users feel comfortable using the system.

In addition, since E-mail is more text oriented, it is more properly suited to lengthy or data-intensive documents, where voice communication is cumbersome. CINDI is ideal for shorter communications and in those many instances where voice inflection helps get the message across.

Organizations buy a CINDI voice mail system in order to solve business problems. CINDI helps businesses cut costs by reducing the time people spend on the phone. It virtually eliminates "telephone tag" by reducing the number of incomplete calls. With CINDI, organizations:

- · reduce the number of calls made
- · shorten the length of calls
- · move some calls to lower rate periods

The number of calls made are reduced because all one-way information calls can be completed by simply leaving a voice message with CINDI. Calls become shorter because "chit-chat" is reduced and because call-backs are made after the message recipient knows the purpose of the call and can prepare for the return call if necessary. Calls move to lower rate periods because CINDI is available 24-hours per day — messages can be left before 8:00 AM as well as after 5:00 PM.

CINDI improves productivity because employees spend less time trying to reach parties on the telephone and simply leave voice messages instead. Employees spend more time doing their job which ulimately, helps improve profits.

CINDI, an acronym for Central INformation DIspatch, is an eight port voice mail system which serves 50 to 350 users. CINDI provides the following useful features:

- 24-hour message access messages can be deposited and received anytime from anywhere.
- Message editing encourages message recording because the sender has control over the message.
- Private mailboxes each user can be assigned a personal mailbox which assures confidentiality and accuracy and which allows senders to leave detailed messages. The Boxholder selects a password for the mailbox.
- Message storage and retrieval messages can be stored then reviewed or acted upon at a time more convenient for the recipient.
 Playback commands include pause, repeat, move forward and backward 10 seconds, move to end, transfer the message to another mailbox.
- Group messages allows Boxholders to send a single message to as many as 247 people at one time.
- Message forwarding Boxholders can have CINDI call them to deliver any messages deposited in their mailbox at a specified time and date.
- Pager activation Boxholders can have CINDI place a call that activates a paging device when messages are deposited in their mailbox.
- Call placement Boxholders can record a message then schedule CINDI to deliver the message to a telephone location at a specific time and date.
- Statistical Reports system and mailbox status and usage reports can be output to a printer or a terminal. Reports are initiated via the telephone or terminal
- Programmable parameters extension lengths, storage capacity, outdial line groups, message retention time, message length are modifiable.

CINDI is designed to support the needs of companies ranging in the size from 50 to about 350 users. CINDI supports up to two hard disks, providing up to twenty-one hours of message storage and up to eight ports that can service as many as eight calls simultaneously.

CINDI is available in sixteen standard configurations as follows:

CINDI Model	Ports	Selectable Hours of Storage	Typical # of users *
820-A	2	1.4/1.5/1.8/2.1	20
820-B	2	3.5/4.0/4.6/5.5	28
820-C	2	6.7/7.6/8.8/10.5	36
820-D	2	13.8/15.6/18.1/21.6	40
840-A	4	1.4/1.5/1.8/2.1	40
840-B	4	3.5/4.0/4.6/5.5	64
840-C	4	6.7/7.6/8.8/10.5	90
840-D	4	13.8/15.6/18.1/21.6	120
860-A	6	1.4/1.5/1.8/2.1	50
860-B	6	3.5/4.0/4.6/5.5	100
860-C	6	6.7/7.6/8.8/10.5	150
860-D	6	13.8/15.6/18.1/21.6	200
880-A	8	1.4/1.5/1.8/2.1	60
880-B	8	3.5/4.0/4.6/5.5	100
880-C	8	6.7/7.6/8.8/10.5	225
880-D	8	13.8/15.6/18.1/21.6	350

^{*} All CINDI models support up to 512 mailboxes. The practical number of mailboxes varies by application. The figures listed above represent the number of mailboxes for a typical environment and are for reference only.

1.5 About the Technical Reference Manual

The Technical Reference Manual presents the information you need to install and maintain a CINDI system. It discusses:

- · System hardware components
- · Telephone interface
- Telephone and serial integrations
- Hardware installation
- · Technical initialization
- System troubleshooting techniques
- CINDI System Utilities

Before you install and service a CINDI system, make sure you are thoroughly familiar with the information presented in this manual. Each item is presented in a separate chapter. Once you are knowledgeable about CINDI hardware and software, you will use this manual as a reference guide to support your CINDI system service.

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2 System Hardware Description

In order to properly install, maintain and repair CINDI, you need to understand the CINDI system architecture and the functions of the major components. This chapter provides you with the necessary component descriptions. CINDI is made up of the following major components:

- Power Supply Assembly
- Mother Board
- Adaptive Interface Units (AIUs)
- Central Processing Unit (CPU)
 - Disk Controller Unit (DCU)
 - Diagnostic Interface Unit (DIU)
 - · Winchester Disk Drive
 - Floppy Disk Drive

Descriptions for each of these major components are in the following sections of this chapter. The diagram at the end of the chapter identifies the location for all of CINDI's major components.

2.1.1 Power Supply Assembly

The power supply assembly contains:

Fuse - stops the power flow in case of an electrical short (2 1/2 amp slow blow fuse).

AC line filter - accepts a power cord from the wall socket.

Power supply - converts the 110 VAC from the wall socket to the various DC voltages (+12V, -12V, and +5V) required by each of CINDI's components.

Power switch - turns CINDI's power on and off.

Fan - provides cooling for the electrical parts.

2.1.2 The Mother Board

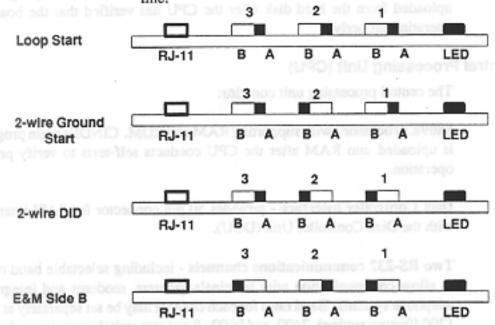
The mother board joins the power supply, the Central Processing Unit (CPU), the Diagnostic Interface Unit (DIU), and the Adaptive Interface Units (AIUs). It contains slots by which the CPU, DIU and AIUs connect to the mother board.

2.1.3 The Adaptive Interface Unit (AIU)

The AIU provides a path for voice transmissions from the telephone into CINDI's central processing unit, converting analog voice signals to digital information for the CPU to store on the hard disk. Messages stored on the hard disk are converted back to analog voice signals for delivery to the user.

There are up to eight AIUs, one for each phone line into CINDI. Each AIU contains:

Switch-configurable trunk interface - to make it easy to indicate the signalling method used on the incoming telephone lines. Supported signalling methods include loop start (factory setting), ground start, DID and E&M. The diagrams below indicate the switch settings for each type of telephone line:



Ring signal detection - informs the processor of an incoming call.

Voice filtering and automatic gain control - prepares the analog signal from the phone line for digitization by adjusting its volume to an acceptable level and filtering out noise.

Voice digitization and compression - converts the voice signal from analog to digital and compresses the digital output, allowing the signal to be stored on the hard disk.

Volume control - to allow callers to adjust the volume to their own requirements during the call.

Silence detection circuitry - to automatically terminate a function if no voice input is received.

DTMF detection - to translate input from the user's telephone pad.

DTMF generation - to make outgoing calls (i.e. message forwarding and call placements).

Call progress detection - to determine the status of an outgoing call. Progress tones include: dial tone, ring back tone, reorder tone and busy tone.

6802 processor - with supporting RAM and ROM. The AIU's program is uploaded from the hard disk after the CPU has verified that the board is operating properly.

2.1.4 The Central Processing Unit (CPU)

The central processing unit contains:

6809E processor - with supporting RAM and ROM. CINDI's main program is uploaded into RAM after the CPU conducts self-tests to verify proper operation.

Disk Controller interface - provides 50 pin connector for SASI interface with the Disk Controller Unit (DCU).

Two RS-232 communications channels - including selectable baud rates, to allow communication with terminals, printers, modems and integrated telephone systems. Baud rates for each channel may be set separately at 300, 1200 (factory setting), 2400, and 9600. Baud rate switches are located at the top of the CPU board and may be adjusted without removing the board.

Battery-backed clock - that maintains CINDI's time and date - is crucial for the message forwarding and call placement features. Because the clock is backed by a 3.0 volt lithium battery, it will continue to maintain the time and date even when the system is taken off-line or during power failures. If the time and date is incorrect after a power-cycle, the battery may need replacing. UL approved batteries must be used for replacement. Approved sources and model numbers are listed below:

Rayovac or Panasonic: CR2025

Duracell: DL2025

Diagnostic halt button - in case you experience a problem with CINDI that you can't resolve. When the diagnostic halt button is pressed, all voice mail functions are halted and a diagnostic procedure begins. Before pressing the diagnostic halt button, consult the troubleshooting chapter.

2.1.5 The Disk Controller Unit (DCU)

The disk controller unit provides an interface between the CPU and the Winchester hard disk drive(s) and the floppy disk drive. The CPU uses a standard SASI interface to perform this operation.

2.1.6 The Diagnostic Interface Unit (DIU)

The diagnostic interface unit offers key benefits in diagnosing both hardware and software problems. The DIU is equipped with a 300-baud modern which allows comprehensive diagnostics to be performed from a remote location at any time (i.e. you don't have to attach an external modern). The DIU can also be used for remote generation of statistical reports or for reconfiguration of system parameters.

The DIU is also equipped with several visual displays. LEDs indicate the presence/absence of necessary voltage (+5, +12, -12, -48). A two-character, seven segment readout indicates the current system operational status.

Along with these diagnostic and maintenance aids, the DIU includes a -48 volt power supply for DID and ground start telephone applications. This power supply supports 8 ports of DID and ground start telephone lines simultaneously with a maximum .5 AMP current output.

2.1.7 The Winchester Disk Drive

The Winchester disk drive provides storage for CINDI, up to 172 megabytes in a two-disk system. The program that operates CINDI is stored on the hard disk, as are the digital versions of CINDI's phrases and users' voice messages.

2.1.8 The Floppy Disk Drive

The floppy disk drive is used to transfer program and phrase updates from a floppy disk to the Winchester hard disk.

In addition, data from the hard disk can be backed up onto floppy diskettes for safekeeping. Information such as personal greetings and the system initialization parameters (i.e. mailbox assignments and privileges) can all be preserved. CINDI requires double sided, double density, 135 TPI, 3.5" micro-floppy diskettes.

The Federal Communications Commission (FCC) has established rules which permit this device to be connected to the telephone network. A jack is provided by the telephone company. Jacks for this type of customer-provided equipment will not be provided on party lines or coin lines.

If this device is malfunctioning, it may also be causing harm to the telephone network. This device should be disconnected until the source of the problem can be determined and until repair has been made. If this is not done, the telephone company may temporarily disconnect service.

The telephone company may make changes in its technical operations and procedures. If such changes affect the compatibility or use of this device, the telephone company is required to give adequate notice of the changes.

If the telephone company requests information about the equipment connected to its lines, provide the following information:

- · The telephone number to which the the unit is connected
- Ringer Equivalence: 2.1A
- USOC Jack type: RJ-11C or W
- FCC Registration Number: ELA55X-14832-MA-E

The last three items are also indicated on the unit.

If the equipment malfunctions, all repairs should be performed by Genesis Electronics Corporation or an authorized agent. The user requiring service is responsibile for reporting the need for service to Genesis or to one of the authorized agents. Service can be obtained at:

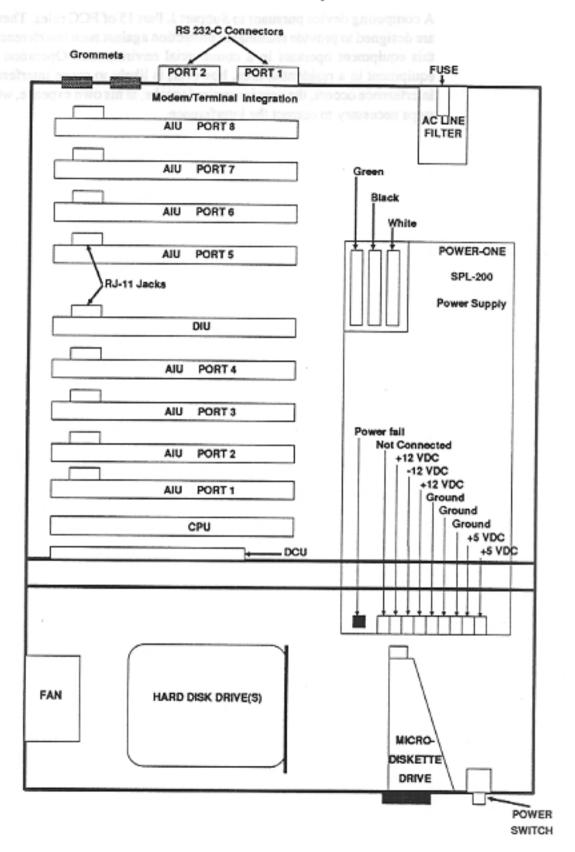
Genesis Electronics Corporation
Customer Service Department
103 Woodmere Road
Folsom, CA 95630
(916) 985-4050

WARNING

This equipment generates, uses and can radiate radio frequency energy. If it is not installed and used properly (i.e. in strict accordance with the manufacturer's instructions), it may cause interference to radio communications. It has been type tested and found to comply with the limits for a Class

A computing device pursuant to Subpart J, Part 15 of FCC rules. These rules are designed to provide reasonable protection against such interference when this equipment operates in a commercial environment. Operation of this equipment in a residential area, however, is likely to cause interference. If interference occurs, the user is required to take, at his own expense, whatever steps necessary to correct the interference.

CINDI System



3 Telephone Interface

This chapter discusses how to connect telephone lines to CINDI. Before you do this, you need to understand the different kinds of telephone system and central office interfaces available with CINDI as well as CINDI's line specifications (i.e. the line types and signalling methods that CINDI supports).

CINDI requires the following for a telephone system installation:

- · Ringing voltage for loop start and ground start line types.
- DTMF signalling during the entire connect period.
- · Dial tone on all lines supporting outdials.

Each of these requirements are presented on the following pages.

3.1.1 Ringing Voltage

When using single line, loop start signalling, standard telephone ringing voltage is required to recognize an incoming call. Systems which use a tone to announce the call instead of using a ringing voltage must be configured to add a ring generator to the single line circuits. A ringing signal followed by silence is recognized as a request for port seizure. Ringing voltage is designed for a FCC Class A ringer specified as follows:

Frequency: 20 to 30 Hz

Frequency of the ring generator in Hertz

(cycles per second).

Duration: 7.5 cycles

minimum

Number of cycles of the ring generator signal.

Silence: 200 msec

minimum

Period of silent time following a ringing sig-

nal in milliseconds.

Voltage: 40 to 130 VAC

Voltage amplitude in Volts AC rms superim-

posed on the network battery -44 VDC to -56

VDC.

To convert the duration of 7.5 cycles to real time in milliseconds (msec), perform the following calculation where 'f' equals frequency in hertz.

Duration (ms) - 1/f x 7.5 x 1000

Example: for f = 15 Hz

Duration = $1/15 \times 7.5 \times 1000 = 500 \text{ ms.}$

Therefore, for a ring generator set at 15 Hz, the ringing must be continuous for at least 500 ms and followed by a minimum of 200 ms of silence in order to recognize the ringing signal as a request for seizure.

3.1.2 DTMF Signalling

The telephone system must allow callers to send DTMF signals to CINDI for all voice mail operations. If CINDI will be used to perform outdials and call transfers, the telephone system must also be ready to accept DTMF signals generated by CINDI.

PBX and Hybrid Key systems normally provide for end-to-end signalling for external and internal calls from a single line set. Not all telephone systems, however, provide this function for internal calls (i.e. station to station) from electronic feature phone sets. You need to determine whether end-to-end signalling is available for a specific phone system. To do this, find out whether or not DTMF tones are still generated after an internal call is completed from an electronic feature phone set. When you call another station, can you still hear DTMF tones when the two stations are connected? If so, end-to-end signalling is available.

CINDI requires a minimum tone duration of 40 milliseconds (ms) and an inter-digit space of 60 ms. When CINDI signals with DTMF, CINDI plays the DTMF tone for 100 ms and pauses between each number in a digit stream for 100 ms.

3.1.3 Dial Tone

Dial tone is required on those lines CINDI will be using to perform outdials. If CINDI will not be used to outdial, dial tone is not required.

Whenever CINDI attempts to forward messages or make a call placement, CINDI goes off hook and listens for a steady dial tone. If CINDI does not hear three seconds of steady dial tone within 20 seconds of going off hook, CINDI will quit the call out attempt. To operate properly in the telephone environment, CINDI must know specific information regarding the line connected to each port. This information, or Line Specification, includes the line type entering the system and the signalling method which is used on these lines. These signalling methods include wink-start, immediate start, delay dial, ground start and loop start.

CINDI accomodates the following line types:

- · Loop Start
- suo ball aire ob oT massys on . Ground Start
- whether or not DTMF boxes are a M&H . and after an internal call is com-
- Direct in Dial (DID)

The line type and the signalling method are indicated through the use of a CINDI Line Equivalent number. CINDI Line Equivalent numbers are grouped into four general categories to reflect the four general line types that CINDI supports.

Line	Line	Signalling
<u>Equiv</u>	Type	Method
		3 Dial Tone
100	Two-wire loop	Loop start
200	Two-wire DID	Wink start (pulsed)
201	Two-wire DID	Immediate start (pulsed)
202	Two-wire DID	Delay dial (pulsed)
210	Two-wire DID	Wink start (DTMF)
211	Two-wire DID	Immediate start (DTMF)
212	Two-wire DID	Delay dial (DTMF)
300	Two-wire ground	Ground start
400	EM Type I	Wink start (Side B)
401	EM Type I	Immediate start (Side B)
402	EM Type I	Delay dial (Side B)
410	EM Type I	Wink start (Side B, pulsed)
411	EM Type I	Immediate start (Side B, pulsed)
412	EM Type I	Delay dial (Side B, pulsed)
420	EM Type I	Wink start (Side B, DTMF)
421	EM Type I	Immediate start (Side B, DTMF)
422	EM Type I	Delay dial (Side B, DTMF)

^{**600} ohm termination

Each of the CINDI Line Equivalent Groups is described in detail below. Use these descriptions to determine the Line Equivalent you must assign for each line.

3.2.1 Two-Wire (2W) Loop

CINDI Line Equivalent Group 100 is used for two-wire loop lines. This is the most common line type, and it is used for single-line stations on PBX's or from a central office. CINDI, through the AIU card, supports a loop-start signalling method with two-wire (2W) loop lines.

CINDI will recognize a 350-ms duration of loop current open on the tip and ring of the loop line. Therefore, CINDI can perform a positive disconnect on far end disconnect if the loop line provides CINDI with the minimum open loop duration.

Line Equivalent:

100 (loop start)

Wink-start duration:

n/a Outdial

Available options:

Call Transfer

Call Continuation

3.2.2 Two-Wire (2W) DID

Two-wire Direct Inward Dial (DID) lines are supported on CINDI Line Equivalent Group 200. Three signalling methods -- wink start, immediate start, and delay dial -- are available. CINDI recognizes either DID pulsed or DTMF digits.

Two-wire DID lines are available from a central office. They have the advantage of providing address digits to CINDI which allow CINDI to identify the proper mailbox for direct access.

Line Equivalent numbers 200-202 are appropriate when the DID digits are pulsed. Numbers 210-212 are appropriate when the DID digits are provided with DTMF tones. Two-wire DID lines have the disadvantage of being one way; no outgoing calls or hookflash transfers can be initiated over these lines.

Line Equivalent: 200 (wink start, pulsed)

Wink-start duration: 140-290 ms

Available options:

Call Continuation

Line Equivalent:

201 (immediate start, pulsed)

Wink-start duration:

n/a (0 ms)

Available options:

Call Continuation

Line Equivalent:

202 (delay dial, pulsed)

Wink-start duration:

n/a (150 ms)

Available options:

Call Continuation

Line Equivalent:

210 (wink start, DTMF)

Wink-start duration:

140-290 ms

Available options:

Call Continuation

Line Equivalent:

211 (immediate start, DTMF)

Wink-start duration:

n/a (0 ms)

Available options:

Call Continuation

Line Equivalent:

212 (delay dial, DTMF)

Wink-start duration:

n/a (150 ms)

Available options:

Call Continuation

Note: With the wink-start signalling method, if you are unsure of the wink-start duration required for the lines, it is recommended that you use the factory-set default of 200-ms duration.

3.2.3 Two-Wire (2W) Ground

Two-wire Ground start lines are supported in CINDI Line Equivalent Group 300. Two-wire Ground start lines are available from a central office. The advantages of ground start lines over loop start are elimination of "glare" or "head on" at seizure and positive signalling on far end disconnect.

Line Equivalent:

300 (ground start)

Wink-start duration:

: n/a

Available options:

Outdial

Call Continuation

Ground start lines require the -48 volt power supply and do not support call transfers.

3.2.4 E&M Type I, Side B

E&M Type I lines are supported in CINDI Line Equivalent Group 400. There are three signalling methods — wink start, immediate start, and delay dial — and two methods for passing digits (pulsed and DTMF) or no address signalling (i.e. no digits passed at all). If digits are to be passed, this occurs at the very beginning of the call. After the initial digits (if any) have been passed and the voice path is established, only DTMF tones are accepted for the remainder of the call. This is true of all E&M Type I lines.

Line Equivalent numbers 410-412 support pulsed digits. Line Equivalents 420-422 support DTMF tones.

> E&M lines provide positive disconnect signalling to CINDI. Consequently, CINDI hangs up immediately after the caller hangs up. E&M lines are also two way and can be used for outdials.

Line Equivalent:

400 (side B, wink start)

Wink-start duration:

140-290 ms

Available options:

Outdial

*Call Transfer Call Continuation

Line Equivalent:

401 (side B, immediate start)

Wink-start duration:

n/a (0 ms)

Available options:

Outdial

*Call Transfer Call Continuation

Line Equivalent:

402 (side B, delay dial)

Wink-start duration:

n/a (150 ms)

Available options:

Outdial

*Call Transfer Call Continuation

Line Equivalent:

410 (side B, wink start, pulsed)

Wink-start duration: 140-290 ms

Available options:

Outdial

*Call Transfer

Call Continuation

Line Equivalent:

411 (side B, immediate start, pulsed)

Wink-start duration:

n/a (0 ms)

Available options:

Outdial

*Call Transfer

Call Continuation

Line Equivalent:

412 (side B, delay dial, pulsed

Wink-start duration: n/a (150 ms)

Available options:

Outdial

*Call Transfer

Call Continuation

the Equivalent:

420 (side B, wink start, DTMF)

Wink-start duration: 140-290 ms

Available options:

Outdial

*Call Transfer Call Continuation

Line Equivalent:

421 (side B, immediate start, DTMF)

Wink-start duration: n/a (0 ms)

Outdial

Available options:

*Call Transfer

Call Continuation

Line Equivalent:

422 (side B, delay dial, DTMF)

Wink-start duration:

n/a (150 ms)

Available options:

Outdial

*Call Transfer Call Continuation

* Some PBX's allow CINDI to perform a hookflash transfer on E&M lines. Check with your PBX service representative to see if your switch supports this option. If not, do not enable CINDI's Call Transfer option for these lines.

Note: With the wink-start signalling method, if you are unsure of the winkstart duration required for the lines, it is recommended that you use the factory-set default of 200-ms duration.

3.2.5 Options

Depending on the Line Equivalent you program, you can enable or disable one or more options for each CINDI port. The particular options available for each Line Equivalent are listed above. Descriptions of these options are listed below:

> OUTDIAL: This option, when enabled, allows CINDI to use this line for an outgoing call (Message Forwarding and Call Placements).

CALL TRANSFER: This option, when enabled, allows CINDI to transfer a call on this line back to a PBX station or attendant console, via hookflash transfer sequence.

CALL CONTINUATION: This option, when enabled, allows a non-Boxholder to continue with the call after leaving a Boxholder a message.

When you determine the line equivalents required for the installation, you may enter this information on the *Technical Initialization Worksheet* which is located in *Appendix A, CINDI Worksheets* at the back of this manual. The information you enter on the worksheet will be supplied to CINDI during technical initialization via the SETUP Utility. Refer to the *Technical Initialization* chapter in this manual for more information.

nalling. The PBX will consider these interfaces as external annles which

CINDI can be connected to each of the following:

- To a PBX System
- To A Hybrid/Key System
- · Directly to Central Office lines

Each type of installation is discussed below.

3.3.1 Connecting CINDI to a PBX System

If you are connecting CINDI to a PBX system, you need to determine whether the PBX provides end-to-end signalling. To do this, find out whether or not DTMF tones are still generated after an internal call is completed from an electronic feature phone set.

PBX Systems with DTMF Signalling

If end-to-end singalling is available on the PBX system, CINDI may be connected with an analog station port interface (single line port). All of the single line stations connected to CINDI should be placed in a pilot hunt group.

This is the most common way to interface with CINDI. The switch settings on CINDI's AIU boards should be set for loop start and CINDI's line equivalent is 100.

See Figure 3-1, PBX System with DTMF Signalling, at the end of this chapter for a diagram of this configuration.

PBX system without DTMF Signalling

If end-to-end signalling is not available on the telephone system, several alternative interfaces are available which can force the system into generating the desired tones: Type I E&M, Ground Start and CO Loop Start trunk signalling. The PBX will consider these interfaces as external trunks which cause the PBX to generate DTMF tones.

Each of these trunk line circuits can be installed in the telephone system and connected directly to CINDI. Please note, if the telephone system does not allow hookflash transfers from such a trunk, CINDI cannot perform call transfers. Cross-Connect

Another method to use if end-to-end signalling is not available on the telephone system, is to cross connect a CO trunk port to a single line station port. See Figure 3-2, PBX Systems without DTMF Signalling for a diagram of this alternate hook-up. The PBX must be programmed for a sequence that will access the cross connected trunks only. After the trunk port has been ac-

cessed, the internal direct hunt group number for CINDI is dialed. This number becomes the voice mail access code. The PBX considers this call an external call since a CO trunk is accessed and generates DTMF tones for CINDI.

CINDI is then configured the same as a normal single line interface. With this method, CINDI is connected to single line stations and is able to perform hookflash transfers. This solution may also enable you to use these same lines to perform call forward directly to mailbox using speed dials, Least Cost Routing (LCR), or Automatic Route Selection (ARS).

Please note, it may not be necessary to cross connect the same number of ports as there are CINDI ports. The sequence which accesses the trunk ports need only be used from extensions which do not generate DTMF tones on a station-to-station call (i.e. from electronic feature phone sets). All other users calling from analog single line sets may call CINDI directly by dialing the hunt group number only. Therefore, if a particular installation has a small proportion of electronic phone sets, you will need fewer cross connected ports than CINDI ports.

3.3.2 Interfacing with Hybrid/Key Systems

If you are installing CINDI with either a Hybrid Key or a "pure" Key system, make sure the system provides end-to-end signalling. The following sections discuss these installations.

Hybrid Key System with DTMF Signalling

Some newer key systems have many "PBX like" features for single line phone sets. They support loop start signalling and hookflash call transfers. These "hybrid" ports are called Off Premise Extension (OPX) ports. While these systems still have key phones on dedicated trunk lines, OPX extensions still have many of the standard PBX features.

OPX ports connect through loop start signalling. Accordingly, CINDI's ports should be configured as a standard loop start and CINDI's line equivalent should be set to 100. See Figure 3-3, Hybrid Key System with DTMF Signalling for a diagram of this configuration.

Hybrid Key systems are typically limited in the number of OPX circuits. Be sure that all supporting equipment such as power supplies, ring generators, etc. are included in order to make the system a true OPX circuit. Refer to the Hybrid Key Manufacturer's Equipment Ordering support for further information on the specifics.

On systems which support call conferencing, a hookflash puts the calling party on hold. Once this occurs, the DTMF signals output by CINDI cause the Hybrid Key system to signal the requested extension over an internal intercom line with a ringing or buzzing sound. The called party must determine which of the voice mail ports has been accessed and physically connect his or her phone to that trunk by pressing that button and going off-hook. CINDI then drops out of the circuit. Please note that this is not a "true" transfer situation. The calling party is still using the line to CINDI's voice mail port to talk with the called party. No other caller may use that Voice Mail port until the previous call is concluded.

Key System with DTMF signalling

Many "pure" key systems still support DTMF Signalling. Even when true OPX circuits are not available, loop start can still be simulated using ring-down circuits. Refer to Figure 3-4, Key System with DTMF Signalling for a diagram of the hook-up. CINDI's ports should be connected to the system via dedicated trunk ports, to be called "voice mail trunks." To use voice mail, the inside caller selects one of the voice mail trunks which is not currently busy and goes off hook.

Typically, Key Systems use trunk lines which signal, via a low current voltage, the signal light on the key telephone. A ring-down circuit can be attached to such a line, which will activate a 90 volt alternating current ring generator when it senses the low current voltage. This ring generator will quit producing the ring upon loop current detection or termination of the initial signal. In some systems, a -48 VDC "talk battery" current generator may also be needed to interface with CINDI using loop start.

If loop start signalling is not possible, then you may employ trunk signalling interfaces such as Type 1 E & M, Ground Start or CO Loop. A system which supports a trunk signalling protocol different from this one may use a third-party signalling converter to translate one interface to another. Four-wire E & M to two-wire E & M signal conversion is a widely available conversion.

3.3.3 Stand Alone Installation (Central Office)

If you are not installing CINDI with a PBX or Hybrid system, you can install CINDI directly to the Central Office using CO lines. There are three basic standalone installations:

- Loop Start Lines
- · Ground Start Lines
- Two-wire DID Lines

Please note that hookflash capabilities are not allowed on any of these three installations, except for CENTREX installations. Each is discussed in the sections below.

Loop Start

This installation is similiar to the PBX station line installation described above (PBX Systems with DTMF Signalling section of this chapter) except all station lines connect directly to the Central Office rather than to a PBX.

This standalone installation does not provide positive disconnect. That is, when a caller hangs up during a CINDI recording or Boxholder session, CINDI does not immediately disconnect. It can take CINDI up to 45 seconds to back out of the appropriate menus before disconnecting and releasing the port for another call.

CINDI line equivalent 100 is required for this installation. Make sure the switch settings on the AIU board are set for loop start as well.

This installation is not commonly used in business except with Centrex applications and is sometimes used for Telephone Answering Services (TAS).

Ground Start

This installation is used more commonly in business environments than the loop start installation. It provides positive disconnect and positive seizure and only requires two wires to operate (like loop start). The Ground Start installation supports outdials and requires the -48 volt power supply. If the CINDI is equipped with the Diagnostic Interface Unit (DIU), a -48 volt supply is included in the unit. If not, you will have to install one separately.

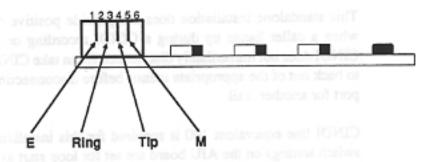
With this installation, programming for CINDI must agree with the Central Office requirements for wink start duration. Also, make sure the orientation of the Tip and Ring are correct. CINDI line equivalent 300 is required for the ground start installations. Make sure the switch settings on the AIU board are set for ground start as well.

Two-wire DID

The Two-wire DID installation is commonly used in Telephone Answering Services (TAS). It allows for the call forwarding direct to mailbox and requires the -48 volt power supply. If the CINDI is equipped with the Diagnostic Interface Unit (DIU), a -48 volt supply is included in the unit. If not, you will have to install one separately.

The DID trunk must be connect directly to the RJ-11C modular jack on the AIU board. It is important that the orientation of Tip and Ring and the AIU switch positions be correct:

RJ-11 Layout



Note: The "E" and "M" positions reference signalling from the PBX's orientation. Reverse these positions to reference CINDI.

CINDI line equivalent group for two-wire DID is 200. Refer to the Telephone Line Specifications section of this chapter for a complete discussion about CINDI's two-wire DID line equivalents.

If the site requires outdial capability for the message forwarding and call placement features, one or more AIU ports need to be configured to allow outdialing. Since DID trunks are inward only and cannot be used for outdial features, one or more AIU boards can be configured as a Loop Start or Ground Start. Both of these lines types support outdials.

If you use a Ground Start trunk with answer supervision, positive disconnect is possible. Loop Start lines typically do not provide for a positive disconnect signal; so, CINDI must detect silence if a caller hangs up without exiting from CINDI properly (i.e. by pressing [9]). For this reason, a Ground Start trunk is recommended for outdialing. The outdial port(s) can also be used for incoming calls but will not have direct mailbox access capability.

Use the following list as a guide when ordering DID telephone service from the local telephone company: DID trunks - one per inbound, direct access port. Do not include outdial ports. DID trunks must be two-wire with answer supervision. Wink start, immediate start, or delay dial signalling is available. The AIU board will accept DTMF or dial pulse digits.

DID numbers - one per voice mailbox. Normally DID numbers are allocated in groups of 100 numbers, but Central Offices will vary allocations. The number of digits passed must be equal to the mailbox length.

Ground Start or Loop Start Trunks - One per outdial port. Loop Start lines may be "flat business line - 1FB." Ground Start trunks must be a two-wire trunk with answer supervision.

The DID trunks should be configured as a hunt group. All applicable DID numbers should be assigned to the DID hunt group.

Figure 3-5 shows a diagram of a DID TAS installation.

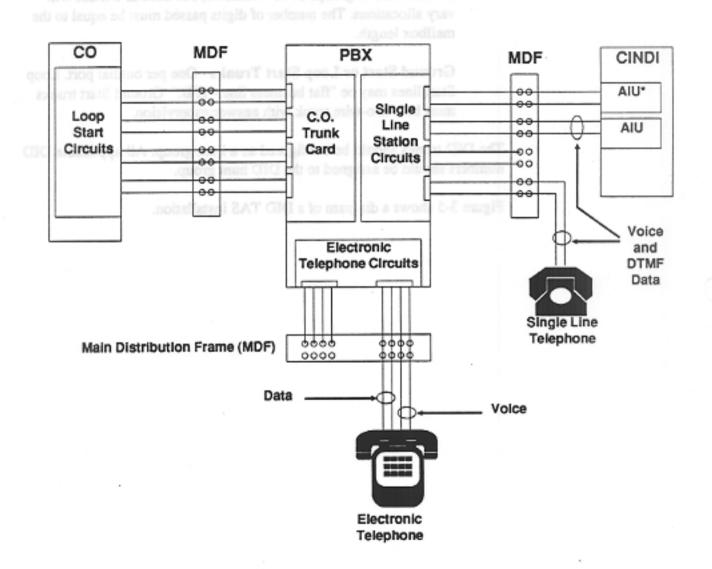


Figure 3-1. PBX System with DTMF Signalling

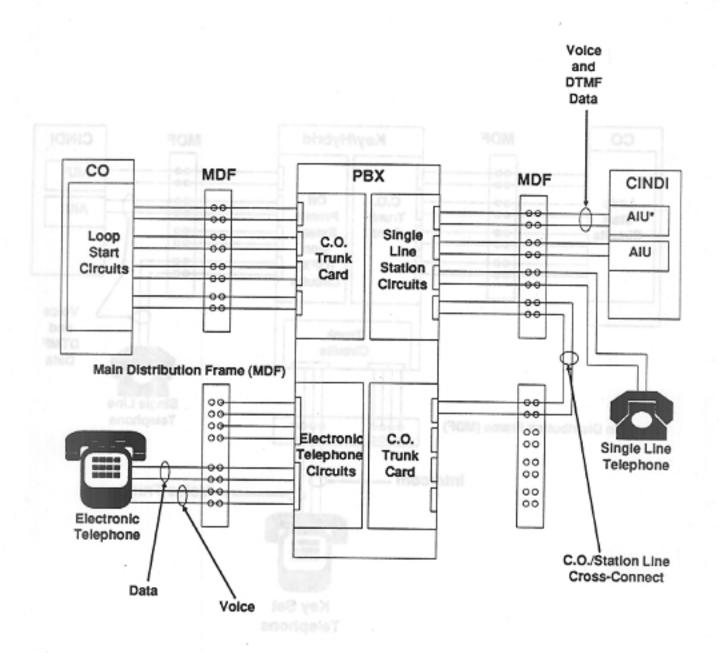


Figure 3-2. PBX System Without DTMF Signalling

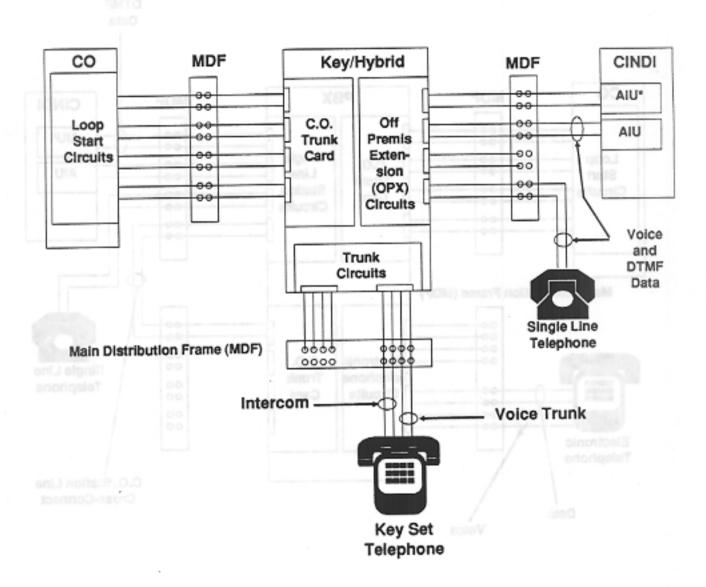


Figure 3-3. Key/Hybrid System with DTMF Signalling

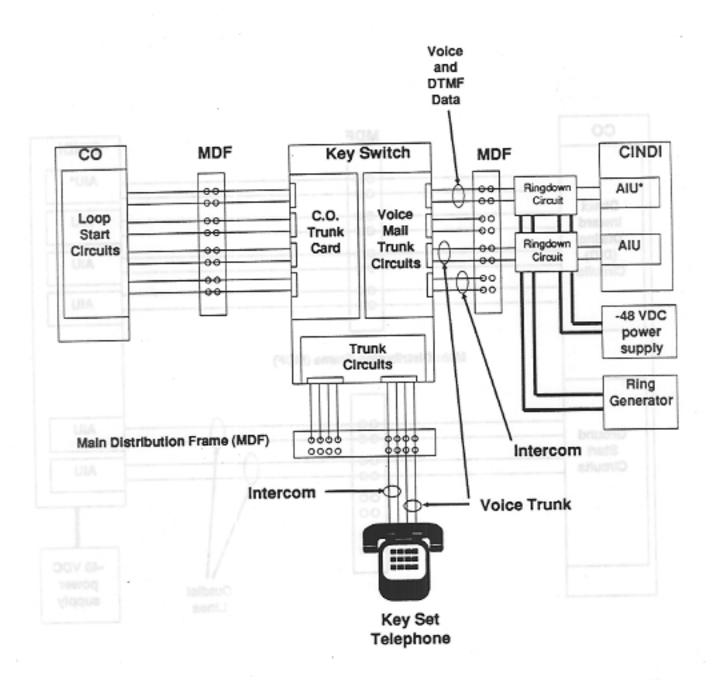


Figure 3-4. Key System with DTMF Signalling

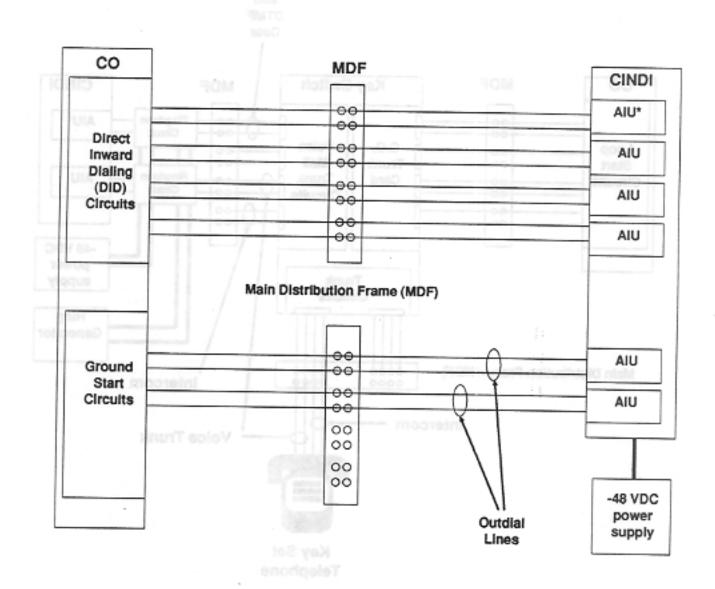


Figure 3-5. Telephone Answering Service (TAS) Installation

4 Integrations

This chapter discusses the ways in which CINDI is integrated with a PBX or Hybrid Key System. This chapter presents both telephone line integrations and serial communications (RS 232) integrations.

Although CINDI will interface with almost any PBX or Hybrid Key in order to provide a basic voice mail system, it is also possible to have CINDI and the telephone system work together in order to provide additional integration features. CINDI can be configured to provide the following integration features:

- Message Waiting Indication
- · Call Transfers To An Extension or The Operator
- · Call Forward Direct to Mailbox

CINDI's ability to perform these features depends on the telephone system and its ability to "share" information with CINDI. These telephone system characteristics vary widely.

The most common method for providing one or more integration features is by transferring required information over telephone lines. The following sections present more detail concerning each integration facture.

CINDI performs message waiting indication by:

- · going off hook;
- by sending a sequence that activates/extinguishes the message waiting indicator;
- and releasing the line.

The telephone system must allow a single line station to turn a message waiting indicator on or off at another station. If the single line can do this, CINDI can as well. Check the technical manual for the telephone system or the Single Line Station User's Guide to see if this feature is available.

Also, in the Single Line Station User's Guide, lookup the dialing sequences for activating and extinguishing message waiting on another station. You should write these sequences on the Technical Initialization Worksheet for the PBXMWI feature option (located at the back of this manual).

In order for CINDI to perform message waiting over telephone lines, CINDI must include the PBX Message Waiting Indication (PBXMWI) option.

4.2.1 Call Transfers

Individual CINDI ports can be programmed to support hookflash call transfers. The telephone station ports attached to these CINDI ports must be given a class of service that allows hookflash transfers. CINDI is programmable to provide hookflashes for any duration from 100 ms to 900 ms in 100 ms increments.

CINDI performs a standard single hookflash call transfer with the following steps:

- 1. CINDI performs a hookflash (or tap).
- CINDI monitors the line for dial tone.
- CINDI sends the programmed call transfer sequence.
- CINDI sends the extension digits dialed by the calling/transferring party.
- CINDI monitors the line for ringing.

CINDI may also be programmed to listen to the call progress tones provided by the switch and act accordingly. CINDI can recognize:

- · reorder tone (invalid extension or disconnected line)
- busy tone (the requested extension is already off hook)

· normal ringing (actually, ring-back tone)

CINDI can also be programmed to wait for the called party to answer. Instructions about how to program CINDI for call transfers is fully discussed in the *Installing/Initializing CINDI* and the *System Utilities* chapters in this manual. Once CINDI has performed the programmed call transfer, the calling party is connected and CINDI drops out of the circuit. CINDI does not attempt to conference all three parties on the line (the calling party, the called party and CINDI) in order to announce the connection.

4.2.2 Call Forward Direct to Mailbox

The Call Forward Direct to Mailbox feature allows the telephone system to provide CINDI with the correct mailbox number rather than requiring the Call Forwarded party to supply it. In order to accomplish this, the phone system needs to wait for CINDI to answer before providing the appropriate mailbox number. Any mailbox number presented to CINDI before CINDI is ready to accept the entry will be lost.

You can use several methods in order to install Call Forward Direct to Mailbox on different telephone systems. Some systems now support the feature directly; they wait for loop current flow and then pass the DTMF tones which tell CINDI the extension of the calling phone. Installing a CINDI on these systems is simply a matter of giving the single line ports dedicated to CINDI a class of service of "Voice Mail."

Telephone Systems that do not directly support the Call Forward Direct to Mailbox feature may be configured to provide this service using Call Forward off Premise, Speed Dials, or Least Cost Routing Tables. Each of these are discussed in the following sections.

Call Forward Off Premise (or External)

One method for providing a programmable pause in the middle of a stored series of numbers involves the use of Call Forward Off Premise (or External). Systems which have this feature allow extensions served by the switch to have their phone call forwarded to phone numbers not on the same switch system. This entails dialing "out" of the telephone system and accessing the outside, external dial tone. This method usually includes a pause feature so that the switch will wait for external dial tone before continuing to dial the rest of the number.

This feature typically works only when the call is directed to a trunk port (e.g. dialing "9" to get an outside line) One way to use this feature is to connect a trunk port to a CINDI port (e.g. a CO trunk interface). When you do this, you will be able to forward the extension to a particular CINDI mailbox

via the dedicated trunk port. This results in the loss of call transfer capability, as most trunk ports do not support this feature. Instead of connecting a dedicated trunk directly to a CINDI port, you may also create a system of "Cross-Connected" trunks to single line station ports.

Another Call Forward Off Premise method to obtain direct to mailbox service is with the use of Direct Inward Dialing (DID) lines. The user simply call forwards his or her phone to a DID number which is pre-arranged with the Central Office to call CINDI and then access the correct mailbox. CENTREX applications which do not use serial communications to the Central Office typically use this method.

Speed Dialing

Another method to provide Call Forward Direct To Mailbox is to create speed dials that access CINDI. Users can program a speed dial that calls CINDI, pauses while the system answers, then enters the user's personal mailbox number. The user can then call forward his or her phone to this speed dial number (just as if it were a real extension number). Incoming callers will be forwarded directly to the user's mailbox for message recording.

On some systems, pause is only available if the speed dial accesses an outside trunk port. In this case, you should use a CO-to-CINDI or CO-crossconnect circuit.

Least Cost Routing and Automatic Routing Selection

It may be possible for CINDI to perform the Call Forward Direct to Mailbox feature via Least Cost Routing (LCR) or Automatic Route Selection (ARS) if one is available on the PBX.

With the ARS or LCR features, particular trunk groups can be configured to perform a specific dialing function, such as calling up a remote station. Typically, once a trunk group is selected, the LCR or ARS table will "take over" and insert a pre-programmed series of numbers and perform required timing halts. Once complete, any remaining numbers in the original dial stream (e.g. if a speed dial were executing) will continue.

To activate Call Forward Direct to Mailbox, a speed dial may be set up to first dial the trunk group assigned to the cross-connect for CINDI. The ARS assigned to that trunk group "kicks in" and dials the hunt group assigned to CINDI, then waits three seconds for CINDI to answer. Once the ARS is complete, control returns to the original speed dial number which would contain the mailbox number to be accessed. The calling party hears the mailbox owner's personal greeting.

The integrations discussed above are integrations through a telephone interface. In some cases, the telephone system cannot "share" information with CINDI via a telephone interface.

Instead, a serial integration may be used. With a serial integration, information about a call is sent over an RS-232C cable directly into CINDI.

Serial integrations offer the three primary features (Message Waiting, Call Transfers, and Call Foward Direct to Mailbox). In addition, enhanced features such as direct access to mailbox are also available.

4.3.1 Connecting A Serial Integration To CINDI

CINDI supports several serial integrations. For each integration, you will have to install the datacom cable. It is shipped separately with the optional software package. To do this:

- Remove CINDI's cover.
- Unscrew the Port 1 "datacom plug" from the cabinet. Keep the screws because you will use them to install the datacom cable.

You will notice that next to this plug is another cable. This cable is installed in the same manner that the datacom cable is installed. The two should look identical when you are finished.

- Attach the 10-pin dual-row connector to the CPU board. The plastic hooks should lock down over the plug.
- String the cable over to the Port 1 slot in the back of the cabinet.
 Insert the RS232C D-SUB connector through the hole and secure it with the screws removed from the plug.

Specific information about connecting each integration system to CINDI is discussed in the following sections.

or ARS table will "take over"

4.3.2 Northern Telecom SL-1 IVMS Integration

CINDI communicates with the SL-1 PBX system over a standard RS-232C serial interface. CINDI must be set to communicate at 1200 baud by setting the switch for Port 1 on the CPU card. The factory setting for Port 1 is set to 1200 baud. Do not change this setting.

The SDI card within the SL-1 PBX must be set to:

- 8-bit character
- no parity
- 1 stop bit
- · auto-linefeed off
- full duplex

Specific information regarding the SL-1 PBX should be obtained through Northern Telecom.

TO COMPLY WITH FCC PART 15, SUBPART J, YOU MUST SUPPLY A DOUBLE-SHIELDED RS-232C CABLE WITH METAL CONNECTOR HOODS. IN ORDER TO GUARANTEE ACCURATE TRANSMISSION OF DATA, THIS CABLE SHOULD NOT EXCEED 50 FEET IN LENGTH.

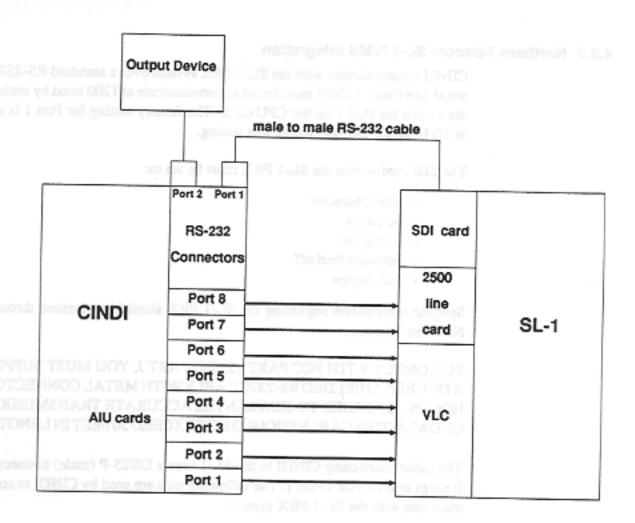
The cable connecting CINDI to the SL-1 uses a DB25-P (male) connector. It plugs into CINDI's Port 1. The following pins are used by CINDI to communicate with the SL-1 PBX system:

SL-1		CINDI	
Pin	Description	Pin	Descript ion
1	Frame Ground	orta maleye an'il	Frame Ground
2	Transmit Data	2	Transmit Data
3	Receive Data	/ID 0 3	Receive Data
7	Signal Ground	acall 7	Signal Ground
20	Data Terminal Ready	2.2 CIN	Clear to Send

Please note that pin connections are reflected above (i.e. SL-1 pin 1 connects with CINDI pin 1, SL-1 pin 2 connects with CINDI pin 2, etc).

Use the diagram shown below as an example for how to connect CINDI to the SL-1. Since IVMS lines (lines coming from the VLC) do not support out-dials, you may want to connect some lines to the 2500 line card for this purpose. Although lines connected to the 2500 line card can be used for outdials, they cannot be used for any of the IVMS functions.

2500 line card. The c



The system shown in this diagram supports:

- 6 CINDI ports (1-6) connected to the VLC card for SL-1 IVMS lines.
- 2 CINDI ports (7 and 8) connected to the 2500 line card. These are non-IVMS lines to be used for outdials.

Note: On IVMS lines (VLC), connect only the tip and ring (voice pair). DO NOT connect the data pair.

Clear to Send

4.3.3 Fujitsu Focus 960 Application Processor Interface (API) Integration

CINDI communicates with the Fujitsu Focus 960 PBX system over a standard RS-232C serial interface. CINDI must be set to communicate at 1200 baud by setting the switch for Port 1 on the CPU card. The factory setting for Port 1 is set to 1200 baud. Do not change this setting. The serial interface card within the Fujitsu Focus PBX must be set to:.

- 8-bit character
- odd or even parity
- 1 stop bit
- · auto-linefeed off
- full duplex

The parity setting for the Focus 960 PBX parity must match CINDI's parity setting. Parity is defined during the SETUP Command for the Fujitsu Focus integration.

Specific information regarding the Fujitsu Focus 960 PBX should be obtained through Fujitsu.

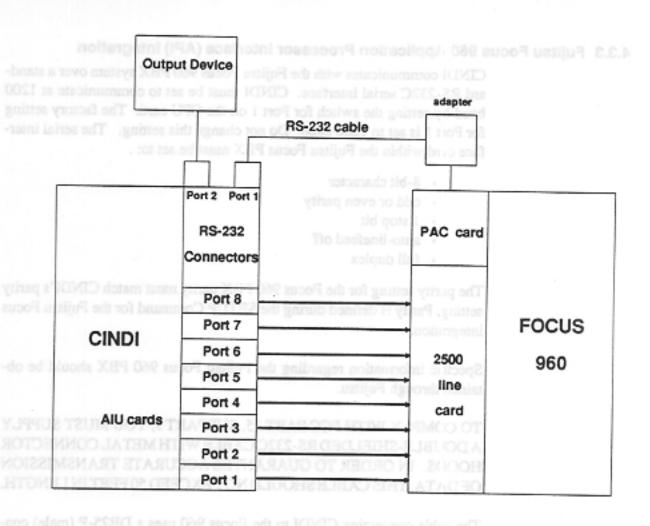
TO COMPLY WITH FCC PART 15, SUBPART J, YOU MUST SUPPLY A DOUBLE-SHIELDED RS-232C CABLE WITH METAL CONNECTOR HOODS. IN ORDER TO GUARANTEE ACCURATE TRANSMISSION OF DATA, THIS CABLE SHOULD NOT EXCEED 50 FEET IN LENGTH.

The cable connecting CINDI to the Focus 960 uses a DB25-P (male) connector. It plugs into CINDI's Port 1. The cable is connected to the AMJ adapter (P/N 403107) using the "printer" setting of the Focus 960 PBX. The following pins are used by CINDI to communicate with the Focus 960 PBX system:

960		CINI	Ν	
Pin	Description	Pin	Descr	iption
1	Frame Ground		1	Frame Ground
2	Transmit Data		2	Transmit Data
3	Receive Data		3	Receive Data
7	Signal Ground		7	Signal Ground
20	Data Terminal Ready		5	Clear to Send

Please note that pin connections are reflected above (i.e. 960 pin 1 connects with CINDI pin 1, 960 pin 2 connects with CINDI pin 2, etc).

The diagram below is an example presenting how to connect CINDI to the Focus 960:



The output device indicated may be a terminal or a printer.

4.3.4 NEC NEAX 2400 Message Center (MCI) Integration

CINDI communicates with the NEC NEAX 2400 PBX system over a standard RS-232C serial interface. CINDI must be set to communicate at 1200 baud by setting the switch for Port 1 on the CPU card. The factory setting for Port 1 is set to 1200 baud. Do not change this setting.

The serial interface card within the NEAX 2400 PBX must be set to:

- · 8-bit character
- 1 stop bit
- · auto-linefeed off
- full duplex

The parity setting for the NEAX 2400 PBX parity must match CINDI's parity setting. Parity is defined during the SETUP Command for the NEC integration.

Specific information regarding the NEAX 2400 PBX should be obtained through NEC.

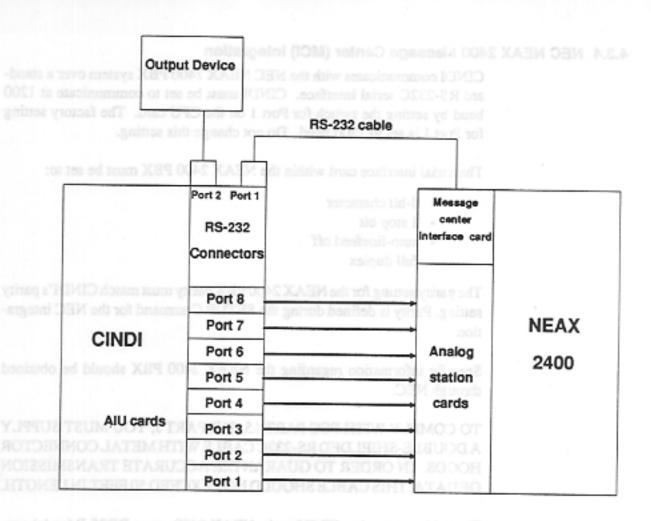
TO COMPLY WITH FCC PART 15, SUBPART J, YOU MUST SUPPLY A DOUBLE-SHIELDED RS-232C CABLE WITH METAL CONNECTOR HOODS. IN ORDER TO GUARANTEE ACCURATE TRANSMISSION OF DATA, THIS CABLE SHOULD NOT EXCEED 50 FEET IN LENGTH.

The cable connecting CINDI to the NEAX 2400 uses a DB25-P (male) connector. It plugs into CINDI's Port 1. The following pins are used by CINDI to communicate with the NEAX 2400:

NEAX		CINDI	
Pin	Description	Pin	Description
1	Frame Ground	1	Frame Ground
2	Transmit Data	3	Receive Data
3	Receive Data	2	Transmit Data
6	Data Set Ready	5	Clear to Send
7	Signal Ground	7	Signal Ground

Please note that pin connections are reflected above (i.e. 2400 pin 1 connects with CINDI pin 1, 2400 pin 2 connects with CINDI pin 3, etc).

The diagram shown below is an example presenting how to connect CINDI to the NEAX 2400:



The output device indicated may be a terminal or a printer.

Receive Deta

5 Hardware Installation

This chapter discusses CINDI hardware installation. Initialization of CINDI's software as well as the installation of optional products is discussed in the Technical Initialization chapter of this manual.

sius per hour. A henvily used 880-D CINE 1 produces between 650 to 800

Before you install CINDI, make sure:

- · the site meets CINDI's power and grounding requirements
- the site provides appropriate environmental conditions
- the CINDI unit has direct access to the telephone system's support equipment.

Each of these items is discussed in the sections below.

5.1.1 Power Requirements

CINDI is rated at 120 volts, alternating current, 60 Hz, 2.5 amps and 300 watts. CINDI should be located near a 110 VAC three pronged power receptacle. Although it is not required, it is recommended that CINDI be operated on a dedicated circuit.

If the ground in the power receptacle is a poor one (or non-existent) you will want to bring in an additional grounding source and connect it to the frame on the CINDI unit. Be sure to also ground all additional related support equipment such as additional power supplies, and trunk ports. These conditions tend to be more prevalent in Florida and Texas.

If the site is in an area of frequent and severe thunder storms, you should have surge protection. If the area experiences frequent brown-outs or black-outs and the organization needs CINDI to provide uninterrupted services (especially for emergency service), a UPS is recommended. CINDI only draws a peak amperage of less than two Amps (250 Watts).

5.1.2 Environmental Conditions

CINDI is rated for operation in an ambient temperature of 10 to 45 degrees Celsius and a thermal shock of a temperature change of up to 10 degrees Celsius per hour. A heavily used 880-D CINDI produces between 650 to 800 BTU of heat per hour.]

The system needs the relative humidity to be between 10% and 80%, noncondensing. CINDI operates under atmospheric pressures from 200 feet below sea level to 7000 feet above. For best continued operation, CINDI should be operated under the same conditions as is a telephone system: low heat and moisture as well as minimal vibration.

5.1.3 CINDI's Location

Make sure that CINDI is located so that CINDI's lines can be directly connected to the Main Distribution Frame (MDF) from the resident telephone system. Voice quality and DTMF detection operate best over lines which ensure the best possible connections.

Additionally, make sure CINDI is located in a safe, secure location and that access to the serial communications port is controlled.

The sections below discuss how you install a CINDI. Read through each section, in order, before proceeding.

5.2.1 Unpack CINDI

Unpack the CINDI unit and place it in the appropriate location. Make sure the location meets the site preparation requirements described above.

5.2.2 Inspecting CINDI

Inspect the exterior of CINDI's cabinet for any signs of damage after the unit is removed form the carton. Remove the 9 Phillips screws which hold the cover in place. Remove the cover and inspect the interior of the unit:

- Remove any packing material from the interior.
- b. Check that all boards are firmly seated in their slots.
- Check that no boards are rubbing against each other.
- d. Check that all cables are firmly seated.
- e. Check the power connectors.

5.2.3 Unlock the Hard Disk Drive (if applicable)

All Model "A" and some older Model "B" CINDI units are equipped with hard disk drives with mechanical shipping locks. A red slip of paper should be taped to the disk drive (inside the CINDI unit) if the model has the lock.

The locking handle is a two-inch long piece of metal which sticks out of the disk drive just above the power plug. This must be fully inserted into the drive in order to operate the CINDI unit properly. Remove the red slip of paper from within the CINDI unit and discard.

5.2.4 Remove the Paper Spacer from Microdiskette Drive

To prevent damage to the diskette-reading head inside of the micro-diskette drive, a cardboard insert is placed in the unit when shipped from the factory. Press the black release button on the outside, front face of the drive to eject this piece of cardboard. Since you won't need to use it again (unless the floppy diskette drive is shipped back to the factory), remove the insert from the installation site.

5.2.5 Mount the RJ 11C or RJ 21 Blocks

Count the number of AIU cards in CINDI to determine the number of ports. For each port, mount one RJ 11C or RJ 21 block in a location close to CINDI, preferably on the wall. Mark each block with its telephone number or extension number. RJ11C's are the modular plug/sockets found on telephones. RJ

21's are "punch downs" found on many Main Distribution Frames (MDF).
Please note, you may also dedicate a separate line for the DIU modem port.

Install modular cords between the RJ blocks and the RJ connectors on the AIU boards. Be sure to mark each cord on both ends with the number of its port. You can run the modular cords through either of the two grommets located at the back of CINDI's cabinet.

5.2.6 Install the Power Cord

Verify that CINDI's power is switched to OFF then plug the power cord into the CINDI unit. Plug the power cord into the AC wall outlet.

5.2.7 Connecting Telephone Lines to CINDI

Before you actually connect CINDI ports to the switch, be sure you understand the different kinds of telephone system and central office interfaces available with CINDI. Refer to the Telephone Interface chapter in this manual for a discussion about telephone system and Central Office interfaces.

Once you have installed the appropriate interface in the telephone system:

- Connect the PBX, Hybrid or CO ports assigned to CINDI to the MDF.
- Wire the CINDI RJ 11 or RJ 21 blocks to the MDF.
- Cross connect the PBX or CO terminations to the CINDI terminations (if needed).

Although you will probably group all lines leading into CINDI into a hunt group, be sure to record the extension number for each CINDI port. This makes troubleshooting port problems much easier. Be sure to use proper punch-down procedures with new lines and equipment in order to avoid system-generated noise problems.

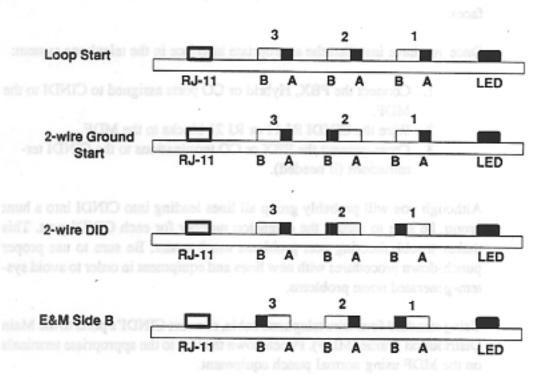
Using standard four wire telephone cable, connect CINDI's ports to the Main Distribution Frame (MDF). Punch down the line to the appropriate terminals on the MDF using normal punch equipment.

Loop start, ground start and two wire DID will only need ring and tip connected. E&M signalling will use four wires. When you connect the wires in this manner, a technician can easily clip on a but-set for line quality monitoring and troubleshooting. Run the lines through either of the grommets in the rear of the unit and connect the other end of the line to the appropriate jack with RJ-11C connectors.

5.2.8 Set The Correct AIU Switch Settings

All AIU] boards are factory set for loop start signalling (i.e. all three switches are set to the "A" position). The AIU Switch Settings diagram shows the AIU settings for: 2-wire ground start lines, 2-wire DID lines and E&M side B.

Configuration Switches



5.2.9 Install The -48 Volt Power Supply (optional).

If the site is using an application that requires the -48 volt supply (e.g. ground start or two wire DID) and the CINDI unit is not equipped with a DIU board, you will need to plug in the additional supply into the appropriately marked leads on the motherboard.

In addition to the DIU, Genesis supplies a TELLABS 8001 regulated power supply to support the -48 volt requirements. It provides a maximum of 80 watts and an input range of 105 VAC to 130 VAC at 60 Hertz (Hz). If you prefer, you can use a different power supply.

5.2.10Connecting a Terminal to CINDI

A terminal must be connected to CINDI to initialize certain parameters that define the environment in which CINDI will operate. Once CINDI is operating, the terminal can be used to display important statistical information. This information can also be sent to a printer.

CINDI communicates with a printer or terminal over a standard RS232C serial interface. CINDI can be set to communicate at 300, 1200, 2400, or 9600 baud by setting the switch for Port 2 on the CPU card (this is described in a following section).

The terminal or printer connected to CINDI must be set for:

- 8-bit character
- · no parity
- 1 stop bit
- · auto-linefeed off
- full duplex

The following sub-sections provide general information on connecting a terminal or printer to CINDI. For more detailed information, please refer to the end of this chapter for additional RS232 information pertaining to printers, terminals, and modems. Information regarding a specific output device should be obtained through the device's manufacturer.

RS232C Interface Cable

To comply with FCC Part 15, Subpart J, you must supply a doubleshielded RS232C cable with metal connector hoods. In order to guarantee accurate transmission of data, this cable should not exceed 50 feet in length.

The cable connecting CINDI to the printer or terminal uses a DB25-P (male) connector. It plugs into CINDI's Port 2. Most terminals require that only

pins 2, 3, and 7 be connected. Normally, pins 2 and 3 are crossed for connections to terminals and printers. However, some devices might require signals on other pins. The following pins are used by CINDI to communicate with the output device.

Pin	Description	Direction
1	Frame Ground	a its bas and
2	Transmit Data	From CINDI
3	Receive Data	To CINDI
4	Request to Send	To CINDI
5	Clear to Send	From CINDI
7	Signal Ground	imeTh nathe

Baud Rate

The factory setting for Port 2 is 300 baud. The following steps are necessary to change this baud rate on CINDI:

- Remove CINDI's cover (you do not need to power CINDI off first).
- Locate the CPU card (it is the one with the two or three RS232C ribbon cables attached).
- Locate the Baud Rate Switch #2. It is the highest of the two switches. If you are positioned at the back of the unit, it is the right jumper block.
- Move the jumper from its current setting to the setting you require.
- Replace CINDI's cover.

5.2.11 Power-on CINDI

Once the terminal is attached and properly configured, power-on the CINDI unit by pushing the power button on the front pannel to the on, or "1" position. On your terminal screen you should see a normal voice mail start-up sequence. Each card in the unit will be tested and the results displayed on the terminal. Once complete, the system will verify the hard disk.

After you are notified that "Housekeeping completed", voice mail is operational. If your terminal screen is blank, some part of the communication "handshake" is incorrect. Please refer to the sections on RS232 communications below.

5.2.12Technical Initialization

Once you have installed all CINDI hardware components, you are ready to move on to the Technical Initialization in which you configure CINDI's parameters for the specific site and install optional software if necessary. The Technical Initialization chapter in this manual presents appropriate information and instructions.



RS232 cables normally have 25 pins; however, as few as three may be ac-

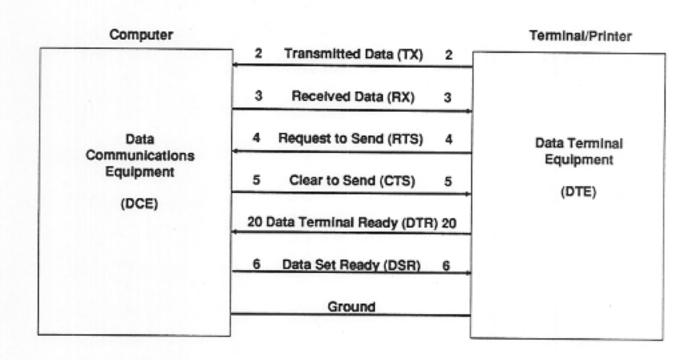
When attaching any device, verify that its i and rate senings match those of

CINDI contains two RS232-C ports for serial data transmission. Port 1 (labeled "INTEGRATION") is used in serial integrations and with the DART optional feature. Port 2 (nearest the grommets, labeled "TER-MINAL/PRINTER/MODEM" is used for system initialization, diagnostics, and management requirements such as statistical report output.

Under the RS232 standard, data equipment has been divided into two categories: Data Communication Equipment (DCE) and Data Terminal Equipment (DTE). Most computers and MODEMs are configured as DCE; terminals and printers are configured as DTE. CINDI is configured as DTE.

RS232 cables normally have 25 pins; however, as few as three may be actually required. The pins most often used are shown in Figure 1. DTE equipment transmits data on pin 2 and receives on pin 3. DCE equipment transmits data on pin 3 and receives on pin 2.

Cables attach to CINDI's RS232 ports using DB-25P (male) connectors. When attaching any device, verify that its baud rate settings match those of CINDI.



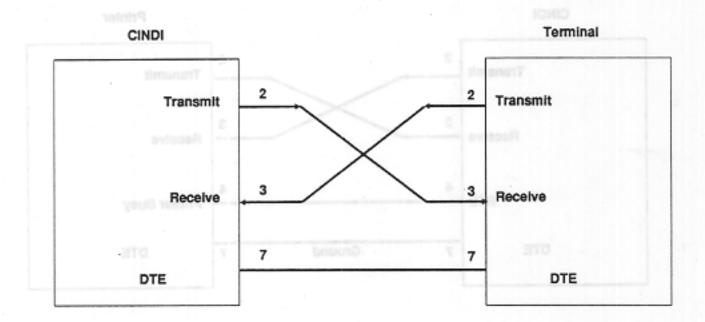
5.3.1 RS232 Terminal Communications

When attaching a terminal to either of CINDI's RS232 ports, CINDI requires that only pins 2,3, and 7 be connected. Most terminals will not require that any additional pins are connected.

However, because CINDI is DTE, in order to communicate with a terminal or other DTE device, pins 2 and 3 must be "swapped" in the cable so that both CINDI and the terminal will not transmit on the same line. An RS232 cable that swaps pins 2 and 3 is called a DTE-DTE cable. This type of cable is illustrated in Figure 2.

RS 232 Communications

Terminal Interface



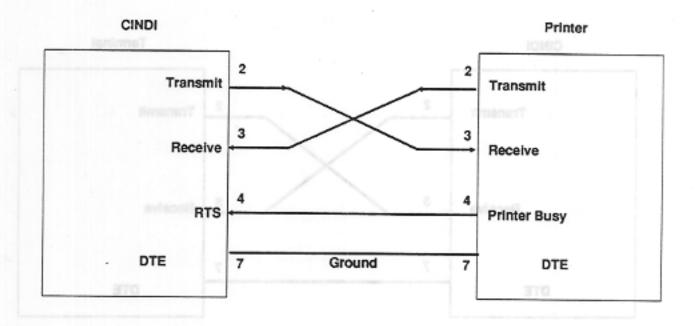
5.3.2 RS232 Printer Communications

Printers should be connected only to CINDI's RS232 Port 2. As with terminals, a swapped cable is also needed for printer interfaces.

Some printers will require connecting pin 4 (RTS) on CINDI to the printer. Figure 3 below shows that pin 4 connects to the Printer Busy output from the printer. This connection will indicate when the printer is busy, and CINDI will stop transmitting data until the printer is not busy. Refer to the printer manufacturer's operating manual to determine the correct pin number.

RS 232 Communications

Printer Interface



5.3.3 RS232 Communications with an External Modem

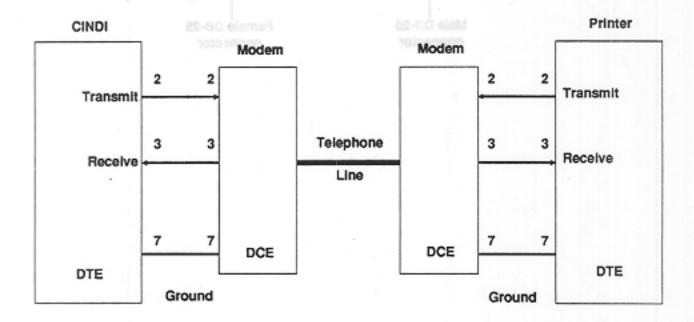
CINDI can also communicate with an external MODEM. With a modem attached to CINDI's RS232 Port 2, statistical reports and diagnostic programs can be performed from a remote location.

Figure 4 shows the connections necessary for internal modem operation with a terminal. When connecting a printer refer to Figure 3 as well. Modems transmit on pin 3 and receive on pin 2. Therefore, "straight-through" cables are needed (a DCE-DTE cable) on each end.

The normal operation will only require that pins 2, 3, and 7 be connected; however, some modems need hardware handshake signalling. Illustrations of both cases are shown in the examples that follow. In general, the modem which makes the call should be configured for "originate mode" and the modem which answers the call should be configured for "auto answer mode."

Modem Communications

With an External Modern

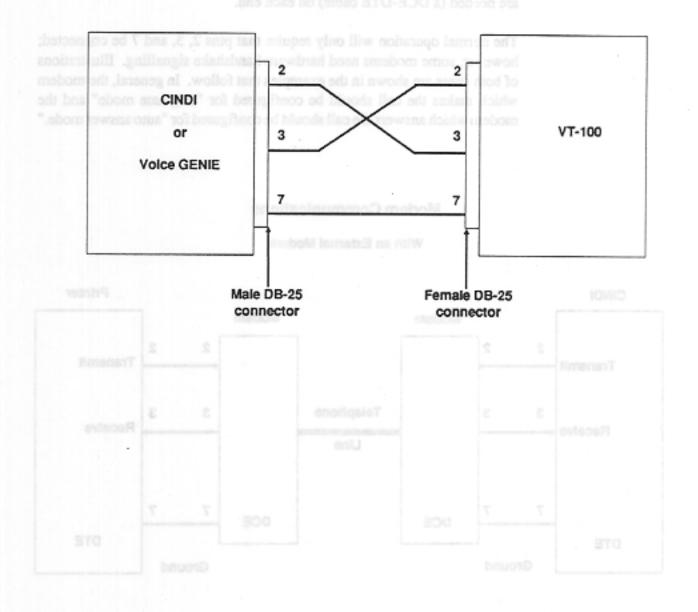


3-13

5.3.4 VT-100 Terminal

The VT-100 or equivalent terminal can be connected as shown in the figure below, with only pins 2, 3 and 7 required to be connected.

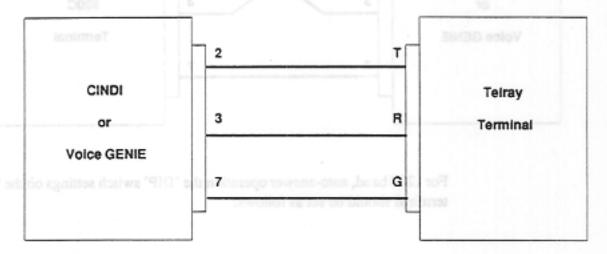
The interface cable will require a male DB-25 connector on the voice mail end and a female DB-25 connector on the terminal end. The Set-Up procedure for the VT-100 must also be as follows: EIA port, Data Leads Only; 8 bits, no parity; 1 stop bit; no local echo; XOFF at 64.



5.3.5 Telray Terminal

The Telray is a DEC VT220 compatable terminal and can be used with the DART feature. The Telray has two seperate RS-232C channels and can be 'toggled' between two seperate inputs. This toggle resembles a built-in RS-232C 'A-B' Switch. Install the RS-232C cable from CINDI to either of the two ports.

CINDI can communicate with the Telray at either 300, 1200, 2400 or 9600 baud. The RS-232C cable should be configured as below.



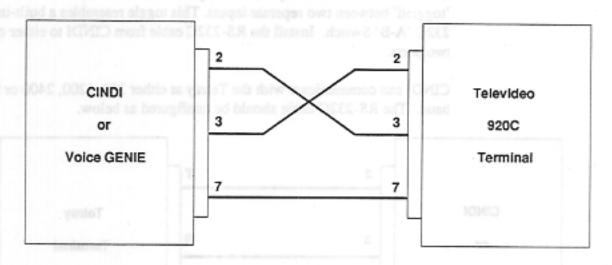
Set up the Telray Terminal as follows:

	EC	MS	AC	CF	DRC	BTF
1	58	-	OFF	9600	CHART	PAGE
2	JUMP	1	0	ODD	OFF	CURSOR
3	6CPS	80	0	OFF	ON	GUARDED DATA
4	ON	ON	OFF	FULL	OFF	OFF
5	12CPS	OFF	TRANSP	default	ON	OFF
6	OFF	ON	60HZ	default	OFF	OFF
7	0	STOP	ON	default	HIGH	OFF
8	ON	80	TELRAY	default		OFF
9	127	24				OFF
10	OFF	2	ANSI			
11	NORMAL					

"TT" and "VIP" are all set to default values. With the above settings, the Telray will properly display the DART Dispatcher's Screen.

5.3.6 TELEVIDEO 920C Terminal

CINDI can communicate with the Televideo 920C at either 300, 1200, 2400 or 9600 baud. The RS-232C cable should be configured as below.



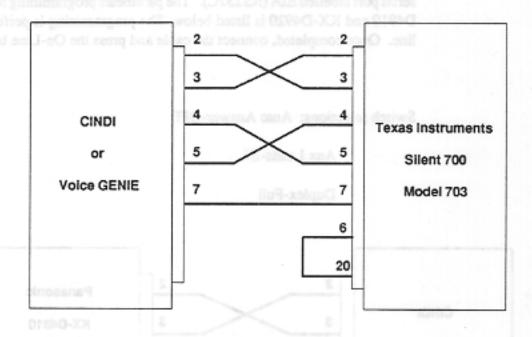
For 1200 baud, auto-answer operation the 'DIP' switch settings on the 920C terminal should be set as follows:

Switch 1	Switch 2		
(ollows:	a Tolany Terminal as		
1 UP/	UP/		
2 UP/	/DOWN		
3 UP/	UP/		
4 UP/	UP/		
5 /DOWN	UP/		
6 UP/	/DOWN		
7 UP/	UP/		
8 UP/	UP/		
9 UP/	UP or DOWN		
10 UP/	/DOWN		

GUARDED DATA

5.3.7 TEXAS INSTRUMENTS Silent 700 Terminal, Model 703

CINDI can communicate directly with the Silent 700 at either 300, 1200, 2400 or 9600 baud. The Silent 700 incorporates a built-in 300 baud modem which allows for remote hook-up. When using the modem, CINDI and the Silent 700 must communicate at 300 baud only. For direct connection the RS-232C cable should be configured as below. Please note that the cable is not reversable.



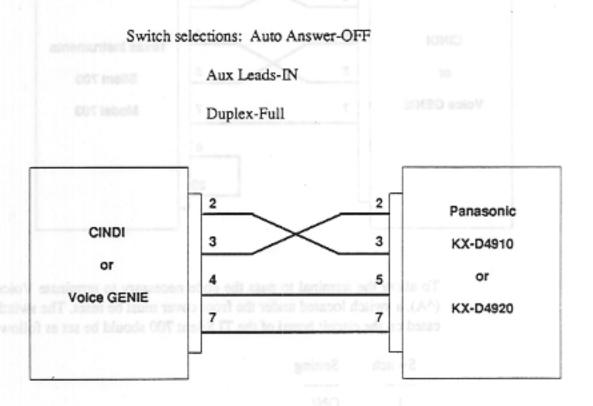
To allow the terminal to pass the code necessary to terminate Voice Mail (^A), a switch located under the front cover must be reset. The switches located on the circuit board of the TI Silent 700 should be set as follows:

Switch	Setting
1	ON/
2	/OFF
3	/OFF

To program the terminal, use the default setup and set the "Local" switch to "OFF".

5.3.8 PANASONIC KX-D4910 Printer/Terminal

The Panasonic KX-D4910 and KX-D4920 printer/terminal interfaces are shown below. The interface cable is a DTE-DTE cable with an additional signal connection. Pin 4 (RTS) on CINDI should be connected to pin 5 (CTS) on the Panasonic printer. The DB-25P connector must be inserted in the serial port labelled EIA (RS232C). The parameter programming for the KX-D4910 and KX-D4920 is listed below. The programming is performed off-line. Once completed, connect the cable and press the On-Line button.



KX-D4910 Printer/Terminal Parameter Setup

Press the "CMD" key.

?(Param/Dial,logon,abm/Test)=P PARAMETER ?(List/Change/Default)=L Parameter

- 1: Baud rate (110/300/600/1200/2400/4800/9600): 1200
- 2: Word length (7/8): 8BIT
- 3: Parity (E/O/M/S): MARK
- 4: Print error symbol (Y/N): NO
- 5: LF on receiving "CR" (Y/N): NO
- 6: CR on receiving "LF" (Y/N): NO
- 7: Transmit "CR"+"LF" on RETURN (Y/N): NO
- 8: Hot zone alert (Y/N): NO
- 9: Print control characters (Y/N): NO
- 10: Ring detect counter (2-9): 2
- 11: Auto line off sequence (None/Eot/Dle+eot): NONE
- 12: EIA busy signal (H/L): LOW
- 13: Transmit XON/XOFF busy code (Y/N): NO

KX-D4920 Printer/Terminal Parameter Setup

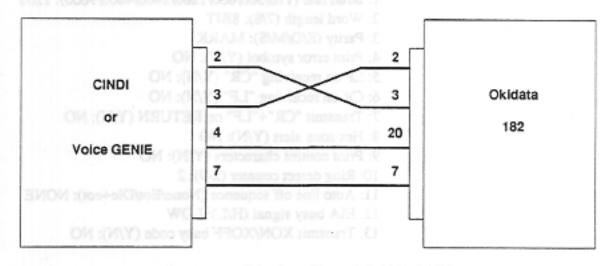
Press the "CMD" key.

Parameter listing...

1. Baud rate:: 1200
2. Word length:: 8BIT
3. Stop bits:: 1
4. Parity:: MARK
5. LF on receiving "CR": NO
6. CR on receiving "LF":: NO
7. Transmit "CR" + "LF": NO
8. Detect XON/XOFF busy code:: NO
9. Transmit XON/XOFF busy code: YES
10. Print error symbol: NO
11. Hot zone alert:: NO
12. Word wrapping: NO
13. Replace TAB with SPACE: YES
14. Print control characters: NO
15. Ring detect counter:: 2
16. Auto line off sequence: NONE
17. ABM auto transmission: NO
18. Ignore DCD signal of RS232-C: YES
19. Busy signal level of RS232-C:: LOW

5.3.9 OKIDATA Microline 182 Printer

The OKIDATA 182 printer interface is shown below. The interface cable is a DTE-DTE cable with an additional signal connection. Pin 4 (RTS) on CINDI should be connected to pin 20 (DTR) on the OKIDATA printer. The switch settings are shown below for the OKIDATA 182 with and without the Super Speed Serial interface.



Without Super Speed Interface:

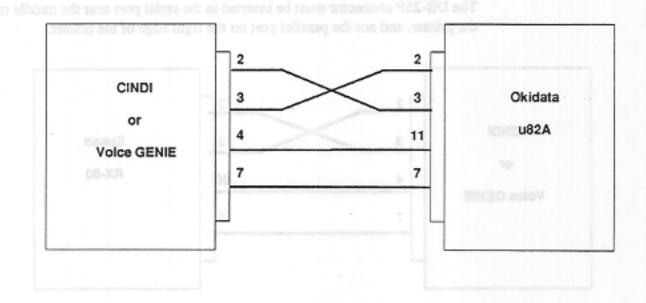
SW1	
1 OFF	5 NOT USED
2 OFF	6 OFF
3 OFF	7 OFF
4 ON	8 NOT USED

With Super Speed Interface:

SW1	SW2	
1 ON	9 ON	
2 ON	10 ON	
3 ON	11 OFF	
4 ON	12 OFF	
5 ON	13 ON	
6 ON	14 ON	
7 ON	15 OFF	
8 ON	16 OFF	

5.3.10 OKIDATA u83A Printer

The OKIDATA u83A Dot Matrix printer interface is shown below. The interface cable is a DTE-DTE cable with an additional signal connection. Pin 4 (RTS) on CINDI should be connected to pin 11 on the printer (Supervisory Send Data).



The DIP Switch settings are:

1 OFF 5 OFF 2 OFF 6 OFF 3 OFF 7 ON 4 OFF 8 ON

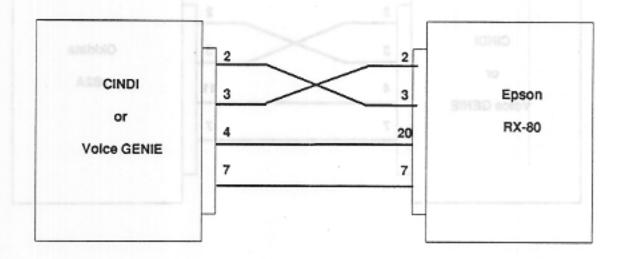
The switch settings are set for ASCII data, 8 bit data, no line feed, and serial data.

5.3.11 EPSON RX-80 Printer

The EPSON RX-80 printer interface is shown below.

The interface cable is a DTE-DTE cable with an additional signal connection. Pin 4 (RTS) on CINDI should be connected to pin 20 on the EPSON printer (Data Terminal Ready).

The DB-25P connector must be inserted in the serial port near the middle of the printer, and not the parallel port on the right edge of the printer.



The DIP Switch settings are:

SW1:	8 OFF	SW2:	6 OFF
	7 OFF		5 OFF
	6 ON		4 OFF
	5 OFF		3 OFF
	4 OFF		2 ON
	3 OFF		1 ON
	2 OFF		
	1 OFF		

These switch settings allow for ASCII data, 8 bit data, and no line feed.

5.3.12 Hayes Smartmodem 1200

The Hayes Smartmodem 1200 can be configured for both originate and auto answer modes. The following table details the necessary switch positions for both modes:

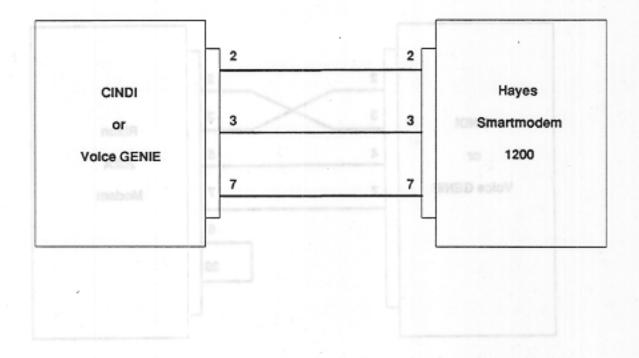
1 2 3 4 5 6 7 8 9* 10*

Originate D U D U D U D U D U D=Down

Answer D D U D U D U D U U U= Up

* Switches 9 and 10 not present on all Smartmodem 1200s.

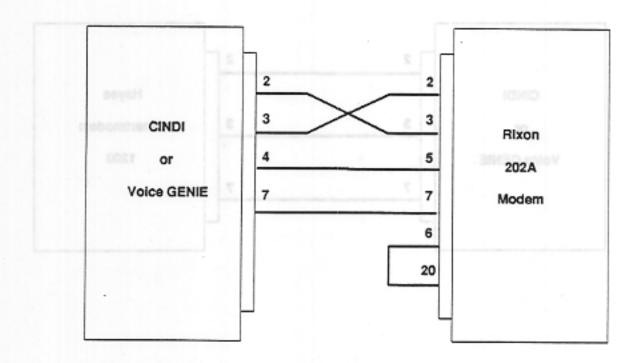
The Smartmodem will not require additional signalling other than the signals on pins 2, 3, and 7. A "straight-through" cable is needed to interface to this modem and is wired as shown in the example below.



5.3.13 RIXON 202A Modem

The RIXON 202A modem is an example of a modem interface that requires a hardware handshake. As shown below, the RIXON 202A requires an additional signal line to be connected. The 202A will output a Data Set Ready (DSR) signal on pin 6 during the communication process. The modem will expect this signal to be acknowledged on the Data Terminal Ready (DTR) signal line on pin 20. This handshake can be accomplished by connecting pins 6 and 20 together at the modem side of the cable. Therefore, when the 202A modem outputs the DSR signal, a DTR signal is immediately acknowledged.

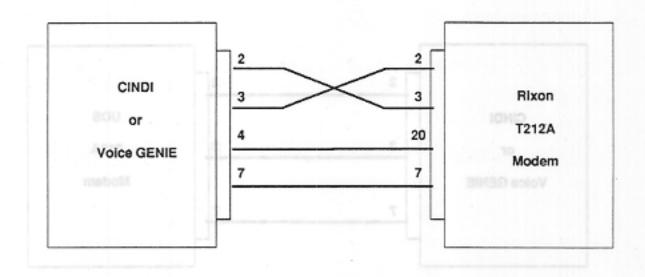
CINDI can communicate through the RIXON 202A modem at 300 baud. This modem is limited to 300 baud operation only. The RS-232C cable should be configured as below. Please note that the cable is not reversable.



5.3.14 RIXON T212A Modem

CINDI can communicate with the T212A modem at either 300 or 1200 baud.

The RS-232C cable should be configured as below.



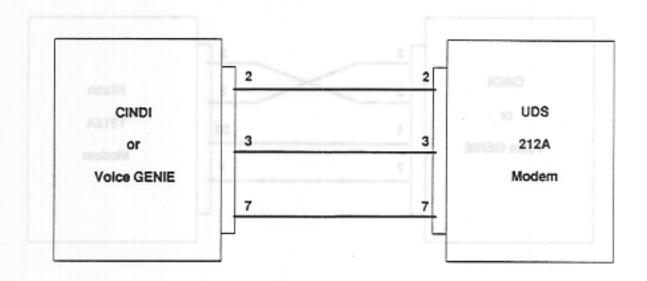
For 1200 baud, auto-answer operation the 'DIP' switch settings on the RIXON T212A Modem should be set as follows:

SW 6	SW 7	SW 8	SW 9	SW10	SW 11
Swizen-3	-G-dosiwi			*****	
1 UP	UP	UP	DOWN	UP	UP
2 UP	UP	DOWN	DOWN	DOWN	UP
3 DOWN	UP	UP	UP	UP	UP
4 UP	UP	UP	DOWN	DOWN	DOWN
5 UP					
6 UP					
7 UP					
8 UP					
9 UP					

The jumper should be in the "MB" position. The Grounding Screw Switch should be closed. The selection of 300 baud and 1200 baud rate is made via the button on the front pannel labeled, "HS" where HS stands for 1200 baud (high speed.)

5.3.15 UDS 212A Modem

CINDI can communicate with the UDS 212A Modern at either 300 or 1200 baud. The RS-232C cable should be configured as below (a 'straight-through' cable with all 25 wires will also work).



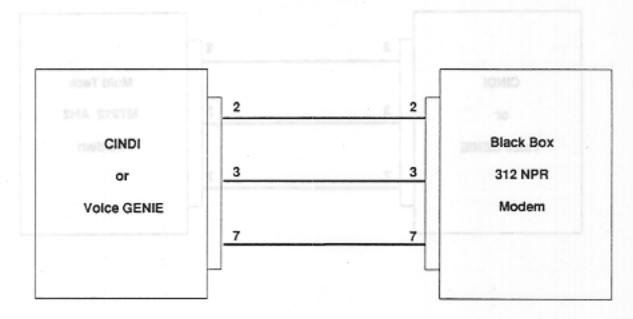
For 1200 baud auto-answer operation, the 'DIP' switch settings on the UDS 212A Modern should be set as follows:

	Switch 1	Switch 2	Switch 3
		U 9U	
1	/OFF	/OFF	ON/
2	/OFF	/OFF	/OFF
3	/OFF	/OFF	/OFF
4	ON/	/OFF	/OFF
5	ON/	/OFF	
6	ON/	/OFF	
7	ON/	/OFF	
8	/OFF	ON/	

Located on the front pannel is a switch labeled, 'DATA'. In the 'HIGH' position, the modern will operate at 1200 baud. In the 'LOW' position, it will operate at 300 baud.

5.3.16 BLACK BOX CORP. 312 NPR Modem

CINDI can communicate with the 312 NPR Modern at either 300 or 1200 baud. The RS-232C cable should be configured as below (a 'straight-through' cable with all 25 wires will also work.)

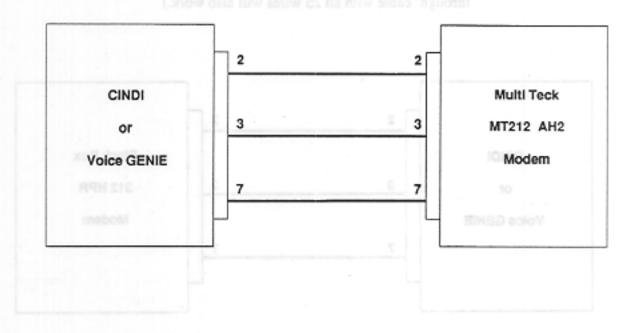


For 1200 baud auto-answer operation, the 'DIP' switch settings on the 320 NPR Modem should be set as follows:

Switch	Setting
1	ON/
2	/OFF
3	/OFF

5.3.17 MULTI TECK Multi Modern MT212 AH2 Intellegent Modern

CINDI can communicate with the MT212 at either 300 or 1200 baud. The RS-232C cable should be configured as below.



For 1200 baud, auto-answer operation the 'DIP' switch settings on the MT212 Modern should be set as follows:

	Switch 6
1	ON/
2	/OFF
3	ON/
4	/OFF
5	/OFF
6	/OFF
7	/OFF
8	ON/

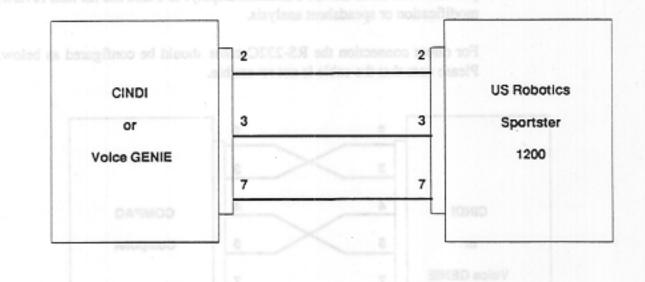
Once the MT212 is connected to a terminal, program the modem with the following command sequence:

ATQ1E0S2=128&W0<cr>

The "<cr>" stands for the Cursor Return key and "0" is zero.

5.3.18 US ROBOTICS Sportster 1200

CINDI can communicate with the Sportster 1200 Modern at either 300 or 1200 baud. The RS-232C cable should be configured as below (a 'straight-through' or 'null' cable with all 25 wires will also work.)



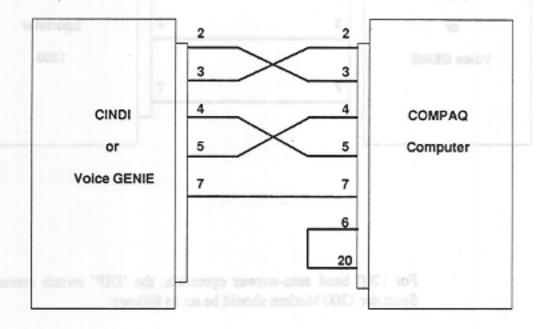
For 1200 baud auto-answer operation, the 'DIP' switch settings on the Sportster 1200 Modern should be set as follows:

Switch	Setting
1	ON/
2	/OFF
3	ON/
4	/OFF
5	/OFF
6	/OFF
7	/OFF
8	/OFF

5.3.19 COMPAQ Portable Computer

CINDI can communicate directly with the COMPAQ Computer at either 300, 1200, 2400 or 9600 baud via one of the serial ports on the computer. In order to communicate with CINDI, the COMPAQ must be running any modem communications program with 'Terminal Emulation.' If you wish, you can write all of CINDI's terminal displays to a disk file for later review, modification or speadsheet analysis.

For direct connection the RS-232C cable should be configured as below. Please note that the cable is not reversible.





CINDI II, Version 5 Documentation Update 970-0099, rev. A

Technical Reference Manual CII Software, Version 5 973-0027, rev. C 3/31/88

The following are changes to the Technical Reference Manual listed above. These changes are effective as of 6/30/88.

Please insert this document into the front of your manual; insert the attached worksheets in Appendix A. The changes listed here will be incorporated into the next released version of this manual.

Chapter 6: Technical Initialization

6.1.8.2 Sequence to Activate A Message Waiting Indicator (page 6-24)

The codes listed in the second sentence have been changed. This paragraph now reads as follows:

This sequence signals the PBX to activate a message waiting indicator. Valid codes for the sequence are:

A = wait for answer

H = hookflash

R = wait for ring

S = wait for silence

T = wait for dial tone

W = wait for one second

X = insert extension number

DTMF codes (0-9, *, #)

Since the message waiting indication feature varies from site to site, this sequence is factory-set to "none." Please note that the message waiting indicator activation sequence is normally sent only when an authorized mailbox goes from zero messages to one message. By enabling reactivation of the indicator when the mailbox is closed, this sequence will be sent again if the user exits his mailbox while any new messages remain.

6.1.8.3 Sequence to Extinguish A Message Waiting Indicator (page 6-24)

The codes listed in the last sentence of this paragraph have been changed. This paragraph now reads as follows:



CINDI II, Version 5 Documentation Update 970-0099, rev. A

Fechnical Reference Manual Cil Software, Version 5 173-0027, rev. C

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6.1.8.3 Sequence to Extinguish A Message Walting Indicator (page 6-24)

The codes hated in the last waterace of this paragraph have been changed. This paragraph now reads as follows:

Cil Documentation Update

This sequence tells the PBX to extinguish the message waiting indicator and will vary greatly from site to site, depending on the PBX system. Therefore, this sequence is factory-set to "none." Valid codes for this sequence are:

A = wait for answer

H = hookflash

R = wait for ring

S = wait for silence

T = wait for dial tone

W = wait for one second

X = insert extension number

DTMF codes (0-9, *, #)

6.1.8.7 Reactivate Message Waiting Indicator After Mailbox Is Closed (page 6-25)

This is a new paragraph and is added after paragraph 6.1.8.6, Message Waiting Diagnostic Print Outs:

This allows the message waiting indicator to be reactivated when a boxholder exits his mailbox while new messages remain in his mailbox. If the telephone switch in your system has the ability to turn off the message waiting indicator without CINDI's knowledge, reactivating the indicator should be considered. However, you should be sure that multiple message activations from CINDI will not cause any problems on the switch or the station set (for example, filling a queue that prevents other devices from accessing the indicator).

Enter "Y" on the worksheet if you want to enable this feature. The factory setting is "no".

6.1.10.10 Reactivate Message Waiting Indicator After Mailbox Is Closed (page 6-29A)

This is a new paragraph and is added after paragraph 6.1.10.9.2, Incoming Calls:

This allows the message waiting indicator to be reactivated when a boxholder exits his mailbox while new messages remain in his mailbox. If the telephone switch in your system has the ability to turn off the message waiting indicator without CINDI's knowledge, reactivating the indicator should be considered. However, you should be sure that multiple message activations from CINDI will not cause any problems on the switch or the station set (for example, filling a queue that prevents other devices from accessing the indicator). For Fujitsu switches (960 and 196), this should always be enabled.

Enter "Y" on the worksheet if you want to enable this feature. The factory setting is "no".

This sequence tells the PBX to extinguish the narsange waiting indicator and will vary greatly from site to site, depending on the PBX system. Therefore, this sequence is factory-set to "none." Valid codes for this sequence are:

A - wait for answer

dealblood = I

R = welt for ring

S = wait for silence

T - wait for dial tone

W = wait for one second

X = insert extension number

D'I'MF codes (0.9, *, #)

6.1.8.7 Reactivate Message Waiting Indicator After Malibox Is Closed (page 6-25) This is a new paragraph and is added after paragraph 6.1.8.6, Message Waiting Diagnostic Print Over 18 of 18

This allows the message waiting indicator to be reactivated when a boxholder exits his mailbox while new messages remain in his mailbox. If the telephone switch in your system has the ability to turn off the message waiting indicator without CINDI's knowledge, mactivating the indicator should be considered. However, you should be sure that multiple message activations from CINDI will not cause any problems on the switch or the station set (for example, filling a queue that prevents other devices from accessing the indicator).

Enter "Y" on the worksheet if you want to enable this feature. The factory setting is "no".

6.1.10.10 Reactivate Messa ge Walting Indicator After Mailbox Is Closed (page 6-29A)

This is a new paragraph and is added after paragraph 6.1.10.9.2, Incoming Calls:

This allows the message waiting indicator to be reactivated when a boxholder exits his mailbox while new messages remain in his mailbox. If the relephone switch in your system t as the ability to use off the message waiting indicator without CINDI's knowledge, reactivating the indicator should be considered. However, you should be sure that analople message activations from CINDI will not cause any problems on the switch or the station set (for example, filling a queue that prevents other devices from accessing the indicator). For Fujitsu switches (960 and 196), this should always be enabled.

Enter "Y" on the worksheet if you want to enable this feature. The factory setting is "no".

6 Technical Initialization

understand the unific CINDI is handling. You can then make informed

The first section of the Technical Initialization Worksheet lists information

This chapter describes the procedures you must use in initializing CINDI.

Also included are descriptions of the options and integrations available.

CINDI allows you to define many internal operating parameters in order to customize CINDI for the organization. Therefore, you must provide CINDI with specific information regarding the telephone system.

The Technical Initialization Worksheet, a form to help you gather this information, is included in the appendix, CINDI Worksheets. Because the information generally remains unchanged as long as CINDI's locale remains unchanged, it is provided to CINDI through off-line, terminal-based utilities.

In order to configure CINDI to work most effectively, you should work with the organization's System Manager when defining CINDI's operating parameters.

Some parameters might need to be changed more frequently than others. The System Manager can change these parameters with the telephone commands discussed in the System Manager's Guide.

The following sections help you fill out the Technical Initalization Worksheet and transfer the information to CINDI. It is suggested that you remove the worksheet from Appendix A of this manual and refer to it as you read the following sections.

6.1.1 CINDI's Extensions/Telephone Numbers

At the top of the first page of the Technical Initialization Worksheet is an area that allows you to record the extensions or telephone numbers of the lines directed into CINDI. This information will not be provided to CINDI.

Recording this information here is helpful if someone else takes over technical responsibilities in the future. It also helps you and the System Manager understand the traffic CINDI is handling. You can then make informed decisions when considering re-arranging the access to CINDI.

6.1.2 System Hardware Configuration

The first section of the Technical Initialization Worksheet lists information regarding the internal hardware configuration of the CINDI system.

Number of Disks, Ports CINDI is designed to support:

> Up to two hard disks, providing up to twenty-one hours of message storage, and

Up to eight ports, servicing up to eight calls simultaneously.

CINDI must be told the actual number of disks and ports in the system. The table below lists the CINDI models and the corresponding number of disks and ports in each system.

CINDI	Num	ber of	CINDI	NDI Number of	
Model	Disks	Ports	Model	Disks	Ports
820-A	gu 11sbret	2 7	840-A	oV 1	4
820-B	1000	2	840-B	1	4
820-C	p vilv ba	2	840-C	nig 1	4
820-D	2	2 o series	840-D	2	4
860-A	1000	6	880-A	1	8
860-B	1	6	880-B	1	8
860-C		6	880-C	10 1	8
860-D	2	6	880-D	2	8

The information for a specific unit is usually set at the factory, so you probably do not need to modify it. You should, however, record the information in the *Technical Initialization Worksheet*. If you expand either the storage or traffic capacity of CINDI by adding the appropriate hardware, you will need to inform CINDI of the new system configuration (this is done by using the System Utilities which are presented in the *System Utilities* chapter of this manual). The new configuration should be recorded in the Technical Initialization Worksheet.

6.1.3 C-II Voice Mail Operational Parameters

The second section of the Technical Initialization Worksheet lists the programmable operating parameters of the C-II voice mail system. These parameters allow you to customize the operation of the CINDI for the site.

System Storage Capacity

CINDI is factory set for the best voice quality. This provides the organization with the storage hours listed in the last column of the following table.

	(1)	(2)	(3)	(4)
CINDI Disk	Maximum	Extended	Normal	Best Voice
Configuration	Storage	Storage	Storage	Quality
A	2.1	1.8	1.5	1.4
В	5.5	4.6	4.0	3.5
C	10.5	8.8	7.6	6.7
D IOMO	21.6	18.1	15.6	13.8

Voice quality is partially dependent upon the rate at which a message is "sampled." In the same manner that a movie is actually only a series of still photographs taken and replayed very quickly, messages in CINDI can be thought of as a series of samples recorded and replayed quickly (as many as 22,000 times per second). At fast rates, more samples are recorded, making the recording clearer. When more samples are recorded, more disk space must be used to store the information.

CINDI allows you to select the storage capacity of the system. Consider the following comparison:

A video cassette recorder offers different recording modes that provide increased time, but reduced picture quality. In the same manner, CINDI offers different settings that provide increased storage capacity, but reduced voice quality. In other words, the best voice quality results in the lowest storage capacity on the system. Conversely, a lower voice quality provides increased storage capacity.

CINDI allows you to choose the balance between voice quality and storage capacity that is most appropriate for the organization. You should write the storage capacity setting you choose (1-4) in the Technical Initialization Worksheet.

Standard Message Retention

It is important to control the use of the system's storage capacity. Therefore, CINDI does not simply leave messages on the system indefinitely. During housekeeping operations at night, CINDI looks at the number of days each message has been on the system. CINDI deletes those messages which have been retained longer than the allowed amount of time.

CINDI allows you to program a standard message retention time. This parameter is set for five days at the factory. However, you can set the standard message retention time from one day to seven days. This value is referred to by CINDI as "Your Company's Standard."

The standard message retention time is used in two ways:

- When the System Manager adds new mailboxes, the standard acts as a default value. It can be assigned to individual mailboxes by either entering 0 or by not entering any value at all. The mailbox can be assigned a different retention time (1-30 days) if the Boxholder requires it.
- If the System Manager changes the standard message retention time, those mailboxes that currently have the former standard value will be updated to the new standard message retention time. CINDI will perform this update during housekeeping functions that night. Only messages deposited in the mailboxes after CINDI's update process will reflect the new retention time.

Record the standard message retention time you want to set for the system in the Technical Initialization Worksheet.

Maximum Personal Greeting Length

The System Manager has the ability to allow or deny Boxholders the privilege of recording personal greetings. Personal greetings are presented to callers instead of the standard greeting CINDI would otherwise use:

I'm taking a message for: (Boxholder's name).

This ability helps the System Manager control the use of CINDI's storage capacity in the organization.

An additional method to control storage capacity use is to limit the length of personal greetings. You can program a maximum as low as 10 seconds or as high as 180 seconds (three minutes). Select this maximum carefully; every Boxholder authorized to have a personal greeting is controlled by this same maximum.

A good value to start with might be around 15 seconds. Whatever value you choose, be sure to record it in the Technical Initialization Worksheet.

Mailbox length

All CINDI mailbox numbers must contain the same number of digits. To avoid confusion, it is usual for a Boxholder's CINDI mailbox number to be the same as the Boxholder's PBX telephone extension. Consequently, the length of CINDI's mailbox numbers typically will be the same as the extension length in your organization.

Once mailboxes have been added to the system, the mailbox length cannot be adjusted. CINDI is set at the factory to a four-digit mailbox length, but you can change this easily to either two or three digits before you have added mailboxes. If you are required to change the mailbox length in the future, all existing mailboxes (excepting the special-function ones described below) must be deleted first.

Ten mailbox numbers are reserved for special functions. Depending on the mailbox length, these ten numbers are 90-99, 990-999, or 9990-9999.

System Operator	= 90,	990,	or 9990
System Manager	= 91,	991,	or 9991
Reserved	= 92-98,	992-998,	or 9992-9998
Message Wastebasket	= 99,	999,	or 9999

Only the mailboxes for the System Operator and Manager actually reside on the system. The remaining numbers either provide special functions or are reserved for future enhancements.

Company telephone number

The company telephone number is the telephone number outside callers use to reach CINDI. In a Call Placement, if CINDI does not reach the intended recipient, a message is left requesting them to return the call at this number.

Be sure to include the area code as part of the number.

Suppression of Initial Mailbox Prompt

The Initial Mailbox Prompt is the CINDI phrase:

Please enter the mailbox number you wish. If you are using a rotary telephone or do not know the number, please wait. Otherwise, use your telephone keypad to enter the number now.

CINDI normally presents the Initial Mailbox Prompt immediately after the company greeting recorded by the System Manager.

During initialization, you can choose to have the Initial Mailbox Prompt suppressed when the company greeting is presented. If you so choose, CINDI suppresses the Initial Mailbox Prompt only when a company greeting is played IMMEDIATELY before it.

In those cases when a company greeting does not precede the prompt, the prompt will be presented. For example, when a user presses [1] from the System User's Main Menu in order to record a message, the user hears the Initial Mailbox Prompt.

CINDI is factory set to present the Initial Mailbox Prompt. If you elect to suppress it, the wording of the company greetings should reflect its suppression. If the System Manager does not record company greetings, the setting of this parameter has no effect on the Initial Mailbox Prompt.

Overriding Boxholder Name with Mailbox Number

When a caller enters a mailbox number, CINDI automatically begins the process to record a message for that mailbox.

At this point, if the Boxholder has been authorized to record a personal greeting and is utilizing the feature, the caller hears the Boxholder's personal greeting. If no personal greeting has been recorded by the Boxholder, the caller hears the Boxholder's name in the phrase:

I'm taking a message for: (Boxholder's name).

The Boxholder's name might be recorded in either the Boxholder's or the System Manager's voice.

However, if the organization prefers that the entire phrase be spoken by CINDI, you can elect to have CINDI respond with the mailbox number instead of the Boxholder's name. In this case, the caller would hear only CINDI's voice rather than a mixture of voices.

CINDI is factory set to use the Boxholder's name if it has been recorded.

Outdial Line Groups

You can define up to eight line groups, numbered 1 through 8, that specify which lines can be used to make an outgoing call for a Boxholder. Each mailbox is assigned a line group number when the mailbox is created.

To illustrate how line groups are used, consider the following example:

Assume you have an eight-port CINDI and mailboxes 100-299 should use only lines 7 and 8 for outgoing calls (possibly because these lines prohibit long-distance calls). All other mailboxes are to use lines 5 and 6. You can then define line group 1 to contain lines 7 and 8 and line group 2 to contain lines 5 and 6. With these line groups defined, the System Manager then assigns line group 1 to mailboxes 100-299 and line group 2 to all other mailboxes. In this example, CINDI does not use lines 1-4 for any outgoing calls.

CINDI line groups also are used effectively by those organizations using Foreign Exchange lines. These lines often are used by organizations with several remote locations. In the same manner as described in the example above, a line group could be defined to contain the Foreign Exchange lines and assigned to Boxholders whose outgoing calls should be made over those lines. Since a Foreign Exchange line acts as a local line, the use of line groups helps keep long-distance expenses to a minimum.

Default Message Retrieval Order

You define the default message retrieval order for all mailboxes added to the Mailbox Directory. The default retrieval order for all messages (new and saved) can be either: Last in, first out (LIFO) or first in, first out (FIFO).

On the worksheet, indicate the appropriate default message retrieval order for all mailboxes. Please note that Boxholder's can set their own message retrieval order via the System User's Main Menu, personalize mailbox function.

6.1.4 PBX Parameters Definition

The third section of the Technical Initialization Worksheet lists the necessary information for interfacing CINDI with the telephone. This information defines how CINDI operates with the organization's telephone system.

Maximum Extension Length

On those lines supporting call transfers, CINDI allows callers to request to be transferred to the attendant or other extensions within the telephone system. CINDI is capable of transferring the caller to extensions up to four digits in length.

By specifying the maximum extension length CINDI will be supporting, you can decrease the amount of time it takes to transfer a call. Because CINDI cannot immediately determine when the caller has provided all of the intended digits, CINDI pauses briefly to allow the caller to enter additional digits if the maximum has not yet been entered.

For example, if the maximum extension length is listed as '4' and the caller enters three digits, CINDI will pause briefly to check if a fourth digit will be entered. After this pause, CINDI will continue with the transfer request. If the maximum extension length would have been listed as '3' in this example, the pause after the third digit would have been eliminated.

You can specify a maximum extension length of 2-4 digits; the factory default is three. Select the highest maximum that supports all desired extensions in the organization -- callers will not be able to enter more digits than

the specified maximum. Record the value in the Technical Initialization Worksheet.

Minimum Extension Length

In addition to specifying the maximum extension length, you can specify the minimum number of digits a caller must provide before CINDI will attempt a call transfer. This minimum affects only transfers to extensions other than the attendant.

By specifying the minimum extension length, you can eliminate the time CINDI would otherwise spend attempting to transfer the caller to an extension that cannot exist (too few digits). This improves CINDI's efficiency and the flow of traffic over lines directed into CINDI.

You can specify a minimum extension length of 1-4 digits; the factory default is two. Select the lowest minimum that supports all desired extensions in the organization -- callers will not be able to transfer to extensions (other than the attendant) with fewer digits than the specified minimum. If the caller provides too few digits, CINDI will inform the caller:

[nnn] is not a valid extension.

The number of digits in an extension is: (maximum).

Record the value in the Technical Initialization Worksheet.

Number of Digits to Access an Outside Line

Often, to make a call external to the company, it is necessary to enter an additional digit (the digit '9' for example) to access an outside line.

The number of digits used for this outside access is communicated to CINDI during the initialization process (CINDI does not need to know what the digits are — simply how many.) When counting the number of digits, include only the digits 0-9; do not count any non-numeric inputs, such as [*] or [_#].

CINDI uses this information to determine whether a particular outdial (Message Forwarding or Call Placement) is a local or long-distance call. CINDI lists the call and its duration in the appropriate statistics. CINDI uses the information only for gathering statistics; CINDI does not cancel calls that are determined to be long distance.

Number of Seconds Before No-Answer Assumed, Internal Calls

You can select the number of seconds a phone should ring before CINDI assumes no answer for internal calls. Select a value between 10 and 60 seconds. The factory setting for this function is 30 seconds.

Number of Seconds Before No-Answer Assumed, Outdials

You can select the number of seconds a phone should ring before CINDI assumes no answer for all outdials (i.e. Message Forwarding and Call Placement). Select a value between 20 and 60 seconds. The factory setting for this function is 30 seconds.

Hookflash Duration

CINDI transfers callers to the attendant or other extensions by first executing a hookflash. You can program the length of this hookflash to match the needs of the telephone system.

Short Hookflash Duration

You can select a hookflash duration between 1/10 second (100 ms) and 9/10 second (900 ms), in 1/10-second increments. A typical duration is 5/10 second (500 ms).

Long Hookflash Duration

If the telephone system requires a second hookflash of a different duration, you may program the duration between 1/10 second and 9/10 second, in 1/10-second increments. In most phone systems, the short and long hookflash durations should be equal.

Valid First Digits for Extensions

If a caller, by pressing [0], requests CINDI to transfer a call, CINDI asks:

To what extension should i transfer your call?

The caller can then enter from one to four digits for the extension number. You can specify which numbers are valid first digits for call transfers.

There are several benefits to this feature:

 It can reduce the time it takes to recognize transfer requests to groups of extensions that do not exist. For example, if no extension in the organization begins with [6], you should omit [6] from the list of valid first digits for extensions. Transfers to this group of extensions are then prevented by CINDI before the transfers are attempted. CINDI then does not spend time performing a hookflash, dialing the extension, recognizing the re-order tone, transferring back to the caller, and reporting the error.

 It can control long-distance charges. In many PBX's, certain numbers are used to access special lines or functions. The most common of these is '9' to access an outside line. Without some controls, callers could easily ask to be transferred to extension '9' and access an outside line. This action could cause any accrued phone charges to be billed to the company. However, to prevent CINDI from transferring calls to an outside line, you could specify that only 1-8 are valid first digits for extension numbers. (The actual numbers might be different depending upon the organization's telephone system.)

In some circumstances, you might want to allow callers to transfer to outside lines. This could be helpful for centralized billing of telephone charges or simply as a service to other people in the organization. Care should be taken in making this decision, since the capability might be misused by some callers.

If CINDI receives a request to transfer the call to an extension with an invalid first digit, the caller is told:

This extension is unavailable.

The caller then can continue with voice mail functions or request to be transferred again by pressing [0].

Once you decide what numbers are valid first digits for call transfers, enter them in the Technical Initialization Worksheet.

Attendant's Extension

On those lines where call transfers are allowed, CINDI prompts callers to press [0] to speak to someone. If a [0] is pressed, CINDI requests the PBX extension number to which the call should be transferred. When CINDI is in Dayline mode, the caller is informed that an attendant can be reached by pressing [0] again.

However, there are reasons why you might want CINDI to transfer callers who request the attendant to an extension other than [0]. Perhaps your attendant also serves as receptionist, and you want to distribute the work load more evenly. Or, you might be using CINDI for a special application within your organization with which the PBX attendant is not familiar.

To provide the necessary flexibility, you are allowed to specify the "attendant's" extension to CINDI. When a caller, by pressing [0], requests to be transferred to the attendant, CINDI processes the caller's request by transferring the call to the extension you specify. You should record the extension number you use in the Technical Initialization Worksheet.

If the System Manager needs to change this extension in the future, it can be modified through the telephone as explained in the System Manager's Guide.

Call Transfer Sequences

Call transfer sequences initiate a transfer to the attendant or to other extensions. Reconnect sequences return CINDI to a caller if the transfer is incomplete. Transfer and reconnect sequences are a combination of commands that instruct your PBX to perform some basic operations:

L = Long hookflash

H = Short hookflash

A = Answer detect

R = Ring detect

T = Tone detect

S = Silence detect

X = Extension number

W = One second wait

D = Disconnect

N = Answer detect with notification

The sequences can also include DTMF digits (_#,*,0-9) and can contain a maximum of 12 operations unless otherwise stated.

You must provide CINDI with information regarding two different transfer sequences and three different reconnect sequences. Remember to record all five sequences on the Technical Initialization Worksheet.

Call Transfer Sequence:#Attendant. Possibly the most important calltransfer sequence for CINDI to know is the one that transfers callers to the PBX attendant. This sequence can be the same as the one used to transfer callers to other extensions, or it can be different. In either case, make sure you tell CINDI what this sequence is. CINDI is factory set to [HWXR]: perform a hookflash, wait for one second, dial the attendant's extension, and detect a ring.

Call Transfer Sequence: #Extensions. You also need to inform CINDI of the call transfer sequence to any extension other than the attendant's. As is mentioned above, this code can be the same as the one to access the attendant. However, CINDI allows for the codes to be different and requires the information for each case. CINDI is factory set to [HWXR]: perform a hookflash, wait for one second, dial the extension, and detect a ring.

Busy Reconnect Sequence. This reconnect sequence returns CINDI to the caller if a busy signal is encountered. It can contain a maximum of eight operations. CINDI is factory set to [H]: reconnect by a hookflash.

Fast-Busy/Reorder Reconnect Sequence. This reconnect sequence returns CINDI to the caller if a fast-busy or reorder signal is encountered. It can contain a maximum of eight operations. CINDI is factory set to [H]: reconnect by a hookflash.

Ring-No-Answer Reconnect Sequence. This reconnect sequence returns CINDI to the caller if CINDI was requested to check for an answer detection (A) which was not received. The sequence can contain a maximum of eight operations. CINDI is factory set to [H]: reconnect by a hookflash.

Answer Detection Parameters

CINDI determines when a called party has answered by detecting the called party's voice when he or she receives the phone call.

Because telephone systems have differing characteristics, you are able to program several parameters that allow CINDI to detect an answer more accurately. These parameters include delays before checking for the ring or for the voice and the voice detection sensitivity. Each is discussed in the following sections.

Call Transfer Answer-Detection Delay. Depending on the type of telephone system, there is sometimes a delay between the time CINDI executes a call transfer and when the ring cadence first begins. CINDI needs to be aware of the delay in order to properly determine when the called party has answered.

You can specify a delay of 0-5000 milliseconds; the factory default is 0 ms. CINDI waits the specified period before checking for the ring cadence. Enter the value appropriate for the telephone system in the Technical Initialization Worksheet.

Outdial Answer Detection Delay. As with call transfers, there is sometimes a delay between the time CINDI makes an outdial and when the ring cadence first begins. CINDI also needs to be aware of this delay in order to properly determine when the called party has answered.

ng -over loop lines

You can specify a delay of 0-5000 milliseconds; the factory default is 0 ms. CINDI waits the specified period before checking for the ring cadence. Enter the value appropriate for the telephone system in the Technical Initialization Worksheet.

DTMF Detection Threshold

Before CINDI will recognize tones as valid DTMF inputs, either for termination of recording or as responses to menus, the tones must be of a minimum duration. With most telephone systems, tones are generated for a minimum of 40 milliseconds (ms). However, some systems do not conform to this standard.

You can specify a minimum duration of 10-500 ms; the factory default is 40 ms. Any tones received with a duration less than the specified detection threshold are not recognized as DTMF.

Silence Detection Threshold

In addition to accepting DTMF tones to terminate recording sessions, CINDI also automatically stops recording if a period of silence is detected.

You are able to specify the minimum length of silence CINDI must receive before terminating recording. If you set this value too low, CINDI will terminate recording sessions more quickly than callers may desire (for example, during a brief pause in speech); if the value is too long, callers may feel CINDI does not respond quickly enough.

You can specify a detection threshold of 1000-5000 milli=seconds (ms); the factory default is 2250 ms. Enter the value you choose in the Technical Initialization Worksheet.

PBX Loop Disconnect Duration

Telephone systems providing positive disconnect signalling over loop lines have varying signal lengths. CINDI must know the duration of the signal in order to properly react.

You can specify a loop disconnect duration of 100-2000 milliseconds (ms); the factory default is 350 ms. Enter the proper value in the Technical Initialization Worksheet.

IF POSITIVE DISCONNECT SIGNALLING IS UNAVAILABLE WITH THE TELEPHONE SYSTEM, ENTER THE FACTORY-DEFAULT VALUE OF 350 MS.

hen she called party

CINDI Disconnect Duration

In the same manner that CINDI must know the duration of the disconnect signal from the telephone system, CINDI must also know the signal duration (i.e. the on-hook time) that must be provided to the telephone system. This is the minimum signal that the telephone system needs to receive in order to recognize a disconnect. Please note that a shorter signal may be construed by the telephone system as a hookflash instead of a disconnect.

CINDI is capable of providing a disconnect signal with a duration of 100-3000 milliseconds (ms); the factory default is 1500 ms. Enter the proper value in the Technical Initial=ization Worksheet.

Voice Detection Threshold

The voice detection threshold determines the number of consecutive variances in frequency from standard call progress tones that CINDI needs to receive before detecting an answer.

Enter a threshold value in the range of 1 to 10; the factory setting is 2. A value of 1 is most sensitive to non-call progress frequencies, 10 is the least sensitive. Therefore, if CINDI is answering early (i.e. when phone is answered, CINDI already is speaking), decrease the sensitivity. If CINDI is not answering, increase the sensitivity.

6.1.5 Telephone Line Specification

This section of the Technical Initialization Worksheet lists the information that CINDI needs in order to interface with the environment of the telephone lines.

To operate properly in the telephone environment, CINDI must know specific information regarding the line connected to each port. This information, or Line Specification, includes the line type entering the system and the signalling method which is used on these lines. These signalling methods include wink-start, immediate start, delay dial, ground start and loop start.

CINDI accomodates the following line types:

Loop Start Ground Start E&M Direct in Dial (DID)

The line type and the signalling method are indicated through the use of a CINDI Line Equivalent number. CINDI Line equivalent numbers are grouped into four general categories to reflect the four general line types that

CINDI supports and are fully discussed in the Telephone Interface chapter of this manual. Refer to the Telephone Line Specifications section of that chapter when you fill out this portion of the Technical Initialization Worksheet.

Depending on the Line Equivalent you program, you can enable or disable one or more options for each CINDI port. Descriptions of these options are listed below:

OUTDIAL: This option, when enabled, allows CINDI to use this line for an outgoing call (Message Forwarding and Call Placements).

CALL TRANSFER: This option, when enabled, allows CINDI to transfer a call on this line back to a PBX station or attendant console, via hookflash transfer sequence.

CALL CONTINUATION: This option, when enabled, allows a non-Boxholder to continue with the call after leaving a Boxholder a message.

These options are discussed in the Telephone Interface chapter of this manual as well.

the si gnalling method which is used on these lines. These signalling methods include wink-start, impossible start, delay dial, ground start and loop start.

6.1.6 Option Class A: Inbound Service 724 (IS724)

This section of the Technical Initialization Worksheet lists the information needed to configure the CINDI system for the IS724 optional software package. Before you fill-out this portion of the worksheet, make sure you understand the telephone system requirements for IS724 discussed below.

IS724 ports should be attached to the telephone system on a single line station port. These lines should have a class of service that allow the following capabilities:

- Silence on disconnect
 - Enhanced end-to-end signalling (DTMF stays on after connection)
 - Hookflash transfers

In addition, verify the class of service on all CINDI station ports and be sure to allow the capabilities listed above.

Before installing the IS724 option, you should determine how the CINDI system will perform call screening behind the company's PBX system. Once you determine how the telephone system will handle call screening, you can program CINDI for the appropriate sequences through the SETUP utility command.

In order to determine the appropriate call screening sequences, go to the site and perform the function of call screening using a single line station set. When you run this trial, be sure to determine the following information:

- How is the calling party placed on hold during the screening (generally a hookflash)?
- Does the telephone system notify the caller by tone that it is ready to accept the DTMF digits of the called party (e.g. dial tone, stuttered dial tone)?
- Are DTMF access codes necessary for reaching the called party's station?
- How is CINDI notified that the station was dialed correctly (ring-back)?
- When a called party accepts a call, how are the two parties connected (the caller to the called party)? Can CINDI simply disconnect or must a 3-way conference call be initiated?
- When the line is busy, how is the calling party brought back on-line in order to be informed of the situation?

 When there is no answer at the called station, how does CINDI reconnect to the caller?

Once you have determined how the telephone system will handle IS724, you are ready to fill out the Option Class A IS724 portion of the Technical Initialization Worksheet.

Lines Providing IS724 Support

These are the lines, numbering in the range of 1 through 8, that operate with IS724. The factory has pre-set no lines to provide IS724 support. Please note that callers will enter voice mail directly on any operational lines not included in this list.

Non-Boxholders Authorization to Screen Calls

This authorization applies to all called parties who either do not own mailboxes on the system or to those who have a mailbox but are not authorized to select their own call screening level.

If you allow non-Boxholders to screen calls, all calls transferred through IS724 are screened EXCEPT those directed to the attendant or to authorized Boxholders who have requested no-screening. If you disallow this authorization to non-Boxholders, ONLY authorized Boxholders will be able to screen calls.

Please note that this value can be changed, on-line, from the System Manager's mailbox by requesting item 2 from the IS724 menu (key [7] from the Change Company Information Menu.)

Attendant's authorization to Screen Calls

This authorization applies to all calls directed to the attendant by IS724. If the attendant screens calls, CINDI presents the attendant with the caller's name and the reason the caller did not reach the intended party. If you do not authorize the attendant to screen calls, CINDI will provide the attendant with no information about incoming calls.

Please note that this value can be changed, on-line, from the System Manager's mailbox by requesting item 1 from the IS724 menu (key [7] from the Change Company Information Menu.)

Suppress the Initial Extension Prompt

The initial extension prompt on IS724 attended lines is:

Please enter the extension of the person you'd like to reach. Press [9] to leave a message if you do not need to interrupt this person.

CINDI normally presents this extension prompt on attended lines immediately after the attended line greeting which is recorded by the System Manager.

During initialization, you can choose to suppress playback of the initial extension prompt when the attended line greeting is played. If you so choose, CINDI suppresses the initial extension prompt only when the attended line greeting is played immediately before it.

If no attended line greeting is recorded, the initial extension prompt is presented in the greeting's place, regardless of how this parameter is set. CINDI is factory set to present the initial extension prompt. Should you elect to suppress it, the wording of the attended line greeting should reflect the sense of the prompt.

CINDI also presents an abbreviated extension prompt that follows the site directory (optionally recorded by the System Manager). If you suppress the initial extension prompt, CINDI suppresses this follow-up prompt as well.

Sequence to Initiate a Consultation Call

Indicate the precise sequence to be used by IS724 to place the caller on hold and call the requested station for screening requirements. For information on dialing sequences, see Chapter 2 of this manual.

The last character of this sequence should be answer detect (A) whenever CINDI receives ring-back. This (A) command helps ensure that the called party hears all of CINDI's screening phrases. Otherwise, you need to tell CINDI what to do; use either tone detect (T) or silence detect (S). Do not use ring detect (R) because, in this case, CINDI will start talking immediately upon receiving ring-back.

Busy Reconnect Sequence

This reconnect sequence returns CINDI to the caller if a busy signal is encountered after dialing the extention for consultation. This sequence also is used if a tone detect (T) or silence detect (S) is requested in the initial transfer and not received.

The sequence can contain a maximum of eight operations. CINDI is factory set to [H]: reconnect by a hookflash.

Fast-Busy/Reorder Reconnect Sequence

This reconnect sequence returns CINDI to the caller if a fast-busy or reorder signal is encountered after dialing the extention for consultation. It can contain a maximum of eight operations. CINDI is factory set to [H]: reconnect by a hookflash.

Ring-No-Answer Reconnect Sequence

This reconnect sequence returns CINDI to the caller if CINDI was requested to check for an answer detection (A) which was not received. The sequence can contain a maximum of eight operations. CINDI is factory set to [H]: reconnect by a hookflash.

Connect Sequence

This : econnect sequence returns CIVDI to the caller if a busy signal is en-

This is the sequence that CINDI uses to connect the caller to the called party after this party has accepted the call. CINDI is factory set to [H]: connect by a hookflash.

Refused Call Reconnect Sequence

This sequence reconnects CINDI with the calling party when the called party has refused the call and disconnected. If this disconnection is sufficient, you should enter none. The factory setting for this sequence is none.

6.1.7 Option Class B: DART

This section of the Technical Initialization Worksheet lists the information needed for setting up the DART database. The Dart database consists of a series of names and an associated assignment and response mailbox for each name. In order to create this database, you will need to obtain a list of the names to be included in the database. The System Manager is probably the best source for this information.

Although they interface, the DART database and the CINDI mailbox directory are separate entities. Information added to the DART database must also be added to the Mailbox Directory. Make sure these two steps (creating the database and adding mailboxes to the mailbox directory) are coordinated. Again, the System Manager is probably the best source to oversee this process.

DART Maintenance - Enter Command

In order to set up the DART database, select option 6 from the SETUP Command Menu to access the "DART Maintenance - enter command." From this command you have the opportunity to either add or delete DART database entries.

Since you are concerned with establishing the DART database, the Technical Initialization Worksheet has a page for this purpose. Make sure the System Manager receives a copy of this worksheet so that he or she can verify that the DART database mailboxes also exist in CINDI. Mailboxes may be verified through the Mailbox Directory (key [4] from the System Manager's Main Menu) or through statistical report 3.

The following sections (Name Entry, Assignment Mailbox Number, and Response Mailbox Number) will help you fill out this worksheet.

Name Entry. Indicate the names in the appropriate worksheet column that need to be added to the database. Since the system automatically alphabetizes the entries, you may want to enter them as follows: last name followed by first name or initial.

The system accepts all alphanumeric characters. Names can be up to 14 characters in length. The system drops the excess letters for names that exceed the 14 character maximum.

Assignment Mailbox Number. This is the mailbox into which the dispatcher leaves job information for the field technician. Indicate an assignment mailbox for each name listed above in the appropriate column on your worksheet. Mailbox number length must correspond with your system setting (2, 3 or 4 characters).

Although you can enter the same assignment mailbox for more than one name, CINDI does not allow duplicate mailboxes to be entered in the Mailbox Directory. Therefore, each name should have a unique assignment mailbox number.

Response Mailbox Number. This is the mailbox that the field technician uses to notify the dispatcher when the job is completed. Enter a response mailbox number in the appropriate column on your worksheet for each of the names listed above. Mailbox number length must correspond with your system setting (2, 3 or 4 characters).

Although you can enter the same response mailbox for more than one name, CINDI does not allow duplicate mailboxes to be entered in the Mailbox Directory. Therefore, each name should have a unique response mailbox number.

Deleting Entries from the DART Database

Name Entry. Indicate the names in the appropriate worksheet column that

Through the "DART Maintenance - enter command" you can delete names from the DART database. If the data entry operator makes an error entering a name or mailbox number, the error can be corrected by deleting the entire entry and re-entering the correct information.

Please note that deleting a name from CINDI's Mailbox Directory DOES NOT delete that name from the DART database. The opposite applies as well. Deleting names from the DART database does not automatically delete names from the Mailbox Directory.

6.1.8 Option Class B: PBX Message Waiting Indication (PBXMWI)

This section of the Technical Initialization Worksheet lists the information needed for defining message waiting indication.

Lines Authorized for MWI Outdialing

This defines which lines will be used to make outdials to control the message waiting indicators. Message waiting outdials are short duration calls, usually less than 30 seconds. The lines selected for message waiting must have the capability to outdial; but, they do not have to be authorized in the CINDI system for outdials (i.e. Message Forwarding, Call Placements).

Sequence to Activate a Message Waiting Indicator

This sequence signals the PBX to activate a message waiting indicator. Valid codes for the sequence are:

A = wait for answer

H = hookflash

R = wait for ring

S = wait for silence

T = wait for dial tone

W = wait for one second

X = insert extension number

DTMF codes (0-9,*,_#).

Since the Message Waiting Indication feature varies from site to site, this sequence is factory-set to none. Please note that the message waiting indicator sequence is sent only when an authorized mailbox goes from zero messages to one message. The sequence will not be sent for additional messages.

Sequence to Extinguish a Message Waiting Indicator

This sequence tells the PBX to extinguish the message waiting indicator and will vary greatly from site to site, depending on the PBX system. Therefore, this sequence is factory-set to none. Valid codes for this sequence are

A = wait for answer

H = hookflash

R = wait for ring

S = wait for silence

T = wait for dial tone

W = wait for one second

X = insert extension number

A - mocre extension numbe

DTMF codes (0-9,*,_#).

If the switch does not permit a single-line station set to turn off an indicator, set this sequence to none.

Correspond PBX Extensions with Mailbox Numbers

You have the ability to automatically make all mailbox numbers the same as their PBX extension numbers. If you do not make them the same, you will have to enter each mailbox number and the corresponding extension one at a time.

Please note that you only have to select this option for CINDI systems which have existing mailboxes and are being upgraded to include the PBXMWI feature.

Change PBX Extension for Any Mailbox

Indicate whether or not you want to change a mailbox's PBX extension number. If you did not make all mailboxes and corresonding extensions the same number, this is where you enter individual mailbox numbers and associate them with the appropriate extension. The PBX extension can also be modified on-line for any mailbox, through the System Manager's mailbox directory.

Mailbox to Be Modified. Indicate the mailboxes (if any) for which you plan to modify the PBX extension.

Corresponding PBX Extension. Indicate the PBX extension that corresponds with the mailbox listed above. If you do not want a mailbox to be authorized for Message Waiting, enter zero for PBX extension.

Message Waiting Diagnostic Print Outs

Although not normally required, there may be times when you need to verify that communication between CINDI and the telephone system is being executed properly. To do this, you can select to monitor where and when message waiting occurs.

The message waiting diagnostic print out simply displays on the terminal screen or printer a message each time a message waiting command is exchanged. For example, the display might show:

MW ON: 200 07:17 AM

MW OFF: 200 07:33 AM

The output of this display would continue until you terminate it through SETUP.

Enter 'Y' on the Technical Initialization Worksheet if you want this display to be produced. Enter 'N' if not.

Reactivate Message Waiting Indicator After Mailbox Is Closed

This allows the message waiting indicator to be reactivated when a boxholder exits his mailbox while new messages remain in his mailbox. If the telephone switch in your system has the ability to turn off the message waiting indicator without CINDI's knowledge, reactivating the indicator should be considered. However, you should be sure that multiple message activations from CINDI will not cause any problems on the switch or the station set (for example, filling a queue that prevents other devices from accesing the indicator.

Enter "Y" on the worksheet if you want to enable this feature. The factory setting is "no".

on the Technical Initialization Wortsheet. Statering No has no effect on the

6.1.9 Option Class B: Northern Telecom IVMS Integration

This section of the Technical Initialization Worksheet lists the information necessary for defining the Northern Telecom IVMS Integration.

Set Logical Terminal Numbers

Indicate whether or not you want to set Logical Terminal Numbers for any of CINDI's lines. You must set a Logical Terminal Number (LTN) for each CINDI line that is to operate with IVMS. For a definition of Logical Terminal Number, refer to the Northern Telecom SL-1 PBX system documentation.

Logical Terminal Numbers for CINDI lines

Select SL-1 PBX Logical Terminal Numbers for each CINDI line (1-8) that is to have IVMS capabilities. A Logical Terminal Number can be a number in the range of 1 through 253. The LTN that you select must match the LTN programmed for the corresponding line in the SL-1 database.

Do not define LTN numbers for CINDI lines which will be used for outdials such as call placements and message forwarding. The LTN numbers for these non-IVMS lines should be set to either blanks or zero.

Correspond PBX Extension With Mailbox Numbers

In order for a mailbox to use the Message Waiting function, its mailbox number must be the same as its associated extension number. For systems that already have mailboxes defined when you install the IVMS software, be sure to initialize every mailbox so its PBX extension is the same as its mailbox number. (Indicate Yes on the Technical Initialization Worksheet.)

On new systems, as mailboxes are added to the mailbox directory, each mailbox number is automatically matched to its associated extension number. Therefore, for new systems, you can enter either Yes or No to this question on the Technical Initialization Worksheet. Entering No has no effect on the mailbox numbers that are added. Each one added is still automatically matched with its associated extension number.

Changing Message Waiting Privileges for Mailboxes

When mailboxes are initially added to the system, they are automatically authorized for the Message Waiting function. You, however, have the ability to revoke (and allow) the authorization at this time for specific mailboxes. Although this SETUP command parameter provides the only way to change the Message Waiting authorization for a mailbox, authorized users are able to enable and disable the Message Waiting function themselves.

On the appropriate place on the Technical Initialization Worksheet, indicate whether or not (Yes or No) there are mailboxes for which you want to change the message waiting authorization.

Mailboxes to be Modified

On the worksheet, list the mailbox numbers (if any) for which you want to change the Message Waiting Notification privilege. Since all mailboxes initially added to the system are automatically authorized for the Message Waiting function, you will be listing mailboxes that should not be authorized for the function.

Authorize for Message Waiting

Indicate whether or not (Yes or No) each mailbox listed above should be authorized for the Message Waiting function.

Diagnostic Print Outs

Although not normally required, there may be times when you need to verify that communication between CINDI and the SL-1 is being executed properly. Two diagnostic print outs are available to monitor primary communications: message waiting and incoming call exchanges. Output of each of these can be controlled separately.

Message Waiting. The message waiting diagnostic print out simply displays on the terminal screen or printer a message each time a message waiting command is exchanged. For example, the display might show:

MW ON: 200 07:17 AM

MW OFF: 200 07:33 AM

The output of this display would continue until you terminate it through SETUP.

Enter 'Y' on the Technical Initialization Worksheet if you want this display to be produced. Enter 'N' if not.

Incoming Calls. The incoming call diagnostic print out simply displays on the terminal screen or printer a message each time an incoming call command is processed. For example, the display might show:

PORT 1 CALL FORWARDED FROM: 233 07:17 AM

PORT 2 DIRECT CALL FROM: TRUNK 07:23 AM

PORT 3 CALL FORWARDED FROM: ATTENDANT 07:17 AM

PORT 1 DIRECT CALL FROM: ACD MEMBER 07:23 AM

The output of this display would continue until you terminate it through SETUP.

Enter 'Y' on the Technical Initialization Worksheet if you want this display to be produced. Enter 'N' if not.

6.1.10 Option Class B: Fujitsu Focus 960 API Integration

This section of the Technical Initialization Worksheet lists the information necessary for defining the Fujitsu Focus 960 Integration.

Define PBX Directory Numbers

Indicate whether or not you want to set PBX Directory Numbers for any of CINDI's lines. You must set a PBX Directory Number for each CINDI line that is to integrate with the Fujitsu Focus 960. For a definition of PBX Directory Number, refer to the Fujitsu Focus 960 PBX system documentation.

PBX Directory Numbers for CINDI lines

Select PBX Directory Numbers for each CINDI line (1-8) to have integration capabilities. A PBX Directory Number can be a number in the range of 0 through 9999. The PBX Directory Number that you select must match the PBX Directory Number programmed for the corresponding line in the Fujitsu Focus database.

Defining the Directory Number for Message Waiting Callback.

Indicate on the Technical Initialization Worksheet whether or not (Yes or No) you want to define the Directory Number for message waiting callback. You must define a Directory Number if the company wants to use the message waiting callback function. Define this number on the appropriate worksheet location as well. It should be one of the PBX Directory Numbers that you listed above and should be the base Directory Number of CINDI's hunt group. This allows the message waiting callback to hunt through each CINDI port if some ports are busy.

Setting Parity

On the worksheet, indicate whether or not (Yes or No) you wish to set even parity. The parity can be either even or odd, although the parity you set here for CINDI must match the Focus 960's parity setting.

Correspond PBX Extension With Mailbox Numbers

In order for a mailbox to use the Message Waiting function, its mailbox number must be the same as its associated extension number. For systems that already have mailboxes defined when you install the integration software, be sure to initialize every mailbox so its PBX extension is the same as its mailbox number. (Indicate Yes on the Technical Initialization Worksheet.) On new systems, as mailboxes are added to the mailbox directory, each mailbox number is automatically matched to its associated extension number. Therefore, for new systems, you can enter either Yes or No to this question on the Technical Initialization Worksheet. Entering No has no effect on the mailbox numbers that are added. Each one added is still automatically matched with its associated extension number.

Changing Message Waiting Privileges for Mailboxes

When mailboxes are initially added to the system, they are automatically authorized for the Message Waiting function. You, however, have the ability to revoke (and allow) the authorization at this time for specific mailboxes. Although this SETUP command parameter provides the only way to change the Message Waiting authorization for a mailbox, authorized users are able to enable and disable the Message Waiting function themselves.

On the appropriate place on the Technical Initialization Worksheet, indicate whether or not (Yes or No) there are mailboxes for which you want to change the message waiting authorization.

Mailboxes to be Modified

On the worksheet, list the mailbox numbers (if any) for which you want to change the Message Waiting Notification privilege. Since all mailboxes initially added to the system are automatically authorized for the Message Waiting function, you will be listing mailboxes that should not be authorized for the function.

Authorize for Message Waiting

Indicate whether or not (Yes or No) each mailbox listed above should be authorized for the Message Waiting function.

Diagnostic Print Outs

Although not normally required, there may be times when you need to verify that communication between CINDI and the Focus is being executed properly. Two diagnostic print outs are available to monitor primary communications: message waiting and incoming call exchanges. Output of each of these can be controlled separately.

Message Waiting. The message waiting diagnostic print out simply displays on the terminal screen or printer a message each time a message waiting command is exchanged. For example, the display might show:

MW ON: 200 07:17 AM

MW OFF: 200 07:33 AM

The output of this display would continue until you terminate it through SETUP.

Enter 'Y' on the Technical Initialization Worksheet if you want this display to be produced. Enter 'N' if not. Incoming Calls. The incoming call diagnostic print out simply displays on the terminal screen or printer a message each time an incoming call command is processed. For example, the display might show:

PORT 1 CALL FORWARDED FROM: 233 07:17 AM

PORT 2 DIRECT CALL FROM: TRUNK 07:23 AM

PORT 3 CALL FORWARDED FROM: ATTENDANT 07:17 AM

PORT 1 DIRECT CALL FROM: ACD MEMBER 07:23 AM

The output of this display would continue until you terminate it through SETUP.

Enter 'Y' on the Technical Initialization Worksheet if you want this display to be produced. Enter 'N' if not.

Reactivate Message Waiting Indicator After Mailbox Is Closed

This allows the message waiting indicator to be reactivated when a boxholder exits his mailbox while new messages remain in his mailbox. If the telephone switch in your system has the ability to turn off the message waiting indicator without CINDI's knowledge, reactivating the indicator should be considered. However, you should be sure that multiple message activations from CINDI will not cause any problems on the switch or the station set (for example, filling a queue that prevents other devices from accesing the indicator.

Enter "Y" on the worksheet if you want to enable this feature. The factory setting is "no".

lights the MWI lamp and leaves a message on the LCD display. In most cases

6.1.11 Option Class B: NEC NEAX 2400 Integration

This section of the Technical Initialization Worksheet lists the information necessary for defining the NEC NEAX 2400 Integration.

Define PBX Directory Numbers

Indicate whether or not you want to set PBX Directory Numbers for any of CINDI's lines. You must set a PBX Directory Number for each CINDI line that is to integrate with the NEAX 2400. For a definition of PBX Directory Number, refer to the NEC NEAX 2400 PBX system documentation.

PBX Directory Numbers for CINDI lines

Select PBX Directory Numbers for each CINDI line (1-8) to have integration capabilities. A PBX Directory Number can be a number in the range of 0 through 9999. Single digit numbers must be preceded by a zero (i.e. 01, 02, 03). The PBX Directory Number that you select must match the PBX Directory Number programmed for the corresponding line in the NEAX 2400 database.

Setting Parity

Valid parity settings and their associated codes are:

- No parity
- Even parity
- Odd parity

On the worksheet, indicate the appropriate code. No parity (1) is recommended; although, CINDI's parity setting must match the NEAX 2400's parity setting.

Message Waiting Display

On digital display phones, the message waiting indication (MWI) function lights the MWI lamp and leaves a message on the LCD display. In most cases this message consists of the caller's directory number. If CINDI turns on the MWI lamp, the LCD display prints either MW (for message center) or VMM (for voice mail system).

Indicate which display you want CINDI to trigger. Valid displays and their associated codes are:

- VMM
- MW

On the worksheet, indicate the appropriate code.

Correspond PBX Extension With Mailbox Numbers

In order for a mailbox to use the Message Waiting function, its mailbox number must be the same as its associated extension number. For systems that already have mailboxes defined when you install the integration software, be sure to initialize every mailbox so its PBX extension is the same as its mailbox number. (Indicate Yes on the Technical Initialization Worksheet.)

On new systems, as mailboxes are added to the mailbox directory, each mailbox number is automatically matched to its associated extension number. Therefore, for new systems, you can enter either Yes or No to this question on the Technical Initialization Worksheet. Entering No has no effect on the mailbox numbers that are added. Each one added is still automatically matched with its associated extension number.

Changing Message Waiting Privileges for Mailboxes

When mailboxes are initially added to the system, they are automatically authorized for the Message Waiting function. You, however, have the ability to revoke (and allow) the authorization at this time for specific mailboxes.

Although this SETUP command parameter provides the only way to change the Message Waiting authorization for a mailbox, authorized users are able to enable and disable the Message Waiting function themselves.

On the appropriate place on the Technical Initialization Worksheet, indicate whether or not (Yes or No) there are mailboxes for which you want to change the message waiting authorization.

Mailboxes to be Modified

On the worksheet, list the mailbox numbers (if any) for which you want to change the Message Waiting Notification privilege. Since all mailboxes initially added to the system are automatically authorized for the Message Waiting function, you will be listing mailboxes that should not be authorized for the function.

Authorize for Message Waiting

Indicate whether or not (Yes or No) each mailbox listed above should be authorized for the Message Waiting function.

Diagnostic Print Outs

Although not normally required, there may be times when you need to verify that communication between CINDI and the Neax 2400 is being executed properly. Two diagnostic print outs are available to monitor primary communications: message waiting and incoming call exchanges. Output of each of these can be controlled separately.

Message Waiting. The message waiting diagnostic print out simply displays on the terminal screen or printer a message each time a message waiting command is exchanged. For example, the display might show:

MW ON: 200 07:17 AM

MW OFF: 200 07:33 AM

The output of this display would continue until you terminate it through SETUP.

Enter 'Y' on the Technical Initialization Worksheet if you want this display to be produced. Enter 'N' if not.

Incoming Calls. The incoming call diagnostic print out simply displays on the terminal screen or printer a message each time an incoming call command is processed. For example, the display might show:

PORT 1 CALL FORWARDED FROM: 233 07:17 AM

PORT 2 DIRECT CALL FROM: TRUNK 07:23 AM

authorized for the Message Walting function.

PORT 3 CALL FORWARDED FROM: ATTENDANT 07:17 AM

PORT 1 DIRECT CALL FROM: ACD MEMBER 07:23 AM

The output of this display would continue until you terminate it through SETUP.

Enter 'Y' on the Technical Initialization Worksheet if you want this display to be produced. Enter 'N' if not.

6.2 Providing Technical Information to CINDI

At this point, the Technical Initialization Worksheet should have been completed. You are now ready to power-on CINDI, install any optional software, then initialize CINDI with the SETUP procedure. Procedures for installing optional software should be included with the optional software diskette(s).

You provide all of the data entered on the Technical Initialization Worksheet to CINDI via the SETUP procedure which is one of CINDI's System Utilities. To access SETUP from the terminal,

Type "SETUP" followed by a carriage return at the "\$" prompt.

The System Utilities chapter in this manual provides complete information about performing the SETUP procedure.

When SETUP is complete, you are ready to begin voice mail operations. To do this,

Type "START" at the "\$" prompt.

The system will perform a routine housekeeping utility. Once housekeeping is complete, CINDI voice mail is operational.

You can now call each CINDI port and test hookflash call transfers, hangup disconnect, and outdial capability. When you call each port, you can leave a message in the System Manager's mailbox (mailbox number 91, 991, or 9991). Next, call CINDI's hunt group number and open the System Manager's mailbox. You can listen to the messages recorded to verify that each port is recording properly. Refer to the System Manager's Guide for complete instructions about opening this mailbox.

6.4 Complete Management Initialization

Complete Management Initialization by adding mailboxes to the mailbox directory, recording company greetings, and setting the time and date. Refer to the CINDI II System Manager's Guide for instructions.

Once all of these steps are complete, users can call into CINDI and use voice mail functions.

Complete Management Initialization by adding mailboxes to the trailbox directory, recording company greatings, and setting the time and date. Refer to the CINDI II System Manager's Guidt for instructions.

Once all of these steps are complete, users can call into CINDI and use voice mail functions.

Chapter 7: System Utilities

7.6.4.2 C-II Voice Mail Operational Parameters (page 7-21)

The following new text is added after the last paragraph on this page:

Do you wish to suppress the recording prompt? [N]

This suppresses the CINDI prompt before the recording tone when a message is being recorded from either an outside caller or from the main menu [1] key. To leave the current setting unchanged, simply press <CR>.

7.6.4.3 PBX Parameters Definition (page 7-28)

The prompt "What is the PBX loop disconnect duration (ms)? [350]" and the prompt description paragraph that follows it are both deleted.

The following new text is added after the last paragraph on this page:

What is the ring detect pulse timer (ms)? [350]

The default is 350 ms and the range is from 1 ms to 1000 ms. The only other recommended value is 150 ms. An improper value in this variable may cause the following symptoms: ring, no answer; or line is answered without ringing.

7.6.4.4 Telephone Line Specification (page 7-30)

The first prompt on this page has been changed by deleting the phrase "for this port". The prompt now reads:

What is the default volume level (1-3)? [2]

The following new text is added after the prompt, "Can non-boxholders continue after leaving a message? [Y]" and before the NOTE at the end of this page:

What is the PBX loop disconnect duration (ms)? [350]

The default is 350 ms and the range is from 300 ms to 3000 ms. This value is used only by loop interface lines; for E&M leave default.

What is the delay before speech (sec)? [0]

The default is 0 and the range is 0 to 10 seconds. Caution should be exercised when changing this value if a significant number of outside callers call directly into the system as they will encounter a delay. This parameter is for systems in which most

Chapter 7: System Utilities

7.6.4.2 C-II Voice Mail Operational Parameters (page 7-21)

The following new text is added after the last paragraph on this page:

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The default is 350 ms and the range is from 1 ms to 1000 ms. The only other recommended value is 150 ms. An improper value in this variable may cause the following symptome ring, no answer, or line is answered without ringing.

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The following new text is added after the prompt, "Can non-boxholders continue after leaving a message? [Y]" and before the NOTE at the end of this page:

What is the PBX loop disconnect duration (ms)? [350]

The default is 350 ms and the range is from 300 ms to 3000 ms. This value is used only by loop interface lines; for E&M leave default.

What is the dalay before speech (sec)? [0]

The default is 0 and the range is 0 to 10 seconds. Caution should be exercised when changing this value if a significant number of outside callers call directly into the system as the v will encounter a delay. This parameter is for systems in which most

non-users are transferred into the voice mail system and enter mid-prompt due to the switch's cut-through timing.

7.6.4.6.2 PBXMWI: PBX Message Waiting Indicator Option (pages 7-38 and 7-39A)

Page 7-38. The paragraph following the prompt "What is the outdial sequence to activate MWI? [none]" has been changed to reflect changes to the list of valid codes. This paragraph now reads as follows:

Enter the sequence that will activate message waiting. Valid codes are:

A = wait for answer

H = hookflash

R = wait for ring

S = wait for silence

T = wait for dial tone

W = wait for one second

X = insert extension number

Page 7-39A. The following new text is added after the last paragraph on this page:

Should Message Waiting be reactivated when mailbox closed? [N]

This allows the message waiting indicator to be reactivated when a boxholder exits his mailbox while new messages remain in his mailbox. The default is "no".

Appendix A: CINDI Worksheets

The following worksheets have been revised to reflect the changes made to the Technical Reference Manual. Please replace the pages in your manual with the pages listed below:

PBX Message Waiting Indication Initialization (page A-9)

Fujitsu Focus 960 API Integration Initialization (pages A-11 and A-12)

non-users are mensferred into the voice mail system and enter mid-prompt due to the switch's cut-f trough teming.

7.6.4.6.2 PBXMWI: PBX Message Waiting Indicator Option (pages 7-38 and 7-39A)

Page 7-38. The paragraph fe llowing the prompt "What is the outdial sequence to activate MWIT [none]" has been changed to reflect changes to the list of valid codes. This paragraph now made as follows:

Enter the sequence that will activate message waiting. Valid codes are:

A = wait for answer

dzefblood = H

R = wait for ring

S - weit for silence

snot laib not niew - T

broose one solt tis w - W.

X = insert extension number

Page 7-39A. The following new text is added after the last paingraph on this page:

Should Message Waiting be reactivated when mailbox closed? [N]

This allows the message waiting indicator to be reactivated when a borholder exits his mailbox while new messages remain in his mailbox. The default is "no".

Appendix A: CiNDI Worksheets

The following worksheets have been revised to reflect the changes made to the Technical Reference Manual. Please replace the pages in your manual with the pages listed below:

PBX Message Waiting Indication Initialization (page A-9)

Fujitsu Focus 960 API Integration Initialization (pages A-11 and A-12)

7 System Utilities

The C-II System Utilities allow the System Manager and/or the installer to perform several levels of system management including initialization, maintenance, and enhancement. This chapter shows the procedures necessary for running the utilities program. The system utilities program requires communication with a standard ASCII terminal. The terminal may operate at 300, 1200, 2400, or 9600 baud. The Genesis voice mail system must be configured to operate at the same baud rate as the terminal. For more information regarding the connection to a terminal, consult the Hardware Installation chapter in this manual.

You can only execute the utilities program when voice mail operations are not being performed. The system must be taken "off-line" in order to run the utilities. Accordingly, you may want to perform some of the utilities functions after normal business hours in order to minimize the impact to voice mail operations.

Also, before you run the utilities program, be sure that no one is currently using voice mail. Please note, however, that no system parameters or messages will be lost when you run the utilities program - although some may be modified.

The utility program may be executed from the hard disk or from the micro diskette. It may be initiated during power up or while the voice mail system is already running. The following section, Running The Utilities Program, provides specific procedures for executing the program.

The utilities program is installed on the hard disk (drive D0) of every Genesis Electronics voice mail system with C-II software. The utilities micro diskette is not required in order to execute the program. You may execute it, however, from either source: the hard disk or micro diskette. Also, the program may be initiated when you are powering the system up or when the system is already running.

7.2.2 Running the

If you are installing new software, it is recommended that you run the utilities program from the micro diskette. This ensures that you are using the latest version of the utilities. Follow the procedures described in this chapter for running the utilities from the micro diskette.

7.2.1 Running the Utilities from the Hard Disk

To run the utilities program from the hard disk, simultaneously press both the 'CONTROL' key and the 'A' key (CTRL-A) on your terminal keyboard. Use the example below as a model of what you will see and how you should respond:

Continue Voice Mail [Y/N]? N

Diagnostic halt. v5 stack pointer: \$XXXX

Diagnostic mode

: X

What file is to be executed? UTILTY <CR>

C-II v5 System Utilities Copyright (C) 1986, 1987 Genesis Electronics Corporation \$

Based on the example above, you respond as follows:

- Type N to the "Continue voice mail" prompt. Do this within 2 seconds after you see the prompt.
- · Type 'X' when you see the colon prompt.
- Type 'UTILTY' followed by a carriage return when you see the "What file is to be executed" prompt.

7.2.2 Running the Utilities from the Micro Diskette (System On)

You can run the utilities program from the micro diskette if needed, without powering the system off. To do this, press CONTROL-A from your terminal keyboard. Use the example below as a model of what you will see and how you should respond:

Continue Voice Mail [Y/N]? N

Diagnostic halt. v5 stack pointer: \$XXXX

Diagnostic mode

: S (insert the micro diskette when you see the colon prompt, then type 'S')

Sys disk: 0 Aux disk: 1 Diskette: 2

Select drive: 2

: X

What file is to be executed? UTILTY < CR>

C-II v5 System Utilities Copyright (C) 1986, 1987 Genesis Electronics Corporation \$

Using the above example, you do the following:

- Type 'N' to the "Continue voice mail" prompt. Do this within 2 seconds after you see the prompt.
- When you see the colon, insert the utilities micro diskette then type 'S'.
 - Select drive '2' (for micro diskette drive) when prompted to select a drive.
 - Type 'X' when the colon prompt reappears.
 - Type 'UTILTY' followed by a carriage return when you see the "What file is to be executed" prompt.

7.2.3 Running the Utilities from the Micro Diskette (System Off)

The utilities program can also be executed if the system is already powered off. In this case the system executes the utilities automatically when you:

- · Insert the utilities micro diskette.
- · Power the system on.

The example below is a model of what you see on your terminal screen:

C-II CPU Diagnostics Rev. x Copyright (C) 1986, 1987 Genesis Electronics Corporation

Testing CPU 0 errors
Testing DCU 0 errors

C-II v5 System Utilities
Copyright (C) 1986, 1987 Genesis Electronics Corporation
\$

- Upgrade disk data from one version to another

Each utility command and an associated description is listed below. These are commands that you type onto the terminal keyboard in order to execute a utility function. You can use the HELP command in order to print a list of the commands available on your version of the software.

BACKUP - Backup the directories to a diskette

CHECK - Check the file integrity

DIR - Print the contents of a disk directory
DTC - Set up disk definition for DTC controller

FORMAT - Format a disk

GINIT - Initialize a system disk for Voice Genie

HELP - Receive command listing

INIT - Initialize a system disk for CINDI

INSTALL - Install new system software from diskette

LABEL - Write a new label to a disk
PCLEAR - Clear phrases from a disk

PCOPY - Copy phrases to the system disk

PEEK - Peek at a disk block

PSAVE - Save phrases to a diskette set

PTEST - Verify ability to read phrase diskettes

RESTORE - Restore the directory from a diskette set

REVERT - Revert from one version to a previous version

RUN - Run a program file from any unit SETUP - Set up C-II and host PBX information

START - Start the system from a diskette or the hard disk

STOP - Shut down the system for transport

TEST - Test a disk drive using random/sequential reads
UPGRADE - Upgrade disk data from one version to another

Several telephone systems allow call transfers from standard extensions to any other extension. The "hookflash" is the standard method employed to signal the switch that this operation is desired. Hookflash is a brief interruption of loop current caused when the phone receiver's hook or button is momentarily depressed.

Telephone systems use several schemes to communicate which desired functions are required. These schemes often involve a sequence of actions and digits along with the hookflash. For this reason, such sequences are often called "Switch Hookflash Sequences."

CINDI is able to communicate with all types of telephone systems using a full range of Switch Hookflash Sequences. You will need to determine in the telephone system's documentation the required sequences for the switch.

The following information explains how to "program" the appropriate sequences for CINDI. The next few sections describe each of the four types of characters that may be used in a sequence: simple commands, cadence detect commands, variables, and data.

7.4.1 Simple Commands

Simple commands are represented by the characters, "D", "H", "L", and "W". These simple instructions instruct CINDI to perform some basic operations such as a short hookflash.

D Disconnect	Disconnect CINDI from the line.
H Hookflash	Do a short hookflash. The duration can be defined in SETUP.
L Long Hookflash	Do an extended duration hookflash. The dura- tion can be defined in SETUP.
W Wait	Wait for approximately one second before ex- ecuting the next command.

7.4.2 Cadence Detect Commands

Cadence detect commands are represented by the characters "A", "N" "R",
"S", and "T". With these a system user can request the system to look for a
specific condition on the voice channel. If a particular condition occurs (i.e.
ringing), then the system will continue with the programmed sequence. If the
condition does not occur (i.e. a ring detect test fails, thus the called party cannot be reached), an error condition arises and the system aborts the sequence.
CINDI can be programmed to perform a recovery sequence after an abort.

A Answer Detect	Listen for voice. As soon as voice is detected, CINDI transfers the call.
N Notify Detect	Listen for voice. As soon as a voice is detected, CINDI informs the called party "Call Transfer" then transfers the call.
R Ring Detect	Listen for normal ring for at least 2 ring cycles. Verify that normal call progress is occuring.
S Silence Detect	Listen for total silence lasting longer than 3 seconds.
T Tone Detect	Listen for a solid tone which lasts from 3-20 seconds. This is usually a dial or stutter tone (3 short bursts then a solid tone).

7.4.3 Variables

There is one character which is treated as a variable and is dynamically defined as the system runs. The "X" character tells the system to insert the extension that the caller entered on the telephone keypad into the programmed sequence at that point. This extension can be from one to four digits long and consists of the characters "0" through "9".

7.4.4 Data

The last type of sequence character is the data character. These are the characters "0" through "9", "*", and "#". Their DTMF equivalents are inserted into the sequences and sent to the telephone system just as they are with no further processing by the system software.

The system control utilities help the System Manager to perform the required functions and utilities of the CINDI system.

The system control utilities are listed below:

HELP START STOP

Print the contents of a disk directory

Verify ability to read phrase distertes

7.5.1 HELP Procedure

The HELP utility lists all system utility operator commands. DO NOT attempt to use any other system utility command other than those listed here. Serious damage to your system may result.

To access the HELP procuedure type "HELP" followed by a <CR> at the dollar sign. The following is an example of what you see on the screen:

\$HELP <CR>

BACKUP	Backup the directories to a diskette
CHECK	Check the file integrity
DIR	Print the contents of a disk directory
DTC	Set up disk definition for DTC controller
FORMAT	Format a disk
GINIT	Initialize a system disk for GENIE Voice Mail
HELP	Receive command listing
INIT	Initialize a system disk for CINDI Voice Mail
INSTALL	Install new system software from floppy
LABEL	Write a new label to a disk
PCLEAR	Clear phrases from a disk
PCOPY	Copy phrases to the system disk
PEEK	Peek at a disk block
PSAVE	Save phrases to a diskette set

Press any key to continue...

(Since the list is longer than a screen's length, the listing stops at the bottom of the screen. Press any key to continue the listing on a fresh screen. What you see above will scroll off the screen.)

PTEST	Verify ability to read phrase diskettes
RESTORE	Restore the directory from a diskette set
REVERT	Revert from one version to a previous version
RUN	Run a program file from any unit
SETUP	Set up C-II and host PBX information
START	Start the system from a diskette or the hard disk
STOP	Shut down the system for transport
TEST	Test a disk drive using random/sequential reads
UPGRADE	Upgrade disk data from one version to another

^{\$ (}The dollar sign reappears when the listing is complete.)

7.5.2 START Procedure

To return to voice mail functions after performing any procedure, run the START utility. To perform this utility:

- Type 'START' followed by a <CR> at the dollar sign. Please note that pressing a key other than <CR> returns you to the '\$' prompt rather than executing the START procedure.
- If you wish to start up from the hard disk, remove any diskette in the drive, Press <CR> to continue.

The screen appears as follows:

Tooting CDII

Remove any diskette in the drive

C-II CPU Diagnostics v5.00 Copyright (C) 1986, 1987 Genesis Electronics Corporation

resting CPU	o error
Testing DCU	0 error
Testing ports	
Port 1	0 errors
Port 2	0 errors
Port 3	0 errors
Port 4	0 errors
Port 5	0 errors
Port 6	0 errors
Port 7	0 errors
Port 8	0 errors

C-II system diagnostics complete Initializing C-II

C-II Office Communications System v5.00
Part number 6010012 Rev X
Copyright (C) 1986, 1987 Genesis Electronics Corporation

Verifying disk, please wait...

Housekeeping completed (date) (time)

This display may list fewer than eight ports if the CINDI model is configured for less.

Once the START procedure is complete (when the "Housekeeping complete" message appears on screen), the system is ready to accept phone calls and perform voice mail functions. No "\$" prompt is displayed on screen.

7.5.3 STOP Procedure

The STOP utility is used to prepare the system for physical movement. Make sure you run this utility every time prior to physically moving the system.

To perform this utility type 'STOP' followed by a <CR> at the dollar sign. The following message appears on the terminal screen:

*** C-II System shut down complete ***

Turn off power and prepare for transport. Power-cycle system to restart.

After the screen displays this message, turn the power switch of the unit off ("O"). Do not attempt to perform any other operation after you execute the STOP Utility.

The system is now prepared for transport. Exercise caution when moving the unit. The system will reset and perform normally after the power switch is returned to the on ("1") position.

7.6 System Configuration Utilities

The System Configuration Utilities are used to redefine system parameters necessary for the voice mail system to operate properly. These utility programs are used when the system is first initialized and when software or hardware urades are added in the future.

The System Configuration Utilities are listed below:

DTC INSTALL REVERT SETUP UPGRADE

7.6.1 DTC Procedure

The DTC utility sets the the disk definition for a DTC controller. This utility ensures that the correct number of sectors per track are defined for the system.

This procedure is critical whenever the Disk Controller Unit (DCU) is changed from an OMTI brand to a DTC brand. The procedure must be performed before the disk controller is changed.

It is advisable to perform this procedure when the Version 5 software is installed. This procedure must be performed before changing controller brands. It will not impact the performance of a system using an OMTI brand. This command may be run at any time on any system, regardless of what controller board is installed, without harming the sytem in any way.

To perform the DTC utility, type 'DTC D0' followed by a <CR>. On your screen you see the following:

\$ DTC D0 <CR>

Previous sectors per track parameter: 0

The DTC operation prints out the previous sector per track information and changes the parameter to 17. The operation is complete when the dollar sign prompt reappears.

If the system is a two drive system, the DTC procedure must also be performed for the second drive. To do this, type 'DTC D1' followed by a <cr>
 The screen appears as follows:

\$ DTC D1 <CR>

Previous sectors per track parameter: 0

The DTC operation prints out the previous sector per track information and changes the parameter to 17. The operation is complete when the dollar sign prompt reappears.

7.6.2 INSTALL Procedure

In order for voice mail operations to be brought on-line, the C-II voice mail software must be stored on the hard disk. Because the original C-II software was installed on the CINDI unit at the factory, you do not need to perform this utility in order to operate CINDI as supplied from the factory.

Any software updates or urades must be transferred to the hard disk from the program/utilities micro diskette. This diskette contains the files to run voice mail, diagnostics, statistical reports, as well as the utilities program. The transfer is performed with the utility, INSTALL.

INSTALL consists of two distinct steps: diskette ver=ifi=ca=tion and software transfer. The verification step ensures that the diskette is not damaged and that the software installation can be completed in its entirety. This step does not concern itself with any existing copy protection keys; it can be used to verify software that will be installed on another CINDI.

If you intend to verify a diskette that will be installed on another system, do not boot from the diskette (copy protection keys are checked during the boot process). Instead, boot from the hard disk and enter utilities from there.

The second step actually transfers files from the diskette to the hard disk. The corresponding files previously on the hard disk are automatically deleted.

To execute the INSTALL utility, type 'INSTALL' followed by a <CR> at the dollar sign prompt. The diskette containing the new software must be in the micro diskette drive at this time, and the diskette's write-protect window must be closed (it should be in the 'read and write' position).

On your screen you see the following:

\$ INSTALL <CR>

Verifying diskette files...

All diskette files verified. Continue installation? [Y]

If a problem is identified during this step, a system error is reported rather than the "All diskette files verified..." message, and CINDI enters console mode.

If all files have been verified, the installation process can be terminated by entering 'N<CR>' at the "continue installation?" message (CINDI returns

to the dollar sign prompt). The installation process can be continued at the "continue installation?" message simply by entering <CR>, after which the screen displays:

Preparing system disk...

Installing system software...

Software modules installed: xx

Installation of software completed

The installation is complete when the dollar sign prompt reappears. The
"Preparing system disk..." message is not presented if INSTALL is performed after some other utility command, such as INIT or PCOPY.

7.6.3 REVERT Procedure

The REVERT utility reverts the C-II database from one version to a previous version. This utility is only needed when reverting from one C-II software version to another (i.e. version 4.xx to version 3.xx), and not when converting to another level within the same version (i.e. version 3.07 to version 3.02).

To perform the REVERT procedure, type 'REVERT' followed by a <CR> at the dollar sign. On your screen you will see:

\$ REVERT < CR>

Do you wish to revert from version 5 to version 4?
Warning: any advisory mailboxes will be deleted!
Do you [N]? (n) <CR>
Do you wish to revert from version 4 to version 3? [N] (y) <CR>

Revert from version 4 to 3 completed \$

Answer 'Yes' to the question that applies to your situation. If you answer 'No' to both questions, the message "No revert was performed" appears on screen and you return to the dollar prompt.

7.6.4 SETUP Procedure

The SETUP utility is used to program CINDI's and the telephone system's configuration parameters. These parameters include: the number of disks, number of ports, storage capacity, message retention time, maximum personal greeting length, call transfer sequences, and telephone line specifications.

Each of the parameters presented in this procedure is fully defined in the Technical Initialization chapter of this manual.

The System Manager may need to enter SETUP numerous times while managing the CINDI system. To make the System Manager's job easier, this SETUP utility is presented within a menu structure. Commands are grouped according to their function (type). Because of this grouping, the System Manager has to simply review the command group which is pertinent to the current need.

To access the SETUP utility simply type "SETUP," then press carriage return. Your screen will look as follows:

\$ SETUP < CR>

----- SETUP COMMAND MENU -----

- System hardware configuration
 - C-II voice mail operational parameters
 - 3. PBX parameters definition
 - Telephone line specification
 - 5. Option Class A Initialization (IS724)
 - Option Class B Initialization (DART or Integrations)

Enter Selection: [EXIT]

If you are installing the system, select each menu item in sequence and answer the questions presented with the information found on the Technical Initialization Worksheet. If you want to modify a specific parameter, select the appropriate menu item.

When you enter a selection from the SETUP Command Menu, the system will present a series of prompts requiring your response. Following each prompt is a set of brackets '[]' which contains the current setting for the prompt. On new systems, this is the factory default setting. You may change this setting by keying in different information or you may simply press <CR> to retain the setting.

CINDI is delivered from the manufacturer with preset system hardware configuration parameters. You will not need to change these parameters unless the CINDI is being reconfigured in the field.

----- SETUP COMMAND MENU -----

- System hardware configuration
- 2. C-II voice mail operational parameters
- 3. PBX parameters definition
- Telephone line specification
- 5. Option Class A Initialization (IS724)
- 6. Option Class B Initialization (DART or Integrations)

Enter Selection: [EXIT]

Enter '1' to select system hardware configuration.

You will see the following prompts:

----- System Hardware Configuration -----

How many disks are on this system? [1]

This number is already factory set by Genesis Electronics. You will only need to change it if you are adding a hard disk.

To change the current setting, enter the number of disks (1 or 2) followed by a <CR>. Press <CR> to retain the factory setting.

How many ports are on this system? [n]

This number was preset at the factory and should not be changed unless you add ports to the system.

To change the current value, enter the number of ports (2-8) followed by a <CR>. To retain the factory setting, press <CR>.

What is the current year? [87]

The default should be for the current year. Press <CR> to retain this setting. If the setting is for a different year, enter the correct year followed by a <CR>. If [0] is displayed, the battery-backed clock may be malfunctioning.

This section of the SETUP Command Menu should be the first parameter definition section to be modified after installing a new CINDI unit.

Make sure you specify the number of mailbox digits before you mailboxes are added to the mailbox directory. Other parameters specified in this section may be changed numerous times during the life of the voice mail unit in order to suit the organization's needs.

----- SETUP COMMAND MENU -----

- System hardware configuration
- 2. C-II voice mail operational parameters
 - PBX parameters definition
 - 4. Telephone line specification
 - 5. Option Class A Initialization (IS724)
 - Option Class B Initialization (DART or Integrations)

Enter Selection: [EXIT]

Enter '2' to select C-II voice mail operational parameters.

You see the following prompts:

----- C-II Voice Mail Operational Parameters -----

What is the desired storage capacity setting? [4]

The storage capacity is set at the factory to Best Voice Quality. If you want to change this setting, type the value (1-4) followed by a <CR>. To leave the setting unchanged, simply press <CR>.

The storage capacity values are defined as follows:

- 1 = Maximum storage capacity
- 2 = Extended storage capacity
- 3 = Normal storage capacity
- the per agree of world M lander and 4 = Best voice quality

Storage capacity and voice quality are inversely related. Greater storage capacity provides lower voice quality and vice versa. For more information, refer to the Technical Initialization Chapter in this manual.

lard format. To leave

What is the standard message retention time in days? [5]

The standard message retention time is set at the factory to five days. If you want to change this setting, type the value (1-7) followed by a <CR>. To leave the setting unchanged, simply press <CR>.

What is the maximum personal greeting length in seconds? [15]

The maximum personal greeting length is set at the factory to 15 seconds. If you want to change this setting, type the value (10-180) followed by a <CR>. To leave the setting unchanged, simply press <CR>.

How many digits are in the mailbox numbers? [4]

The mailbox length is set at the factory to four digits. If you want to change this setting, type the value (2-4) followed by a <CR>. To leave the setting unchanged, simply press <CR>.

You cannot change this parameter once the System Manager has created a mailbox directory (i.e. mailboxes currently exist on the system) unless you first delete all mailboxes from the entire system. Accordingly, you should only set this parameter when the system is first installed.

What is your company's telephone number? [(none)]

Type your company's telephone number, including the area code. Type all the numbers without symbols or spaces, (i.e., enter 916/555-1234 as 9165551234). Follow it with a <CR>. The system will display the information in the standard format. To leave the current setting unchanged, simply press <CR>.

Do you wish to suppress the initial mailbox prompt? [N]

CINDI is factory set to present the Initial Mailbox Prompt, regardless of whether there is a company greeting presented. To have this prompt suppressed by a company greeting, type 'Y' followed by a <CR>. To leave the current setting unchanged, simply press <CR>.

If you suppress this prompt, the system will still play it in the event no company greeting is recorded.

Do you wish to suppress the recording prompt? [N]

This suppresses the CINDI prompt before the recording tone when a message is being recorded from either an outside caller or from the main menu [1] key. To leave the current setting unchanged, simply press <CR>.

Should the mailbox number override the boxholder name? [N]

CINDI is factory set to present the Boxholder's name to the caller when no personal greeting is recorded by the Boxholder. To have the Boxholder's mailbox number presented in this instance, type 'Y' followed by a <CR>. To leave the current setting unchanged, simply press <CR>.

Do you wish to modify the outdial line groups? [N]

CINDI is factory set for Group 1 to contain all lines and Groups 2-8 to contain no lines. To change a line group, type 'Y' followed by a <CR>. To leave line groups unchanged, simply press <CR>.

If you type 'Y' to change a line group, CINDI asks these questions:

Which line group do you wish to modify? [EXIT]

Type the line group number (1-8) followed by a <CR>. To exit line group modification, simply press <CR>.

Which lines are in group n? [current lines]

Type the line numbers that belong to this group, and follow them with a <CR>. The lines to be included can be listed separatly with commas (1,2,3,4,8) or collectively in a range with hyphens (1-4,8). To leave the current lines unchanged, simply press <CR>.

These questions continue to be asked until you exit line group modification by pressing a <CR>. Enter "-" to reset to none.

Default message retrieval order

- 1. First in first out
- 2. Last in first out

What is the desired default retrieval order? [1]

Enter either option 1 (FIFO) or option 2 (LIFO) to select the default message retrieval order. This is a system-wide setting that affects all mailboxes added to the mailbox directory but does not affect the mailboxes that already exist. Please note that Boxholders can change their own message retrieval order through their own mailbox.

The factory setting is for first in, first out order.

commas (1,2,3,4,8) or collectively in a range with hyphens (1-4,8)

This section of the SETUP Command Menu contains prompts that are intended to configure the voice mail system to the specific environment. You may be installing the system "behind" a PBX or attaching it directly to an outside line to the central office. If you are not interfacing the system with a PBX, you can ignore many of the prompts. For additional information, refer to the Dialing Sequence Programming section of this chapter.

----- SETUP COMMAND MENU -----

- 1. System hardware configuration
 - C-II voice mail operational parameters
 - 3. PBX parameters definition
 - 4. Telephone line specification
 - Option Class A Initialization (IS724)
 - 6. Option Class B Initialization (DART or Integrations)

Enter Selection: [EXIT]

Enter '3' to select PBX parameters definition.

You will see the following prompts:

----- PBX Parameters Definition -----

What is the maximum extension length? [4]

Enter the maximum number of digits (2-4) a caller can dial in order to transfer from CINDI to an extension. The factory setting is four digits.

What is the minimum extension length? [2]

Enter the minimum number of digits (1-4) a caller must dial in order to transfer from CINDI to an extension. The factory setting is two digits.

How many digits must be entered to get an outside line? [0]

CINDI is factory set to assume that no additional digits are required to access an outside line. Normally no more than one digit is needed (i.e 9). To change the current setting, enter the number of digits (0-9) followed with a <CR>. To leave the setting unchanged, simply press <CR>.

How many seconds before no-answer, internal calls? [30]

Enter the number of seconds that a phone will ring before CINDI assumes no answer for internal calls. You may enter any value between 10 and 60. The factory setting is 30 seconds.

How many seconds before no-answer, outdials? [30]

Enter the number of seconds that a phone will ring before CINDI assumes no answer for outdials (i.e. Message Forwarding, Call Placements). You may enter any value between 20 and 60. The factory setting is 30 seconds.

What is the SHORT hookflash duration (H) in 1/10 seconds? [5]

CINDI is factory set to provide a 5/10 second (500 ms) hookflash. The duration you define here should match the PBX's hookflash duration and may vary from switch to switch. You will use this hookflash duration when you define call transfer sequences below.

To change this setting, type the number of tenths of seconds (1-9) followed by a <CR>. To leave the setting unchanged, simply press <CR>.

What is the LONG hookflash duration (L) in 1/10 seconds? [5]

Most switches require a single hookflash type only. If you have a switch that requires a second hookflash of a different duration, enter the duration here and use the "L" character when programming the sequence. If the switch does not require a second hookflash duration, it does not matter what duration is defined here.

CINDI is factory set to provide a 5/10 (500 ms) hookflash.

What are the valid first digits for extensions? [1-8]

CINDI is factory set to allow call transfers to all extensions except those beginning with 9. To change this setting, type the valid first digits followed by a <CR>. The digits can be listed separately with commas (1,2,3,4,8), or as a range with hyphens (1-4,8). To leave the current digits unchanged, simply press <CR>.

What is the attendant's extension? [0]

The attendant's extension is set at the factory to [0]. To change this setting, type the extension number (1-4 digits) followed by a <CR>. To leave the current setting unchanged, simply press <CR>.

What is the attendant transfer sequence? [HWXR]

This sequence is used to transfer to the attendant only if the attendant's extension is "0." If the attendant's extension is another number, use the Extension Transfer Sequence below.

The system is factory set for the following attendant transfer sequence: hookflash, wait, extension, ring detect (HWXR). To leave the current setting unchanged, simply press <CR>. To reset the sequence to [none], type '-' followed by a <CR>.

To change this setting, type the sequence followed by <CR>. For valid dialing sequence commands, refer to the Dialing Sequence Programming section of this chapter.

What is the extension transfer sequence? [HWXR]

The system is factory set for the following extension transfer sequence: hookflash, wait, extension, ring detect (HWXR). To leave the current setting unchanged, simply press <CR>. To reset the sequence to [none], type '-' followed by <CR>.

To change this setting, type the sequence followed by <CR>. For valid dialing sequence commands, refer to the Dialing Sequence Programming section of this chapter.

What is the busy reconnect sequence? [H]

Enter the sequence necessary to return CINDI to the caller if a busy signal is encountered. The factory setting is hookflash 'H'.

If additional codes are required, enter them here. Enter a dash '-'
to set the sequence to 'none'.

What is the fast-busy/reorder reconnect sequence? [H]

Enter the sequence required to return CINDI to the caller if a fastbusy or a reorder tone is encountered. The factory setting is hookflash 'H'. If additional codes are necessary, enter them here. Enter a dash '-' to set the sequence to 'none'.

What is the ring-no-answer reconnect sequence? [H]

Enter the sequence necessary to return CINDI to the caller if the call is unanswered. The factory setting is hookflash 'H'. This sequence is used after the number of rings occurs as defined above under the prompt "How many rings are allowed before no answer is assumed?"

If additional codes are required, enter them here. Enter a dash '-' to set the sequence to 'none'.

What is the call transfer answer-detection delay (ms)? [0]

This item determines the length of the delay between the time CINDI executes a call transfer and when the ring cadence begins. You can enter a call transfer answer-detection delay in the range of 0-5000 milli=seconds (ms). The factory default setting is 0 ms.

What is the outdial answer-detection delay (ms)? [0]

This items determines the length of the delay between the time CINDI makes an outdial and when the ring cadence begins. You can enter an outdial answer-detection delay in the range of 0-5000 milli=seconds (ms). The factory default setting is 0 ms.

What is the DTMF detection threshold (ms)? [40]

Enter the minimum DTMF tone duration that CINDI will recognize as valid. You can enter a value in the range of 10-500 milliseconds (ms). The factory default setting is 40 ms.

What is the silence detection threshold (ms)? [2250]

Enter the minimum length of silence that CINDI needs to detect before terminating message recording. You can enter a value in the range of 1000-5000 milliseconds (ms). The factory default setting is 2250 ms.

What is the CINDI disconnect duration (ms)? [1500]

Enter the disconnect signal duration provided by CINDI. You can enter a value in the range of 100-3000 milli=seconds (ms). The factory default setting is 1500 ms.

What is the voice detection threshold? [2]

The voice detection threshold determines the number of consecutive variances in frequency from standard call progress tones that CINDI needs to receive before detecting an answer. Enter a threshold value in the range of 1 to 10A value of 1 is most sensitive to non-call progress frequencies, 10 is the least sensitive. Therefore, if CINDI is answering early (i.e. when the phone is answered, CINDI is already speaking), decrease the sensitivity. If CINDI is not answering, increase the sensitivity.

What is the ring detect pulse timer (ms)? [350]

Depending on the Line Equivalent you specify, CINDI asks none, some, or

The default is 350 ms and the range is from 1 ms to 1000 ms. The only other reccomended value is 150 ms. An improper value in this variable may cause the following symptoms: ring, no answer; or line is answered without ringing.

The following group of prompts are used to define the type of telephone line interface to be used by each port on the system. Standard loop start lines are supported by default

----- SETUP COMMAND MENU -----

- System hardware configuration
- 2. C-II voice mail operational parameters
- 3. PBX parameters definition
- Telephone line specification
- Option Class A Initialization (IS724)
- Option Class B Initialization (DART or Integrations)

Enter Selection: [EXIT]

Enter '4' to select PBX parameters definition

You will see the following prompts:

----- Telephone Line Specification -----

What is the line equivalent for port n?[current line number]

Line equivalent numbers are explained in detail in the Telephone Interface chapter of this manual and are set according to the type of telephone line connected to the port. On the screen, the 'n' is replaced by the appropriate port number.

Type the Line Equivalent number from the data entered in the Technical Initialization Worksheet, followed by <CR>.

Depending on the Line Equivalent you specify, CINDI asks none, some, or all of the following questions:

What is the wink pulse duration in milliseconds? [200]

This question is asked only for ports configured for wink start operation. Type the duration (140-290) followed by a <CR>. Press <CR> to retain the current setting.

What is the default volume level (1-3)? [2]

Enter a value of 1 through 3. Each value corresponds with the following volume level: 1 = Ouiet

2 = Medium

3 = Loud

Are outgoing calls allowed on this line? [Y]

The factory setting is 'Y'. Entering 'N' prohibits any outgoing calls on this port (i.e. Call Placements and Message Forwarding). Press <CR> to retain the current setting.

is this line able to perform a hookflash transfer? [Y]

Entering 'Y' allows CINDI to attempt a PBX hookflash transfer to the operator or to another extension. The factory setting is 'Y.' Enter <CR> to retain this setting.

Can non-Boxholders continue after leaving a message? [Y]

Entering 'Y' allows non-Boxholders to press '1' in order to continue to another mailbox after leaving a message. Entering 'N' causes non-Boxholders to leave only one message per call.

What is the PBX loop disconnect duration (ms)? [350]

The default is 350 ms and the range is from 100 ms to 3000 ms.

This value is used only by the loop interface lines; for E&M, leave the default setting.

What is the delay before speech (sec)? [0]

The default is 0 and the range is o to 10 seconds. Caution should be exercised when changing this value if a significant number of outside callers call directly into the system as they will encounter a delay. This parameter is for systems in which most non-users are transferred into the voice mail system and enter mid-prompt due to the switch's cut-through timing.

NOTE: These prompts are repeated for each port on the system. Make sure you enter the correct information from the worksheet that corresponds to the appropriate port. Once you complete entering information for each port, you return to the SETUP Command Menu.

Option Class A denotes the programs which perform functions 'in front of' or 'around' the CINDI voice mail environment, such as the IS724 option. These programs do not directly modify the actual voice mail funtions. Rather, they change how the outside world perceives voice mail.

-- SETUP COMMAND MENU -----

- System hardware configuration
- C-II voice mail operational parameters
- PBX parameters definition
- Telephone line specification
- Option Class A Initialization (IS724)
- 6. Option Class B Initialization (DART or Integrations)

Enter Selection: [EXIT]

Enter 5 to select Option Class A Initialization

If no optional software exists on the system, selecting menu item 5 causes the system to prompt:

Option Package not resident on system

You return to the SETUP Command Menu

If the optional software for the Inbound Service 724 (IS724) exists on the system you will see a group of prompts used to initialize this feature package.

----- IS724 Automated Attendant-----

Which lines will provide IS724 support? [none]

Enter the desired line numbers (1-8) that should provide IS724 service. The lines can be separated with commas (1,2,3,4,8) or with hyphens (1-4,8). The factory has pre-set no lines to provide IS724 support. You can type '-' (hyphen) to reset to none.

Please note that callers will enter voice mail directly on any operational lines NOT specified in this list.

Are non-mailbox holders allowed to screen calls? [N]

Enter 'Y' and all calls transferred through IS724 are screened except calls directed to the attendant or to authorized Boxholders who have requested no-screening. Enter 'N' and screening ability is restricted to Boxholders only.

The factory has pre-set this value to 'N'. Simply press <CR> to retain the factory setting.

Is the attendant allowed to screen calls? [N]

Enter 'Y' and CINDI will provide the attendant with data about each IS724 call received. Please note that the attendant is now allowed to reject a screened call. Enter 'N' and the attendant will receive no information about the calls.

The factory has pre-set this value to 'N'. Simply press <CR> to pretain the factory setting

Do you wish to suppress the initial extension prompt? [N]

CINDI is factory set to present the initial extension prompt on IS724 lines, regardless of whether an attended line greeting is presented. To have this prompt suppressed by the attended line greeting, type 'Y' followed by a <CR>. To leave the current setting unchanged, simply press <CR>. Should you choose to suppress this prompt, the system will still play it in the event no attended line greeting is recorded.

If you elect to suppress this prompt, the brief, follow-up extension prompt that comes after the site directory will also be suppressed

What is the sequence to initiate a consultation call? [HWXA]

This sequence defines how CINDI places the caller on hold and initiates contact with the called party for screening requirements.

This sequence is factory set to hookflash 'H', wait-one-second 'W', dial extension 'X', answer detect 'A'. If you need to change this setting, refer to Dialing Sequence Programming section of this chapter. Enter '-' to set the sequence to 'none.'

What is the busy reconnect sequence? [H]

This sequence returns CINDI to the caller if a busy signal is encountered at the called party during a screened call.

The factory setting is hookflash 'H'. Enter <CR> to retain the current setting. Enter '-' to set the sequence to 'none.'

What is the fast-busy/reorder reconnect sequence? [H]

This sequence returns CINDI to the caller if a fast-busy signal or reorder tone is encountered at the called party during a screened call. The factory setting is hookflash 'H'. Enter to retain the current setting. Enter '-' to set the sequence to 'none.'

What is the ring-no-answer reconnect sequence? [H]

This sequence returns CINDI to the calling party if no-one answers the screened call after the programmed number of rings. The number of rings allowed before a no-answer is assumed is programmed through menu selection 3, PBX Parameters Definition.

The factory setting is hookflash 'H'. Enter to retain the current setting. Enter '-' to set the sequence to 'none'

What is the connect sequence? [H]

This sequence is used by CINDI to reconnect to the calling party and drop out of the call after the called party accepts the screened call The factory setting is hookflash 'H'. Enter to retain the current setting. Enter '-' to reset the sequence to 'none.'

What is the refused-call reconnect sequence? [none]

This sequence reconnects CINDI with the calling party in order to continue with IS724 procedures when the called party has refused the call and disconnected.

The factory setting is 'none'. Enter to retain the current setting. Enter '-' to reset the sequence to 'none.'

Option Class B Initialization (DART or Integrations)

Option Class B denotes those programs which perform integrated, systemwide services within the voice mail environment. These include the DART and the Message Waiting feature options as well as the IVMS, Fujitsu Focus, and NEC NEAX integrations.

Since there are numerous Class B feature options, there are several groups of prompts depending upon what feature you are initializing or modifying.

----- SETUP COMMAND MENU -----

- 1. System hardware configuration
- C-II voice mail operational parameters
- PBX parameters definition
- Telephone line specification
- 5. Option Class A Initialization (IS724)
- 6. Option Class B Initialization (DART or Integrations)

Enter Selection: [EXIT]

first name. If you want to group at mes together, enter an identify

Enter 6 to select Option Class B Initialization.

If no Class B optional software is installed on the system, no prompts will appear when you select this option.

If a feature option has been purchased in addition to the standard C-II software, you will receive an appropriate series of prompts when you select option 6. The prompts you see for each feature are presented in the following sections.

DART: Dispatch Assignment/Response Terminal Option

Since DART is a screen oriented package, DART requires a Digital VT220 or compatible terminal The following group of prompts are used for initializing or modifying the DART database.

----- DART Initialization -----

DART Maintenance - enter command: (Add, Delete, Quit)

Enter 'A' to add a name to the DART database. Enter 'D' to delete a name from the DART database. If you want to return to the SETUP Command Menu and make no changes to the DART database, enter 'Q.' Entering <CR> causes the prompt to be refreshed on the screen.

You may enter mailbox numbers to the DART database which do not yet exist in CINDI's mailbox directory. These mailboxes, however, will not be displayed on the Dispatcher's terminal until the System Manager adds them to the mailbox directory.

To Add DART Entries:

If you enter 'A' to add, you will see the following prompts:

Enter the name to be added.

Enter a name. Names can be up to 14 characters in length. If you enter a name with more than 14 characters, the system drops the excess letters. You can verify your entry by looking at the top of your screen.

The names will be automatically sorted alphabetically. For this reason, you may want to enter the names in this order: last name, first name. If you want to group names together, enter an identifying account code before the name. These names will be sorted first.

If you enter <CR>, the system accepts the key-stroke and moves ahead to the next prompt. The entry is recorded but no name will appear on your screen.

What is the assignment mailbox number?

Enter the assignment mailbox number for the name just entered above. You can verify your entry by looking at the top of your screen. The mailbox number appears next to the associated name. The mailbox number must correspond with your system mailbox digit setting (2, 3 or 4 characters). If you enter an invalid number or if you enter <CR>, the system issues the following error message:

ILLEGAL MAILBOX NUMBER OR WRONG LENGTH

In this case, the system rejects the mailbox entry and associated name. You return to the "DART Maintenance - enter command" prompt in order to re-enter the information.

What is the response mailbox number?

Enter the appropriate response mailbox number. You can verify your entry by looking at the top of your screen. The response mailbox appears between the associated assignment mailbox and name.

The mailbox number must correspond with your system setting (2, 3 or 4 characters). If you enter an invalid number or if you enter <CR>, the system issues the following error message:

ILLEGAL MAILBOX NUMBER OR WRONG LENGTH

In this case, both mailbox entries and the associated name are rejected. You return to the "DART Maintenance - enter command" prompt in order to re-enter the information.

Enter all names you wish to add to the "DART Maintenance enter command" prompt. Press 'Q' when you are finished to return to the SETUP command menu.

You may notice after you have entered a name and both mailbox numbers that a piece of information is incorrect (i.e. mis-spelled name, incorrect mailbox number). You will have to delete the entire entry and then re-enter the information to correct it.

To Delete DART Entries:

In order to delete an entry from the DART database, press 'D' in response to the "DART Maintenance - enter command" prompt listed above. You will see the following prompts:

Enter the name to be deleted.

Enter the name you want to delete exactly as it appears on your screen. After you enter the name and press <CR>, the system shades the targeted name and associated mailbox numbers.

Delete this record? [N]

Enter 'Y' and the entire entry (the name, assignment mailbox number, response mailbox number) is eliminated from the database. It is erased from your screen as well. The associated mailboxes, however, are not deleted from CINDI's mailbox directory. Refer to the System Manager's Guide for instructions on how to delete a mailbox.

Enter 'N' or press <CR> and the record remains in the database.

The PBXMWI setup procedure is used for initializing the optional PBX Message Waiting Indicator (PBXMWI) software. The dialing sequence programming instructions used for this feature differ from those explained in the Dialing Sequence Programming section of this chapter. Please refer to the explanations included below for the correct sequences.

Which lines are authorized for MWI outdialing? [none]

Enter the lines that are to be authorized to outdial for message waiting. List line numbers separated either by a comma (i.e. 1,2,3) or by a hyphen (i.e. 1-3) or by a combination of the two (i.e. 1,2,5-8). There are no factory-set lines. Enter '-' to reset to none.

Please note that the lines you indicate here are different from and in addition to the outdialing specifications programmed for Message Forwarding and Call Placements.

What is the outdial sequence to activate MWI? [none]

Enter the sequence that will activate message waiting. Valid codes are:

A = Wait for answer

H = Hookflash

R = Wait for ring

S = Wait for silence

T = Wait for dial tone

W = One second wait

X = PBX extension to be dialed

You may also use the DTMF codes: 0-9, #, *

Example: WXH5. Based on this example, the system would wait one second for the dial tone to return then dial the extension number of the phone to be signalled, hookflash, and sound the DTMF frequencies for the characters Type '-' to reset the sequence to none.

What is the sequence to extinguish MWI? [none]

Enter the actual sequence necessary to extinguish the message waiting indicator. Refer to the code list presented above for valid sequence codesType '-' to reset the sequence to none.

Do you wish to have every mailbox initialized so that its corresponding PBX extension is the same as its mailbox number? [N]

Enter 'Y' to make all mailbox and extension numbers the same. The following message prints on the screen:

ALL MAILBOXES HAVE BEEN INITIALIZED

Enter 'N' to require that the extension number for each mailbox be entered one at a time. Or, enter 'N' if this initialization was previously performed

Do you wish to change the corresponding PBX extension for any mailboxes? [N]

Enter 'N' to move ahead to the Message Waiting Diagnostics prompt. Enter 'Y' and you can enter mailbox numbers and their corresonding extensions. You can do this with the following prompts:

Which mailbox is to be modified? [exit].

Enter the appropriate mailbox number. The mailbox must exist in CINDI's directory. Press <CR> to exit.

If the mailbox does not exist in the mailbox directory, you will see the following message on screen:

MAILBOX DOES NOT EXIST

What is the corresponding PBX extension? [0].

Enter the corresponding extension number. Entering zero disables the message waiting indicator function for the mailbox.

The mailbox prompt reappears. Enter all mailboxes you wish to modify. Press <CR> when you are finished in order to continue with the next prompt.s

Do you wish to print out Message Waiting diagnostics? [N]

If you enter 'Y' CINDI will print message waiting diagnostics on the terminal during voice mail operations. The diagnostics displayed include whether the message waiting indicator is on or off, the mailbox number, and the current time. Please note, message waiting diagnostic displays can occur while CINDI stat reports are being run on the terminal.

Enter 'N' and CINDI will not print message waiting diagnostics.

Should Message Waiting be reactivated when mailbox closed? [N]

This allows the message waiting indicator to be reactivated when a boxholder exits his mailbox while new message remain in his mailbox. The default is "NO".

ber.) The LTN that you enter must match the LTNprogrammed

IVMS: Integrated Voice Messaging System

The IVMS setup procedure configures the CINDI system to communicate digitally with the Northern Telecom SL-1 PBX, providing a complete integration between CINDI and the SL-1. The installation must also be employing the required optional software from Northern Telecom on the SL-1 in order to use IVMS.

The Integrations chapter in this manual contains additional information about this serial integration The following group of prompts are used for initializing the SL-1 IVMS Integration

----- Northern Telecom IVMS Integration Init -----

Do you wish to set any PBX Logical Terminal Numbers? [N]

CINDI's software must be initializated for the particular SL-1 location before voice mail is able to know that the PBX has an incoming call. Each line is assigned a Directory Number (or Logical Terminal Number) in the SL-1.

Enter 'Y' to set PBX Logical Terminal Numbers (LTN) for specific CINDI lines. Press 'N' or if you do not want to change any LTN numbers at this time.

Entering Yes causes the next question to be asked for every port on the system.

What is the Logical Terminal Number for CINDI line n? [].

Enter the LTN number for the CINDI line listed if the line is to be used with IVMS. (The 'n' is replaced by an actual line number.) The LTN that you enter must match the LTN programmed for the corresponding line in the SL-1 databaseNo two CINDI ports may have the same LTN.

This prompt is displayed for each available CINDI line (1-8). You can enter a LTN in the range of 1 through 253. Logical Terminal Numbers are undefined when CINDI is shipped from the factory.

Please note that non-IVMS lines should not have an LTN number. Enter zero in this case.

Do you wish to have every mailbox initialized so that its corresponding PBX extension is the same as its mailbox number? [N]

This question only effects systems that have current, existing mailboxes. Make sure you enter Yes if you are adding IVMS to systems that already have defined mailboxes. The following message prints on the screen:

ALL MAILBOXES HAVE BEEN INITIALIZED

Mailboxes without this one-for-one correspondence are unable to use the built-in features of the integrated system Enter 'N' to bypass this step

Do you wish to change the Message Waiting privileges for any mailboxes? [N]

All mailboxes are initially authorized to use Message Waiting.

Answer Yes to this question in order to change existing settings for mailboxes which are not correct. Answer No to continue with the Message Waiting Diagnostics prompt.

Which mailbox is to be modifed? [exit].

Enter the mailbox you want to modify. Pressing <CR> moves you ahead to the Message Waiting Diagnostics prompt without modifying a mailbox.

If the mailbox does not exist in the mailbox directory, you will see the following message on screen:

MAILBOX DOES NOT EXIST

Do you wish mailbox nnnn to have Message Waiting functions? [Y,N].

Enter 'Y' to authorize the mailbox for Message Waiting privileges. Enter 'N' to deny authorization to a mailbox. The current value, whether or not the mailbox is set for message waiting, is displayed in the default setting.

The "Which mailbox is to be modified?" prompt reappears. Enter all mailboxes you wish to modify. Press <CR> when you have finished entering mailboxes to continue with the next prompt.

Do you wish to print out Message Waiting diagnostics? [N]

If you enter 'Y' CINDI will print message waiting diagnostics on the terminal during voice mail operations. The diagnostics displayed include whether the message waiting indicator is on or off, the mailbox number, and the current time. Please note, message waiting diagnostic displays can occur while CINDI stat reports are being run on the terminal.

Enter 'N' and CINDI will not print message waiting diagnostics

Do you wish to print out incoming call diagnostics? [N]

Enter 'Y' and CINDI will print incoming call diagnostics on the terminal during voice mail operations. The diagnostics displayed include the port accessed, the function (e.g. call forwarding, direct calls), and the incoming call source (e.g. extension, attendant, trunk). Please note, diagnostic message displays may occur while CINDI stat reports print on the terminal.

Enter 'N' and CINDI will not print incoming call diagnostics

The Fujitsu Focus setup procedure configures the CINDI system to communicate digitally with the Fujitsu Focus 960, providing a complete integration between CINDI and the Focus 960.

The user must also install the optional voice messaging software and hardware connection on the Fujitsu Focus 960 PBX. The Integrations chapter in this manual contains additional information about this serial integration.

The following group of prompts are used for initializing the Fujitsu API Integration

----- Fujitsu FOCUS API Integration Initialization -----

Do you wish to define any PBX Directory Numbers? [N]

Enter 'Y' to set PBX Directory Numbers for CINDI's lines. Press
'N' or <CR> if you do not want to change any Directory Numbers
at this time. If you answer yes, you will see the following prompt:

What is the PBX Directory Number for CINDI line n? [].

Enter the PBX Directory Number for the CINDI line listed if the line is to be integrated with the Focus 960. (The 'n' is replaced by an actual line number.) The Directory Number that you enter must match the Directory Number programmed for the corresponding line in the Focus 960 database. Enter '0' for ports not to have the Fujitsu API Integration.

This prompt is displayed for each available CINDI line (1-8). You can enter a PBX Directory Number in the range of 0 through 9999. PBX Directory Numbers are undefined when CINDI is shipped from the factory.

Do you wish to define the Directory Number for message waiting callback? [N]

Enter 'Y' if you intend to define the Directory Number for message waiting callback. If you enter Yes you see the following prompt:

What is the Directory Number for MW callback? [].

Enter the appropriate Directory Number. The number must be a Directory Number that you entered for a CINDI line, preferably, the base Directory Number of CINDI's hunt group

Do you wish to set even parity? []

Entering 'Y' sets the parity to even. Entering 'N' sets it to odd. The parity that you set for CINDI must match the Focus 960's parity setting.

Do you wish to have every mailbox initialized so that its corresponding PBX extension is the same as its mailbox number? [N]

Enter 'Y' to match each mailbox number with its corresponding PBX extension number. The following message prints on the screen:

ALL MAILBOXES HAVE BEEN INITIALIZED

Make sure you enter yes if you are adding the integration software to a system that already has defined mailboxes.

Enter 'N' to bypass this step

Do you wish to change the Message Waiting privileges for any mailboxes? [N]

Enter 'N' to retain the current Message Waiting authorizations for all mailboxes in the system.

Enter 'Y' to change the Message Waiting authorization for specific mailboxes You see the following prompts:

Which mailbox is to be modified? [exit].

Enter the mailbox you want to modify. Pressing <CR> continues with the Message Waiting Diagnostics prompt without modifying a mailbox.

Do you wish mailbox nnnn to have Message Waiting Functions? [Y,N].

Enter 'Y' to authorize the mailbox for Message Waiting privileges. Enter 'N' to deny authorization to a mailbox. The current value, whether or not the mailbox is set for message waiting, is displayed in the default setting.

The "Which mailbox is to be modified?" prompt reappears.

Enter all mailboxes you wish to modify. Press <CR> when
you have finished entering mailboxes to continue with the
next prompt

Do you wish to print out Message Waiting diagnostics? [N]

If you enter 'Y' CINDI will print message waiting diagnostics on the terminal during voice mail operations. The diagnostics displayed include whether the message waiting indicator is on or off, the mailbox number, and the current time. Please note, message waiting diagnostic displays can occur while CINDI stat reports are being run on the terminal.

Enter 'N' and CINDI will not print message waiting diagnostics

Do you wish to print out Incoming Call diagnostics? [N]

when CINDI is shipped from the factory

Enter 'Y' and CINDI will print incoming call diagnostics on the terminal during voice mail operations. The diagnostics displayed include the port accessed, the function (e.g. call forwarding, direct calls), and the incoming call source (e.g. extension, attendant, trunk). Please note, diagnostic message displays may occur while CINDI stat reports print on the terminal.

Enter 'N' and CINDI will not print incoming call diagnostics

(B). Enter '00' for ports not to

The NEC NEAX 2400 setup procedure configures the CINDI system to communicate digitally with the NEAX 2400, providing a complete integration between CINDI and the NEAX 2400.

The user must install the required voice mail software and hardware on the NEAX 2400 in order to use this integration. The Integrations chapter in this manual contains additional information about this serial integration.

The following group of prompts are used for initializing the NEC NEAX Integration

----- NEC NEAX 2400 Integration Initialization ------

Do you wish to define any PBX directory numbers? [N]

Enter 'Y' to set PBX Directory Numbers for CINDI's lines. Press 'N' or <CR> if you do not want to change any Directory Numbers at this time. If you answer yes, you will see the following prompt:

What is the PBX directory number for CINDI line n? [].

Enter the PBX Directory Number for the CINDI line listed if the line is to be integrated with the NEAX 2400. (The 'n' is replaced by an actual line number.) The Directory Number that you enter must match the Directory Number programmed for the corresponding line in the NEAX 2400 database.

This prompt is displayed for each available CINDI line (1-8). You can enter a PBX Directory Number in the range of 0 through 9999. Single digit directory numbers must be preceded by a zero (i.e 01, 02, 03). Enter '00' for ports not to have the NEAX 2400 Integration.

For each CINDI line, PBX Directory Numbers are undefined when CINDI is shipped from the factory.

What is the desired parity setting? [1]

Immediately prior to this prompt, the system displays the valid parity settings and associated codes as follows:

- 1. No parity
- Even parity
- Odd parity

Enter the value (1,2,3) that corresponds with the parity setting you want. Please note that the recommended setting is no parity (1). The parity selected for CINDI, however, must match the NEAX 2400 parity setting.

What is the desired message waiting display? [2]

Immediately prior to this prompt, the system displays the valid Message Waiting displays and associated codes as follows:

- VMM
- 2. MW

Enter the value (1 or 2) that corresponds with the Message Waiting display you want. Users will see the display you select here when they check their callback queue on the digital display phone. 'VMM' refers to 'Voice Mail Module' and 'MW' refers to 'Message Waiting.'

Do you wish to have every mailbox initialized so that its corresponding PBX extension is the same as its mailbox number? [N]

Enter 'Y' to match each mailbox number with its corresponding PBX extension number. The following message prints on the screen:

ALL MAILBOXES HAVE BEEN INITIALIZED

Make sure you enter yes if you are adding the integration software to a system that already has defined mailboxes.

Enter 'N' to bypass this step

Do you wish to change the message waiting privileges for any mailboxes? [N]

Enter 'N' to retain the current Message Waiting authorizations for all mailboxes in the system Enter 'Y' to change the Message Waiting authorization for specific mailboxes You see the following prompts:

Which mailbox is to be modified? [exit]

Enter the mailbox you want to modify. Pressing <CR> continues with the Message Waiting Diagnostics prompt without modifying a mailbox.

Do you wish mailbox nnnn to have Message Waiting functions? [Y,N]

Enter 'Y' to authorize the mailbox for Message Waiting privileges. Enter 'N' to deny authorization to a mailbox. The current value, whether or not the mailbox is set for message waiting, is displayed in the default setting.

The "Which mailbox is to be modified?" prompt reappears. Enter all mailboxes you wish to modify. Press when you have finished entering mailboxes to continue with the next prompt.

Do you wish to print out Message Waiting diagnostics? [N]

If you enter 'Y' CINDI will print message waiting diagnostics on the terminal during voice mail operations. The diagnostics displayed include whether the message waiting indicator is on or off, the mailbox number, and the current time. Please note, message waiting diagnostic displays can occur while CINDI stat reports are being run on the terminal.

Enter 'N' and CINDI will not print message waiting diagnostics

Do you wish to print out incoming call diagnostics? [N]

Enter 'Y' and CINDI will print incoming call diagnostics on the terminal during voice mail operations. The diagnostics displayed include the port accessed, the function (e.g. call forwarding, direct calls), and the incoming call source (e.g. extension, attendant, trunk). Please note, diagnostic message displays may occur while CINDI stat reports print on the terminal.

Enter 'N' and CINDI will not print incoming call diagnostics.

ig privileges for any

To exit from the SETUP command menu, press carriage return <CR>. Exit is the default command menu setting.

----- SETUP COMMAND MENU -----

- System hardware configuration
- 2. C-II voice mail operational parameters
 - 3. PBX parameters definition
- 4. Telephone line specification
- 5. Option Class A Initialization (IS724)
 - Option Class B Initialization (DART or Integrations)

Enter Selection: [EXIT]

"Yes" to the inst upgrade question, (version 4 to version 5), or if you respond

Enter <CR> to exit from the command menu and return to the dollar sign.

7.6.5 UPGRADE Procedure

The UPGRADE utility upgrades the C-II database from one version to a later version. Generally, this utility is only needed when upgrading from one C-II software version to another (i.e. version 4.xx to version 5.xx), and not when converting to another level within the same version (i.eversion 3.02 to version 3.07).

Be sure, however, to run UPGRADE if you are upgrading to version 5, revision E software because UPGRADE initializes mailboxes for authorized group messaging. This procedure does not affect the actual software. Rather, it modifies the current directory information so that it will be compatible with a more recent release of software.

The UPGRADE procedure must be executed before the INSTALL, PCOPY, INIT or GINIT procedures. Also, it is always preferred to run the utilities software from the micro diskette when new software is being installed, in order to utilitze the latest version of Utilities software. Therefore, follow the procedure described in the "Running Utilities from the Micro Diskette" section of this chapter.

To run the UPGRADE utility, type 'UPGRADE' followed by a at the dollar sign. On the screen you will see:

\$ UPGRADE

Are you upgrading from version 2 to version 3? [N] Are you upgrading from version 2 to version 4? [N] Are you upgrading from version 3 to version 4? [N] Are you upgrading from version 4 to version 5? [N]

Answer "Yes" to the question that applies to your situation. If you answer
"Yes" to the last upgrade question, (version 4 to version 5), or if you respond
"No" to all upgrade prompts, you will receive an additional prompt about
group messaging:

Should all mailboxes be authorized for group messaging?
[Y]

Answer "Yes" to initially authorize all existing mailboxes for group messaging. All existing mailboxes can continue to use the group message feature. Answer "No" for none of the existing mailboxes to have access to groups. Each mailbox's defined groups will be inaccessible until the mailbox is authorized for this feature.

Please note that the System Manager can selectively modify the group messaging authorization for individual mailboxes via the Mailbox Directory.

The UPGRADE operation is complete when the message "UPGRADE from version n to n completed" appears on screen. The dollar prompt reappears.

7.7 System Diagnostic Utilities

System diagnostic utilities are used to diagnose operational problems. These utility programs can be used to identify or verify the exact system failure. Effective use of these utilities helps keep downtime to a minimum.

The System diagnostic utilities are listed below:

CHECK

PEEK

RUN

TEST

7.7.1 CHECK Procedure

The CHECK command validates the status of C-II software and phrases. A "verified" or "checksum error" message will be displayed for each software file. If a checksum error message or an incorrect phrase number is displayed, contact your distributor. The system identification (unit serial number) will also be displayed.

To perform the CHECK utility, type 'CHECK' followed by a <CR> at the dollar sign. On the screen you see the following:

\$ CHECK

System identification: 6120001 CPU Serial Number: 6120001

UTILTY.EXE 601-0014 Rev. D - verified CINDI .OVR 601-0014 Rev. D - verified

For each file verified, the following items are presented: file name and type (e.g. CINDI.OVR), part number, revision level, and verification status. This information is displayed for all files. After the files are verified, the CHECK procedure prompts:

Check phrases? [N]

If you press <CR> or "n", the system will terminate the check procedure and return to the dollar prompt.

If you press "y", the system will check all of CINDI's phrases. Phrase verification may take a minute or two. You see the following:

Checking C-II phrases

Phrases: nnn - verified

The CHECK phrase verification is complete when the dollar prompt reappears.

7.7.2 PEEK Procedure

The PEEK utility allows you to look at a disk block. The information is displayed in hexidecimal notation ("F" is decimal 15).

To perform the PEEK utility:

- Type 'PEEK' followed by a <CR> at the dollar sign.
- Enter the disk number follwed by a <CR> when prompted for "Unit."
- Enter the block address when prompted for it follwed by a CR>.
- 4. Enter the block number when prompted.

On the screen you will see the following:

\$ PEEK of subvoiled orb the forey off, do so you

Unit: DO

Enter block address: (block address)

Block: (block number)

If you pross "y", the system will check all of CINDI's phrases. Phrase

Press return to continue...<space bar>

Pressing carriage return <CR> causes the system to continue to display the contents of the disk from where the listing left off.

Pressing space bar causes the peek address prompt to reappear as follows:

Enter block address: (block address)

Block: (block number)

Press return to continue...<space bar>

Enter block address: <CR>

Pressing <CR> instead of a block address stops the PEEK operation. The PEEK operation is complete when the dollar sign reappears.

7.7.3 RUN Procedure

The RUN utility directly executes any system executable program ("EXE") off of any disk drive. This is not intended as the normal utilities exit, however.

To do the normal exit, please use START To execute the RUN procedure, type 'RUN' followed by the disk drive and the program to be executed. Also type <CR>. Use the example below as a model:

\$ RUN F0:UNTTST <CR>

The disk drive that contains the program to be executed must be included in the program specification. The actual extension name ("EXE") must not be listed. The resulting screen display depends entirely on which program was run.

7.7.4 TEST Procedure

The TEST utility tests a disk drive with a random/sequential read operation-No data on the disk will be modified or damaged when TEST is executed. The TEST procedure searches for a media defect. This procedure will normally only be conducted when instructed by a Genesis Electronics representative.

To perform the TEST procedure:

- 1. Type 'TEST' followed by a <CR> at the dollar sign.
- Enter the disk drive you want to test followed by <CR> when prompted for "Unit."

Your screen will appear as follows:

	\$ TEST	
	Unit: D0	

	***************************************	****
	************************	****
The	sterisks will continue to be displayed until the entire disk is re- ntire disk is read, periods will be displayed as follows:	ad. Once

	•••••••••••••••••••••••••••••••••••••••	

The read operation continues and the periods will be displayed until you stop the operation by entering a <CR>. Once it is interrupted, the dollar sign prompt reappears. If needed, you can interrupt the operation at any time by entering a <CR>, even if the entire disk has not been read. The operation is interrupted automatically if an error occurs.

Before other file commands can be issued, the disk must be prepared. The C-II software uses a proprietary system format for its disks. These programs provide those formats.

The disk maintenance utilites are:

FORMAT GINIT INIT LABEL

7.8.1 FORMAT Procedure

The FORMAT utility is used to format a new floppy diskette. This formatting prepares the diskette to receive data such as personal greetings and system initialization parameters from the C-II system. You may use double sided, double density, 135 TPI 3.5" diskettes purchased from any manufacturer. Use the FORMAT utility before you employ the BACKUP and PSAVE commands.

To execute the FORMAT utility:

- Type 'FORMAT' followed by a <CR> at the dollar sign prompt.
- 2. Insert the micro diskette that you want to format.

The screen appears as follows:

\$ FORMAT < CR>

Insert the diskette to be formatted..

All information will be lost.

Enter Yes to continue: [N] (yes)

Formatting.. Verifying.. Formatting completed

Insert the micro diskette to be formatted..

All information on the disk will be lost.

Enter Yes to continue: [N] (no)

Format terminated

Format as many diskettes as you think necessary for performing the BACK-UP procedure. Answering "No" to the "Continue" prompt terminates the FORMAT utility and the dollar sign reappears.

7.8.2 LABEL Procedure

LABEL is used to electronically enter a short phrase or name on micro diskettes and hard disks. This disk name will be displayed whenever the DIR (directory) utility is executed.

To execute the LABEL procedure:

- Type 'LABEL' followed by the disk drive that you want to label. Valid disk drive names are FO, DO, and D1. Enter <CR>.
 - Enter the disk label when prompted for it. A label may be up to 32 alpha/numeric characters, including spaces and punctuation

The screen appears as the example below:

\$ LABEL FO < CR>

Enter the disk label: [none] (disk label)

Once the procedure is complete, the dollar sign prompt reappears.

7.8.3 GINIT Procedure

The GINIT utility initializes the system for GENIE voice mail processing and should not be used for CINDI systems. CINDI users should use the INIT procedure instead. Factory set default parameters differ between the two.

Should you accidentally perform GINIT, run INIT immediately afterward.

Then, go into the SETUP utility and run option 1, system hardware configuration, in order to set the appropriate number of disks and ports for the system.

7.8.4 INIT Procedure

The INIT utility initializes the system for CINDI voice mail processing-Several base directories and system configuration parameters need to be established before voice mail operations can begin.

This command will not normally be necessary unless the system needs to be re-initialized for some reason. The INIT utility does not affect phrases and programs on the disk, but all messages and mailboxes will be lost. The company name recording and the company greetings will also be lost.

The System Manager and System Operator mailboxes are re-added with passwords of zero when initialization is completed. All system parameters will default to the factory settings.

To perform the INIT utility:

- 1. Type 'INIT' followed by a <CR> at the dollar sign prompt.
- Enter 'Yes' to continue (if appropriate) when prompted. Answering 'No' does not initialize the system.

The screen appears as follows:

\$ INIT <CR>

All messages and mailboxes will be lost. Enter Yes to continue: [N] yes

Preparing system disk.. System initialization completed \$

Initialization is complete when the dollar sign prompt reappears. If you just press <CR> or answer no to the "continue" prompt, the dollar sign reappears and initialization is aborted.

The file command utilities allow the System Manager to transfer the data from hard disk to a micro diskette or vice versa. All data (except messages) can be saved onto micro diskettes. This includes: system initialization and mailbox parameters, phrases, and software.

The file command utilities are listed below:

BACKUP DIR PCLEAR PCOPY PSAVE PTEST RESTORE

These commands are designed to compliment each other. BACKUP and RE-STORE operate on the data that the software uses to customize the system to your needs. PSAVE and PCOPY perform the same function on the phrases that the system uses in order to operate.

BACKUP and PSAVE both transfer information from the hard disk to the micro diskette. RESTORE and PCOPY reverse that process and copy information to the hard disk from the micro diskette.

7.9.1 BACKUP Procedure

The BACKUP command creates a backup of the mailbox directories and system configuration data onto a set of micro diskettes. All system initialization and mailbox parameters may be saved except for individual Call Placement information.

Make sure you have formatted all diskettes used in the BACKUP command (see the FORMAT Procedure). The number of diskettes required for the backup varies with system usage. The System Manager must make an estimate of the number of diskettes needed based on the number of users on the system.

Be sure the write-protect window on each diskette is in the closed (or writeable) position. Also, you should probably label all disks used and number them sequentially as well.

The System Manager must also decide if personal greetings will be saved during the BACKUP procedure. The number of diskettes needed is much smaller if personal greetings are not saved. If you are saving personal greetings you will need approximately one additional backup diskette for every 15 personal greetings. It is advisable to format more diskettes than estimated.

To execute the BACKUP command, type 'BACKUP' followed by <CR>.

The following example shows what the screen will look like. Follow the instructions displayed.

\$ BACKUP < CR>

C-II v5 Voice Mail Backup Utility
Should Personal Greetings be saved? [Y] (yes or no) <CR>
Should Message Forwarding information be saved? [Y]
(yes or no)<CR>

Insert backup diskette number 1.
All information on the diskette will be lost.
Enter Yes to continue: [N] (yes) <CR>

Backing up directories...

Insert backup diskette number 2. All information on the diskette will be lost. Enter Yes to continue: [N] <CR>

Backup process completed

small ir if personal meetings are not saved. If you are saving personal greet-

The "Insert backup diskette..." prompt repeats as long as the system needs another diskette to complete the BACKUP procedure. BACKUP is completed when the dollar prompt reappears.

If you enter "no" to the continue prompt, the system terminates the BACK-UP procedure and returns you to the dollar prompt.

7.9.2 DIR Procedure

The DIR command displays the names of all files or programs on a disk in a directory-type format. This command is especially useful for determining the version of C-II software in question.

To execute the DIR command, type 'DIR FO' or 'DIR DO' followed by at the dollar sign prompt. The FO indicates the micro diskette; DO indicates the hard disk. An example of the listing that you see on the screen follows:

\$ DIR DO <CR>

Directory listing of D0: Default: UNTTST

C-II voice mail system disk Phrases: 468

Phr rev: A

File	Rev	Load	Disk	Length
UTILTY.EXE	D	0000	002F	12
UNTTST.EXE	D	0000	1784	04
CINDI .OVR	D .	0000	0020	0E
AIUDID.OVR	D	E800	0010	04
AIUEMC.OVR	D	E800	0014	04
AIUGRP.OVR	. D	E800	0018	04
AIULOP.OVR	D	E800	0010	04
SYSUSE.OVR	D	C500	0042	02
SYSPAR.OVR	D	C500	0043	02
LINACT.OVR	D	C500	0044	02

On line one, the listing indicates that the directory is for disk DO and that the default program is UNTTST. Line two prints the text input under the LABEL command and indicates that there are 468 phrases stored on the disk. The next line indicates the phrase revision level. The remaining columns contain an entry for each file on the disk.

Column header definitions are listed below:

File: File name and type

Rev: File's engineering revision level

Load: The computer memory address location where that

program should be loaded

Disk: The storage location for that file on the disk

Length: The length, in blocks, for that file

Once the last file and its particulars are listed, the dollar sign reappears.

7.9.3 PCLEAR Procedure

The PCLEAR command clears all phrases from the disk. It is advisable to perform the PCLEAR command prior to running PCOPY when replacing phrases (applicable when performing a REVERT or UPGRADE operation).

Failing to perform PCLEAR at appropriate times does not directly affect system performance. You may however have problems verifying good phrases when running the CHECK utility. You also run the risk of permanently losing a small amount of usable memory on the system disk.

WARNING: DO NOT use this command until you have copied (with PSAVE) a complete set of backup phrases onto diskettes. Otherwise, you may irreversably lose system phrases.

To execute the PCLEAR command, type 'PCLEAR D0' followed by <CR>.

The following example shows what the screen will look like.

\$ PCLEAR D0 < CR>

All phrases on the disk will be lost.

Enter Yes to continue: [N] (yes) <CR>

Preparing system disk...

All system phrases are erased

\$

The dollar sign prompt reappears when the PCLEAR command is completed.

If you enter no to the "Enter Yes to continue" prompt, the system terminates the PCLEAR procedure.

7.9.4 PCOPY Procedure

The PCOPY command copies system phrases from micro diskettes to the system disk. Phrases are the voice prompts heard when you phone into the voice mail system. Each phrase on the diskettes will replace its predecessor on the hard disk, even if the same phrase is copied.

The phrase diskettes may be copied in any order. It is advisable to perform the PCLEAR command prior to PCOPY when replacing phrases.

Once the phrases are copied onto the disk, they may be checked using the CHECK procedure To execute the PCOPY command, type 'PCOPY' followed by <CR>. The example below shows what the screen will look like. Follow the instructions displayed

\$ PCOPY < CR>

Insert the diskette to be copied to the system disk. Enter Yes to continue: [N] (yes) <CR>

Copying phrases... Disk Number: 1

Phrases from this disk: 117 Total phrases copied: 117

Insert the diskette to be copied to the system disk. Enter Yes to continue: [N] (yes) <CR>

Copying phrases... Disk Number: 2

Phrases from this disk: 45 Total phrases copied: 162

Insert the diskette to be copied to the system disk.

Enter Yes to continue: [N] (no) <CR>

PCOPY terminated

\$

The insert diskette prompt repeats indefinitely. Answer 'No' once the last phrase diskette has been copied. The dollar sign then reappears.

As soon as the system finishes copying the phrases, the disk sequence number, the phrases from the disk, and the total phrases copied during the PCOPY session are displayed before the system prompts you to insert the next diskette.

7.9.5 PSAVE Procedure

The PSAVE command copies the system phrases and the site's company name and greetings recordings from the system disk to a set of micro diskettes for storage. The phrase set requires seven to eight diskettes.

If the organization has the optional DART software, PSAVE also stores the DART database. If the organization has the Inbound Service 724 (IS724) software, PSAVE saves the IS724 attended line greeting and the site directory.

Be sure to format (with the FORMAT procedure) all diskettes that you are using in the PSAVE procedure. Since PSAVE writes to the diskettes, make sure that the write-protect window on each diskette is in the closed (or write-able) position.

To execute the PSAVE command, type 'PSAVE' followed by <CR>. The example below shows what the screen will look like. Follow the instructions displayed.

\$ PSAVE < CR>

Insert the first diskette in the save set.
All information on the diskette will be lost.
Enter Yes to continue: [N] (yes) <CR>
Saving phrases...

Insert the next diskette in the save set.
All information on the diskette will be lost.
Enter Yes to continue: [N] (yes) <CR>
Saving phrases...

Phrases saved to disk \$

The "insert the next diskette...enter yes to continue" prompt repeats until all the system phrases are copied. If you respond 'No' to this prompt, the system terminates the PSAVE procedure and returns you to the dollar prompt.

7.9.6 PTEST Procedure

Some software updates or upgrades include new phrases that must be transferred to the hard disk from micro diskettes. The PCOPY utility is used to perform this transfer.

Before attempting to transfer the phrases, you should verify each diskette in the phrase set with the utility, PTEST. PTEST ensures that the diskettes are not damaged and that the phrase transfer can be completed in its entirety.

To execute this utility, type 'PTEST' followed by a <CR> at the dollar sign prompt. Your screen displays the following:

\$ PTEST < CR>

PHRASE DISKETTE VERIFICATION

Verifies phrase diskettes prior to using PCOPY. If more or less than a standard phrase set is input, ignore checksum warnings as they will be invalid.

Insert the phrase diskette to be verified. Enter Yes to continue: [N]

When you type 'Y<CR>' to this prompt, CINDI verifies the status of the phrases stored on the diskette currently inserted in the diskette drive. If a problem is identified, CINDI reports a system error and enters console mode. If no problems are found, the verification process continues:

****Diskette verified****

Insert the phrase diskette to be verified. Enter Yes to continue: [N]

When all diskettes have been verified, enter <CR> to the prompt. CINDI then reviews the results of the phrase verification process and returns to the dollar sign:

Number of phrases checked: nnn - verified as complete set \$

If a complete phrase set was not reviewed, CINDI displays "*** Warning: Phrase Set checksum incorrect" rather than the "verified as complete set" message. This can be ignored unless you were verifying a complete set of standard voice mail phrases. In this case, perform PTEST again to ensure

that the error cannot be explained by other reasons, such as testing a diskette more than once or including an optional phrase diskette with the standard set.

7.9.7 RESTORE Procedure

The RESTORE command restores the information from the backup diskettes to the voice mail system. It is critical that the diskettes be restored in the same order in which they were recorded during the BACKUP procedure. The BACKUP utility recorded a sequence number on each diskette; so, should you accidentally insert a diskette out of order, you will be prompted to replace it with the correct diskette.

To execute the RESTORE command, type 'RESTORE' followed by <CR>.

The example below shows what the screen will look like. Follow the instructions displayed

\$ RESTORE < CR>

Insert backup diskette number 1. Enter Yes to continue: [N] (yes) <CR>

Restoring...

Insert backup diskette number 2. Enter Yes to continue: [N] (yes)

Restoring... Restore process completed \$

The "Insert backup diskette..." prompt repeats until the last backup diskette is inserted. RESTORE is completed when the completion message and dollar sign prompt appear. If you respond "no" to the "Enter yes to continue" prompt, the restore process terminates and you return to the dollar sign prompt.

8 The System Monitor

The C-II system monitor allows the System Manager and/or distributor to perform basic system functions. The system monitor is actually a set of bootstrap and diagnostic routines stored in permanent memory (ROM) inside of the system. These bootstrap routines perform various system tests on power up, determine the disk drive from which to load the default program, and load and execute that program.

Error handling and diagnostic routines allow the user to determine the cause of a system error and to execute programs from various devices. This chapter shows the proper procedures to run monitor commands. The system monitor communicates with a standard ASCII terminal. The terminal may operate at 300, 1200, 2400, or 9600 baud and the CINDI voice mail system must be configured to operate at the same baud rate as the terminal. For more information regarding the connection to a terminal, refer to the Hardware Installation chapter in this manual.

The system monitor can only be entered when voice mail operations are not being run. Therefore, the system needs to be taken "off-line" when entering the system monitor. It may be necessary to perform certain operations after normal business hours in order not to interrupt normal voice mail operations. Also, make sure that no one is using CINDI voice mail prior to entering the system monitor. No parameters or messages will be lost during the operation of this facility other than messages being recorded at the actual time you brought the system off-line.

CAUTION: Do not attempt any procedure other than those explained in this chapter. Damage to the operating software could occur.

The system monitor may be initiated from the system utilities or while the voice mail system is active. Follow the procedures shown in the Entering the System Monitor sections of this chapter.

The system monitor presents the colon sign ':' prompt when waiting for a command input from you. You may enter any valid monitor command, including 'H' (Help), which lists all of the commands. All system monitor commands consist of one letter. No <CR> is required to begin their execution. If you see a '#' prompt at anytime while in the monitor, simply enter the letter 'Q' in order to quit. The familiar colon prompt ':' will reappear.

The responses required in order to perform a monitor procedure are also shown in the following sections of this chapter.

8.1.1 Entering The System Monitor From Voice Mail

To enter the system monitor while the voice mail system is active:

- Press 'Control-A' on your terminal's keyboard.
- Enter 'No' to the "Continue Voice Mail" prompt within 2 seconds of seeing this prompt.

The screen looks as follows:

Continue Voice Mail [Y/N]? (N)

Diagnostic halt. v5.xx stack pointer: \$XXXX

Diagnostic mode

The colon prompt appears once this procedure is complete.

8.1.2 Entering The System Monitor From The Utility System

To enter the system monitor while the utility system is active, type 'CONSOL' followed by a <CR> at the dollar sign prompt. The screen looks as follows:

\$ CONSOL

Normal termination. v5.xx stack pointer: \$EOOO

Diagnostic mode

The colon prompt appears once this procedure is complete.

Each of the user monitor diagnostic commands are listed below with an associated description. The H command prints a list of the available commands for your version of the software.

- H Help Command
- L List the selected disk directory
- R Restart the Voice Mail System
- S Select the current working disk
- V View the report on the last system failure
- X Execute a file from the selected disk

The system control commands direct which programs are to be in control of the system. Commands that provide assistance to the operator, such as the Help command, are also listed within this category.

The monitor system control commands are:

Help

Execute

Restart

The HELP command may be entered at any time to refresh the operator's memory with a list of the most commonly used monitor commands. To access HELP, type 'H' at the colon prompt. The screen looks as follows:

: H

- L List the selected disk directory
- R Restart the system
- S Select working disk
- V View last failure report
- X Execute a file from the selected disk

8.2.2 LIST

The System Monitor offers a command paralleling the DIRectory command found in the System Utilities. This command is LIST.

Use this command to list the files on a selected disk. You must use the SELECT command in order to specify which disk drive is to be listed.

To execute LIST, type 'L' at the colon prompt. An example of how your screen appears follows:

: L

Directory listing of D0: Default: UNTST
C-II voice mail system disk Phrases: 348

File Type Part Rev Load Block Len UTILTY EXE 600-0014 5.0 0000 06B9 40

This example indicates that the file UTILTY is type EXE, has part number 600-0014 and revision level 5.0, loads into memory at offset of 0, is stored on the disk starting at block 06B9 (hex), and is 40 hexidecimal sectors long.

When all files on the disk have been listed, the colon prompt reappears.

8.2.3 RESTART

The RESTART command reactivates the voice mail system from the system monitor. The unit will boot from the micro diskette if the diskette is in the micro diskette drive. If not, it boots from the number 0 hard disk drive. The system is not able to start from the micro diskette if a diskette was not completely inserted or if the diskette did not contain a valid default program.

To execute the RESTART command, type 'R' at the colon prompt. The system will prompt you to confirm your request by prompting "Restart CINDI?" Answer "Yes" to continue. If you enter anything other than the three characters "Yes", the system will return to the colon prompt.

An example of how the the screen appears when you execute the RESTART command follows:

:R

Restart CINDI? (Yes)

C-II CPU Diagnostics v5.xx Copyright (C) 1986, 1987 Genesis Electronics Corporation

Testing CPU 0 errors
Testing DCU 0 errors
Testing ports

Port 1 0 errors
Port 2 0 errors
Port 3 0 errors
Port 4 0 errors

8.2.4 SELECT

System configuration is necessary so that a basic set of commands can work in various ways, depending upon the situation. For example, instead of having one "List the Directory" for the micro diskette drive and another for the hard disk, you can select the drive that you want to be the currently active drive. Then, you can use one LIST command to read what is on it.

The system configuration command is called SELECT.

The SELECT command allows you to specify the disk which you want to be accessed when you use the L or the X commands. You may select either the system disk (0) or the diskette (2). There is an auxiliary hard disk (1) installed on CINDI units that have a 'D' designation following the model number. Otherwise, there is no auxiliary hard disk (1) to access. To execute the SELECT command, type 'S' at the colon prompt. Your screen will appear as follows:

: S

Sys disk: 0 Aux disk: 1 Diskette: 2

Select Drive: (0,1, or 2)

The colon prompt reappears when the select operation is completed.

8.2.5 VIEW

One of the tools CINDI provides for system diagnostics is contained in the System Monitor. This command is VIEW.

The VIEW command is used to display the error message for the most recent system error which occured. The terminal did not need to be operational when the error occured in order to use this command. The error message is retained for display when you enter the VIEW command.

To enter the VIEW command, type 'V' at the colon prompt. Your screen appears as follows:

de on the current; active drive. This is defined with

(Displays most recent system error message)

User requested termination. v5.xx stack pointer: \$C800

The colon prompt reappears after the error message is displayed.

Please note that the most current system error message is available for as long as the operator remains in the system monitor. Once power is lost or another system is activated (i.e. voice mail or utilities), this specific system error message is lost.

8.2.6 EXECUTE

The EXECUTE command loads the requested program from the currently selected drive and executes that program. When you enter the system monitor from the Voice Mail program, the system disk (D0) is always the disk drive currently selected.

To access EXECUTE:

- 1. Type 'X' at the colon prompt.
- 2. Enter the file to be executed when prompted for it.

NOTE: Only files of the "EXE" type (executable programs) may be selected. The file named must reside on the currently active drive. This is defined with the Select command.

The following is an example of how the screen appears:

: X What file is to be executed? UTILTY <CR>

C-II System Utilities v5.xx Copyright (C) 1986, 1987 Genesis Electronics Corporation \$

Once a file is executed, the prompt that appears on the screen (i.e. colon or dollar sign) changes to whichever system has been activated. If the voice mail system is activated, no prompt appears. If the system utilities are activated, a dollar sign appears.

Various error messages may occur during normal operation of the monitor commands. To aid the smooth operation of these commands, the following list of error messages is included. Follow the actions that are recommended and re-attempt the command.

Error Message	Explanation	Corrective Action
Drive not ready	The disk drive specified in the command is not	For diskette operations, make sure the diskette is proper- ly installed.
	ready.	For hard disk operation, make sure that the disk has been given time to come up to speed.
		Check the cables to the disk drive for loose connections.
Drive not selected	The disk drive specified could not be	Check to make sure that the unit number is valid.
	found.	Check the cables to the disk drive for loose connections.
Invalid Command	The command entered was not valid.	Check the proper entry of the command.

Error Message	Unit	Explanation	Corrective Action
System Error \$04	0	The disk	Check to make sure that the
System Error \$44	friesdcon	drive specified	unit number is valid.
System Error \$84	2	could not be	
		found.	Check the cables to the disk drive for loose connections.
System Error \$05	0	The disk drive	Check to make sure that the
System Error \$45	1	specified could	unit number is valid.
System Error \$85	2	not be found.	
ly installed.	100	command is	
System Error \$11	. 0	The data on the	Call your Genesis service repre-
System Error \$51	1	drive has been	sentative for instructions.
System Error \$91	2	corrupted. Disk may require reformatting.	
for loose connection			
System Error \$12	0	The data on the	Call your Genesis service repre-
System Error \$52	1 SVIII	drive has been	sentative for instructions.
System Error \$92	2	corrupted. Disk may require	
		reformatting.	

9 System Troubleshooting

This chapter provides information that will help you diagnose and, in some cases, repair some typical CINDI system problems. This chapter is divided into four sections:

- · Process of reduction
- Software troubleshooting
 - Hardware troubleshooting
 - Tables and flowcharts

Read this chapter from beginning to end before attempting to service CINDI. The flowcharts located at the end of the chapter are useful for determining what the actual problem is as well as where that problem is located. You might find it helpful to examine an operating CINDI while you read the chapter (especially the Hardware Troubleshooting sections).

Whenever CINDI fails to perform as expected, the problem is probably due to one or more faults in the telephone system or in the CINDI system itself. To diagnose the problem most effectively, you should isolate each fault to a single component which can be replaced or repaired. You do this by a process of reduction as follows:

- Divide the largest "system" into two parts.
- Determine which of the two parts contains the fault by performing appropriate tests.
- Once you determine which part contains the fault, divide this part into two parts and repeat the process until you reach a specific component that can be replaced or repaired.

When you begin your diagnostics, the largest "system" will consist of the telephone system and everything outside of the phone system. Since a fault outside of CINDI can make CINDI fail to perform as expected, always test for a fault outside of CINDI before opening CINDI.

If you determine that the fault lies within CINDI, turn to the Failure Troubleshooting Flowchart located in the Flowcharts section at the end of this chapter. This flowchart contains a series of operations for CINDI troubleshooting. The remaining text in this chapter accompanies these operations.

The first CINDI troubleshooting procedure is to check for a system error code. The error code is displayed in two places: 1) on the terminal attached to CINDI, and 2) on the display readout located on the top edge of the DIU board (next to the LEDs). System error codes are represented by hexidecimal numbers in the form of 00 through FF. The letters A, B, C, D, E, and F are considered to be numbers in this case.

If a system error code is displayed, refer to the Error Code Index at the back of this chapter (immediately following the Failure Troubleshooting Flow-chart). Locate the appropriate error code in the Index and read the description and category for the error. Next, refer to the applicable troubleshooting flowchart for specific diagnostic procedures.

If no error code is displayed, you will need to test for a fault within CINDI. Do this by following the procedures in the Failure Troubleshooting Flow-chart and by reading the accompanying text in this chapter.

Voice Quality/System Storage Setting

Telephone interface chapter of this manual. Be sure that the line equivalents

The sections below will help you determine whether or not CINDI's problem is a programming fault. These sections present typical software configuration problems that are frequently encountered and also discuss the basic software diagnostic "tools".

9.3.1 Typical Software Configuration Problems

When CINDI is installed at a site, various parameters are programmed uniquely for the site. These include PBX parameters that configure CINDI for the specific telephone sytem; voice mail parameters that allow users to customize CINDI's operations for the site; and telephone line specifications that define the type of telephone line interface used by CINDI's ports.

CINDI may not operate as expected if the software configuration parameters are set inappropriately. The following sections discuss some typical configuration problems.

Voice Quality/System Storage Setting

If the voice quality on the system is poor, make sure that the system storage capacity is set for "best voice quality." Although this is the factory setting, the System Manager may have changed it in order to provide greater storage capacity.

You can reset storage capacity off-line via the SETUP utility or on-line via the System Manager's Mailbox. To review the current storage capacity offline, use the terminal to select option 2 from the SETUP utility command menu.

Telephone Line Port Specification

CINDI supports numerous line equivalents which are fully discussed in the Telephone Interface chapter of this manual. Be sure that the line equivalents defined for CINDI's ports are appropriate for the line types used. If the system installer specified incorrect or incompatible line equivalents, CINDI will not be able to communicate properly with the outside world. To review the line equivalents defined for the system, refer to the Technical Initialization Worksheets or to the SETUP utility. Any changes you need to make to the line equivalents may be made via the SETUP utility.

Wink Duration

Both DID and E & M line types support wink start. The wink start duration is factory set at 200 milliseconds (ms). You can program CINDI to respond to any incoming wink duration between 140ms and 290ms. Make sure that

CINDI's wink duration matches the duration expected by your telephone system.

The Telephone Interface chapter of this manual discusses wink start duration and other signalling methods supported by CINDI. You can program wink start duration for CINDI via the SETUP utility.

Hookflash Duration

CINDI performs hookflash call transfers on ports programmed for transfers.

The long and short hookflash durations are programmable over the range of 1/10 to 9/10 of a second and must be appropriate for the telephone system.

If CINDI's hookflash duration is too short, callers will hear DTMF tones and may be told that the person they are trying to reach is unavailable. If CINDI's hookflash duration is too long, callers will be disconnected rather than transferred.

Each telephone system has a hookflash duration range during which it recognizes a hookflash request. If CINDI's hookflash duration is programmed too close to the beginning or too close to the end of this range, the telephone system may respond differently to hookflash requests during light and heavy load conditions. To avoid problems, it is best to set CINDI's hookflash duration in the middle of the telephone system's acceptable range.

You can review and modify CINDI's long and short hookflash durations via the SETUP utility.

Extension Transfer Sequence

CINDI performs call transfers according to the call transfer sequence programmed during system initialization. If CINDI is not transferring calls correctly, verify that the sequence is correct for the telephone system. For a description of the dialing sequence programming commands, refer to the System Utilities chapter in this manual. You can review and change the current extension transfer sequence via the SETUP utility.

One common dialing sequence programming error is to omit a "timing" command that allows CINDI to wait until the switch can accept further commands. Normally, CINDI follows each command programmed in the dialing sequence with a 100 ms wait. If this is too short, you may want to insert a "Wait for one second" command after a hookflash. This gives the switch time to provide or receive the next information.

Call Transfer Answer Detect

If CINDI's extension transfer sequence includes an answer detect (i.e. 'A'), CINDI will wait on a normally ringing line for an answer for a preprogrammed number of seconds before quitting or attempting to recover the call. The number of seconds that CINDI will wait for an answer for hookflash call transfers (for internal calls) can be from 10 through 60 seconds and is defined via the SETUP utility.

Some telephone systems activate a call roll-over to the operator or to another extension after a programmed number of rings (four rings is typical). When CINDI encounters a roll-over, CINDI may interpret the change in ring cadence as an answer and execute the transfer at that time.

To avoid problems, be sure that the number of seconds programmed in CINDI for internal call transfers is less than the amount of time it will take for the telephone system to activate a roll-over. For most installations, 15 seconds is an appropriate duration.

Feature Authorizations

If CINDI prevents a specific user from performing a function, determine whether or not the user's mailbox is authorized for the desired function. The mailbox directory worksheet should provide this information. Also, authorizations for all mailboxes may be reviewed and modified via the System Manager's Mailbox.

9.3.2 Talk-Off

A typical problem that is not related to a software configuration parameter is called "talk-off." Talk off occurs when CINDI interprets frequencies in a caller's voice or in a recorded message as a DTMF input. When this occurs, CINDI responds as though the caller entered a keypad command.

If CINDI users are experiencing talk-off, check the following:

- The telephone system is set to match the termination impedance of 600 ohms.
- The default volume setting on the AIU cards is not set to the high or "3" setting which may cause some distortion due to over-amplification.

If a site is experiencing missing, partial, or deleted messages, talk-off may be responsible. For example, when CINDI plays-back a message during message receiving, a combination of frequencies in the message may be interpreted as key [8] and the message will be deleted. Or, if CINDI thinks the key has been pressed, the message currently being played will be saved, and the next message in the queue will be presented.

9.3.3 Software Diagnostic Tools

When you encounter a software problem, the main source you can refer to is the System Usage Reports. If you attach a terminal or printer to the RS-232C port 2 on CINDI, you can display or print any of six system reports. For information about accessing these reports, refer to the Statistical Reports chapter in the System Manager's Guide. An example showing the format and the items within each report is displayed in this chapter along with a complete description about the items within each report.

Other sources that indicate software problems follow: 1) START-UP display; 2) the port error warning report; 3) CINDI's verbal warnings during normal voice mail operations.

START-UP information displays on the terminal screen (or printer) whenever CINDI is powered on. CINDI performs a system self-test, the progress of which is displayed on the screen (or printer). CINDI tests the central processor, the disk controller, the hard disk drive, and each AIU port. Any hardware or software "mismatches" will be uncovered and reported in the display.

The port error warning is a message that CINDI delivers to the System Operator when he or she accesses the Operator's mailbox. In this message, CINDI presents which ports (if any) are not working.

Finally, CINDI presents error messages when users are prevented from performing specific functions such as call placements and message forwarding which are authorized by the System Manager. If the system's problem is not a programming fault, you need to check various hardware components. This section discusses how to diagnose basic hardware problems.

Diagnosis of CINDI hardware problems typically is accomplished by replacing one or more of the printed-circuit boards in CINDI or by performing diagnostic tests using a telephone or digital volt/ohm meter. Repair will normally be accomplished by replacing a simple electrical component (e.g. a fuse) or one of the printed-circuit boards.

The primary tools you need for hardware maintenance and repair include:

- A digital volt/ohm meter
- Phillips screwdriver, No. 2
- · Standard screwdriver, 3/16"
- · Eprom puller (or plastic screwdriver)
- Allen wrench, 5/32"
- · Standard module touch-tone telephone
- RS 232 compatible terminal capable of 9600 baud with appropriate RS 232C cable

Perform the diagnostic operations presented in the sections below in the order presented (which is also the order presented in the Failure Troubleshooting Flowchart).

9.4.1 Is the Fault System-wide or Confined to One Port?

First, you need to determine if the problem occurs on all ports or on a particular port. To do this, call into each port using the port's specific extension to see if the problem occurs. If the problem occurs on all ports, you should measure the power supply voltages which are discussed in a section below.

If the problem occurs on a particular port, power CINDI down and remove the cover. Pull out the faulty AIU board.

Replace or Swap the AIU board

After you pull out the faulty AIU, you need to replace or swap the faulty board with a functioning board. If you have a replacement board, insert it in the original board's location. If you don't have a replacement, insert one of the operable boards, already in the CINDI, into the faulty board's location. After you do this, power CINDI back on and repeat the test calls for the targeted port. If the problem disappears when you retest the port, you have identified a faulty port. You will need to obtain a new AIU board to replace the faulty one.

9.4.2 Measure Power Supply Voltages

If you cannot isolate a faulty port, you should measure the voltages on your power supply. To do this, remove CINDI's cover while the power is running and carefully test all power supply voltages. The diagram below shows the wire connections and voltage requirements for the supply:

BROWN P27	PWR FAIL	CHASSIS	P12 GREEN
O CONNECTION	-5	AC LIVE	P11 BLK/WHITE
YELLOW P23	+12	AC NEUTRAL	P10 WHITE
BLUE P26	-12	ed AJU bosse. You will nee	0000
YELLOW P24	+12		Check the Hard D
BLACK P25	GND	POWER ONE SUPPLY	
BLACK P21,P22	GND		the lu
BLACK P20	GND		
RED P18,P19	+5	- Sumonas	rilam
RED 17 →	+5	SPL-200-5100P	nucl)

Allowable Tolerance Range

You will need to replace the disk drive altogether in this case.

+5 volts:	+4.75	to +5.25 volts
+12 volts:	+11.4	to +12.6 volts
-12 volts:	-11.4	to -12.6 volts
-48 volts:	-42.5	to -56.0 volts

Note: More cards with less disk = high 12V

Less cards with more disk = low 12V

If your voltage readings do not fall into the ranges listed above, you need to check and see if a short in one of the AIU boards is draining power from the power supply. To do this,

1. Power down the CINDI.

- Remove all boards (AIU, DIU, CPU) from the card rack.
- Power on the system and repeat the voltage check.

If the voltages are still out of the tolerance range, you should replace the power supply.

If the voltages are within the range, power down CINDI and replace one of the boards. Power CINDI up and repeat the voltage tests. Do this for each AIU board. If the voltages are out of the tolerance range for one of the boards, remove this board and replace the others in their slots. Test the voltages one more time. If they are within the tolerance range, the problem lies in the removed AIU board. You will need to replace this board.

9.4.3 Check the Hard Disk

If you cannot locate the problem within the power supply, you should check the hard disk drive. Always check the power supply before the disk drive, because a faulty power supply can cause the hard disk to appear as if it is malfunctioning.

Check the LED display on the disk drive. If it is flashing at a steady rate when voice mail operations are not running, you probably have a hard disk failure. You will need to replace the disk drive altogether in this case.

If you replace the hard disk, you will need to install the software again (with the INSTALL utility). If you have a recent backup (performed with the BACKUP utility) of the mailbox directories and system configuration data on a set of micro-diskettes, you should restore this information to the system hard disk with the RESTORE utility. If you recently performed the PSAVE utility, you can also use the PCOPY utility to copy the system phrases and company greetings onto the hard disk. Each of these utilities is discussed in the System Utilities chapter of this manual.

The chart below lists some typical symptoms and possible fault locations for each, listed in the order you should check them. You will probably encounter symptoms and fault locations other than those listed.

It's best to consult this table after you have followed through all opertions in the Failure Troubleshooting Flowchart and are unable to locate the fault. You can use this symptoms chart in conjunction with the Operational Symptoms' flowcharts located at the end of this chapter (after all troubleshooting flowcharts).

Symptom Possible Fault Locations

Nothing happens Power supply assembly, cabling, CPU, disk drive

Will not answer AIU

Will not respond to DTMF . . AIU

Always busyAIU

Will not make calls AIU

Will not record, will talk AIU, CPU, DCU, disk drive

Will not record or talk AIU, disk drive, DCU, CPU

No pause compression AIU

Will not talk to terminal RS-232 I/O ports or cable, baud rate selection, CPU

Hard disk not operating Disk drive, power supply to disk drive, DCU, cable

Will answer, will not

Noisy messages AIU

Time and date wrong battery backed clock CPU *

* CINDI's clock is backed by a 3.0 volt Lithium battery.

If the time and date are not correct after a power cycle, the battery may need to be replaced. UL approved batteries must be used. Approved sources are:

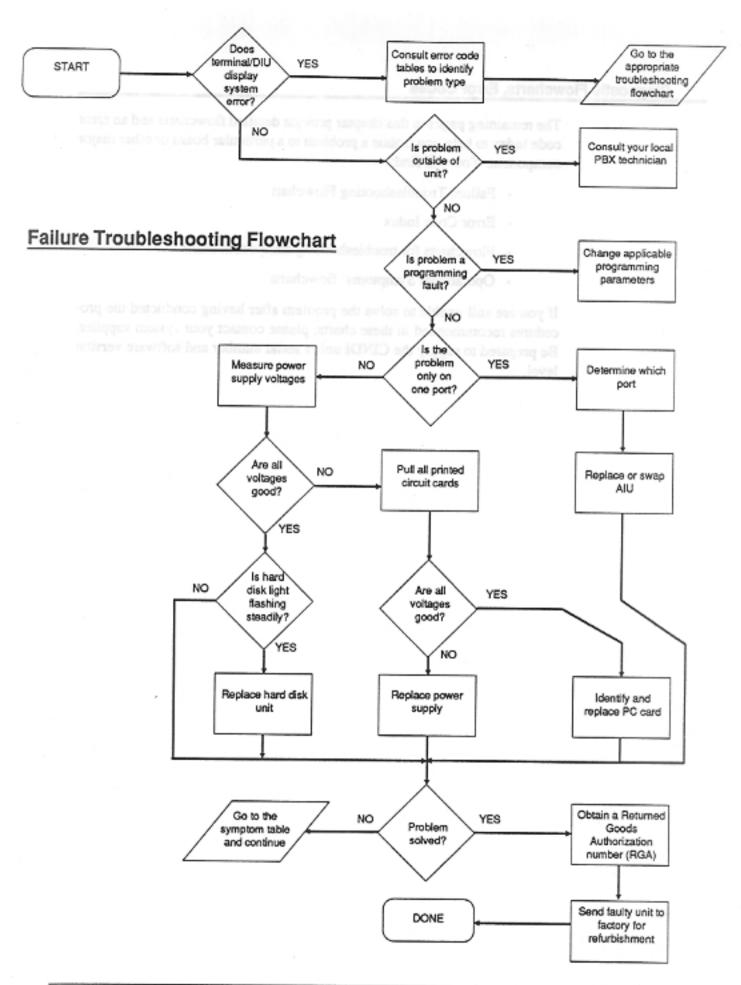
Rayovac or Panasonic: BR2016, BR2320, BR2325, CR2016, CR2025

Duracell: DL2016, DL2025, DL2032

The remaining pages in this chapter provide detailed flowcharts and an error code index to help you isolate a problem to a particular board or other major component. You will find:

- · Failure Troubleshooting Flowchart
- Error Code Index
- Flowcharts for troubleshooting component faults
- · Operational Symptoms' flowcharts

If you are still unable to solve the problem after having conducted the procedures recommended in these charts, please contact your system supplier. Be prepared to supply the CINDI unit's serial number and software version level.



Error Code Index

The error codes presented in the Error Code Index are represented in hexidecimal notation and relate to system problems as follows:

00-3F: Hard Disk Drive, D0

40-7F: Hard Disk Drive, D1

80-B1: Microdiskette Drive, F0

B2-B4: Security Errors

C0-FF: Other Error Codes

Syssom aftweet creed

Hard Disk Drive Error Codes, Drive D0

Error Code	<u>Description</u>	Troubleshooting Category
00	(No error detected)	Disk hrdwre failure
01	No index signal	Disk hrdwre failure
02	No seek complete	Disk hrdwre failure
03	Write fault	Disk hrdwre failure
04	Drive not ready	Disk hrdwre failure
05	Drive not selected	Disk hrdwre failure
06	No track 200 found	Disk hrdwre failure
07	Multiple drive select	Disk hrdwre failure
08,09,0A	N/A	
0B,0C	N/A	
0D	Operation in progress	System software
0E,0F,10	N/A	•
11	Uncorrectable data error	Disk data/format error
12	N/A	
13	No address mark found	Disk data/format error
14	No record found	Disk data/format error
15	Seek error	Disk data/format error
16	N/A	
17	Write protected	System sftwre error
18	Correctable ECC error	System sftwre error
19	Bad track flag set	System sftwre error
1A	Incorrect interleave	System sftwre error
1B,1C,1D	N/A	
1E,1F	N/A	
20	Invalid disk command	System sftwre error
21	Illegal sector address	System sftwre error
22	Illegal DCU function	System sftwre error
23	Disk volume overflow	System sftwre error
24-2F	N/A	•
30	Power up DCU fail	Disk hardware
31-3F	N/A	

Hard Disk Drive Error Codes, Drive D1

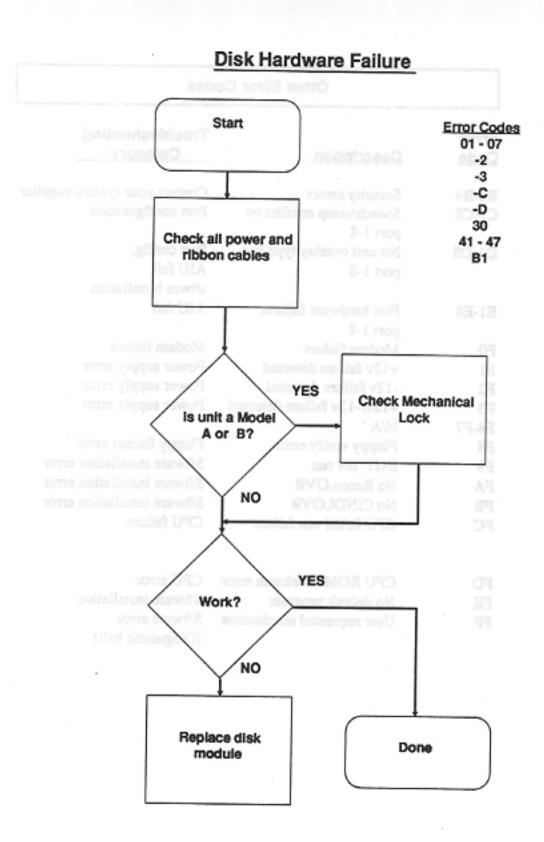
Error	<u>Description</u>	Troubleshooting Category
40	No error	Disk hardware
41	No index signal	Disk hardware
42	No seek complete	Disk hardware
43	Write fault	Disk hardware
44	Drive not ready	Disk hardware
45	Drive not selected	Disk hardware
46	No trace 200 found	Disk hardware
47	Multiple drive select	Disk hardware
48-4C	N/A	
4D	Operation in progress	System software
4E-50	N/A	
51	Incorrectable data	Disk data/format
52	N/A	
53	No address mark	Disk data/format
54	No record found	Disk data/format
55	Seek error	Disk data/format
56	N/A	
57	Write protected	System software
58	Correctable ECC error	System software
59	Bad track flag set	System software
5A	Incorrect interleave	System software
5B-5F	N/A	A S
60	Invalid command	System software
61	Illegal sector address	System software
62	Illegal function	System software
63	Volume overflow	System software
64-7F	N/A	V

Floppy Disk Drive Error Codes, Floppy F0

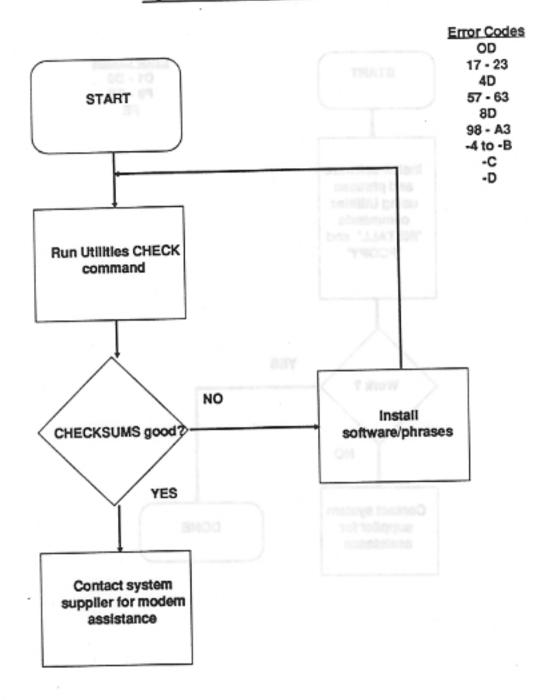
Error Code	Description	Troubleshooting Category
80	No error	
81	No index signal	Floppy hardware
82	No seek complete	Floppy hardware
83	Write fault	Floppy hardware
84	Drive not ready	Floppy hardware
85		Floppy hardware
86	No track zero	Floppy hardware
87	Multiple drive select	Floppy hardware
88-8C	N/A	1 toppy madware
8D	Operation in progress	System software
8E-90	N/A	System software
91	Incorrectable data error	Floppy format
92	· A\V	(Remove cardboard
		floppy shipping insert)
93	No address mark	Floppy format
94	No record found	Floppy format
95	Seek error	Floppy format
96	N/A	r toppy tormat
97	Write protect error	Floppy write protect
98	Correctable ECC error	System software
99	Bad track flag set	System software
9A	Incorrect interleave	System software
9B-9E	N/A	System software
A0	Invalid command	System software
A1	Illegal sector address	System software
A2	Illegal function	System software
A3	Volume overflow	CORP. N. N.
A4-B0	N/A	System software
B1	DCU floppy hard error	Disk hardware

Other Error Codes

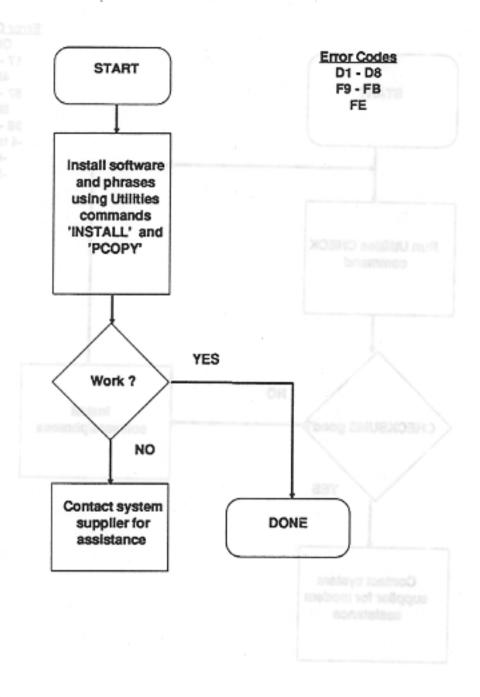
Error Code	Description	Troubleshooting Category
B2-B4	Security errors	Contact your system supplier
C1-C8	Switch/setup conflict on port 1-8	Port configuration
D1-D8	No unit overlay type for	Port config,
	port 1-8	AIU fail,
	1	sftwre installation
E1-E8	Port hardware failure, port 1-8	AIU fail
F0	Modem failure	Modem failure
F1	+12v failure detected	Power supply error
F2	-12v failure detected	Power supply error
F3	+12v/-12v failure detected	Power supply error
F4-F7	N/A	inu al STT
F8	Floppy verify error	Floppy format error
F9	INIT not run	Sftware installation error
FA	No Recon.OVR	Sftware installation error
FB	No CINDLOVR	Sftware installation error
FC	CPU RAM test failure	CPU failure
FD	CPU ROM checksum error	CPU error
FE	No default program	Sftware installation
FF	User requested termination	Sftware error (Diagnostic halt)



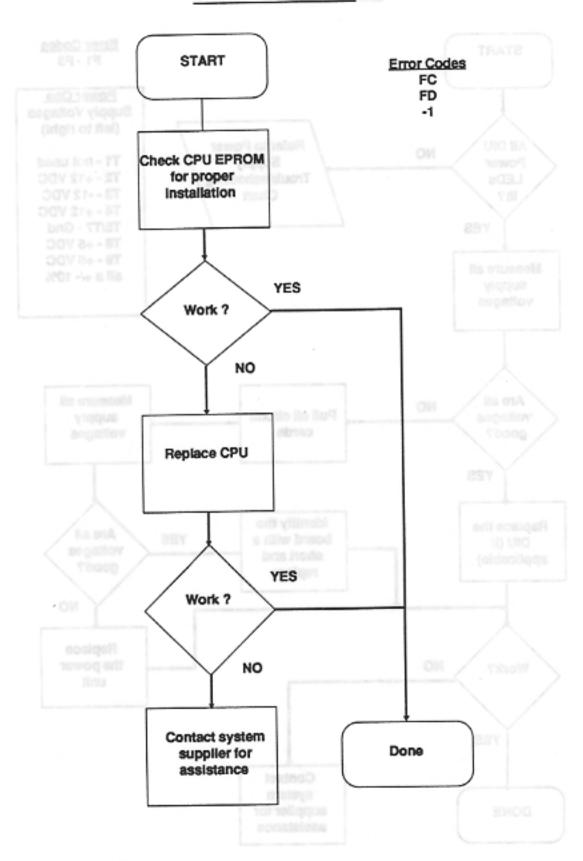
System Software Error



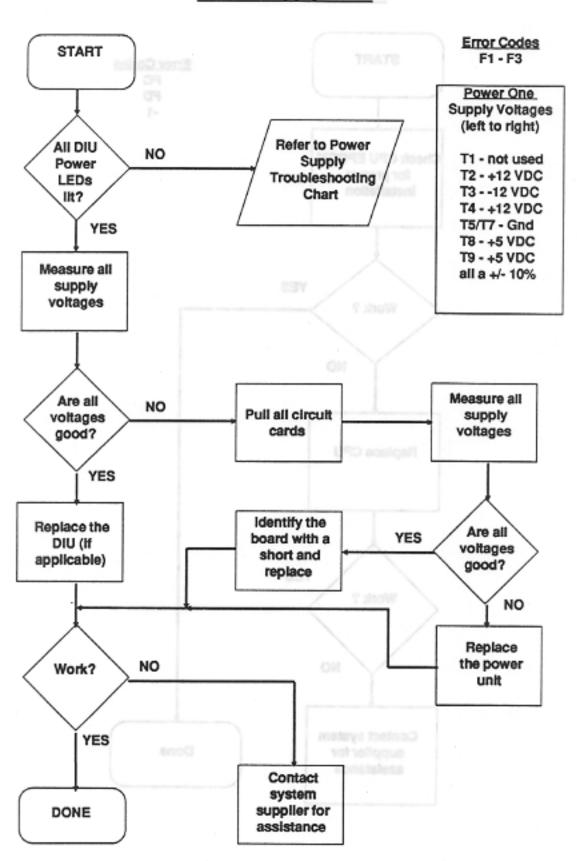
Software Installation Error



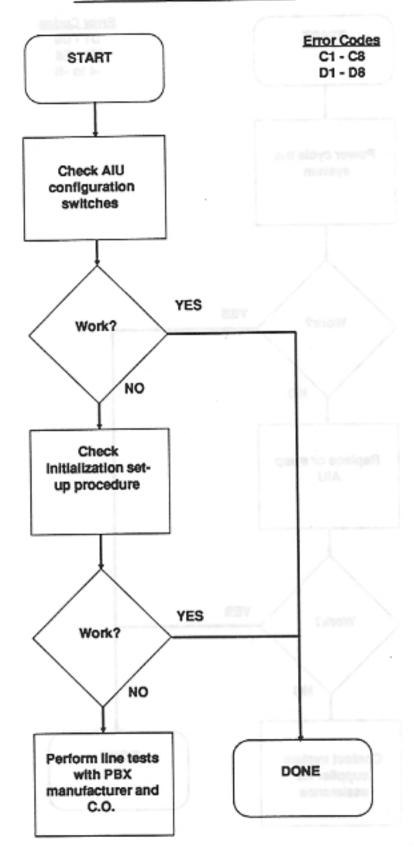
CPU Failure Error



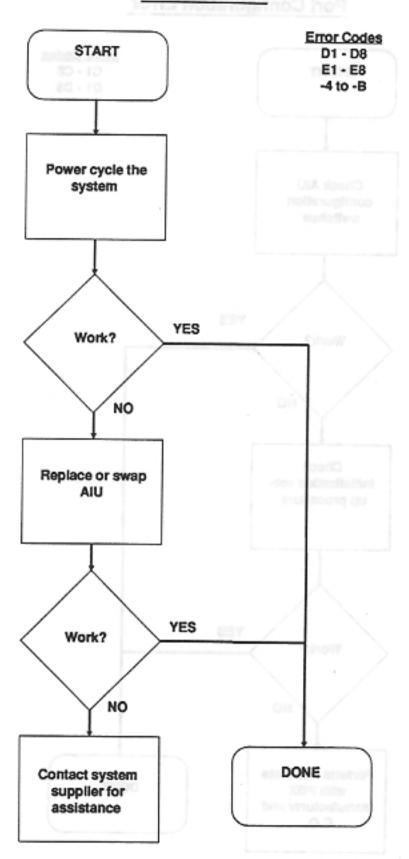
Power Supply Error



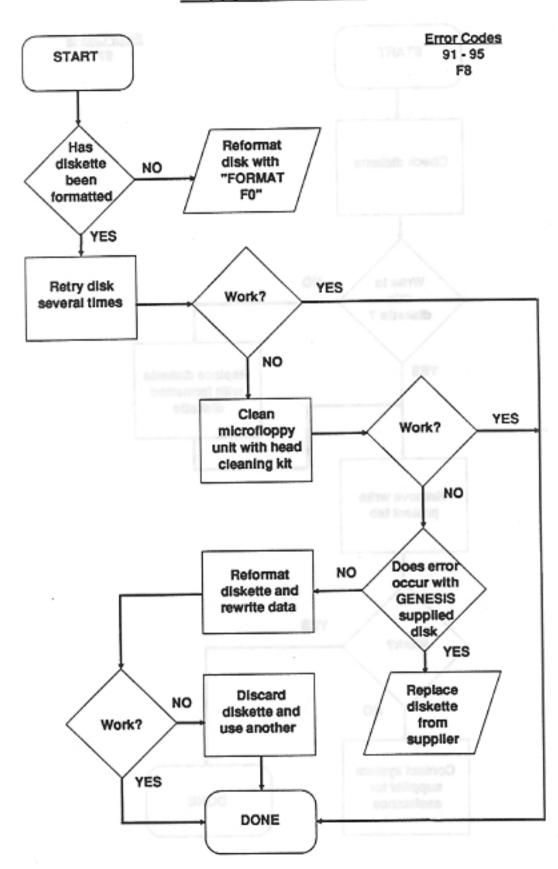
Port Configuration Error



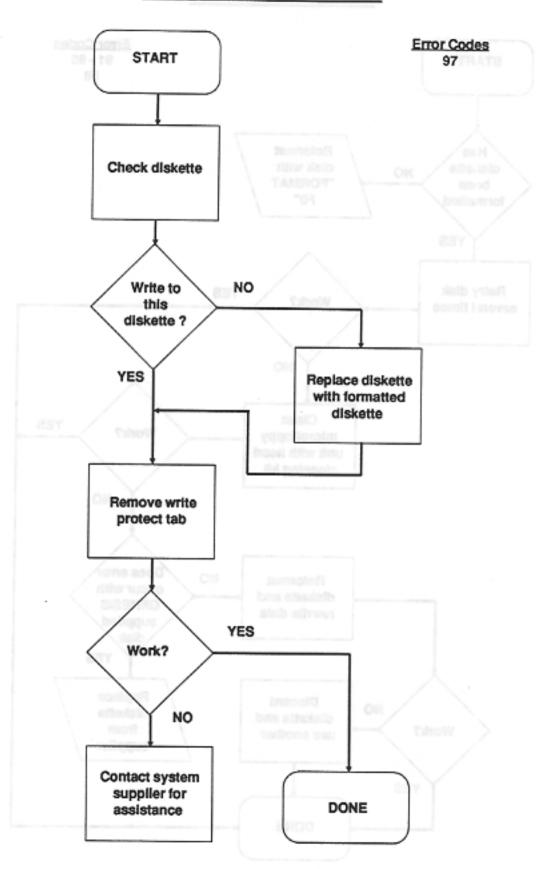
AIU Fail Error



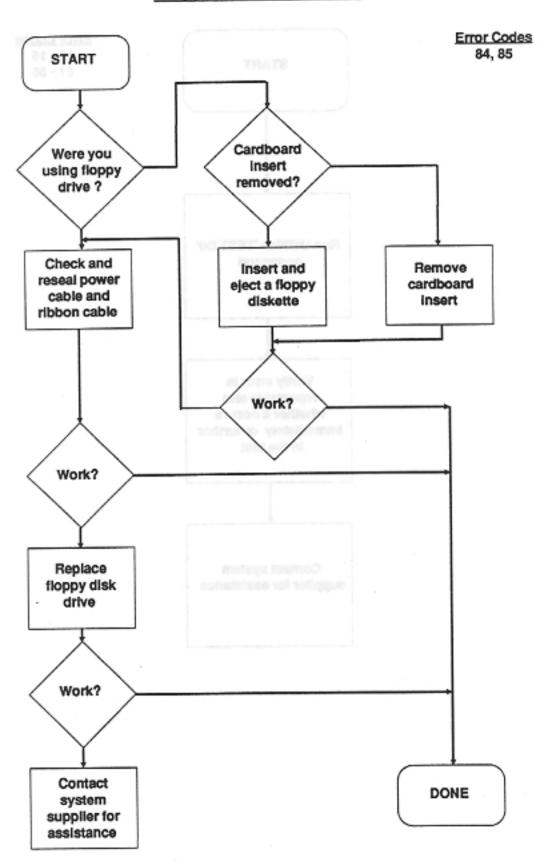
Floppy Format Error



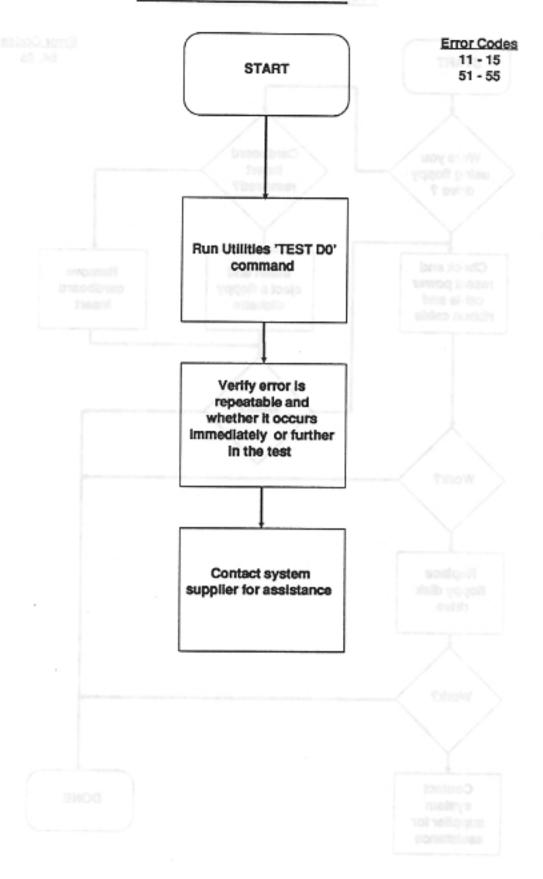
Floppy Write Protect Error



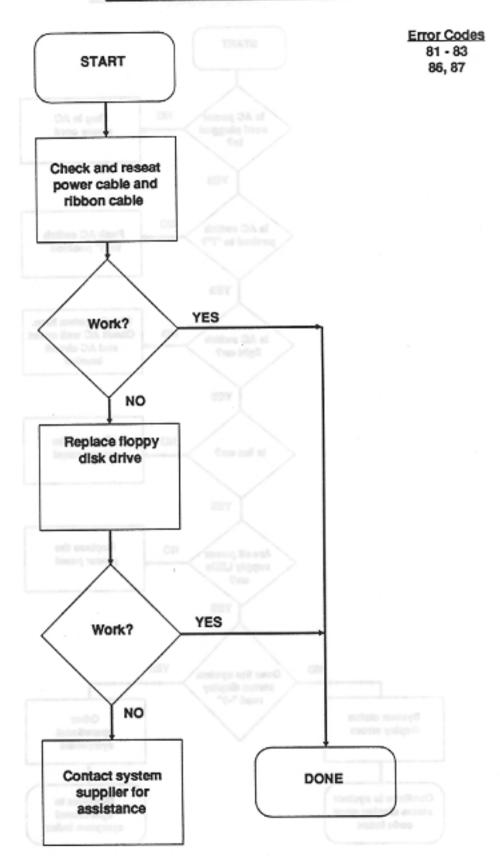
Floppy Hardware Error



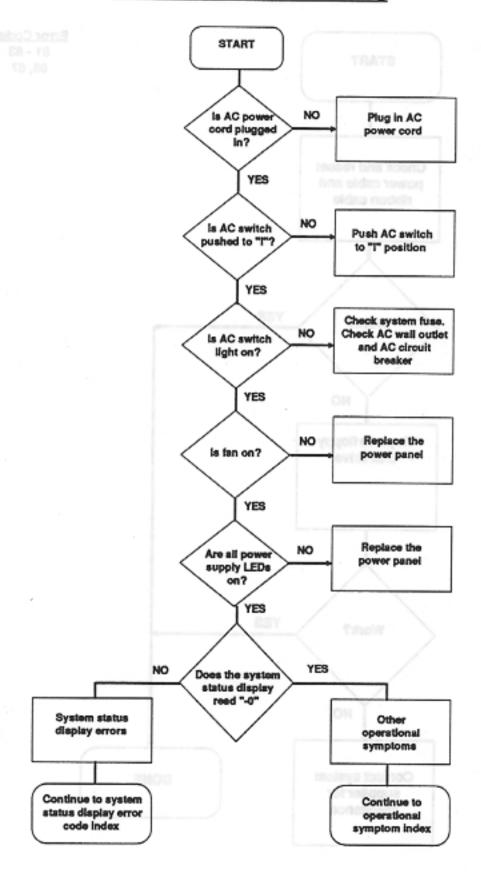
Disk Data/Format Error

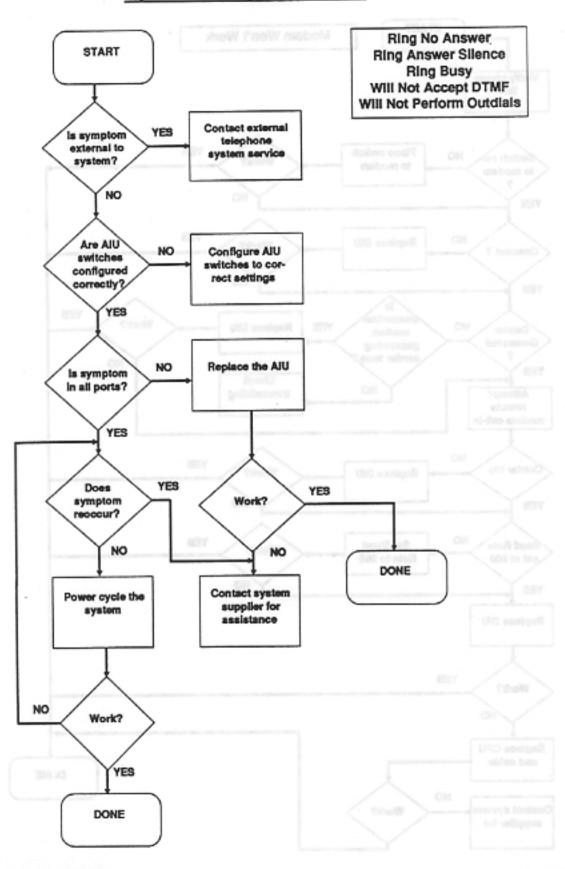


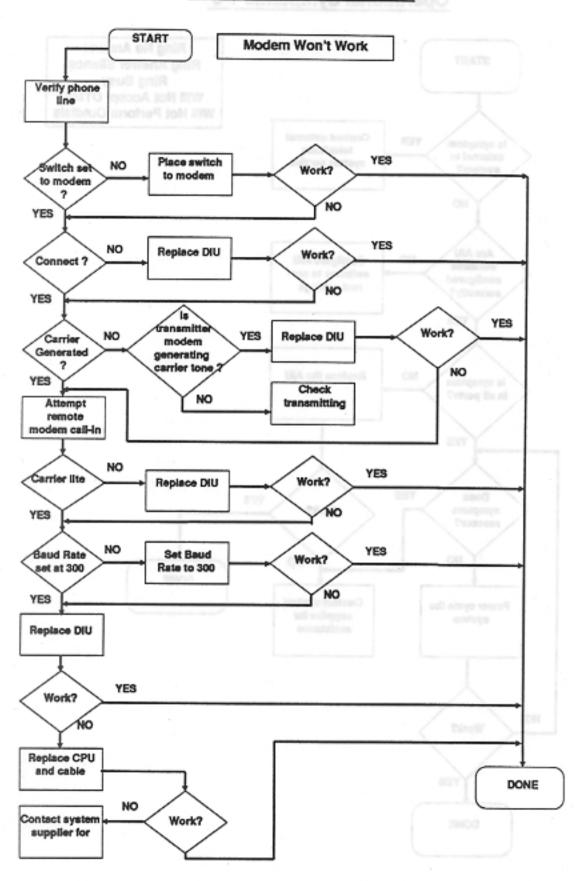
Floppy Hardware Error

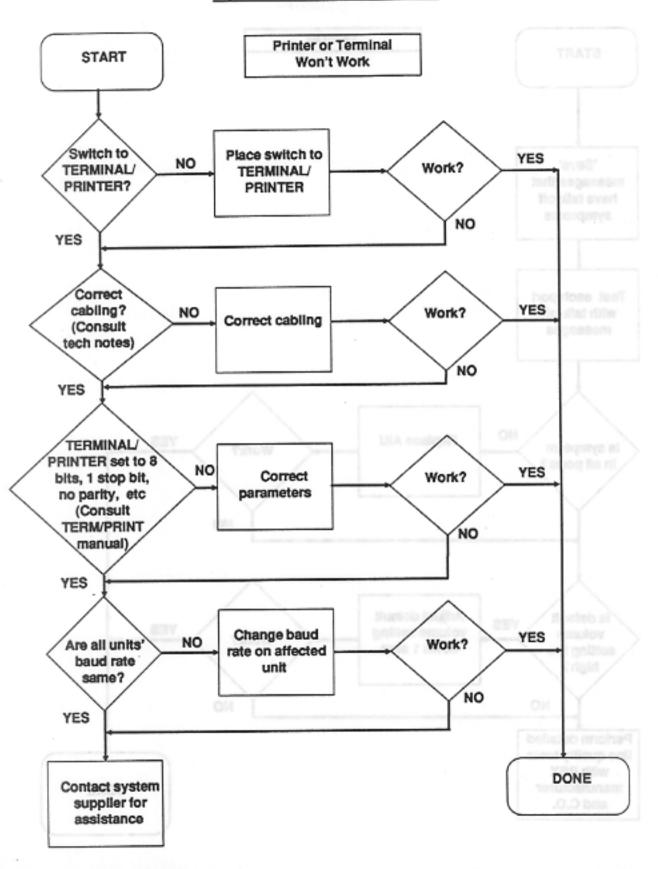


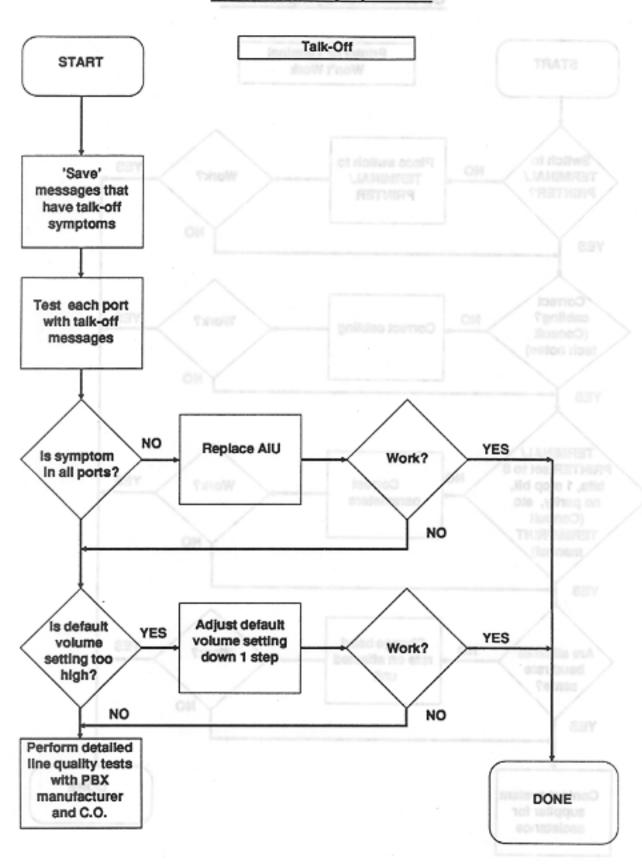
Power Supply Troubleshooting

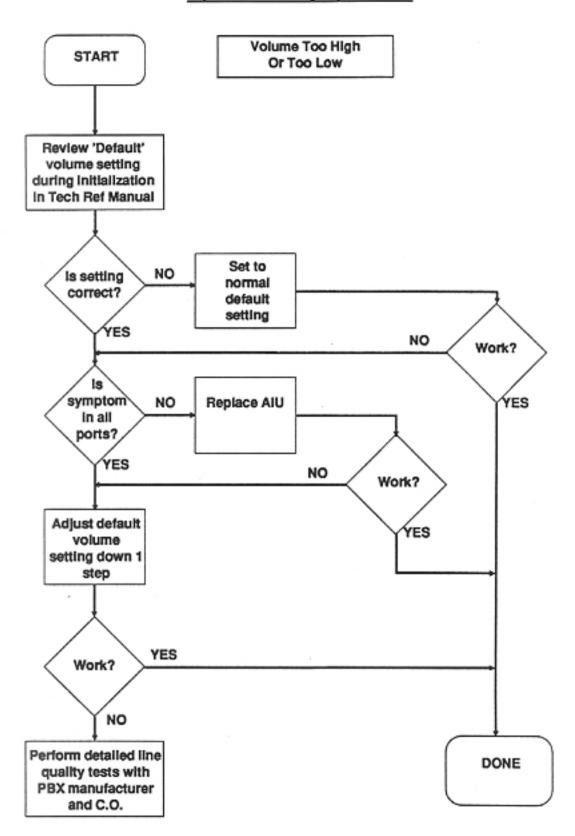


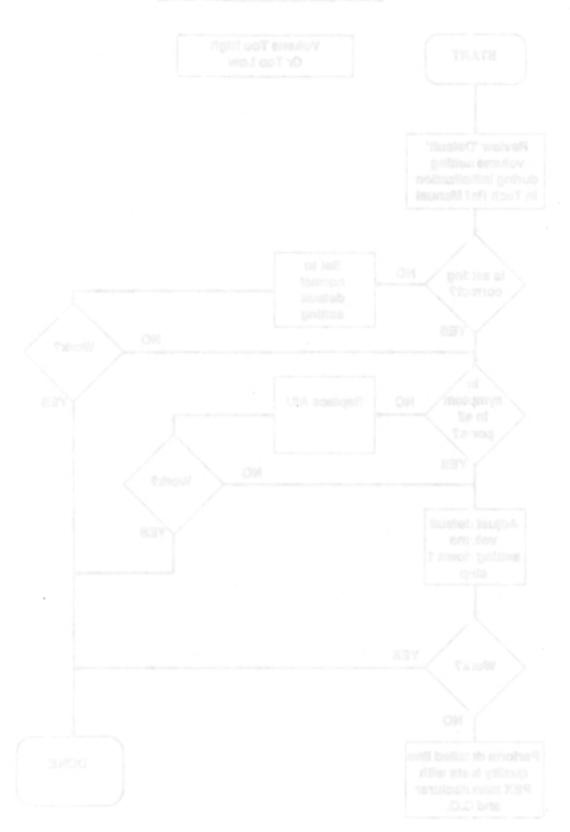












Appendix A: CINDI Worksheets

This appendix contains copies of the Technical Initialization Worksheet. Additional copies can be created by copying blank worksheets.

PBX extensions or	telephone number:	s directed into	CINDI:		
Port 1:	Contrate on Addison	Pe	ort 5:	lo, suimon animir v	n with annual air
Port 2:		Po	ort 6:	ing blank worksh	and by copy
Port 3:					
Port 4:		Po	ort 8:		
	Syster	n Hardware C	Configuration		
Number of disks on	system (1,2):				
Number of ports on	system (2-8):				
	C-II Voice	Mail Operation	onal Paramet	<u>ers</u>	
Storage capacity (1,	2, 3, or 4, as corre	sponds to the h	ours listed bel	ow):	
	(1)	(2)	(3)	(4)	
CINDI Disk	Maximum	Extended	Normal	Best Voice	
Configuration	Storage	Storage	Storage	Quality	
A	2.1	1.8	1.5	1.4	
В	5.5	4.6	4.0	3.5	
C	10.5	8.8	7.6	6.7	
D	21.6	18.1	15.6	13.8	

		Te	chnical Ir	nitializatio	on Works	heet		-
Standard	l message i	retention tin	ne (1-7 day	s):		-(3-C) dt	ention lene	cro.oromize
Personal	greeting le	ength (10-1	80 seconds):		-Ch-D di	meal anizas	a in manini
Mailbox	length (2,	3, or 4):			endulle	utside line.	A top of the	iblo vidao
Compan for peop	y telephon le calling t	e number, i o reach CI	ncluding ar NDI:	rea code,	,bermed,	owens-on o	onds befor	umber of sec ternal calls (
Suppres	s the Initia	l Mailbox P	rompt (Y/N	N):	Increments o		oned a beston	erobee of secondists (20-6)
Override	e the Boxh	older's nam	ne (Y/N):		er of sendin	ion (number	triub (H) duras	ealistood mos
Outdial	line group	s:						
Group	Ln1	Ln2	Ln3	Ln4	Ln5	Ln6	Ln7	Ln8
1	_		_	_	·		enor ea lo si	igib <u>tedi</u> bila
2	_			_	_	_	:mossumi	ze z' million i
3	_	_	_		qu) thibnot	ns orti Kono	ar sonsupe	ill transfer se
4		_	_				_	(sugib 21
5	<u>·</u>	_			coc <u>cas</u> iom	reach other	The second secon	ill tr <u>ansfer</u> se e to 12 digita
6	_				_	_	recuences r	sy reconnec
7			_	_	_			_
8						mendage to	MILES OF 100	st-busy/reon

Default message retrieval order (LIFO/FIFO):

A - 3

PBX Parameters Definition

Maximum extension length (2-4):	andard message retention time (1-7 days):
Minimum extension length (1-4):	ersonal greeting length (10-180 accords):
Number of digits to get outside line (0-9):	hilbox length (2, 3, or 4):
Number of seconds before no-answer assumed, internal calls (10-60):	ompany telephone number, including area code r people calling to reach CINDE:
Number of seconds before no-answer assumed, outdials (20-60):	appress the Initial Mulibox Prompt (Y/N):
Short hookflash (H) duration (number of tenths of a second, 1-9):	werride the Boxholder's same (Y/N):
Long hookflash (L) duration (number of tenths of a second, 1-9):	ential line groups:
Valid first digits of extensions:	
Attendant's extension:	
Call transfer sequence to reach the attendant (up to 12 digits):	
Call transfer sequence to reach other extensions (up to 12 digits):	
Busy reconnect sequence:	
Fast-busy/reorder reconnect sequence:	
Ring-no-answer reconnect sequence:	
Call transfer answer-detection delay (0-5000 ms):	Default message rendeval order (LIFO/FIFO):
Outdial answer-detection delay (0-5000 ms):	

DTMF detection threshold (10-50	00 ms):	rol anoity	headine	dalar made	ingiT ani I)
Silence detection threshold (1000)-5000 ms):	BaD	-IsO	siniW ^a	
PBX loop disconnect duration (1	00-2000 ms):	Digi	71,678	Equity	
CINDI disconnect duration (100-			-		
Voice detection threshold (1-10)	:				

Telephone Line Specification

(Line Equivalents, wink starts, and options for incoming lines)

T.ino	+3371I.	0	0.11		
Line Port	*Wink Equiv	Out- start	Call Dial	Call Xfer	Cont Conton to conton to Conton Conto
1					
2				(8m 00	CINDI disconnect duration (100-30
					Voice detection threshold (1-10):
3					
4					
5					
6					
7					
8					

^{*} Required for Line Equivalents 200, 210, and 400 only

Option Class A Initialization (IS724)

Lines to provide IS724 su	pport (1-8):			_
Allow non-Boxholders to	screen calls (Y,1	N):		_
Allow attendant to screen	calls (Y,N):		<u>, , , , , , , , , , , , , , , , , , , </u>	_
Suppress the initial exten	sion prompt (Y,N	t):		_
Sequence to initiate a cor	sultation call:			_
Busy reconnect sequence				
Fast-busy/reorder reconn	ect sequence:			_
Ring-no-answer reconne	ct sequence:			_
Connect sequence:				
Refused call reconnect se	equence:			

DART Initialization

Name	Assignment Mailbox	Response Mailbox
	 	ines to provide 15724 support (1-8)
	 (N, Y) a	llow non-Boxholders to screen call
	 =	illow amendant to screen <u>calls (Y</u> ,N
	 (Y,Y) :	oppress the initial exten tion prom up
	 die	equence to initiate a con stitution cr
		lusy reconnect sequence:
		est-busy/reorder reconnect sequenc
		ding-no-answer reconnect sequence
		Consoct sequence:
	 	Refused call reconnect sequence:

PBX Message Waiting Indication Initialization Lines authorized for MWI outdialing (1-8): Outdial sequence to activate MWI: Sequence to extinguish MWI: Initialize mailboxes so that each PBX extension is same as corresponding box# (Y,N): Change corresonding PBX extension for any mailboxes (Y,N): PBX Modify PBX Modify Extension Mailbox Mailbox Extension Print message waiting diagnostics (Y,N): Reactivate MWI when mailbox is closed (Y,N):

Northern Telecom IVMS Integration Initialization

Set PBX Logi	cal Terminal Nu	mbers (Y,N):		
Logical Termi	inal Number for	CINDI lines:		
	Line 1:		Line 5:	ines authorized for MWI out
	Line 2:		Line 6:	utdial sequence to activate M
	Line 3:	_	Line 7:	equence to extinguish MWI:
	Line 4:			itialize mailboxes so that ex-
	boxes so that eac rresponding box#	h PBX extension f(Y,N):	ension for any	hange convetending PBX extrailboxes (Y,N):
Change Messa mailboxes (Y	nge Waiting privi	leges for any	X84	Wilhold
			Extendon	Mailbox
	Modify Mailbox	Authorize for MWI	Modify Mailbox	Authorize for MWI
	-		,	
Print message	waiting diagnost	ics (Y,N):	or is closed (Y.N):	
Print incoming	g call diagnostics	(Y,N):	API, 17 DOROLD 82 NO	VALUEDI UBRIM TAATA DIBARDESI

Fujitsu Focus 960 API Integration Initialization

Set PBX Directory Numbers (Y,N):		_
Directory Number for CINDI lines:		
Line 1:	Line 5:	
Line 2:	Line 6:	
Line 3:	Line 7:	
Line 4:	Line 8:	
Define Directory Number for message waiting callback (Y,N):		_
Directory Number for message waiting callback:		_
Even parity (Y=even, N=odd):	message waiting diagnostics (Y,N):) (I)
Initialize mailboxes so that each PBX extension is same as corresponding box# (Y,N):	mcoming call diagnostics (Y,N):	le
Reactivate MWI when mailbox is closed (Y.N):		

	Modify Mailbox	Authorize for MWI	Modify Mailbox	Authorize for MWI
		Line 3:		Line 1:
		th and I		Lino 2:
	Line 7:			Line 3:
		Line 8:		Line 4:
			for mestage watcing	tiine Directory Number ilibeck (Y,N):
			enge weiting callbac	trectory Number for mos
Print messa	ge waiting diagnostic	:s (Y,N):		
D	ing call diagnostics (en painty (Yeeven, Neo

NEC NEAX 2400 Integration Initialization

Set PBX Direc	tory Numbers			
Directory Nun	aber for CIND	I lines:		
	Line 1: _		Line 5:	
	Line 2:		Line 6:	
	Line 3: _		Line 7:	
	Line 4: _		Line 8:	
Parity setting ((1=no, 2=even	, 3=odd):		
Message waiti	ng diplay (1=\	VMM, 2=MW):		
	boxes so that e	ach PBX extension_ ex# (Y,N):	:(V,Y):	int message waiting diagnosti

,	Modify Mailbox	Authorize for MWI	Modify Mailbox	Authorize for MWI
			Unes:	irectory Number for CIND
-) :	4, 3	Line 6:		Line 2:
		Lipe 7:		
		Line 8: _		Line 4:
			3=edd):	urity setting (1-e.o., 2-even
			(MM, 2=MW):	lessage waiting diplay (1=)
Print message	waiting diagnostic	es (Y,N):		ritia <u>lize mailboxes so that e</u> s surge as corresponding bo

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